

Talmage Road/Southbound U.S. 101 On-Off Ramp Realignment Project

Draft Environmental Impact Report

State Clearinghouse # 2013072057

August 2014

Prepared for:
City of Ukiah

Prepared by:
Leonard Charles & Associates

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Prepared for: City of Ukiah
300 Seminary Avenue
Ukiah, California 95482

Prepared by: Leonard Charles and Associates
7 Roble Court
San Anselmo, California 94960
415.454.4575

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1.0 EXECUTIVE SUMMARY

1.1. Summary of the Proposed Project

The City of Ukiah (City) proposes to modify and reconstruct the southbound portion of the U.S. 101 interchange at Talmage Road (State Route 222) in Ukiah, California, to provide additional capacity in order to address future impacts associated with regional growth and projected growth in the Airport Industrial Park (AIP). The purpose of the project is to alleviate congestion and improve traffic operations and safety for the southbound Highway 101 on- and off-ramps and along the Talmage Road Corridor. The project includes a partial cloverleaf interchange configuration with a new signalized intersection at the southbound ramp terminus with Talmage Road. There would be three (3) left-turn lanes onto westbound Talmage Road and one (1) eastbound lane. Two dedicated left turns would be provided into the Airport Industrial Park. The existing southbound off-ramp would be removed. The new signalized intersection at Talmage Road and the southbound on/off ramp are proposed to be interconnected and coordinated with the existing signalized intersection at Talmage Road and Airport Park Boulevard. Other proposed improvements include new sidewalks, signing, striping, medians, and safety lighting.

1.2 Areas of Controversy

A. Areas of Controversy and Issues to Be Resolved

The proposed project raises issues and some areas of controversy that will be considered by City decision-makers. Controversial issues are known through expressions of public opinion that are documented in the record or obtained through public meetings. Prior to circulating the Draft EIR, the City circulated a Notice of Preparation (NOP) to agencies and interested parties. Though no written comments were received on that NOP, the City did receive five comment letters on the Draft Mitigated Negative Declaration (MND) that the City considered adopting for the project in August 2013 (see subsequent Project History for more details about this Draft MND). These letters are on file with the City's Planning & Community Development Department.

Some areas of controversy are not within the purview of CEQA because that statute focuses on evaluation of significant effects to the *physical environment*. The areas of controversy identified in the comment letter that relates to physical impact issues are the potential for construction noise, increased traffic noise, increased hazards from design features, and increased traffic through the interchange.

Pursuant to CEQA Guidelines section 15123, the issues to be resolved includes the choice among alternatives and whether or how to mitigate the significant effects. This EIR has presented mitigation measures and project alternatives, and the City Council will consider the Final EIR when considering the proposed project. In considering whether to approve the project, the City Council will take into the consideration the environmental consequences of the project with mitigation measures and project alternatives, as well as other factors related to feasibility. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking

into account economic, environmental, legal, social, and technological factors (CEQA Guidelines, section 15364). No one of these factors establishes a fixed limit on the scope of reasonable alternatives. The concept of feasibility also encompasses the question of whether a particular alternative or mitigation measure promotes the underlying goals and objectives of a project. Moreover, feasibility under CEQA encompasses "desirability" to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, legal, and technological factors.

1.3 Summary of Impacts

All impacts and mitigation measures identified in this EIR are summarized in Table 1.3-1, Summary of Impacts and Mitigations, at the end of this chapter. For a full discussion of potential environmental impacts, the reader is referred to the appropriate sections of Chapter 4. Table 1.3-1 summarizes the project impacts and the mitigation measures recommended to address those impacts. The first column of Table 1.3-1 describes the impact that would result from the project. Following that impact is a description of the level of significance the impact has. Levels of significance include "less than significant" (listed as LTS in the table), "potentially significant" (i.e., significant prior to implementation of mitigation measures; listed as PS in the table), and "significant and unavoidable" (listed as SU in the table).

The next column lists the recommended mitigation measures for the impact. Finally, there is a column that describes the significance of the impact after mitigation measures have been implemented.

The proposed construction of the project would not result in any significant direct impacts that cannot be mitigated to a less-than-significant level. The project would result in three significant and unavoidable indirect impacts, namely:

1. Emission of criteria air pollutants from projected future traffic that would be accommodated by the project would exceed adopted Mendocino County Air Quality Management District (MCAQMD) significance thresholds.
2. The emission of these criteria pollutants would also make a considerable contribution to a significant cumulative air quality impact regarding emission of pollutants.
3. Emission of greenhouse gases from projected future traffic that would be accommodated by the project would exceed adopted MCAQMD significance thresholds, thereby making a considerable contribution to a significant cumulative impact on climate change.

1.4 Summary of Project Alternatives

As described in Section 5.5 of this EIR, the EIR analyzed the following three alternatives to the proposed project:

1. *No Project Alternative.* Under this alternative, none of the improvements included in the proposed project would be built.
2. *Maintain Two Separate Southbound Off-ramps Alternative.* Under this alternative, the southbound Highway 101 off-ramp to westbound Talmage Road would remain in its approximate current location. It would be widened to include two right-turn lanes as it approached the Talmage Road intersection. This southbound off-ramp intersection with westbound Talmage Road would be signalized and realigned to the west to increase sight distance. The southbound Highway 101 off-ramp to eastbound Talmage Road would be realigned slightly to the west, and would remain only one lane. This intersection would be signalized with the signal controlling right turns if queues begin accumulating on either southbound off-ramps or along the left-turn lane onto the southbound Highway 101 on-ramp. As is the case for the proposed project, two dedicated left-turn lanes from Talmage Road to Airport Park Boulevard would be constructed.
3. *Widen the Overcrossing Alternative.* This alternative would modify the entire interchange to a “tight diamond” configuration. Such a configuration would have a southbound off-ramp exiting the freeway and intersecting with Talmage Road at approximately 90 degrees at a four-way intersection allowing left and right turns as well as including the southbound on-ramp. Similarly on the east side of the freeway, the northbound on-ramp and off-ramp would meet at a single intersection with Talmage Road. The two four-way intersections would be signalized and coordinated with the existing traffic signal at Talmage Road/Airport Park Boulevard.

Environmentally Superior Alternative

The alternatives analysis contained in Section 5.5 of this EIR concludes that the No Project Alternative is the environmentally superior alternative, though it does not meet any of the project objectives. Of the remaining alternatives, Alternative 2 (Maintain Two Separate Southbound Off-ramps) is environmentally superior to the project as proposed and Alternative 3.

TABLE 1.3-1 - IMPACT AND MITIGATION SUMMARY

IMPACTS	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION	
4.1	Geology and Soils			
4.1-A	The project could expose people to injury or structures to damage from potential rupture of a known earthquake fault, strong ground shaking, seismic-related ground failure, or landslides.	PS	<p>4.1-A.1 The final improvement plans shall incorporate all design and construction recommendations contained on pages 8-12 in the <i>Limited Materials and Preliminary Geotechnical Report</i> prepared by Rau and Associates dated May 2013 consistent with the standards identified in the California Building Code, Caltrans standard structural requirements, and Caltrans Standard Specifications (latest Edition) and pertaining to the following:</p> <ol style="list-style-type: none"> 1. Reprocessing of Certain Subgrade Soils and Fill Soils, including unconsolidated subgrade soils for pavement support and Strip Foundation Support for Low Retaining Walls. 2. Grading and Site Preparation 3. Pavement Structural Sections 4. Retaining Wall Foundations 5. Pier Foundations for Signals or Street Lights 6. Surface and Subsurface Drainage <p>The Rau and Associates or other geotechnical engineer retained by the City shall review and sign the final plans and specifications for the project and approve them as conforming to their recommendations prior to grading. The project geotechnical engineer shall provide geotechnical observation during the grading and construction, which will allow the geotechnical engineer to compare the actual with the anticipated soil conditions and to check that the contractors' work conforms to the geotechnical aspects of the plans and specifications. The geotechnical engineer of record will prepare letters and as-built documents, to be submitted to the City, to document their observances during constructions and to document that the work performed is in accordance with the project plans and specifications.</p>	LTS
4.1-B	Construction of the project would involve grading and movement of earth, which could expose soils to erosion and result in the loss of topsoil.	PS	<p>4.1-B.1 The City shall prepare an Erosion and Sediment Control Plan consistent with all the general site and good housekeeping requirements, the listed erosion control requirements, and the sediment control requirements of Division 9, Chapter 7 of the City Code. The plan shall be prepared by a registered civil engineer, or other professional who is licensed and qualified. As required by the code, the plan shall include the following information and contain the following mandatory measures:</p> <ul style="list-style-type: none"> • A description and delineation of the vegetative measures to 	LTS

Note: B = Beneficial Impact LTS = Less Than Significant Impact
 PS = Potentially Significant Impact SU = Significant Unavoidable Adverse Impact

TABLE 1.3-1 - IMPACT AND MITIGATION SUMMARY
(Continued)

IMPAIRMENTS	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION
		<p>be taken to minimize erosion and sedimentation;</p> <ul style="list-style-type: none"> • A description and delineation of the proposed temporary and permanent measures to appropriately and effectively minimize soil erosion and sedimentation and to protect manufactured or disturbed slopes from erosion by mechanical means, such as with mulches, diversion dikes, etc.; • Delineation of the proposed drainage control measures and temporary and permanent measures to be taken to retain sediment on the site; • The extent and manner of the cutting of trees and the clearing of vegetation, and their disposal, and the measures proposed for the protection of undisturbed trees and vegetation; • The proposed methods for the disposal of excess materials and for dust control; • A description of the measures to maintain the devices shown on the plan during grading operations and construction on the site; • The extent of disturbed ground that would exist, the streets that would be paved, and drainage devices that would be installed prior to the start of each rainy season; • Seeding mixtures and rates, types of sod, method of seedbed preparation, expected seeding dates, type and rate of lime and fertilizer application, and kind and quantity of mulching for both temporary and permanent vegetative control measures; • Use of the most recent version of the CASQA BMP handbook, section 3 as a guide as to what measures should be taken for any particular set of circumstances. • Erosion Control Measures (Section 9703) <ul style="list-style-type: none"> ○ Complete soil stabilization within five days of clearing or inactivity in construction; ○ Design the Project as such to avoid disturbing land in sensitive areas and to preserve existing vegetation wherever possible; ○ Schedule major grading operations during dry months when practical, and allow adequate time before rainfall begins to stabilize the soil with erosion control materials; ○ Conduct seeding and mulching as soon as grading is complete; ○ If seeding or another vegetative erosion control method is used, establish the vegetative cover within 	

TABLE 1.3-1 - IMPACT AND MITIGATION SUMMARY
(Continued)

IMPAIRMENTS	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION
		<p>a time frame approved by the city engineer, or the city engineer may require the site to be reseeded or a nonvegetative option employed;</p> <ul style="list-style-type: none"> ○ Use special techniques that meet the design criteria outlined in the CASQA BMP handbook on steep slopes or in drainageways to ensure stabilization; ○ Stabilize soil stockpiles and/or securely cover at the end of each workday; ○ In areas where permanent reseeded and planting is not established at the close of the construction season, use additional control measures, such as a heavy mulch layer or another method that does not require germination, to ensure soil stabilization at the site; ○ Where runoff needs to be diverted from one area and conveyed to another, construct earth dikes, drainage swales, slope drains or other suitable practice in accordance with the design criteria set forth in the most recent version of the CASQA BMP handbook; ○ Employ techniques to prevent the blowing of dust or sediment from the site and that deliver upland runoff past disturbed slopes shall be employed when determined necessary by the City engineer. <ul style="list-style-type: none"> • Sediment Control Measures (Section 9703): <ul style="list-style-type: none"> ○ Place linear sediment barriers below the toe of exposed and erodible slopes, down slope of exposed soil areas, around soil stockpiles, and at other appropriate locations along the site perimeter; ○ Conduct street sweeping as needed to remove sediment from streets and roadways and to prevent the sediment from entering storm drains or receiving waters. Washing the street or use of cleaning fluids would not be allowed; ○ Protect every storm drain inlet with the potential to receive sediment laden runoff in accordance with the design criteria set forth in the most recent version of the CASQA BMP handbook. Inspect and maintain inlet protection frequently; ○ Install sediment basins or sediment traps where sediment-laden water may enter the drainage system or watercourses and in association with dikes, 	

TABLE 1.3-1 - IMPACT AND MITIGATION SUMMARY
(Continued)

IMPAIRMENTS	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION	
		<ul style="list-style-type: none"> temporary channels, and pipes used to convey runoff from disturbed areas; o Protect adjacent properties by the use of a vegetated buffer strip in combination with other perimeter controls or other appropriate method, as described in the most recent version of the CASQA BMP handbook 		
4.1-C	The project would be located on soil that is unstable, or that would become unstable as a result of the project, and could potentially result in on- or off-site landsliding, lateral spreading, subsidence, liquefaction, or collapse.	PS	Mitigation Measure 4.1-A.1 applies to this impact.	LTS
4.1-D	The project could be located on expansive soil, which could cause the failure of project improvements.	PS	Mitigation Measure 4.1-A.1 applies to this impact.	LTS
4.1-E	The project could make a cumulatively considerable contribution to cumulative effects associated with erosion, topsoil loss, or increased exposure to seismic or other geologic-related risks.	PS	Mitigation Measure 4.1-B.1 applies to this impact.	LTS
4.2 Hydrology and Water Quality				
4.2-A	Project construction activities would disturb surface soils and could cause erosion, and the release of sediment and construction-related water quality pollutants to receiving waters.	PS	Mitigation Measure 4.1-B.1 applies to this impact.	LTS
4.2-B	The paving of widened and realigned freeway ramps could increase impervious surfaces onsite. This could decrease stormwater infiltration and recharge of the aquifer.	LTS	No mitigation is required	LTS
4.2-C	The paving of widened and realigned freeway ramps could increase impervious surfaces onsite. This could decrease stormwater infiltration and increase stormwater flows causing downstream flooding, erosion, or sedimentation.	LTS	No mitigation is required	LTS
4.2-D	The project would not subject people and structures to increased risk of floods from the potential failure of the Coyote Dam at Lake Mendocino.	LTS	No mitigation is required	LTS
4.2-E	The project would accommodate existing and future projected traffic. The increase in traffic would generate additional pollutants that could be washed off the site and adversely affect the water quality of the receiving waterways.	PS	No mitigation is required	LTS
4.2-F	Project development, in conjunction with other foreseeable development in the City and portions of the county in the Russian River watershed could result in cumulative	PS	Mitigation Measure 4.1-B.1 applies to this impact.	LTS

TABLE 1.3-1 - IMPACT AND MITIGATION SUMMARY
(Continued)

IMPAIRMENTS	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION	
hydrology and water quality impacts.				
4.3 Biological Resources				
4.3-A	Project construction could damage habitat used by special-status species.	PS	<p>Mitigation 4.1-B.1 applies to this impact. In addition, the following mitigation is recommended.</p> <p>4.3-A.1 Construction shall not cause nest abandonment of special-status species of birds or destruction of active nests of species protected by the Migratory Bird Treaty Act or Section 3503 of the Fish and Game Code (protection of nesting passerines). The following measures shall be implemented to avoid disturbing any special status species nesting above ground. Vegetation removal conducted during the nesting period shall require a pre-construction survey for active bird nests, conducted by a qualified biologist. No known active nests shall be disturbed without a permit or other authorization from USFWS and/or CDFW.</p> <ol style="list-style-type: none"> 1. For earth-disturbing activities occurring during the breeding season (March 1 through September 1), a qualified biologist shall conduct pre-construction surveys of all potential nesting habitat for all birds within 500 feet of earthmoving activities. 2. If active special status bird nests are found during pre-construction surveys 1) a 500-foot no-disturbance buffer will be created around active raptor nests during the breeding season or until it is determined that all young have fledged, and 2) a 250-foot buffer zone will be created around the nests of other special status birds and all other birds that are protected by California Fish and Game Code 3503. These buffer zones are consistent with CDFW avoidance guidelines; however, they may be modified in coordination with CDFW based on existing conditions at the project site. 3. If pre-construction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required. Shrubs and trees that have been determined to be unoccupied by special status birds or that are located 500 feet from active nests may be removed. 4. If vegetation removal activities are delayed or suspended for more than two weeks after the pre-construction survey, the areas shall be resurveyed. 	LTS
4.3-B	Project construction and operation could interfere with wildlife	LTS	No mitigation is required.	LTS

TABLE 1.3-1 - IMPACT AND MITIGATION SUMMARY
(Continued)

IMPAIRMENTS	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION	
	travel and wildlife nursery sites.			
4.3-C	The project would be consistent with policies protecting biological resources.	PS	Mitigation Measures 4.1-B.1 and 4.3-A.1 apply to this impact.	LTS
4.3-D	Project development, in conjunction with other foreseeable development in the City and portions of the county in the Russian River watershed could result in cumulative impacts to biological resources.	PS	Mitigation Measures 4.1-B.1 and 4.3-A.1 apply to this impact.	LTS
4.4	Cultural Resources			
4.4-A	Project construction could damage or destroy archeological and paleontological resources or disturb human remains.	PS	<p>4.4-A.1 If buried archeological resources, such as chipped or ground stone, historic debris, building foundations, or human bone, are inadvertently discovered during ground-disturbing activities, work would stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the City and other appropriate agencies.</p> <p>4.4-A.2 If human remains of Native American origin are discovered during project construction, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (NAHC) (PRC 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:</p> <ul style="list-style-type: none"> • The county coroner has been informed and has determined that no investigation of the cause of death is required; and • If the remains are of Native American origin, the descendants of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98 <p>Or</p> <ul style="list-style-type: none"> • The NAHC was unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours 	LTS

TABLE 1.3-1 - IMPACT AND MITIGATION SUMMARY
(Continued)

IMPAIRMENTS	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION
		<p align="center">after being notified by the commission.</p> <p>4.4-A.3 If human remains are discovered during any demolition/construction activities, all ground-disturbing activity within a 100-meter radius of the remains shall be halted immediately, and the Mendocino County coroner shall be notified immediately, according to Section 5097.98 of the state Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The City shall consult with the Most Likely Descendant, if any, identified by the NAHC regarding the treatment and disposition of the remains.</p> <p>4.4-A.4 Should paleontological resources be identified at any project construction site, the construction manager shall cease operation within a 100-meter radius of the discovery and immediately notify the City. The project proponent shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe mitigation measures to reduce impacts to a less-than-significant level. In considering any suggested mitigation proposed by the consulting paleontologist, the City shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for paleontological resources is carried out.</p>	
4.4-B	Project development, in conjunction with other foreseeable development in the City and portions of the county in the Russian River watershed could result in cumulative impacts to cultural and paleontological resources.	PS Implement Mitigation Measures 4.4-A.1 through 4.4-A.4.	LTS

TABLE 1.3-1 - IMPACT AND MITIGATION SUMMARY
(Continued)

IMPAIRMENTS	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION
4.5 Traffic and Circulation			
4.5-A	LTS	No mitigation is required.	LTS
4.5-B	LTS	No mitigation is required.	LTS
4.5-C	LTS	No mitigation is required.	LTS
4.5-D	LTS	No mitigation is required.	LTS
4.6 Air Quality			
4.6-A	PS	4.6-A.1 The project shall be constructed to include all requirements set forth in the MCAQMD Rules 1-410 and 4-130. All Best Management Practices shall be included in the construction contracts.	LTS
4.6-B	PS	No mitigation is available.	SU
4.6-C	LTS	No mitigation is required.	LTS
4.6-D	LTS	No mitigation is required.	LTS
4.6-E	PS	No mitigation is available.	SU
4.7 Noise			
4.7-A	PS	4.7-A.1 If nighttime work is necessary, as required by the City Code, the applicant shall obtain a permit from the Director of Public Works. The permit shall include the following: 1) allow construction noise between 7 P.M. and 7: A.M. for construction activities that Caltrans states needs to be done at night; 2) construction equipment idling shall be limited to five (5) minutes; 3) if nighttime work is to exceed one week, then temporary noise baffles would be installed between the noise source and sensitive receptors; 4)	LTS

TABLE 1.3-1 - IMPACT AND MITIGATION SUMMARY
(Continued)

IMPAIRMENTS	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION	
		if nighttime work is to exceed one week, then provide hotel vouchers to occupants of the nearest sensitive receptors; and 5) any other noise-reducing measures the City considers warranted.		
4.7-B	Project construction could cause groundborne vibrations or noise that would affect sensitive receptors.	LTS	No mitigation is required.	LTS
4.7-C	Project operations would result in a noise increase at adjacent land uses.	LTS	No mitigation is required.	LTS
4.7-D	Noise associated with the project in combination with other local development would not result in cumulatively considerable noise increases.	LTS	No mitigation is required.	LTS
4.8	Visual Resources			
4.8-A	The project would not have a substantial adverse effect on a scenic vista.	LTS	No mitigation is required.	LTS
4.8-B	The project would not substantially affect the existing visual character or quality of the site and its surrounding visual resources or views.	LTS	No mitigation is required.	LTS
4.8-C	The project may create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.	LTS	No mitigation is required.	LTS
4.8-D	The project would not contribute to a significant cumulative visual impact.	LTS	No mitigation is required.	LTS
4.9	Utilities and Public Services			
4.9-A	The project would not require the construction of new or physically altered governmental facilities to provide adequate water, wastewater treatment, storm drains, park/recreational facilities, schools, fire/emergency medical response, or police services to the project.	LTS	No mitigation is required	LTS
4.9-B	The project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal, and would comply with federal, State, and local statutes and regulations related to solid waste.	LTS	No mitigation is required	LTS
4.9-C	The project would not combine with other projects to make a significant cumulative impact to public services and utilities impacts associated with cumulative development in the project vicinity.	LTS	No mitigation is required	LTS
4.10	Hazards and Hazardous Materials			
4.10-A	The project would not create a significant hazard to the public or the environment through the routine transport, use, or	LTS	No mitigation is required	LTS

TABLE 1.3-1 - IMPACT AND MITIGATION SUMMARY
(Continued)

IMPACTS	SIGNIFICANCE BEFORE MITIGATION	MITIGATION	SIGNIFICANCE AFTER MITIGATION	
	disposal of hazardous materials.			
4.10-B	During construction, the project could create a hazard to the public or the environment through upset or accident conditions involving the release of hazardous materials or hazardous wastes to the environment.	LTS	No mitigation is required	LTS
4.10-C	The project site is located within an airport land use plan but would not result in a safety hazard for people travelling in the project area.	LTS	No mitigation is required	LTS
4.10-D	The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LTS	No mitigation is required	LTS
4.10-E	The project would not contribute to a significant cumulative impact related to hazards or hazardous materials.	LTS	No mitigation is required	LTS
4.11	Land Use			
4.11-A	The proposed project would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	No mitigation is required	LTS
4.11-B	The proposed project, in combination with other developments in the vicinity, would not contribute to potential cumulative land use impacts.	LTS	No mitigation is required	LTS
4.12	Global Climate Change			
4.12-A	Construction and use of the project would increase the emission of greenhouse gases. (<i>Direct Impact</i>)	PS	No mitigation is available.	SU
4.13	Energy			
4.13-A	The project could result in a wasteful expenditure of energy.	PS	<p>4.13-A During project construction, the City shall require the following: 1) engines shall be maintained to meet manufacturers' recommended operating standards; and 2) construction equipment shall not be allowed to idle for longer than five (5) minutes. Caltrans shall encourage that the contractors' fleets include diesel engines meeting the most current State standards for new diesel engine performance and/or low-emission, energy-secure, alternatively-fueled vehicles. Caltrans shall require project contractors to maximize carpooling of their employees.</p> <p>4.13-B Project design shall include: 1) LED lights for illumination and stoplights; and 2) to the degree possible, solar panels to power lighting.</p>	LTS
4.13-B	The project would not contribute to a significant cumulative impact related to energy use.	LTS	No mitigation is required.	LTS

2.0 INTRODUCTION CHAPTER

2.1 Purpose of the EIR

This Draft Environmental Impact Report (EIR) addresses the potential environmental impacts of making improvements to the Talmage Road Interchange with U.S. Highway 101 and at the intersection of Talmage Road and Airport Park Boulevard.

This EIR has been prepared in conformance with the provisions of the *California Environmental Quality Act (CEQA) Guidelines* as amended to date. CEQA requires that public agencies prepare and certify an EIR before carrying out projects that may have significant effects on the environment (Public Resources Code Section 21080). Preparation of an EIR is the responsibility of the "lead agency," the public agency that has the principal responsibility for carrying out or approving the project (Public Resources Code, Section 21067). The City of Ukiah is the lead agency for this EIR. The California Department of Transportation (Caltrans) must also approve the project.

This EIR is an informational document intended to inform the City (the Lead Agency), other public agency decision-makers, and the public of the significant environmental effects of the proposed project and alternatives to the proposed project. The City will consider the information in this EIR along with other information presented during the decision-making process when determining whether to approve the project. The information contained in this EIR does not control the City's ultimate decision on the project. If the City decides to approve the project, however, then the City must respond to each significant effect identified in the EIR by making findings under Section 15091 of the *CEQA Guidelines* and, if necessary, making a Statement of Overriding Consideration under Section 15093.

2.2 Scope of the EIR

This EIR has been prepared by the City of Ukiah as Lead Agency in conformance with the California Environmental Quality Act (CEQA). As such, it provides objective information addressing the environmental consequences of the proposed project and possible ways to reduce or avoid these impacts.

This EIR addresses all the areas of potentially significant impact as well as other potential impact areas that CEQA requires an EIR to investigate. The environmental effects of the project are analyzed for each impact area. The *CEQA Guidelines* define the effects of a project as changes from the environmental setting (i.e., existing conditions) that are attributable to the project. Particularly pertinent sections of the *CEQA Guidelines* are listed below.

1. **Section 15121(a) (Information Document)** states that an EIR "is an informational document which will inform public agency decision-makers and the public generally of the significant environmental effect of a project,

identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.”

2. **Section 15151 (Standards for Adequacy of an EIR)** states that “an EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts.”
3. **Section 15003(l and j) (Policies)** states that technical perfection is not necessary, but adequacy, completeness, and a good-faith effort at full disclosure are required. "CEQA requires that decisions be informed and balanced. It must not be subverted into an instrument for the oppression and delay of social, economic, or recreational development or advancement."
4. **Section 15143 (Emphasis)** states that the EIR shall focus on the significant effects on the environment. The significant effects will be discussed with emphasis in proportion to their severity and probability of occurrence. Effects dismissed in the Initial Study as clearly insignificant and unlikely to occur need not be discussed further in the EIR. Discussion of each major topic includes criteria used to evaluate whether an environmental impact is significant or insignificant.
5. **Section 15002(g) (Significance)** states that a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project. The significance criteria for each topic in this EIR have been developed based on guidelines set forth in the *CEQA Guidelines* as modified in some cases by standards established by the City. This EIR lists the thresholds of significance for each area of impact and assesses whether the project's impacts exceed these thresholds. If the impact does not exceed the threshold or if the recommended mitigation measures reduce the impact below the thresholds, then the impact is considered to be less-than-significant.

2.3 Public Review and Comment

A. Project History

On July 28, 2013, the City issued a Draft Mitigated Negative Declaration (MND) on the proposed project for public review and comment. After the close of the public review period, the City determined, partly based on comments received on the Draft MND, to withdraw the MND and proceed to prepare an EIR for the proposed project. The Draft

MND is presented in Appendix A of this EIR. The five comment letters received on that report are on file with the City of Ukiah Department of Planning and Community Development (hereafter, City Planning Department).

B. Notice of Preparation

The City issued a Notice of Preparation for this EIR on October 22, 2013. The public was invited to submit written comments or verbal comments at a scoping meeting. The close of the NOP review period was November 26, 2013. The City did not receive any written responses to the NOP. This NOP is included in Appendix A of this EIR.

C. Public Scoping Meeting

Agencies and the public were notified about a Public Scoping Meeting on the EIR. The Public Scoping Meeting was held in Ukiah on November 7, 2013. It was attended by City staff and one member of the public.

D. Distribution of the Draft EIR

A public review period of at least 45 days is provided for this Draft EIR. This review period begins on the publication date of the Notice of Completion of the Draft EIR. During the public review period, the City will hold one public hearing on the Draft EIR. In addition, public agencies and interested individuals may submit comments in writing to Charley Stump, City of Ukiah Department of Planning and Community Development, 300 Seminary Avenue, Ukiah, CA 95482.

E. Certification of the Final EIR

Once the public review period is closed, a Final EIR will be prepared. The Final EIR will incorporate this Draft EIR by reference, and it will contain all comments on this Draft EIR, responses to those comments, and any revisions to the text of this Draft EIR. The Final EIR will be considered by the Ukiah City Council. When the City Council considers the EIR to be complete and accurate, it will certify the document. The Final EIR must be certified before any action on the proposed project can occur. After the Council has certified the EIR, it will consider the merits of the project and determine whether to approve the project, approve a project alternative, or deny the project. If it approves the project or a project alternative, a Notice of Determination will be filed with the State Office of Planning and Research and the Mendocino County Clerk.

Before the project is approved, the City Council would be required for each significant impact of the project (per CEQA Guidelines Section 15091) to find: that changes in the project would avoid or substantially lessen the significant impact; that such changes are within the responsibility or jurisdiction of a public agency other than the City; or that specific economic, legal, social, technological, or other considerations make the mitigation measures and alternatives infeasible. For impacts that the City determines cannot be mitigated to a less than significant level, it would be necessary for the Council to adopt a Statement of Overriding Considerations (per CEQA Guidelines Section 15093), which describes how benefits of the project outweigh those impacts before approving the project.

2.4 Intended Uses of the EIR

A. Lead Agency

The Lead Agency under CEQA for the project is the City of Ukiah. The City Council will be responsible for certifying the EIR and making a decision on whether to approve the project.

B. Responsible and Trustee Agencies

Responsible Agencies are agencies that must issue some form of permit or determination for the project and, thus, rely on the EIR for the environmental documentation required prior to issuing said permit. Trustee Agencies are State agencies having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California.

The primary Responsible Agency for this project is the California Department of Transportation (Caltrans). Caltrans will use the information and analysis in the EIR to support its permitting process for changes to the highway interchange. Other potential Responsible and Trustee Agencies are listed below.

1. *State Water Resources Control Board. Division of Water Rights* – has the authority to approve the requested Amendments to the water rights Permit.
2. *Regional Water Quality Control Board (RWQCB)* – regulates discharges to waterways through the adoption of Waste Discharge Requirements (WDR) and National Pollution Discharge Elimination System (NPDES) permits.
3. *Department of Fish and Wildlife (CDFW)* – is a Trustee Agency and has responsibility for protecting the State's fish and wildlife resources.
4. *Native American Heritage Commission* – mandated to preserve and protect places of special religious or cultural significance pursuant to Section 5097 et seq. of the Public Resources Code.

C. Other Agencies

In addition to the agencies listed above, the Draft EIR will be sent to local agencies that provide services in the area or that could be affected by the project. These include:

1. *County of Mendocino* – provides land use oversight for development within the unincorporated portion of the County.
2. *Mendocino Council of Governments* – coordinates transportation planning in the County and administers transportation funding and financing.

2.5 EIR Organization

The Draft EIR is organized as follows:

- **Chapter 1.0 – Executive Summary** identifies areas of controversy, highlights the important effects of implementing the project, and identifies the measures available to mitigate significant adverse impacts.
- **Chapter 2.0 – Introduction** provides background on the CEQA requirements and review process.
- **Chapter 3.0 – Project Description** describes the proposed project.
- **Chapter 4.0 – Environmental Impact Analysis** describes existing environmental conditions in the area affected by the proposed project, identifies probable direct and indirect impacts from implementing the project, and describes mitigation measures required to substantially reduce or eliminate potentially significant adverse impacts.
- **Chapter 5.0 – Other Required CEQA Sections** discusses growth-inducing impacts, cumulative impacts, irreversible environmental changes, and project alternatives. It assesses the difference in outcome between the project and three alternatives. This chapter also identifies an environmentally superior alternative among the alternatives.
- **Chapter 6.0 – Report Preparation** includes the report preparers, the people and organizations consulted, and the bibliography.
- **Chapter 7.0 – Appendix** includes technical background material supporting the Draft EIR text. The complete Appendix is on a disc which is located on the inside of the back cover of this report.

3.0 PROJECT DESCRIPTION

3.1 Project Location

As shown on Figures 3.1-1 and 3.1-2, the project site is located in the southeastern portion of the City just north of the Airport Industrial Park. As shown on Figure 3.1-3, the project includes changes to the western portion of the Talmage Road/U.S. Highway 101 interchange.

The environmental setting of the project site can be characterized as densely urban because it is the location of the major street interchange between U.S. Highway 101 and Talmage Road, which is classified as a local arterial street in the City General Plan. Topographically, the project site is flat except for the interchange elevations. Elevations range between approximately 594 feet above sea level along U.S. Highway 101 and 597 feet above sea level along the Talmage Road overpass.

Surrounding land uses include commercial to the south and west, Highway 101 to the east, and a mix of residential types to the north/northwest.

3.2 Project Characteristics

The City of Ukiah proposes to modify and reconstruct the southbound portion of the U.S. 101 interchange at Talmage Road (State Route 222) in Ukiah, California, to provide additional capacity in order to address future impacts associated with regional growth and projected growth in the Airport Industrial Park (AIP), which is comprised of the Redwood Business Park (RBP) at its northern end and Airport Business Park (APB) at its southern end.

The purpose of the project is to alleviate congestion and improve traffic operations and safety for the southbound on- and off-ramps and along the Talmage Road Corridor. As shown on Figure 3.1-3, the project includes a partial cloverleaf interchange configuration with a new signalized intersection at the southbound ramp terminus with Talmage Road. This interchange improvement would remove the existing U.S. 101 southbound off-ramp to westbound Talmage Road from use, and widen the existing U.S. 101 southbound loop off-ramp to eastbound Talmage Road from one lane to four lanes south of the Talmage Road overpass, so that it can serve turns in both directions onto Talmage Road. The loop ramp would be modified to terminate at Talmage Road with a more standard 90-degree angle. With this configuration all southbound traffic exiting U.S. 101 at Talmage Road would use the loop off-ramp terminating at a new signalized intersection. Three left-turn lanes would direct traffic to westbound Talmage Road and a single right-turn lane would direct traffic to eastbound Talmage Road. Phasing of the new traffic signal would include right-turn overlaps for the eastbound Talmage Road right-turn onto the southbound U.S. 101 on-ramp. Protected left-turn phasing would also be provided for the westbound Talmage Road approach. The new traffic signal would be interconnected and coordinated with the traffic signal at the intersection of Airport Park Boulevard and Talmage Road. Two dedicated left turns would be provided from Talmage Road to Airport Park Boulevard. Figure 3.1-3 shows the proposed layout for the proposed project. Implementation of the

project requires no additional right-of-way or property acquisition. It is estimated that project construction would take about five months.

Additional details of the proposed project are summarized below.

- Realigning the southbound on-ramp and providing new curb and gutter and shoulder on the ramp;
- Widening Talmage Road to provide two westbound left-turn lanes at Airport Park Boulevard;
- Constructing a new curb and gutter on the realigned off-ramp and Talmage Road;
- Constructing a new signalized intersection at Talmage Road and the realigned southbound on-/off-ramps; the new signalized intersection would be coordinated with the existing signalized intersection at Talmage Road/Airport Park Boulevard due to their close proximity;
- Installing new vehicle detectors where required for signal actuation;
- Installing new safety lighting, as required;
- Constructing new sidewalk, curb, and gutter along the north side of Talmage Road between Airport Park Boulevard and the western edge of the overcrossing structure; a small retaining wall may be required along a portion of Talmage Road due to existing grades on the north side;
- Constructing new curb and gutter along the south side of Talmage Road between Airport Park Boulevard and the southbound on-ramp;
- Providing breakdown shoulders along both sides of Talmage Road and the on/off ramps, where right-of-way allows; and
- Constructing new raised medians.

All improvements would occur within previously disturbed land within existing City or State road rights-of-way. There are a number of trees within the existing off-ramp loop, but none would be altered or removed as a result of the project. All trees would be protected from construction activities.

Construction activities would primarily occur during normal business hours and would involve traffic control. Talmage Road and the southbound on and off-ramps would remain functional during construction activities.

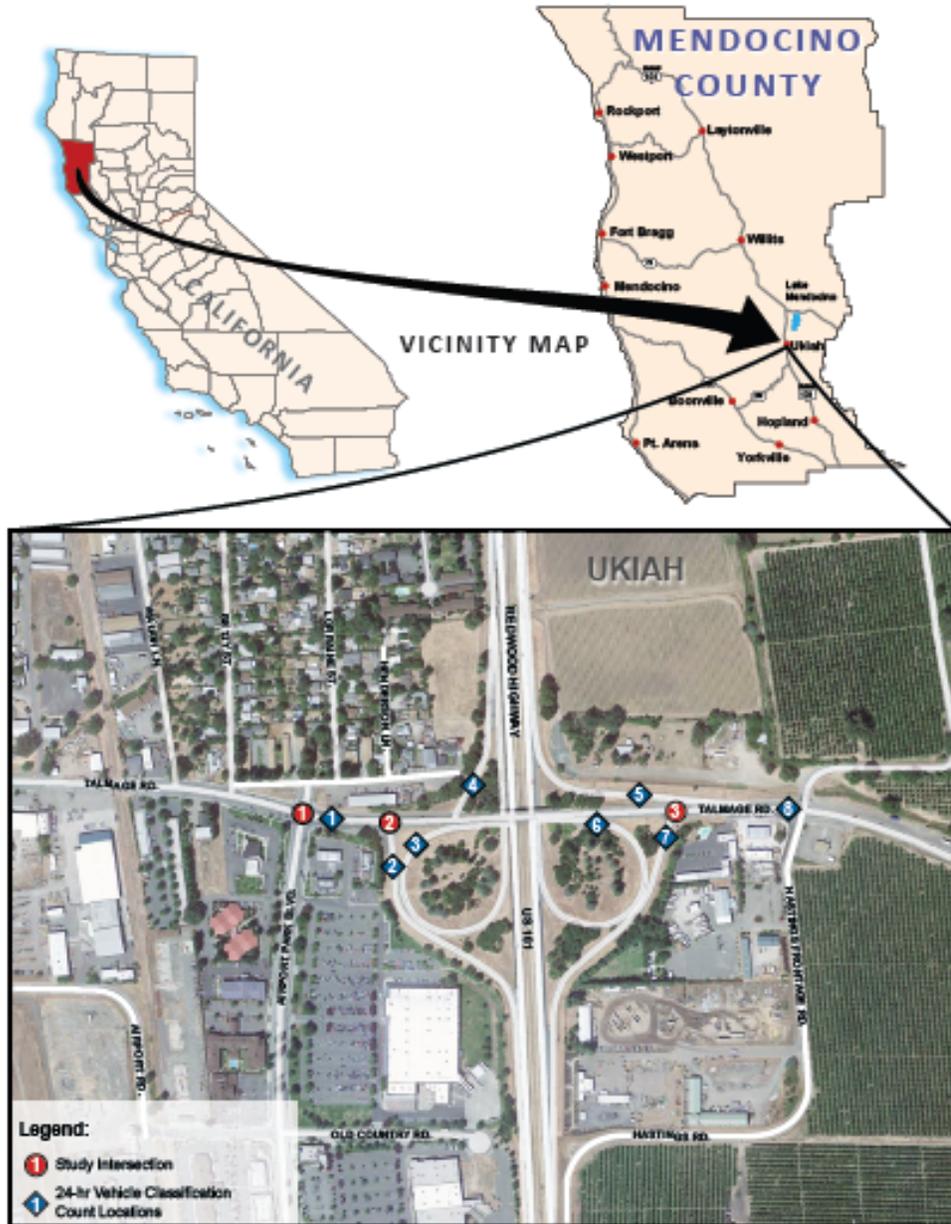


Figure 3.1-1
Project Site Location - City of Ukiah

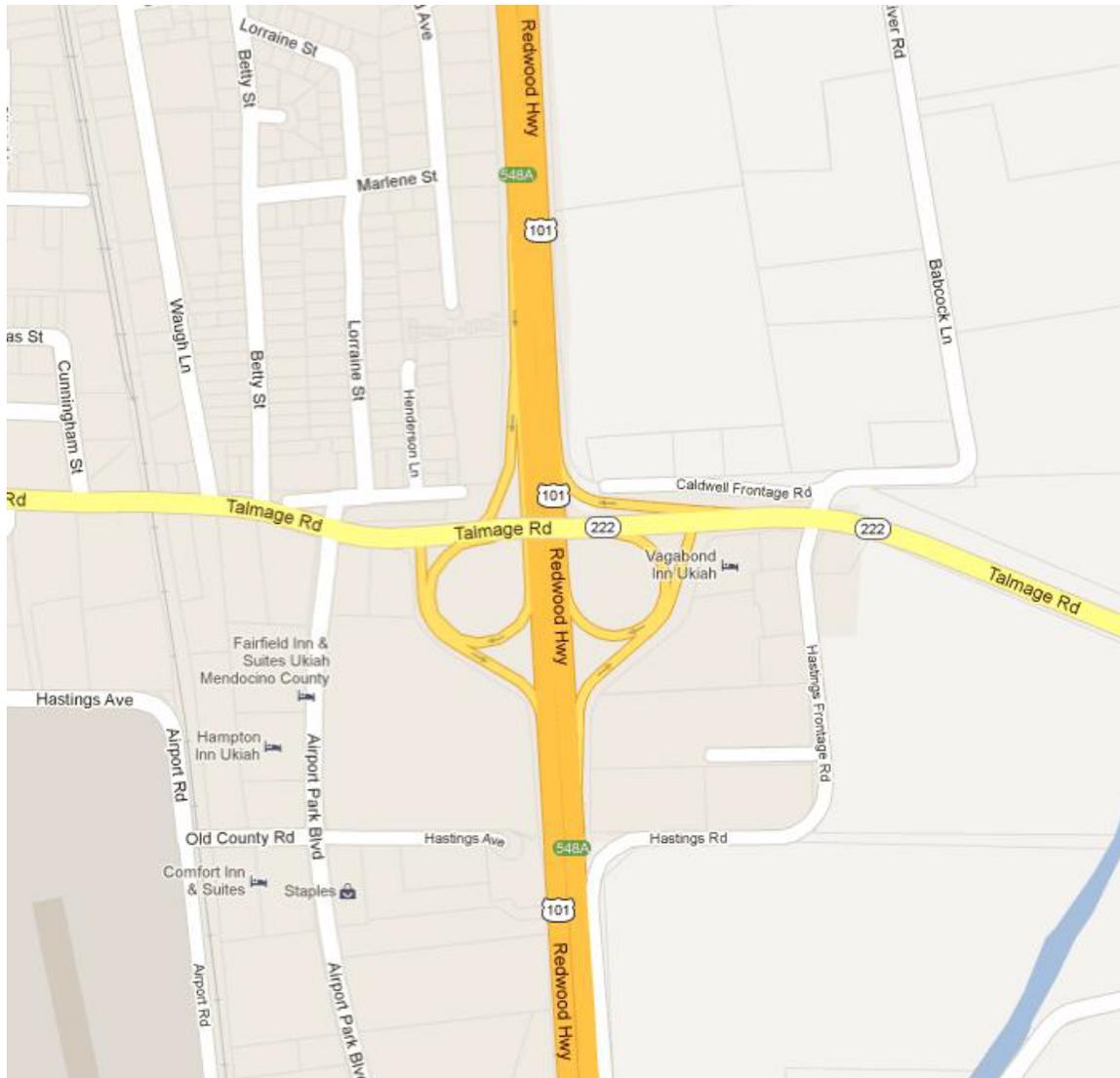
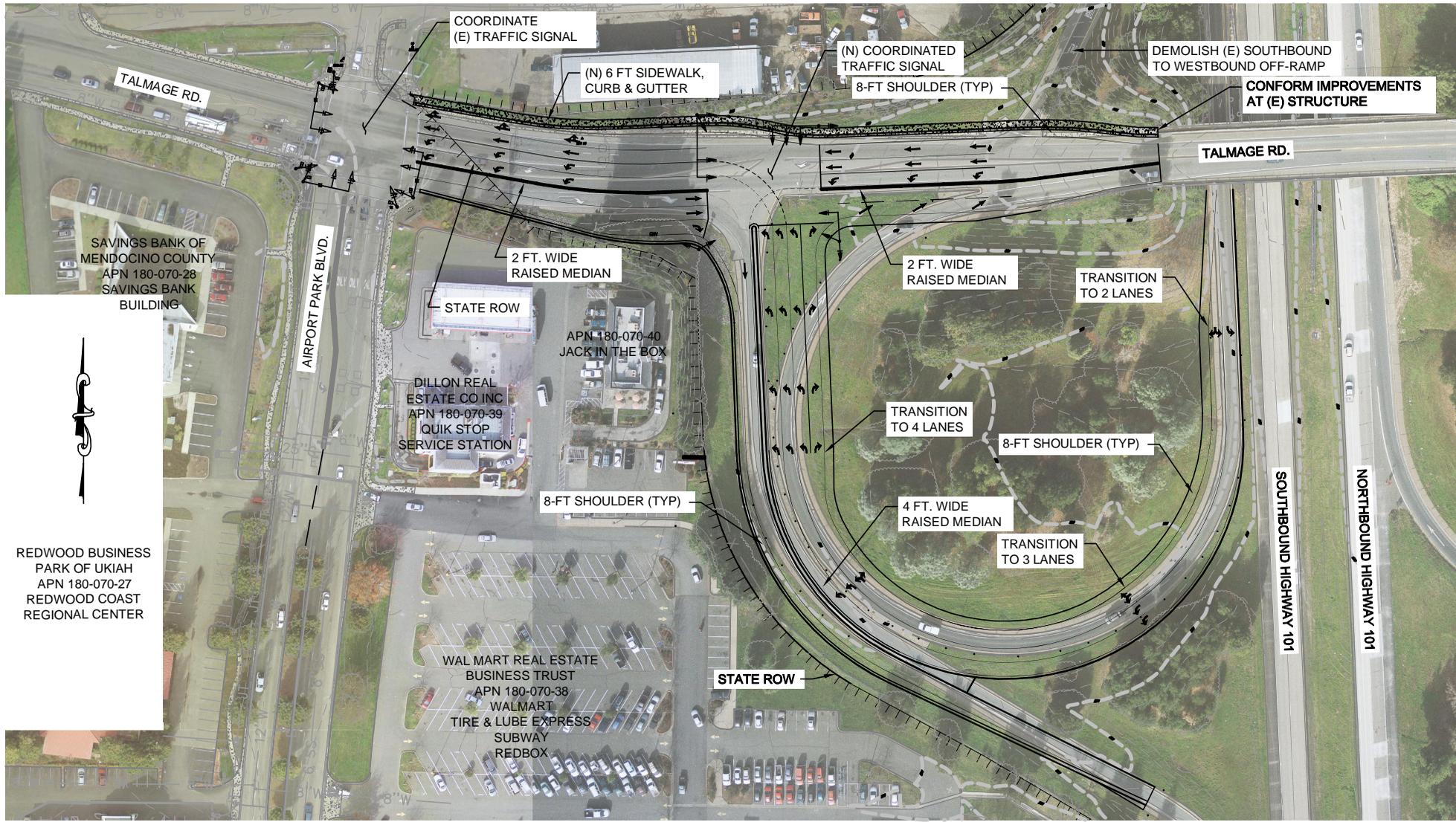


Figure 3.1-2
Existing Highway 101/Talmage Road Interchange



REDWOOD BUSINESS
PARK OF UKIAH
APN 180-070-27
REDWOOD COAST
REGIONAL CENTER

WAL MART REAL ESTATE
BUSINESS TRUST
APN 180-070-38
WALMART
TIRE & LUBE EXPRESS
SUBWAY
REDBOX

DILLON REAL
ESTATE CO INC
APN 180-070-39
QUIK STOP
SERVICE STATION

APN 180-070-40
JACK IN THE BOX

SAVINGS BANK OF
MENDOCINO COUNTY
APN 180-070-28
SAVINGS BANK
BUILDING



CLIENTS | PEOPLE | PERFORMANCE

City of Ukiah
Talmage Interchange

PROPOSED INTERCHANGE RECONSTRUCTION
US 101 SB RAMPS INTERSECTION
(SIGNALIZED - TRIPLE LEFT)

Job Number | 8410035
Revision

Date | Apr 2013

Figure 2

2235 Mercury Way Suite 150 Santa Rosa California 95407 USA T 1 707 523 1010 F 1 707 527 8679 W www.ghd.com

Plot Date: 26 April 2013 - 12:30 PM Cad File No: G:\02502 - City of Ukiah\02502-8410035 Talmage Interchange\06-CAD\Figures\Exhibits\Interchange Option A - Signal - AL 2 - Triple Left.dwg

Figure 3.1-3: Proposed Project Intersection

Project Objectives

The City's objectives in pursuing this project are:

1. To alleviate existing traffic congestion at the Talmage Road/Highway 101 interchange, specifically the southbound on and off-ramps.
2. To improve the Talmage Road/Highway 101 interchange so that it will successfully accommodate vehicle and pedestrian traffic resulting from future local and regional traffic growth for a 20-year planning horizon and design life.
3. To improve traffic safety at the Talmage Road/Highway 101 interchange.
4. To improve the Talmage Road gateway into the City of Ukiah.
5. To improve pedestrian facilities along Talmage Road at its intersection with U.S. Highway 101.
6. To limit site disruption.
7. To limit disruption to the flow and circulation of traffic during construction activities.
8. To satisfy the General Plan Circulation and Transportation Element goal to construct improvements to the interchange of U.S. 101 and Talmage Road as part of the Airport Industrial Park off Talmage Road.

4.0 ENVIRONMENTAL IMPACT ANALYSIS CHAPTER

A. Setting

This section includes a description of the existing physical and environmental conditions as regards the particular environmental factor under consideration (per *CEQA Guidelines* Section 15125).

B. Regulatory Framework

This section describes the various laws and regulations that govern the use and protection of the particular environmental factor under consideration.

C. Potential Impacts and Mitigation Measures

This section begins with a list of the criteria that are used to determine impact significance. The criteria are based on the list of impacts typically considered significant as listed in the *CEQA Guidelines* Environmental Checklist.

C. Potential Impacts and Mitigation Measures

This section begins with a list of the criteria that are used to determine impact significance. The criteria are based on the list of impacts typically considered significant as listed in the *CEQA Guidelines* Environmental Checklist.

As described previously, an Initial Study was prepared and circulated for public review and comment as part of a Draft Mitigated Negative Declaration (MND). That Initial Study concluded that the project would have no impact or a less-than-significant impact per most of the Environmental Checklist criteria. In most cases, those conclusions were not questioned nor commented on during the public review of the Draft MND nor in the comments submitted on the NOP for this EIR. In those cases where the impact was deemed less than significant, the following impact sections summarize the basis used to make these findings. Accordingly, the subsequent impact analysis in this EIR focuses on those resource areas where there could be a potentially significant impact.

This section includes a description of any environmental constraints that could affect project implementation, and an analysis of all potentially significant direct and indirect impacts that would or could occur if the proposed project is approved (per *CEQA Guidelines* Section 15126.2a and b). Mitigation measures are provided for all potentially significant impacts.

1. Direct Impacts

CEQA Guidelines Section 15064(d)(1) requires that the EIR examine the direct physical changes caused by and immediately related to the project, which are the environmental changes resulting from constructing the proposed improvements and any impacts resulting from changes in vehicular movement through the new interchange.

2. Indirect Impacts

CEQA Guidelines Section 15064(d)(2) requires the EIR to assess the physical changes in the environment which are not immediately related to the project, but which are caused indirectly by the project. Similarly, Section 15126.2(a) requires the EIR to assess indirect impacts caused by bringing development and people into an area. By providing additional capacity at the interchange, the project alleviates existing and future traffic congestion, which any significant new development in the Redwood Business Park and the Airport Business Park (together, the Airport Industrial Park [AIP]) could otherwise exacerbate. It is not expected that the project would affect development of other undeveloped lands accessed by Talmage Road since there are no large vacant properties in the area served by this road other than those on the Airport Industrial Park.¹ Undeveloped properties in the AIP that may benefit from the traffic congestion relief resulting from the project include the property where a Costco store is proposed. The Costco Wholesale Project was previously analyzed in an EIR certified by the City in 2013.² One of the mitigation measures in the Costco EIR requires that Talmage Road Interchange Improvements Project be substantially completed prior to issuance of the certificate of occupancy for the Costco project. On this basis, the Talmage Road Interchange Improvements Project bears some relation to the Costco project. Under CEQA, however, even if two or more projects are arguably related, where the two projects have “independent utility” an agency may consider them as stand-alone projects in separate environmental documents. In this case, the City has concluded that the following circumstances support the determination that the Talmage Road Interchange Improvements Project is a separate action with independent utility from the Costco project. First, the Talmage Road interchange improvements are required to alleviate existing and future congestion and improve traffic operations and safety for the southbound on- and off-ramps and along the Talmage Road corridor. The improvements are needed regardless of whether the Costco project goes forward. The Costco EIR acknowledges that the Talmage Road Interchange improvements are needed, with or without the Costco project. Second, the City’s need for the Talmage Road interchange improvements predates the application for the Costco project. The need for the interchange improvements has been discussed in the Circulation and Transportation Element of the General Plan since 1995. Thus, improving this interchange has been adopted City policy since that time. Third, both the Talmage Road Interchange Improvements Project and the Costco Project have different project proponents. (See, e.g., *Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173, 1189-1190 (*Anderson First*) (in which the lead agency did not need to analyze in a single EIR the impacts of a shopping center and an adjacent interchange upon which the center would rely for access).) Fourth, this EIR acknowledges the existence of the Costco project, and evaluates the cumulative environmental effects in the event both the Costco project and the Talmage Road Interchange Improvements Project

¹ Charley Stump, Ukiah Planning & Community Development Director, personal communication, 11/22/13.

² *City of Ukiah Costco Wholesale Project Final Environmental Impact Report*, ESA, November 2013.

are constructed; thus, the cumulative effects of both projects have been considered.

The City is, therefore, pursuing the Talmage Road Interchange Improvements Project as a separate City-sponsored project and analyzing the project in a stand-alone EIR, because the project is a separate action with independent utility from the Costco project. To the extent construction and/or operational activities at the Costco are reasonably foreseeable and may cause impacts related to the potential impacts of the Talmage Road Interchange Improvements Project, this EIR assesses the range of impacts that could result from development of the approved Costco project, as well as other approved or reasonably foreseeable future development in and near the AIP as part of the cumulative impact analysis in this EIR.

4.1 GEOLOGY AND SOILS

A *Limited Materials Report and Preliminary Geotechnical Report* was prepared for the project in May 2013 by Rau & Associates. That report is included in Appendix B. The purpose of that geotechnical investigation was to provide recommendations for subgrade treatment and structural sections for a widening of a segment of the southbound off-ramp from Highway 101 to Talmage Road, to provide recommendations for subgrade treatment and structural sections for widening a segment of Talmage Road, and to evaluate the site soils for potential corrosive effects to reinforced concrete foundations for traffic signals at the intersection of the Southbound off-ramp and Talmage Road and at the intersection of Airport Park Boulevard and Talmage Road. This section of the EIR includes data contained in that report.

A. Setting

1. Geologic Setting

The City of Ukiah is located within the Russian River Valley, which is within the northern portion of the Coast Ranges of California. The mountain range that lies west of the Russian River Valley and extends to the Pacific Coast is commonly called the Mendocino Range. The Ukiah Valley is a subarea of the Russian River Valley. The Ukiah Valley is approximately 22 miles long, averages 3 miles wide, and occupies an area of approximately 65 square miles. The altitude of the valley floor ranges from approximately 500 feet at the southern end to approximately 700 feet in the northern end. The valley floor at the City of Ukiah is approximately 600 feet above sea level.

2. Soils Setting

According to the USDA (United States Department of Agriculture) Soil Survey, the project site soil is predominately identified as "Urban Land." It is surrounded by three different soil units – the land northeast of the Talmage interchange is identified as "Cole Loam;" southwest of the interchange underlying Airport Park Boulevard is identified as "Russian Loam, gravelly substratum"; and southeast of the interchange is identified as "Russian Loam." Each of these soil complexes is characterized as having slopes ranging from 0-2 percent. The soil complexes originated from parent material comprised of alluvium derived from sedimentary rock. The two Russian loam formations are characterized as being "well drained," while the Cole loam formation is characterized as "somewhat poorly drained."

The Cole loam formation has a typical profile of loam from 0-15 inches underlain by silty clay down to 60 inches. The Russian loam has a profile consisting of loam from 0-38 inches and stratified very fine sandy to silt loam down to 60 inches. The Russian loam with gravelly substratum consists of loam from 0-30 inches underlain by stratified gravelly coarse sand to sandy loam from 30-51 inches and stratified gravelly coarse sand to gravelly sandy loam from 51-60 inches. These three formations are predominately low plasticity silt and clay (ML, CL) with the exception of the large amount of gravel contained in the lower portion of the Russian loam with gravelly substratum.

Based on testing conducted as part of the Limited Materials Report and Preliminary Geotechnical Report done for the project, the site soils at subgrade level of recommended structural section are interpreted as having low potential for expansion, based upon the results of the R-Value testing which was conducted, as well as the results of laboratory testing contained in a number of geotechnical reports in the area.

3. Seismicity Setting

The Maacama Fault Zone, approximately 1.7 miles (2.7 km) easterly of the site, is considered to be active and is the dominant fault zone for the project area. According to the CBC, active faults are those with Holocene displacement (within the last 11,000 years). There has been little distortion of the alluvial surface in the area of the subject project. There are no active faults shown in close proximity to the project area. Although, historically, there have been no major recorded earthquakes on this fault, it is considered on the basis of likely length of rupture to be capable of generating earthquakes on the order of Richter Magnitude 7.1. The Limited Materials Report and Preliminary Geotechnical Report states that the probabilistic ground motions with a 10% probability of being exceeded in 50 years expressed as a fraction of the acceleration due to gravity. The peak ground acceleration in alluvium is 0.534 times the acceleration of gravity.

4. Landsliding

On the basis of the flat to gentle slopes and uniform ground surface at the project site, there is no significant risk with respect to landsliding at the site.

B. Regulatory Framework

Federal

Federal Earthquake Hazards Reduction Act

In October 1997, the U.S. Congress passed the Earthquake Hazards Reduction Act to “reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program.” To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of agency responsibilities, program goals, and objectives.

The NEHRP’s mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results.

State

Alquist-Priolo Earthquake Fault

The Alquist-Priolo Earthquake Fault Zoning Act (formerly the Alquist-Priolo Special Studies Zone Act) of 1972 (revised in 1994) is the State law that addresses hazards from earthquake fault zones. The purpose of this law is to mitigate the hazard of surface fault rupture by regulating development near active faults. As required by the Act, the State has delineated Earthquake Fault Zones (formerly Special Studies Zones) along known active faults in California. The project does not lie within an Alquist-Priolo Zone. The nearest zone is located 1.75 miles east of the site.

California Building Standards Code

The California Building Code (CBC) has been codified in the California Code of Regulations (CCR) as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The CBC is based on the International Building Code.

The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC.

Caltrans Seismic Design Criteria

All improvements to State Highway structures are designed in accordance with Caltrans Seismic Design Criteria (SDC), Version 1.6, dated November 2010. These Criteria provide data addressing the demands on and the capacities of various structural components. The demand is compared to capacity of the components. Design recommendations are determined based on soils, liquefaction potential, and seismic exposure.

Local

Ukiah City Code

The City of Ukiah Building Division staff process Building Permit applications for all construction projects subject to the California Building Code, and other applicable federal, state, and local codes. Building codes are found in Division 3 Chapter 1 of the Ukiah City Code.

The City Code specifies requirements for protection of water courses that would apply to the proposed project. The relevant requirements in the municipal code are described below.

Sections 9702 through 9704 of Chapter 7 in Division 9 of the Ukiah City Code (2010b) describe measures required to minimize soil disturbance and sedimentation during construction and maintenance activities. The project sponsor would be required to obtain a grading permit through Section 9702 of the municipal code, which requires preparation of an erosion control and sedimentation plan by a registered civil engineer to be submitted with the grading permit application. Section 9703 sets forth design standards for erosion control and stormwater management. Standards for erosion control include soil/stock pile stabilization, revegetation, and hydroseeding. Standards for stormwater flows include spill prevention for hazardous materials, construction of stormwater diversion facilities in accordance with the California Stormwater Quality Association's (CASQA) best management practice (BMP) handbook, and protection of storm drain inlets that may receive sediment-laden flows. Section 9704 describes site control measures that are required to be implemented as part of the grading permit for the project. The applicant would be required to establish and implement construction site management practices to prevent toxic materials and other debris from entering the City's storm drainage and waterway systems, and adversely affecting water quality.

City of Ukiah General Plan and Growth Management Program

The City of Ukiah General Plan contains the following goals, policies and implementation measures pertaining to geology, soils and seismicity relevant to the project.

Goal SF-2: Regulate development across or near earthquake faults outside the Alquist-Priolo Earthquake Zone.

Policy SF-2.1: Provide development guidelines for building outside Alquist-Priolo Earthquake Fault Zones.

Implementation Measure SF-2.1(a): Geotechnical evaluations prepared by a California licensed engineering geologist shall be submitted to the City or County prior to site development along or near identified active and potentially active faults. If a discretionary permit is required, the geotechnical report shall be submitted with the application for the permit.

C. Potential Impacts and Mitigation Measures

1. Criteria Used For Determining Impact Significance

The impact analysis section considers the project's potential to result in significant impacts based on standards of significance derived from CEQA Guidelines Appendix G. As such, the project would have a significant impact if it meets any of the following criteria.

1. Exposes people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving earthquake fault rupture, seismic shaking, seismic ground failure, liquefaction, or landslides.
2. Results in substantial soil erosion or the loss of topsoil.
3. Is located in a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and could potentially result in on- or off-site landsliding, lateral spreading, subsidence, liquefaction, or collapse.
4. Is located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property.
5. Has 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.
6. Results in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State.
7. Results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Due to the location and characteristics of the project, certain conditions are not associated with the project, and, therefore, are not considered potential impacts. These conditions are addressed briefly below and are not discussed further in this document.

Soils Suitability for Septic Tanks

The project does not include any buildings that would be used by people. The project includes roadway improvements and does not require the use of bathroom facilities, and, therefore, no need for septic systems. No impact would occur.

Mineral Resources and Mineral Recovery Facilities

There is no State-, County-, or City-mapped or identified mineral resource or mineral resource recovery site within this highway right-of-way, the Talmage Road right-of-way or the project footprint. Thus, the project's construction and operation would not affect any mineral resources or a mineral resource recovery site. No impact would occur.

The following discussions summarize data contained in the geotechnical report included in Appendix B of this EIR.

Potentially Significant Impacts

Impact 4.1-A The project could expose people to injury or structures to damage from potential rupture of a known earthquake fault, strong ground shaking, seismic-related ground failure, or landslides. This is a potentially significant impact.

Earthquakes occurring on the nearby Maacama Fault Zone (approximately 1.7 miles east of the site) could cause damage or failure of the project. An earthquake on this fault is capable of generating a maximum magnitude 7.1 event which would cause significant groundshaking at the project site. Soils beneath the site are soft and loosely compacted to a depth of 20 feet, which could result in seismic-related ground failure and pavement failure if not properly conditioned. There are weak/unconsolidated soil layers underlying the existing compacted fills upon which the current paved structural section is situated. The construction of widened fills to increase the number of travel lanes, low retaining walls, and pier supports for signals and lighting will need to address these surface soil constraints. These existing conditions plus the risk of earthquakes could cause failure of project improvements.

Mitigation Measures

4.1-A.1 The final improvement plans shall incorporate all design and construction recommendations contained on pages 8-12 in the *Limited Materials and Preliminary Geotechnical Report* prepared by Rau and Associates dated May 2013 consistent with the standards identified in the California Building Code, Caltrans standard structural requirements, and Caltrans Standard Specifications (latest Edition) and pertaining to the following:

1. Reprocessing of Certain Subgrade Soils and Fill Soils, including unconsolidated subgrade soils for pavement support and Strip Foundation Support for Low Retaining Walls.
2. Grading and Site Preparation
3. Pavement Structural Sections
4. Retaining Wall Foundations
5. Pier Foundations for Signals or Street Lights
6. Surface and Subsurface Drainage

The Rau and Associates or other geotechnical engineer retained by the City shall review and sign the final plans and specifications for the project and approve them as conforming to their recommendations prior to grading. The project geotechnical engineer shall provide geotechnical observation during the grading and construction, which will allow the geotechnical engineer to compare the actual with the anticipated soil conditions and to check that the contractors' work conforms to the geotechnical aspects of the plans and specifications. The geotechnical engineer of record will prepare letters and as-built documents, to be submitted to the City, to document their observances during constructions and to

document that the work performed is in accordance with the project plans and specifications.

Impact Significance After Mitigation

Implementation of the design recommendations listed above will ensure that all new grading complies with Caltrans' standards, and soils will be conditioned to withstand seismic shaking. Similarly, the recommendations ensure that new pavement, retaining wall foundations, and pier foundations will be designed and constructed to withstand seismic shaking. These recommendations would reduce the impact to a less-than-significant level.

Impact 4.1-B Construction of the project would involve grading and movement of earth, which could expose soils to erosion and result in the loss of topsoil. This is a potentially significant impact.

Construction of the project would require earthmoving, backfilling, grading and compaction. These activities would expose areas that are currently covered with vegetation. The bared soils would be subject to wind and stormwater runoff that could erode the soils. This could lead to air pollution and/or discharging of sediment to the storm drain system that serves the freeway, the overcrossing, and Talmage Road.

Division 9, Chapter 7, Erosion and Sediment Control, Sections 9700 to 9706 of the Ukiah City Code provides requirements for reducing the potential for construction activities to result in an increase in erosion or contribution of sediment to onsite or offsite water bodies. Measures are identified to address the requirement to prepare an erosion and sediment control plan and to address such issues as grading and storage methods, clearing and grading activities, and waterway crossings.

These measures are mandatory, and as a result, all future development projects will provide erosion control measures to preclude siltation of the Russian River.

Additionally, the North Coast Regional Water Quality Control Board (NCRWQCB) has primary responsibility for protecting the surface and groundwater quality within the proposed project area. The NCRWQCB's efforts are generally focused on preventing either the introduction of new pollutants or an increase in the discharge of existing pollutants into bodies of water that fall under its jurisdiction. The NCRWQCB is concerned with all potential sources of contamination that may reach subsurface water supplies through direct surface runoff or infiltration. Discharges from the project area are subject to state water quality laws and regulations.

The State Regional Water Quality Control Board requires Best Management Practices (BMPs) to be implemented by the project proponents. The intent of incorporating BMPs is to prevent any net detrimental change in runoff quantity or quality resulting from new development and redevelopment. Runoff reduction control measures should be implemented according to the New Development and Redevelopment Handbook (California Stormwater Quality Association, 2004), which provides general guidance for selecting and implementing BMPs to reduce pollutants in runoff in newly developed areas

and redeveloped areas to waters of the State. The New Development and Redevelopment Handbook also provides guidance on developing project-specific stormwater management plans including selection and implementation of BMPs for a particular development or redevelopment project. The State requirements to protect water quality have been used by the City to develop Division 9, Chapter 7 of the City Code where the requirements for an erosion and sediment control plan for new development are listed.

Mitigation Measures

- 4.1-B.1 The City shall prepare an Erosion and Sediment Control Plan consistent with all the general site and good housekeeping requirements, the listed erosion control requirements, and the sediment control requirements of Division 9, Chapter 7 of the City Code. The plan shall be prepared by a registered civil engineer, or other professional who is licensed and qualified. As required by the code, the plan shall include the following information and contain the following mandatory measures:
- A description and delineation of the vegetative measures to be taken to minimize erosion and sedimentation;
 - A description and delineation of the proposed temporary and permanent measures to appropriately and effectively minimize soil erosion and sedimentation and to protect manufactured or disturbed slopes from erosion by mechanical means, such as with mulches, diversion dikes, etc.;
 - Delineation of the proposed drainage control measures and temporary and permanent measures to be taken to retain sediment on the site;
 - The extent and manner of the cutting of trees and the clearing of vegetation, and their disposal, and the measures proposed for the protection of undisturbed trees and vegetation;
 - The proposed methods for the disposal of excess materials and for dust control;
 - A description of the measures to maintain the devices shown on the plan during grading operations and construction on the site;
 - The extent of disturbed ground that would exist, the streets that would be paved, and drainage devices that would be installed prior to the start of each rainy season;
 - Seeding mixtures and rates, types of sod, method of seedbed preparation, expected seeding dates, type and rate of lime and fertilizer application, and kind and quantity of mulching for both temporary and permanent vegetative control measures;
 - Use of the most recent version of the CASQA BMP handbook, section 3 as a guide as to what measures should be taken for any particular set of circumstances.
 - Erosion Control Measures (Section 9703)
 - Complete soil stabilization within five days of clearing or inactivity in construction;
 - Design the Project as such to avoid disturbing land in sensitive areas and to preserve existing vegetation wherever possible;
 - Schedule major grading operations during dry months when practical, and allow adequate time before rainfall begins to stabilize the soil with erosion control materials;

- Conduct seeding and mulching as soon as grading is complete;
- If seeding or another vegetative erosion control method is used, establish the vegetative cover within a time frame approved by the city engineer, or the city engineer may require the site to be reseeded or a nonvegetative option employed;
- Use special techniques that meet the design criteria outlined in the CASQA BMP handbook on steep slopes or in drainageways to ensure stabilization;
- Stabilize soil stockpiles and/or securely cover at the end of each workday;
- In areas where permanent reseeding and planting is not established at the close of the construction season, use additional control measures, such as a heavy mulch layer or another method that does not require germination, to ensure soil stabilization at the site;
- Where runoff needs to be diverted from one area and conveyed to another, construct earth dikes, drainage swales, slope drains or other suitable practice in accordance with the design criteria set forth in the most recent version of the CASQA BMP handbook;
- Employ techniques to prevent the blowing of dust or sediment from the site and that deliver upland runoff past disturbed slopes shall be employed when determined necessary by the City engineer.
- Sediment Control Measures (Section 9703):
 - Place linear sediment barriers below the toe of exposed and erodible slopes, down slope of exposed soil areas, around soil stockpiles, and at other appropriate locations along the site perimeter;
 - Conduct street sweeping as needed to remove sediment from streets and roadways and to prevent the sediment from entering storm drains or receiving waters. Washing the street or use of cleaning fluids would not be allowed;
 - Protect every storm drain inlet with the potential to receive sediment laden runoff in accordance with the design criteria set forth in the most recent version of the CASQA BMP handbook. Inspect and maintain inlet protection frequently;
 - Install sediment basins or sediment traps where sediment-laden water may enter the drainage system or watercourses and in association with dikes, temporary channels, and pipes used to convey runoff from disturbed areas;
 - Protect adjacent properties by the use of a vegetated buffer strip in combination with other perimeter controls or other appropriate method, as described in the most recent version of the CASQA BMP handbook.

Impact Significance After Mitigation

The erosion and sediment control requirements set forth in Division 9, Chapter 7 of the City Code are intended to ensure that erosion from grading and development is controlled to prevent the loss of topsoil and deposition of sediment in the storm drain system and the

Russian River. Compliance with these requirements would reduce the loss of topsoil to a less-than-significant level.

Impact 4.1-C The project would be located on soil that is unstable, or that would become unstable as a result of the project, and could potentially result in on- or off-site landsliding, lateral spreading, subsidence, liquefaction, or collapse. This is a potentially significant impact.

As described in the Setting, the site is relatively flat with a low potential for landslides. High seasonal groundwater was below the level of any proposed subgrade elements to support the structural section, ranging from about 4 feet below the surface to about 9 feet below the surface as found in numerous borings during the wet period of various years. It is not anticipated that the groundwater level will rise high enough to saturate the subgrade and thereby weaken the soils supporting the structural section. Accordingly, the risk of liquefaction and lateral spreading (which is related to liquefaction) is low.

There are weak/unconsolidated soil layers underlying the existing compacted fills upon which the current paved structural section is situated. The construction of widened fills to increase the number of traffic lanes will have to take those surface soils into account. Likewise, structures, such as low retaining walls and pier supports for signals and lighting will have to be planned with the knowledge that weak/unconsolidated surface soils exist. Otherwise, these improvements could fail and collapse, placing people and improvements at risk.

Mitigation Measures

Mitigation Measure 4.1-A.1 also applies to this impact.

Impact Significance After Mitigation

Mitigation Measure 4.1-A.1 requires reprocessing of subgrade soils and some fill soils. These soils will be reprocessed to a standard that can support all proposed project improvements. Reprocessing of these soils in combination with the other geotechnical recommendations set forth in Mitigation Measure 4.1-A.1 will ensure that proposed improvements do not fail due to site soils.

Impact 4.1-D The project could be located on expansive soil, which could cause the failure of project improvements. This is a potentially significant impact.

As described in the Setting, the site soils are interpreted as having low potential for expansion, based upon the results of the R-Value testing which was conducted, as well as the results of laboratory testing contained in a number of geotechnical reports in the area. Nevertheless, it is possible that local concentrations of more clayey soil may be encountered. If these soils are not properly conditioned, they could result in failure of components of the project.

Mitigation Measures

Mitigation Measure 4.1-A.1 also applies to this impact.

Impact Significance After Mitigation

Mitigation Measure 4.1-A.1 requires potentially expansive clay soils, with a plasticity index of 20 or more, that are encountered during subexcavation and reprocessing of site soils be replaced with approved materials having low expansion potential with a Plasticity Index less than 12 and R-Value of 20 (minimum), or those soils could be mixed with more granular material and used in the fill slope areas. These requirements would eliminate the risk of expansive soils affecting the project. The impact would be reduced to a less-than-significant level.

3. Cumulative Impacts

Impact 4.1-E The project could make a cumulatively considerable contribution to cumulative effects associated with erosion, topsoil loss, or increased exposure to seismic or other geologic-related risks. This is a potentially significant impact.

The project is located within an existing developed area of the City of Ukiah. Construction of the cumulative projects identified in Section 5.2 of this EIR would involve some soil-disturbing activities that could result in erosion and would result in a slight increase in the number of people exposed to seismic or other risks. As described above, the project area is not exposed to high or unusual hazards associated with soil type or geological hazards. Although the entire region is considered seismically active, it has a wide range of soil and geologic conditions. These conditions can vary widely within a short distance, making the cumulative context for potential impacts related to seismic risks one that is more localized or even site-specific. Accordingly, closely related past, present, and future projects in the area would have little relevance to the cumulative analysis because they do not cumulatively combined to result in a significant environmental effect. While exceptions exist, the seismic risk potential of the project site combined with the seismic risk potential of another site nearby would not “compound” to result in increased or significant cumulative seismic risk. In addition, compliance with federal, State and local regulations addressing building construction, runoff, and erosion, reduce the potential impacts for all present and future projects associated with geology and soils to a less-than-significant level. As a result, conformance with adopted California Building Code and other measures to protect people and structures from geologic hazards would reduce this impact to a less-than-significant level. Moreover, when considered in combination with other nearby construction projects, the cumulative effect to exposure to potential seismic hazards would be less than significant.

Concurrent implementation of the proposed project and other cumulative projects could result in erosion with consequent long-term impacts related to water quality. The City requires new development to comply with the erosion control and water quality protection requirements included in the City Code. For example, the Costco EIR found that project

would have a less-than-significant runoff impact on water quality given compliance with the construction general permit and implementation of applicable BMPs through the SWPPP and the City-required erosion control plan. This Interchange EIR codifies these requirements in Mitigation Measure 4.1-B.1. Per City Code and State requirements the City would require a similar mitigation during the project-level CEQA review for other new applications. Existing City and State regulations and the City's ability to review new development for compliance with these requirements and constraints (and consequently apply standard site-specific mitigations when warranted by the specific project and site conditions) would reduce the cumulative erosion impact to a less-than-significant level.

Therefore, given the site characteristics and project mitigation, the project's contribution to any significant erosion-related impacts, were there any such impacts, would be considered less than cumulatively considerable.

With regard to the geologic and soil impacts of the approved Costco project and the two quarry projects, all of those impacts were found to be less than significant or less than significant after required mitigations. Thus, in conjunction with the project, no significant cumulative impacts would result.

Mitigation Measures

Implement Mitigation Measure 4.1-B.1.

Impact Significance After Mitigation

As described previously, this mitigation would reduce the project's effects on erosion to a less-than-significant level. In so doing, the mitigation would reduce the project's contribution to any significant cumulative impact on erosion and water quality to a less than cumulatively considerable level.

4.2 HYDROLOGY AND WATER QUALITY

A. Setting

1. Regional Hydrologic Setting

The City of Ukiah is located within the Russian River watershed. The Russian River is approximately 110 miles long and originates in central Mendocino County, approximately 15 miles north of the City of Ukiah in Redwood and Potter Valley. The east and west forks combine to form the Russian River within the Ukiah Valley. Several streams are tributary to the Russian River within the Ukiah Valley including: York, Hensley, Ackerman, Mill, Howell, Morrison, Parsons, Robinson, Orrs, Howard, Gibson, and Doolin Creeks.

The mainstem of the Russian River generally flows to the southeast to its confluence with Mark West Creek, at which point it turns sharply to the west and traverses the Coast Range, ultimately emptying into the Pacific Ocean at Jenner. Within the Russian River watershed, the Coyote Dam and the Warm Springs Dam are major reservoirs and provide flood protection, water supply and storage, and recreational opportunities.

Coyote Dam is located on the East Fork of the Russian River near Ukiah and construction of the dam resulted in the creation of Lake Mendocino; the Warm Springs Dam is located on Dry Creek west of Healdsburg, and resulted in creation of Lake Sonoma.

Following construction of the Coyote Dam in 1959, the Russian River has experienced substantial physical changes. Continued urbanization of the Russian River floodplain may result in further impacts to the free flow of flood waters, increase exposure of persons and property to flooding, and cause deterioration or destruction of natural riparian habitats. Since the dam has held back both water and sediment, the river has experienced erosion of its bed and banks and subsequent incision into its floodplain. To date, the river has become entrenched by over 18 feet in the Ukiah Valley. Erosion of the banks of the Russian River and loss of riparian trees typically result from these conditions, as well as the erosion of creeks that are tributary to the river.

Land use patterns within the Ukiah Valley have also resulted in the conversion of streams and creeks to channelized and tunneled drainage facilities. Such channelization has interfered with natural drainage patterns, and has the potential to increase the occurrence of flooding due to an increase in impermeable surfaces within the Valley. Within the Russian River Basin, approximately 93 percent of the average seasonal runoff occurs in a five-month period beginning in December and ending in April. Annual rainfall in the City of Ukiah is approximately 35 inches. Streamflow responds directly to the rainfall pattern; high flows will drop quickly without sustaining rainfall. During the dry summer months, streamflow consists of groundwater seepage, channel storage, or reservoir storage.

The environmental setting of the project site can be characterized as densely urban because it is the location of the major street interchange between U.S. Highway 101 and Talmage Road, which is classified as a local arterial street in the City General Plan. Topographically, the project site is almost flat except for the interchange elevations.

Existing storm drains route runoff from the freeway, the ramps, and Talmage Road in the project area to a vegetated ditch along the west side of the freeway and then east to an eventual outfall to the Russian River.

B. Regulatory Framework

Water resources are regulated by a variety of local, State, and federal statutes. Agencies with regulatory and enforcement jurisdiction in Sonoma County include the North Coast Regional Water Quality Control Board (RWQCB), the State Water Resources Control Board (SWRCB), the California Department of Fish and Game, the Federal Emergency Management Agency (FEMA), the U.S. Army Corps of Engineers (Corps), and the U.S. Environmental Protection Agency (EPA). Plans, policies, and regulations pertaining to hydrology and water quality in the project area are outlined below.

Federal

Clean Water Act

Under the Clean Water Act (CWA) of 1977, the U.S. Environmental Protection Agency (EPA) seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The statute employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The CWA authorizes the EPA to implement water quality regulations. The National Pollutant Discharge Elimination System (NPDES) permit program under section 402(p) of the CWA controls water pollution by regulating stormwater discharges into the waters of the U.S.

Section 401 of the CWA requires a permit for every applicant of a federal permit or license for an activity that may result in a discharge of pollutants to the waters of the U.S. (including permits under section 404 of the CWA). The purpose of the permit application is to obtain certification that the proposed activity will comply with State water quality standards.

Clean Water Act Section 303(d) Impaired Waters List and Total Maximum Daily Loads

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a TMDL for each of the pollutants listed for each water body. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. The TMDL prepared by the state must include an allocation of allowable loadings to point and nonpoint sources, with consideration of background loadings and a margin of safety. The TMDL must also include an analysis that shows the linkage between loading reductions and the attainment of water quality objectives. The EPA must either approve a TMDL prepared by the state or, if it disapproves the state's TMDL, issue its

own. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL.

After implementation of the TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) list would be remediated. In California, preparation and management of the Section 303(d) list is administered by the RWQCBs. The Upper Russian River in Ukiah in the vicinity of the project area is listed for sedimentation/siltation and temperature. Sources listed for the impairment are as follows:

Sedimentation/ Siltation: Agriculture, Silviculture, Construction/Land Development, Resource Extraction, Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/ Destabilization, Drainage/Filling of Wetlands, Channel Erosion, Erosion/Siltation, Highway Maintenance and Runoff, and Natural Resources

Temperature: Hydromodification, Upstream Impoundment, Flow Regulation/Modification, Habitat Modification, Removal of Riparian Vegetation, Streambank Modification/Destabilization, and Nonpoint Source.

State

State and Regional Water Quality Control Board

The CWA authorizes the EPA to implement water quality regulations. The EPA has delegated authority for water permitting to the California State Water Resources Control Board (SWRCB). The SWRCB administers water rights, water pollution control, and water quality functions throughout the State, and has nine regional boards. The Regional Water Quality Control Boards (RWQCBs) conduct planning, permitting, and enforcement activities; The North Coast Regional Water Quality Control Board (RWQCB, Region 1) regulates water quality in Mendocino County.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act allows the SWRCB to adopt statewide water quality control plans or basin plans. The purpose of the plans is to establish water quality objectives for specific water bodies. The RWQCB has prepared the North Coast Water Quality Control Plan (Basin Plan) (2011) that establishes water quality objectives and implementation programs to meet the stated objectives and to protect the beneficial uses of the Bay waters (see regional regulatory discussion below). The act also authorizes the NPDES program under the CWA, which establishes effluent limitations and water quality requirements for discharges to waters of the State. Most of the implementation of SWRCB's responsibilities is delegated to the nine regional boards. Under the NPDES program, the RWQCB has established permit requirements for stormwater runoff for the project area.

National Pollutant Discharge Elimination System (NPDES)

The National Pollutant Discharge Elimination System (NPDES) program under Section 402(p) of the CWA controls water pollution by regulating stormwater discharges into the

waters of the U.S. California has an approved State NPDES program. The NPDES permit system was established in the CWA to regulate point source discharges. Point sources include a municipal or industrial discharge at a specific location or pipe. For individual point source discharges, each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. The NPDES Municipal Stormwater Permitting Program regulates stormwater discharges from separate storm sewer systems.

In 1999, the U.S. EPA promulgated Phase II stormwater regulations pursuant to the federal Clean Water Act, requiring the SWRCB to issue NPDES stormwater permits to operators of small municipal separate storm sewer systems (MS4s). To meet this requirement, in April, 2003, the SWRCB adopted Water Quality Order No. 2003-0005-DWQ, NPDES General Permit CAS000004 WDRs for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4 Permit). However, in February, 2013, a revised version of the MS4 permit (Order No. 2013- 0001-DWQ) was adopted and became effective on July 1, 2013.

The MS4 permit implements a series of permit conditions that are required for projects within its domain. Thus, proposed development within the City, including the project, must adhere to the conditions of the MS4 permit. Key conditions relevant to the project include the following: implementation of a construction site stormwater runoff control program; implementation of pollution prevention and good housekeeping measures; implementation of a post-construction stormwater management program; implementation of stormwater quality monitoring and annual reporting; and compliance with Total Maximum Daily Load and program assessment and improvement requirements. Within these categories, key components relevant to protecting stormwater quality on site would include the incorporation of Low Impact Development (LID) design standards, source control measures, hydromodification measures, operation and maintenance requirements for stormwater control measures, post-construction assessment of condition for best management practices (BMPs), and various other construction and operation period stormwater quality management requirements.

Regional

North Coast Region Basin Plan

The North Coast RWQCB is responsible for the protection of beneficial uses and the water quality of water resources within the North Coast region of California. The first comprehensive Water Quality Plan for the North Coast Region (Basin Plan) was adopted by the RWQCB in 1975. Since that time, the RWQCB has updated and amended the Basin Plan several times. The RWQCB adopted the most current version of the Basin Plan in 2011. The North Coast RWQCB has set water quality objectives for all surface waters in the region. The beneficial uses listed for the Ukiah Hydrologic Subarea under the Upper Russian River Hydrologic Area include: municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, freshwater replenishment, navigation, hydropower generation, water contact and noncontact recreation, commercial and sport fishing, warm and cold freshwater

habitat, wildlife habitat, rare species, fish migration, fish spawning, and potential shellfish harvesting and aquaculture. The Basin Plan provides water quality objectives for inland surface waters such as the Upper Russian River segment located in the project vicinity that are incorporated in the NPDES permit discussed above.

Ukiah City Code

As described in the Setting section for Section 4.1, Geology, Sections 9702 through 9704 of Chapter 7 of Division 9 of the Ukiah City Code specifies requirements for protection of water courses that would apply to the proposed project. These sections require erosion and sediment control during project construction.

Chapter 8, Stormwater Discharges in Division 4 of the City Code regulates water quality pursuant to the CWA and NPDES Phase II stormwater regulations for small municipal separate storm sewer systems, by reducing pollutants in stormwater discharges to the maximum extent practicable (Section 4090.01) and by prohibiting nonstormwater discharges to the storm drain system (Section 4090.5). Chapter 8 applies to all water entering the storm drain system generated on any developed and undeveloped lands.

Stormwater Management Plan

The City is required to implement the Stormwater Management Plan/Program (SWMP) and comply with the General Permit. The purpose of the Stormwater Management Plan (SWMP; City of Ukiah, 2006) is to implement and enforce a series of management practices designed to reduce the discharge of pollutants from urban runoff or MS4. The SWMP includes the six areas listed below in which the City is taking measures to reduce the pollutants in the stormwater runoff that flows into the local creeks and rivers. The SWMP describes implementation procedures under each of the following areas to be followed by the City or the individual project applicant or contractor:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management
6. Pollution Prevention and Good Housekeeping for Municipal Operations

The control of discharges from project sites are codified in the requirements set forth in Division 9, Chapter 7 of the City Code. Per the Stormwater Management Plan the City conducts street sweeping to reduce the amount of pollutants deposited on the street system. Caltrans conducts regular street sweeping on the State highways to reduce pollution of waterways.

Ukiah General Plan and Growth Management Program

The City's General Plan has policies related to flooding and water quality that are pertinent to this project. They are listed below.

Goal OC-12: Protect groundwater recharge.

Policy OC-12.1: Establish a program to maintain quality and quantity of groundwater in the recharge area.

Goal OC-15: Protect surface and groundwater from adverse impacts from chemicals and soil sediments found in urban and agricultural runoff.

Policy OC-15.1: Protect water quality from adverse impacts of urban and agricultural runoff.

Policy OC-16.2: Manage stormwater flows to reduce the hazard of flooding from increased stormwater volumes.

Goal SF-3: Protect new development from flooding.

Policy SF-3.1: Ensure adequate standards for development within the One Hundred Year Flood Plain.

C. Potential Impacts and Mitigation Measures

1. Criteria Used For Determining Impact Significance

The impact analysis section considers the project's potential to result in significant impacts based on standards of significance derived from CEQA Guidelines Appendix G. As such, the project would have a significant impact if it meets any of the following criteria.

1. Violates any water quality standards or waste discharge requirements.
2. Substantially depletes groundwater supplies or interferes 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 been granted).
3. Substantially alters the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
4. Substantially alters the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increases the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
5. Creates or contributes runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provides substantial additional sources of polluted runoff.

6. Otherwise substantially degrades water quality.
7. Places housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood delineation map.
8. Places structures within a 100-year flood hazard area that would impede or redirect flood flows.
9. Exposes people or structures to significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.
10. Is subject to inundation by seiche, tsunami, or mudflow.

Due to the location and characteristics of the project, certain conditions are not associated with the project, and, therefore, are not considered potential impacts. These conditions are addressed briefly below and are not discussed further in this document.

Placement of Housing within a 100-Year Flood Zone

The project does not include the construction of housing. Therefore, the project would not result in the placement of housing within a 100-year flood zone. No impact would occur.

Placement of Structures within a 100-Year Flood Zone

As stated in the geotechnical report contained in Appendix B of this EIR, the project site is not located within a 100-year flood zone. Thus the project would not result in the placement of structures within a 100-year flood zone. Therefore, no impact would occur.

Seiche, Tsunami, or Mudflow

There are no large open bodies of water near the project site, therefore the site is not susceptible to damage from seiche activity. The project site is more than ten miles from the Pacific Ocean, and therefore is not susceptible to coastal hazards (tsunami, extreme high tides, or sea level rise). Mudflows are typically associated with regions downstream of high relief areas which have loose surficial sediments and/or are or may become denuded of vegetation, such that high stormflows could alter the stability of surficial sediments, leading to a mudflow. Mudflows may also occur as a result of volcanic activity. These conditions are not anticipated on site or in the vicinity of the project area. Therefore, no impact would occur.

2. Impact Analysis

Impact 4.2-A Project construction activities would disturb surface soils and could cause erosion, and the release of sediment and construction-related water quality pollutants to receiving waters. This is a potentially significant impact.

The potential impacts of soil erosion on water quality were assessed previously in Impact 4.1-B. That discussion concluded that the project-generated erosion could adversely affect water quality. Additionally, spills of materials used to operate construction equipment plus runoff of residues of petrochemicals, grease, and heavy metals could wash off the site and adversely affect the water quality of receiving waterways and eventually the Russian River and the ocean.

Mitigation Measures

Mitigation Measure 4.1-B.1 applies to this impact. That mitigation measure requires the preparation of an Erosion and Sediment Control Plan that incorporates all Best Management Practices listed in Sections 9702 through 9704 of Chapter 7 of Division 9 of the Ukiah City Code. This plan also includes requirements to establish and implement construction site management practices to prevent toxic materials and other debris from entering the City's storm drainage and waterway systems, and adversely affecting water quality.

Impact Significance After Mitigation

Implementing the required Erosion and Sediment Control Plan will ensure that toxic materials and construction-related residues are captured or treated on site before they can escape to the storm drain system. Implementation of the plan during construction would reduce the impact to a less-than-significant level.

Impact 4.2-B The paving of widened and realigned freeway ramps could increase impervious surfaces onsite. This could decrease stormwater infiltration and recharge of the aquifer. This impact would be less than significant.

The project would include paving areas that currently are unpaved, and it would remove paving from other areas that are currently paved. The project would result in approximately the same amount of impermeable surface as currently exists. The Ukiah Valley groundwater basin is approximately 22 miles long and 5 miles wide. Groundwater in storage in the upper 100 feet of this most productive area of the Ukiah Valley is estimated at 90,000 acre-feet, and groundwater storage located within the margins of the Ukiah Valley is estimated at an additional 45,000 acre-feet.³ The impact to the groundwater recharge area would be less than significant given no net increase in impermeable surface and the size of the groundwater basin.

Impact 4.2-C The paving of widened and realigned freeway ramps could increase impervious surfaces onsite. This could decrease stormwater infiltration and increase stormwater flows causing downstream flooding, erosion, or sedimentation. This impact would be less than significant.

³ California Department of Water Rights, 1975

During wet weather events, impervious surfaces typically do not allow for stormwater infiltration thereby creating higher sheet flows on impervious surfaces, as compared to pervious surfaces. As a result, larger volumes of storm runoff accumulate and higher rates of flow alter existing drainage patterns. Therefore, construction of impervious surfaces results in a net increase in the rate and volume of surface runoff, potentially contributing to downstream flood impacts. Additionally, increases in stormwater runoff from the site could cause increased erosion and subsequent sedimentation downstream.

The freeway, the freeway ramps, and Talmage Road are served by an existing storm drain system. Runoff from the realigned and widened ramps and street would continue to flow via ditches, swales, or pipes to vegetated ditches along the freeway that transport runoff from the site to the Russian River. The project would not substantially alter the drainage pattern on the site or in the area. As described under Impact 4.2-B, the project would result in approximately the same amount of impermeable surface as currently exists. Therefore, the project would not be expected to substantially increase runoff from the site, and the impact would be less than significant.

Impact 4.2-D The project would not subject people and structures to increased risk of floods from the potential failure of the Coyote Dam at Lake Mendocino. This is a less-than-significant impact.

The project site is within the area that would be inundated if Coyote Dam were to fail. The California DWR, Division of Safety of Dams (DSOD) oversees the construction of dams such as Coyote Dam, and requires monitoring following construction. Due to DSOD regulatory oversight, monitoring, and design review, the potential is minimal for the catastrophic failure of a properly designed and constructed dam, whether caused by a seismic event, flood event, unstable slope conditions, or damage from corrosive or expansive soils. Further, the interchange and Talmage Road are currently within the inundation zone. There would not be substantial new structures placed in the inundation zone nor would the project result in additional people using the project improvements. Finally, the project would involve installation of realigned and/or widened ramps and roads, and would not result in any alteration to the physical structure, integrity, or operations of any dams or other flood control structures. Therefore, the project would not result in a significant increase in flood risk from the potential failure of the Coyote Dam relative to current conditions. The impact would be less than significant.

Impact 4.2-E The project would accommodate existing and future projected traffic. The increase in traffic would generate additional pollutants that could be washed off the site and adversely affect the water quality of the receiving waterways. This is a less-than-significant indirect impact.

Once operational, the project would accommodate existing traffic and therefore would not increase the potential deposition of motor vehicle-generated residues (e.g., oil, brake lining residues, tire residues). By accommodating additional traffic by the year 2032, the project would indirectly increase the potential deposition of motor vehicle-generated residues. The City and Caltrans will continue to sweep streets and ramps in accordance with their ongoing stormwater management responsibilities. The City requires and conducts twice-

monthly street sweeping and storm drain inlet cleaning as part of its Stormwater Management Plan. Caltrans generally sweeps the highway once a month. Continuing these road cleaning actions would be expected to reduce the residues on the road and reduce the impact to water quality to a less-than-significant level. In any case, the additional residues that could be generated by future traffic increases would not be substantial given the cleaning protocols. Finally, the Caltrans-projected increase in traffic in the area would be expected to occur area-wide with or without the project, so the project would not induce residues from this area-wide traffic increase.

3. Cumulative Impacts

Impact 4.2-F Project development, in conjunction with other foreseeable development in the City and portions of the county in the Russian River watershed could result in cumulative hydrology and water quality impacts. This is a potentially significant impact.

The geographic area for the analysis of cumulative impacts for hydrology and water quality is the Russian River watershed, particularly those areas that drain into the Russian River in the vicinity of the project, including the City of Ukiah. The cumulative analysis considers the past, present, and probable future projects listed in Section 5.2 for cumulative impacts.

Short-term Construction

Concurrent construction of the proposed project and other cumulative projects could result in increased erosion and subsequent sedimentation, which could have a cumulative effect on the water quality of the receiving waters including the Russian River. Any inadvertent release of fuels or other hazardous materials during concurrent construction of projects could affect the water quality in the stream channels or storm drains that eventually flow into Russian River. As discussed above, the Russian River is impaired for sediment. Therefore the addition of either silt or sediment from construction activities from the proposed project combined with other projects in the watershed would have a significant cumulative effect. However, as described under Impacts 4.2-A and 4.2-C above, the project applicant would minimize the project impacts by complying with the applicable water quality regulations including preparing and implementing an Erosion and Sediment Control Plan; complying with the Municipal Code requirements; and installing BMPs and practicing control measures to manage and reduce erosion, stormwater runoff, and sedimentation downstream. This would also minimize any resulting flooding impacts from construction activities. The project impact on water quality and flooding from construction would be less than significant. Given the existing developed nature of the project vicinity, and other projects in the watershed including the development of proposed project, the project would not result in a cumulatively considerable contribution toward the cumulative water impact from construction.

Long-term Operation

Concurrent implementation of the proposed project and other cumulative projects could result in an increase in the amount of impermeable surface in the watershed and could cause localized flooding in ditches or small tributaries. The City's existing regulations

require that new projects within flood hazard zones not adversely affect flood flows or flood elevations. The City's regulations also require that new development be served by adequately sized drainage facilities. For example, for the Costco project a detention basin and other improvements were required as part of its Final Drainage Plan so there would be no net increase in runoff from that site. Per the City's existing regulations, similar drainage improvements may be required for other proposed development; these measures would be determined during the project-specific CEQA analysis for those projects. These existing City regulations and the ability for the City to further review potential flood constraints for new development applications would reduce the cumulative impact to a less-than-significant level. The two approved quarry projects within the County's jurisdiction were also required to provide adequate flood control facilities. Further, even if there were a cumulative flooding impact, the no net increase in impervious surface on the project site would not result in a considerable contribution toward that cumulative flooding impact.

Concurrent implementation of the proposed project and other cumulative projects could result in long-term impacts related to water quality. Construction and use of new roads and other impermeable surfaces results in residues of petrochemicals, heavy metals, pesticides, and other materials used by residents and businesses being deposited on streets, roofs, and other surfaces. These residues can be washed off during storms and transported to the Russian River where they can adversely affect the water quality of the river. As described under Impact 4.2-E, the project would not contribute significantly to water quality impacts caused by vehicle operations. The City requires new development to comply with water quality protection requirements included in the City Code. For example, the Costco EIR found that project would have a less-than-significant runoff impact on water quality given compliance with the construction general permit and implementation of applicable BMPs through the SWPPP and the City-required erosion control plan. This EIR codifies these requirements in Mitigation Measure 4.1-B.1. The two quarry projects approved by the County also contain erosion and sediment control mitigations that reduce the impacts on water quality from those projects to a less-than-significant level. Per City Code and State requirements the City would require a similar mitigation during the project-level CEQA review for other new applications. Existing City and State regulations and the City's ability to review new development for compliance with these requirements and constraints (and consequently apply standard site-specific mitigations when warranted by the specific project and site conditions) would reduce the cumulative impact to a less-than-significant level, and no additional mitigation is required for this project. Further, with implementation of Mitigation Measure 4.1-B.1 in this EIR, the project would not result in a cumulatively considerable contribution toward any cumulative water quality impact that might occur.

Concurrent implementation of the proposed project and other cumulative projects could result in long-term impacts related to groundwater resources. Covering more of the ground surface with impermeable materials would reduce recharge of the valley aquifer. However, as discussed above under Impact 4.2-B, the Ukiah Valley groundwater basin is approximately 22 miles long and 5 miles wide. Groundwater in storage in the upper 100 feet of this most productive area of the Ukiah Valley is estimated at 90,000 acre-feet, and groundwater storage located within the margins of the Ukiah Valley is estimated at an additional 45,000 acre-feet. The cumulative development of 15-20 acres would not

measurably decrease the recharge of this very large aquifer. In addition, the small amount of additional pavement the project would add (in any area where recharge is already likely low given past soil compaction) would not result in a cumulatively considerable contribution toward any cumulative groundwater impact that might occur.

Mitigation Measures

Implement Mitigation Measure 4.1-B.1.

Impact Significance After Mitigation

The mitigation would control erosion and transport of pollutants to the Russian River in compliance with City, State, and federal laws and regulations, thereby reducing any possible contribution of the project to a cumulative water quality impact to a less than cumulatively considerable level. Therefore, the proposed project would not contribute to any significant adverse cumulative land use impacts when considered together with past, present, pending and reasonably foreseeable development.

4.3 BIOLOGICAL RESOURCES

A. Setting

1. Background

The project site lies within the Northern California Coast Ranges Ecological Section and the Central Franciscan Ecological Subsection. This section is influenced somewhat by marine air but lacks summer fog and has a temperate and humid climate. Regional natural plant communities common to the area include oak woodlands, mixed oak and conifer woodlands, grasslands, riparian woodlands, and aquatic habitat.

The Ukiah Valley was once entirely oak forest, but agriculture and urban development have modified most of the native habitat, leaving fragmented and isolated remnants along riparian corridors and in designated open space, ranches, and parks. Overall, remaining native habitats in the region surrounding the City of Ukiah are found in riparian areas and floodplains as well as native mixed oak and conifer woodlands in the Coast Ranges east and west of the City. Vegetation communities and wildlife habitats present within Ukiah include urban, ruderal, annual grassland, sporadic stands of oaks, and narrow ribbons of riparian along the larger creeks and the Russian River (ESA, 2011).

These habitat types are used by a variety of wildlife species, primarily species that reside in or forage in agricultural or grazing areas and species that live in urban and suburban environments.

2. Project Site Conditions

The portion of the interchange where the new lanes would be added to the southbound off-ramp to Talmage Road contains grassland with some trees and a few shrubs. Native tree species include coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), redwood (*Sequoia sempervirens*), black oak (*Quercus kelloggii*), and madrone (*Arbutus menziesii*), while species not native to the area include liquid amber (*Liquidamber styraciflua*), poplar (*Populus* sp.), and Coulter pine (*Pinus coulteri*).

3. Special Status Species

As required for projects affecting State highways, a Natural Environment (Biological) Study (WRA 2013) was conducted for the project; it is included in Appendix C of this EIR. That study found that there is the potential for one special status plant species in the area: Burke's goldfields (*Lasthenia burkei*), which is a federal- and State-listed endangered species and a CNPS Rank 1B species. This is a species that occurs in wet meadows and seeps. There is no habitat for this species on the project site or within the AIP, and it has not been mapped as occurring in the area.

The only special-status plant species that has a mapped population in the City is Burke's goldfields (*Lasthenia burkei*). The one population of this species known in the project area occurred on the RBP, and that population was extirpated when that site was filled for development in the early 1990s.

The only populations of special status wildlife species mapped for the area are several fish, amphibian, and other aquatic species that would not occur on the project site.

4. Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or those that are protected under CEQA, Section 1600 of the California Fish and Game Code, the California Coastal Act, California Department of Forestry and Fire Protection directives, and/or Section 404 of the Federal Clean Water Act. The sensitive habitats that include any sizable acreage within the plan area include the wetlands/waters of the U.S., oak woodlands, and wildlife migration corridors. None of these habitat types occur on the project site.

B. Regulatory Framework

The following plans, acts, and regulations are related to preservation of Special Status Species and biotic habitat.

Federal

Federal Endangered Species Act

Under FESA, the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as threatened or endangered (16 USC 1533[c]). Two federal agencies oversee FESA: the USFWS has jurisdiction over plants, wildlife, and resident fish, and the National Marine Fisheries (NMFS) has jurisdiction over anadromous and marine fish as well as marine mammals. FESA prohibits the “take”⁴ of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery. Section 10 of FESA requires the issuance of an incidental take permit before any public or private action may be taken that could harm, harass, injure, kill, capture, collect, or otherwise hurt any individual of an endangered or threatened species. The permit requires preparation and implementation of a habitat conservation plan that provides specific measures to offset project impacts on endangered or threatened species.

Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed threatened or endangered species could be present in the project area and whether the project action would have a potentially significant impact on such species. In addition, the agency is required to determine whether the project action is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]).

Similarly, the permitting responsibilities of the Army Corps of Engineers include consultation with the USFWS and NMFS when federally listed species (i.e., listed under

⁴ “Take” is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct.

the FESA) are at risk. At both the State and federal levels, the process requires that a Biological Assessment be prepared to determine the effects on listed species.

The Migratory Bird Treaty Act

The Federal Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.), Title 50 Code of Federal Regulations (CFR) Part 10, prohibits taking, killing, possessing, transporting, and importing of migratory birds, parts of migratory birds, and their eggs and nests, except when specifically authorized by the Department of the Interior. As used in the act, the term "take" is defined as meaning, "to pursue, hunt, capture, collect, kill or attempt to pursue, hunt, shoot, capture, collect or kill, unless the context otherwise requires." Many bird species are considered migratory under the MBTA. Disturbance that causes nest abandonment and/or loss of reproductive effort or loss of habitat upon which these birds depend would be in violation of the MBTA.

U.S. Fish and Wildlife Service (USFWS)

USFWS administers the Federal Endangered Species Act (ESA) and the Marine Mammal Protection Act. The U.S. Fish and Wildlife Service (USFWS) operates under a number of statutory and administrative authorities. Its basic responsibilities concern migratory birds, anadromous fish, and endangered species. If a project involves a "take" of a federally listed species, then USFWS must approve the permit for this "taking."

The USFWS is an advisory agency to the Army Corps on Section 404 and Section 10 projects. The USFWS will review mitigation plans for these projects. The USFWS identifies four different resource categories with criteria and mitigation goals for each. The Fish and Wildlife Service will review the resources on a site and assign a category to each. Each category has a specific set of mitigation requirements.

National Oceanic and Atmospheric Administration-National Marine Fisheries Service (NMFS or NOAA-Fisheries) Regulations

NMFS administers the Federal Endangered Species Act and the Marine Mammal Protection Act as they pertain to marine and anadromous species. The service also advises the Army Corps of Engineers on Section 7 and Section 404 permits for projects that could affect fish habitat.

State

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) administers a number of laws and programs, discussed below, designed to protect fish and wildlife resources.

California Endangered Species Act

The California Endangered Species Act of 1984 (CESA) – Fish and Game Code Section 2050 et seq – regulates the listing and "take" of endangered and threatened species. A "take" of such a species may be permitted by CDFW through issuance of permits pursuant

to Fish and Game Code section 2081, except for designed “fully protected” species (see subsection below).

Fully Protected Species

The classification of “fully protected” was the CDFW’s initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA.

Protection of Nesting Birds

Section 3503.5 of the California Fish and Game Code states that it is “unlawful to take, possess, or destroy the nests or eggs of any such bird of prey (i.e., species in the orders Falconiformes and Strigiformes) except otherwise provided by this code or any other regulation adopted hereto.” Active nests of all other birds (except English sparrow (*Passer domesticus*) and European starling (*Sturnus vulgaris*)) are similarly protected under Section 3503 of the California Fish and Game Code, as well as birds designated in the International Migratory Bird Treaty Action under Section 3513 of the California Fish and Game Code. Disturbance that causes nest abandonment and/or loss of reproductive failure is considered a take by the CDFW. This statute does not provide for the issuance of an incidental take permit.

Native Plant Protection Act

California Fish and Game Code Section 1900–1913, also known as the Native Plant Protection Act, is intended to preserve, protect, and enhance endangered or rare native plants in California. The act directs CDFW to establish criteria for determining what native plants are rare or endangered. Under Section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more cause. A species is rare when, although not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens. The act also directs the California Fish and Wildlife Commission to adopt regulations governing the taking, possessing, propagation, or sale of any endangered or rare native plant.

3. California Rare Plant Ranks

Regional committees made up of professional botanists review current status information and recommendations for changes made by the California Natural Diversity Database of CDFW and the CNPS, and comment on whether changes are warranted. Changes are made if there is a consensus that this is warranted. In April 2011 the California Native Plant Society (CNPS) officially changed the name “CNPS List” to “California Rare Plant Rank.” The definitions of the ranks and the ranking system have remained essentially unchanged. California Rare Plant Ranks include the following categories:

- 1A. Presumed extinct in California; extirpated or rare in other states.
- 1B. Rare, threatened, or endangered in California and elsewhere.

- 2A. Presumed extirpated in California, but more common elsewhere.
- 2B. Rare, threatened, or endangered in California, but more common elsewhere.
- 3. Plants for which more information is needed.
- 4. Plants of limited distribution – a “watch” list.

Additionally, endangerment codes are assigned to each taxon as follows:

- 1. Seriously endangered in California (over 80 percent of occurrences threatened/high degree of immediacy of threat).
- 2. Fairly endangered in California (20-80 percent occurrences threatened).
- 3. Not very endangered in California (<20 percent of occurrences threatened or no current threats known).

Plants designated CRPR 1A, 1B, and 2 may qualify for State listing, and are given consideration under CEQA during project review.

4. Local

City of Ukiah General Plan

The Open Space and Conservation Element of the City’s General Plan contains numerous goals, policies, and implementation measures aimed at conserving and protecting biological resources. Policies pertinent to this proposed project include::

Goal OC-7: Ensure the health and vitality of the Russian River and its tributaries.

Policy OC-7.1: Maintain river bed and banks for flood control, water delivery, and fish habitat.

Policy OC-7.5: Maintain the Russian River as a natural riparian corridor.

C. Potential Impacts and Mitigation Measures

1. Criteria Used For Determining Impact Significance

The impact analysis section considers the project’s potential to result in significant impacts based on standards of significance derived from CEQA Guidelines Appendix G. As such, the project would have a significant impact on biological resources if it meets any of the following criteria:

- 1. Has a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service.
- 2. Has 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 California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service.

3. Has a substantial adverse effect on federally protected wetlands as defined by section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) or tributary to an already impaired water body, as defined by section 303(d) of the Clean Water Act through direct removal, filling, hydrological interruption, or other means.
4. Interferes 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. Conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

Due to the location and characteristics of the project, certain conditions are not associated with the project, and, therefore, are not considered potential impacts. These conditions are addressed briefly below and are not discussed further in this document.

Riparian and Other Sensitive Natural Communities

The Natural Environment Study prepared for the project did not identify any riparian habitat or other sensitive natural community on the site. Runoff from the project would continue to flow to the storm drain system that currently serves the freeway, ramps, and Talmage Road. This runoff is transported by the storm drain system to the Russian River. As such, runoff from the site would not enter or affect riparian habitat or other sensitive natural communities. Therefore, there would be no impact per this criterion.

Wetlands

As described in the appended Natural Environment Study, the project site does not contain any type of wetlands. Runoff from the project would continue to drain to the storm drain system that currently drains the freeway, ramps, and Talmage Road. This runoff is transported by the storm drain system to the Russian River. As such, runoff from the site would not enter or affect wetlands. Therefore, there would be no impact per this criterion.

2. **Impact Analysis**

Impact 4.3-A Project construction could damage habitat used by special-status species. This is a potentially significant impact.

No special-status species of plants or animals were found on the site. However, the biological surveys done for the Initial Study did not include surveys of all of the blooming period for potential special-status species. Caltrans in responding to the original MND recommended that site surveys be done for potential special-status species during their blooming period. However, as described in the biological study (see Table 2-1 of that study, which is included as Appendix C of this EIR), the project site does not contain habitat that would support any of the five special-status species reported within three miles of the site. The only species reported anywhere near the site is Burke's goldfields (*Lasthenia burkei*), which was reported near the south end of Redwood Business park approximately 800 yards south of Talmage Road. This population was extirpated during filling of the AIP in the early 1990s. In addition, the project site was previously disturbed when constructing the existing highway and interchange and is mowed on a regular basis. Therefore, there is very little likelihood of any special-status plant species occurring within the loop of the southbound off-ramp. No impact is expected, and additional field surveys of this disturbed area are not warranted.

The biological study prepared for the project found that the trees within the off-ramp loop can provide nesting habitat for nesting passerines and raptors. While no special-status species of birds were observed during site surveys conducted for the biological report, it is possible that such species could use these trees in the future. If construction work is done near these trees during nesting season, it could result in birds protected by federal or State laws abandoning active nests.

As previously described under Impacts 4.1-B and 4.2-A, project construction could result in transport of sediments and other residue pollutants to the Russian River. If this were to occur, it could harm special-status fish, amphibians, and reptiles that inhabit the river, potentially resulting in disruption of nesting, interfering with the growth of eggs, retarding growth, and possibly injuring or killing individuals. As explained under Impact 4.2-E, the project would not result in a significant impact on water quality from the operation of vehicles traveling through the project area.

Mitigation Measures

Mitigation 4.1-B.1 applies to this impact. In addition, the following mitigation is recommended.

- 4.3-A.1 Construction shall not cause nest abandonment of special-status species of birds or destruction of active nests of species protected by the Migratory Bird Treaty Act or Section 3503 of the Fish and Game Code (protection of nesting passerines). The following measures shall be implemented to avoid disturbing any special status species nesting above ground. Vegetation removal conducted during the nesting period shall require a pre-construction survey for active bird

nests, conducted by a qualified biologist. No known active nests shall be disturbed without a permit or other authorization from USFWS and/or CDFW.

1. For earth-disturbing activities occurring during the breeding season (March 1 through September 1), a qualified biologist shall conduct pre-construction surveys of all potential nesting habitat for all birds within 500 feet of earthmoving activities.
2. If active special status bird nests are found during pre-construction surveys 1) a 500-foot no-disturbance buffer will be created around active raptor nests during the breeding season or until it is determined that all young have fledged, and 2) a 250-foot buffer zone will be created around the nests of other special status birds and all other birds that are protected by California Fish and Game Code 3503. These buffer zones are consistent with CDFW avoidance guidelines; however, they may be modified in coordination with CDFW based on existing conditions at the project site.
3. If pre-construction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required. Shrubs and trees that have been determined to be unoccupied by special status birds or that are located 500 feet from active nests may be removed.
4. If vegetation removal activities are delayed or suspended for more than two weeks after the pre-construction survey, the areas shall be resurveyed.

Impact Significance After Mitigation

While it is unlikely that the project would affect special-status species or active nests, this mitigation ensures that, if warranted, mitigation would be required to protect active nests. The impact would be reduced to a less-than-significant level. Mitigation Measure 4.1-B.1 requires implementation of an Erosion and Sediment Control Plan. Implementing the BMPs required for this plan will ensure that indirect runoff impacts to special-status species inhabiting the Russian River would be controlled to a level where the indirect impact would be less than significant.

Impact 4.3-B Project construction and operation could interfere with wildlife travel and wildlife nursery sites. This impact is less than significant.

Highway 101, the freeway ramps, and Talmage Road are major barricades that currently thwart wildlife movement both in the east-west direction and the north-south direction. The project would not change this existing situation. Temporary structures near the interchange that may be needed during construction would not add new impediments to wildlife movement in the area.

The one area containing some habitat that could be used for nursery sites is the area within the ramps loop located south of the Talmage Road overcrossing. This area is surrounded by heavily used streets and ramps and is mowed to reduce fire hazard. Therefore it is not expected that the project site is used for nursery sites except possibly by small mammals like gophers, moles, mice, and voles. The natural habitat on the site would remain approximately the same size, so that this area would continue to be

available for nursery sites of such species. Therefore, the project would have a less-than-significant impact on wildlife travel and wildlife nursery sites.

Impact 4.3-C The project would be consistent with policies protecting biological resources. This impact is potentially significant.

The project would not affect special-status species and would be consistent with the Federal Endangered Species Act. There is no adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local or State habitat conservation plan for the project area. The project could affect nesting birds, including possible nesting passerines and raptors. Nests of these species are protected under the Federal Migratory Bird Treaty Act and Fish and Game Codes 3503 and 3503.5.

The project would not directly affect State or federal endangered or threatened species and would be consistent with the Federal Endangered Species Act and the California Endangered Species Act. It is possible that polluted runoff from the site could indirectly affect endangered or threatened species inhabiting the Russian River. This pollution, if it were to occur, would also be counter to the City General Plan policies about preserving the fishery of the river.

Other than its general plan, the City does not have adopted policies specifically directed at protection of biological resources. However, as described previously, the City Code in Sections 9702 through 9704 of Chapter 7 of Division 9 specifies requirements for protection of water courses that would apply to the proposed project. These sections require erosion and sediment control during project construction.

The City Code of Chapter 8, Division 4 (Stormwater Discharges), regulates water quality pursuant to the CWA and NPDES Phase II stormwater regulations for small municipal separate storm sewer systems by requiring that pollutants in stormwater discharges be reduced to the maximum extent practicable (Section 4090.01) and by prohibiting nonstormwater discharges to the storm drain system (Section 4090.5). Chapter 8 applies to all water entering the storm drain system generated on any developed and undeveloped lands, which would include project-related stormwater. These City Code provisions provide strong mitigation requirements for protecting the water quality of the river and its tributary streams. As explained under Impact 4.2-E, given ongoing street sweeping and inlet cleaning by the City and Caltrans the project would not result in a significant impact on water quality from the operation of vehicles traveling through the project area.

Mitigation Measures

Mitigation Measures 4.1-B.1 and 4.3-A.1 apply to this impact.

Impact Significance After Mitigation

As described above under the discussions of Impacts 4.1-B.1 and 4.3-A.1, these mitigations would reduce potential impacts to water quality and nesting birds, respectively, to a less-than-significant level. With implementation of these mitigations, the project would be consistent with the FESA, CESA, Federal Migratory Bird Treaty Act, and Fish and Game Codes 3503 and 3503.5. Therefore, the project impact as regards policy consistency would be reduced to a less-than-significant level.

3. Cumulative Impacts

Impact 4.3-D Project development, in conjunction with other foreseeable development in the City and portions of the county in the Russian River watershed could result in cumulative impacts to biological resources. This is a potentially significant impact.

The geographic area for the analysis of cumulative impacts for biological resources is the Russian River watershed. The cumulative analysis considers the past, present, and probable future projects listed in Section 5.2 for cumulative impacts.

The only potentially significant impacts that could result from the proposed project are impacts to nesting birds and indirect water quality-related effects on species inhabiting the Russian River, with a corresponding impact as regards consistency with policies aimed at protecting nesting species and river water quality. Other projects in the Russian River Valley watershed could have similar impacts to nesting species. It is expected that where a potential impact is possible for those projects the lead agency (the City or the County) would require mitigation similar to what is recommended for this project, given the legal mandates of the Federal Migratory Bird Treaty Act and Fish and Game Codes 3503 and 3503.5. For example, the Costco project was conditioned with a similar mitigation to protect nesting birds (Mitigation Measure 3.12.1 of the Final Costco EIR), which reduced that project's Impacts to nesting birds to a less-than-significant level. Furthermore, the recommended Mitigation Measure 4.3-A.1 reduces the project's impact to a less-than-significant level so that even if there were a cumulative impact on nesting birds, the project would not make a considerable contribution to that impact.

Other projects in the Russian River watershed could cause erosion as well as pollutant-laden runoff with consequent deposition of sediments and pollutants in the Russian River. Like this proposed project, other projects within the City are required to comply with the water quality protection provisions of the City Code. Projects within the County's jurisdiction would also be required to comply with water quality protections as set forth in adopted policies in the Ukiah Valley Area Plan and the County General Plan. The Final EIR for the Costco project found that with the inclusion of water quality control mitigations, the Costco project would not have a significant project-specific impact or be part of a significant cumulative impact on water quality. It is expected that with compliance with federal, State, and City or County regulations that the cumulative impact would be less than significant. Further, even if there were a significant cumulative impact, the project, as mitigated, would make a less-than-cumulatively considerable contribution to that significant impact.

Mitigation Measures

Implement Mitigation Measures 4.1-B.1 and 4.3-A.1.

Impact Significance After Mitigation

The recommended Mitigation Measure 4.3-A.1 reduces the project's impact to a less-than-significant level so that even if there were a cumulative impact on nesting birds, the project would not make a cumulatively considerable contribution to that impact. Mitigation Measure 4.1-B.1 controls erosion from the project and ensures that erosion from the project would not substantially affect water quality in the Russian River. Therefore, with mitigation, the project would not make a cumulatively considerable contribution to any significant cumulative biological impact.

4.4 CULTURAL RESOURCES

A. Setting

1. *Archaeological Resources*

The proposed project site was originally inhabited by the Central Pomo people. These Native Americans made seasonal encampments in upland areas but were primarily people who lived near the Russian River and its tributaries. There are numerous archaeological sites within the Ukiah area, but very few of these sites have been subject to systematic scientific study. With so few cultural resources carefully studied, the prehistory of the area generally remains poorly understood.

2. *Historic Resources*

There are many buildings in the Ukiah area that are potentially significant historical structures (many of the ranches and farms in the valley have been in existence for 100 years or more). Within the City, the Held-Poage House, the Palace Hotel, the Sun House, and the Hofman House are listed on the national Register of Historic Places (the Sun House is also listed as a California Historical Landmark).

3. *Paleontological Resources*

The paleontological record for the Ukiah area is scant, and the location of potential fossils remains unknown. Given that most of the project site and the AIP is on imported fill, it is not expected that there would be substantial paleontological resources in the project area.

B. Regulatory Framework

State Regulations

The California Register of Historical Resources (the California Register) and the California Environmental Quality Act (CEQA) provide the statutory basis for this study for the county-level review. The California Register legislation was signed into law in September 1992 and its implementing regulations became effective on January 1, 1998. Guidelines for the California Register have been incorporated into the October 26, 1998 revisions to CEQA. CEQA requires the lead agency to prepare an environmental impact report for a project determined to have a significant impact on the environment, including substantial adverse changes to historical resources. Historical resources are, by definition, those resources determined eligible to the California Register by virtue of meeting one or more of the following criteria:

- Association with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Association with the lives of persons important in our past;
- Embodiment of the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values;

- Has yielded, or may be likely to yield, information important in prehistory or history.

A resource is also automatically included in the California Register if it is listed or eligible for listing in a local register of historic resources, or determined to be significant by the lead agency as the result of substantial evidence.

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. Integrity is the authenticity of a property's physical identity – the presence of characteristics which were present during the resource's period of significance. Enough of these characteristics must remain to convey the reasons for their significance.

The State's Office of Historic Preservation (OHP) has primary responsibility for the administration of historic preservation programs in California through the *California's Comprehensive Statewide Historic Preservation Plan*, as well as other laws and regulations.

The California Native American Heritage Commission works to identify, catalogue and protect places of special religious or social significance, graves, and cemeteries of Native Americans per the authority given the Commission in Public Resources Code 5097.9.

Public Resources Code, Section 5097, implements a number of federal laws and specifies procedures in the event that human remains are discovered during any site disturbance activity. The disposition of Native American burials falls within the jurisdiction of the California Native American Heritage Commission. California Code of Regulations Section 15064.5(f) and Health & Safety Code Section 7050.5(b) identify the need to establish procedures in the event of discovery during construction of buried cultural resources on nonfederal land.

Paleontological resources also are afforded protection by environmental legislation set forth under CEQA. Appendix G (Part V) of the CEQA Guidelines provides guidance relative to significant impacts on paleontological resources, stating that a project would normally result in a significant impact on the environment if it would "...disrupt or adversely affect a paleontological resource or site or unique geologic feature, except as part of a scientific study." Paleontological resources are also protected by several federal and State statutes, most notably by the 1906 Federal Antiquities Act and other subsequent federal legislation and policies and by the State. However, these statutes only apply to projects occurring on State or federal lands.

Caltrans

Projects requiring Caltrans approval must comply with the federal National Historic Preservation Act. The principal report used for this compliance for state-only projects (which this project is) is the Historical Resources Compliance Report (HRCR). This report summarizes the findings of technical studies such as historical and archaeological survey reports. They are used to document the identification and evaluation of potential historic properties for the purposes of Section 106 and CEQA compliance respectively. Appendix D of this EIR contains the HRCR required by Caltrans.

Local Regulations

The Historic and Archeological Resources Chapter of the Infrastructure Element of the City's General Plan contains goals, policies, and implementation measures aimed at protecting cultural resources. Policies pertinent to the proposed project include:

Policy HA-2.1: Support strong and effective historic and scenic preservation.

C. Potential Impacts and Mitigation Measures

1. Criteria Used For Determining Impact Significance

The impact analysis section considers the project's potential to result in significant impacts based on standards of significance derived from CEQA Guidelines Appendix G. As such, the project would typically have a significant impact on cultural resources if it meets any of the following criteria.

1. Causes a substantial adverse change in the significance of a historical resource pursuant to §15064.5 of the CEQA Guidelines.
2. Causes a substantial adverse change in the significance of an archaeological resource as defined in §15064.5 of the CEQA Guidelines.
3. Directly or indirectly destroys a unique paleontological resource or site.
4. Disturbs any human remains, including those interred outside of formal cemeteries.

2. Impact Analysis

Impact 4.4-A Project construction could damage or destroy archeological and paleontological resources or disturb human remains. This is a potentially significant impact.

An *Archaeological Survey Report* and a *Historic Property Survey Report* (included as Appendix C of this EIR) were prepared for the project, and included full contact with

representatives of local Native American groups.⁵ No archaeological or historic resources were found on the site. Nevertheless, there is always the chance that such resources as well as previously unidentified human remains could be found during site grading. This is a potentially significant impact.

Mitigation Measures

4.4-A.1 If buried archeological resources, such as chipped or ground stone, historic debris, building foundations, or human bone, are inadvertently discovered during ground-disturbing activities, work would stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the City and other appropriate agencies.

4.4-A.2 If human remains of Native American origin are discovered during project construction, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (NAHC) (PRC 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- The county coroner has been informed and has determined that no investigation of the cause of death is required; and
- If the remains are of Native American origin, the descendants of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98.

Or

- The NAHC was unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified by the commission.

4.4-A.3 If human remains are discovered during any demolition/construction activities, all ground-disturbing activity within a 100-meter radius of the remains shall be halted immediately, and the Mendocino County coroner shall be notified immediately, according to Section 5097.98 of the state Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the County coroner to be Native American, the Native American Heritage

⁵ The *Archaeological Survey Report* and a *Historic Property Survey Report* prepared as part of the Initial Study were revised in preparing this EIR to address several minor concerns that Caltrans had with the original reports. These revised reports are on file with the Ukiah Planning & Community Development Department.

Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. The City shall consult with the Most Likely Descendant, if any, identified by the NAHC regarding the treatment and disposition of the remains.

- 4.4-A.4 Should paleontological resources be identified at any project construction site, the construction manager shall cease operation within a 100-meter radius of the discovery and immediately notify the City. The project proponent shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe mitigation measures to reduce impacts to a less-than-significant level. In considering any suggested mitigation proposed by the consulting paleontologist, the City shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for paleontological resources is carried out.

Impact Significance After Mitigation

The recommended mitigation measures ensure that any cultural resources, paleontological resources, or human remains found during project construction will be treated, preserved, curated, and/or disposed of consistent with pertinent federal and State laws and regulations. Therefore, the impact would be reduced to a less-than-significant level.

3. Cumulative Impacts

Impact 4.4-B Project development, in conjunction with other foreseeable development in the City and portions of the county in the Russian River watershed could result in cumulative impacts to cultural and paleontological resources. This is a potentially significant impact.

The geographic scope for cumulative impacts to cultural and paleontological resources includes a one-mile radius from the project site. Analysis of cumulative impacts takes into consideration the entirety of impacts that the projects discussed in Section 5.2 would have on cultural resources. This geographic scope of analysis is appropriate because the archaeological, historical, and paleontological resources within this radius are expected to be similar to those in the project site because of their proximity; similar environments, landforms, and hydrology would result in similar land-use, and thus, site types. Similar geology within this vicinity would likely yield fossils of similar sensitivity and quantity.

The region contains an important archaeological and historical record that, in many cases, has not been well documented or recorded. Thus, there is the potential for ongoing and future development projects in the vicinity to disturb landscapes that may contain known or unknown cultural resources. The potential construction impacts of the proposed project, in combination with other projects in the area, could contribute to a cumulatively significant impact on cultural resources. However, this analysis includes mitigation to reduce potential

project impacts to cultural resources during construction of the proposed project. No cultural resources or paleontological resources were found on the Costco site. That project was conditioned to treat currently unknown resources encountered during construction in the same fashion as recommended for the proposed project. Future projects with potentially significant impacts to cultural resources would be required to comply with federal, State, and local regulations and ordinances protecting cultural resources through implementation of similar mitigation measures during construction.

Excavation activities associated with the proposed project in conjunction with other projects in the area could contribute to the progressive loss of fossil remains, as-yet unrecorded fossil sites, associated geological and geographic data, and fossil bearing strata.

Mitigation Measures

Implement Mitigation Measures 4.4-A.1 through 4.4-A.4.

Impact Significance After Mitigation

With implementation of Mitigation Measures 4.4-A.1 through 4.4-A.3 the proposed project would not make a cumulatively considerable contribution to impacts to archaeological resources and human remains. Additionally, with the implementation of Mitigation Measure 4.4-A.4 the proposed project would not make a cumulatively considerable contribution to impacts to paleontological resources.

4.5 TRAFFIC AND CIRCULATION

A. Setting

This section is based in part on technical information contained in the *Traffic Impact Study* prepared by GHD, which is included as Appendix E of this EIR. This section summarizes the detailed information contained in that appended report. The reader requiring more detail about traffic counts, roadway conditions, and methodologies used to assess impacts is directed to that complete report.⁶

1. Roadway System

U.S. 101 is a limited access freeway and primary regional route connecting the City of Ukiah to other communities within Mendocino County and beyond. Within the City limits, *U.S. 101* is a divided four-lane freeway. The posted speed limit is 65 miles per hour (mph). *U.S. 101* is part of the Federal Highway Administration (FHWA) Non-Interstate Strategic Highway Network (STRAHNET).

Talmage Road – State Route 222 (SR 222) is a major urban arterial that provides access to *U.S. 101* via an existing partial cloverleaf interchange (a Type L-9 Interchange :Caltrans, 2012). *Talmage Road* provides access to the Redwood Business Park and to the southern limits of the City by connection to South State Street. *Talmage Road* is a State facility between the eastern edge of the intersection of *Talmage Road/Airport Park Boulevard* in the west and the town of *Talmage* in the east. The typical roadway section varies from undivided two-lane road to four lanes divided by a two-way left-turn lane. The face-of-curb to face-of-curb width at the westbound approach to *Airport Park Boulevard* is approximately 70 feet. Shoulders 8 feet in width are generally present within the project limits and State right-of-way. The posted speed limit in the project area is 35 mph.

Airport Park Boulevard is an urban arterial serving the Redwood Business Park and Airport Business Park. *Airport Park Boulevard* extends from just north of *Talmage Road* in the north to its terminus at *Airport Road* near the Mendocino Brewing Company. The typical road section includes two travel lanes in each direction separated by a raised median. The posted speed limit is 30 mph.

⁶ The traffic Impact Study was prepared in coordination with Caltrans District 1 Traffic Operations. The Caltrans standard modeling and study guidelines were followed along with input and coordination from District 1 Traffic Operations. These guidelines are the *Caltrans Guide for the Preparation of Traffic Impact Studies* (Caltrans, 2002), and the *Caltrans – District 1 Traffic Signals on State Highways, Supplement and Addendum to Guide for the Preparation of Traffic Impact Studies for New and Existing Traffic Signals Serving Proposed and Existing Developments* (Caltrans, 2008). Growth rates for the year 2032 were provided by Caltrans.

2. Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signals, curb ramps, and streetscape amenities. In general, a network of sidewalks, crosswalks, pedestrian signals, and curb ramps provide access for pedestrians in the project vicinity, though notable sidewalk gaps, obstacles, and barriers can be found along each of the roadways connecting to the project site. A summary description of existing pedestrian conditions is provided below:

- Talmage Road – Intermittent sidewalk coverage, with notable gaps on one or both sides of the street between Hastings Frontage Road-Babcock Lane on the east side of U.S. 101 to South State Street on the west. Curb ramps and crosswalks at side street approaches are intermittent, non-existent, or not compliant with current ADA standards. For these reasons, high-speed vehicle movements associated with the Talmage Road/U.S. 101 interchange are in conflict with pedestrian movements. Overhead streetlights provide lighting of the corridor.
- Airport Park Boulevard – There is intermittent sidewalk coverage, with no sidewalks on the east side of the street along Wal-Mart’s roadway frontage. Sidewalks are provided along the developed properties on the west side of the street between Talmage Road and Commerce Drive. South of Commerce Drive, limited sidewalk coverage is provided along developed property frontages. Marked crosswalks are not provided at the Airport Park Boulevard/Commerce Drive intersection, and curb ramps are not in compliance with current ADA standards.

3. Bicycle Facilities

Bikeways are categorized by design type:

- Class I facilities are called “bike paths.” These facilities provide completely separated right-of-way for exclusive use of bicycles and pedestrians with minimum cross flow of motorist traffic. According to the *Mendocino County Regional Bikeway Plan*, Class I bike paths are expensive to construct and maintain. There may also be some safety issues, as parts of the County have visual obstructions posing security concerns.
- Class II facilities are called “bike lanes.” These facilities are designated areas within the roadway for the exclusive or semi-exclusive use of bicycle traffic. Pavement striping and posted signs generally identify these lanes. Adjacent vehicle parking and cross flow by pedestrians and motorists are permitted.
- Class III facilities are called “bike routes.” These facilities are street areas shared with motorists. Bike route rights of way are designated by signs or pavement markings.

The Ukiah Bicycle and Pedestrian Master Plan (City of Ukiah, 1999) classifies Talmage Road as a regional bicycle facility and "bicycle activity corridor," and identifies it as a Class III connector bike route. A Class III bikeway provides for shared use with motor vehicle traffic. The portion of Talmage Road within the project area is not identified as a pedestrian activity area.

4. Public Transit

The Mendocino Transit Authority (MTA) is a joint powers agency formed by Mendocino County, Fort Bragg, Point Arena, Willits, and Ukiah to provide public transportation services to citizens in Mendocino County. MTA operates demand-responsive services, as well as ten fixed routes serving various parts of the Ukiah Valley.

MTA Local Route 9 provides loop service to destinations throughout the City and stops on Commerce Drive at 1-hour headways, Monday through Friday between 7:00 a.m. and 8:30 p.m., and Saturdays between 10:00 a.m. and 5:00 p.m.

MTA Regional Routes 20 and 75 provide service from Ukiah to destinations in Willits and the South Mendocino County Coast and stops on Commerce Drive with approximately 1-hour to 3 hour headways, Monday through Friday between 7:00 a.m. and 6:30 p.m.

MTA Paratransit provides dial-a-ride service for individuals who are unable to independently use the public transit system because of physical or mental disabilities.

5. Study Intersections

The project area and project vicinity is shown in Figure 3.1-1. The project area includes portions of Talmage Road, a portion of Airport Park Boulevard, and the U.S. 101 on- and off-ramps to Talmage Road. This study area was selected in consultation with Caltrans and the City. It was determined appropriate for the project because this project does not generate traffic but rather redirects traffic through improvements to roadway geometrics and controls. The following intersections (with existing traffic control) were evaluated as part of this analysis; the intersections are numbered for ease of reference:

- Intersection No. 1. Talmage Road and Airport Park Boulevard – Signalized
- Intersection No. 2. Talmage Road and Southbound Ramp – Unsignalized
 - a. Westbound left-turn to On-Ramp
 - b. Off-Ramp right turn to Westbound Talmage Road
 - c. Off-Ramp right turn to Eastbound Talmage Road⁷
- Intersection No. 3. Talmage Road and Northbound Ramp – Unsignalized
 - a. Off-ramp approach to Talmage Road

⁷ The existing southbound off-ramp intersects Talmage Road at two locations— one on the south side of Talmage Road and one on the north side. So, in both cases, southbound U.S. 101 drivers using the off-ramp make right turns to access Talmage Road.

Caltrans is responsible for the maintenance and operations of state routes and highways. Within the project study area, Caltrans' facilities include:

- Intersection No. 2. Talmage Road and Southbound Ramp - Unsignalized
 - a. Westbound left-turn to On-Ramp
 - b. Off-Ramp right-turn to Westbound Talmage Road
 - c. Off-Ramp right Turn to Eastbound Talmage Road
- Intersection No. 3. Talmage Road and Northbound Ramp - Unsignalized
 - a. Off-ramp approach to Talmage Road

6. Study Periods

The study periods included in the traffic impact assessment include daily (24-hour) traffic classification, weekday a.m. and p.m. peak conditions, and Saturday midday peak conditions. The weekday a.m. peak hour generally occurs between 7:00 a.m. and 9:00 a.m. and the p.m. peak hour generally occurs between 4:00 p.m. and 6:00 p.m., while the weekend (Saturday) mid-day peak hour generally occurs between 11:00 a.m. and 1:00 p.m. Weekday peak hours are generally associated with commute traffic (i.e., 7:00 a.m. and 9:00 a.m. and 4:00 p.m. and 6:00 p.m.) while the weekend peak hour is generally associated with shopping traffic. Pedestrian and bicycle volumes were also included in the analysis for the peak conditions.

Existing traffic counts in the project study area were collected in September 2012 in coordination with Caltrans District 1 staff. Traffic conditions during the month of September, when school is in session, are generally considered the worst case "peak" traffic conditions and were approved by Caltrans for corridor planning and analysis for the project. Caltrans required new traffic counts during the peak months of August or September be collected and used in this analysis. It is recognized that the traffic counts collected and used for this study differ from counts collected and used in previous traffic studies. The traffic volumes used in this analysis have been accepted by Caltrans and the City of Ukiah as representative of existing traffic conditions at the study intersections.

7. Level of Service Methodology

Level of Service (LOS) is a qualitative measure used to rank traffic operation on various transportation facility types using a series of letter grade designations ranging from A to F. Generally, LOS A represents free-flow conditions and LOS F represents forced flow or breakdown conditions. The LOS designation for intersections is generally accompanied by a unit of measure which indicates a level of delay.

The focus on the LOS analysis is on automobile traffic and the effect implementation of project alternatives has at study intersections. The analysis is delay-based methodology for both signalized and unsignalized intersections from the Highway Capacity Manual (Transportation Research Board, 2000), also referred to as HCM2000. Delay is defined as the total elapsed time from when a vehicle stops at the stop line of the intersection or behind a queue until the vehicle leaves from the stop bar. In the case of a vehicle in a queue, the total delay time includes the time required for the vehicle to travel from the last

queue position to the stop bar. Average total delay is a function of the traffic volumes, green time for each movement, phasing, signal coordination, pedestrian activity, intersection geometry, capacity of the approach, and the volume of conflicting movements. The LOS concept for signalized and unsignalized intersections is a measure of average operating conditions at intersections during a span of an hour, and is based on measurements of the average vehicular delay in seconds per vehicle. Tables 1 and 2 summarize the ranges of delay associated with the various levels of service for signalized and unsignalized intersections as defined by the HCM2000.

Synchro 8 with SimTraffic software was used to model the study intersections and report HCM2000 LOS result. Use of this analytic model to assess project impacts was approved by Caltrans District 1 Traffic Operations. This software package performs analysis in accordance with the HCM2000 methodology, and includes a probabilistic simulation module for the estimate of vehicular queue lengths. It is also the preferred analysis software of Caltrans District 1.

The LOS concept for signalized and unsignalized intersections is a measure of average operating conditions at intersections during a span of an hour, and is based on measurements of the average vehicular delay in seconds per vehicle. Tables 4.5-1 and 4.5-2 summarize the ranges of delay associated with the various levels of service for signalized and unsignalized intersections as defined by the HCM2000.

**Table 4.5-1
HCM2000 Signalized Level of Service**

Level of Service	Description	Average Control Delay (Seconds Per Vehicle)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and/or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	> 80.0

Source: Highway Capacity Manual (Transportation Research Board, 2000).

**Table 4.5-2
HCM2000 Unsignalized Level of Service**

Level of Service	Description	Average Control Delay (Seconds Per Vehicle)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and/or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	> 80.0

Source: Highway Capacity Manual (Transportation Research Board, 2000).

9. Existing Traffic Volumes

To assess conditions at study intersections, 24-hour traffic counts were done for five consecutive days at eight locations on the highway ramps and on Talmage Road. In addition, intersection turning movement counts, were collected during the a.m. and p.m. peak hours during a non-holiday week on Tuesday, September 11, 2012 while school was in session. Weekend midday peak hour turning movement counts were collected on Saturday, September 15, 2012. Peak hour intersection turning movement counts were collected at the following locations:

- Intersection No. 1: Talmage Road and Airport Park Boulevard
- Intersection No. 2: Talmage Road and U.S. 101 Southbound Ramps
- Intersection No. 3: Talmage Road and U.S. 101 Northbound Ramps

Pedestrian and bicycle volumes were also collected. The peak hour factors obtained from these traffic volume counts were also used in the analysis of the existing condition. The existing traffic volumes are shown on Figure 3 in the appended Traffic Impact Study. The analysis results using these counts are shown in Appendix C of the appended Traffic Impact Study; they are summarized in Table 4.5-3. The appended report also includes tables showing collision type and history for the area.

**Table 4.5-3
Existing (2012) Intersection Level of Service (Existing Geometry)**

No.	Intersection	Existing (2012)		
		AM	PM	SAT
		Delay/LOS	Delay/LOS	Delay/LOS
1	Talmage Rd/Airport Park Blvd (signal) ¹	23.6/C	29.8/C	31.5/C
2	Talmage Rd/Southbound Ramp (unsignalized) ²			
	Westbound left-turn to On-ramp	8.9/A	11.1/B	10.0/B
	Southbound Right-turn	50.8/F	25.4/D	27.8/D
	Northbound Right-turn	13.0/B	24.2/C	14.0/B
3	Talmage Rd/Northbound Ramp (unsignalized) ²			
	Northbound Off-ramp approach	15.7/C	15.5/C	13.4/B

Notes: ¹LOS based on HCM method of operational analysis for Signalized Intersections
²LOS based on HCM method for operational analysis for Unsignalized Intersections
Delay is calculated in average seconds per vehicle in queue
LOS = Level of Service
BOLD = LOS D or worse

B. Regulatory Framework

Caltrans

The California Department of Transportation (Caltrans) is the primary State agency responsible for transportation issues, including the construction and maintenance of the State highway system. Caltrans has established standards for roadway traffic flow. For facilities where Caltrans is responsible for maintenance and operations, Caltrans strives to maintain minimum service levels at thresholds between LOS C and LOS D. In cases where this LOS is not feasible the lead agency should consult with Caltrans to establish an appropriate LOS threshold. If an existing state highway facility is operating worse than the appropriate LOS threshold, the existing Measure of Effectiveness (MOE) should be maintained.

Caltrans has also developed procedures to determine if intersections require improvements (e.g., consideration of signalization when an intersection meets a signal warrant). Traffic signal warrants are established in the California Manual on Uniform Traffic Control Devices (CAMUTCD), and define the minimum conditions under which installing traffic control signals might be justified. Traffic Signal Warrant 3 for the peak hour of traffic is based on the CAMUTCD (Caltrans, 2012). The Warrant has two Parts, A and B that must be met to justify the potential need for a signal based on the peak hour. Part A contains three conditions, which are:

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a Stop sign equals or exceeds four vehicle-hours for one-lane approach, or five vehicle-hours for a two-lane approach; AND

2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vehicles per hour (vph) for one moving lane of traffic or 150 vph for two moving lanes; and
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. Part B of the Traffic Signal Warrant 3 contains figures that plot minor street versus major street approaches for urban and rural areas. The Signal Warrant 3 calculations are included in the full report in Appendix E.

For projects that may physically affect facilities under its administration, Caltrans requires encroachment permits before any construction work may be undertaken. Any improvements within the State Right-of-Way must be approved by Caltrans.

Ukiah General Plan

The Circulation and Transportation Element of the Ukiah General Plan and Growth Management Program contains numerous goals, policies, and implementation measures. These are aimed at maintaining acceptable levels of service on roadways and at intersections, as well as providing safe and efficient transport via cars, bicycles, walking, and mass transit. The plan establishes acceptable levels of service (LOS) to be used when assessing the impacts of new development proposals. Specific policies pertinent to the proposed project include:

Policy CT-1.3: All proposed development shall be reviewed for its immediate and cumulative transportation impacts.

Policy CT-2.1: Avoid premature widening by seeking other methods of increasing capacity on existing street or road sections segments.

Policy CT-3.1: New development and Redevelopment projects shall specifically include plans for pedestrian facilities, bike lanes, bike racks, and transit stops.

Policy CT-6.2: Promote the use of bicycles as a viable and attractive alternative to cars.

Policy CT-6.3: Provide bicycle lanes or paths along major streets.

Policy CT-7.1: Treat pedestrian access as an integral part of all road improvements within the City and within urbanized development areas of the County.

Policy CT-16.4: Balance the need for new development with methods of accommodating increasing traffic.

Policy CT-21.1: Work to improve the existing freeway interchanges.

Policy PR-13.1: Establish safe bicycle travel lanes.

Specifically, Policy CT-16.4 states that until a City traffic model is adopted at signalized or 4-way stop intersections, the minimum acceptable level of service is LOS D while LOS E is acceptable for side streets with stop signs (or LOS F where side streets have very low traffic volumes). At the time this analysis was conducted, a City-wide traffic model has not been adopted.

The General Plan text on page 32 of the Circulation sections states “Improvements to the interchange of U.S. 101 and Talmage are to be constructed as part of the Airport Industrial Park off Talmage Road, which is a short distance west of the existing interchange.”

C. Potential Impacts and Mitigation Measures

1. Criteria Used For Determining Impact Significance

The impact analysis section considers the project’s potential to result in significant impacts based on standards of significance derived from CEQA Guidelines Appendix G. As such, a project-related traffic impact or cumulative traffic impact is considered to be significant if it meets any of the following criteria:

1. Conflicts with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
2. Conflicts with an applicable congestion management program, including, but not limited to LOS standards and transportation demand management measures, or other standards established by the County congestion management agency for designated roads or highways.
3. Results in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
4. Substantially increases hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
5. Results in inadequate emergency access.
6. Conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decreases the performance or safety of such facilities.

Due to the location and characteristics of the project, certain conditions are not associated with the project, and, therefore, are not considered potential impacts. These conditions are addressed briefly below and are not discussed further in this document.

Congestion Management Plan

Neither the County nor the City has a congestion management plan, so there is no impact per Criterion No. 2.

Air Traffic

The project site is located over 1,000 feet northeast of the Ukiah Municipal Airport, and is not situated within any approaches or clearance zones for Ukiah Municipal Airport. The project would not result in any change to air traffic patterns, so there would be no impact per Criterion No. 3.

Emergency Access

The project would improve access through the project area and correspondingly improve emergency access. The impact per Criterion No. 5 would be beneficial.

Pedestrians and Bicyclists

Talmage Road is identified in the Ukiah Bicycle and Pedestrian Master Plan as a Class III bicycle route in this area, where bicyclists share the roadway with other vehicles. The project maintains this designation, and also provides striped shoulders that may be used by bicyclists. The project improves pedestrian access by constructing new wider sidewalks along the north side of Talmage Road connecting to existing sidewalks. Project construction and use of the project by pedestrians and bicyclists would improve safety at all study intersections and would be consistent with the Ukiah Bicycle and Pedestrian Master Plan. The impact per Criterion No. 6 would be less than significant.

Proposed Project

As described in detail in the appended Traffic Impact Study (TIS), GHD, working in consultation with Caltrans, identified and assessed five alternative approaches for the Talmage Road (SR 222)/U.S. 101 southbound on/off-ramp intersection. At the time the TIS was prepared, Caltrans and GHD determined that the proposed project best met the project objectives of congestion relief and improving traffic safety for a 20-year planning horizon and design life.

See Section 3.2, Project Characteristics, for a description of the proposed project improvements. The project will be designed in accordance with the California Department of Transportation Highway Design Manual (HDM). This manual outlines the design criteria and policies as guidance to the engineer. The manual's guidance allows for flexibility in applying design standards and approving design "exceptions" that consider the unique site circumstances of each project. Because design standards have evolved over time, many existing State highway facilities do not conform fully to current standards. It is not the intent that the HDM be applied retroactively to facilities that do not meet current standards. When warranted, consideration should be given to upgrading existing nonstandard highway facilities. A record of the decision not to upgrade a particular feature is documented through the exception process. It is important to note that Caltrans will not

approve a design exception if a significant safety or operational issue exists or would occur.

Background for Discussion of Project Impacts

The EIR evaluates traffic operational conditions under the following four (4) analysis scenarios:

1. *Existing Conditions*. This is the amount of traffic, including bicyclists and pedestrians, using the existing roadway system in September 2012. These existing conditions were summarized in the previous Setting section.
2. *Existing Conditions Plus Project*. This scenario is identical to Existing Conditions but includes construction of the proposed project improvements.
3. *Long Term (2032) Background Conditions*. As required by Caltrans for planning and design of a State facility, future traffic volumes were projected using the Caltrans District 1, twenty-year growth factors (Caltrans, 2006). These growth factor targets were developed based on the "California Motor Vehicle Stock, Travel and Fuel Forecast" (CMVSTAFF) dated December 30, 2005 using Annual Vehicle Miles Traveled (AVMT) comparisons. Twenty-year growth factors for individual routes were based on historic growth, constrained by the growth factor targets. Traffic growth was projected based on the U.S. 101 growth factor of 1.5 in the area of the project (southern Mendocino County). In December 2013 Caltrans revised the growth factor for the U.S. 101 corridor through Ukiah down to 1.3. Future (2032) traffic volumes were projected from the base year (2012) existing traffic count data and multiplying existing volumes by the 1.3 growth factor. The distribution of future traffic volumes at study intersections was adjusted to align the volume projections with trip distribution estimates developed by the City of Ukiah (2013) for the Costco Wholesale Project FEIR. This scenario assesses LOS and the traffic impacts from this future development and regional growth on the existing geometry of the ramps and Talmage Road.
4. *Long-term (2032) Plus Proposed Project Conditions*. This scenario is identical to Long-term (2032) Background Conditions, but assesses the impacts on the roadway geometry that would result from the proposed project.

2. Impact Analysis

Impact 4.5-A Project construction would result in area traffic being directed through realigned ramps, lanes, and intersections. These changes in traffic patterns would benefit levels of service and traffic operations and consequently be consistent with transportation plans. There would be no adverse impact.

Comparing the intersection delay for existing conditions (as shown in Table 4.5-3) and the delay once the project is completed (as shown in Table 4.5-4), the proposed project roadway and intersection improvements would improve circulation of existing traffic at

project intersections. The proposed improvements would improve the level of service at the southbound right turn at the Talmage Road/Southbound Ramp from LOS D to LOS C (i.e., the new signalized intersection would result in all movements operating here to LOS C). These improvements, by decreasing congestion at intersections and along roadways, and improving intersection levels of service, would be consistent with City General Plan policies aimed at decreasing congestion on the roadway system. Because the project does not directly cause any adverse changes in traffic volumes, there would be no direct significant impacts.

**Table 4.5-4
Existing + Project PM Peak Hour Intersection Level of Service**

No.	Intersection	PM	
		Delay (sec)	LOS
1	Talmage Rd/Airport Park Blvd (Signal)	28.1	C
2	Talmage Rd/Southbound Ramp (Signal)	21.9	C
3	Talmage Rd/Northbound Ramp (Unsignalized) <i>Off-ramp approach</i>	14.8	B

Impact 4.5-B The project would realign ramps and change lane configurations, but these changes would not increase hazards to drivers. The impact would be less than significant.

The proposed project would realign the southbound on- and off-ramps and the geometrics of Talmage Road, including adding a second eastbound through lane. The consulting traffic engineers have determined that the resulting lane geometry would be safe and an improvement over existing conditions given the proposed corridor operations, travel speeds, vehicle types, anticipated signing and traffic volumes. The primary safety improvements include providing standard lane and shoulder widths, signal control, improved pedestrian crossings, and congestion relief. Consequently, the project would have a less-than-significant impact on traffic safety, and, in fact, would likely have a beneficial impact on safety. Caltrans has reviewed and commented on the proposed design, and Caltrans District 3 Design indicates that the proposed basic design will be approved. Accordingly, the project impact to traffic safety would be less than significant.

Impact 4.5-C The project would accommodate existing and future projected traffic allowing all study intersections to operate at acceptable LOS under cumulative conditions. This is a less-than-significant indirect impact.

This project would accommodate existing and projected future traffic through the project area. To assess this indirect project impact as well as comply with Caltrans' requirements for planning and design of a State facility, the TIS and this EIR assess project operations in 2032. By 2032, the projected area development will increase traffic volumes at study intersections. The traffic associated with regional growth and the proposed Costco project is included in the future traffic volume estimates used in the analysis. Table 4.5-5 shows what the LOS would be in 2032 for study intersections if the proposed project

improvements were not built. Table 4.5-6 shows the 2032 LOS with the proposed project constructed. All study intersections would operate at an acceptable LOS.

A queuing analysis (that shows how many cars fit in a lane while waiting for a signal or an opening to turn) was done for the project under 2032 conditions (see Section 6.1.3 of the TIS). The results of the queuing analysis show that there would be adequate available storage length at all intersections within the State right-of-way under average peak hour conditions with the exception of the No. 2 westbound through lane at the Talmage Road/South-bound Ramp intersection. Where available storage is exceeded, queues are not anticipated to cause safety or operational issues. Accordingly, the indirect impact would be less than significant.

**Table 4.5-5
Future (2032) Peak Hour Intersection Level of Service
(Existing Road and Ramp Geometry)**

No.	Intersection	Future (2032)		
		AM	PM	SAT
		Delay/LOS	Delay/LOS	Delay/LOS
1	Talmage Road/Airport Park Blvd. (Signal) ¹	28.0/C	55.2/E	45.2/D
2	Talmage Road/Southbound Ramp (Unsignalized) ²			
	Westbound left-turn	9.4/A	14.5/B	11.4/B
	Southbound Right-turn	>50/F	>50/F	>50/F
	Northbound Right-turn	14.9/B	>50/F	17.8/C
3	Talmage Road/Northbound Ramp (Unsignalized) ²			
	Northbound Off-ramp approach	18.4/C	22.8/C	15.8/C

Notes: ¹LOS based on HCM2000 method of operational analysis for Signalized Intersections
²LOS based on HCM2000 method for operational analysis for Unsignalized Intersections
 Delay is calculated in average seconds per vehicle in queue
 LOS = Level of Service
BOLD = less than LOS D

**Table 4.5-6
Future (2032) PM Peak Hour Intersection Level of Service
(Proposed Project Geometry)**

No.	Intersection	PM	
		Delay (sec)	LOS
1	Talmage Road/Airport Park Blvd (Signal)	32.1	C
2	Talmage Road/Southbound Ramp (Signal)	20.9	C
3	Talmage Road/Northbound Ramp (Unsignalized) <i>Off-ramp approach</i>	24.0	C

3. Cumulative Impacts

Impact 4.5-D Project development, in conjunction with other projected development could result in traffic impacts. This is a less-than-significant cumulative impact.

As described in Section 5.2 of this EIR, cumulative traffic impacts were assessed based on Caltrans recommended traffic projections. Impact 4.5-C presented above assesses the cumulative impacts of future traffic on project intersections. As stated there, the cumulative impact would be less than significant.

Increased traffic would increase the risk of traffic accidents. However, overall the project improves safety conditions in the project area, and the project has been designed with Caltrans input to comply with Caltrans standards (and the final design will eventually be reviewed and approved by Caltrans). The proposed project improvements are expected to provide safe and acceptable traffic operations under 2032 conditions. There is no evidence that future use of project improvements would result in a substantial increase in accidents.

The proposed project includes a new sidewalk on the north side of Talmage Road between Airport Park Boulevard and the western edge of the freeway overcrossing, which would improve pedestrian access along this road. Additional pedestrian access improvements were required for the Costco project. It is not expected that there would be a significant impact on bicyclists or pedestrians. In any case, by improving access for these user groups, the project would not make a considerable contribution to any future impact on pedestrians or bicyclists. As previously explained, the project would make no contribution to any possible impacts on emergency access or air traffic.

4.6 AIR QUALITY

This section is based in part on technical information contained in the *Talmage Interchange Improvement Environmental Air Quality Assessment, Ukiah, California* prepared by Illingworth & Rodkin, Inc., which is included as Appendix F of this EIR.

A. Setting

The City of Ukiah is located within the North Coast Air Basin (NCAB), as established by the California Air Resources Board (CARB). The NCAB includes Mendocino, Humboldt, Trinity, and Del Norte Counties, and northern Sonoma County. The NCAB extends south from the coast of Oregon and is between 30 and 100 miles wide. Air quality in Ukiah is regulated by the Mendocino County Air Quality Management District (MCAQMD).

1. Climate and Meteorology

The climate is characterized by warm dry summers and cool damp winters. During summer, high temperatures of 90 to 100 degrees Fahrenheit are common, while nighttime temperatures are in the 50s and 60s. Rainfall occurs mostly during the winter, with an annual average of 38 inches. Winds are primarily from the northwest, especially during the summer. Winds can, however, flow from the south under certain weather conditions, such as when Pacific low pressure systems affect Northern California, and during warm weather spells where low-level cooler marine air penetrates into the area through the Russian River Valley.

2. Local Setting

In the 1960s and 1970s, open field burning, lumber mill teepee burners, and other sources of pollutants created poor air quality in the Ukiah area. Current pollution potential in the area is relatively low due to controls on these sources, closure of many of the lumber mills and processing facilities, improvements in motor vehicles and fuels, and increased enforcement of District burn regulations by MCAQMD. However, elevated levels of particulate matter (PM₁₀ and PM_{2.5}) and ground-level ozone in the Ukiah area are still of concern to air quality officials. Air quality in the region is controlled by meteorological conditions and the rate of pollutant emissions. Meteorological conditions such as wind speed, atmospheric stability, and mixing height affect the atmosphere's ability to mix and disperse pollutants. Long-term variations in air quality typically result from changes in air pollutant emissions while short-term variations result from changes in meteorological conditions.

During the wintertime, the combination of strong ground-based inversions combined with very light or calm winds lead to elevated levels of particulate matter and carbon monoxide. The wintertime emissions of these pollutants are caused mostly by wood smoke and open outdoor burning.

In summer, relatively weak inversions aloft combined with abundant sunlight, light winds, and warm temperatures lead to a buildup of ground-level ozone. Ground-level ozone, the principal component of smog, is not directly emitted into the atmosphere. It is formed by

the reaction of reactive organic gases and nitrogen oxides (known as ozone precursor pollutants) in the presence of strong sunlight. Ozone levels are highest in Ukiah during late spring through early fall, when emissions of the precursor pollutants are highest, and meteorological conditions are favorable. Monitored ozone levels are slowly increasing, due in part to ozone moving into the county from elsewhere (e.g., the Bay Area and possibly more distant locations like China). Summer PM levels can also be elevated because of dust generated by agricultural, construction, and grading activities and wildfires.

Under the Federal Clean Air Act, Mendocino County has been designated either attainment or unclassified for all national ambient air quality standards. Under the California Clean Air Act, the Air Basin is designated nonattainment for the California ambient air quality standard for particulate matter (PM₁₀). Specifically, the Air Basin is designated nonattainment for two air quality standards, State PM₁₀ annual average and State PM₁₀ 24-hour average (MCAQMD, 2008).

Air quality levels for ozone, carbon monoxide and nitrogen dioxide are measured in Ukiah on a continuous basis at a site on East Gobbi Street (approximately 0.5 miles from the project site). PM_{2.5} levels are measured continuously at a site located at the County Library at the corner of Perkins and Main Streets. The air pollutant of primary concern in the plan area is ozone. Ground-level ozone is a concern since the highest measured levels have been close to or at the State standard during the past decade. The State standard for 1-hour emissions was exceeded for one day in 2010 and has not been exceeded since then. Air quality in the area is well within State and national standards for carbon monoxide and nitrogen dioxide, and all other ambient air quality standards have been met for the last 10 years. The most recent published data for ozone and particulates at the East Gobbi Street and Ukiah County Library Monitoring Stations are presented in Table 4.6-1 (data for most pollutants for 2013 has not been published as of the date of preparing this EIR).

B. Regulatory Framework

Air quality and air pollution sources are regulated by federal, State, regional, and local regulatory agencies. Air quality regulations provide the standards by which air quality is determined and institute controls on air pollution sources to improve air quality. The Federal Clean Air Act established the national ambient air quality standards and delegated the enforcement of air pollution control regulations to the states. In California, the California Air Resources Board (CARB) develops and enforces air regulations, but delegates the responsibility of stationary emission source regulation to local air pollution control agencies. In the project area, the MCAQMD is responsible for air pollution source regulation. Mobile sources of air pollutant emissions are regulated on a statewide basis by the CARB. The air pollutants of concern and the roles of the agencies primarily responsible for managing the air quality within the project area and relevant air quality regulations are further discussed below.

**Table 4.6-1
Maximum Measured Short-Term and Annual Average
Air Pollutant Concentrations at Ukiah Monitoring Stations**

Pollutant	Averaging Period	Air Quality Standard		2009	2010	2011	2012	2013
		National	State					
Fine Particulate Matter (PM_{2.5})								
	Highest 24-Hour Average (µg/m ³)	35.00	-	24.9	22.00	20	19.2	17.6
	Estimated National Standard Exceedance Days			*	0	0	0	0
	State Annual Average (µg/m ³)		12.00	*	*			*
Ozone (O₃)								
	Highest 1 Hour Average (ppm)	0.09	0.09	0.094	0.097	0.066	0.068	*
	State Standard Exceedance Days			0	1	0	0	*
	Highest 8-Hour Average (ppm)		0.07	0.063	0.050	0.047	0.062	*
	State Standard Exceedance Days	0.070		0	0	0	0	*
	National Standard Exceedance Days	0.075		0	0	0	0	*

- Notes: 1. Ozone measurements are from the E. Gobbi Street station and the particulate measurements are from the station at the County Library
2. ppm = parts per million
3. µg/m³ = micrograms per cubic meter
4. The term exceedance days refers to the number of days during the year when the standard was exceeded.
5. PM_{2.5} is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.
6. * = no or insufficient data

Federal

Federal Clean Air Act

The Federal Clean Air Act (Federal Act) was established in an effort to assure that acceptable levels of air quality are maintained in all areas of the United States. Air quality is characterized by the presence of pollutants that fall into two basic categories; criteria air pollutants and toxic or hazardous air contaminants. Criteria air pollutants refer to a group of pollutants for which the regulatory agencies have adopted ambient air quality standards and pollution management and control strategies. Toxic or hazardous air contaminants refer to a category of air pollutants that have potential adverse health effects but do not have an associated ambient air quality standard. These pollutants are called hazardous air pollutants (HAPs) in federal law and toxic air pollutants (TACs) in California law.

Criteria Air Pollutants

The Federal Act requires the EPA to establish ambient air quality standards for air pollutants that cause or contribute to air pollution and that may reasonably be anticipated to endanger public health. Pollutants with air quality standards are called criteria

pollutants. National Ambient Air Quality Standards (NAAQS or national standards) have been established for seven pollutants: carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), particulate matter, which includes both respirable particulate matter (PM₁₀ - particulate matter 10 microns or less in diameter) and fine particulate matter (PM_{2.5} - particulate matter 2.5 microns or less in diameter), sulfur dioxide (SO₂), and lead (Pb).

Air quality is described by the concentration of various pollutants in the atmosphere. Units of concentration are generally expressed in parts per million (ppm) or micrograms per cubic meter (µg/m³). The significance of a pollutant concentration is determined by comparing it to an appropriate ambient air quality standard. Depending on the pollutant and its associated effects, the standards may be short term, from one to twenty-four hours, or an annual average. In general, short-term standards represent the maximum acceptable concentrations that may be reached but not exceeded more than once per year. Annual standards are maximum acceptable concentrations that may be reached but not exceeded. Table 4.6-2 lists the NAAQS and the California Ambient Air Quality Standards (CAAQS or State standards). Potential health effects and primary sources of criteria pollutants are described below.

- **Nitrogen Dioxide.** Nitrogen dioxide is a reddish-brown gas that is a by-product of combustion processes. During combustion processes at high temperatures, nitrogen from the atmosphere and the fuels being burned combines with oxygen to form various oxides of nitrogen. Nitric oxide (NO) and nitrogen dioxide (NO₂) are the most significant air pollutants generally referred to as NO_x. Nitric oxide is a colorless and odorless gas that quickly converts to NO₂ and is easily measured in the atmosphere. Nitrogen dioxide also contributes to ground-level ozone formation. Adverse health effects associated with exposure to high levels of nitrogen dioxide include the risk of acute and chronic respiratory illness.
- **Ozone.** Ground-level ozone (ozone) is the principal component of smog. Ozone is not directly emitted into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving volatile organic compounds (VOCs) and nitrogen oxides (NO_x) in the presence of sunlight. VOCs and NO_x are known as precursor compounds for ozone. Ozone levels are highest during late spring through early summer when precursor emissions are high and meteorological conditions are favorable for the complex photochemical reactions to occur. Ozone is a regional air pollutant since it is not emitted directly by sources, but is formed downwind of sources of VOCs and NO_x emissions. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infection, impairs lung defense mechanisms, and leads to emphysema and chronic bronchitis. Ground-level ozone is also one of the most harmful pollutants for vegetation, and can damage many other common materials such as nylon, rubber, dyes, and paints
- **Carbon Monoxide.** Carbon monoxide (CO) is a non-reactive pollutant that is colorless and odorless, and is toxic in high concentrations. It is formed by the incomplete combustion of fuels. The largest source of CO emissions is motor vehicles. Wood stoves and fireplaces also contribute to high levels of CO, particularly in the wintertime. Unlike ozone and NO₂, CO is directly emitted to the

atmosphere without additional chemical conversion. The highest CO concentrations generally occur during the nighttime and early mornings in late fall and winter. CO levels are strongly influenced by meteorological factors such as wind speed and atmospheric stability. High CO concentrations can develop during periods of light winds combined with ground-level temperature inversions, typical of wintertime conditions during the evening through early morning hours. Adverse health effects of carbon monoxide include the impairment of oxygen transport in the bloodstream, increase of carboxyhemoglobin, aggravation of cardiovascular disease, impairment of central nervous system function, fatigue, headache, confusion, and dizziness. Exposure to carbon monoxide can be fatal in the case of very high concentrations.

- **Particulate Matter.** Respirable particulate matter, PM₁₀, and fine particulate matter, PM_{2.5}, consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM₁₀ and PM_{2.5} represent fractions of particulate matter that can be inhaled and cause adverse health effects. PM₁₀ and PM_{2.5} are a health concern, particularly at levels above the PM₁₀ federal and State ambient air quality standards. PM_{2.5} (including diesel exhaust particles) can have greater effects on health than PM₁₀ because these particles are so small they are able to penetrate to the deepest parts of the lungs. Scientific studies have identified links between fine particulate matter and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Children are more susceptible to the health risks of PM_{2.5} because their immune and respiratory systems are still developing. Very small particles of certain substances (e.g., sulfates and nitrates) can also cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health.

Several forms of particulate matter, in particular diesel particulate matter, have adverse health effects at concentrations well below the standards established for PM₁₀ or PM_{2.5}. The CARB identified diesel exhaust particulate matter as a toxic air contaminant based on its potential to cause cancer, premature death, and other health problems. Diesel exhaust also contributes to fine particulate matter (PM_{2.5}) air quality problems. Thus, diesel particulate matter presents both an air quality concern, as well as a health risk concern. As such, diesel particulate matter emissions require separate evaluation as a toxic air contaminant in order to assess potential health risks.

Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as mining and demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. In addition to health effects, particulates also can damage materials and reduce visibility. Dust comprised of large particles (diameter greater than 10 microns) settles out rapidly and is more easily filtered by human breathing passages. This dust is of concern more as a soiling nuisance rather than a health hazard.

- **Sulfur Dioxide.** Sulfur dioxide is a colorless gas with a strong odor and potential to damage materials. It is produced by the combustion of sulfur containing fuels such as oil and coal. Refineries, chemical plants, and pulp mills are the primary industrial sources of sulfur dioxide emissions. Adverse health effects associated with exposure to high levels of sulfur dioxide include aggravation of chronic obstruction lung disease and increased risk of acute and chronic respiratory illness.
- **Lead.** Lead occurs in the atmosphere as particulate matter. Historically, it was primarily emitted by gasoline-powered motor vehicles; however, the use of lead in fuel has been virtually eliminated. As a result of lead being eliminated from fuels, levels throughout the U.S. have dropped dramatically in the past 20 years. Dust from old lead paints represent very localized lead problems. Lead concentrations measured at ambient monitoring stations in California are well below the ambient standards.

Federal Requirements

Each state is divided into air basins based on topographic, geographic, and meteorological conditions. Each air basin is then assessed to determine if the area meets the NAAQS. Air basins or portions thereof have been classified as either “attainment” or “nonattainment” for each criteria air pollutant based on whether or not compliance with the standards have been achieved.

If an area does not meet the NAAQS over a set period of time, the EPA designates the area as a “nonattainment” area for that particular pollutant and sets deadlines for bringing the area into compliance with the standards. The EPA requires states that have areas that are not in compliance with the national standards to prepare and submit air quality plans showing how and when the standards will be met. These plans are referred to as State Implementation Plans (SIPs).

SIPs typically contain measures to reduce air pollution and specific strategies for achieving attainment. SIPs for nonattainment areas must require new sources to realize the “lowest achievable emission rate.” The Federal Act also contains specific measures relating to air pollution from cars, trucks, and other “mobile sources.” States have the authority to implement transportation control measures to reduce mobile source pollution. Except for California, states do not have the authority to prescribe the level of pollutants emitted directly from the tailpipe of mobile sources. The Federal Act also contains specific measures to be included in the SIP for areas that have not attained the ozone and particulate matter NAAQS.

Areas with monitored air pollutant concentrations lower than ambient air quality standards are designated as attainment areas on a pollutant-by-pollutant basis. Areas are designated as unclassified when data are insufficient to have a basis for determining the area’s attainment status. From a regulatory standpoint, unclassified areas are treated the same as an attainment area. Table 4.6-3 shows the attainment status of the project area with respect to the national and State air quality standards.

**Table 4.6-2
California and National Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards	National Standards ^(a)	
			Primary ^(b,c)	Secondary ^(b,d)
Ozone	8-hour	0.070 ppm (137 $\mu\text{g}/\text{m}^3$)	0.075 ppm (147 $\mu\text{g}/\text{m}^3$)	Same as primary
	1-hour	0.09 ppm (180 $\mu\text{g}/\text{m}^3$)	— ^(e)	Same as primary
Carbon monoxide	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	Annual	0.03 ppm (57 $\mu\text{g}/\text{m}^3$)	0.053 ppm (100 $\mu\text{g}/\text{m}^3$)	Same as primary
	1-hour	0.18 ppm (339 $\mu\text{g}/\text{m}^3$)	0.100 ppm ^(f) (188 $\mu\text{g}/\text{m}^3$) ^(f)	—
Sulfur dioxide	Annual	—	0.030 ppm (80 $\mu\text{g}/\text{m}^3$)	—
	24-hour	0.04 ppm (105 $\mu\text{g}/\text{m}^3$)	0.14 ppm (365 $\mu\text{g}/\text{m}^3$)	—
	3-hour	—	—	0.5 ppm (1300 $\mu\text{g}/\text{m}^3$)
	1-hour	0.25 ppm (655 $\mu\text{g}/\text{m}^3$)	75 ppb (196 $\mu\text{g}/\text{m}^3$) ^(h)	—
PM ₁₀	Annual	20 $\mu\text{g}/\text{m}^3$	— ^(g)	Same as primary
	24-hour	50 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$	Same as primary
PM _{2.5}	Annual	12 $\mu\text{g}/\text{m}^3$	12 $\mu\text{g}/\text{m}^3$	
	24-hour	—	35 $\mu\text{g}/\text{m}^3$ ^(g)	
Lead	Calendar quarter	—	1.5 $\mu\text{g}/\text{m}^3$	Same as primary
	30-day average	1.5 $\mu\text{g}/\text{m}^3$	—	—

Notes: ppm = parts per million
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter
 mg/m^3 = milligrams per cubic meter

(a) Standards, other than for ozone and those based on annual averages, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

(b) Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis.

(c) Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than 3 years after that state's implementation plan is approved by the EPA.

(d) Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

(e) The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005. A new 8-hour standard was established in May 2008.

(f) The form of the 1-hour NO₂ standard is the 3-year average of the 98th percentile of the daily maximum 1-hour average concentration.

(g) The annual PM₁₀ standard was revoked by U.S. EPA on September 21, 2006 and a new PM_{2.5} 24-hour standard was established.

(h) The U.S. EPA established a new 1-hour sulfur dioxide standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations.

**Table 4.6-3
Attainment Status of Mendocino County**

Pollutant	Federal	State
Ozone (O ₃) – 1 hour	No Federal Standard	Attainment
Ozone (O ₃) – 8 hour	Unclassified/Attainment	Attainment
Carbon Monoxide (CO)	Unclassified/Attainment	Attainment
Nitrogen Dioxide (NO ₂)	Unclassified/Attainment	Attainment
Sulfur Dioxide (SO ₂)	Attainment	Attainment
Respirable Particulates (PM ₁₀)	Unclassified	Nonattainment
Fine Particulate Matter (PM _{2.5})	Unclassified/Attainment	Attainment
Lead	No Designation	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility reducing Particles	No Federal Standard	Unclassified

Notes: The PM₁₀ status is considered unclassified as the data are incomplete and do not support a designation of attainment or nonattainment.

State Air Quality Regulations

California Clean Air Act

Air pollution in California is regulated under the provisions of the California (State Act). These statutes provide the basis for implementing the Federal Clean Air Act (Federal Act). The California Air Resources Board (CARB) is responsible for establishing and reviewing the State standards, compiling the California SIP, securing approval of that plan from the EPA, and identifying toxic air contaminants. CARB also regulates mobile emission sources in California, such as construction equipment, trucks, and automobiles. The State Act divides implementation responsibility between the CARB and local or regional agencies called air quality management districts or air pollution control districts.

The air districts are primarily responsible for implementing and enforcing federal and State regulations for stationary sources at industrial and commercial facilities within their jurisdictions and for preparing the regional air quality plans that are required under the Federal Clean Air Act and California Clean Air Act. These regional air quality plans prepared by districts throughout the state are compiled by the CARB to form the California SIP. The local air districts also have the responsibility and authority to adopt transportation control measures and emission reduction programs for indirect and area-wide emission sources.

Toxic Air Contaminants

Toxic Air Contaminants (TAC) are a large group of compounds known to cause short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects. TACs are considered separately from criteria pollutants in the regulatory process. Unlike criteria pollutants, there are no ambient air quality standards for evaluation of TACs. Instead, TAC emissions are generally evaluated based on the degree of health risk that could result from exposure to these pollutants.

In August 1998, CARB identified particulate emissions from diesel-fueled engines (diesel particulate matter, or DPM) as TACs. CARB subsequently developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (CARB, 2000). The document represents proposals to reduce diesel particulate emissions, with the goal of reducing emissions and associated health risks by 75 percent in 2010 and by 85 percent in 2020. The program aims to require the use of state-of-the-art catalyzed diesel particulate filters and ultra low sulfur diesel fuel on diesel-fueled engines.

CARB published the Air Quality and Land Use Handbook: A Community Health Perspective in 2005 (CARB, 2005). The primary goal in developing the handbook was to provide information that will help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution. The handbook highlights recent studies that have shown that public exposure to air pollution can be substantially elevated near freeways and certain other facilities (i.e., distribution centers, rail yards, chrome platers, etc.). However, the health risk is greatly reduced with distance. For that reason, CARB provided some general recommendations aimed at keeping appropriate distances between sources of air pollution and sensitive land uses, such as residences.

Local

Mendocino County Air Quality Management District (MCAQMD)

The MCAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized. MCAQMD has regulations to control fugitive dust during construction (Rule 430), visible emissions (Rule 410), particulates (Rule 420), and sulfur dioxide emissions (Rule 410).

The MCAQMD has adopted a Particulate Matter Attainment Plan⁸ which establishes control measures for emission of particulate matter. The implementation of MCAQMD Rule 1-430 would meet the recommended requirements outlined in the plan to reduce the PM emissions from the construction of projects. Rule 1-430 prohibits the handling, transportation, or open storage of materials, or the conduct of other activities in such a manner that allows or may allow unnecessary amounts of particulate matter to become

⁸ Particulate Matter Attainment Plan, Mendocino County Air Quality Management District of the California North Coast Air basin, January 2005

airborne. The following airborne dust control measures are required during all construction operations, the grading of roads, or the clearing of land:

- (a) Reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including, but not limited to, the following provisions:
 - (1) Covering open bodied trucks when used for transporting materials likely to give rise to airborne dust.
 - (2) Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials.
 - (3) The screening of all open-outdoor sandblasting and similar operations.
 - (4) The use of water or chemicals for the control of dust during the demolition of existing buildings or structures.

- (b) The following airborne dust control measures shall be required during all construction operations, the grading of roads, or the clearing of land
 - (1) All visibly dry disturbed soil road surfaces shall be watered to minimize fugitive dust emissions.
 - (2) All unpaved surfaces, unless otherwise treated with suitable chemicals or oils, shall have a posted speed limit of 10 miles per hour.
 - (3) Earth or other material that has been transported by trucking or earth moving equipment, erosion by water, or other means onto paved streets shall be promptly removed.
 - (4) Asphalt, oil, water or suitable chemicals shall be applied on materials stockpiles, and other surfaces that can give rise to airborne dusts.
 - (5) All earthmoving activities shall cease when sustained winds exceed 15 miles per hour.
 - (6) The operator shall take reasonable precautions to prevent the entry of unauthorized vehicles onto the site during non-work hours.
 - (7) The operator shall keep a daily log of activities to control fugitive dust.

MCAQMD has recommended that the significance thresholds for air contaminants and greenhouse gas emissions adopted by the Bay Area Air Quality Management District in its CEQA Guidelines (2010) be used for assessing projects in Mendocino County. MCAQMD made some revisions to these guidelines to reflect Mendocino County conditions. In late 2010, the Building Industry Association filed a lawsuit in Alameda Superior Court, challenging BAAQMD's CEQA Guidelines on the grounds that the agency did not comply with CEQA. In March of 2012, the Court ruled that the BAAQMD CEQA Guidelines constitute a project under CEQA and that the District must "set aside all approvals in [the resolution approving the Guidelines] and... not disseminate these or any new approvals of officially sanctioned air quality thresholds of significance until the District fully complies with CEQA." The claims made in the case concerned the CEQA impacts of adopting the thresholds. Those issues are not relevant to the scientific soundness of the BAAQMD's analysis of what level of emissions should be deemed significant. The City has determined that these thresholds are based on substantial evidence, as identified in Appendix D of the BAAQMD Guidelines, and has therefore incorporated them into this EIR.

City of Ukiah General Plan

The Open Space and Conservation Element of the City's General Plan contains goals, policies, and implementation measures aimed at maintaining good air quality in the community. Specific policies pertinent to the proposed project include:

Goal OC-31: Reverse present deterioration of Valley air quality to maintain agricultural viability and human health.

Policy OC-31.1: Concentrate development to encourage mass transit and limit automobile use.

Goal OC 37: Support programs to reduce PM10 emissions.

Policy OC-37.2: Work to reduce particulate emissions from construction activities.

C. Potential Impacts and Mitigation Measures

1. Criteria for Determining Impact Significance

The CEQA Guidelines provide that a project would have a significant impact on air quality if it would meet any of the following criteria:

1. Conflicts with or obstruct implementation of the applicable air quality plan.
2. Violates any ambient air quality standard or contributes substantially to an existing or projected air quality violation.
3. Results 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).
4. Exposes sensitive receptors to substantial pollutant concentrations.
5. Creates objectionable odors affecting a substantial number of people.

Criteria Pollutants

MCAQMD considers impacts to be significant if emissions of any pollutant exceed one half the level defined as significant for stationary sources in Regulation 1, Rule 130 of the District. Specifically, operational emissions would be considered potentially significant if they exceed the following:

- NO_x – 42 pounds per day;
- ROG – 180 pounds per day;
- CO – 125 tons per year;
- PM₁₀ – 82 pounds per day; and
- PM_{2.5} – 54 pounds per day.

Toxic Air Contaminants

The operation of any project with the potential to expose sensitive receptors to substantial levels of TACs (such as DPM) would be deemed to have a potentially significant impact. In June 2010 the MCAQMD adopted the updated Bay Area Air Quality Management District (BAAQMD) *CEQA Air Quality Guidelines* for the assessment of potential health risks (MCAQMD, 2010; see the preceding note about these guidelines). More specifically, proposed projects that have the potential to expose the public to TACs in excess of the following BAAQMD CEQA thresholds would be considered to have a significant air quality impact if they meet any of the following thresholds.

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million people for 70 year exposure;
- Ground-level concentrations of non-carcinogenic TACs would exceed a Hazard Index greater than 1 for the MEI; and/or
- Results in an incremental increase in localized annual average concentrations of PM_{2.5} exceeding 0.3 micrograms per cubic meter from either project construction or operations.

Under the new BAAQMD *CEQA Air Quality Guidelines*, a project would result in a significant TAC cumulative impact to air quality if it would:

- Result in potential to expose persons to substantial levels of TACs, such that the probability of contracting cancer for the Maximally Exposed Individual considering all existing sources within 1,000 feet of the project property line and project sources exceeds 100 in one million; or
- Result in an incremental increase in localized annual average concentrations of PM_{2.5} exceeding 0.8 micrograms per cubic meter.

2. Impact Analysis

Impact 4.6-A Project construction would not generate significant amounts of emissions of criteria pollutants, and consequently the project would be consistent with MCAQMD's Particulate Matter Attainment Plan. This is a less-than-significant impact.

Construction of the project has the potential to create air quality impacts through the use of heavy duty construction equipment and through vehicle trips generated by construction workers traveling to and from the project site. In addition, fugitive dust

emissions would result from site preparation and excavation activities. Mobile source emissions, primarily ROG and NOx, would result from the use of construction equipment. Fugitive dust emissions would result from a variety of site preparation activities and vehicle travel on paved and unpaved surfaces. Construction equipment exhaust also would include some PM₁₀ emissions.

PM₁₀ and PM_{2.5} emissions from construction would vary greatly from day to day depending on the level of activity, the equipment being operated, silt content of the soil, and the prevailing weather. Larger-diameter dust particles (i.e., greater than 30 microns) generally fall out of the atmosphere within several hundred feet of construction sites, and represent more of a soiling nuisance than a health hazard. Smaller-diameter particles (e.g., PM₁₀ and PM_{2.5}) are associated with adverse health effects and generally remain airborne until removed from the atmosphere by moisture. Therefore, unmitigated construction dust emissions could result in significant local effects.

The Road Construction Emission Model, Version 6.3.2 was used to calculate construction emissions. See the *Air Quality Assessment* in Appendix F for details regarding modeling and its results. As shown in Table 4.6-4 below, project construction would result in temporary and less-than-significant emissions of air pollutants. For fugitive dust emissions from construction, MCAQMD's significance threshold is "application of Best Management Practices". The project will be subject to MCAQMD Rules 1-410 (Visible Emissions) and 1-430 (Fugitive Dust Emissions), which prescribe measures that constitute Best Management Practices. As a result of compliance with these adopted regulations, impacts associated with construction-related dust emissions will be less than significant.

The Road Construction Emission Model, Version 6.3.2, indicates that construction emissions of ozone precursors (i.e., reactive organic gases and nitrogen oxides) and exhaust particulate matter would be well below emission thresholds proposed by the MCAQMD. Inputs to the model include model defaults for a 0.25-mile roadway segment and 1 acre of disturbed land. The PM₁₀ and PM_{2.5} emissions assume a standard reduction of 50% of fugitive dust from watering and associated dust control measures as required by MCAQMD Rules 1-410 and 1-430 to meet the recommended requirements outlined in the District's Particulate Matter Attainment Plan.⁹

Emissions from activities involved with project construction would be below MCAQMD's significance thresholds and therefore not cause a violation of an air quality standard. The project would be consistent with MCAQMD's plans and regulations. The project would be consistent with MCAQMD's Particulate Matter Attainment Plan. Accordingly, the impact would be less than significant.

⁹ If the standard particulate emission rates are not reduced as required by existing regulations, the emissions would be twice as much as shown in the table. For PM₁₀ the unmitigated emissions would be 3.4 pounds per day (2.0 lbs. fugitive dust and 1.4 pounds exhaust) and for PM_{2.5} it would be 1.7 lbs. per day (0.6 lbs. fugitive dust and 1.2 pounds exhaust).

**Table 4.6-4
Road Construction Emission Model Results**

Emission Estimates for Talmage Rd. Interchange						
Project Phases	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM₁₀ (lbs/day)	PM_{2.5} (lbs/day)	CO₂ (lbs/day)
Grubbing/Land Clearing	3.2	14.1	28.1	2.1	1.2	3,157.5
Grading/Excavation	3.6	17.2	29.6	2.4	1.5	3,568.7
Drainage/Utilities/Sub-Grade	3.2	13.9	25.5	2.3	1.4	2,928.2
Paving	1.9	7.8	11.4	1.0	0.9	1,147.8
Maximum (pounds/day)	3.6	17.2	29.6	2.4	1.5	3,568.7
Total (tons/construction project)	0.2	1.0	1.7	0.1	0.1	197.3
MCAQMD Threshold of Significance (pounds/day)	None	None	None	82	54	None

Source: Illingworth & Rodkin, Inc, 2014

Mitigation Measures

4.6-A.1 The project shall be constructed to include all requirements set forth in the MCAQMD Rules 1-410 and 4-130. All Best Management Practices shall be included in the construction contracts.

Impact Significance After Mitigation

By complying with MCAQMD’s existing regulations, the project particulate emissions will be reduced to a level acceptable to MCAQMD. The impact would be reduced to a less-than-significant level.

Impact 4.6-B Project operation would generate emissions of criteria air pollutants that could contribute to existing nonattainment conditions or degrade air quality. This is a potentially significant impact.

The project itself would not increase traffic or have a major effect on overall traffic speeds that would substantially affect local air pollutant emissions. The project would realign and remove portions of the off-ramp opposite the closest residences, which would move some of the traffic (i.e., emission sources) further from the residences. This would result in similar or slightly lower localized air pollutant concentrations. In reducing congestion and consequent vehicle idling, the project would also reduce emissions of criteria pollutants. However, in general, the emission of criteria pollutants would not change enough to be measurable using the modeling methodology for calculating emissions.

As described in the Traffic section (see Impact 4.5-C), the project would accommodate additional traffic. Table 4.6-5 shows the existing and future emission of criteria pollutants from vehicles passing through the project. For 2012, the No Build row shows the baseline emissions from existing traffic. Project-generated emissions do not exceed MCAQMD significance thresholds.

**Table 4.6-5
Criteria Pollutant Emissions – 2012 and 2032^(a)**

Year and Scenario	Pollutant				
	ROG	CO	NOx	PM10	PM2.5
2012					
• No Build	27	258	107	6	4
• Build	26	246	104	6	4
2032					
• No Build	12	85	6	5	2
• Build	11	78	6	5	2
Significance Threshold	180 lbs/day	127 tons/yr.	42 lbs/day	82 lbs/day	54 lbs/day

Source: Illingworth & Rodkin, Inc., 2014.

(a) Emissions calculated using CT-EMFAC Version 5.0.0 Modeling. See Appendix F.

However, for 2032 this modeling does not show the total emissions from the new trips that would travel through the project, since the Caltrans-approved model for transportation improvements only looks at the emissions of vehicles passing through the project area and compares the emissions from a “build” alternative and a “no build” alternative. The modeling shows the emissions of projected new traffic (i.e. 1.3 times the number of trips as currently occurs – see the Traffic section for more details on projected traffic growth) as it travels through the project site. Modeling of the emissions of criteria pollutants that was done for the Costco project assessed the emissions from the complete trips for people accessing the Costco site. After applying feasible mitigations, that modeling showed that vehicles traveling to and from the Costco project (i.e., emissions from the entire trip) would generate 181 pounds per day of NOx, 5,717 pounds per day of PM₁₀, and 571 pounds per day of PM_{2.5}.¹⁰ These emissions would exceed the MCAQMD significance thresholds for those three pollutants. According to the traffic analysis done as part of that Costco EIR, 42 percent of the new trips generated by that project would access Costco to and from Highway 101, and, therefore, would travel through the project. If the emissions reported in Costco were similarly adjusted and reduced by 58 percent (to exclude trips that accessed the Costco from streets other than those traversing the proposed project site) the emissions generated by vehicles using the proposed project would still exceed the significance thresholds for those three criteria pollutants. Accordingly, the complete trips accommodated by the proposed project would emit amounts of NOx, PM₁₀, and PM_{2.5} that would exceed adopted MCAQMD significance thresholds. This would be a potentially significant impact.

¹⁰ City of Ukiah Costco Wholesale Project Final EIR, 2014. See Table 3.2.5.

As noted in Table 4.6-3, Mendocino County is nonattainment for PM_{2.5} under State standards, and the trips accommodated by the project would contribute PM_{2.5} to the air basin. Such additional PM_{2.5} emissions could contribute to or cause potentially adverse health effects. Extensive research reviewed by CARB indicates that exposure to outdoor PM₁₀ and PM_{2.5} levels exceeding current ambient air quality standards is associated with increased risk of hospitalization for lung and heart-related respiratory illness, including emergency room visits for asthma. PM exposure is also associated with increased risk of premature deaths, especially in the elderly and people with pre-existing cardiopulmonary disease. In children, studies have shown associations between PM exposure and reduced lung function, increased respiratory symptoms, and illnesses. Besides reducing visibility, the acidic portion of PM (e.g., nitrates and sulfates) can harm crops, forests, aquatic, and other ecosystems. While these general correlations between pollutant emissions and health and environmental effects are known, it is not feasible to provide a detailed modeling analysis that would identify the precise link between the project-specific emissions of each pollutant and possible specific health effects on various classes of sensitive receptors.

Mitigation Measures

Project-related emissions during operation are from mobile sources that would use the project as part of their trip. Reduction in emissions from these sources is not under the control of the City or this project. Reduction in mobile emissions would result from improved engine efficiency or less polluting fuel sources. Such changes would be the result of State or federal direction. The City does not have the authority to require such changes. Accordingly, there is no mitigation that can feasibly be included as part of the proposed project that would reduce these emissions.

Impact Significance After Mitigation

Though it could be several years until the emissions reached a level deemed significant, the threshold exceedance would nevertheless occur at some point before 2032. The indirect impact would remain significant and unavoidable.

Impact 4.6-C Project operation would not expose sensitive receptors to substantial pollutant concentrations. This is a less-than-significant impact.

As stated in the previous impact discussion, by reducing congestion, the project would in the short term reduce emissions. By relocating the existing southbound offramp to westbound Talmage Road to the east, it could slightly reduce pollution concentrations at sensitive receptors to the west of the off-ramp and north of Munson Frontage Road.

Over time as projected new traffic uses the project, there would be additional emission of TACs. The BAAQMD has published TAC screening tables for roadways in each county of the Bay Area. These tables are used to predict screening TAC impacts from local traffic. The BAAQMD screening criteria for roadways does not require TAC analysis unless the roadway would have in excess of 10,000 average trips per day (ADT), and the roadways that are part of the project carry less than 10,000 ADT. Nevertheless, the

predicted TAC impacts associated with these tables are based on roadway orientation, distance from roadway, and average daily traffic (ADT). Assuming an ADT of 30,000 trips at a 10-foot distance from a north-south roadway in Sonoma County, the screening level cancer risk would be 8.3 excess lifetime cancer cases per year, the annual PM_{2.5} concentration would be 0.26 µg/m³, and the acute or chronic non-cancer risks would be less than 0.03. Since the closest receptors to the proposed project are over 50 feet from the closest sources of TAC, impacts would be less than reported for the Sonoma County example. The total excess cancer risk, PM_{2.5} concentration and non-cancer risks from the facility would remain below the community risk thresholds described previously, and therefore, the project would have a less-than-significant impact.

Impact 4.6-D Project construction and operation would not create objectionable odors affecting a substantial number of people. This is a less-than-significant impact.

Emissions from vehicles constructing or using the project would not be expected to create objectionable odors. Odors are typically problematic for projects like agriculture, wastewater treatment plants, food processing and rendering facilities, chemical plants, composting facilities, landfills, waste transfer stations, and dairies. For example, the Bay Area AQMD's May 2011 CEQA Guidelines note that: "Examples of land uses that have the potential to generate considerable odors include, but are not limited to: 1. Wastewater treatment plants; 2. Landfills; 3. Confined animal facilities; 4. Composting stations; 5. Food manufacturing plants; 6. Refineries; and 7. Chemical plants." (Section 7.0, Odor Impacts.) The impact would be less than significant.

3. Cumulative Impacts

Impact 4.6-E Project development, in conjunction with other projected development could result in cumulative air quality impacts. This is a potentially significant cumulative impact.

Impacts 4.6-B and 4.6-C presented above assess the cumulative impacts of year 2032 emissions from future projected traffic using project improvements. As stated there, the cumulative impact with regard to exposing sensitive receptors to substantial TACs would remain below the community risk thresholds, and therefore, the project would have a less-than-significant impact. Compliance with required BMPs would ensure compliance with MCAQMD's Particulate Matter Attainment Plan. It is not expected that cumulative emissions would result in an air quality standard violation. However, as shown on Table 4.6-5, the cumulative emissions would exceed MCAQMD significance thresholds for several pollutants. The project would indirectly make a cumulatively considerable contribution to this significant cumulative impact.

Mitigation Measures

As explained for Impact 4.6-B, the project-related emissions are from mobile sources that would use the project as part of their trip. Reduction in emissions from these sources is not under the control of the City or this project. Accordingly, there is no

mitigation that can be feasibly included as part of the proposed project that would reduce these emissions.

Impact Significance After Mitigation

No feasible mitigation measures have been identified to avoid or substantially lessen this impact. Accordingly, the indirect cumulatively considerable contribution to the cumulative impact would remain significant and unavoidable.

4.7 NOISE

This section is based on technical information contained in the *Talmage Road/Southbound U.S. 101 Ramp Realignment Project Draft Environmental Assessment, Ukiah* prepared by Illingworth & Rodkin, Inc., which is included as Appendix G of this EIR.

A. Setting

1. Background Information on Noise and Vibration

a. Fundamentals of Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of a sound could be caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A decibel (dB) is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 4.7-1.

There are several methods of characterizing sound. The most common in California is the A-weighted sound level or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 4.7-2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called Leq. The most common averaging period is hourly, but Leq can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from

sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night (because excessive noise interferes with the ability to sleep), 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level (CNEL) is a measure of the cumulative noise exposure in a community, with a five dB penalty added to evening (7:00 p.m. to 10:00 p.m.) and a ten dB addition to nocturnal (10:00 p.m. to 7:00 a.m.) noise levels. The Day-Night Average Sound Level (L_{dn}) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the day-time period.

b. Effects of Noise

The effects of noise on people can be placed into three categories:

- Subjective effects of annoyance, nuisance, dissatisfaction;
- Interference with activities such as speech, sleep, learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no agreed upon method to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise. Therefore, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so called "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived;
- Outside of the laboratory, a 3 dB change is considered a just-perceivable difference;
- A change in level of at least 5 dB is required before any noticeable change in human response would be expected; and
- A 10 dB change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion; hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

c. Fundamentals of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table 4.7-3 displays the reactions of people and the effects on buildings that continuous vibration levels produce.

The annoyance levels shown in Table 4.7-3 should be interpreted with care since vibration may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related ground-borne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess ground-borne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 in/sec PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage may threaten the integrity of the building, or can be classified as cosmetic only, such as minor cracking of building elements. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building.

**Table 4.7-1
Definitions of Acoustical Terms**

Term	Definitions
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
L ₀₁ , L ₁₀ , L ₅₀ , L ₉₀	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Equivalent Noise Level (L _{eq})	The average A-weighted noise level during the measurement period.
Community Noise Equivalent Level (CNEL)	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level (L _{dn})	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 p.m. and 7:00 a.m.
L _{max} , L _{min}	The maximum and minimum A-weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control*, Harris, 1998. Source: *Handbook of Acoustical Measurements and Noise Control*, Harris, 1998.

**Table 4.7-2
Typical Noise Levels in the Environment**

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night
	20 dBA	
		Silent broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), California Department of Transportation, November 2009.

**Table 4.7-3
Reaction of People and Damage to Buildings From Continuous or Frequent
Intermittent Vibration Levels**

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect.
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure.
0.08	Distinctly perceptible to strongly perceptible	Upper level of the vibration to which it is recommended that ruins and ancient monuments should be subjected.
0.1	Strongly perceptible	Virtually no risk of damage to normal buildings.
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential dwellings (such as to plastered walls or ceilings).
0.5	Severe - vibrations considered unpleasant	Threshold at which there is a risk of damage to newer residential structures.

Source: Transportation and Construction Vibration Guidance Manual, California Department of Transportation, September 2013.

2. Existing Noise Environment

Noise-sensitive land uses (single-family and multiple-family residences) are located west of U.S. 101 and north Talmage Road (see Figure 4.7-1). Ambient noise measurements were made during two noise surveys; the first occurred in January 2013, and the second occurred in November 2013. The two noise monitoring surveys were conducted to quantify ambient noise levels at representative noise-sensitive land uses located in the project vicinity.

January 2013 Noise Monitoring Survey

During the first noise monitoring survey, ambient noise levels were measured at four locations from Thursday, January 3, 2013 to Friday, January 4, 2013. Noise levels measured at long-term site LT-1 quantified the daily trend in noise levels at receptors north of Talmage Road. The three remaining noise measurements were short-term, observed noise measurements that were 10 to 20 minutes in duration. The January 2013 monitoring locations are shown on Figure 4.7-1. The full noise report in Appendix G of this EIR contains field notes and calibration records for noise monitoring equipment.

Long-term noise measurement LT-1 was located in front of 560 Munson Frontage Road just west of Airport Park Boulevard. This location was selected to quantify the daily trend in noise levels at residential land uses north of Talmage Road. Hourly average noise levels typically ranged from 62 to 68 dBA Leq during weekday daytime hours and from 53 to 62 dBA Leq during weekday nighttime hours. The calculated day-night average noise level at this location was 67 dBA Ldn. The daily distribution of noise levels at LT-1 and other locations is summarized in the full report in Appendix G of this EIR.

Short-term measurement ST-1 was made at the approximate setback of single-family residences nearest the Lorraine Street/Munson Frontage Road intersection. Site ST-2 was located at the approximate setback of single-family residences nearest the Henderson Lane/Munson Frontage Road intersection, and ST-3 was made at the easternmost terminus of Munson Frontage Road (see Figure 4.7-1). The results of the short-term noise measurements are presented in Table 4.7-4.

**Table 4.7-4
Summary of Short-Term Noise Measurements, January 2013 (dBA)**

Location and Time of Day	Lmax	L(1)	L(10)	L(50)	L(90)	Leq	Ldn¹
ST-1: Setback of single-family residences nearest the Lorraine Street/Munson Frontage Road intersection. (11:20 a.m. - 11:30 a.m.)	71	69	63	55	52	59	63
(11:30 a.m. - 11:40 a.m.)	74	71	64	56	52	60	
ST-2: Setback of single-family residences nearest the Henderson Lane/Munson Frontage Road intersection. (10:50 a.m.-11:00 a.m.)	72	66	61	56	54	58	60
(11:00 a.m.-11:10 a.m.)	68	65	60	56	53	57	
ST-3: Easternmost terminus of Munson Frontage Road. (12:40 p.m. - 12:50 p.m.)	72	69	64	61	58	62	63

Source: Illingworth & Rodkin, Inc., 2013

Notes: See Table 4.7-1 for definitions of acoustical terms.

¹L_{dn} approximated by correlating the data measured at the short-term site with the data measured at the corresponding long-term measurement site during concurrent time intervals. The difference in measured noise levels between the two sites is then applied to the L_{dn} calculated for the data measured at the long-term site in order to estimate the L_{dn} at the short-term site. For example, if the measured 10-minute L_{eq} at the long-term site is 65 dBA, with an L_{dn} of 70 dBA, and the measured 10-minute L_{eq} at the short-term site is 55 dBA during the same 10-minute time period, then the estimated L_{dn} at the short-term site would be 60 dBA.

November 2013 Noise Monitoring Survey

During the second noise monitoring survey, conducted between Wednesday, November 13, 2013 and Sunday, November 17, 2013, ambient noise levels were measured at six locations. The daily trends in noise levels were measured at three locations (LT-2, LT-3, and LT-4). The three remaining noise measurements were short-term, observed noise measurements conducted in 10-minute intervals over a period of 40 minutes at each site. The November 2013 monitoring locations are also shown on Figure 4.7-1. The full

report in Appendix G contains field notes and calibration records for noise monitoring equipment.

Long-term noise measurement LT-2 was made to document ambient noise levels at receptors west of U.S. 101 and north of the primary project area along Marlene Street. LT-2 was 115 feet from the center of U.S. 101 and 55 feet from the center of the U.S. 101 southbound off-ramp to Talmage Road. Hourly average noise levels typically ranged from 67 to 73 dBA Leq during weekday daytime hours and from 62 to 71 dBA Leq during weekday nighttime hours. The calculated day-night average noise level at this location was 74 dBA Ldn on Thursday and Friday. Ambient noise levels were lower on Saturday (72 dBA Ldn).

Noise measurement LT-3 documented ambient noise levels resulting from traffic along Talmage Road at receptors along Munson Frontage Road near Betty Street. Site LT-3 was 95 feet from the center of Talmage Road. Hourly average noise levels typically ranged from 61 to 69 dBA Leq during weekday daytime hours and from 52 to 65 dBA Leq during weekday nighttime hours. The calculated day-night average noise level at this location was 68 dBA Ldn on Thursday and 67 dBA Ldn on Friday. Ambient noise levels were 66 dBA Ldn on Saturday.

Long-term noise measurement LT-4 was made to document ambient noise levels near receptors along Munson Frontage Road adjacent to the U.S. 101 southbound off-ramp to Talmage Road. LT-4 was at the westernmost terminus of Munson Frontage Road, 70 feet from the center of the U.S. 101 southbound off-ramp to Talmage Road, and 100 feet from the center of Talmage Road. Hourly average noise levels typically ranged from 59 to 66 dBA Leq during weekday daytime hours and from 53 to 62 dBA Leq during weekday nighttime hours. The calculated day-night average noise level at this location was 67 dBA Ldn on Thursday and 66 dBA Ldn on Friday. Ambient noise levels were 65 dBA Ldn on Saturday.

Short-term measurement ST-4 was made at the easternmost terminus of Munson Frontage Road and repeated ST-3 from the January 2013 survey. ST-5 was made near residential receptors along Munson Frontage Road near LT-1 from the January 2013 noise survey. Site ST-6 was made in front of 744 Munson Frontage Road. The results of the November 2013 short-term noise measurements are presented in Table 4.7-5.

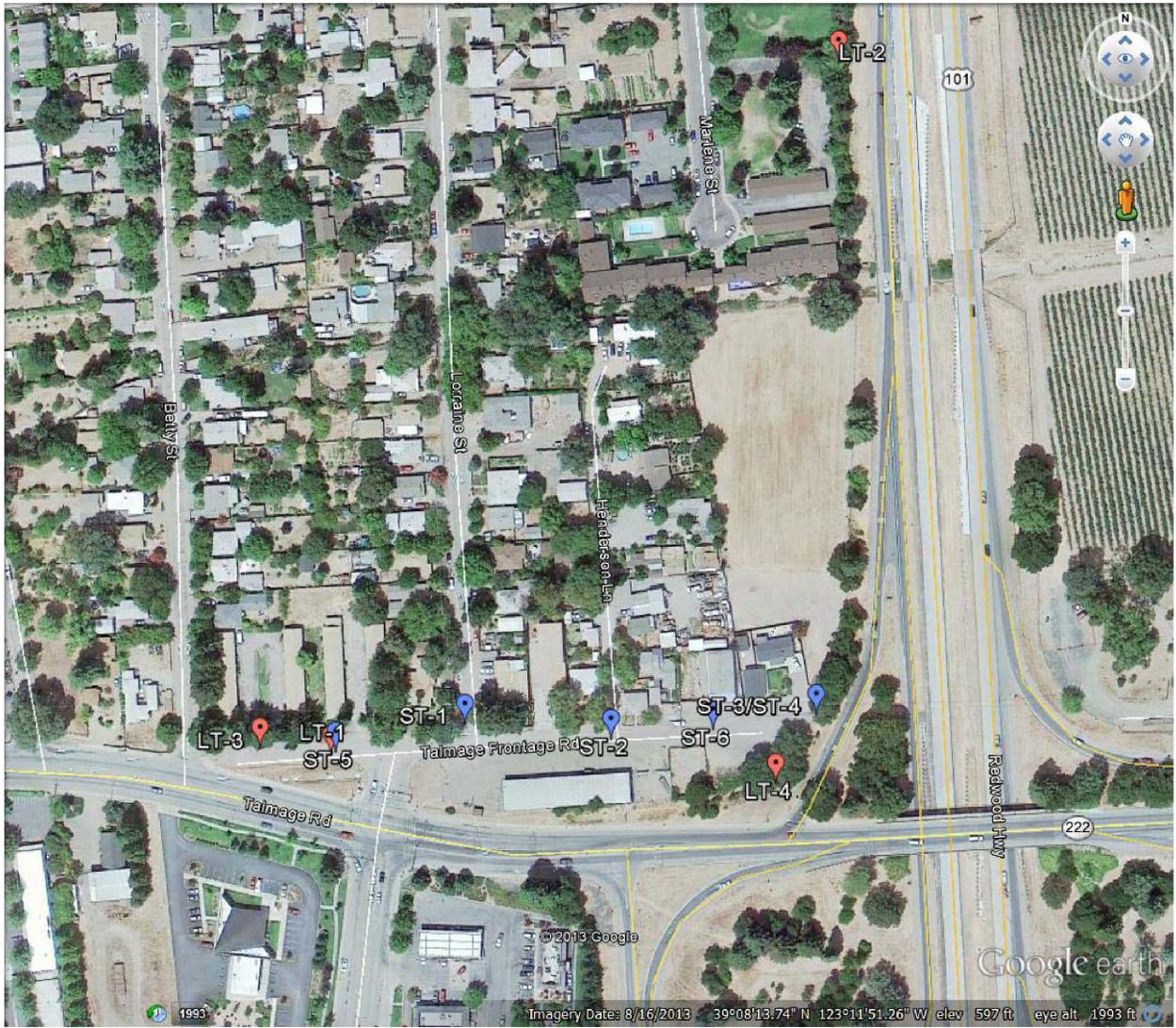


Figure 4.7-1
Aerial Photo Showing Measurement/Modeling Receptors

**Table 4.7-5
Summary of Short-Term Noise Measurements, November 2013 (dBA)**

Location and Time of Day	Lmax	L(1)	L(10)	L(50)	L(90)	Leq	Ldn¹
ST-4: Easternmost terminus of Munson Frontage Road. (10:10 a.m.-10:20 a.m.)	72	67	62	59	55	60	63-65
(10:20 a.m.-10:30 a.m.)	69	67	63	60	56	61	
(10:30 a.m.-10:40 a.m.)	71	68	63	59	56	61	
(10:40 a.m.-10:50 a.m.)	67	66	63	59	56	60	
ST-5: Between 560 and 570 Munson Frontage Road. (11:00 a.m.-11:10 a.m.)	78	74	66	61	56	63	64-66
(11:10 a.m.-11:20 a.m.)	79	76	67	61	57	65	
(11:20 a.m.-11:30 a.m.)	72	69	65	61	56	62	
(11:30 a.m.-11:40 a.m.)	75	72	66	60	57	63	
ST-6: Front of 744 Munson Frontage Road. (12:10 p.m.-12:20 p.m.)	66	64	59	56	53	57	62-64
(12:20 p.m.-12:30 p.m.)	66	64	60	57	55	58	
(12:30 p.m.-12:40 p.m.)	73	70	64	57	54	60	
(12:40 p.m.-12:50 p.m.)	74	71	61	57	53	60	

Source: Illingworth & Rodkin, Inc., 2013

Notes: See Table 4.7-1 for definitions of acoustical terms.

¹L_{dn} approximated by correlating the data measured at the short-term site with the data measured at the corresponding long-term measurement site during concurrent time intervals. The difference in measured noise levels between the two sites is then applied to the L_{dn} calculated for the data measured at the long-term site in order to estimate the L_{dn} at the short-term site. For example, if the measured 10-minute L_{eq} at the long-term site is 65 dBA, with an L_{dn} of 70 dBA, and the measured 10-minute L_{eq} at the short-term site is 55 dBA during the same 10-minute time period, then the estimated L_{dn} at the short-term site would be 60 dBA.

B. Regulatory Framework

State of California

The State has established regulatory criteria that are applicable to noise and vibration impact analysis. The criteria pertinent to this proposed project are checklist items in Appendix G of the CEQA Guidelines. These are provided subsequently under Section B, Potential Impacts and Mitigations. Because the project will partially be funded with federal funds, the noise analysis must follow federal guidelines as established in Federal Highway Administration regulation 23 CFR 772. This regulation provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. Under 23 CFR 772.7, projects are categorized as Type I, Type II or Type III projects. The Federal Highway Administration (FHWA) defines a Type I project as a proposed federal or federal-aid

highway project for the construction of a highway on a new location, the physical alteration of an existing highway where there is either a substantial horizontal or substantial vertical alteration, or other activities discussed in the definition of a Type I project. A Type II project involves construction of noise abatement on an existing highway with no changes to highway capacity or alignment. Type III projects do not require a noise analysis.

The improvements proposed by the project do not result in a new highway facility in a new location, a substantial horizontal or vertical alteration in the existing roadway alignments, or otherwise meet the definition of the Type I project. Therefore, the project does not require a Noise Study Report as defined by regulation 23 CFR 772.

City of Ukiah

Ukiah General Plan

The City of Ukiah General Plan contains policies pertinent to noise, including:

Goal NZ-1: Stabilize or reduce transportation noise impacts on adjacent residential.

Policy NZ-1.2: Residential zoned land shall be located as much as possible outside of the Discomfort Threshold Corridor (DTC) of existing transportation corridors.

Implementation Measure NZ-1.2(c): Expansion of existing roads must be designed using acceptable acoustical engineering features – examples include low landscaped berms, below-grade construction, and speed control – to minimize expansion of the existing DTC.

Policy NZ-1.3: Use appropriate construction techniques to reduce interior noise exposure for residences built within a DTC.

Goal NZ-3: Respect individuals' rights to avoid exposure to excessive or unwanted noise.

Policy NZ-3.1: Enforce existing noise regulations.

Ukiah City Code

The City does not have adopted maximum noise limits for construction. However, it limits construction activities to between the hours of 7:00 AM and 7:00 PM seven days a week. Section §6054, Construction of Buildings and Projects, states:

It shall be unlawful for any person within a residential zone, or within a radius of five hundred feet (500') therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist or any other construction type device (between the hours of 7:00 P.M. of one day and 7:00 A.M. of the next day) in such a manner that a reasonable person of normal

sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a permit therefore has been duly obtained from the Director of Public Works. No permit shall be required to perform emergency work as defined in §6046 of this Article.

Section §6048, Ambient Base Noise Level, establishes ambient noise levels for various zones. The project site is zoned “Streets,” and there is no ambient noise level provided for that zone.

C. Potential Impacts and Mitigations

1. Criteria Used to Determine Impact Significance

A project would typically have a significant impact if it meets any of the following criteria.

1. Exposes people to, or generates, noise levels in excess of the City General Plan or Municipal Code.
2. Causes a substantial permanent increase in ambient noise levels in the project vicinity above the noise levels existing without the project. A noise impact would be identified if the permanent noise level increase resulting from the project is 3 dBA L_{dn} or greater.¹¹
3. Causes a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. The City of Ukiah does not have adopted limits for construction noise other than to regulate the hours construction can occur. Commonly, a substantial temporary noise increase is defined as construction noise levels that exceeds 60 dBA L_{eq} and the ambient noise environment by at least 5 dBA L_{eq} for a period of more than one year.¹²

¹¹ In other words, this would be an increase in traffic noise exposure due to the project in excess of the Federal Interagency Commission on Noise (FICON) standards. Based on studies of test subject’s reactions to changes in environmental noise levels for similar noise sources, the FICON developed the following recommendations for thresholds to be used in assessing the significance of project-related noise level increases for transportation noise sources. Where background noise levels without the project would be less than 60 dB L_{dn} , a 5 dB or greater noise level increase due to the project would be considered significant. Where background noise levels without the project would be in the range of 60-65 dB L_{dn} , a 3 dB or greater noise level increase due to the project would be considered significant. Finally, where background noise levels without the project would exceed 65 dB L_{dn} , a 1.5 dB or greater noise level increase due to the project would be considered significant. This graduated scale is based on findings that people in quieter noise environments would tolerate larger increases in noise levels without adverse effects, whereas people already exposed to elevated noise levels exhibited adverse reactions to noise for smaller increases.

¹² The rationale of the standard is as follows. 1) The one-year duration defines what would be considered “temporary”. One-year is representative of the amount of time typically required to construct most projects and consistent with most people’s expectations for a project’s duration. In the noise consultants’ professional opinion, one-year is a reasonable amount of time for

4. Exposes people to or generates excessive groundborne vibration or ground-borne noise levels. A vibration impact would be identified if groundborne vibration levels would exceed 0.3 in/sec PPV (peak particle velocity) at adjacent buildings.¹³
5. Expose people residing or working in the project area to excessive noise levels; applies to projects located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project.
6. Exposes people residing or working in the project area to excessive noise levels; applies to projects within the vicinity of a private airstrip.

Due to the location and characteristics of the project, certain conditions are not associated with the project, and, therefore, are not considered potential impacts. These conditions are addressed briefly below and are not discussed further in this document.

Airport Noise

Construction of the project would not expose people to excessive noise from airports, so there would be no impact per Criteria 5 and 6.

2. Impact Analysis

Impact 4.7-A Noise generated by construction activities could result in a substantial temporary noise increase at adjacent land uses, which could be inconsistent with acceptable noise levels established in the City Code. This impact would be less than significant.

The construction of the project would generate noise and would temporarily increase noise levels at adjacent receptors to the west of the freeway. Noise impacts resulting from roadway construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receptors. The project engineers estimate that project construction would take about five months.

persons of normal sensitivity to be subject to daytime construction noise. 2) The 60 dBA Leq noise level threshold is derived from speech interference studies. Noise levels above 60 dBA Leq begin to result in speech interference and persons must raise their voices to be clearly heard. Exterior noise levels exceeding 60 dBA Leq can also result in activity interference indoors. 3) The construction noise must also be 5 dBA Leq above the ambient to be clearly noticeable. The noise level limits and construction duration, combined, are used to assess the potential for a substantial temporary noise increase.

¹³ The California Department of Transportation recommends a vibration limit of 0.3 in/sec, PPV for buildings that are found to be structurally sound but where structural damage is a major concern. This is the threshold at which there is a risk of cosmetic damage to older residential dwellings (such as cracks in plastered walls or ceilings).

At times, construction activities would occur immediately adjacent to residential receptors. The noise analysis assumed that a receptor outdoors would be as near as 50 feet from the construction noise source. The nearest buildings would be about 70 feet from this source. Work planned along the southbound U.S. 101 off-ramp to westbound Talmage Road would intermittently expose adjacent receptors to the highest noise levels caused by the project. The highest maximum noise levels generated by project construction would typically range from about 80 to 90 dBA L_{max} at a distance of 50 feet from the noise source (Table 4.7-6). Typical hourly average construction-generated noise levels are about 79 dBA to 88 dBA L_{eq} measured at a distance of 50 feet from the center of the site during busy construction periods when multiple pieces of construction equipment are operating in a given area (see Table 4.7-7).

**Table 4.7-6
Construction Equipment 50-Foot Noise Emission Levels**

Equipment Category	Lmax Level (dBA)^{1,2}	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor ³	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
Other equipment with engines larger than 5hp	85	Continuous

Source: National Cooperative Highway Research Program, 1999

Notes: ¹ Measured at 50 feet from the construction equipment, with a "slow" (1 sec.) time constant.

² Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.

³ Portable Air Compressor rated at 75 cfm or greater that operates at greater than 50 psi.

**Table 4.7-7
Typical Ranges of Noise Levels at 50 Feet from Construction Sites (dBA L_{eq})**

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

Source: United States Environmental Protection Agency, 1973, Legal Compilation on Noise, Vol. 1, p. 2-104.

Notes: I – All pertinent equipment present at site.
II – Minimum required equipment present at site.

Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of distance between the source and receptor. Shielding provided by buildings or terrain results in lower construction noise levels at more distant receptors. For example, residences on Munson Frontage Road that are 200 feet from the construction site would experience noise levels ranging from about 68 dBA to 78 dBA L_{max}, and typical hourly average construction-generated noise levels ranging from about 67 dBA to 76 dBA L_{eq}. Such noise levels would typically represent expected construction noise levels over the duration of the construction period.

Construction of the proposed improvements would result in temporary noise level increases at sensitive receptors along the project alignment during the allowable construction hours. Construction noise levels would exceed the 60 dBA L_{eq} noise threshold and exceed the ambient noise environment by at least 5 dBA L_{eq}. However, construction activities would generally move along the right-of-way as construction proceeds so that any one sensitive receptor would not be exposed to maximum construction noise for the entire construction period. Also, the overall construction duration would be limited to less than one year.

The Ukiah City Code establishes limits on the hours during the day that construction activity is permitted to occur, and proposed construction activities would generally occur during daytime hours only. This ensures that construction noise impacts would not occur during the sensitive nighttime period when it could result in potential sleep disturbance.

However, it is possible that to facilitate some of the work when ramp or road closures are necessary to construct improvements that Caltrans would allow nighttime work. At this time, the construction schedule has not been developed, so it is not possible to describe how many nights would be affected by construction noise. If the final construction schedule requires nighttime work and Caltrans approves that schedule, then there could be a potentially significant nighttime noise impact.

Mitigation Measures

4.7-A.1 If nighttime work is necessary, as required by the City Code, the applicant shall obtain a permit from the Director of Public Works. The permit shall include the following: 1) allow construction noise between 7 P.M. and 7: A.M. for construction activities that Caltrans states needs to be done at night; 2) construction equipment idling shall be limited to five (5) minutes; 3) if nighttime work is to exceed one week, then temporary noise baffles would be installed between the noise source and sensitive receptors; 4) if nighttime work is to exceed one week, then provide hotel vouchers to occupants of the nearest sensitive receptors; and 5) any other noise-reducing measures the City considers warranted.

Impact Significance After Mitigation

It is expected that nighttime construction would be infrequent. The construction noise permit can identify what specific measures will be taken to reduce noise once a final construction schedule is developed. Further, the sensitive receptors are located adjacent to a freeway where residents are not used to low ambient noise levels. While nighttime construction noise may be noticeable, it would be far less impacting than would occur in a quiet neighborhood. This fact plus the expected infrequency of nighttime work and the noise reduction and other measures that will be provided by the required permit would reduce the construction noise impact to a less-than-significant level.

Impact 4.7-B Project construction could cause groundborne vibrations or noise that would affect sensitive receptors. This impact would be less than significant.

Project construction would cause groundborne vibration that could adversely affect existing residences and other structures in the area. Appendix G of this EIR contains a detailed analysis of potential vibration impacts. That analysis concludes that project-caused vibrations would be below the vibration limit of 0.3 inches/second peak particle velocity (PPV) for buildings that are found to be structurally sound but where structural damage is a major concern. In areas where vibration would not be expected to cause architectural damage, vibration levels may still be perceptible. However, as with any type of construction, this would be anticipated and it would not be considered significant given the intermittent and short duration of the phases that have the highest potential of producing vibration (demolition and use of jackhammers and other high power tools). Accordingly, the vibration impact is considered to be less than significant.

Impact 4.7-C Project operations would result in a noise increase at adjacent land uses. This impact would be less than significant.

Once operational, all southbound vehicles exiting Highway 101 would travel south of the freeway overcrossing and intersect Talmage Road from the south. There would be no additional traffic traveling through the project site when the project becomes operational. Accordingly, there would be no noise from additional vehicles. The existing off-ramp to turn west on Talmage Road would be removed. Southbound vehicles exiting the freeway would use the other existing southbound off-ramp lane (that currently is used for traffic that is heading east on Talmage Road) that is adjacent to the freeway. Accordingly, these vehicles would travel a route that is further from the nearest sensitive receptors (the centerline of the southbound off-ramp to westbound Talmage Road is 80 feet from the nearest residence while the centerline of the southbound off-ramp to eastbound Talmage Road is 145 feet from that residence). By increasing the distance between the off-ramp and these residences, the project will reduce noise levels at these residences.

Indirectly, the project would accommodate additional vehicle trips through the project area. Appendix G of this EIR includes the modeling done to describe future traffic noise. The modeling was completed using the Federal Highway Administration's Traffic Noise Model (TNM). TNM calculates traffic noise levels based on the geometry of the site, which includes the positioning of travel lanes, receptors, barriers, terrain, ground type, buildings, etc. Peak hour traffic volume data were used for existing conditions (2012) and future conditions in 2032. Travel speeds were input into the model based on observations made during the noise monitoring surveys. The full report contains the TNM adjustment factors and input and output files. The traffic noise model was used to calculate existing and future noise level conditions, which are shown in Table 4.7-8.

As shown in Table 4.7-8, the traffic noise modeling results show indirect noise increases ranging from 0 to 2.2 dBA at receptors in the project vicinity. The noise increases are attributable to the proposed improvements and additional traffic volumes expected along the roadways. The increase in noise levels would not exceed the 3 dBA threshold of significance (as stated previously, a 3 dB change is considered a barely-perceivable difference outside of a laboratory). Accordingly, the indirect impact would be less than significant even with changes in the significance threshold as the background noise changes.

Appendix G also includes modeling to determine whether the project would extend the 60 dBA L_{dn} line (the "Discomfort Threshold Corridor") and whether that extension would cause a measureable noise increase at nearby sensitive receptors. The modeling shows that the DTC would be extended by 10 feet at one sensitive receptor (with no extension at the other nearest receptor). This 10-foot extension would not result in a measureable increase in noise at that receptor, and the impact would be less than significant. In 2032, the additional traffic using the project would extend the DTC by 40 feet at one receptor and 50 feet at the second receptor. This would result in an approximately one decibel increase in noise at these locations (with noise levels increasing from 59 dBA L_d to 60 dBA L_d). This change in noise level would not be measurable outside of a laboratory environment, and would not represent a perceptible

change in noise levels at nearby residential land uses. The future extension of the DTC would be minimal and not result in a significant noise increase within the area that would be included within the DTC by 2032.

In summary, the indirect noise caused by the project would be consistent with City General Plan noise policies, and the impact would be less than significant.

**Table 4.7-8
Traffic Noise Modeling Results (dBA, L_{dn})**

Receptor	Existing	Proposed Project	Noise Level Increase	Significant Increase?
LT-1	64.8	66.1	+1.3	No
ST-1	60.7	62.6	+1.9	No
ST-2	59.0	61.1	+2.1	No
ST-3/ST-4*	66.1	66.5	+0.4	No
LT-2	73.1	74.3	+1.2	No
LT-3	65.1	66.3	+1.2	No
LT-4	67.8	68.4	+0.6	No
ST-5	63.8	65.3	+1.5	No
ST-6	61.3	63.5	+2.2	No

Source: Illingworth & Rodkin, Inc., 2014

Notes: *ST-4 modeling results used to represent ST-3 and ST-4 measurement positions as ST-4 measurement yielded worst-case existing noise levels.

3. Cumulative Impacts

Impact 4.7-D Noise associated with the project in combination with other local development would not result in cumulative noise impacts.

The geographic area for noise impacts is the area containing projects close enough to the proposed project where both would be audible at the same time and where the noise could combine to result in a louder noise than caused by the project itself; or where the combined traffic would cause a cumulative noise impact.

With regard to construction noise, the nearest project that might be constructed at the same time as the proposed project is the Costco project. That project is located approximately 0.5 miles south of the project site. Construction noise generated at the Costco site would be expected to be more than 10 dBA below the construction noise generated by the proposed project because of attenuation with distance from the noise

source and shielding provided by intervening buildings. As such, construction noise generated at the Costco site would not measurably increase construction noise levels resulting from the proposed project. Given the distance between the project sites as well as the noise generated by freeway traffic, it is not expected that the two projects, even if they were constructed at the same time, would result in a cumulative noise impact.

The cumulative noise impact from other projects using the new project roadway system is presented in Table 4.7-8. As shown, the cumulative traffic would not result in a significant cumulative traffic noise impact.

4.8 VISUAL RESOURCES

A. Setting

1. Existing Views

The City is situated within the Ukiah Valley and includes background views to wooded or chaparral covered mountains. The project site is the Talmage Road/Highway 101 interchange, which is a General Plan-designated City “gateway” located in the southeastern portion of the City. According to the City’s General Plan, “gateway” is a term used to describe the first impression that a resident or visitor has of the Ukiah Valley. Per the City’s General Plan, Talmage Road is one of six main gateways identified as a “second gateway level,” which is an entrance into the City itself.

The project site is developed with roadways and street infrastructure. The surrounding area is densely developed with residential, heavy commercial, and retail commercial with agricultural land uses east of the freeway. The site contains a number of trees within the interchange loop, as well as shrubs and grasses.

2. View Points

The proposed project site can be seen from motorists traveling along U.S. 101 as well as by existing businesses north and south of the site and residences north of the site, Views of the project site are possible from single-family and multi-family residences located on the north side of the Munson Frontage Road (which is north of Talmage Road), including two single-family residences and a small multi-family complex located east of Betty Street. The southbound off-ramp to westbound Talmage Road is approximately 250 feet from the nearest residences at the ramp’s nearest point to the home. The portion of Talmage Road that would be improved is approximately 200 feet from the nearest residence. The portion of the southbound off-ramp south of the overcrossing is approximately 425 feet from the nearest residences at its nearest point to that residence. There is also one residence on the east side of the freeway, north of Talmage Road. It is approximately 450 feet from this residence to the nearest portion of the southbound off-ramp.

3. Sensitive Receptors

Sensitive receptors typically subject to the potential effects of visual changes resulting from construction of the proposed expansion consist of motorists traveling on local roadways and regional highways; and residents living adjacent to or in the vicinity of areas subject to construction activities associated with the proposed project. As described above, the only sensitive receptors potentially subject to the effects of visual change associated with the proposed project consist of five single-family units and two small multi-family development residences located north of Talmage Road and motorists traveling along U.S. 101 and Talmage Road. Other commercial and industrial land uses in the vicinity of the project are not considered sensitive receptors.

4. Scenic Roadways

US 101 through the Ukiah Valley is a local General Plan Scenic Corridor providing visitors and residents access to the beauty of the valley; however, no highways in Mendocino County have been officially designated as State scenic highways by either the County or the California Department of Transportation.

5. Scenic Vistas

The project site is located in a developed commercial, industrial, and residential area of Ukiah. No scenic vistas are located within or adjacent to the project site; however, in the distance to the east and west, hills provide background to area views.

6. Light and Glare

Existing sources of light and glare in the project area are mostly from outdoor lights illuminating Talmage Road, the freeway, and the parking lots surrounding existing commercial uses. Motorists traveling along the freeway and Talmage Road also contribute to nighttime sources of light and glare in the project area.

B. Regulatory Framework

City of Ukiah General Plan

The Community Design Element and the Open Space Element of the City's General Plan contain goals, policies, and implementation measures to preserve views and ensure that new development is compatible with the existing visual character of the community, including the following.

Policy CD-1.1: Encourage appropriate scale, materials, setbacks, and landscaping to enhance the Valley's beauty and historic fabric.

Goal CD-5: Preserve and enhance the scenic setting of the Ukiah Valley.

Policy CD-5.3: Maintain an attractive US 101 viewshed.

Goal CD-7: Improve the appearance of area gateways.

Goal OC-28: Visually enhance the Highway 101 corridor through the Planning Area.

Policy OC-28.1: Upgrade the visual appearance of the corridor along Highway 101.

C. Potential Impacts and Mitigations

1. Criteria Used to Determine Impact Significance

The impact analysis section considers the project's potential to result in significant impacts based on standards of significance derived from CEQA Guidelines Appendix G.

As such, the project would have a significant impact if it meets any of the following criteria.

1. Has a substantial adverse effect on a scenic vista.
2. Substantially damages scenic resources along a State scenic highway.
3. Substantially degrades the existing visual character or quality of the site and its surroundings.
4. Creates a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Due to the location and characteristics of the project, certain conditions are not associated with the project, and, therefore, are not considered potential impacts. These conditions are addressed briefly below and are not discussed further in this document.

Effects on Scenic Highways

As the proposed project is not in the vicinity of a designated State scenic highway, Criterion 2 (above) is not further analyzed in this EIR. However, the Ukiah General Plan recognized the need to “visually enhance” the U.S. 101 corridor. Therefore, highway travelers are considered sensitive receptors, and are considered in the analysis of potential degradation of visual character or quality, below.

2. Impact Analysis

Impact 4.8-A The project would not have a substantial adverse effect on a scenic vista. The impact would be less than significant.

The proposed interchange improvement project would modernize the southbound Highway 101 on and off-ramps. Elimination of the existing southbound off-ramp would result in additional planted area, and this would have a beneficial impact for travelers on Highway 101 as well residents of the single-family and multi-family residences located north of Talmage Road. The widening of the existing loop off-ramp would be visible only to drivers using the off-ramp and drivers traveling past the ramp on Highway 101 and Talmage Road. These drivers would see a widened off-ramp and a slight reduction in the vegetated area within the loop. This area is not visible from residences north of Talmage Road due to intervening buildings and/or topography. All the trees, which are the most important scenic resources in the interchange, would be retained. This widening would not block views of the hillsides to the west or east and would not substantially change the views at this “gateway.” Given the existing views of development at the interchange and the retention of trees and views to the western hills, the proposed project improvements would not substantially change views for motorists using the interchange or passing by on the freeway. The impact would be less than significant.

Impact 4.8-B The project would not substantially affect the existing visual character or quality of the site and its surrounding visual resources or views. This impact would be less than significant.

U.S. 101 is not a scenic highway, so there would be no impacts to a scenic highway. The project is bordered by commercial and industrial development. The project would make changes to roadways within existing freeway and road right-of-ways. Accordingly, the project would not “substantially degrade” the surrounding urban views. The erection of a traffic signal and signage would not alter any views of the western hills or substantially change existing views. The proposed improvements would therefore have a less-than-significant impact on aesthetic resources.

Impact 4.8-C The project may create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area. This impact would be less than significant.

The project site is currently lit with eight streetlights along Talmage Road. Two new light poles will be installed as part of the project. One of these new lights will be located at the new southbound off-ramp intersection with Talmage Road; it will replace an existing light located just to the northwest. The one additional light will be installed on the north side of Talmage Road just west of the intersection of the southbound off-ramp and Talmage Road (north of the Triple S Tire store). This is a preliminary lighting design. A photometric analysis is being done to show exactly where the light poles would be installed to meet Caltrans lighting requirements. The light poles are standard Caltrans Type 15 barrier rail mounted poles. The lights will be 200-watt equivalent LED lights. Given the existing lighting of the project area as well as the businesses in the Airport Industrial Park, the relocated lighting would not add a new source of substantial light nor glare to the area. The one new light source would be on the north side of Talmage Road and aimed to the south to light the street. It would not substantially change light exposure of residences located to the north of Munson Frontage Road. The impact would be less-than-significant.

3. Cumulative Impacts

Impact 4.8-D The project would not contribute to a significant cumulative visual impact.

The geographic area for the analysis of cumulative impacts for visual resources is the viewshed that includes the proposed project site. The projects assessed for potential cumulative impacts as listed in Section 5.2 are not within the same viewshed as the proposed project or do not substantially alter the character of the area. The nearest project is the approved Costco outlet, which is located approximately 0.5 miles to the south. This project is within a developed area on the Airport Business Park. The EIR prepared for that project found that project would not substantially alter the visual character of the area. The Costco site is not a designated scenic resource. The EIR for that project found that with mitigation, the lighting impacts would be less than significant. Further, the proposed interchange project would not significantly impact the daytime or nighttime visual character and quality of the area. When considered together with past,

present, pending and reasonably foreseeable development, there would be no cumulative impact to which the project would contribute.

4.9 UTILITIES AND PUBLIC SERVICES

A. Setting

1. Background Information on Public Service Providers

The Ukiah Fire Department (UFD), headquartered at 300 Seminary Avenue, provides fire protection and emergency response services to the City of Ukiah. Currently, the Ukiah Fire Department employs 15 full-time staff and 20 volunteer firefighters. The fourteen staff members who are full-time firefighters are also State-certified paramedics.

The City of Ukiah Police Department is located at 300 Seminary Way in Ukiah and currently employs 26 sworn Law Enforcement Officers, with 21 civilian positions. The police department provides public safety and emergency protection services within the City limits. The California Highway Patrol (CHP) also provides protection services.

The City of Ukiah provides water service for customers within the City limits. The City also operates and maintains its own wastewater treatment plant (WWTP) which provides service for the City of Ukiah and the Ukiah Valley Sanitation District (UVSD). The WWTP includes primary, secondary, and tertiary treatment facilities, as well as solids handling facilities. The plant has a treatment capacity of 20 mgd at peak wet weather flow and an average 2.8 mgd of dry weather flow.

The City and surrounding area are served by the Ukiah Unified School District (UUSD). The district is comprised of one preschool (Preschool Village), eight elementary schools (Calpella, Frank Zeek, Grace Hudson, Hopland, Nokomis, Oak Manor, Redwood Valley, and Yokayo), two middle schools (Eagle Peak and Pomolita), two high schools (South Valley and Ukiah), and one adult education and independent study center.

Solid waste collection and disposal service for residents and businesses within the City limits is provided by the City's franchise waste hauler, Ukiah Waste Solutions. Trash collected by the waste hauler is disposed of at the Transfer Station and then hauled to a permitted sanitary landfill in nearby Lake County (the Eastlake Sanitary Landfill). This landfill had capacity to accept 6,050,000 cubic yards of material in 2000. Over 40% is estimated remaining. Between 40,000 and 50,000 tons of solid waste have been annually disposed of here since 2000.

The City of Ukiah Community Services (Parks and Recreation) Department operates 13 neighborhood and community parks, the Grace Hudson Museum, the Civic Center, and various athletic fields. Additionally, the City maintains a system of trails and bikeways along City streets and within some recreational areas, as intended by the City of Ukiah Bicycle and Pedestrian Master Plan.

B. Regulatory Framework

City of Ukiah General Plan and Growth Management Program

The City of Ukiah General Plan contains the following goal applicable to the proposed project and this CEQA analysis:

Goal CF-3: Promote water conservation

C. Potential Impacts and Mitigations

1. Criteria Used to Determine Impact Significance

The impact analysis section considers the project's potential to result in significant impacts based on standards of significance derived from CEQA Guidelines Appendix G. As such, the project would have a significant impact if it meets any of the following criteria:

1. Results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire, police, schools, parks, or other public facilities.
2. Exceeds wastewater treatment requirements of the applicable Regional Water Quality Control Board.
3. Results in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments
4. Requires or results in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
5. Requires or results in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
6. There are insufficient water supplies available to serve the project from existing entitlement and resources.
7. Is served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
8. Does not comply with federal, State, and local statutes and regulations related to solid waste.
9. Increases the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
10. Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

2. *Impact Analysis*

Impact 4.9-A **The project would not require the construction of new or physically altered governmental facilities to provide adequate water, wastewater treatment, storm drains, park/recreational facilities, schools, fire/emergency medical response, or police services to the project. This would be a less-than-significant impact.**

The project is a roadway improvements project. It will not result in the construction of new buildings used by people for living, shopping, or working. It would not increase the number of residents in the City or the area. Accordingly, the project would not result in an increased demand for public services or utilities with the possible exception of solid waste facilities (which are discussed in Impact 4.9-B below). The following describes how there would be no project impact per the listed public services and utilities.

Wastewater Treatment

The project includes changes to an existing roadway system that will be used by motorists. There would be no requirement for sanitary facilities and, therefore, no impact on wastewater treatment and disposal systems. There would be no impact per Significance Criteria 1, 2, 3 and 4 as regards wastewater treatment facilities.

Water

The project includes changes to an existing roadway system that will be used by motorists. There would be no requirement for water to serve the project.

Storm Drains

As discussed under the previous Impact 4.2-C, the project would not require a new drainage system. See the discussion under Impact 4.2-C for the analysis of increased runoff and its effects on the storm drain system. Per that analysis, there would not be a need for new or expanded storm drain facilities. Therefore, there would be no impact per Significance Criteria 1 and 5 as regards storm drain facilities.

Parks and Recreational Facilities

The project includes changes to an existing roadway system that will be used by motorists. The project would not add housing or new residents. Accordingly, the project would not increase the use of or demand for parks or recreational facilities. Therefore, there would be no impact per Significance Criteria 1, 9, and 10 as regards parks and recreational facilities.

Fire Services

The project would not add new buildings that could in the future require fire or emergency medical response. One of the project objectives is to improve the traffic safety in the project area. In so doing, the project may decrease traffic accidents and the need for emergency medical response. The project would not require construction of new facilities needed to house fire equipment. Accordingly, the project would have either no impact or a beneficial impact on the Ukiah Fire Department. There would be no impact per Significance Criterion 1.

Police Services

The project does not include residences or businesses that would potentially require police response. There is currently police response to traffic infractions and accidents on the ramps and Talmage Road. The project would increase the capacity of the ramps and the road thereby reducing the potential traffic hazards. It is possible that the project would reduce the calls for police services. In any case, the continued patrolling of these roadways by the Ukiah Police Department and the California Highway Patrol would not be expected to increase to the level that new police buildings or facilities would be required. There would be at least a less-than-significant or, potentially, a beneficial impact per Significance Criterion 1.

Schools

The project would not increase the number of residences or jobs. Therefore, it would not result in new students, and no need for additional school facilities. There would be no impact per Significance Criterion 1.

Summary

The project would have no impact or a less-than-significant impact on the listed public service providers. The project would not result in the need for new or physically altered water, wastewater, storm drain, park, fire, police or education facilities. Therefore, no mitigation is required for this impact.

Impact 4.9-B The project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal, and would comply with federal, State, and local statutes and regulations related to solid waste.

Project construction would result in concrete and asphalt from demolition activities, vegetation from clearing and grubbing, and miscellaneous construction-generated debris. Granite Construction in Ukiah accepts asphalt and concrete without rebar for recycling. The Ukiah Transfer Station accepts other types of solid waste expected to be generated by the project. The solid waste would be transferred to the Eastlake Sanitary Landfill. The transfer station and Eastlake Sanitary Landfill both have capacity to dispose of this solid waste.

3. *Cumulative Impacts*

Impact 4.9-C **The project would not combine with other projects to make a significant cumulative impact to public services and utilities impacts associated with cumulative development in the project vicinity. This would be a less-than-significant impact.**

The geographic area for the analysis of cumulative impacts for public services and utilities is the Ukiah Valley. As described in the previous two impacts, the only public service or utility that the project would make a contribution to is disposal of solid waste. However, the project would only generate solid waste during a portion of the construction period. After construction, it would make no contribution to the solid waste facilities. The existing landfill has capacity to dispose of the project's one-time contribution as well as other solid waste generated by the other projects during the construction period. Accordingly, the cumulative impact on solid waste facilities would not be significant

4.10 HAZARDS AND HAZARDOUS MATERIALS

A. Setting

1. Hazardous Materials

Hazardous materials are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed of, or otherwise managed. Hazardous materials are grouped into the following four categories, based on their properties: toxic (causes human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), and reactive (causes explosions or generates toxic gases). Hazardous materials have been and are commonly used in industrial applications.

2. Fire Protection, Emergency Response, and Disaster Planning

The Ukiah Fire Department (UFD) provides fire protection, emergency medical response, hazardous materials incident response, and other emergency services to the City of Ukiah. Fire protection services and facilities are further described in Section 4.9, Public Services and Utilities.

The Mendocino County Office of Emergency Services (OES) is responsible for disaster planning, assistance, and coordination of all jurisdictions in the Mendocino Operational Area, which encompasses Mendocino County. In 2006 the County adopted the Mendocino Operational Area Emergency Operations Plan that describes how various departments and agencies would respond to the range of potential emergencies that might occur in the County.

Through the Redwood Empire Hazardous Incident Team (REHIT), a Joint Powers Agreement (JPA) provides hazardous materials team emergency response throughout the County. This multi-agency response team is capable of handling all levels of hazardous materials incidents on a 24-hour basis, and providing training for local fire departments. Members of REHIT include State-certified hazardous materials specialists and technicians. Other agencies with hazardous materials capabilities include the fire departments of the incorporated cities, the Ukiah Valley and Redwood Valley fire districts, and the California Department of Forestry and Fire Protection. Local law enforcement agencies and the California Highway Patrol can assist in the management of hazardous materials incidents.¹⁴

B. Regulatory Framework

Hazardous Materials

Numerous local, State, and federal laws and regulations regulate the use, storage, and disposal of hazardous materials, including management of contaminated soils and groundwater. In addition to the State regulations, the following agencies have some

¹⁴ *Draft EIR for the Ukiah Valley Area Plan (UVAP)*, Leonard Charles and Associates, 2011.

responsibility regarding hazardous materials. The U.S. Environmental Protection Agency (U.S. EPA), Cal-EPA, DTSC, RWQCB, and the Mendocino County Air Quality Management District (MCAQMD) are the major federal, State, and regional agencies that enforce these regulations. The main focus of the federal and California Occupational Safety and Health Administrations (OSHA) is to prevent work-related injuries and illnesses, including from exposures to hazardous materials. CAL FIRE implements fire safety regulations. In accordance with Chapter 6.11 of the California Health and Safety Code (§25404, et seq.), local regulatory agencies enforce many federal and State regulatory programs through the Certified Unified Program Agency (CUPA) program.

Emergency Response

California has developed an emergency response plan to coordinate emergency services provided by federal, State, and local governments and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES), which coordinates the responses of other agencies. The County Office of Emergency Services coordinates response to emergencies in the County. Emergency Response Team members respond and work with local fire and police agencies, emergency medical providers, California Highway Patrol (CHP), California Department of Fish and Wildlife (CDFW), and California Department of Transportation (Caltrans).

Mendocino County Airport Comprehensive Land Use Plan

The City of Ukiah owns and operates the 165-acre Ukiah Municipal Airport, located west of Highway 101 just south of State Route 222 in the southern part of Ukiah. The airport was built in 1942 for the military and has remained in the same location for over 70 years. According to the City's airport master plan report, the airport's runway (Runway 15-33) is 4,415 feet long and there are no plans for extension. Since 1986, the City has expanded the Airport Runway Protection Zone, placed an emphasis on commercial and industrial development around the airport, and improved airport facilities.

Through the Ukiah General Plan and the Ukiah Municipal Airport Master Plan, the City controls land use on the airport property and in the immediate area within the City limits, emphasizing airport operations as established by the City's Airport Commission. Through the Mendocino County Airport Comprehensive Land Use Plan (CLUP), the Mendocino County Airport Land Use Commission controls land use in the City and surrounding unincorporated area as it relates to airport safety and viability as well as community safety and compatibility. Both the CLUP and the City's Airport Master Plan contain a Land Use Compatibility Map that establishes land use compatibility criteria for five zones: Zone A (the Runway Protection Zone); Zone B1 (encompasses the runway approach and departure zones and adjacent to the runway); Zone B2 (the Extended Approach/Departure Zone); Zone C (the Common Air Traffic Pattern); and Zone D (Other Airport Environs).

The project site is within Zone C. The CLUP allows a maximum density of 15 units per acre and a non-residential maximum intensity of 150 people per acre in this zone.

C. Potential Impacts and Mitigation Measures

1. Criteria Used For Determining Impact Significance

The impact analysis section considers the project's potential to result in significant impacts based on standards of significance derived from CEQA Guidelines Appendix G. As such, the project would have a significant impact if it meets any of the following criteria:

1. Creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
2. Creates 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. Emits hazardous emissions or handles hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
4. Is located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.
5. For a project located within an airport land use plan referral area or, where such a plan has not been adopted, within two miles of a public airport or public use airport, or in the vicinity of a private airstrip, the project results in a safety hazard for people residing or working in the project area.
6. Impairs implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan.
7. Exposes people or structures to a significant risk of loss, injury, or death involving wildland fires.

Due to the characteristics of the project, certain conditions are not associated with the project, and, therefore, are not considered potential impacts. These conditions are addressed briefly below and are not discussed further in this document.

Emissions Near Schools

The project site is more than one-quarter mile from the nearest school (Grace Hudson Elementary School located at 251 Jefferson Lane). Consequently, there would be no impact per Significance Criterion 3.

Hazardous Materials Site

The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, there would be no impact per Significance Criterion 4.

Wildfire Risk

The project is located in a developed area of the City. The nearest wildfire fuels are on the western hills, which are over 1.25 miles distant. In addition the proposed project improvements are not flammable. Therefore, there would be no impact per Significance Criterion 7.

2. Impact Analysis

Impact 4.10-A The project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. This would be a less-than-significant impact.

Lead and petroleum hydrocarbons are the primary hazardous materials associated with vehicle use of a freeway. Construction-related soil disturbance could release hydrocarbons if they are present. A *Study of Potential Aerially Deposited Lead and Petroleum Hydrocarbons* was prepared for the project by GHD, Inc., dated January 30, 2013. Lead and petroleum hydrocarbons are the hazardous materials associated with vehicle use of the freeway). This study was incorporated by reference into the Initial Study for this project. The study involved taking soil samples from geotechnical borings along Talmage Road to determine if any petroleum hydrocarbons were present on the site. The study also involved soil samples from the unpaved section of the southbound U.S. Highway 101 off-ramp and cloverleaf to determine the levels of aerial-deposited lead on the site as a result of vehicle exhaust.

The study found no petroleum hydrocarbons from the soil samples taken from the site. Aerially-deposited lead was detected, but in concentrations well below the threshold of concern established by the State Department of Toxic and Substance Control. In fact the concentrations were low enough to meet the standard allowing reuse of the soils within the Caltrans right-of-way.

Additionally, hazardous materials would be used in varying quantities during project construction. Construction and maintenance activities would use hazardous materials such as fuels (gasoline and diesel), oils, and lubricants. Construction workers and the general public could be exposed to hazards and hazardous materials as a result of improper handling or use during construction activities. Construction workers could also be exposed to risks associated with accidental releases of hazardous materials, which could result in adverse health effects. The project contractors would be required to use, store, and transport hazardous materials in compliance with federal, State, and local regulations during project construction. Significant risks to the public or workers are not expected with the assumption that these products are used, transported and disposed of

properly in accordance with the handling instructions on their labels and in accordance with state and federal regulations. This would be a less-than-significant impact.

Impact 4.10-B During construction, the project could create a hazard to the public or the environment through upset or accident conditions involving the release of hazardous materials or hazardous wastes to the environment. This would be a less-than-significant impact.

As described under the previous impact, the *Study of Potential Aerially Deposited Lead and Petroleum Hydrocarbons* concluded that there would be a less-than-significant impact from potential escape of hazardous materials from contaminated soils at the project site. There is also the risk of spills or accidents releasing fuels, oils, and lubricants used for project construction. However, as stated in the previous impact, significant risks to the public or workers are not expected with the assumption that these products are used, transported and disposed of properly in accordance with the handling instructions on their labels and in accordance with state and federal regulations. This would be a less-than-significant impact.

Impact 4.10-C The project site is located within an airport land use plan but would not result in a safety hazard for people travelling in the project area. This would be a less-than-significant impact.

The project site is within Zone C of the Ukiah Municipal Airport. Residential and non-residential development are allowed in this zone. The project would not extend the height of the road or overcrossing, and, therefore, would not add a “hazard to flight.” In the future, more vehicles would use the project than currently do, but these vehicles also do not pose a hazard to flight. Therefore, the project is consistent with the Airport Comprehensive Land Use Plan, and the project would not significantly affect airport operations or air safety.

Impact 4.10-D The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. This would be a less-than-significant impact.

The project would increase the capacity of the roadway system thereby allowing traffic to move with less congestion. It would also improve the safety of the interchange operations. These roadway improvements would not interfere with evacuation or emergency response. In fact, the roadway improvements could be expected to benefit the community ability to evacuate as well as emergency response.

3. Cumulative Impacts

Impact 4.10-E The project would not contribute to a significant cumulative impact related to hazards or hazardous materials.

Hazardous materials impacts are generally site-specific and a roadway improvement project does not generally interact with cumulative projects to produce cumulative effects. During construction of the project it is anticipated that limited quantities of

miscellaneous hazardous substances would be brought onto the project site. However, these materials would be limited, isolated, and not interact with other cumulative projects. There is no evidence of contamination that could be affected by multiple development projects. Because compliance with State and federal regulations for the transport, use, or disposal of hazardous materials is required, as described above, the increase in the potential exposure to public health and safety hazards would not be significantly increased with cumulative development. Therefore, cumulative impacts related to hazards and hazardous wastes would be less than significant, and the project would not make a considerable contribution to a cumulative impact.

4.11 LAND USE AND PLANNING

In addition to addressing land use and planning issues, this section addresses corollary issues involving agriculture, forestry, population and housing.

A. Setting

1. Land Use Setting

Ukiah is the County seat and the largest city in the county. It is the commercial, governmental, and medical center of Ukiah Valley, which is populated by over 40,000 people. The City contains a blend of commercial, light industrial, and residential land uses. The principal older commercial areas are along State Street, School Street, E. Perkins Street, and Gobbi Street. There are major shopping centers on E. Perkins Street, N. Orchard Avenue, and in the Airport Industrial Park.

The area southwest of the project site contains the Airport Industrial Park (AIP), which includes the Redwood Business Park at the north end and the Airport Business Park at the south end. These business parks contain a mix of commercial retail stores, auto dealerships, restaurants, hotels, and offices. The approved Costco project is within the Airport Business Park.

Neither the project site nor the AIP contain designated Forestlands or Farmlands, and there is no agricultural use of these lands.

2. Population

The City of Ukiah's population was approximately 16,185 in January 2014 (DOF, 2011). The City had a population of 16,075 in 2010, having grown by 6.2 percent between 1990 and 2000 and by 3.7 percent between 2000 and 2010. The population increased by 1,476 residents, about 10 percent, over this 20-year period (U.S. Census Bureau, 1990, 2000 and 2011).

3. Housing

Approximately 333 housing units were added in Ukiah between 1990 and 2010, a 5.7 percent increase. Housing stock in the county increased by 312 housing units, or about 5.4 percent, between 1990 and 2000 and by 21 housing units, or about 0.3 percent, between 2000 and 2010. Overall, housing in Ukiah increased at a slightly slower rate than population between 1990 and 2010 – by about 5.7 percent, compared to a 10 percent increase in population.

B. Regulatory Framework

Land use within the City is guided by the City's General Plan. The City's General Plan contains goals, policies, and implementation measures explicitly directed at ensuring that new development does not cause environmental damage nor damage to the character of the community. Pertinent policies aimed at protecting specific resources

and community factors are listed in the Regulatory Framework section of each section of Chapter 4 of this EIR. Also, see the subsequent Table 4.11-1 for a review of project consistency with pertinent General Plan policies.

The General Plan text on page 32 of the Circulation section states “improvements to the interchange of U.S. 101 and Talmage are to be constructed as part of the Airport Industrial Park off Talmage Road, which is a short distance west of the existing interchange.”

C. Potential Impacts and Mitigations

1. Criteria Used to Determine Impact Significance

The impact analysis section considers the project’s potential to result in significant impacts based on standards of significance derived from CEQA Guidelines Appendix G. As such, the project would typically have a significant impact if it meets any of the following criteria:

1. Physically divides an established community.
2. Conflicts with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
3. Conflicts with existing zoning for agricultural use or a Williamson Act contract.
4. Converts Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.
5. Conflicts with existing zoning for, or causes rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).
6. Results in the loss of forest land or conversion of forest land to non-forest use.
7. Involves other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.
8. Displaces substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

Due to the location and characteristics of the project, certain conditions are not associated with the project, and, therefore, are not considered potential impacts. These conditions are addressed briefly below and are not discussed further in this document.

Physical Division of a Community

The project entails widening and realignment of some existing freeway ramps and Talmage Road. The freeway and Talmage Road currently divide neighborhoods from one another. However, the proposed project would not add any new barriers to movement or further divide the community. Therefore, there would be no impact.

Agricultural Use

The project site is part of the freeway or Talmage Road right-of-ways. It is not zoned nor used for agriculture, nor is it in a Williamson Act contract. The nearest commercial agricultural uses are vineyards north of Talmage Road and east of the freeway. The project would not conflict with agricultural zoning nor agricultural use. Therefore, there would be no impact.

Farmlands

The project site is not mapped by the State as having Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland). The nearest site containing Farmland is the vineyard east of the freeway described above. The project would not result in the loss of Farmland. Therefore, there would be no impact.

Forestlands

The project site is a freeway and road right-of-way. It is not zoned for forest land, Timberland, or Timberland Production. The nearest timber lands are located in the hills west of the City, approximately 1.25 miles distant. These timberlands are mixed evergreen forest. The project would not result in the loss of forest land, Timberland, or Timberland Production lands. Therefore, there would be no impact.

Displacement of People or Housing

The project site is within a freeway or street right-of-way. There are no living units within the right-of-way. Therefore, no living unit would be removed nor would any people be displaced. Therefore, there would be no impact.

2. Impact Analysis

Impact 4.11-A The proposed project would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

As noted in the Setting section, the General Plan specifically calls for improving this freeway interchange as part of developing the Airport Industrial Park, which began

development 20 years ago. Therefore, the project explicitly fulfills the recommendation of the General Plan. The project is also consistent with policies aimed at providing pedestrian and bicycle facilities, as described in Section 4.5, Traffic and Circulation. Table 4.11-1 below shows the project's consistency with applicable policies contained in the General Plan. The project appears consistent with policies pertinent to aesthetics, air quality, biological resources, cultural resources, geology, hazards/hazardous materials, hydrology, noise, traffic, and public services and utilities. In recommending improvement of this interchange as part of the General Plan, the City found the project consistent with the plan as a whole.

Consistency must ultimately be determined by the decision making body (the Planning Commission and/or City Council). Land use impacts, relating to inconsistency with adopted plans, are less than significant. Mitigation measures are included in this EIR that would reduce project impacts to a less-than-significant level. Even if there were a potential inconsistency with individual policies does not mean the project is inconsistent with the General Plan as a whole, particularly given that the project is specifically recommended in that plan. Whether or not, on balance, the project furthers the General Plan or hinders its implementation is determined by the decision-making body.

Improving operations of the interchange is also consistent with the recommendations included in the Route 101 Corridor Interchange Study (MCOG 2005). This study recommended that improvements be made to the interchange to address existing (2005) and future (2025) congestion, sight distance limitations, and queue spillover.

**Table 4.11-1
Project Consistency with General Plan Policies**

Policy	Consistency Summary
Open Space and Conservation	
OC-7.1 Maintain river bed and banks for flood control, water delivery, and fish habitat.	As described in Sections 4.1, Geology, 4.2, Hydrology, and 4.3, Biological Resources, the project would not significantly affect the river or the fishery.
OC-7.4 Take measures to lessen flooding resulting from runoff.	As discussed in Section 4.2, Hydrology, the project would not increase off-site flooding.
OC-7.5 Maintain the Russian River as a natural riparian corridor.	As described in Sections 4.1, Geology, 4.2, Hydrology, and 4.3, Biological Resources, the project would not significantly affect the river or riparian habitat.
OC-9.5 Establish water course protection areas with construction limits to provide protection for riparian vegetation and stream banks.	As discussed in Section 4.3, Biological Resources, there is no riparian habitat or stream banks on the project site.
OC-15.1 Protect water quality from adverse impacts of urban and agricultural runoff.	As described in Sections 4.1, Geology, 4.2 and Hydrology, the project would not significantly affect the river or the fishery.
OC-16.2 Manage stormwater flows to reduce the hazard of flooding from increased stormwater flows.	As discussed in Section 4.2, Hydrology, the project would not increase off-site flooding.
OC-25.1 Protect existing healthy mature trees to maintain shade and area attractiveness.	As discussed in Section 4.3, Biological Resources, the project would not result in the loss of trees.

Policy	Consistency Summary
OC-28.1 Upgrade the visual appearance of the corridor along Highway 101.	As discussed in Section 4.8, Visual Resources, the project would retain site trees and would not degrade the visual character of the project area.
OC-34.1 Submit all discretionary applications to the MCAQMD for review and comment.	The project and this EIR will be submitted to MCAQMD for review.
OC-37.2 Work to reduce particulate emissions from construction activities.	As discussed in Section 4.6, Air Quality, particulates generated during construction would be controlled.
Noise	
NZ-21.2 Residential zoned land shall be located as much as possible outside of the Discomfort Threshold Corridor (DTC) of existing transportation corridors	As discussed in Section 4.7, Noise, the project would not significantly extend the DTC or cause a significant noise increase within the existing or future DTC.
NZ-2.2 Ensure adequate analysis of noise impacts when reviewing project permits.	As discussed in Section 4.7, Noise, the project has undergone an extensive noise analysis.
NZ-3.1 Enforce existing noise regulations.	As discussed in Section 4.7, Noise, the project would be consistent with City noise regulations.
Safety	
SF-2.1 Provide development guidelines for building outside Alquist-Priolo Earthquake Fault Zones.	As discussed in Section 4.1, Geology, the project site is not within an Alquist-Priolo zone.
SF-2.2 Protect people and property from landslide danger.	As discussed in Section 4.1, Geology, the project is not subject to landsliding.
SF-3.1 Ensure adequate standards for development within the One Hundred Year Floodplain.	As discussed in Section 4.2, Hydrology, the project site is not within the 100-year floodplain.
Energy	
EG-1 Create land use patterns which facilitate the conservation of energy.	As discussed in Section 4.13, Energy, the project would decrease congestion and not cause a wasteful use of energy.
EG-4 Maximize on-site energy use, especially in new developments.	As discussed in Section 4.13, Energy, it is possible that on-site solar panels may provide some of the energy needed for the project.
EG-4.1 Incorporate solar energy considerations into the design, review and approval of all development.	As discussed in Section 4.13, Energy, it is possible that on-site solar panels may provide some of the energy needed for the project.
EG-5 Site design shall incorporate shade trees for energy conservation.	As discussed in Section 4.8, Visual Resources, landscaping is not needed to reduce visual impacts of this project. Existing landscaping trees will be retained.
Parks and Recreation	
PR-13.3 All new developments shall incorporate safe bicycle lanes in project street design	As discussed in Section 4.5 Traffic, the project enhances bicycle use of the project area.

Policy	Consistency Summary
<i>Historic and Archaeological Resources</i>	
HA-2.1 Support strong and effective historic and scenic preservation.	As described in Section 4.4, Cultural Resources, the project provides protection for archaeological resources. As described in Section 4.8, Visual Resources, the project would not adversely affect views, including views of historical resources.
HA-3 Maintain, protect, and enhance the area's heritage, including and not limited to its cultural, historical, spiritual, social, economic, architectural, agricultural, archaeological, and scenic heritage.	As described in Section 4.4, Cultural Resources, the project provides protection for archaeological resources. As described in Section 4.8, Visual Resources, the project would not adversely affect views, including views of historical resources.
HA-4.1 Consider the visual character of surrounding developments when reviewing discretionary project approvals.	As described in Section 4.8, Visual Resources, the project would not adversely affect views, including views of historical resources.
<i>Circulation</i>	
CT-1.3 All proposed development shall be reviewed for its immediate and cumulative transportation impacts.	As described in Section 4.5, Traffic, the traffic impacts, including cumulative impacts, of the project has been assessed in this EIR.
CT-2.1 Avoid premature widening by seeking other methods of increasing capacity on existing street or road section segments.	The project implements General Plan language that recommends improvement of the Talmage Interchange to provide capacity for buildout of the Airport Industrial Park.
CT-3.1 New development and Redevelopment projects shall specifically include plans for pedestrian facilities, bike lanes, bike racks, and transit stops.	The project includes bicycle and pedestrian-serving facilities.
CT-6.2 Promote the use of bicycles as a viable and attractive alternative to cars.	As discussed in Section 4.5, Traffic, the project improves bicycle safety in the project area.
CT-6.3 Provide bicycle lanes or paths along major streets.	As discussed in Section 4.5, Traffic, the project improves bicycle safety in the project area.
CT-7.1 Treat pedestrian access as an integral part of all road improvements within the City and within urbanized development areas of the County.	As discussed in Section 4.5, Traffic, the project improves pedestrian safety in the project area.
CT-16.4 Balance the need for new development with methods of accommodating increasing traffic.	By providing roadway capacity to serve projected growth, the project implements this policy.
CT-21.1: Work to improve the existing freeway interchanges.	The project implements this policy.

Policy	Consistency Summary
Community Design	
CD 1.1 Encourage appropriate scale, materials, setbacks, and landscaping to enhance the Valley's beauty and historic fabric.	As discussed in Section 4.8, Visual Resources, landscaping is not needed to reduce visual impacts of this project. Existing landscaping will be retained.
CD 5.3 Maintain an attractive US 101 viewshed.	As discussed in Section 4.8, Visual Resources, the project would not adversely affect views along the freeway.

3. Cumulative Impacts

Impact 4.11-B The proposed project, in combination with other developments in the vicinity, would not contribute to potential cumulative land use impacts.

The cumulative geographic context of the proposed project for land use and planning consideration consists of the City of Ukiah since cumulative effects must be considered in relationship to policies or regulations that apply citywide. As analyzed in this section, the proposed project would not result in a significant land use impact by physically dividing an established community or by conflicting with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. The other cumulative projects are also located in areas considered suitable by the general plan and zoning.

There would be no cumulative impacts associated with loss of farmlands, agricultural land uses, forest lands, or displacement of housing and people as none occur on the project site nor do they occur on the Costco site or the Hospital Support Building site (the two projects within the City as listed in Section 5.2 of this EIR).

Therefore, the proposed project would not contribute to any significant adverse cumulative land use impacts when considered together with past, present, pending and reasonably foreseeable future development.

4.12 GLOBAL CLIMATE CHANGE

A. Setting

1. *Greenhouse Gas Emissions and Global Climate Change*

Climate change is caused by greenhouse gases (GHGs) emitted into the atmosphere around the world from a variety of sources, including the combustion of fuel for energy and transportation, cement manufacturing, and refrigerant emissions. GHGs are those gases that have the ability to trap heat in the atmosphere, a process that is analogous to the way a greenhouse traps heat. GHGs may be emitted a result of human activities, as well as through natural processes. Over the last 150 years, GHGs have been accumulating in the earth's atmosphere at a much faster rate than has occurred historically. Increasing GHG concentrations in the atmosphere are leading to global climate change.

Carbon dioxide (CO₂) is the most important anthropogenic GHG because it comprises the majority of total GHG emissions released per year and it is very long-lived in the atmosphere. Other common GHGs include methane, nitrous oxides, and halocarbons (a group of gases containing fluorine, chlorine, or bromine). Typically, GHG emissions are expressed as carbon dioxide equivalents, or CO₂e, which is a means of weighting the global warming potential (GWP) of the different gases relative to the global warming effect of CO₂, which has a GWP value of one. Other GHGs, such as methane and nitrous oxide which are commonly found in the atmosphere, but at much lower concentrations, have GWPs of 23 and 296, respectively. In the United States, CO₂ emissions account for about 85 percent of the CO₂e emissions, followed by methane at about eight percent and nitrous oxide at about five percent.

An individual project cannot generate enough GHG emissions to effect a discernible change in global climate. However, the project may participate in this potential impact by its incremental contribution combined with the cumulative increase of all other sources of GHGs which, when taken together, may influence global climate change. Because these changes may have serious environmental consequences, this section will evaluate the potential for the project to have a significant effect upon California's environment as a result of its potential contribution to the enhanced greenhouse effect.

It is widely recognized that anthropogenic emissions of greenhouse gases and aerosols are contributing to changes in the global climate, and that such changes are having, and will increasingly have, adverse effects worldwide. The major changes are summarized below.

Sea Level Rise and Flooding. The California Climate Change Center predicts that sea level in California would rise between 10.9 to 71.6 centimeters (cm) (0.36 to 2.3 feet) above existing mean sea level (MSL) by 2099 as a result of climate change.

Rainfall. In the future, precipitation events are predicted to vary in terms of timing, intensity, and volume according to many climate change models. Both droughts and extreme storm events may occur with greater frequency. The effect on peak runoff is not

known because most climate change models have not used a temporal (or spatial) scale necessary to identify effects on peak flows, and existing precipitation/runoff models for assessing the effects of climate change do not yet adequately predict rainfall/runoff scenarios. Changes in rainfall and runoff could affect flows in surface water bodies, causing increased flooding and runoff to the storm drain system.

Snowfall. Most of the scientific models addressing climate change show that the primary effect on California's climate would be a reduced snow pack and a shift in stream-flow seasonality. A higher percentage of the winter precipitation in the mountains would likely fall as rain rather than as snow in some locations, reducing the overall snowpack. Further, as temperatures rise, snowmelt is expected to occur earlier in the year. As a result, peak runoff would likely come a month or so earlier. The end result of this would be that the State may not have sufficient surface storage to capture the resulting early runoff, which would be lost to the oceans rather than remain available for use in the State's water delivery systems.

Water Quality. Climate change could have adverse effects on water quality, which would in turn affect the beneficial uses (habitat, water supply, etc.) of surface water bodies and groundwater. The changes in precipitation discussed above could result in increased sedimentation, higher concentration of pollutants, higher dissolved oxygen levels, increased temperatures, and an increase in the amount of runoff constituents reaching surface water bodies.

Ecosystems and Biodiversity. Climate change is expected to have effects on diverse types of ecosystems, from alpine to deep sea habitat. As temperatures and precipitation change, seasonal shifts in vegetation will occur; this could affect the distribution of associated flora and fauna species. As the range of species shifts, habitat fragmentation could occur, with acute impacts on the distribution of certain sensitive species. Shifts in existing biomes could also make ecosystems vulnerable to invasive species encroachment. Wildfires, which are an important control mechanism in many ecosystems, may become more severe and more frequent, making it difficult for native plant species to repeatedly re-germinate. In general terms, climate change is expected to put a number of stressors on ecosystems, with potentially catastrophic effects on biodiversity.

Human Health Impacts. Climate change may increase the risk of vector-borne infectious diseases, particularly those found in tropical areas and spread by insects such as malaria, dengue fever, yellow fever, and encephalitis. Cholera, which is associated with algal blooms, could also increase. While these health impacts would largely affect tropical areas in other parts of the world, effects would also be felt in California. Warming of the atmosphere is expected to increase smog and particulate pollution, which could adversely affect individuals with heart and respiratory problems, such as asthma. Extreme heat events are also expected to occur with more frequency, and could adversely affect the elderly, children, and the homeless. Finally, the water supply impacts and seasonal temperature variations expected as a result of climate change could affect the viability of existing agricultural operations, making the food supply more vulnerable.

B. Regulatory Framework

Federal

The United States participates in the United Nations Framework Convention on Climate Change (UNICCO). While the United States signed the Kyoto Protocol, which would have required reductions in GHGs, Congress never ratified the protocol. The federal government chose voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science. In 2002, the U.S. announced a strategy to reduce the greenhouse gas intensity of the American economy by 18 percent over the 10-year period from 2002 to 2012.

In 2007, the EPA identified CO₂ as an air pollutant as defined under the Clean Air Act, and that the EPA has the authority to regulate emissions of GHGs. In 2009, the EPA published their “Proposed Endangerment and Cause or Contribution Findings for Greenhouse Gases under the CAVA”. This finding is based on the Federal Clean Air Act, which states that the Administrator (of the EPA) should regulate and develop standards for emissions of air pollution from any class or classes of new motor vehicles or new motor vehicle engines, which in its judgment cause, or contribute to, air pollution that may reasonably be anticipated to endanger public health or welfare.

Since the EPA’s endangerment finding, the agency has promulgated several greenhouse gas regulations, which for the most part, apply to larger facilities that emit large amounts of CO₂ or its equivalent in other regulated GHGs. These regulations include the Federal Mandatory Reporting of Greenhouse Gases (Mandatory Reporting Rule) and the Tailoring Rule. In 2009 the EPA established the Mandatory Reporting Rule, which requires reporting of CO₂ and other GHG emissions. This rule applies to particular facility types, some of which are required to report based on the quantity of GHGs that they emit, while others are required to report regardless of the quantity of their GHG emissions. Stationary fuel combustion sources are subject to the rule if the aggregate maximum heat input capacity of all units is 30 million British thermal units per hour (MBTA/hr) or more and the combined GHG emissions equals 25,000 metric tons of CO₂e or more per year.

In May 2010, the EPA issued a final rule that addressed greenhouse gas emissions from stationary sources and requirements under Title V and PSD permitting programs. This rule is known as the PSD and Title V Greenhouse Gas Tailoring Rule, or Tailoring Rule. After July 1, 2011, new sources with GHG emissions of at least 100,000 tons per year have been subject to PSD permitting requirements. Additionally, new and existing sources with GHG emissions of at least 100,000 tons per year are subject to Title V permitting requirements.

State

In response to the increasing body of evidence that GHGs will continue to affect the global climate, the State has enacted key legislation and implemented regulations in an effort to reduce the State’s contribution to climate change.

California Assembly Bill 1493 (Paley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB apply to 2009 and later model year vehicles. CARB estimates that the regulation will reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030.

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. The California Climate Action Team's (CAT) Report to the Governor contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met.

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing GHGs in California. As defined under AB 32, GHGs include: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. AB 32 requires the California Air Resources Board, the State agency charged with regulating statewide air quality, to adopt rules and regulations that would achieve greenhouse gas emissions equivalent to statewide levels in 1990 by 2020. CARB approved the Climate Change Scoping Plan (Scoping Plan) in December 2008. The Scoping Plan outlines actions to obtain the goal set out in AB 32 of reducing emissions to 1990 levels by 2020. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health". The measures in the Scoping Plan went into effect in 2012. The Scoping Plan's recommendations for reducing greenhouse gas emissions to 1990 levels by 2020 establishing emission reduction measures, including a cap-and-trade program linked to Western Climate Initiative partner jurisdictions, green building strategies, recycling and waste-related measures, and Voluntary Early Actions and Reductions. CARB also developed and approved a 1990 State GHG emissions inventory of 427 million metric tons of carbon dioxide equivalent (McCon_e) in December 2007. Therefore, by 2020, GHG emissions in California are required to be at or below 427 McCon_e.

AB 32 also required development of a mandatory reporting rule for major sources of GHGs. The CARB reporting rule (sections 95100 – 95313 of Title 17, California Code of Regulations) became effective in January 2009. The rule requires reporting GHG emissions for certain specific industrial sectors and for other facilities that emit greater than 25,000 metric tons per year of CO₂e (MT CO₂e/year) from stationary combustion sources.

Executive Order S-01-07 was enacted by the Governor on January 18, 2007. The order mandates a two pronged approach to achieving lower fuel emissions. First, it states that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, then from that baseline a Low Carbon Fuel Standard for transportation fuels shall be established for California.

California Senate Bill 97 (SB-97), signed by the governor in August 2007, acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research to prepare, develop, and transmit to the California Resources Agency by July 1, 2009 guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA. The California Resources Agency was required to certify and adopt these guidelines by January 1, 2010. Amendments to the CEQA Guidelines pursuant to SB-97 were adopted in March 2010.

California Senate Bill 375 passed on August 30, 2008 and was signed by the Governor on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of greenhouse gas emissions, which emits over 40 percent of the total greenhouse gas emissions in California. SB 375 states that "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing greenhouse gas emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

In January 2010, the State Building Standards Commission adopted the State Green Building Standards Code (CAL Green). CAL Green supplements the California Building Standards Code (Title 24) which became effective on January 1, 2011 requires all new buildings in the state to incorporate energy saving features. New standards include:

- Water efficiency: New buildings must demonstrate at least a 20 percent reduction in water use over typical baseline conditions.
- Construction waste: At least 50 percent of construction waste must be recycled, reused, or otherwise diverted from landfilling.
- Interior finishes: Interior finishes such as paints, carpet, vinyl flooring, particle board, and other similar materials must be low-pollutant emitting.
- Landscape irrigation: In nonresidential buildings, separate water meters must be provided for a building's indoor and outdoor water use. Large landscape projects must use moisture-sensing irrigation systems to limit unnecessary watering.

In November, 2012, the State conducted its initial auction of carbon credits as part of its cap-and-trade program. This program is a key method the State plans to use to limit GHG emissions in the future.

Caltrans has adopted its own Climate Action Program (Caltrans, 2006). The Department's Climate Action Program promotes clean and energy efficient transportation and provides guidance for mainstreaming energy and climate change issues into its business operations. The framework is provided by the Caltrans Director's Policy (DP) 23 - Energy Efficiency and Conservation – and is intended to implement a comprehensive, long-term departmental energy policy, interagency collaboration, and a coordinated effort in energy and climate policy, planning, and implementation. The Department's overall approach to lowering fuel consumption and CO₂ from transportation is twofold: 1) reducing congestion and improving efficiency of transportation systems through smart land use, operational improvements, and

Intelligent Transportation Systems, and 2) institutionalizing energy efficiency and GHG emission reduction measures and technology into planning, project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment.

Local Plans and Policies

City of Ukiah

The City has contracted with a consulting firm to prepare a Greenhouse Gas Inventory and Climate Action Plan. The plan is expected to be completed in 2014. The City has also adopted a Green Building Program that includes elements to maximize energy efficiency. However, the recommendations in this program are voluntary and not required.

Mendocino County Air Quality Management District

MCAQMD has not officially adopted any significance thresholds for GHG emissions. However, in 2010 MCAQMD recommended that the significance thresholds included in the Bay Area AQMD's CEQA Guidelines that were deemed by the District to be pertinent to Mendocino County be used when conducting CEQA reviews.

Methods of Assessing Global Climate Change

Amendments to the CEQA Guidelines, pursuant to SB-97 include a new section 15064.4 designed to assist lead agencies in determining the significance of the impacts of GHG emissions. Section 15064.4 encourages lead agencies to quantify the greenhouse gas emissions of proposed projects where possible and recommends lead agencies consider several factors in determining significance: (1) the extent to which the project may increase or reduce GHG emissions compared with the existing environment, (2) whether the emissions exceed a threshold of significance that applies to the project, and (3) the extent to which the project complies with requirements adopted to implement statewide, regional, or local plans for reduction of GHG emissions.

There is currently no City Greenhouse Gas Reduction Plan for reduction of emissions that can be used in assessing project impacts. In June 2010, BAAQMD adopted updated draft California Environmental Quality Act (CEQA) Air Quality Guidelines, finalized them in May 2011, and revised them in 2012 (BAAQMD, 2012). These guidelines superseded previously adopted agency air quality guidelines and were intended to advise lead agencies on how to evaluate potential air quality impacts, including greenhouse gas impacts (see the earlier discussion in Section 4.6, Air Quality about the legal standing of these guidelines). The new BAAQMD CEQA guidelines introduced numerical thresholds of significance for determining if land use plans and land development projects would contribute a significant amount of greenhouse gases to the atmosphere. The recommended thresholds included both a total per-project limit of 1,100 metric tons of CO₂e per year as well as an efficiency-based threshold of 4.6 metric tons of CO₂e per year per service population. Projects would have the option of addressing either of the thresholds.

Baseline Emissions

At this time, no formal current or historical inventory of GHG emissions exists for the City, the Ukiah Valley, or Mendocino County. However, in preparing the Ukiah Valley Area Plan EIR, the County estimated that the UVAP plan area emissions at buildout (including City of Ukiah emissions) in 2007 were 353,177 tons of CO₂e (Carbon Dioxide Equivalent).¹⁵

C. Potential Impacts and Mitigations

1. Criteria Used to Determine Impact Significance

The impact analysis section considers the project's potential to result in significant impacts based on standards of significance derived from CEQA Guidelines Appendix G. As such, the project's global climate change impact is considered significant if it meets the following criteria:

1. Generates greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflicts with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Per the MCAQMD recommendations, a project would have a significant effect if it would:

1. For stationary sources, emit over 10,000 MT (metric tons) of carbon dioxide equivalent per year (CO₂e/yr).
2. For other projects, emit over 1,100 MT of CO₂e/yr or 4.4 MT of CO₂e/SP/yr (SP is the Service Population, which is the total of the new residents and employees generated by the project).

2. Cumulative Impacts

By definition, impacts to climate change are cumulative impacts since no single project by itself can emit pollutants that would change the global climate.

Impact 4.12-A Construction and use of the project would increase the emission of greenhouse gases. This impact would be potentially significant.

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions

¹⁵ The Ukiah Valley Area Plan Program EIR (Leonard Charles and Associates, 2011) addressed the area plan that is intended to guide development in the unincorporated portion of the Ukiah Valley. The EIR assessed the impacts from buildout of the valley, including buildout of the City of Ukiah.

include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement life, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be reduced to some degree by longer intervals between maintenance and rehabilitation events.

As reported in the appended air quality study (see Appendix F of this EIR) and shown on Table 4.6-4 in the Air Quality section, the total emissions from the construction of the project would be 197.3 MT of CO₂e. With respect to construction-related GHG impacts, BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, as recommended in BAAQMD's CEQA Air Quality Guidelines, this EIR has quantified and disclosed GHG emissions that would occur during construction, and made a determination on the significance of these construction-generated GHG emission impacts in relation to meeting AB 32 GHG reduction goals, as required by the Public Resources Code, Section 21082.2.

The project also would accommodate additional trips through the project area. These vehicle trips emits GHG. Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.

One of the main strategies in Caltrans' Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 mph) and speeds over 55 mph; the most severe emissions occur from 0-25 mph. To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors, GHG emissions, particularly CO₂, may be reduced.

As discussed further in Appendix G of this EIR, baseline (2012) CO₂ emissions for traffic traveling through the project site are 5,838 MT of CO₂e/year. Based on the calculations from the Road Construction Emissions Model (see Appendix F of this EIR), the maximum daily CO₂ from construction would be 3,569 pounds/day, and the total emissions from construction would be 197.3 metric tons of CO₂. Operationally, vehicles using the project site in the baseline year of 2012 generated 5,838 MT of CO₂e. By 2032, emissions would be 5,490 MT of CO₂e. This compares to 5,942 MT of CO₂e if proposed interchange improvements are not made and annual trips increase, as Caltrans projects.

The cumulative traffic increase would emit CO₂ at a level that exceeds the significance threshold of 1,100 MT of CO₂e/yr. Accordingly, the impact on climate change would be significant.

Mitigation Measures

Project-related emissions are from mobile sources that would use the project as part of their trip. Reduction in emissions from these sources is not under the control of the City or this project. Accordingly, there are no project-specific mitigation measures that could feasibly be included in this project that would address these indirect emissions.

Impact Significance After Mitigation

The traffic would increase as the area is projected to grow. This growth to the year 2032 and the corresponding Caltrans-projected growth in trips would result in emissions of CO₂ with or without the project. Because the project would reduce area CO₂ emissions by 464 metric tons of CO₂ per year compared to emissions caused by areawide projected traffic increases without the proposed project improvements, the project would be consistent with Caltrans Climate Action Plan and, therefore, with AB 32. Accordingly, the project would not make a significant contribution to global climate change.

Though it could be several years until the emissions reached a level deemed significant, nevertheless, the exceedance of the threshold of 1,100 MT of CO₂e/yr would occur at some point before 2032. No feasible mitigation measures have been identified to avoid or substantially lessen this impact. Accordingly, the indirect cumulatively considerable contribution to the cumulative impact would remain significant and unavoidable.

4.13 ENERGY

This section was prepared pursuant to Public Resources Code Section 21100(b)(3), CEQA Guidelines Section 15126(c), and Appendix F (Energy Conservation of the Guidelines), which require that EIRs include a discussion of the potential energy impacts of proposed projects with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

A. Setting

1. Background Information

Energy consumption is analyzed in an EIR because of the environmental impacts associated with its production and usage. Such impacts include the depletion of nonrenewable resources (oil, natural gas, coal, etc.) and emissions of pollutants during both the production and consumption phases.

2. Existing Conditions

a. Electricity and Natural Gas

Electricity consumption in California is projected to grow at a rate of 1.2 percent per year from 2010-2020, with demand during peak use periods (i.e., hottest days of the year during the afternoon) growing at a rate of 1.3 percent per year. In 2010, approximately 275,000 kWh (kilowatt hours) of electricity were consumed in the state. Under the State of California Energy Action Plan, a “loading order” has been established for providing for future electricity needs. The State and its electricity providers would invest first in energy efficiency and demand-side resources, followed by renewable resources, and only then in clean conventional electricity supply to meet its energy needs. The Energy Action Plan is an ongoing process, subject to change and updating over time. The most recent update to the Energy Action Plan was in 2008.

With the adoption of SB 1078, California established its Renewable Portfolio Standard (RPS) program, with the goal of increasing the percentage of renewable energy in the state’s electricity mix by at least 1 to 20 percent per year by 2017. The RPS program aims to ensure that a minimum amount of renewable energy is included in the portfolio of electricity resources.

City of Ukiah

The City of Ukiah provides electrical service to residents and business within the City. The Electric Utility Department oversees the procurement and retail sales of electric energy within the City limits, and maintains and operates the local electric distribution system and the Lake Mendocino Hydroelectric Plant. The Ukiah Electric Utility Department supplies electricity to more than 16,000 residents and 2,000 businesses. The utility serves 6,100 residential customers and 2,100 commercial customers. The utility’s annual energy sales exceed \$15,000,000 with a peak demand of nearly 36 megawatts (MW), recorded in July 2006.

Ukiah's electric utility is a member of the Northern California Power Agency (NCPA), which is a joint powers agency of 17 member communities and districts in Northern and Central California. In addition to hydroelectric facilities, NCPA also generates power from geothermal and combustion turbine sources. As of 2011, Ukiah received an average of 51.7 percent of electricity generated from eligible renewable resources, including biomass, geothermal, small hydroelectric, solar, and wind. Large hydroelectric comprised an additional 17.5 percent of the City's power, and the remainder was divided among natural gas, coal, and nuclear (LAFCO, 2012).

PG&E

Pacific Gas and Electric Company (PG&E) transmits and delivers natural gas to residents and businesses in the Ukiah area. It provides natural gas and electric service to approximately 15 million people throughout a 70,000 square mile service area in northern and central California. PG&E's operations are regulated by the California Public Utilities Commission. Electricity and natural gas supplies are regulated by the California Energy Commission (CEC).

The natural gas is provided via natural gas lines stretching from Oregon to Arizona. Gas is delivered from basins in California, Canada and the Western United States by transmission mains. Natural gas consumption in California is projected to grow at a rate of 0.7 percent per year from 2010-2018. PG&E estimates that natural gas consumption for its service areas will grow at a rate of 0.5 percent per year from 2010-2018.

b. Fuels

Transportation fuels, including gasoline and diesel fuels, are produced by refining crude oil. Approximately 38 percent of crude oil used in California is produced in-state; the remaining percent comes from Alaska (14 percent) and foreign sources (48 percent). All imported crude supplies and products arrive to California by ship through marine terminals. In recent years, Californians consumed approximately 40 million gallons of gasoline a day and about eight million gallons of diesel a day. Overall, California is experiencing a downward trend in sales for gasoline, diesel, and jet fuel. It is anticipated that this downward trend will continue due to high fuel prices, efficiency gains, competing fuel technologies, and mandated increases of alternative fuel use.

B. Regulatory Framework

Many federal, State, and local statutes and policies address energy conservation. At the federal level, energy standards apply to numerous products (e.g., the EnergyStar™ program) and transportation (fuel efficiency standards). At the State level, Title 24 of the California Administrative Code sets forth energy standards for buildings; rebates/tax credits are provided for installation of renewable energy systems; and the Flex Your Power program promotes conservation in multiple areas. In addition, in January 2010, the State of California adopted the California Green Building Standards Code (CALGreen) that establishes mandatory green building standards for all buildings in California.

The California Green Building Standards Code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality. These standards include a mandatory set of minimum guidelines, as well as more rigorous voluntary measures, for new construction projects to achieve specific green building performance levels. This Code went into effect as part of local jurisdictions' building codes on January 1, 2011.

The City has a Green Building Program. "Green building" is the practice of siting, designing, constructing, operating, maintaining, and removing buildings in such a way as to increase the efficiency of resource use – energy, water, and materials – while reducing building impacts on human health and the environment. However, this program includes recommendations, and those recommendations have not been adopted as part of the City Code.

C. Potential Impacts and Mitigations

1. Criteria Used to Determine Impact Significance

The impact analysis section considers the project's potential to result in significant impacts based on standards of significance derived from Public Resources Code Section 21100(b)(3), CEQA Guidelines Appendix F. As such, an energy impact is considered significant if the project would result in a wasteful, inefficient, and unnecessary consumption of energy.

2. Impact Analysis

The following analysis of energy impacts is based on the technical analysis contained in Appendix H of this EIR.

Impact 4.13-A The project could result in a wasteful expenditure of energy. The impact would be less-than-significant.

The energy analysis contained in Appendix H assessed the direct and indirect energy impacts of the proposed project. Direct energy is the amount of fuel consumed by vehicles over a given period of time. Factors that influence fuel consumption include: speed, grade, intersection delay time, traffic density (free flowing or congested), and changing fuel economy due to newer more fuel efficient vehicles on the road. Indirect energy is the remaining energy consumed to construct, operate and maintain the proposed project. Indirect energy also includes the manufacture and maintenance of vehicles using the roadway.

Existing traffic using the project site roadways expends approximately 82,248 MBTUs (Million British Thermal Units) of energy per year. Upon project completion, this amount of traffic would expend approximately 70,137 MTBU per year, or 14.7% less energy per year than baseline expenditures. This decrease is due to a reduction in vehicle delays for vehicles traveling through the project.

Constructing the project would result in the expenditure of approximately 14,047 MBTU. Other indirect energy expenditures (vehicle maintenance) would result in an increase of approximately of 8 MTBU per year plus one-time expenditures of an additional 8 MBTU for manufacturing the vehicles using the project. The total increase in direct and project construction expenditures after project completion would be approximately 1,950 MTBU per year greater (i.e., about 2% greater) than the baseline expenditure.

As described in Appendix H, the project would decrease direct energy use by about 17% a year given Caltrans-projected traffic growth in the area. Accordingly, the project would be expected to result in energy conservation within 1-2 years. The small short-term increase in energy use caused by the project due to construction would not be considered wasteful, inefficient, or unnecessary, and the impact would be less than significant. Additionally within a very short period of time after the project is completed, the project would reduce energy use as compared to an alternative of not constructing the project.

As discussed in the previous sections on air quality and climate change, reducing congestion improves fuel economy. Over time, the energy savings resulting from expanding intersection capacity, coordinating traffic signals, and other improvements that are part of this project would reduce the energy use of vehicles projected to use the interchange.

In addition to reducing traffic congestion, the project includes energy-conserving elements, such as the use of LED lighting and improving bike and pedestrian safety (thereby promoting use of these alternate transportation methods). These LED lights would replace the halide lights currently used, resulting in a savings of energy.

While the project would have a less-than-significant impact on energy, the following mitigations are recommended to further conserve energy.

Mitigation Measures

- 4.13-A During project construction, the City shall require the following: 1) engines shall be maintained to meet manufacturers' recommended operating standards; and 2) construction equipment shall not be allowed to idle for longer than five (5) minutes. Caltrans shall encourage that the contractors' fleets include diesel engines meeting the most current State standards for new diesel engine performance and/or low-emission, energy-secure, alternatively-fueled vehicles. Caltrans shall require project contractors to maximize carpooling of their employees.
- 4.13-B Project design shall include: 1) LED lights for illumination and stoplights; and 2) to the degree possible, solar panels to power lighting.

Impact Significance After Mitigation

The two recommended mitigation measures would provide energy reduction both during the construction and operational phases of the project. They would bolster the earlier

conclusion that the project would not result in a wasteful, inefficient, or unnecessary consumption energy.

3. Cumulative Impacts

Impact 4.13-B The project would not contribute to a significant cumulative impact related to energy use.

The geographic area for the analysis of energy impacts includes all projects in the State. Construction and operation of new projects in California will require expenditure of a substantial amount of energy. The State has expended considerable effort at developing programs requiring fuel economy and conservation. Regulations governing vehicle fuel economy will become more stringent as time goes on, and it is expected that further development of alternative energy sources will also reduce the use of fossil fuel-generated energy. For example, the 2013 Title 24 standards that are being implemented in 2014 will result in a further energy savings of 23.6 gigawatt hours per year over the current 2008 standards. This means a single-family home will be 25% more efficient in the future.

As described in more detail in Appendix H of this EIR, the project would reduce direct energy use over the next 20 years when compared to projected traffic using the existing roadways and interchange. As noted in the previous impact discussion, the project would reduce direct annual energy consumption by approximately 17%. Accordingly, the project would make at least a less-than-significant impact on energy resources and likely a beneficial impact. In either case, the project would not make a cumulatively considerable contribution to any State-wide cumulative impact related to wasteful, inefficient, or unnecessary consumption energy.

5.0 OTHER REQUIRED CEQA TOPICS CHAPTER

Consistent with CEQA Guidelines Section 15126.2, this section summarizes the findings with respect to the project's growth-inducing effects, cumulative impacts (when considered with other projects), significant unavoidable environmental impacts, significant irreversible environmental changes, and project alternatives.

5.1 Growth-Inducing Impacts

CEQA mandates that an EIR assess potential growth-inducing impacts of a project. The *CEQA Guidelines* describe the required assessment in the following way:

Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment (CEQA Guidelines, Section 15126.2(d)).

Growth-inducing impacts typically arise when a project would provide new infrastructure or public services that could then be used to serve other future projects. The project would add capacity to the interchange complex to accommodate existing and future projected increases in traffic. By doing so, the project would, to some extent, accommodate growth both locally and regionally. This growth in traffic is the result of local and regional land use plans and approved development projects. Locally, the proposed project's improved access and roadway capacity could indirectly allow for the development and intensification of land uses in the AIP. However, this development and intensification would occur in areas already planned for such development by the City. The project would eliminate a traffic congestion constraint and allow buildout of the AIP. The impacts of that development were all assessed as indirect or cumulative impacts in Chapter 4.0 of this EIR. It is not expected that the project would induce any additional development along Talmage Road or along S. State Street to the south or north of Talmage Road because there are few vacant parcels along S. State Street and none that are large. Additionally, property along S. State Street can be served by other east-west arterials if Talmage Road remained congested. The growth-inducing impacts of the project would be less than significant except for the three significant indirect impacts identified in Chapter 4 and summarized below in Section 5.3.

5.2 Cumulative Impacts

1. Introduction

CEQA defines cumulative impacts as two or more individual impacts which, when considered together, are substantial or which compound or increase other environmental impacts. The cumulative analysis is intended to describe the “incremental impact of the project when added to other, closely related past, present, or reasonably foreseeable future projects” that can result from “individually minor but collectively significant projects taking place over a period of time” (CEQA Guidelines Section 15355). The analysis of cumulative impacts is a two phase process that first involves the determination of whether the project, together with existing and reasonably foreseeable projects, would result in a significant impact. If there would be a significant cumulative impact of all such projects, the EIR must determine whether the project’s incremental contribution to the effect is cumulatively considerable, in which case, the project itself is deemed to have a significant cumulative effect (CEQA Guidelines Section 15130). As defined in Section 15355 of the CEQA Guidelines, an EIR should not discuss impacts that do not result in part from the project evaluated in the EIR. As such, the discussion in this section focuses specifically on those impacts of the project that would result in cumulative effects, and does not consider cumulative impacts to which the project would not contribute.

The *CEQA Guidelines* identify two basic methods for establishing the cumulative environment in which the project is to be considered: the use of a list of past, present, and reasonably anticipated future projects; or the use of adopted projections from a general plan or other regional planning document. The list of projects approach is used here for assessing most cumulative impacts. Cumulative traffic impacts are assessed, as required by Caltrans, for a 20-year horizon, which at the time the analysis was done was the year 2032. Correspondingly, cumulative impacts for traffic-related noise, air quality, and greenhouse gas emissions are also assessed for a 20-year horizon.

A two-step approach was used to analyze cumulative impacts. The first step was to determine whether the combined effects from the proposed project and the other projects on the list would be cumulatively significant. Where the combined effect of the projects was determined to result in a significant cumulative impact, the second step was to evaluate whether the proposed project’s incremental contribution to the combined significant cumulative impact would be cumulatively considerable as required in Section 15064(h)(1) of the CEQA Guidelines.

2. Geographic Scope

The potential for project-generated impacts to contribute to a significant cumulative impact would arise if they are located within the same geographic area. The geographic area varies depending on the resource being assessed. For example, the geographic area for assessing impacts to water quality included the Russian River watershed in the County. The geographic area for visual impacts would be the viewshed that includes the

project site. Each section of Chapter 4 contains a cumulative impact analysis, and the geographic scope for each resource area is defined in those impact discussions.

3. List Approach

CEQA Guidelines Section 15130 provides that an EIR may use a “list approach” in evaluating the foreseeable projects that will contribute to cumulative impacts. The list should include past, present, and reasonably probable future projects producing related cumulative impacts. The list of approved/proposed projects is described below.¹⁶

1. There is a proposal for an 11,200 square foot Hospital Support Building on the north side of the Ukiah Valley Medical Center. This project is located within the City about one mile northwest of the project site.
2. The City has approved a Costco Wholesale Project at the southern end of the Redwood Business Park, approximately 0.5 miles south of the project site. This project would include a 148,000 square foot Costco Wholesale warehouse and a fuel station. The EIR certified for the project has been legally challenged.
3. There is a County-approved quarry expansion and new asphalt facility at the Harris Quarry site at the north end of Ukiah Valley. However, the project is on hold pending the final ruling of the Appeals Court on a legal challenge to the EIR. In 2014 the County approved continuing the mining at the Harris Quarry under the quarry’s vested rights. The quarry site is within the unincorporated portion of Mendocino County and near a tributary of Forsythe Creek, which is a tributary of the Russian River. It is located approximately 15 miles north of the project site.
4. There is a proposed 30-acre sand and gravel quarry between the west bank of the Russian River and North State Street. The County approved this project. The EIR was challenged, and the Court concluded that some revisions of the EIR were required. The applicant has not as yet decided whether to proceed with revising the EIR. The quarry site is within the unincorporated portion of Mendocino County and is located about 1.5 miles northeast of the project site.

4. Projections Approach

CEQA Guidelines Section 15130 provides that an EIR also may use a “projections approach” in evaluating how projected growth will contribute to cumulative impacts. document. Cumulative traffic impacts were assessed, as required by Caltrans for projects on State highways, for a 20-year horizon, which at the time the analysis was initiated was the year 2032. As described in the appended Traffic Impact Study, this cumulative impact approach was based on Caltrans District 1 20-year growth factors (Caltrans, 2006). Correspondingly, cumulative impacts for traffic-related noise, air quality, and greenhouse gas emissions are also assessed for the horizon year of 2032.

¹⁶ The list was compiled in May 2014 in consultation with Charley Stump, Ukiah Community Development Director, and Andy Gustavson and John Speka of the Mendocino County Department of Planning and Building Services.

The published traffic growth was projected based on the U.S. 101 growth factor of 1.3 in the area of the project (southern Mendocino County). In December 2013 Caltrans revised the published growth factor for southern Mendocino County down from 1.5 to 1.3. Future (2032) traffic volumes were projected from the base year (2012) existing traffic count data and multiplying existing volumes by the 1.3 growth factor. The distribution of future traffic volumes at study intersections was adjusted to align the volume projections with trip distribution estimates developed by the City of Ukiah (2013) for the Costco Wholesale Project DEIR.

For reference, the 2006 District 1 20-year Growth Factors are included in Appendix B of the appended Traffic Impact Study.

5. Cumulative Impacts

Cumulative impacts are discussed in each section of Chapter 4. Significant and unavoidable cumulative impacts are summarized below in Section 5.3.

5.3 Significant Unavoidable Impacts

In accordance with CEQA Section 21083, and with CEQA Guidelines Sections 15064 and 15065, an EIR must also identify impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the implementation of the proposed project, or by other mitigation measures that could be implemented, as described in Chapter 4. Implementation of the proposed project would result in the following significant and unavoidable impacts that cannot be mitigated to a less-than-significant level:

1. Emission of criteria air pollutants from projected future traffic that would be accommodated by the project would exceed adopted Mendocino County Air Quality Management District (MCAQMD) significance thresholds.
2. The emission of these criteria pollutants would also make a considerable contribution to a significant cumulative air quality impact regarding emission of pollutants.
3. Emission of greenhouse gases from projected future traffic that would be accommodated by the project would exceed adopted MCAQMD significance thresholds, thereby making a considerable contribution to a significant cumulative impact on climate change.

5.4 Significant Irreversible Environmental Effects

CEQA Guidelines Section 15126.2(c) specifies that the EIR shall discuss the significant irreversible environmental changes associated with a project. The project would create capacity for existing and future traffic volumes, with associated air quality and GHG impacts. The consumption of fossil fuels by those vehicles represents a significant commitment of nonrenewable resources. Construction of the project also represents a

commitment of nonrenewable resources, such as concrete, asphalt, and other building materials and fossil fuels used during construction.

5.5 Project Alternatives

1. Introduction

CEQA requires that the EIR assess alternatives to the project if the project would have potentially significant environmental impacts, even if these impacts can be mitigated to a level that would be less-than-significant. As noted in Chapter 4.0 of this EIR, the project would have a number of potentially significant impacts. This EIR therefore assesses alternatives to the project.

The CEQA Guidelines offer a number of requirements and recommendations regarding the alternatives analysis. The more pertinent issues are summarized as follows:

- Alternatives must be ones that could feasibly attain most of the basic objectives of the proposed project and could avoid or substantially lessen one or more of the significant effects of the project. While alternatives can impede the attainment of the objectives, they should not substantially impede those objectives. Alternatives that fundamentally change the nature of the project do not meet the basic objectives of the project. As stated previously, the eight objectives are:
 1. To alleviate existing traffic congestion at the Talmage Road/Highway 101 interchange, specifically the southbound on and off-ramps.
 2. To improve the Talmage Road/Highway 101 interchange so that it will successfully accommodate vehicle and pedestrian traffic resulting from future local and regional traffic growth for a 20-year planning horizon and design life.
 3. To improve traffic safety at the Talmage Road/Highway 101 interchange.
 4. To improve the Talmage Road gateway into the City of Ukiah.
 5. To improve pedestrian facilities along Talmage Road at its intersection with U.S. Highway 101.
 6. To limit site disruption.
 7. To limit disruption to the flow and circulation of traffic during construction activities.
 8. To satisfy the General Plan Circulation and Transportation Element goal to construct improvements to the interchange of U.S. 101 and Talmage Road as part of the Airport Industrial Park off Talmage Road.
- The alternatives must be potentially feasible. Feasibility takes into account factors such as site suitability, economic viability, availability of infrastructure, consistency with the Ukiah General Plan, other plans and regulatory limitations, jurisdictional boundaries, and ability to acquire, control, or gain access to alternative sites.

- The analysis of each alternative must determine whether the alternative reduces the significant and unavoidable impacts identified for the project. If the alternative would generate additional significant impacts, those must also be identified and discussed
- One of the alternatives to be assessed must be the “no project” alternative (see discussion below under that heading).
- The EIR must assess the identified alternatives and determine which among them is environmentally superior. If the no project alternative is identified as the environmentally superior option, then one of the other remaining alternatives must be identified as environmentally superior.

2. Alternatives Eliminated From Further Consideration

CEQA Guidelines Section 15126.6(c) requires an EIR to identify and briefly discuss any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process. In identifying alternatives, primary consideration was given to alternatives that would reduce significant impacts while still meeting most of the project objectives. Alternatives that would have the same or greater impacts as the proposed project, or that would not meet most of the project objectives, were rejected from further consideration.

a. Interchange Alternatives

The Traffic Impact Study prepared for the project identified an interchange configuration alternative, that is described in detail in the Route 101 Corridor Interchange Study in Mendocino County (MCOG, 2005). This alternative would add signals to northbound and southbound ramp intersections and widen the overcrossing structure. It is expected that this would require modification of the entire interchange to a tight diamond (Type L-1) configuration, requiring additional right-of-way. The alternative would interconnect/coordinate the new traffic signal with existing signal at Talmage Road/Airport Park Boulevard intersection. This alternative was rejected by the City for the following reasons

- The configuration is more complex and has significantly more impacts to the existing U.S. 101 mainline facility;
- It has significantly more impacts to the existing City and State transportation facilities;
- It requires additional right-of-way or property acquisition; and
- It has a higher overall project cost.

A second alternative would reconstruct the interchange to a partial cloverleaf design, as recommended in the MCOG study. While the proposed project is compatible with this MCOG-preferred interchange alternative, the project does not include the entire interchange improvement. It does not include widening of the overcrossing structure and signaling of the northbound on- and off-ramps. The project was selected over this alternative for the same four reasons listed above.

Both these alternatives would be expected to result in more disturbance and have more substantial impacts than the proposed project. They would not decrease any potentially significant impact. Because they would not substantially reduce project impacts and because they are inferior as far as effects in the freeway mainline are concerned, these alternatives were rejected from further consideration.

b. Southbound Ramp Intersection Alternatives

The Traffic Impact Study (TIS) prepared for the project assessed alternatives for the Talmage Road/ Southbound on/off ramp intersection including:

- Alternative 1: Signalized intersection with two left-turn lanes;
- Alternative 2: Two-lane three-leg roundabout intersection; and
- Alternative 3: One-lane four-leg roundabout intersection.

See the appended TIS for additional details about these alternatives. As explained in the TIS, the two roundabout alternatives (Alternatives 2 and 3) were eliminated from consideration due to operational and safety issues, right-of-way requirements, and cost. The signal alternative (Alternative 1) was evaluated further with the assistance of Caltrans District 1 Traffic Operations. Through this evaluation process Alternative 1 was eliminated because of excessive vehicle queuing and delay issues related to the dual left-turn lanes.

In addition, these alternatives would be expected to have the same environmental impacts as the project as proposed. None of these three alternatives would eliminate or reduce potentially significant impacts any more than mitigations recommended for the proposed project. For these reasons, the three alternative intersection alternatives were rejected from further consideration.

3. Alternatives Selected for Further Consideration

Using the guidelines listed in Section 1 above, the City has identified the following alternatives to the project as proposed:

1. No Project Alternative
2. Maintain Two Separate Southbound Off-ramps Alternative
3. Widen the Overcrossing Alternative

The following describes the three alternatives, each followed by a discussion of its impacts and how they differ from those of the proposed project. As permitted by CEQA, the significant effects of the alternatives are discussed in less detail than are the effects of the project (CEQA Guidelines, Section 15126.6[d]). However, the analysis is conducted at a sufficient level of detail to provide project decision-makers adequate information to fully evaluate the alternatives and to approve any of the alternatives without further environmental review.

The impacts for each alternative are compared to the impacts of the project, and a conclusion is provided whether the impacts would be Lesser, Similar, or Greater as

compared to the project impacts. In the final subsection, these alternatives are compared to the project as proposed and to one another to identify the environmentally superior alternative.

2. Alternative 1 – No Project

a. Description

The No Project Alternative describes the environmental effects of not approving the proposed project. The existing southbound on-ramp and off-ramp would remain in their current locations, and no improvements would be made to Talmage Road. The No Project Alternative would eliminate or substantially reduce most impacts associated with the project. However, the No Project Alternative would not meet project objectives.

b. Impacts

Geology and Soils. No road improvement construction would occur under this alternative. The project's impacts regarding seismic hazard, soil constraints, and soil erosion would be eliminated. [Lesser]

Hydrology and Water Quality. No construction would occur, and no new impermeable surfaces would be added. The potential impacts to flooding, storm drains, and water quality would be eliminated. The existing drainage on the project site would continue. [Lesser]

Biological Resources. As there would be no construction activities, the potential impacts to nesting birds would be eliminated. Potential water quality impacts to special-status species inhabiting the Russian River would be eliminated. There would be no loss of grassland habitat. [Lesser]

Cultural Resources. As no construction would occur, the potential impact to currently unknown but possible cultural resources, human remains, and paleontological resources would be eliminated. [Lesser]

Traffic and Circulation. If the proposed interchange improvements project is not built, the existing congestion at the Talmage Road/Airport Park Boulevard would remain and over time get worse from increased traffic generated by new area development. While the Costco development may not open under this alternative, and, therefore, the traffic generated by that project would not travel through the project, other traffic from projected new development in other portions of the Ukiah Valley would still increase traffic through the interchange. Similarly, the unacceptable level of service for the right turn to westbound Talmage Road at the Talmage Road/Southbound Ramp intersection would remain and get worse over time. This congestion and unacceptable levels of service would result in increased risk of accidents at locations where crash rates are already high. Accordingly, the traffic impacts of this alternative would be greater than the proposed project. [Greater]

Air Quality. If the proposed interchange improvements are not built, traffic congestion will get worse over time. As congestion increases, drivers will spend more time idling and stopping and starting. Traffic congestion causes increased emission of criteria pollutants. The coordination of traffic signals alone can reduce emissions up to 50%,¹⁷ Therefore, over time it is expected that there would be emission of more criteria pollutants under this alternative. [Greater]

Noise. As no construction would occur, noise impacts from that construction would be eliminated. Over time, noise generated by vehicles using the interchange would be similar to the proposed project. [Lesser]

Visual Resources. As no construction would occur, there would be no changes to the viewshed. Therefore, the alternative would have less impact than the proposed project. [Lesser]

Utilities and Public Services. As no construction would occur, there would be no demand on solid waste facilities, and like the proposed project no demand on other service providers. Therefore, the alternative would have less impact than the proposed project. [Lesser]

Hazards and Hazardous Materials. As no construction would occur, there would be no risk of spills of hazardous materials that would be used in building the project. Therefore, the alternative would have less impact than the proposed project. [Lesser]

Land Use. Because improvements would not be made to the interchange, this alternative would be counter to the specific General Plan language that calls for upgrading the interchange. The project would also be counter to policies aimed at maintaining acceptable levels of services on roadways and minimizing risks to bicyclists and pedestrians. Therefore, the alternative would be less consistent with the City's General Plan. [Greater]

Global Climate Change. Because no construction would occur, there would be no emissions of GHG from construction equipment. Because the roadway improvements would not be built, there would, over time, be greater roadway congestion than would occur under the proposed project. Roadway congestion increases the emission of CO₂ with consequent greater impacts on the climate.¹⁸ [Greater]

Energy Use. As no construction would occur, there would be no expenditure of energy to construct improvements. Energy would continue to be used by vehicles using the project. As was the case for air quality and greenhouse gas emissions, over time increased congestion would result in less efficient energy use. It is estimated that future traffic would expend approximately 17% more energy per year than would be expended if the project were built. Therefore, the alternative would have greater impacts than the proposed project. [Greater]

¹⁷ See Barth and Boriboonsomsin, 2009; Nesamani et al, 2005.

¹⁸ Barth and Boriboonsomsin, 2009; UCLA School of Public Affairs, n.d.

Ability of the Alternative to Meet Project Objectives. This alternative would not meet the five project objectives aimed at reducing existing traffic congestion, accommodating increased traffic from projected growth over the next 20 years, improving traffic safety, improving pedestrian facilities within the project area, and, consistent with the City's General Plan, ensuring adequate access for development of the Airport Industrial Park.

3. Alternative 2 – Maintain Two Separate Southbound Off-ramps Alternative

a. Description

As this EIR was being prepared, Caltrans suggested some design revisions to the original project that is assessed in Chapter 4 of this EIR. As shown on Figure 5.4-1, under Alternative 2, the southbound Highway 101 off-ramp to westbound Talmage Road would remain in its approximate current location. It would be widened to include two right-turn lanes as it approached the Talmage Road intersection. This southbound off-ramp intersection with westbound Talmage Road would be signalized and realigned to the west to increase sight distance. The southbound Highway 101 off-ramp to eastbound Talmage Road would be realigned slightly to the west, and would remain only one lane. This intersection would be signalized with the signal controlling right turns if queues begin accumulating on either southbound off-ramps or along the left-turn lane onto the southbound Highway 101 on-ramp. As is the case for the proposed project, two dedicated left-turn lanes from Talmage Road to Airport Park Boulevard would be provided.

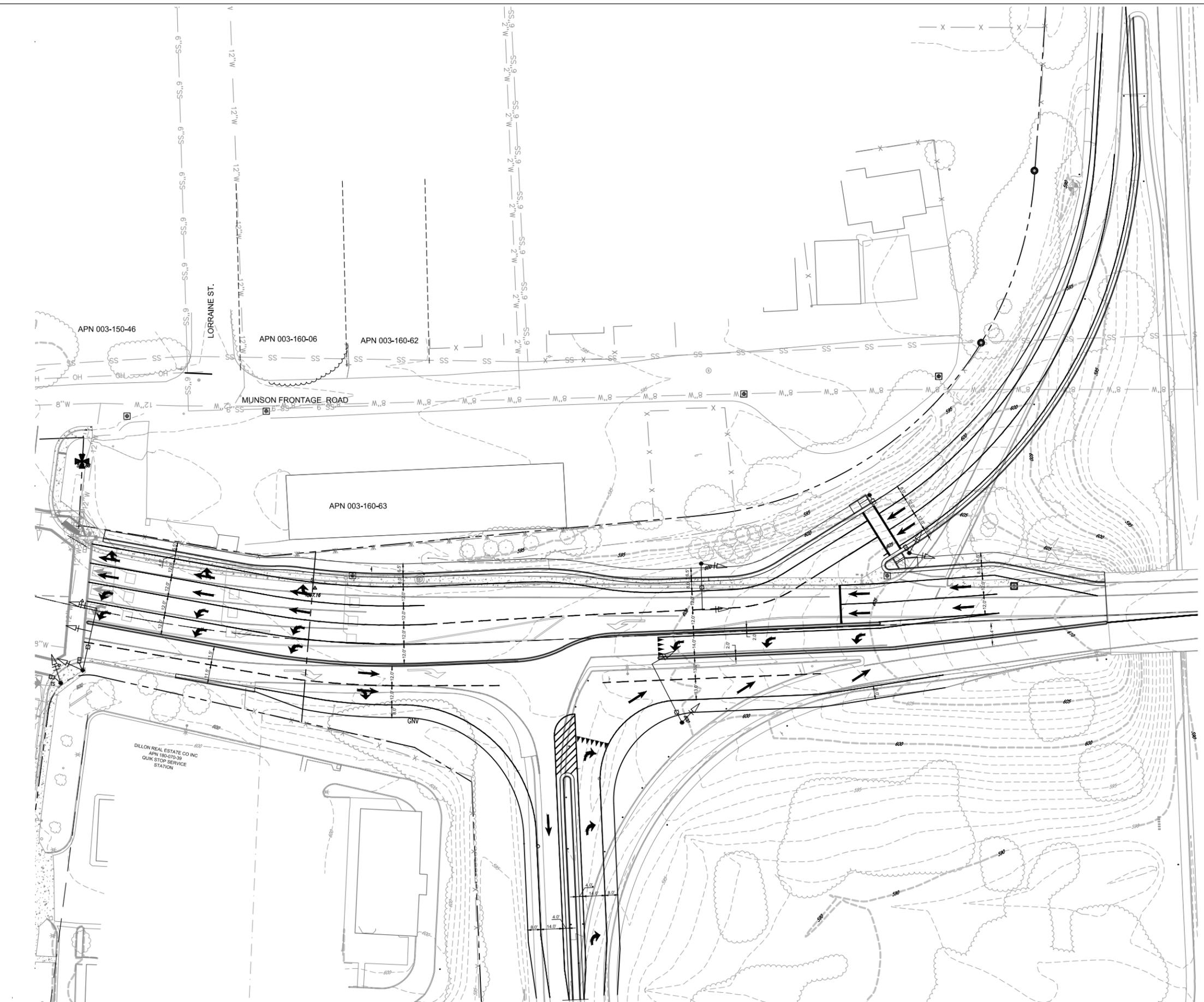
This alternative would require grading to the west of the existing Southbound Off-ramp to provide the second off-ramp lane and for the minor realignment of the ramp where it intersects Talmage Road. A minor amount of additional grading would also be required at the southbound off-ramp to eastbound Talmage Road, but this alternative would avoid expansion of this off-ramp from one lane to four. This alternative would require that additional right-of-way be purchased. Otherwise, other improvements that are part of the proposed project (e.g., new lighting, curbs, and gutters) would be included in this alternative.

b. Impacts

This alternative would have the following potentially significant impacts as compared to the project as proposed.

Geology and Soils. Similar to the proposed project, unless properly designed and constructed, project improvements could fail due to deficiencies in the underlying soils and/or geologic conditions or during an earthquake. The widening of the southbound off-ramp to westbound Talmage Road plus the minor realignment of the southbound off-ramp to eastbound Talmage Road would involve grading and construction in areas that are expected to be similar to those studied in the Preliminary Geotechnical Report prepared for the project. It is expected that all mitigations recommended in that report would also be required for this alternative and that these design mitigations would reduce the geologic and soil impacts for the alternative to a less-than-significant level. Though these geologic/soil impacts can be reduced to a less-than-significant level for

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans	CONSULTANT FUNCTIONAL SUPERVISOR		CALCULATED-DESIGNED BY	REVISOR
			CHECKED BY	DATE



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	MEN	101	23.33-23.58		XX

REGISTERED CIVIL ENGINEER _____ DATE _____

PLANS APPROVAL DATE _____

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GHD INC. 2235 MERCURY WAY, STE 150 SANTA ROSA, CA 95407	TALMAGE INTERCHANGE UKIAH, CA 95481
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PRELIMINARY LAYOUT
FEBRUARY 2014
NOT FOR CONSTRUCTION

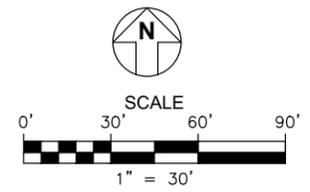


Figure 5.4-1
PROJECT ALTERNATIVE 2

PRELIMINARY LAYOUT
SCALE: 1"=30'

DATE PLOTTED => 14-Feb-2014
TIME PLOTTED => 08:47
LAST REVISION 00-00-00

both the project and this alternative, because the alternative would require slightly more grading than the project as proposed, it would have more geologic/soil impacts. [Greater]

Hydrology and Water Quality. The alternative would result in additional runoff due to an increase in impermeable surface from widening of the southbound off-ramp. It is estimated that the alternative would increase the developed site from 1.29 acres of impervious surface to 1.72 acres, or a 0.53-acre increase. This alternative would result in more runoff than the proposed project. According to the Stormwater Data Report prepared for the project (on file with the Ukiah Community Development Department), the existing storm drain system draining the site has capacity to drain this additional runoff, and no improvements to that system is required. Similar to the proposed project, erosion control Best Management Practices would be required to control erosion and protect water quality. The relatively small amount of new impermeable surface in the freeway right-of-way would not be expected to affect groundwater recharge. The improvements would not be subject to flooding. All hydrologic and water quality impacts can be reduced to less-than-significant levels by requiring compliance with existing City and Caltrans' requirements and regulations. [Greater]

Biological Resources. The alternative would add a second lane to the southern part of the southbound off-ramp to westbound Talmage Road. This expansion would remove grasses, forbs, and weedy vegetation in areas previously disturbed by freeway and off-ramp construction. Due to grading requirements, approximately 35 trees would need to be removed. This includes 32 live oaks, 2 redwoods, and one pine.

**Table 5.5-1
Tree Removal for Alternative 2**

Size (DBH)	Coast Live Oak	Redwood	Pine
2-6"	18		
6-12"	6		
14-18"	6		
30"	2	1	1
48"		1	
Total	32	2	1

Note: DBH is diameter at breast height

Loss of these trees would be a new potentially significant impact for this alternative. Mitigation would be required for this loss of trees (see below).

The area does not contain wetlands. Similar to the project, it is not expected that there would be special-status species in the area to be disturbed. Nevertheless, Caltrans may require additional surveys prior to final approval to confirm this conclusion. Similar to the project, the alternative could disturb nesting birds, and the same mitigation recommended for the project (Mitigation Measure 4.3-B.1) would apply. Biological impacts for both the project and this alternative can be reduced to a less-than-significant level. [Greater]

Mitigation Measure PA 2-1: A certified arborist or landscape architect shall develop a final tree plan for the project. The plan shall meet at least the following requirements unless the arborist can demonstrate that substitute measures would meet the targets listed at the end of this mitigation. At least 64 trees shall be planted. The trees shall be fertilized, irrigated, protected, and maintained until they are five years old. Any trees dying within that period shall be replanted until there are 64 new live trees that have been alive for at least seven years. Compacted ground shall be broken to an area three times the diameter of the root ball prior to planting to allow root growth. Trees shall be watered weekly in weeks with no natural precipitation (usually April 15 through October 15 of each year), and for the first three years after planting they shall be watered three times per week when temperatures exceed 100 F°. It is recommended that the trees be planted in the four open gaps west of the southbound off-ramp. The plan will be reviewed and approved by Caltrans.

This mitigation would ensure replacement of trees at a 2:1 ratio. Because the coast live oaks are susceptible to SOD, over the long term the replacement trees may provide more biological benefits than the existing trees. By replanting the gaps to the south of where the trees would be removed, the mitigation would provide additional visual screening of the freeway from residences and other structures located to the west.

Cultural Resources. As is the case with the proposed project, no cultural resources are expected to be disturbed within the area by construction of this alternative. However, to ensure that is the case, construction will be halted if currently unidentified cultural resources are uncovered. It is expected that the same mitigations protecting cultural resources, human remains, and paleontological resources recommended for the project would be required for this alternative. Those mitigations plus compliance with Caltrans regulations for the protection of cultural resources would reduce any impact to these resources to a less-than-significant level. [Similar]

Traffic and Circulation. The widened and realigned southbound off-ramps and realignment of the ramps' intersections with Talmage Road would result in improved operating conditions as compared to existing conditions. The Traffic Impact Study contained in Appendix E assesses the impacts of this alternative (described therein as the Caltrans Alternative). Table 5.5-2, below, shows the calculated level of service at the time this alternative opens for use while Table 5.5.3 shows the 2032 level of service for the three study intersections for this alternative.

**Table 5.5-2
Existing + Alternative 2 PM Peak Hour Intersection Level of Service**

No.	Intersection	PM	
		Delay (sec)	LOS
1	Talmage Rd/Airport Park Blvd (Signal) ¹	24.7	C
2	Talmage Rd/Southbound Ramp		
	<i>Westbound left-turn (Unsignalized)</i> ²	9.3	A
	<i>Northbound Right-turn (Unsignalized)</i> ²	11.2	B
	<i>Southbound Right-turn (Signalized)</i> ¹	5.0	A
3	Talmage Rd/Northbound Ramp (Unsignalized) ²		
	<i>Northbound Off-ramp approach</i>	15.5	C

Notes: ¹LOS based on HCM2000 method of operational analysis for Signalized Intersections
²LOS based on HCM2000 method for operational analysis for Unsignalized Intersections
 Delay is calculated in average seconds per vehicle in queue
 LOS = Level of Service

**Table 5.5-3
Future (2032) PM Peak Hour Intersection Level of Service (Alternative 2
Geometry)**

No.	Intersection	PM	
		Delay (sec)	LOS
1	Talmage Rd/Airport Park Blvd (Signal) ¹	31.7	C
2	Talmage Rd/Southbound Ramp		
	<i>Westbound left-turn (Unsignalized)</i> ²	10.9	B
	<i>Northbound right-turn (Unsignalized)</i> ²	15.2	C
	<i>Southbound right-turn (Signalized)</i> ¹	5.3	A
3	Talmage Rd/Northbound Ramp (Unsignalized) ²		
	<i>Northbound Off-ramp approach</i>	22.8	C

Notes: ¹LOS based on HCM2000 method of operational analysis for Signalized Intersections
²LOS based on HCM2000 method for operational analysis for Unsignalized Intersections
 Delay is calculated in average seconds per vehicle in queue
 LOS = Level of Service

Similar to the proposed project, the alternative would accommodate the projected increase in trips through 2032. When compared to the proposed project, the alternative would reduce the amount of delay at Intersections Nos. 1 and 2 while slightly increasing the delay at Intersection No. 3. The alternative would result in Intersection No. 2 operating at LOS A through C (depending on the turn movement -- with the movement with the heaviest traffic operating at LOS A) as compared to LOS C for the entire intersection for the proposed project. The alternative would provide adequate queuing at the time the alternative began operations. In 2032, the results of the queuing analysis done for this alternative analysis (see Tables 17 to 19 in the appended Traffic Impact Study) show that for the future condition there is adequate storage length at all intersections, except under the 95th percentile congestion condition where the northbound left-turn lane at Intersection No. 1, the westbound turn at Intersection No. 2, and the northbound right turn at Intersection No. 3, are all about one car length short of

the recommended queue storage length. There is generally less queuing under this alternative, plus the intersection of the southbound off-ramp with eastbound Talmage Road intersection would be signalized with the signal controlling right turns if queues begin accumulating on either southbound off-ramps or along the left-turn lane onto the southbound Highway 101 on-ramp. Accordingly, this alternative would result in less intersection congestion and queuing than the proposed project. [Lesser]

Air Quality. Project construction would be expected to have approximately the same emission of air pollutants as the proposed project. As is the case for the proposed project, compliance with dust control and other measures included in the MCAQMD's Rules 1-410 and 1-430 would reduce construction impacts to a less-than-significant level.

Operationally, as is the case for the project as proposed, by reducing congestion and queuing, the alternative would reduce emissions from vehicles using the new interchange. Locally, sensitive receptors immediately west of the southbound off-ramp to westbound Talmage Road may be exposed to more emissions. This is because this ramp is closer to residences than the ramp that would be used as part of the proposed project (i.e., the southbound off-ramp that is adjacent to the freeway). However, the widened southbound ramp would at most be only 50 feet closer to the nearest residences near the Henderson Lane/Munson Frontage Road intersection, and, in most cases, only 5-25 feet closer at the ramp's northern end. The potential increase in emissions exposure from this off-ramp realignment compared to the proposed project would be barely measurable, particularly given the large amount of emissions generated by vehicles and heavy trucks on the freeway. Any increase in emission exposure at these nearest receptors would be expected to be less than significant.

However, as is the case for the proposed project, the emission of criteria pollutants by new trips accommodated by the alternative would exceed MCAQMD significance thresholds. This indirect project impact and the project's contribution to the cumulative air quality impact would remain significant and unavoidable for this alternative. [Similar]

Noise. Construction of the widened southbound off-ramp to westbound Talmage Road would result in new noise affecting residents living immediately west of this ramp. The noise modeling included in the full noise study in Appendix G of this EIR calculated that the construction noise would result in average hourly noise at these receptors of 67 to 76 dBA during the construction period. This is similar to the noise generated by construction of the proposed project. Because the City does not consider construction noise to be a significant impact, and because the increase would occur for less than one year, this construction noise impact would be less than significant. There would be less construction south of Talmage Road with a consequent decrease in construction noise in that area.

The full noise study includes a quantitative assessment of noise caused by vehicle use for this alternative as shown on Table 5.5-4. When compared to Table 4.7-8 that shows future noise from the project as proposed, the two alternatives result in almost the same noise at the sensitive receptor measurement locations, with a range of 0.5 dBA Ldn less at one location for this alternative to 0.6 dBA Ldn less at one location for the project as

proposed. The noise assessment also showed that this alternative would have the same less-than-significant impact regarding extension of the Discomfort Threshold Corridor as the proposed project. The noise impacts on sensitive receptors would be essentially the same for both alternatives and would be less than significant for both alternatives.

[Similar]

**Table 5.5-4
Traffic Noise Modeling Results (dBA, L_{dn})**

Receptor	Existing	Alternative 2	Noise Level Increase	Significant Increase?
LT-1	64.8	66.0	+1.2	No
ST-1	60.7	62.6	+1.9	No
ST-2	59.0	60.9	+1.9	No
ST-3/ST-4*	66.1	66.8	+0.7	No
LT-2	73.1	74.3	+1.2	No
LT-3	65.1	66.3	+1.2	No
LT-4	67.8	69.0	+1.2	No
ST-5	63.8	65.3	+1.5	No
ST-6	61.3	63.0	+1.7	No

Source: Illingworth & Rodkin, Inc., 2014 worst-case existing noise levels.

Visual Resources. As described above under the discussion of biological resources, the alternative would require the removal of approximately 35 trees, mainly on the west side of the southbound off-ramp to westbound Talmage Road. The trees are mainly east of the commercial structure located near the east end of Munson Frontage Road. Residences to the north of this commercial building have vegetative screening at their eastern property line so the removal of trees further south would not be expected to open up new views of the freeway or freeway traffic. The two redwoods that need to be removed on the west side of the southbound on-ramp would not be expected to substantially change views of the Walmart store to the west. Though the visual impact would be less than significant, any mitigation to require planting new trees would further reduce any visual impact to residents living north of Munson Frontage Road.

Three new light poles would be added – one on the north side of Talmage Road, one on the west side of the widened southbound off-ramp, and one on the east side of that same ramp. All three lights would be directed away from residences located north of Munson Frontage Road. The impact would be less than significant, and no mitigation would be required. [Greater]

Public Services. As with the proposed project, the interchange improvements would not require response from any public service responder nor require new facilities or utilities. [Similar]

Hazards and Hazardous Materials. As with the proposed project, construction of this alternative would not result in the release of hazardous materials or exposure of individuals to hazardous materials. The new facilities would not result in any hazardous conditions involving the airport. [Similar]

Land Use and Planning. As with the proposed project, the alternative would not affect agricultural soils nor divide a community. The alternative would be consistent with goals and policies of the Ukiah General Plan. [Similar]

Global Climate Change. Construction and use of the project alternative would result in emission of greenhouse gas. The emission of GHGs from construction would be expected to be relatively the same as the proposed project (i.e., about 200 MT of CO₂e). Emissions from vehicles using the project would be approximately the same as the proposed project. The indirect emission of CO₂e from new traffic accommodated by the project would exceed the MCAQMD significance threshold. This cumulative impact on the global climate would remain significant and unavoidable for this alternative. [Similar]

Energy. Similar to the proposed project, construction of the improvements would require the expenditure of energy. As described in Appendix H of this EIR, this alternative (described therein as the Caltrans Alternative) would reduce the direct energy expenditures of future traffic using the interchange by approximately 680 MTBU per year (less than 1% reduction). This alternative would reduce construction expenditures by 17,024 MTBU (a 50% reduction). Like the proposed project, this alternative would reduce expenditure of energy by projected traffic using the interchange. [Lesser]

Ability of the Alternative to Meet Project Objectives. This alternative would meet all project objectives.

4. Alternative 3 – Widen the Overcrossing Alternative

a. Description

Alternative 3 would modify the entire interchange to a “tight diamond” configuration (Caltrans Type L-1 interchange) as shown in Figure 4 of Appendix E of this EIR. Such a configuration would have a southbound off-ramp exiting the freeway and intersecting with Talmage Road at approximately 90 degrees at a four-way intersection allowing left and right turns as well as including the southbound on-ramp. Similarly, on the east side of the freeway, the northbound on-ramp and off-ramp would meet at a single intersection with Talmage Road. The two four-way intersections would be signalized and coordinated with the existing traffic signal at Talmage Road/Airport Park Boulevard. This alternative would require that additional right-of-way be purchased. This alternative is identified as Option 1 in the *Route 101 Corridor Interchange Study in Mendocino County* (MCOG 2005).

b. Impacts

Geology and Soils. Construction of the new on/off-ramps would require substantially more grading and paving than the proposed project. However, it is not expected that the soils and underlying geology for the areas north and south of Talmage Road where these ramps would be constructed would pose any significant constraints. Additional fill would need to be placed to develop the two intersections. New piles would need to be driven to support a widened overcrossing. It is likely that additional retaining walls would also be needed. Given required geotechnical review of the site and the future proposed design, it is expected that all these improvements could be constructed to maintain the integrity of the interchange if the recommendations of that geotechnical review are implemented. To summarize, this alternative would have more potential geological impacts than the proposed project due to the more extensive improvements that would be needed. However, in both cases, it is expected that the impacts could be reduced to a less-than-significant level. [Greater]

Hydrology and Water Quality. This alternative would require more grading with the potential for soil erosion. New areas would be covered with impermeable surfaces. However, the amount of impermeable surface for the interchange as a whole would probably be less than what currently exists (if the existing ramps are decommissioned). Alternative project construction would need to abide by all City requirements for erosion control and control of pollutants as established in City Code Division 4, Chapter 8 (Stormwater Discharge), Division 9, Chapter 6 (Floodplain Management), and Division 9, Chapter 7 (Erosion and Sediment Control). Compliance with these mandatory requirements and the Best Management Practices they require would be expected to reduce water quality impacts to a less-than-significant level. New or expanded storm drains may be needed to drain the widened overcrossing and/or the realigned ramps. However, there is no evidence that such drainage improvements would cause a significant impact on the environment, as Caltrans would require adequate drainage of improvements within the State right-of-way. To summarize, the alternative would change drainage patterns and increase the risk of soil erosion. However, for both the project as proposed and this alternative, the hydrologic and water quality impacts could be reduced to a less-than-significant level. [Greater]

Biological Resources. The new ramps would likely require removal of more than 100 trees currently within the freeway right-of-way. Though it is unlikely that special-status species of plants or animals occupy or use the area that would be developed for the new ramps and overcrossing widening, this would need to be confirmed at the time a project application is filed. Similar to the project as proposed, the ramp areas do not provide a good wildlife travel corridor due to their proximity to the freeway. It is possible that there are wetlands within the proposed ramp alignments, particularly to the north of Talmage Road. If there are wetlands that would be filled, then compensatory mitigation would be required. To summarize, this alternative would have more substantial potential biological impacts than the proposed project. Though it is expected that in both cases the impacts could be reduced to a less-than-significant level, the mitigations for this alternative (tree replacement and wetland compensation) would be substantially greater than for the proposed project. [Greater]

Cultural Resources. As is the case for the proposed project, it is unlikely there are cultural or paleontological resources in the area near the freeway that would be affected by this alternative. However, it is possible that such resources do occur, and the area of disturbance is substantially larger than for the proposed project. Mitigation similar to that required for the proposed project would also be required for this alternative. It is expected that for both this alternative and the proposed project the cultural resource impacts could be reduced to a less-than-significant level. [Greater]

Traffic. As is the case for the proposed project, this alternative would accommodate projected growth in vehicle travel. This alternative would improve the level of service at all interchange intersections and reduce queuing impacts. By aligning the on/off-ramps to intersect Talmage Road at two signalized intersections and by providing additional queuing storage capacity, this alternative would best meet long-term area circulation needs and improve traffic safety on the ramps and Talmage Road. This alternative would provide the optimal long-term solution for traffic at this interchange. [Lesser]

Air Quality. The alternative would require more grading and construction than the proposed project with a corresponding increase in the construction-generated emission of dust and criteria pollutants. However, it is expected that these emissions could be reduced to a less-than-significant level. Operationally, the alternative would emit approximately the same amount of criteria air pollutants as the proposed project. In both cases the impact would be significant and unavoidable. [Greater]

Noise. The new ramp alignments north of Talmage Road would move the ramps closer to residential receptors. However, as is the case for Alternative 2, the reduction of buffer between the ramp and sensitive receptors would be relatively small. The alternative would require more construction than the proposed project with a corresponding increase in construction noise. This alternative would have more potential noise impacts on sensitive receptors than the proposed project, though it is expected that in both cases the impact would be less than significant. [Greater]

Visual Resources. The alternative would require more grading and disturbance than the proposed project. However, the visual changes in this freeway view corridor would not be expected to be substantially more significant than the project as proposed, and in both cases would be less than significant. [Similar]

Public Services. As with the proposed project, the interchange improvements would not require response from any public service responder, nor require new facilities or utilities. [Similar]

Hazards and Hazardous Materials. As with the proposed project, construction of this alternative would not result in the release of hazardous materials or exposure of individuals to hazardous materials. The new facilities would not result in any hazardous conditions involving the airport. [Similar]

Land Use and Planning. As with the proposed project, the alternative would not affect agricultural soils nor divide a community. The alternative would be consistent with goals and policies of the Ukiah General Plan. [Similar]

Global Climate. Since more grading and construction using heavy equipment would be required, there would be greater emission of GHG. Operationally, the vehicles using this alternative would generate approximately the same GHG as the proposed project. For both this alternative and the project as proposed, the impacts would be significant and unavoidable. [Greater]

Energy. Since more grading and construction using heavy equipment would be required, there would be greater use of energy to construct the alternative. Operationally, the vehicles using this alternative would use approximately the same energy as the proposed project. For both this alternative and the project as proposed, the impacts would be less than significant. [Greater]

Ability of the Alternative to Meet Project Objectives. This alternative would meet all project objectives.

4. Environmentally Superior Alternative

The CEQA Guidelines require the EIR to identify the environmentally superior alternative. Alternative 1 (No Project) would eliminate all project impacts. It is expected that the three significant and unavoidable indirect impacts resulting from the proposed project would be reduced to a less-than-significant level for the No Project alternative. However, existing traffic congestion and safety impacts at the Talmage Road/Airport Park Boulevard intersection and the Southbound Off-ramp Ramp intersection with Talmage Road would remain unaddressed by this alternative. Over the next 20 years, given Caltrans-projected traffic volume increases, this alternative would result in more energy use than the project as proposed. Nevertheless, the elimination of all other impacts would make this alternative the environmentally superior alternative.

As discussed earlier, if the no project alternative is identified as the environmentally superior option, then one of the other remaining alternatives must be identified as environmentally superior. This is particularly the case because the No Project alternative completely impedes the City's objectives to improve operations of the interchange to address existing operational shortcomings.

Among the remaining alternatives, Alternative 2 (Maintain Two Separate Southbound Off-ramps) would have reduced energy impacts. Otherwise, impacts would be similar but, slightly greater than the proposed project, though any additional potentially significant impacts can likely be mitigated to a less-than-significant level. Furthermore, Alternative 2 has definite traffic operational benefits. Accordingly, Caltrans recommended that it be assessed as an alternative in this EIR. Alternative 3 (Widen the Overcrossing) would have greater impacts on most resources than the project as proposed with the exception that it improves intersection levels of service. Therefore, Alternative 2 would be the environmentally superior alternative after the No Project alternative.

6.0 REPORT PREPARATION

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6.2 Persons Contacted

Gustavson, Andy	Mendocino County Department of Planning and Building Services
Speka, John	Mendocino County Department of Planning and Building Services
Stump, Charley	Ukiah Community Development Director

6.3 Preparers of the Report

This report was prepared by an environmental study team led by Leonard Charles and Associates under a contract with the City of Ukiah. The EIR preparation was overseen and coordinated by Charley Stump, Community Development Director of the City of Ukiah. The following individuals worked on this EIR:

Leonard Charles and Associates

Leonard Charles, Ph.D.	Project Manager
Lynn Milliman, M.A.	Environmental Analyst
Jacoba Charles, M.S., M.A.	Environmental Analyst

GHD, Inc.

Matt Kennedy, P.E., T.E.	Traffic Engineer
--------------------------	------------------

Illingworth & Rodkin, Inc.

Michael Thill	Acoustic Consultant
Keith Pommerenck	Air Quality Consultant

Anthropological Studies Center/Sonoma State University

Kate Erickson Green, M.A.	Archaeologist
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