

**RECIRCULATED PORTIONS OF THE DRAFT
ENVIRONMENTAL IMPACT REPORT FOR THE
RIVER CROSSING MARKETPLACE SPECIFIC PLAN**

SCH No. 2017052030

Lead Agency:

CITY OF REDDING

777 Cypress Avenue

Redding, CA 96001

Assisted by:

PLACEWORKS

101 Parkshore Drive, Suite 215

Folsom CA 95630

December 2019

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SUMMARY OF REVISIONS

Summary of Revisions

Pursuant to CEQA Guidelines § 15088.5(c), the City of Redding (City) is recirculating portions of the Draft Environmental Impact Report (EIR) prepared for the proposed River Crossing Marketplace Specific Plan project (State Clearinghouse No. 2017052030). The City revised the air quality analysis to account for pass-by trips and to update to the newest emission factor air quality model (EMFAC2017). The Traffic Impact Assessment Report (TIAR) was amended to incorporate the previous errata and to provide Saturday trip information for the 2040 Rancheria (casino) plus Project condition.

The following documents are part of the recirculation:

Section 2 Executive Summary

Section 2 was revised to reflect changes in 4.2 Air Quality and 4.12 Transportation.

Section 4.2 Air Quality

Section 4.2, Air Quality, of the Draft EIR has been revised to reflect the correct assumption for pass-by trips and to use the most current air quality modeling software available (EMFAC2017). As a result of the new modeling, impact AQ-1, AQ-3 and AQ-8 identified as significant and unavoidable in the original Draft EIR, are now less than significant.

Section 4.6 Greenhouse Gases

Section 4.6, Greenhouse Gases, of the Draft EIR has been revised to reflect the updated air quality modeling.

Section 4.12 Transportation

The River Crossing Marketplace Specific Plan Traffic Impact Analysis Report (TIAR) Appendix 4.12-1 Traffic Impact Analysis Report (TIAR) has been updated to incorporate the information contained in the previous TIAR Addendum, include all of the previous technical memorandums as attachments, and to analyze the Saturday peak traffic information for the 2040 Redding Rancheria (casino) Plus Project condition. Section 4.12 Transportation of the Draft EIR has been revised to include information from the revised TIAR and its appendices. No changes to impacts resulted from the update.

Section 6 CEQA-Mandated Assessment

This section was revised to reflect 4.2 Air Quality and 4.12 Transportation.

This Recirculated Draft EIR has been prepared in compliance with CEQA Guidelines Section 15088.5. This document does not revise the EIR in any other respect than noted above, and the other portions of the EIR are not being recirculated for public review and comment.

SUMMARY OF REVISIONS

Review and Comment

In accordance with CEQA Guidelines § 15088.5(f)(2), the City requests that agencies and interested parties limit their comments to the modified portions of the Draft EIR only. Consistent with § 15088.5(f)(2), the City need only respond to (1) comments received during the initial circulation period that relate to chapters or portions of the document that were not revised and recirculated, and (2) comments received during the recirculation period that relate to the chapters or portions of the earlier EIR that were revised and recirculated.

DOCUMENT AVAILABILITY: Pursuant to CEQA Guidelines § 15087, responsible and trustee agencies and other interested parties, including members of the public, must submit any comments in response to this notice no later than **Thursday, February 6, 2020**.

The recirculated portions of the Draft EIR are available for review at **Redding City Hall** located at 777 Cypress Avenue, Redding, CA 96001, in addition to the City website (<https://www.cityofredding.org>).

A courtesy copy of the document has been provided to the **Redding Library** located at 1100 Parkview Avenue, Redding, CA 96001. Note that the appendices to the document are included in electronic format.

COMMENTS: Written comments should be submitted to:

Kent Manuel, Planning Manager (Special Projects)
City of Redding
Development Services Department
777 Cypress Avenue, Redding, CA 96001
Email: kmanuel@ci.redding.ca.us

2. Executive Summary

2.1 INTRODUCTION

This draft environmental impact report (Draft EIR) addresses the environmental effects associated with the implementation of the proposed River Crossing Marketplace Specific Plan (the Project), including the location, setting, and characteristics of the Project site; objectives, components, and approximate construction schedule; and required permits and approvals. The California Environmental Quality Act (CEQA) requires that local government agencies consider the environmental consequences before taking action on projects over which they have discretionary approval authority. An environmental impact report (EIR) analyzes potential environmental consequences in order to inform the public and support informed decisions by local and state governmental agency decision makers.

This Draft EIR has been prepared pursuant to the requirements of CEQA and the City of Redding's CEQA procedures. The City of Redding, as the lead agency, has reviewed and revised all submitted drafts, technical studies, and reports as necessary to reflect its own independent judgment, including reliance on City technical personnel from other departments and review of all technical subconsultant reports.

Data for this Draft EIR derive from onsite field observations, discussions with affected agencies, analysis of adopted plans and policies, review of available studies, reports, data and similar literature, and specialized environmental assessments. Technical reports supporting the conclusions in this Draft EIR are included as appendices and referenced in the analysis.

2.2 ENVIRONMENTAL PROCEDURES

This Draft EIR has been prepared pursuant to CEQA to assess the environmental effects associated with implementation of the proposed Project, as well as anticipated future discretionary actions and approvals. CEQA established six main objectives for an EIR:

1. Disclose to decision makers and the public the significant environmental effects of proposed activities.
2. Identify ways to avoid or reduce environmental impact.
3. Prevent environmental impact by requiring implementation of feasible alternatives or mitigation measures.
4. Disclose to the public reasons for agency approval of projects with significant environmental effects.
5. Foster interagency coordination in the review of projects.
6. Enhance public participation in the planning process.

EXECUTIVE SUMMARY

An EIR is the most comprehensive form of environmental documentation in CEQA and the CEQA Guidelines; it is intended to provide an objective, factually supported analysis and full disclosure of the environmental consequences of a proposed project with the potential to result in significant, adverse environmental impacts.

An EIR is one of various decision-making tools used by the City to consider the merits and disadvantages of a project that is subject to its discretionary authority. Before approving a proposed project, the City must consider the information in the EIR; determine whether the EIR was prepared in accordance with CEQA and the CEQA Guidelines; determine that it reflects the independent judgment of the lead agency; adopt findings concerning the Project's significant environmental impacts and alternatives; and adopt a statement of overriding considerations if significant impacts cannot be avoided.

2.2.1 TYPE AND PURPOSE OF THIS DRAFT EIR

This Draft EIR has been prepared as a "Project EIR", defined by CEQA Guidelines Section 15161 (California Code of Regulations, Title 14, Division 6, Chapter 3). This type of EIR examines the environmental impacts of a specific development project and should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the Project including planning, construction, and operation.

2.3 PROJECT LOCATION

The Project site is on the northeast corner of S. Bonnyview Road and Bechelli Lane in the City of Redding, as shown in Figure 3-1 in Chapter 3, Project Description, of this EIR. The Project site is bounded by South Bonnyview Road to the south; Bechelli Lane to the west; a stormwater detention basin/conservation easement and vacant land to the north; and Interstate 5 (I-5) to the east.

2.4 PROJECT SUMMARY

The Project applicant (Costco Wholesale) is requesting adoption of the River Crossing Marketplace Specific Plan, which would result in construction of approximately 222,000 square feet of retail uses consisting of a 152,000-square-foot discount warehouse store with up to 15 fuel pumps (30 fuel dispensers) and six retail pads accommodating approximately 70,000 square feet of retail, restaurants (some with drive-through lanes), and service uses. The Specific Plan would include a sign package for a freeway-oriented pylon sign and other signage. To accommodate the proposed Project, the general plan land use designation would be amended from Shopping Center and Residential, 6 to 10 units per acre to Regional Commercial, and the zoning would be amended from "SC" Shopping Center District and "RM-10", Multiple Family District to "RC", Regional Commercial District with the "SP" Specific Plan Overlay District.

2.5 SUMMARY OF PROJECT ALTERNATIVES

CEQA requires that an EIR analyze a “no project” alternative (CEQA Guidelines Section 15126.6(e)). CEQA Guidelines also require that the environmentally superior alternative be designated. If the alternative with the least environmental impact is the No Project Alternative, the EIR must designate the next most environmentally superior alternative.

Based on the location, existing uses and proposed objectives of the Project, it was determined that, pursuant to CEQA Guidelines Section 15126.6(a), a reasonable range of alternatives includes the three listed below. The alternatives considered are as follows. The complete analysis of alternative is included in Chapter 5.

- **No Project Alternative.** CEQA Guidelines Section 15126.6(e) addresses the required analysis of the “no project” alternative, directing that the analysis should consider “what would reasonably be expected to occur in the foreseeable future if the Project were not approved, based on current plans and consistent with available infrastructure and community services.” The Project site is designated and zoned for a mix of commercial and residential development. Therefore, this alternative is not “no-build” on the Project site, but rather future development consistent with the existing land use regulations. This alternative assumes development only of a total of approximately 25 acres of property that is included in the proposed Project. This alternative is required by the CEQA Guidelines. Section 5.6 contains an analysis of this alternative.
- **Expansion of the Existing Costco.** Costco Wholesale is the applicant for the proposed Specific Plan and has acknowledged its desire to construct a larger facility in Redding at the South Bonnyview Road location. In order to provide additional land for an expanded discount warehouse, fuel facility and required parking, this alternative would require the closure and abandonment of Old Alturas Road between Friendly Road and Bradford Way to allow the existing store to expand onto the existing right-of-way (ROW). This alternative would reduce traffic and biology impacts identified in the EIR for development at the current location. This alternative was also requested by a resident during the Notice of Preparation (NOP) review period. Section 5.7 contains an analysis of this alternative.
- **Oasis Road Specific Plan Site.** The Oasis Road Specific Plan was adopted in 2007, in part, to plan for significant retail development in the northern part of the City of Redding. That Plan includes approximately 210 acres designated for Regional Commercial uses. Adoption followed the 2005 certification of a Master Environmental Impact Report (SCH#20022122045) and approval of a use permit for development of the 302,238-square-foot “Redding Oasis Towne Center” to be located at the northeast quadrant of the I-5/Oasis Road interchange. Both the EIR and use permit suggests that, based on peak hour traffic, approximately 150,000 square feet of commercial land can be developed with high traffic generation retail uses before a new interchange with Interstate 5 (I-5) at Oasis Road must be constructed. However, there is sufficient entitlement to include the property as an alternative. The intent of this alternative would be to reduce transportation and noise, impacts associated with the Project at its proposed location. Section 5.8 contains an analysis of this alternative.

EXECUTIVE SUMMARY

2.6 AREAS OF CONTROVERSY

The following summarizes the key areas of controversy identified during the Notice of Preparation comment period from May 10, 2017 through July 1, 2017, and from a public scoping meeting held by the Planning Commission on June 13, 2017. Details of the comments can be found in Section 1.3.1 of Chapter 1, Introduction, of this EIR.

Table 2-1 Areas of Controversy

Issue	Where Addressed in This EIR
Traffic	See Section 4.12, Transportation & Traffic
Site Access	See Section 4.12, Transportation & Traffic See Section 4.7 Hazards
Noise	See Section 4.10, Noise
Trees	See Section 4.3, Biological Resources
Storm Drainage	See Section 4.8, Hydrology and Water Quality
Appropriate Location	See Chapter 5, Alternatives
Conservation Easement Impacts	See Section 4.3 Biological Resources

2.7 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Table 2-1 summarizes the conclusions of the environmental analysis contained in this Draft EIR. Impacts are identified as significant or less than significant, and mitigation measures are identified for all significant impacts. The level of significance after imposition of the mitigation measures is also presented.

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
4.1 Aesthetics			
AES-1: The Project would not have a substantial adverse effect on a scenic vista.	Less than Significant	None Required	Less than Significant
AES-2: The Project would not substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	No Impact	None Required	No Impact
AES-3: The Project would not degrade the existing visual character or quality of the site and its surroundings.	Less than Significant	None Required	Less than Significant
AES-4: The Project would not expose people on- or off-site to substantial light or glare which would adversely affect day or nighttime views in the area.	Less than Significant	None Required	Less than Significant
AES-5: The Project, in combination with past, present, and reasonably foreseeable projects, would result in less than significant cumulative impacts with respect to aesthetics.	Less than Significant	None Required	Less than Significant
4.2 Air Quality			
AQ-1: Implementation of the proposed Project would conflict with or obstruct implementation of the 2015 Air Quality Attainment Plan.	<u>Less than</u> Significant and Unavoidable	None <u>Required</u> Feasible	<u>Less than</u> Significant and Unavoidable
AQ-2: Project implementation would not violate an air quality standard or contribute substantially to an existing or projected air quality violation during project construction.	Potentially Significant without Mitigation	AQ-2: Prior to issuance of a grading permit, the Project applicant shall submit a grading plan for review and approval by the City of Redding Development Services Department. The following specifications shall be included on the permit to reduce short-term air quality impacts attributable to the on-site and off-site construction activities: <ul style="list-style-type: none"> During all construction activities, all diesel-fueled construction equipment, including but not limited to rubber-tired dozers, graders, scrapers, excavators, asphalt paving equipment, cranes, and tractors, shall be California Air Resources Board (CARB) Tier 3 Certified or better, as set forth in Section 2423 of Title 13 of the California Code of Regulations and Part 89 of Title 40 of the Code of Federal Regulations. 	Less than Significant

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		<ul style="list-style-type: none"> During all construction activities, all architectural coatings applied shall contain a low content of volatile organic compounds (VOC) (i.e., 100 grams/liter) as required by the Green Building Code and as adopted by the City of Redding. All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. Equipment maintenance records shall be kept on-site and made available upon request by the City of Redding or Shasta County AQMD. All material excavated, stockpiled, or graded shall be sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering shall occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day. All unpaved areas (including unpaved roads) with vehicle traffic shall be watered periodically or have dust palliatives applied for stabilization of dust emissions. All on-site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads. All land clearing, grading, earth-moving, or excavation activities on the Project site shall be suspended when sustained winds are expected to exceed 20 miles per hour. All portions of the development site which have been stripped of vegetation by construction activities shall be stabilized in accordance with the approved SWPPP. All trucks hauling dirt, sand, soil, or loose material shall be covered or shall maintain at least 2 feet of freeboard (i.e., minimum vertical distance between top of the load and the trailer) in accordance with the requirements of California Vehicle Code Section 23114. This provision will be enforced by local law enforcement agencies. All material transported off-site shall be either sufficiently watered or securely covered to prevent a public nuisance. Prior to final occupancy, the applicant shall re-establish ground 	

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		cover on the construction site through seeding and watering. ▪ Off-road construction equipment shall not be left idling for periods longer than 5 minutes when not in use.	
AQ-3: Project implementation would violate an air quality standard or contribute substantially to an existing or projected air quality violation during Project operations.	<u>Less than</u> Significant and Unavoidable	None <u>Required</u> feasible	<u>Less than</u> Significant and Unavoidable
AQ-4: Project implementation would not expose sensitive receptors to substantial carbon monoxide pollutant concentrations.	Less than Significant	None Required	Less than Significant
AQ-5: Implementation of the proposed Project would not expose sensitive receptors to substantial toxic air contaminant concentrations during Project construction.	Less than Significant	None Required	Less than Significant
AQ-6: Project implementation would not expose sensitive receptors to substantial toxic air contaminant concentrations during Project operations.	Less than Significant	None Required	Less than Significant
AQ-7: Implementation of the proposed Project would not expose a substantial number of people to objectionable odors during construction or operations.	Less than Significant	None Required	Less than Significant
AQ-8: Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).	<u>Less than</u> Significant and Unavoidable	None <u>Required</u> feasible	<u>Less than</u> Significant and Unavoidable
4.3 Biological Resources			
BIO-1: Project development could have a substantial effect, either directly or through habitat modification, on a natural community or on a plant species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	No Impact	None Required	No Impact
BIO-2: Project development could have a substantial adverse impact on special-status animal species.	Potentially Significant without Mitigation	BIO-2.1: The Project applicant must carry out one of the following two actions regarding vernal pool fairy shrimp and vernal pool	Less than Significant

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		<p>tadpole shrimp:</p> <ol style="list-style-type: none"> 1. Retain a qualified biologist to conduct protocol-level surveys for federally listed vernal pool shrimp to determine presence/absence and appropriate mitigation. The biologist shall prepare a report with the methods and results of such surveys and submit the report to the US Fish and Wildlife Service and the City of Redding Development Services Director; or, 2. Assume the presence of federally listed vernal pool shrimp and mitigate at a ratio of 3:1, or another ratio as approved by the US Fish and Wildlife Service or Army Corps of Engineers, for all impacts on shrimp habitat in accordance with state and federal requirements. <p>BIO-2.2: Project construction activities shall prevent the discharge of sediment and/or muddy, turbid, or silt-laden waters into nearby wetlands. The Project construction contractor shall install and maintain sediment barriers (e.g., filter fabric fencing, fiber mats, straw or waddles/rolls) capable of preventing sedimentation/turbidity, where necessary.</p> <p>BIO-2.3: The existing hydrology of the offsite Conservation Easement shall be maintained by providing appropriate stormwater outfall to the easement area through the Project's stormwater infiltration system. The method and necessary engineering calculations shall be provided to the City with the final improvement plans prepared for the Project and installed prior to occupancy.</p> <p>BIO-2.4: The following measures will avoid or minimize the potential for Project-related impacts on white-tailed kite and bald eagle. If tree removal and construction is to occur during the nesting season (February 15 through August 31), a qualified biologist shall conduct a preconstruction survey no more than seven days before construction activities begin. If an active migratory bird, raptor nest is found, no construction activities shall occur within 300 feet of the nest unless a smaller buffer zone is approved by CDFW. Construction may resume once the young have left the nest or as approved by the qualified biologist. If a lapse in construction</p>	

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		<p>activities of 14 days or more occurs during the nesting season, an additional nesting bird survey is recommended to ensure no nests were established in the area while construction was on hold.</p> <p>BIO-2.5: The removal of trees shall occur outside of the breeding season for bats designated as April 1 through August 15, unless a qualified biologist conducts a preconstruction survey no more than seven days before construction activities begin. If an active roost is found, no construction activities shall occur within 300 feet of the nest unless a smaller buffer zone is approved by CDFW. Construction may resume once the young have left the roost or as approved by the qualified biologist. If a lapse in construction activities of 14 days or more occurs during the roosting season, an additional roost survey is recommended to ensure no roosts were established in the area while construction was on hold.</p> <p>BIO-2.6: Prior to issuance of a grading permit affecting any jurisdictional waters, including wetlands, as identified in the Project wetland delineation, the Project applicant shall provide written verification to the City of Redding Development Services Department that the following resource agency permits and mitigation requirements have been successfully secured from the Corps, CDFW, RWQCB, or any other applicable agency (i.e., USFWS) identified through the permitting process:</p> <ul style="list-style-type: none"> ▪ Prior to any discharge of dredged or fill material into “waters of the U.S.” including wetlands, authorization under a Nationwide Permit or Individual Permit shall be obtained from the Corps. For any features determined to not be subject to the Corps jurisdiction during the verification process, authorization to discharge (or a waiver from regulation) shall be obtained from the RWQCB. For fill requiring a Corps permit, water quality certification shall be obtained from the RWQCB prior to discharge of dredged or fill material. Verification shall be provided to the City of Redding Development Services Department prior to issuance the issuance of a grading permit. ▪ Prior to any activities that would place fill in seasonal and/or 	

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		<p>fresh water emergent wetlands , a 1602 streambed alteration agreement shall be obtained by the Project applicant to address potential impacts to fish and wildlife resources resulting from Project implementation .</p> <ul style="list-style-type: none"> ▪ The Project applicant shall achieve the mitigation for the permanent loss of streams, wetlands, and other waters through the purchase of mitigation credits at an agency approved mitigation bank at a minimum 1:1 ratio, or through onsite/offsite habitat restoration at a 3:1 ratio, or other ratio required by the permitting agencies. ▪ Work on the beds/banks of streams shall be limited to the period between June 1 and October 15, or as may otherwise be specified through permits/certifications issued by the CDFW, Corps, and/or RWQCB. If work is proposed outside the agency approved work period, for either portions, or the entire Project site, the applicant shall have concurrence from those agencies that those activities can proceed prior to conducting such work and any additional measures, such as work terminating immediately, and erosion control measures implemented should rainfall be anticipated within three days shall be implemented. 	
BIO-3: Development of the proposed Project would not impact riparian habitats or sensitive natural communities.	No Impact	None Required	
BIO-4: Development of the proposed Project would impact about 0.27 acre of seasonal wetland in the northeast part of the Project site.	Potentially Significant without Mitigation	BIO-4: Implementation of Mitigation Measures BIO-2.1, 2.2, and BIO-2-6 will address this impact.	Less than Significant
BIO-5: Development of the proposed Project could impact nesting migratory birds protected under federal and state laws.	Potentially Significant without Mitigation	BIO-5: Implementation of Mitigation Measure BIO-2.4 will address this impact.	Less than Significant
BIO-6: Project development would not substantially interfere with overland wildlife movement.	No Impact	None Required	No Impact
BIO-7: Development of the proposed Project would not conflict with City of Redding ordinances managing trees on development sites and on public property.	No Impact	None Required	No Impact
BIO-8: Project development would not conflict with a habitat conservation plan or natural community	No Impact	None Required	No Impact

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
conservation plan.			
BIO-9: Other projects in the Sacramento Valley would impact special-status species, sensitive habitats, and jurisdictional waters and wetlands.	Less than Significant	None Required	Less than Significant
4.4 Cultural Resources			
CULT-1: The Project would not cause a substantial adverse change in the significance of a historical resource.	Potentially Significant without Mitigation	<p>CULT-1: The developer shall retain a qualified cultural resource monitor(s) to be present to monitor initial site clearing, grading, and utility installation.</p> <ul style="list-style-type: none"> ▪ If historical/prehistorical, or other cultural artifacts that are not human remains are found, all work within 100 feet of the find shall immediately cease until a qualified archaeologist can examine the find. If the find is deemed to be a historical resource (eligible for inclusion in the CRHR or NRHP), then the qualified expert shall submit a plan for the evaluation of all potential cultural resources to the City of Redding Department of Development Services. If the resources are found to be historical resources, then a mitigation plan shall be submitted to the City of Redding for approval, outlining how the resources will be protected or recovered prior to work resuming at that location. The plan shall be implemented before other ground-disturbing or construction activities can resume within the vicinity of the find. ▪ If human remains are discovered, all work within 100 feet of the remains shall immediately cease, and the Shasta County Coroner's office shall be notified. If the coroner determines that the remains are Native American, the coroner shall notify the Native American Heritage Commission to identify the most likely descendant. The Project developer, under the direction of the City of Redding, and in consideration of recommendations from the most likely descendant, shall prepare a plan for treatment and reinternment of the remains. In the event that the most likely descendant cannot reach an agreement with the property owner for these activities even after mediation by the NAHC, the property owner shall reinter the remains where they will not be 	Less than Significant

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		subject to further disturbance, record the location with the NAHC and the Northeast Information Center, and work with the City to establish a zoning designation or easement at the location to protect the remains against future discovery or damage. Work shall not resume within the vicinity of the find until the appropriate treatment measures have been completed to the satisfaction of the City.	
CULT-2: The Project would not cause a substantial adverse change in the significance of an archaeological resource.	Potentially Significant without Mitigation	CULT-2: Implementation of Mitigation Measure CULT-1.	Less than Significant
CULT-3: The Project would not directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature.	Potentially Significant without Mitigation	CULT-3: Should any paleontological resources be encountered during ground disturbing activities, all such activities shall halt within a 100-foot radius of the discovery, and a qualified paleontologist shall be contacted to determine the nature of the find, evaluate its significance, and if necessary, suggest preservation or removal methods.	Less than Significant
CULT-4: The Project would not disturb any human remains, including those interred outside of formal cemeteries.	Potentially Significant without Mitigation	CULT-4: Implementation of Mitigation Measure CULT-1.	Less than Significant
CULT-5: The Project, in combination with past, present, and reasonably foreseeable future projections, would result in less than significant cumulative impacts with respect to cultural resources.	Less than Significant	None Required	Less than Significant
4.5 Geology and Soils			
GEO-1: Project development would not subject people or structures to hazards from surface rupture of a known active fault.	No Impact	None Required	No Impact
GEO-2: Ground shaking can be expected to occur within the design lifetimes of the proposed buildings. Project design and construction would comply with the CBC and with recommendations of the Project geotechnical investigation report. Project development would not subject people or structures to substantial hazards from ground shaking.	Less than Significant	None Required	Less than Significant

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
GEO-3: Development of the proposed Project would subject people and structures to hazards from seismic-related ground failure including liquefaction.	Less than Significant	None Required	Less than Significant
GEO-4: The site and surrounding area are relatively flat to gently sloping. Development of the Project would not subject people or structures to landslide hazards.	No Impact	None Required	No Impact
GEO-5: Project development would disturb and expose large amounts of soil, thus dramatically increasing the potential for soil erosion on-site. The construction phase of the Project would be required to use Best Management Practices (BMPs) to minimize erosion from the site.	Less than Significant	None Required	Less than Significant
GEO-6: Project development would not subject people or structures to substantial hazards from ground subsidence.	Less than Significant	None Required	Less than Significant
GEO-7: Shallow site soils may be unsuitable for supporting structures for human occupancy. The Project geotechnical report recommends removal of existing shallow soils beneath and next to the proposed building pads. Project development would not expose people or structures to substantial hazards from collapsible soils.	Less than Significant	None Required	Less than Significant
GEO-8: Clay soils observed at the site are considered moderately expansive. The Project geotechnical investigation report includes recommendations for compaction of potentially expansive clay soils. Project development would not pose substantial hazards to people or structures arising from expansive soils after compliance with such recommendations.	Less than Significant	None Required	Less than Significant
GEO-9: Project development would not expose people to substantial hazards from volcanic eruptions from Mt. Shasta or Mt. Lassen.	No Impact	None Required	No Impact
GEO-10: The proposed Project would include sewer laterals and would not involve septic tanks or other alternative wastewater disposal systems. Project development would have no impact regarding soils	No Impact	None Required	No Impact

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TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
incapable of supporting such systems.			
GEO-11: No significant cumulative impacts to geology and soils are anticipated, and Project impacts would not be cumulatively considerable.	Less than Significant	None Required	Less than Significant
4.6 Greenhouse Gases			
GHG-1: Greenhouse gas emissions generated by the Project would not have a significant impact on global climate change in the year 2020.	Less than Significant	None Required	Less than Significant
GHG-2: Greenhouse gas emissions generated by the Project would not have a significant impact on global climate change in the year 2035.	Less than Significant	None Required	Less than Significant
GHG-3: Implementation of the proposed Project would not conflict with an applicable greenhouse gas reduction plan, policy, or regulation.	Less than Significant	None Required	Less than Significant
GHG-4: Greenhouse gas emissions generated by the Project would not have a significant impact on global climate change.	Less than Significant	None Required	Less than Significant
4.7 Hazards and Hazardous Materials			
HAZ-1: The proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Less than Significant	None Required	Less than Significant
HAZ-2: The proposed Project would not create a significant hazard to the public or the environment through accidental reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Less than Significant	None Required	Less than Significant
HAZ-3: Project development would not cause substantial hazards to the public or the environment arising from hazardous materials sites on the proposed Project site.	Potentially Significant without Mitigation	HAZ-3: Hazardous materials contamination from previous service uses could be present in site soils. <ul style="list-style-type: none"> ▪ If contaminated soils are found in concentrations above established thresholds, a Site Management Plan (SMP) shall be prepared and implemented (as outlined below) and any contaminated soils found in concentrations above established 	Less than Significant

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TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		<p>thresholds shall be removed and disposed of according to California Hazardous Waste Regulations.</p> <ul style="list-style-type: none"> ▪ The SMP shall be prepared by a qualified hazardous materials consultant and provided to the City of Redding. The SMP shall include: <ul style="list-style-type: none"> • Management practices for handling contaminated soil or other materials if encountered during construction or cleanup activities and measures to minimize dust generation, stormwater runoff, and tracking of soil off-site. • Preliminary Remediation Goals (PRGs) for environmental contaminants of concern to evaluate the site conditions following SMP implementation. • A Health and Safety Plan (HSP) for each contractor working at the site that addresses the safety and health hazards of each phase of site operations that includes the requirements and procedures for employee protection. The HSP will also outline proper soil handling procedures and health and safety requirements to minimize worker and public exposure to hazardous materials during construction. • Cleanup and remediation activities on the site prior to building construction shall be conducted in accordance with the SMP. • The SMP shall be prepared and submitted to the City of Redding for review and approval prior to issuance of grading permits and commencement of cleanup activities. The approved SMP shall detail procedures and protocols for management of soil containing environmental contaminants during site development activities. • All measures shall be printed on all construction documents, contracts, and Project plans prior to issuance of grading permits. • A No Further Action letter (or equivalent assurance) shall be provided to the City of Redding prior to issuance of any grading permit for the proposed Project. 	

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TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
HAZ-4: The proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Less than Significant	None Required	Less than Significant
HAZ-5: The proposed Project, in combination with past, present, and reasonably foreseeable projects, would result in less than significant cumulative impacts with respect to hazards and hazardous materials.	Less than Significant	None Required	Less than Significant
4.8 Hydrology and Water Quality			
HYD-1: Specific Plan buildout would not violate any water quality standards or discharge requirements.	Less than Significant	None Required	Less than Significant
HYD-2: Specific Plan buildout would increase water demands in the City, thus increasing demands for groundwater.	Less than Significant	None Required	Less than Significant
HYD-3: Project implementation would not substantially interfere with groundwater recharge.	Less than Significant	None Required	Less than Significant
HYD-4: Specific Plan implementation would change the drainage pattern on and surrounding the Project site and would not cause substantial erosion or siltation on- or off-site.	Less than Significant	None Required	Less than Significant
HYD-5: Specific Plan implementation would change the drainage pattern on-site but would not cause flooding on- or off-site	Less than Significant	None Required	Less than Significant
HYD-6: Specific Plan buildout would not generate runoff exceeding the capacity of existing or planned storm drainage systems or generate a substantial increase in polluted runoff.	Less than Significant	None Required	Less than Significant
HYD-7: Specific Plan buildout would not substantially degrade water quality.	Less than Significant	None Required	Less than Significant
HYD-8: Specific Plan buildout, in combination with past, present, and reasonably foreseeable projects, would not cause significant cumulative impacts to hydrology and water quality.	Less than Significant	None Required	Less than Significant

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TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
4.9 Land Use and Planning			
LU-1: The Project would not physically divide an established community.	No Impact	None Required	No Impact
LU-2: The Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None Required	Less than Significant
LU-3: The Project would not conflict with any applicable habitat conservation plan or natural community conservation plan.	No Impact	None Required	No Impact
LU-4: The Project, in combination with past, present and reasonably foreseeable projects, would/would not result in less than significant cumulative impacts with respect to land use and planning.	Less than Significant	None Required	Less than Significant
4.10 Noise			
NOI-1: The Project will result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project.	Less than Significant	None Required	Less than Significant
NOI-2: The Project could potentially expose persons to or generate excessive ground borne vibration or ground borne noise levels.	Less than Significant	None Required	Less than Significant
NOI-3: The Project could potentially expose persons to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	Less than Significant	None Required	Less than Significant
NOI-4: The Project could potentially result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.	Potentially Significant without Mitigation	NOI-4: So as to not exceed the Redding Municipal Code Section 18.40.100 Noise Standards: <ul style="list-style-type: none"> ▪ Parking lot sweeping activities associated with the proposed project shall be limited to the daytime hours between 7:00 a.m. and 10:00 p.m. ▪ All loading, unloading, opening, closing or other handling of 	Less than Significant

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TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		boxes, crates, containers, building materials, or similar objects in such a manner as to cause a noise disturbance across a residential real property line shall be limited to the daytime hours between 7:00 a.m. and 10:00 p.m. <ul style="list-style-type: none"> ▪ Tire center operations shall be limited to the daytime hours between 7:00 a.m. and 10:00 p.m. 	
NOI-5: The proposed Project would not expose people residing or working in the vicinity of the Project area to excessive aircraft noise levels from a public airport or public use airport.	No Impact	None Required	
NOI-6: The proposed Project would not expose people residing or working in the Project area to excessive noise levels from a private airstrip.	No Impact	None Required	No Impact
4.11 Public Services			
PS-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities and/or result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts to maintain acceptable service ratios, response times, or other performance objectives for any of the public services.	Less than Significant	None Required	Less than Significant
4.12 Transportation and Traffic			
TRANS-1: The Project would create a significant impact at several intersections and roadway segments under existing plus project and Year 2020 scenarios.	Potentially Significant without Mitigation	TRANS-1 .1: Prior to occupancy, the Project developer shall complete the following improvements to intersection #5 South Bonnyview Road/Bechelli Lane: <ul style="list-style-type: none"> ▪ Reconstruct the intersection and approaches into a four-leg, multi-lane roundabout in accordance with the specifications of the City Engineer. <p>If a multi-lane roundabout is not constructed at intersection #5 South Bonnyview Road/Bechelli Lane, widen the southbound approach to provide:</p> <ul style="list-style-type: none"> ▪ Two 325-foot-long left-turn lanes. 	Less Than Significant

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TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		<ul style="list-style-type: none"> One 325-foot-long shared through/left-turn lane. One 325-foot-long right-turn lane. <p>TRANS-1.2: Prior to occupancy, the Project developer shall complete the following improvements to intersection #7 South Bonnyview Road/ I-5 Southbound Ramps:</p> <p>Widen the eastbound approach to provide:</p> <ul style="list-style-type: none"> Two through lanes that <u>transition into two trap</u> become left-turn lanes at the next easterly intersection (#8 South Bonnyview/I-5 Northbound Ramps). <p>Widen the southbound <u>I-5 off-ramp</u> approach to provide:</p> <ul style="list-style-type: none"> One shared through/left-turn lane. Two 275-foot long right-turn lanes. <u>Alternatively, construct the intersections of South Bonnyview Road/ I-5 Southbound Ramps and South Bonnyview Road/ I-5 Northbound Ramps into a diverging diamond interchange.</u> 	Less Than Significant
		<p>TRANS-1.3 : Prior to occupancy, the Project developer shall complete the following improvements to intersection #8 South Bonnyview Road/ I-5 Northbound Ramps:</p> <ul style="list-style-type: none"> Widen the eastbound approach to provide: <ul style="list-style-type: none"> Two left-turn lanes. <p>Widen the northbound approach to provide:</p> <ul style="list-style-type: none"> One 300-foot shared through/left-turn lane. One 300-foot right-turn lane. <u>Alternatively, construct a diverging diamond interchange.</u> 	Less Than Significant
		<p>TRANS-1.4: Prior to occupancy, the Project developer shall construct improvements and/or pay the City Development Impact Fee, or proportionate share of improvement cost as noted, toward completing the following for roadway segment #2 Churn Creek Road between South Bonnyview Road and Victor Avenue:</p> <ul style="list-style-type: none"> The Project shall demonstrate payment of proportionate share of the following Improvements to Shasta County for Intersection #11 - Churn Creek Road/Hartmeyer Lane: <ul style="list-style-type: none"> Eliminate westbound left movement. 	Significant and Unavoidable

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TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		<ul style="list-style-type: none"> Provide a receiving lane on westbound Churn Creek Road for northbound left-turns from Hartmeyer Lane. Provide northbound right-turn lane. Widen adjacent bridge to accommodate intersection improvements. <ul style="list-style-type: none"> Improvements to Intersection #12 – Churn Creek Road & Huntington Drive: <ul style="list-style-type: none"> Construct a Two-Way-Left-Turn-lane (TWLTL) from approximately the bridge over Churn Creek to intersections #13 and #14; <u>or</u>, <u>Construct a TWLTL, from approximately the bridge over Churn Creek to intersections 13 and 14, however, eliminate left-turns at Huntington Drive, close gap in Huntington Drive, and construct a compact roundabout at the Victor Avenue and El Verano Drive intersection.</u> <p>Improvements to Intersections #13 and #14 (Churn Creek Road/Victor Avenue and Churn Creek Road/Rancho Road):</p> <ul style="list-style-type: none"> Construct the intersections of Churn Creek Road/Victor Avenue and Churn Creek Road/Rancho Road into a four-leg, single-lane roundabout. 	
		<p>TRANS-1.5: Prior to occupancy, the Project developer shall complete the following improvements on Loma Vista Drive between Churn Creek Road and Bechelli Lane:</p> <ul style="list-style-type: none"> Construct raised crosswalks at two locations on Loma Vista Drive. Construct median pedestrian refuge islands at the crosswalks. <p>Construct curb bulb-outs at the raised crosswalks.</p>	Less Than Significant
TRANS-2: The Project would create a less than significant impact at several Freeway mainline segments under 2020 conditions.	Less than Significant	None Required	Less than Significant
TRANS-3: The Project would conflict with level of service standards established by the county congestion management agency for designated roads or highways.	Potentially Significant	TRANS-3: Implement Mitigation Measures TRANS-1.2 and TRANS-1.3.	Less than Significant
TRANS-4: The Project would not increase hazards due to a design feature (e.g., sharp curves or dangerous	Potentially Significant without Mitigation	TRANS-4: If a roundabout is constructed at intersection #5 South Bonnyview/Bechelli Lane (see Mitigation Measure TRANS-1.1), prior	Less than Significant

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TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
intersections) or incompatible uses (e.g., farm equipment).		<p>to permitting left turns from the proposed Project at intersection #29 Bechelli Lane/Southern Driveway onto Bechelli Lane, the following roadway and signal improvements shall be made to City of Redding standards:</p> <ul style="list-style-type: none"> ▪ “Keep Clear” markings shall be painted on Bechelli Lane at intersection #29 Bechelli Lane/Southern Driveway. ▪ Queue detectors shall be installed at intersection #18 Bechelli/Blue Shield. <p>If no roundabout is constructed, no outbound left turns shall be permitted from the Project site at intersection #29 Bechelli Lane/Southern Driveway.</p>	
TRANS-5: The Project would not result in inadequate emergency access.	Less than Significant	None Required	Less than Significant
TRANS-6: The Project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Less than Significant	None Required	Less than Significant
TRANS-7: The proposed Project, in combination with past, present and reasonably foreseeable projects, would result in significant cumulative impacts with respect to transportation and traffic.	Potentially Significant without Mitigation	<p>TRANS-7.1: Prior to occupancy, in addition to the requirements of TRANS-1.2, the Project developer shall pay the City Development Impact Fee toward the following improvements at intersection #7 South Bonnyview Road/I-5 Southbound ramps.</p> <ul style="list-style-type: none"> ▪ Widen the westbound approach to provide: <ul style="list-style-type: none"> • Two left-turn lanes ▪ Widen the southbound I-5 off-ramp approach to provide: <ul style="list-style-type: none"> • One shared through/left-turn lane of length 400 feet. • Two right-turn lanes of length 400 feet. <p>TRANS-7.2: Prior to occupancy, in addition to the requirements of TRANS-1.3, the Project developer shall pay the City Development Impact Fee toward the following improvements at intersection #8 South Bonnyview Road/I-5 Northbound ramps.</p> <ul style="list-style-type: none"> ▪ Provide all improvements from Mitigation Measure TRANS-1.3. Widen the eastbound approach to provide: ▪ Add Northbound Left-Turn Lane; and ▪ Extend all Northbound turn lanes to 500 feet. 	Significant and Unavoidable

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TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
		<ul style="list-style-type: none"> ▪ <u>Or construct a diverging diamond interchange.</u> ▪ One additional eastbound left-turn lane ▪ Widen the northbound approach to provide: <ul style="list-style-type: none"> ▪ One left-turn lane of 500 feet in length ▪ One shared through/left-turn lane of 500 feet in length ▪ One 500-foot long right-turn lane <p>TRANS-7.3: Prior to occupancy, the Project developer shall complete the following improvements at Intersection #21 Bechelli Lane/Loma Vista Drive: Construct a traffic signal with split phasing for the eastbound and westbound approaches, and protected left-turn movements on northbound and southbound approaches; or</p> <ul style="list-style-type: none"> ▪ Construct a four-leg, single lane roundabout <p>TRANS-7.4: Prior to occupancy, in addition to the requirements of TRANS -1.4, the Project developer shall complete the following for roadway segment #2 Churn Creek Road between South Bonnyview Road and Victor Avenue:</p> <ul style="list-style-type: none"> ▪ Construct a TWLTL, <u>from approximately the bridge over Churn Creek to intersections #13 and #14</u>, with a single-lane roundabout at the Huntington Drive Intersection; or ▪ Construct a TWLTL, <u>from approximately the bridge over Churn Creek to intersections #13 and #14</u>, eliminate left-turns at Huntington Drive, close gap in Huntington Drive, and <u>construct</u> a compact roundabout at the Victor Avenue/El Verano Drive Intersection; or ▪ Construct a five-lane roadway. <p>TRANS-7.5: Prior to occupancy, the Project developer shall complete the following improvements on roadway segment #4 Bechelli Lane from South Bonnyview Road to Chinook Drive:</p> <ul style="list-style-type: none"> ▪ Provide a two-way left-turn lane on Bechelli Lane from Chinook Drive to Northern Driveway. 	

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TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
4.13 Tribal Cultural Resources			
TCR-1: Ground-disturbing activities could result in the unanticipated discovery of prehistoric archaeological sites, which may be considered tribal cultural resources.	Potentially Significant without Mitigation	TCR-1: One tribal monitor shall be retained to monitor all vegetation clearing and removal, and all initial surface grading of the Project area. The tribal monitor shall have the authority to temporarily pause ground disturbance in order to examine potential TCRs that may become unearthed during the activity. In the event that a TCR is identified, the monitor shall notify the City of Redding immediately to consult on appropriate and respectful treatment. Upon conclusion of the monitoring, the monitor shall submit a letter to the City to document the monitoring methods and results.	Less than Significant
TCR-2: No significant cumulative impacts to tribal cultural resources are anticipated, and Project impacts would not be cumulatively considerable.	Less than Significant	None Required	Less than Significant
4.14 Public Utilities			
UTIL-1: The Project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.	Less than Significant	None Required	Less than Significant
UTIL-2: The Project would not require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	Less than Significant	None Required	Less than Significant
UTIL-3: The Project would result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	Less than Significant	None Required	Less than Significant
UTIL-4: The Project, in combination with past, present and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to wastewater.	Less than Significant	None Required	Less than Significant
UTIL-5: The Project would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the	Less than Significant	None Required	Less than Significant

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TABLE 2-1 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Environmental Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
construction of which could cause significant environmental effects.			
UTIL-6: The City of Redding would have sufficient water supplies available to serve the project from existing entitlements and resources, and no new or expanded entitlements would be needed.	Less than Significant	None Required	Less than Significant
UTIL-7: The Project, in combination with past, present and reasonably foreseeable projects, would/would not result in a significant cumulative impacts with respect to water supply.	Less than Significant	None Required	Less than Significant
UTIL-8: The Project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.	Less than Significant	None Required	Less than Significant
UTIL-9: The Project would comply with federal, state, and local statutes and regulations related to solid waste.	Less than Significant	None Required	Less than Significant
UTIL-10: The Project, in combination with past, present and reasonably foreseeable projects, would not result in a significant cumulative impact with respect to solid waste.	Less than Significant	None Required	Less than Significant
4.15 Energy			
EGY-1: The Project would not use energy in a wasteful manner.	Less than Significant	None Required	Less than Significant
EGY-2: The proposed project, combined with other related cumulative projects, would not develop land uses and patterns that cause wasteful, inefficient, and unnecessary consumption of energy or construct new or retrofitted buildings that would have excessive energy requirements for daily operation.	Less than Significant	None Required	Less than Significant

4.2 AIR QUALITY

This section describes the regulatory framework and existing conditions on the Project site related to air quality and the potential impacts of the Project on same. *This section updates the previously recirculated Draft EIR to reflect revisions to the Project's emission modeling predictions based on the recent availability of the most up-to-date mobile emissions modeling software, the EMFAC2017 model. Maintained by the California Air Resources Board (CARB), EMFAC2017 was approved for use by the U.S. EPA in mid-August 2019. The previous Project air quality-related analysis relied on the EMFAC2014 model to calculate mobile-source emissions. In addition, this section updated the previously recirculated Draft EIR to account for refinements to construction timing. On-road operational mobile emissions were revised to utilize a combination of weekday, Saturday and Sunday trip rates, an updated fleet mix, EMFAC2017, and idling of passenger vehicles at the gas station. All additions are shown in underline text, and all deletions are shown in strikethrough text.*

4.2.1 ENVIRONMENTAL SETTING

4.2.1.1 REGULATORY FRAMEWORK

Federal and State Regulations

Ambient Air Quality Standards

The proposed Project will release gaseous emissions of criteria pollutants and dust into the ambient air; therefore, development activities under the proposed Project fall under the ambient air quality standards promulgated at the local, state, and federal levels. The federal Clean Air Act of 1971 and the Clean Air Act Amendments (1977) established the national ambient air quality standards (NAAQS), which are promulgated by the U.S. Environmental Protection Agency (EPA). The State of California has also adopted its own California ambient air quality standards (CAAQS), which are promulgated by the California Air Resources Board (CARB). Implementation of the Project would occur in the Shasta County portion of the Northern Sacramento Valley Air Basin (NSVAB), which is under the air quality regulatory jurisdiction of the Shasta County Air Quality Management District (SCAQMD) and is subject to the rules and regulations adopted by the air district to achieve the NAAQS and CAAQS. Applicable federal, state, regional, and local laws, regulations, plans, and guidelines relevant to the California Environmental Quality Act (CEQA) review process are summarized below. As shown in Table 4.2-1, these pollutants include ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), coarse particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Air Quality Attainment Plans

The proposed Project is located at the northern end of the NSVAB. In 1994, the air districts in the NSVAB, which includes the SCAQMD, prepared an air quality attainment plan for ozone. Updated every three years since adoption, the current *2015 Air Quality Attainment Plan* includes forecast reactive organic

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gases (ROG) and nitrogen oxide (NO_x) emissions (ozone precursors) for the entire NSVAB through the year 2020.

The 2015 *Air Quality Attainment Plan* provides local guidance for air basins to achieve attainment of ambient air quality standards. Areas that meet ambient air quality standards are classified as attainment areas; areas that do not meet these standards are classified as nonattainment areas. Areas for which there is insufficient data are designated unclassified. The attainment status for the Shasta County portion of the NSVAB is in Table 4.2-2. The region is nonattainment for state ozone and PM₁₀ standards.

TABLE 4.2-1 AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	National Standards
Ozone (O ₃)	8 Hour	0.070 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³)
	1 Hour	0.09 ppm (180 µg/m ³)	—
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m ³)	9.0 ppm (10 mg/m ³)
	1 Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)
Nitrogen Dioxide (NO ₂)	1 Hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)
Sulfur Dioxide (SO ₂)	24 Hour	0.04 ppm (105 µg/m ³)	0.14 ppm
	3 Hour	—	—
	1 Hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)
	Annual Arithmetic Mean	—	0.030 ppm
	24 Hour	50 µg/m ³	150 µg/m ³
Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	—
	24 Hour	—	35 µg/m ³
Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	12.0 µg/m ³
	24 Hour	25 µg/m ³	—
Sulfates	30 Day Average	1.5 µg/m ³	—
	Calendar Quarter	—	1.5 µg/m ³
	Rolling 3-Month Average	—	0.15 µg/m ³
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	—
Vinyl Chloride (chloroethene)	24 Hour	0.01 ppm (26 µg/m ³)	—

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Pollutant	Averaging Time	California Standards	National Standards
Visibility-Reducing Particles	8 Hour	—	—

Source: California Air Resources Board, *Ambient Air Quality Standards*, 2016.

Toxic Air Contaminant Regulations

In 1983, the California legislature enacted a program to identify the health effects of toxic air contaminants (TACs) and to reduce exposure to these contaminants to protect the public health. The Health and Safety Code defines a TAC as “an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health.”

TABLE 4.2-2 FEDERAL AND STATE AMBIENT AIR QUALITY ATTAINMENT STATUS FOR SHASTA COUNTY

Pollutant	Federal	State
8-Hour Ozone (O ₃)	Unclassified/Attainment	Nonattainment
Course Particulate Matter (PM ₁₀)	Unclassified	Nonattainment
Fine Particulate Matter (PM _{2.5})	Unclassified/Attainment	Attainment
Carbon Monoxide (CO)	Unclassified/Attainment	Unclassified
Nitrogen Dioxide (NO ₂)	Unclassified/Attainment	Attainment
Sulfur Dioxide (SO ₂)	Unclassified	Attainment

Source: California Air Resources Board, *State and Federal Area Designation Maps*, 2016.

A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the federal Clean Air Act (42 United States Code Section 7412[b]) is a TAC. Under state law, the California Environmental Protection Agency, acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Health and Safety Code section 39650 et seq., passed as Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and Health and Safety Code Section 44300 et seq., passed as AB 2588 (Air Toxics “Hot Spot” Information and Assessment Act of 1987). Health and Safety Code Section 39650 sets forth a formal procedure for CARB to designate substances as toxic air contaminants. Once a TAC is identified, CARB adopts an “airborne toxics control measure” for sources that emit designated TACs. If there is a safe threshold for a substance (a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs that have no safe threshold.

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Air toxics from stationary sources are also regulated in California under the Air Toxics “Hot Spot” Information and Assessment Act of 1987 (Health and Safety Code Section 44300). TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High-priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

Since the last update to the TAC list in December 1999, CARB has designated 244 compounds as TACs.¹ Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

California Diesel Risk Reduction Plan

In September 2000, CARB adopted the Diesel Risk Reduction Plan, which recommends many control measures to reduce the risks associated with diesel particulate matter (DPM) and achieve a goal of an 85 percent reduction of DPM generated by 2020. The Reduction Plan incorporates measures to reduce emissions from diesel-fueled vehicles and stationary diesel-fueled engines. Ongoing efforts by CARB include the development of specific statewide regulations, which are designed to further reduce DPM emissions. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards.

Since the initial adoption of the Reduction Plan in September 2000, CARB has adopted numerous rules related to the reduction of DPM from mobile sources as well as the use of cleaner-burning fuels. Transportation sources addressed by these rules include public transit buses, school buses, on-road heavy-duty trucks, and off-road heavy-duty equipment.

On-Road Heavy-Duty Diesel Vehicles (In Use) Regulation

CARB’s On-Road Heavy-Duty Diesel Vehicles (In Use) Regulation—which is a Final Regulation Order that amended Title 13 of the California Code of Regulations, Section 2025—requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Heavier trucks were required to be retrofitted with particulate matter filters beginning January 1, 2012, and older trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent. The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses as well as to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds.

¹ California Air Resources Board (CARB), 1999. *Final Staff Report: Update to the Toxic Air Contaminant List*.

Local Regulations

Shasta County Air Quality Management District

The SCAQMD is designated by law to adopt and enforce regulations to achieve and maintain ambient air quality standards. The SCAQMD, along with other air districts in the NSVAB, has committed to jointly prepare the NSVAB Air Quality Attainment Plan for the purpose of achieving and maintaining healthful air quality throughout the air basin. In addition, the SCAQMD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs, and it regulates agricultural burning. Other responsibilities include monitoring air quality, preparing clean air plans, and responding to citizen complaints concerning air quality.

All projects in Shasta County are subject to applicable SCAQMD rules and regulations in effect at the time of construction. Descriptions of specific rules applicable to future construction resulting from implementation of the proposed Project may include, but are not limited to:

- SCAQMD Rule 2-1A, Authorities to Construct/Permits to Operate, allows any person to use construction equipment for construction activities, and must obtain a permit to operate prior to installation activities.
- SCAQMD Rule 3-2, Specific Air Contaminants, controls the amount of air contaminants allowed to be discharged into the atmosphere.
- Architectural coatings and solvents used at the Project shall be compliant with SCAQMD Rule 3-31, Architectural Coatings.
- Cutback and emulsified asphalt application shall be conducted in accordance with SCAQMD Rule 3-15, Cutback and Emulsified Asphalt.
- SCAQMD Rule 3-16, Fugitive, Indirect, or Non-traditional Sources, controls the emission of fugitive dust during earth-moving, construction, demolition, bulk storage, and conditions resulting in wind erosion.

Redding General Plan

The following goals and policies of the General Plan Air Quality Element are pertinent to the proposed Project:

Air Quality Element

Goal 1: Effective communication, cooperation, and coordination in developing and implementing community and regional air quality programs.

- Policy 1. The City will require an air quality impact analysis using the recommended methods promulgated by the Air Quality Management District (AQMD) for all projects that are subject to CEQA review and which exceed emissions thresholds established by the AQMD.
- Policy 2. Report on Cumulative Air Quality Impacts.
- Policy 8. Regional and Local Plan Consistency.

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Goal 3: Reduce particulate emissions from sources under the jurisdiction of the City.

- Policy 29. The City will require measures to reduce particulate emissions from construction, grading, and demolition to the maximum extent feasible.

Redding Municipal Code

Grading Ordinance

Chapter 16.12 of the Redding Municipal Code establishes minimum requirements for grading, clearing, and erosion and sediment control. The chapter requires issuance of a grading permit prior to any clearing or grading on privately owned land that is larger than one acre in size. Both an interim and a final erosion and sediment control plan are required as part of the grading permit process and must be prepared by a licensed professional and approved by the City Engineer. The plans must address the potential for soil erosion due to stormwater runoff and wind and include best management practices designed to ensure sediment does not leave the construction site. The City is responsible for inspection of construction sites to ensure compliance with provisions of the grading permit.

4.2.1.2 EXISTING CONDITIONS

Northern Sacramento Valley Air Basin

The proposed Project is located at the northern end of the Northern Sacramento Valley Air Basin (NSVAB). The NSVAB consists of seven counties: Sutter, Yuba, Colusa, Butte, Glenn, Tehama, and Shasta. The NSVAB is bounded on the north and west by the Coastal Mountain Range and on the east by the southern end of the Cascade Mountain Range and the northern end of the Sierra Nevada. These mountain ranges reach heights in excess of 6,000 feet above mean sea level, with individual peaks rising much higher. The mountains form a substantial physical barrier to locally created pollution as well as to pollution transported northward on prevailing winds from the Sacramento metropolitan area.²

The environmental conditions of Shasta County are conducive to potentially adverse air quality conditions. The basin area traps pollutants between two mountain ranges to the east and the west. This problem is exacerbated by a temperature inversion layer that traps air at lower levels below an overlying layer of warmer air. Prevailing winds in the area are generally from the south and southwest. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas. Growth and urbanization in Shasta County have also contributed to an increase in emissions.

² Sacramento Valley Air Quality Engineering and Enforcement Professionals, 2015. *Northern Sacramento Valley Planning Area: 2015, Triennial Air Quality Attainment Plan*, August.

Air Pollutants of Concern

Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state laws. These regulated air pollutants are known as “criteria air pollutants” and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO_x), sulfur dioxide (SO₂), coarse particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), lead, and fugitive dust are primary air pollutants. Of these, CO, SO₂, PM₁₀, and PM_{2.5} are criteria pollutants. ROG and NO_x are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and nitrogen dioxide (NO₂) are the principal secondary pollutants.

Sources and health effects commonly associated with criteria pollutants are summarized in Table 4.2-3.

Criteria Air Pollutant Monitoring Data

Ambient air quality in Redding, including the Project site, can be inferred from ambient air quality measurements conducted at air quality monitoring stations. Existing levels of ambient air quality and historical trends and projections in the region are documented by measurements made by the SCAQMD. These measurements are affected by pollutants generated by the urbanized land uses in Shasta County as well as by land uses in the entire NSVAB and beyond.

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TABLE 4.2-3 CRITERIA AIR POLLUTANTS SUMMARY OF COMMON SOURCES AND EFFECTS

Pollutant	Major Man-Made Sources	Human Health & Welfare Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO ₂)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O ₃)	Formed by a chemical reaction between volatile organic compounds (VOC) and NO _x in the presence of sunlight. VOCs are also commonly referred to as reactive organic gases (ROGs). Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles, and dyes.
Particulate Matter (PM ₁₀ & PM _{2.5})	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood burning stoves and fireplaces, automobiles, and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO ₂)	A colorless, nonflammable gas formed when fuel containing sulfur is burned; when gasoline is extracted from oil; or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.

Source: California Air Pollution Control Officers Association, *Health Effects*, 2013.

Ozone, PM₁₀, and PM_{2.5} are the primary pollutants affecting the NSVAB. The nearest air quality monitoring site to the Project site that monitors ambient concentrations of ozone and airborne particulates is located on the roof of the Shasta County Health and Human Services Agency (2630 Breslauer Way, Redding CA 96001), approximately 1.4 miles northwest of the Project site. Table 4.2-4 summarizes the published data since 2014 for each year that the monitoring data are provided.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, TACs are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs are generally assumed to have a safe level of exposure, which is determined on a pollutant-by-pollutant basis.

AIR QUALITY**TABLE 4.2-4 AMBIENT AIR QUALITY MONITORING DATA**

Pollutant Standards		2014	2015	2016
Ozone (O ₃)	Max 1-hour concentration (ppm)	0.090	0.078	0.084
	Max 8-hour concentration (ppm) (state/federal)	0.079 / 0.078	0.069 / 0.069	0.074 / 0.074
	Number of days above state/ federal 1-hour standard	0 / 0	0 / 0	0 / 0
	Number of days above state/federal 8-hour standard	5 / 5	0 / 0	5 / 5
Particulate Matter (PM ₁₀)	Max 24-hour concentration (µg/m ³) (state/federal)	72.8 / 71.7	78.3 / 80.3	27.6 / 28.4
	Number of days above state/federal standard	* / 0	6.5 / 0	0 / 0
Particulate Matter (PM _{2.5})	Max 24-hour concentration (µg/m ³) (state/federal)	22.2 / 22.2	64.6 / 64.6	12.6 / 12.6
	Number of days above federal standard	0	6.6	0

Notes: ug/m3 = micrograms per cubic meter; ppm = parts per million; * = No data currently available to determine the value.

Source: California Air Resources Board, 2016. Aerometric Data Analysis and Management System (ADAM) Air Quality Data Statistics.

There are many different types of TACs and varying degrees of toxicity. Sources of TACs include industrial processes, such as petroleum refining and chrome-plating operations; commercial operations, such as gasoline stations and dry cleaners; and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally (as TACs rapidly disperse from the source). TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

Most recently, CARB identified DPM as a toxic air contaminant. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because many compounds in diesel exhaust are carcinogenic. The chemical composition and particle sizes of DPM vary between engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine.³ Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk of all the TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

Residential areas are considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Children are considered more susceptible to health effects of air pollution due to their

³ U.S. Environmental Protection Agency, 2002. *Health Assessment Document for Diesel Engine Exhaust*.

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immature immune systems and developing organs.⁴ Therefore, schools are also considered sensitive receptors because children are present for extended durations and engage in regular outdoor activities. The nearest residential land uses would be those adjacent to the Project site on the northern boundary. There are also residences on the east side of Interstate 5 that are approximately 600 feet from the northeast corner of the Project site and approximately 700 feet south of the southwest corner of project site. No schools, hospitals, or senior care homes are within 0.25 miles of the Project site.

4.2.2 STANDARDS OF SIGNIFICANCE

The proposed Project would result in a significant impact to air quality if it would:

1. Conflict with or obstruct implementation of any applicable air quality plan. (Refer to Impact Discussion AQ-1)
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation. (Refer to Impact Discussion AQ-2 and AQ-3)
3. Expose sensitive receptors to substantial pollutant concentrations. (Refer to Impact Discussion AQ-4, AQ-5, and AQ-6)
4. Create objectionable odors affecting a substantial number of people. (Refer to Impact Discussion AQ-7)
5. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

SCAQMD and the City of Redding Air Quality Element thresholds (which are identical) have been used to determine air quality impacts in this analysis. These thresholds are consistent with New Source Review Rule 2-1 adopted by the SCAQMD Board in 1993, as required by the California Clean Air Act. The thresholds of significance are summarized in Table 4.2-5.

TABLE 4.2-5 SHASTA COUNTY AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS OF SIGNIFICANCE

Threshold	Emissions (Maximum Pounds per Day)		
	NO _x	ROG	PM ₁₀
Level A Thresholds	25	25	80
Level B Thresholds	137	137	137

Source: Shasta County Air Quality Management District.

The SCAQMD and the General Plan recommend that projects apply Standard Mitigation Measures (SMM) and appropriate Best Available Mitigation Measures (BAMM) when a project exceeds Level A thresholds and SMM, BAMM, and special BAMM when a project exceeds Level B thresholds. Projects that cannot

⁴ Office of Environmental Health Hazard Assessment, 2007. *Air Toxicology and Epidemiology: Air Pollution and Children's Health*.

mitigate emissions to levels below the Level B thresholds are considered significant. Based on these standards, the effects of the proposed Project have been categorized as either a “less than significant impact” or a “potentially significant impact.” Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less-than-significant level through the application of mitigation, it is categorized as a significant and unavoidable impact.

4.2.3 IMPACT DISCUSSION

AQ-1	Implementation of the proposed Project would conflict with or obstruct implementation of the 2015 Air Quality Attainment Plan. [Less Than Significant and Unavoidable]
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Under state law, the California Clean Air Act requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date. As previously stated, the Shasta County portion of the NSVAB is classified nonattainment for state ozone and PM₁₀ standards (refer to Table 4.2-2).

The *2015 Air Quality Attainment Plan* is the most recent air quality planning document covering Shasta County. Air quality attainment plans are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls describing how the state will attain ambient air quality standards. State law makes CARB the lead agency for all purposes related to the Air Quality Attainment Plan. Local air districts prepare air quality attainment plans and submit them to CARB for review and approval. The *2015 Air Quality Attainment Plan* includes forecast ROG and NO_x emissions (ozone precursors) for the entire NSVAB through the year 2020.

The consistency of the proposed Project with the *2015 Air Quality Attainment Plan* is determined by its consistency with air pollutant emission projections in the plan. Implementation of the Project could increase vehicle miles traveled, and thus ROG and NO_x emissions, which could conflict with air quality planning in the *2015 Air Quality Attainment Plan*. As previously stated, the plan cites projected O₃ precursor emissions (ROG and NO_x) through the year 2020. For the purposes of this analysis, the emissions resulting from proposed Project operations were quantified and compared with the *2015 Air Quality Attainment Plan* 2020 ozone precursor emissions projections.

The *2015 Air Quality Attainment Plan* includes control strategies necessary to attain the California ozone standard at the earliest practicable date, as well as developed emissions inventories and associated emissions projections for the region showing a downtrend for both ROG and NO_x. The proposed Project would result in long-term emissions from area and mobile emission sources. As discussed in Impact AQ-3, below, the ozone precursor emissions, ROG and NO_x would increase as a result of the Project. The upward trend in ozone precursor emissions is not consistent with the projected ozone emissions reductions documented in the *2015 Air Quality Attainment Plan*, which projects a 5.76 percent reduction in ROG emissions and a 20.27 percent reduction in NO_x emissions from area and mobile sources in the NSVAB by the year 2020 (the latest year projected in the *2015 Air Quality Attainment Plan*). Operation of the Project would increase O₃ precursor emissions by approximately 0.02 ton of ROG and 0.~~08~~⁰⁴ ton of NO_x daily.

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This increase would represent a 0.05~~2~~ percent increase in ROG emissions and a 0.09~~1~~ percent increase in NO_x emissions compared with existing projections.

However, as identified in Impact AQ-3, the Project would emit air pollutants at a rate below the SCAQMD Level B thresholds, and thus would not violate any SCAQMD standards. A project that does not result in the generation of emissions beyond SCAQMD's significance standards would not result in an increase in the frequency or severity of any existing air quality violations, and thus could be considered to conform to the overall reduction goals of the 2015 Air Quality Attainment Plan. Therefore, the proposed Project would not conflict with implementation of the 2015 Air Quality Attainment Plan. This impact is less than significant.

~~Additionally, as identified in Impact AQ-3, the Project would violate the SCAQMD standard for the ozone precursor, NO_x. Therefore, the proposed Project would conflict with implementation of the 2015 Air Quality Attainment Plan by resulting in an increase of ozone precursor emissions. As discussed in Impact AQ-3, the majority of Project emissions would be generated by mobile sources, which cannot be regulated by the City. While there are no feasible mitigations that would reduce vehicle trips, as discussed in Impact AQ-3, the Project will install electric vehicle supply equipment in accordance with California Building Code which will allow charging stations to be supplied based on demand. Charging stations could lead to less use of gasoline-burning automobiles and thus, less air pollutant emissions. However, in a retail environment where customers typically spend less than an hour in the store, the vehicle is not there long enough for a meaningful charge, and charging stations often go unused. Additionally, the Project buildings would be more energy efficient than commercial buildings built just three years ago. Nonetheless, there are no feasible mitigations that would reduce ozone precursor emissions consistent with the 2015 Air Quality Attainment Plan, and this impact is considered significant and unavoidable.~~

Significance Without Mitigation: *Less Than* Significant ~~and unavoidable.~~

AQ-2	Project implementation would not violate an air quality standard or contribute substantially to an existing or projected air quality violation during project construction. [Less Than Significant With Mitigation]
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Construction-generated emissions are assumed to occur during approximately 11 months estimated for construction. Emissions commonly associated with construction activities include fugitive dust from soil disturbance and fuel combustion from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips. During construction, fugitive dust, the dominant source of PM₁₀ and PM_{2.5} (particulate matter smaller than 2.5 microns), is generated when wheels or blades disturb surface materials. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities. Also, off-road construction equipment is often diesel-powered and can be a substantial source of NO_x emissions, and worker commute trips and architectural coatings are dominant sources of ROG emissions.

The proposed Project consists of on-site construction and off-site construction activities. On-site activities include the removal and off-site hauling of all vegetation on the Project site followed by construction of

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five retail pads accommodating approximately 70,100 square feet of retail and fast food restaurants and a ±152,000-square-foot Costco Whole Corporation store with up to 30 fuel pumps. Total on-site ground disturbance would equal 25.4 acres. Off-site construction includes the freeway ramp, roadway, and intersection improvements to accommodate Project traffic.

Construction air emissions were quantified using the CalEEMod land use emissions model (refer to Appendix 4.2-[1](#) for model data outputs). Predicted maximum daily construction-generated emissions for the proposed Project are summarized and compared to SCAQMD significance thresholds in Table 4.2-6.

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TABLE 4.2-6 CONSTRUCTION-RELATED EMISSIONS

Construction	Emissions (Maximum Pounds per Day) ¹				
	ROG	NO _x	PM ₁₀	PM _{2.5}	CO
Unmitigated					
2019	49.30	126.38	13.21	4.95	94.08
	45.68	88.60	11.39	4.33	78.32
2020	45.26	76.99	7.55	3.27	70.60
	44.17	67.91	10.76	3.57	67.58
Level A Significance Threshold	25	25	80	None	None
Exceed Level A Threshold	Yes	Yes	No	N/A	N/A
Level B Significance Threshold	137	137	137	None	None
Exceed Level B Threshold?	No	No	No	N/A	N/A

Source: CalEEMod, version 2016.3.1. See **Appendix 4.2-1** for emission model outputs.
Assumes implementation of Mitigation Measure AQ-1.

Table 4.2-6 shows that daily emissions associated with the construction of the proposed Project would exceed the Level A significance threshold for ROG and NO_x emissions. No pollutants would surpass the Level B significance thresholds during the assumed construction period. The SCAQMD recommends that projects apply SMM and appropriate BMM when a project exceeds Level A thresholds in order to be considered less than significant. To comply with SCAQMD recommendations, Mitigation Measure AQ-1 is required, which includes various dust control measures to reduce fugitive PM₁₀ and PM_{2.5}, such as regular watering of disturbed areas, providing track-out devices that reduce soil from trucks being ‘tracked’ onto adjacent roadways, covering stockpiles, and limiting on-site vehicle speeds, as well as the use of Tier 3 and Tier 4 off-road construction equipment. Implementation of Mitigation Measure AQ-1 would reduce impacts resulting from construction-generated emissions associated with Project construction.

Significance Without Mitigation: Potentially significant.

Mitigation Measure AQ-1: Prior to issuance of a grading permit, the Project applicant shall submit a grading plan for review and approval by the City of Redding Development Services Department. The following specifications shall be included on the permit to reduce short-term air quality impacts attributable to the on-site and off-site construction activities:

- During all construction activities, all architectural coatings applied shall contain a low content of volatile organic compounds (VOC) (i.e., 100 grams/liter) as required by the Green Building Code and as adopted by the City of Redding.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturers’ specifications. Equipment maintenance records shall be kept on-site and made available upon request by the City of Redding or Shasta County AQMD.
- All material excavated, stockpiled, or graded shall be sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering shall occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day.

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- All unpaved areas (including unpaved roads) with vehicle traffic shall be watered periodically or have dust palliatives applied for stabilization of dust emissions.
- All on-site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads.
- All land clearing, grading, earth-moving, or excavation activities on the Project site shall be suspended when sustained winds are expected to exceed 20 miles per hour.
- All portions of the development site which have been stripped of vegetation by construction activities shall be stabilized in accordance with the approved SWPPP.
- All trucks hauling dirt, sand, soil, or loose material shall be covered or shall maintain at least 2 feet of freeboard (i.e., minimum vertical distance between top of the load and the trailer) in accordance with the requirements of California Vehicle Code Section 23114. This provision will be enforced by local law enforcement agencies.
- All material transported off-site shall be either sufficiently watered or securely covered to prevent a public nuisance.
- Prior to final occupancy, the applicant shall re-establish ground cover on the construction site through seeding and watering.
- Off-road construction equipment shall not be left idling for periods longer than 5 minutes when not in use.
- All off-road diesel equipment greater than 50 horsepower (hp) shall meet USEPA Tier 3 or 4 off-road emission standards as set forth in Table 2: Construction Equipment Inventory, included in Appendix 4.2-2.

Implementation of Mitigation Measure AQ-1 will be required as part of any grading permit issued for the Project. The provisions of the grading permit will be approved by the City Engineer, and compliance assured during construction by inspection as required by Section 16.12.190 of the Redding Municipal Code. As shown in Table 4.2-6, Project emissions do not exceed the SCAQMD Level B Threshold, impacts from construction-generated air pollutants would be less than significant with the implementation of mitigation.

Significance With Mitigation: Less than significant.

AQ-3	Project implementation would violate an air quality standard or contribute substantially to an existing or projected air quality violation during project operations. [Less Than Significant and Unavoidable]
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The proposed Project would result in increased regional emissions of PM₁₀ and PM_{2.5}, ROG, NO_x, and CO due to an increased use of motor vehicles, natural gas, maintenance equipment, and various consumer products, thereby increasing potential operational air quality impacts. Increases in operational air impacts with the proposed Project would generally consist of three sources: area, energy, and mobile. Area sources are defined as fireplaces, consumer products, area architectural coatings, and landscaping

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equipment. Energy sources include natural gas emission variables, and mobile sources include automobiles. Predicted maximum daily emissions are summarized in Table 4.2-7.

TABLE 4.2-7 OPERATIONAL-RELATED EMISSIONS

<u>Pollutant Standards</u>		<u>Emissions (pounds per day)</u>				
		<u>ROG</u>	<u>NO_x</u>	<u>PM₁₀</u>	<u>PM_{2.5}</u>	<u>CO</u>
<u>Summer</u>	<u>Area</u>	6.61	7.90E-04	3.10E-04	3.10E-04	0.09
	<u>Energy</u>	0.11	1.03	0.08	0.08	0.86
	<u>Mobile</u>	65.56	71.93	87.03	23.81	524.38
	<u>Costco Warehouse and Gas Station Visitors</u>	35.55	49.16	41.86	11.61	274.42
	<u>Commercial Retail Visitors</u>	19.55	13.40	30.67	8.27	166.80
	<u>Fast Food with Drive Through Visitors</u>	10.37	6.88	14.26	3.85	82.50
	<u>Costco Wholesale Trucks</u>	0.06	1.54	0.15	0.06	0.33
	<u>Costco Wholesale Fuel Delivery Trucks</u>	0.02	0.46	0.04	0.02	0.10
	<u>Major Retail Building Trucks</u>	0.02	0.38	0.04	0.02	0.08
	<u>TRUs</u>	0.005	0.106	0.001	0.001	0.158
	<u>GDF Evaporative Emissions</u>	30.01	--	--	--	--
	<u>Total</u>	102	73	87	24	525
<u>Winter</u>	<u>Area</u>	6.61	7.90E-04	3.10E-04	3.10E-04	0.09
	<u>Energy</u>	0.11	1.03	0.08	0.08	0.86
	<u>Mobile</u>	63.65	81.85	87.03	23.81	477.92
	<u>Costco Warehouse and Gas Station Visitors</u>	34.95	55.03	41.87	11.61	253.65
	<u>Commercial Retail Visitors</u>	18.55	15.96	30.67	8.27	147.55
	<u>Fast Food with Drive Through Visitors</u>	10.05	8.19	14.26	3.85	76.03
	<u>Costco Wholesale Trucks</u>	0.06	1.66	0.15	0.06	0.34
	<u>Costco Wholesale Fuel Delivery Trucks</u>	0.02	0.50	0.04	0.02	0.10
	<u>Major Retail Building Trucks</u>	0.02	0.40	0.04	0.02	0.08
	<u>TRUs</u>	0.005	0.106	0.001	0.001	0.158
	<u>GDF Evaporative Emissions</u>	30.01	--	--	--	--
	<u>Total</u>	100	83	87	24	479
<u>Level A Significance Threshold</u>		25	25	80	None	None
<u>Exceed Level A Threshold?</u>		Yes	Yes	Yes	No	No
<u>Level B Significance Threshold</u>		137	137	137	None	None
<u>Exceed Level B Threshold?</u>		No	No	No	No	No

Source: CalEEMod, version 2016.3.1. See [Appendix 4.2-1](#) for emission model outputs.

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		Emissions (Pounds per Day)				
Pollutant Standards		ROG	NO _x	PM ₁₀	PM _{2.5}	CO
Summer	Area	6.62	0	0	0	0.08
	Energy	0.11	1.02	0.07	0.07	0.86
	Mobile	25.77	151.09	28.69	8.12	172.29
	Total	32.51	152.11	28.76	8.20	173.24
Winter	Area	6.62	0	0	0	0.08
	Energy	0.11	1.02	0.07	0.07	0.86
	Mobile	18.81	153.58	28.70	8.14	175.38
	Total	25.54	154.61	28.78	8.22	176.33
Level A Significance Threshold		25	25	80	None	None
Exceed Level A Threshold		Yes	Yes	No	N/A	N/A
Level B Significance Threshold		137	137	137	None	None
Exceed Level B Threshold?		No	Yes	No	N/A	N/A

Source: CalEEMod, version 2016.3.1. See Appendix 4.2 for emission model outputs.

As depicted in Table 4.2-7, emissions associated with operations of the proposed Project would exceed Level A significance thresholds for ROG and NO_x, as well as Level B significance thresholds for NO_x. The SCAQMD recommends that projects apply SMMs *and* BAMMs *as appropriate* when a project exceeds Level A thresholds, ~~and special BAMM when a project exceeds Level B thresholds.~~ SCAQMD operational SMMs and BAMMs are summarized in Appendix 4.2-1. *The Project's consistency with SCAQMD construction and operational SMMs and BAMMs are discussed in Table 4.6-8 of Chapter 4.6, Greenhouse Gasses of this Draft EIR.*

The proposed Project would be constructed to comply with the 2019~~6~~ Title 24 Building Codes, which result in a 5 percent increase in energy efficiency in commercial buildings when compared with the 2016~~3~~ Title 24 Building Codes. Increases in building energy efficiency results in a reduction of pollutant emissions.

As shown in Table 4.2-7, *the Shasta County portion of the NSVAB is listed as a nonattainment area for the state O₃ standard. O₃ is a health threat to persons who already suffer from respiratory diseases and can cause severe ear, nose and throat irritation and increases susceptibility to respiratory infections. Particulate matter can adversely affect the human respiratory system. As shown in Table 4.2-7, the Proposed Project would result in increased emissions of the O₃ precursor pollutants ROG and NO_x, as well as particulate matter however, the correlation between a project's emissions and increases in*

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nonattainment days, or frequency or severity of related illnesses, cannot be accurately quantified. The overall strategy for reducing air pollution and related health effects in Shasta County is contained in the 2015 NSVAB Air Quality Attainment Plan. The 2015 NSVAB Air Quality Attainment Plan provides control measures that reduce emissions to attain state ambient air quality standards by their applicable deadlines such as the application of available cleaner technologies, best management practices, incentive programs, as well as development and implementation of zero and near-zero technologies and control methods. The CEQA thresholds of significance established by the SCAQMD are designed to meet the objectives of the Air Quality Attainment Plan and in doing so achieve attainment status with state standards. As noted above, the Project would increase the emission of these pollutants, but would not exceed the thresholds of significance established by the SCAQMD for purposes of reducing air pollution and its deleterious health effects.

~~Level B significance thresholds are exceeded for NO_x.~~ The majority of ~~NO_x~~ *Project pollutant* emissions would be generated by mobile sources, which is an emission source that cannot be regulated by the City of Redding. A reduction in vehicle trips to and from the proposed Project would reduce the amount of mobile emissions. Methods for reducing personal vehicle trips include carpooling, transit, cycling, and pedestrian connections. Roadway improvements along the frontage of Bechelli Lane and South Bonnyview Road would include sidewalks and be consistent with the City of Redding road standards, which include Class 2 bicycle lanes that are part of a City-wide network. As required by the California Building Code and described in the Project Description in chapter 3, areas to secure bicycles will be provided within the proposed Project. However, even with the connectivity provided by the roadway improvements and the areas to secure bicycles, there is no way to know if employees or customers will cycle to the proposed Project. According to the Alliance for Biking and Hiking,⁵ 1.1 percent of Californians commute to work via bicycling and/or walking. Furthermore, the Shasta Bike Challenge 2017⁶ reports that the City of Redding ranked #1 in California and #2 in the United States as the most active in the 2017 National Bike Challenge, with an average of 152 cyclists logging in at least one bike trip daily over the month of May. However, discount warehouses typically provide bulk sales to the general public, and it is unlikely that a large number of these customers would ride bikes to the store, although some may. Pedestrians and cyclists may be attracted to the 70,000 square feet of proposed retail and restaurants.⁷

There is no certainty that the number of vehicle trips would be sufficiently lowered by pedestrians or cyclists to reduce ROG or NO_x emissions shown in Table 4.2-7.

The Redding Area Bus Authority (RABA) provides transit service to the City of Redding. The use of transit service over passenger automobiles can result in a reduction of daily air pollutants. However, while there is an existing bus turnout on southbound Bechelli Lane along the frontage of Blue Shield, the area is not identified on any service route by RABA and is not identified as a bus stop. Furthermore, as there are no roadway improvements along the proposed Project frontage along Bechelli Lane, there is no corresponding bus turnout heading northbound. The nearest bus stop to the proposed Project is located

⁵ Alliance of Biking and Walking, 2016. *Bicycling and Walking in the United States Benchmarking Report*.

⁶ Shasta Bike Challenge 2017, 2017. *2017 Shasta Bike Challenge May 1–31*. <http://healthyshasta.org/bikechallenge/>.

⁷ Appendix 4.2-1 analyzed 70,000 square feet of retail and restaurants. Changes to the site plan since submittal of the analysis have reduced the square footage. The results of the analysis remain valid and are considered conservative because the project is smaller than originally analyzed.

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at Loma Vista Drive and Bechelli Lane (near Lassen School) and is served by Route 4. The proposed Project site is approximately 0.8 mile from this bus stop on Loma Vista Drive and Bechelli Lane. Although customers at a warehouse store are unlikely to use transit because of bulk good purchases, customers at other stores anticipated in the retail center could make effective use of transit. In addition, employees could also use transit. Routes are established by the Joint Powers Authority composed of Shasta County and the cities of Redding, Anderson, and Shasta Lake. It is unknown at this time whether RABA would extend one or more bus routes to the Project site, and neither the applicant nor the City has jurisdiction over the bus routes and therefore cannot unilaterally extend a route or activate a bus stop.

Other best management practices include preferred parking for carpool or rideshare at the proposed Project. However, while it is possible that employees would carpool or rideshare to one or more of the businesses in the proposed Project, this type of vehicle trip reduction strategy is more effective for professional office buildings, where hours of operation are standardized, allowing for better coordination of ~~start and stop~~ arrival and departure times. While designating one or more parking spaces for carpool or ridesharing may reduce vehicle trips, it is unlikely that there would be sufficient usage to affect the operational emissions from mobile sources reported in Table 4.2-7.

The California Building Code does require that 6 percent of the Project parking stalls be fitted with electric vehicle supply equipment (EVSE) in accordance with the California Building Code and the California Electrical Code. Additionally, the CalGreen Building Code also requires that 8 percent of the Project parking stalls be reserved as preferred parking for clean air vehicles (there is no requirement for a rideshare or carpool parking area). As demand warrants, encouragement of electric vehicles and clean air vehicles through the provision of charging facilities and preferred parking could lead to reduced use of gasoline-burning automobiles and thus, less air pollutant emissions. However, there is no certainty that the provision of electric charging facilities and/or preferred parking for clean air vehicles would result in a substantial replacement of fossil-fuel burning automobiles with less-polluting vehicles. ~~Therefore, it cannot be ensured that pollutant emissions of ROG or NO_x would be sufficiently lowered.~~

~~Since NO_x cannot be reduced to a less-than-significant level, and there are no feasible mitigations that would reduce vehicle trips, this impact is considered significant and unavoidable.~~

The SCAQMD has set its CEQA significance thresholds for NO_x at 25 tons per year (expressed as 137 pounds per day) based on the Federal Clean Air Act (FCAA), which defines a major stationary source (in federal ozone attainment areas such as the Shasta County portion of the NSVAB) as emitting 25 tons per year. The thresholds correlate with the trigger levels for the federal New Source Review (NSR) Program and SCAQMD Rule 1303 for new or modified sources. The NSR Program⁸ was created by the FCAA to ensure that stationary sources of air pollution are constructed or modified in a manner that is consistent with attainment of health-based federal ambient air quality standards. The federal ambient air quality standards establish the levels of air quality necessary, with an adequate margin of safety, to protect the public health. Therefore, projects that do not exceed the SCAQMD's emissions thresholds would not

⁸ Code of Federal Regulation (CFR) [i.e., PSD (40 CFR 52.21, 40 CFR 51.166, 40 CFR 51.165 (b)), Non-attainment NSR (40 CFR 52.24, 40 CFR 51.165, 40 CFR part 51, Appendix S)]

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violate any air quality standards or contribute substantially to an existing or projected air quality violation and no criteria pollutant health impacts.

NO_x is a precursor emission that forms ozone in the atmosphere in the presence of sunlight where the pollutants undergo complex chemical reactions. It takes time and the influence of meteorological conditions for these reactions to occur, so ozone may be formed at a distance downwind from the sources. Breathing ground-level ozone can result health effects that include reduced lung function, inflammation of airways, throat irritation, pain, burning, or discomfort in the chest when taking a deep breath, chest tightness, wheezing, or shortness of breath. In addition to these effects, evidence from observational studies strongly indicates that higher daily ozone concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. The consistency and coherence of the evidence for effects upon asthmatics suggests that ozone can make asthma symptoms worse and can increase sensitivity to asthma triggers.

Table 4.2-7 shows that a large proportion of the Project's NO_x emissions are from mobile sources. Under California law, the local and regional districts are primarily responsible for controlling air pollution from all sources except motor vehicles. CARB (a branch of the California Environmental Protection Agency) is primarily responsible for controlling pollution from motor vehicles. The air districts must adopt rules to achieve and maintain the state and Federal ambient air quality standards within their jurisdictions.

Ozone and NO_x have been decreasing in the California since 1975 and are projected to continue to decrease in the future. Although vehicle miles traveled across the state continue to increase, NO_x levels are decreasing because of the mandated controls on motor vehicles and the replacement of older polluting vehicles with lower-emitting vehicles. NO_x emissions from electric utilities have also decreased due to the use of cleaner fuels and renewable energy.

On December 24, 2018, the California Supreme Court issued an opinion identifying the need to provide sufficient information connecting a project's air emissions to health impacts or explain why such information could not be ascertained (*Sierra Club v. County of Fresno [Friant Ranch, L.P.]* [2018] 6 Cal.5th 502, Case No. S219783). As noted above and shown in Table 4.2-7, the Project's operational emissions would not exceed any of the SCAQMD's NO_x significance thresholds. ~~resulting in a significant and unavoidable impact.~~

Pursuant to Rule 8.520(f) of the California Rules of Court, the South Coast Air Quality Management District (SCAQMD) and the San Joaquin Valley Unified Air Pollution Control District (SJVAPCD) filed Amicus Curiae Briefs (amicus briefs) in regard to this case. In both amicus briefs, SCAQMD and SJVAPCD provided technical explanations as to why it may not be feasible for a project to relate the expected adverse air quality impacts to likely health consequences. As summarized below, for the reasons set forth in the SCAQMD and SJVAPCD amicus briefs, the proposed Project's significant air quality impacts currently cannot feasibly be related to likely health consequences. The technical demands to feasibly and accurately relate the adverse air quality impacts to likely health consequences are too high for this proposed Project at this time. The technical challenges are listed below, with the SCAQMD and SJVAPCD amicus briefs providing support on the findings for the proposed Project:

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- **Ozone is not formed at the location of sources/emissions, which necessitates the use of complex and more sophisticated modeling that is not reasonably feasible for the proposed Project at this time.**

“For the so-called criteria pollutants, such as ozone, it may be more difficult to quantify health impacts. Ozone is formed in the atmosphere from the chemical reaction of the nitrogen oxides (NOx) and volatile organic compounds (VOC) in the presence of sunlight... It takes time and the influence of meteorological conditions for these reactions to occur, so ozone may be formed at a distance downwind from the sources.” [SCAQMD p.11]

- **Ozone and secondary PM formation is complex, which necessitates the use of more sophisticated modeling that is not reasonably feasible for the Project at this time. The proposed Project, while much smaller in scale to the Friant Ranch project, similarly includes area wide sources and mobile sources.**

“Meteorology, the presence of sunlight, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone or PM. This is especially true for a project like Friant Ranch where most of the criteria pollutant emissions derive not from a single ‘point source,’ but from area wide sources (consumer products, paint, etc.) or mobile sources (cars and trucks) driving to, from and around the site.” [SJVAPCD p.9]

- **The quantity of precursor emissions is not proportional to local ozone and secondary PM concentration, which necessitates the use of complex and more sophisticated modeling that is not reasonably feasible for the proposed Project at this time.**

“Ground level ozone (smog) is not directly emitted into the air, but is formed when precursor pollutants such as oxides of nitrogen (NOx) and volatile organic compounds (VOCs) are emitted into the atmosphere and undergo complex chemical reactions in the process of sunlight. Once formed, ozone can be transported long distances by wind. Because of the complexity of ozone formation, a specific tonnage amount of NOx or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area.” [SJVAPCD p.4]

“Secondary PM, like ozone, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur dioxides (SOx) and NOx. Because of the complexity of secondary PM formation, the tonnage of PM-forming precursor emissions in an area does not necessarily result in an equivalent concentration of secondary PM in that area.” [SJVAPCD p.5]

- **Emissions do not cause health effects – it is the resulting concentration of criteria pollutants, which is influenced by sunlight, complex reactions, and transport, which necessitates the use of complex and more sophisticated modeling that is not reasonably feasible for the proposed Project at this time.**

“The disconnect between the tonnage of precursor pollutants (NOx, SOx and VOCs) and the concentration of ozone or PM formed is important because it is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of resulting ozone or PM.” [SJVAPCD p.5]

- **Currently available modeling tools are appropriate for regional evaluations, but not individual projects like the proposed Project.**

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“For instance, the computer models used to simulate and predict an attainment date for the ozone or particulate matter NAAQS in the San Joaquin Valley are based on regional inputs, such as regional inventories of precursor pollutants (NO_x, SO_x and VOCs) and the atmospheric chemistry and meteorology of the Valley... the models simulate future ozone or PM levels based on predicted changes in precursor emissions Valley wide... The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the date that the Valley attains the NAAQS. Rather, the Air District's modeling and planning strategy is regional in nature and based on the extent to which *all* of the emission-generating sources in the Valley (current and future) must be controlled in order to reach attainment.” [SJVAPCDF p.6-7]

“Thus, the CEQA air quality analysis for criteria pollutants is not really a localized, project-level impact analysis but one of regional, “cumulative impacts.”” [SJVAPCD p.8]

“...the currently available modeling tools are equipped to model the impact of all emission sources in the Valley on attainment... Running the photochemical grid model used for predicting ozone attainment with the emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NO_x and VOC in the Valley) is not likely to yield valid information given the relative scale involved.” [SJVAPCD p.9-10]

- **The SJVAPCD indicates that it is currently impossible to accurately correlate project level emissions to specific health impacts.**

“Finally, even once a model is developed to accurately ascertain local increases in concentrations of photochemical pollutants like ozone and some particulates, it remains impossible, using today's models, to correlate that increase in concentration to a specific health impact. The reason is the same: such models are designed to determine regional, population-wide health impacts, and simply are not accurate when applied at the local level.” [SJVAPCD p.10]

- **SCAQMD highlights that CARB indicated that a CARB methodology of analysis for PM_{2.5} health impacts is not suited for small projects.**
 - “Also, the California Air Resources Board (CARB) has developed a methodology that can predict expected mortality (premature deaths) from large amounts of PM_{2.5}... SCAQMD used the CARB methodology to predict impacts from three very large power plants (e.g., 731-1837 lbs/day) Again, this project involved large amounts of additional PM_{2.5} in the District, up to 2.82 tons/day (5,650 lbs/day of PM_{2.5}, or, or 1029 tons/year... However, the primary author of the CARB methodology has reported that this PM_{2.5} health impact methodology is not suited for small projects and may yield unreliable results due to various uncertainties.” “Among these uncertainties are the representativeness of the population used in the methodology, and the specific source of PM and the corresponding health impacts.” [SCAQMD p.14]
- **SCAQMD indicates that the CARB PM_{2.5} methodology would provide unreliable findings for a small project with a small population and that a lead agency should be able to decide if and when it may be appropriate.**

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“Therefore, when SCAQMD prepared a CEQA document for the expansion of an existing oil production facility, with very small PM_{2.5} increases (3.8 lb/day) and a very small affected population, staff elected not to use the CARB methodology for using estimated PM_{2.5} emissions to derive a projected premature mortality number and explained why it would be inappropriate to do so... SCAQMD staff concluded that use of this methodology for such a small source could result in unreliable findings and would not provide meaningful information” [SCAQMD p.15]

“This CEQA document was not challenged in court.” [SCAQMD p.15]

- **The development of new technical approaches in the future may change the feasibility determination.**

“Moreover, what is reasonably feasible may change over time as scientists and regulatory agencies continually seek to improve their ability to predict health impacts. For example, CARB staff has been directed by its Governing Board to reassess and improve the methodology for estimating premature deaths.” [SCAQMD p.16]

For the reasons set forth above, it is not currently feasible to relate the proposed Project’s air quality NO_x impacts to likely health consequences. Both SCAQMD and SJVAPCD are responsible for assessing ozone and PM impacts regionally, and the potential health consequences from those on a regional basis. The current evaluation on the limitations and uncertainties of existing tools is consistent with SCAQMD and SJVAPCD findings. Currently available regional modeling tools are not designed to capture changes in pollutant concentrations for this proposed Project that would be meaningful. This is due in part to a relatively coarse spatial resolution (e.g., greater than 4-kilometer x 4 kilometer) which makes it speculative to discern local project impacts on air quality. For the proposed Project, mass operational emissions operation for NO_x would not exceed the applicable SCAQMD Level B significance threshold. Furthermore, NO_x impacts would be further reduced with the implementation of SCAQMD SMMs and BAMMs as shown in Table 4.6-8 of this EIR. ~~cannot be mitigated to less than significance and are considered significant and unavoidable.~~ Additionally, Annual annual operational emissions of NO_x are approximately 28 tons per year, primarily from mobile sources. This is approximately 30 percent of the annual NO_x emissions estimated for the Friant Ranch project [SJVAPCD p.8], even smaller than the quantity emitted for the project that the SJVAPCD argued it was not feasible at this time to quantify the health impacts.

Significance Without Mitigation: Less Than Significant ~~and unavoidable.~~

AQ-4 Project implementation would not expose sensitive receptors to substantial carbon monoxide pollutant concentrations. [Less than Significant]

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections may reach unhealthy levels, affecting nearby sensitive receptors. Areas of high CO concentrations, or “hot spots,” are typically associated with such intersections. However, CO disperses

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rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars (requirements for certain vehicles are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Project vicinity have steadily declined.

Accordingly, even very busy intersections do not result in exceedances of the CO standard. The analysis prepared for CO attainment in the South Coast Air Quality Management District's *1992 Federal Attainment Plan for Carbon Monoxide* (1992 CO Plan) in Southern California was conducted for four busy intersections in Los Angeles County during the peak morning and afternoon periods. The busiest intersection evaluated had a traffic volume of approximately 100,000 vehicles per day, and the level of service (LOS) was LOS E at peak morning traffic and LOS F at peak afternoon traffic—i.e., from highly congested to practically stopped. Even under these conditions, the CO analysis concluded that there was no violation of CO standards.⁹

According to the proposed Project's traffic impact analysis (refer to Appendix 4.12-1), the proposed Project would result in approximately 9,160 vehicles per day. Because the proposed Project would not increase traffic volumes at any intersection to more than 100,000 vehicles per day, there is no likelihood of the Project traffic exceeding CO values. Therefore, this impact would be considered less than significant.

Significance Without Mitigation: Less than significant.

AQ-5	Implementation of the proposed Project would not expose sensitive receptors to substantial toxic air contaminant concentrations during project construction. [Less Than Significant With Mitigation]
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Construction-related activities would result in temporary, short-term project-generated emissions of DPM from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading), soil-hauling truck traffic, paving, application of architectural coatings, and other miscellaneous activities. For construction activity, the potential cancer risk from the inhalation of DPM, discussed below, outweighs the potential for all other health impacts (i.e., noncancer chronic risk, short-term acute risk) from DPM or other TACs. Accordingly, DPM is the focus of this discussion.

Based on the emission modeling conducted and presented in Table 4.2-6, above, the maximum construction-related daily emissions of exhaust PM_{2.5}—considered a surrogate for DPM—would be 3.19 pounds/day. Furthermore, DPM would be generated from different locations on the Project site rather than a single location, because different construction activities (e.g., site preparation, building construction) would not all happen at the same place at the same time. The “dose” that receptors are exposed to is the primary factor in determining health risk.

⁹ South Coast Air Quality Management District (SCAQMD), 1992. *1992 Federal Attainment Plan for Carbon Monoxide*.

The “dose” depends on both the concentration of the substance(s) and the duration of exposure to it. The risks are higher if exposure to a fixed concentration occurs over a longer period. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, should be based on a 70- or 30-year exposure period; however, use of off-road heavy-duty diesel equipment would be limited to the periods of construction, which would be during the construction season (approximately May 1 to October 15) and only for a 11-month period.

Also important to consider is the proximity of nearby sensitive receptors. Studies show that DPM disperses rapidly (e.g., DPM concentrations decrease by 70 percent at 500 feet from the source), and receptors must be in close proximity to emission sources in order to be exposed to concentrations of concern. In most cases, receptors around the Project site would be 120 feet or more from the nearest construction activities. (There is vacant, residentially zoned land adjacent to a portion of the northern Project boundary but it is not anticipated to be developed until after construction of the discount warehouse phase of the proposed Project. The timing of project construction would be in advance of any future homes at this site north of the Project site.) Given the locations of potential receptors relative to potential DPM emission sources and the temporary nature of construction activities, the concentrations and durations of any TAC exposure that might occur would be very limited.

Furthermore, as part of their *Peer Review of Health Risk Assessment*, Ramboll Group (Ramboll) conducted a screening construction HRA which included on-site construction of the Project, and off-site street and ramp improvements. The Ramboll peer review is included in Appendix 4.2-2. The construction emissions analysis reflected Mitigation Measure AQ-1 above, which requires the use of construction equipment that would meet Tier 3 or Tier 4 engine standards for both the on-site construction and off-site street improvements. According to the screening level construction HRA, the incremental cancer risk to off-site residents from exposure to construction-related DPM emission would be 6.1 in a million, which is less than the OEHHA significance threshold of 10 in a million.

Therefore, considering the relatively low mass of DPM emissions that would be generated during even the most intense season of construction, the relatively short duration of construction activities seasonally and overall, the distance to the nearest off-site sensitive receptors, and the highly dispersive properties of DPM, construction-related TAC emissions would not expose sensitive receptors to an incremental increase in cancer risk that exceeds 10 in one million or a hazard index greater than 1.0. Additionally, Ramboll’s screening construction HRA determined the incremental cancer risks from construction emissions were below the OEHHA significance threshold. Therefore, this impact would be less than significant with mitigation incorporated.

Significance Without Mitigation: Potentially significant.

Mitigation Measure

Implementation of Mitigation Measure AQ-1

Implementation of Mitigation Measure AQ-1 requires the use of Tier 3 and Tier 4 construction equipment. The modelling conducted for the proposed project shows that the use of Tier 3 and Tier 4 construction

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equipment will ensure that the health risk will be below the 10 per million threshold as shown in Table 4.2-8.

Significance With Mitigation: Less than significant.

AQ-6	Project implementation would not expose sensitive receptors to substantial toxic air contaminant concentrations during proposed Project operations. [Less Than Significant]
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The proposed Project would be a source of gasoline vapors that would include TACs such as benzene, methyl tertiary-butyl ether, toluene, and xylene. Benzene is the primary TAC associated with gas stations. Additionally, DPM emissions would be emitted from diesel-fueled trucks traveling along the designated delivery truck routes for the Costco warehouse and major retail buildings, and emitted from trucks idling at loading docks and truck bays. The Project would emit TACs within 350 feet of existing residences to the northeast and northwest and within 100 feet of the future residences that could be developed on the parcel north of the Project site. A full quantitative Health Risk Assessment (HRA) was prepared for the Project and is provided in Appendix 4.2-2. The methodology used in this HRA is consistent with the most recent [OEHHA](#) guidance documents.¹⁰

The HRA evaluated the projected truck volumes, number equipped with transport refrigeration units (TRUs), and gasoline throughput provided by the City and applicant. To account for the emission standards representative of the California vehicle fleet, CARB has developed the EMFAC2014 emission factor model. EMFAC2014 was used to identify pollutant emission rates for DPM for Heavy-Heavy Duty Trucks and Medium-Heavy Duty Trucks.¹¹ The EPA AERMOD air dispersion modeling program and CARB's Hotspots Analysis and Reporting Program (HARP2) Risk Assessment Standalone Tool¹² were used to estimate excess lifetime cancer risks and chronic and acute noncancer hazard indices at the nearest sensitive receptors. Additionally, as part of their *Peer Review of Health Risk Assessment*, Ramboll Group (Ramboll) conducted a screening-level HRA analysis to evaluate health risks from diesel trucks traveling between the project site and highway on/off-ramps.¹³

The results of the operational HRA, including off-site truck emissions, are provided in Table 4.2-8.

TABLE 4.2-8 OPERATIONAL HEALTH RISK ASSESSMENT RESULTS

Receptor	Cancer Risk (per million) ^a	Chronic Hazard Index	Acute Hazard Index
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¹⁰ Office of Environmental Health Hazard Assessment, 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments*.

¹¹ California Air Resources Board (CARB), 2014. EMFAC2014: Calculating Emission Inventories for Vehicles in California.

¹² California Air Resources Board (CARB), 2017. Hotspots Analysis and Report Program (HARP2). Risk Assessment Standalone Tool (RAST), Version 17023.

¹³ [Although not required under the guidance of the Air Quality District, for informational purposes a screening level HRA assessing potential health risks from TAC emissions during Project construction was prepared that shows that the impacts to the nearest residential receptor would be 6.1 in one million, which is below the significance threshold of 10 in one million.](#)

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Existing Residences	2.0	0.003	0.052
Vacant Residential Land ^b	2.2	0.008	0.067
AQMD Threshold	10	1.0	1.0
Exceeds Threshold?	No	No	No

a. OEHHA (2015) recommends that a 30-year (high end residency time) exposure duration be used to estimate individual cancer risk for the maximum exposed receptor. The cancer risks for the maximum lifetime (70-year) and average residency (9-year) exposure durations are provided for informational purposes. For the maximum exposed existing residential receptor, the 70-year and 9-year cancer risks were calculated as 0.8 in a million and 0.5 in a million, respectively. For the maximum exposed future residential receptor, the 70-year and 9-year cancer risks were calculated as 2.2 in a million and 1.3 in a million, respectively. (from on-site project emissions only)

b. Assumed development based on existing general plan designation and zoning of the Not A Part property north of the proposed Project as shown in Figure 3-7 of this EIR.

Source: Ramboll, 2019. *Peer Review of Health Risk Assessment, City of Redding River Crossing Marketplace Specific Plan*, dated March 21, 2019. Included as Appendix 4.2-2 to this Draft EIR.

The incremental cancer risk for the residential Maximum Exposed Receptor (MER) based on the maximum ground level concentration for a 30-year, 24-hour outdoor exposure duration is 2.0 in a million for existing residences and 2.2 for future residences north of the Project site. Carcinogenic risks do not exceed the threshold value of 10 in a million for residents in the vicinity of the Project. For noncarcinogenic effects, the chronic and acute hazard indices identified for each toxicological endpoint were less than one for existing and future residences. Therefore, chronic and acute noncarcinogenic hazards are below the significance thresholds. Consequently, the proposed Project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during operation, and impacts would be less than significant.

Significance Without Mitigation: Less than significant.

AQ-7 Implementation of the proposed Project would not expose a substantial number of people to objectionable odors during construction or operations. [Less Than Significant]

Typically, odors are regarded as an annoyance rather than a health hazard. However, a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory, and respiratory effects, nausea, vomiting, and headache).

The human nose is the sole sensing device for odors, and the ability to detect odors varies considerably and overall is quite subjective. An odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of "odor fatigue," where a person becomes desensitized to a pervasive odor until its intensity changes.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection

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or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Equipment exhaust and paving activities would result in odor emissions for the proposed Project. Odors would be localized and generally confined to the construction area. The proposed Project would use typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Therefore, under CEQA, construction odors would result in a less-than-significant impact related to odor emissions.

In terms of operations, land uses commonly considered to be potential sources of odorous emissions include wastewater treatment plants, sanitary landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants. The proposed Project does not include any of these odorous uses. However, the ability to detect odors varies considerably among the population and is inherently subjective in nature. For instance, gasoline vapors from the gas station component of the proposed Project could be considered unpleasant to some; however, the State of California has stringent requirements for the control of gasoline vapor emissions from gasoline-dispensing facilities. For instance, CARB-certified Phase I and Phase II vapor recovery systems are required. Vapor recovery systems collect gasoline vapors that would otherwise escape into the air during bulk fuel delivery (Phase I) or fuel storage and vehicle refueling (Phase II). Phase I vapor recovery system components include the couplers that connect tanker trucks to the underground tanks, spill containment drain valves, overfill prevention devices, and vent pressure/vacuum valves. Phase II vapor recovery system components include gasoline dispensers, nozzles, piping, break away hoses, face plates, vapor processors, and system monitors. Additionally, CARB requires fuel storage tanks to be equipped with a permanent submerged fill pipe tank that prevents the escape of gasoline vapors. Such requirements ensure that minimal vapor and the associated odors are released into the atmosphere.

Similarly, the proposed Project would allow for fast-food or other sit-down restaurants, which are potential sources of odors that may affect certain people. Cooking odors (molecules) generated by the combustion of animal and vegetable matter result in a complex mixture of reactive odorous gases. A small percentage of these odors may be absorbed by the grease particles, but the vast majority exists separately in the airstream. Additionally, grease trap interceptors would be installed where a significant quantity of fats, oils, and grease (FOG) enters the waste water stream (i.e., fast food restaurants). Grease traps are passive devices designed to collect the FOG for removal by pumping the tank. The grease layer builds and forms a "grease cap." Due to a high content of FOG with limited other nutrients and bacteria, the grease cap quickly putrefies and becomes rancid. A very high level of fatty acids is produced, contributing to a lowering of the pH in the trap. A low pH environment allows odor-producing bacteria to flourish.

The two common methods of abating odor from cooking are (1) the use of an odor oxidant (potassium permanganate), which oxidizes the molecules to solids and then retains them, and (2) a spray odor neutralizer system. Either of these types of odor control can remove 85 to 90 percent of the molecules, depending on the type of cooking. However, determining the efficiency of odor control is subjective, as testing is usually conducted by people rather than machines.

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The restaurant uses would be required to comply with all state regulations associated with cooking equipment and controls, such as grease filtration and removal systems, exhaust hood systems, and blowers to move air into the hood systems, through air cleaning equipment, and then outdoors. Proposed Project uses would be equipped with kitchen exhaust systems and pollution/odor control systems. Pollution/odor control systems typically include smoke control, odor control, and exhaust fan sections. Such equipment would ensure that pollutants associated with smoke and exhaust from cooking surfaces would be captured and filtered, allowing only filtered air to be released into the atmosphere. Grease trap maintenance is very important for odor control in restaurants. Common grease trap maintenance includes routine cleaning using high pressure washing, pumping the trap out, and using non-toxic, natural odor control products and vapor barriers.

In addition, the proposed Project would have waste receptacles throughout and would use outdoor trash dumpsters with plastic flip-top lids, which would be stored in an enclosed area and picked up no less than weekly during normal solid waste collection operating hours. The garbage collected on-site, and stored in the outdoor dumpsters, would typically not be on-site long enough to cause substantial odors. The outdoor, enclosed, and covered trash dumpsters, which would be picked up weekly, or more often if requested by the user, would be considered proper containment and handling of the trash generated on-site.

For these reasons, odors associated with the proposed Project would be less than significant.

Significance Without Mitigation: Less than significant.

4.2.4 CUMULATIVE IMPACTS

AQ-8	Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors). [<u>Less Than</u> Significant and Unavoidable]
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The cumulative setting for air quality is the NSVAB, which consists of Sutter, Yuba, Colusa, Butte, Glenn, Tehama, and Shasta counties. The Shasta County portion of the NSVAB is designated a nonattainment area for ozone and PM₁₀ state standards. It is unclassified and/or attainment for all pollutants under federal standards. Cumulative growth in population, vehicle use, and industrial activity could inhibit efforts to improve regional air quality and attain the ambient air quality standards.

The *2015 Air Quality Attainment Plan* is the most recent air quality planning document covering the NSVAB. Air quality attainment plans are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls describing how the state will attain ambient air quality standards. State law makes CARB the lead agency for all purposes related to the *Air Quality Attainment Plan*. Local air districts prepare air quality attainment plans and submit them to CARB for review and approval. The *2015 Air Quality Attainment Plan* includes forecast ROG and NO_x emissions (ozone precursors) for the entire NSVAB through the year 2020.

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Since it is the intent of the 2015 Air Quality Attainment Plan to achieve ozone attainment status for the NSVAB, the proposed Project would conflict with implementation of the 2015 Air Quality Attainment Plan if it results in the generation of emissions beyond SCAQMD's Level B significance standards thereby resulting in an increase in the frequency or severity of any existing air quality violations. ~~by resulting in an increase of ozone precursor emissions beyond that anticipated.~~ Project conflicts with the 2015 Air Quality Attainment Plan equate to cumulative air quality impacts since the Air Quality Attainment Plan addresses air quality in the NSVAB. The consistency of the proposed Project with the 2015 Air Quality Attainment Plan is determined by its consistency with air pollutant emission projections in the plan. As described in Impact AQ-1, the proposed Project would not conflict with implementation of the 2015 Air Quality Attainment Plan. ~~by resulting in an increase of ozone precursor emissions beyond that anticipated, as well as by exceeding daily significance thresholds of the ozone precursor, NO_x.~~

The 2015 Air Quality Attainment Plan does not address PM₁₀. Because of the region's nonattainment status for PM₁₀, if a project generates this pollutant in quantities that would be considered to result in significant air quality impacts under individual project conditions, the project's cumulative impacts would be considered significant as well. As shown in Tables 4.2-6 and 4.2-7, the proposed Project's PM₁₀ emissions do not surpass SCAQMD thresholds for construction or operations.

~~While the proposed Project would not result in a cumulative air quality impact associated with PM₁₀, project conflicts with the 2015 Air Quality Attainment Plan equate to cumulative ozone precursor impacts since the Air Quality Attainment Plan addresses ozone precursor pollutants in the NSVAB. The proposed Project would conflict with implementation of the 2015 Air Quality Attainment Plan by resulting in an increase of ozone precursor emissions beyond that anticipated. Therefore, impacts are cumulatively significant and unavoidable.~~

TAC Emissions

Sources of TAC emissions near the Project site include emissions from trucks traveling on the highway (I-5), emissions from vehicles on major streets near the Project (e.g., S. Bonnyview Road), and other nearby stationary sources such as diesel generators and gasoline dispensing facilities. A quantitative cumulative HRA analysis was not performed since information on nearby sources of TAC emissions is not available; therefore, it would be speculative to attempt to quantify the cumulative risk.

In the absence of information on all nearby sources of TAC emissions, the City has elected to follow guidance of the South Coast Air Quality Management District and other air districts to assess cumulative impacts for air quality. The South Coast AQMD guidance states that: "As Lead Agency, the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR". Thus, the cumulative significance thresholds are the same as project-specific significance thresholds. Projects that exceed that project-specific significance thresholds are considered by the South Coast AQMD to be cumulatively considerable. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant. The same approach is taken by other large air districts in California such as San Joaquin Valley Air Pollution Control District (SJVAPCD) and Sacramento Metropolitan Air Quality Management District (SMAQMD). As shown in the project-specific health risk analysis conducted for this draft EIR, the overall

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Project level health risks are below the project-specific significance thresholds. Therefore, the Project's health risks are not cumulatively considerable.

Odors

There are no related projects in close enough proximity that would generate odors that would combine with the project's odors to create a cumulative impact. Therefore, cumulative odor impacts would be less than cumulatively considerable.

Significance Without Mitigation: Less Than Significant ~~and unavoidable~~.

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GREENHOUSE GASES

4.6 GREENHOUSE GASES

This section describes the regulatory framework and existing conditions on the Project site related to greenhouse gases (GHGs), and the potential GHG impacts of the Project. GHG emissions modeling results are provided in Appendix 4.6-1 to this DEIR. *This section updates the previously recirculated Draft EIR to reflect revisions to the Project's emission modeling predictions based on the recent availability of the most up-to-date mobile emissions modeling software, the EMFAC2017 model. Maintained by the California Air Resources Board (CARB), EMFAC2017 was recently approved for use by the U.S. EPA in mid-August 2019. The previous Project GHG-related analysis relied on the EMFAC2014 model to calculate mobile-source emissions. In addition, this section updated the previously recirculated Draft EIR to account for refinements to construction timing to allow for overlapping construction, correction of an error associated with Project water demand, and to correctly account for the weekend daily trips and pass-by trips in the modeling. In addition, the analysis of the Project under the service population metric was removed in compliance with recent case law. All additions are shown in underline text, and all deletions are shown in strikethrough text.*

4.6.1 ENVIRONMENTAL SETTING

4.6.1.1 REGULATORY FRAMEWORK

State Regulations

Executive Order S-1-07

Executive Order S-01-07 (2007) requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California. The regulation took effect in 2010 and is codified at Title 17, California Code of Regulations, Sections 95480 to 95490. The low carbon fuel standard will reduce greenhouse gas (GHG) emissions by reducing the carbon intensity of transportation fuels used in California by at least 10 percent by 2020.

Executive Order S-3-05

Executive Order S-3-05 set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- 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 Executive Order (EO) directed the secretary of the California Environmental Protection Agency to coordinate a multiagency effort to reduce GHG emissions to the target levels. The secretary would also submit biannual reports to the governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of California

GREENHOUSE GASES

Environmental Protection Agency (CalEPA) created the California Climate Action Team, made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through state incentive and regulatory programs.

Executive Order B-30-15 (2015)

EO B-30-15 established a medium-term goal for 2030 of reducing GHG emissions by 40 percent below 1990 levels and requires the California Air Resources Board (CARB) to update its current AB 32 Scoping Plan to identify the measures to meet the 2030 target. The EO supports EO S-03-05, described above, but is currently only binding on state agencies.

Assembly Bill 1493

Assembly Bill (AB) 1493 (“the Pavley Standard”) (Health and Safety Code Sections 42823 and 43018.5) aims to reduce GHG emissions from noncommercial passenger vehicles and light-duty trucks of model years 2009–2016 by achieving “the maximum feasible reduction of GHG emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State.” To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations (CCR) in 2004 by adding GHG emissions standards to California’s existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961, and adoption of 13 CCR Section 1961.1 require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars and some light-duty trucks and medium-duty vehicles, beginning with the 2009 model year. Emissions limits are reduced further in each model. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent less CO₂e (carbon-dioxide equivalent) emissions and 75 percent less smog-forming emissions than in 2009.

Senate Bill 375

Senate Bill (SB) 375¹ (codified in the Government Code 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, 14522.1, 14522.2, and 65080.01, as well as at Public Resources Code Sections 21061.3 and 21159.28 and Chapter 4.2.) took effect in 2008 and provides a new planning process to coordinate land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32. Senate Bill (SB) 375 requires metropolitan planning organizations to incorporate a Sustainable Communities Strategy in their Regional Transportation Plans that will achieve GHG emissions reduction targets by reducing vehicle miles traveled from light-duty vehicles through the development of more compact, complete, and efficient communities.

¹ Government Code Sections 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, 14522.1, 14522.2, and 65080.01; Public Resources Code Sections 21061.3 and 21159.28 and Chapter 4.2.

GREENHOUSE GASES*Renewables Portfolio Standard (Senate Bill X1-2 and Senate Bill 350)*

California's Renewables Portfolio Standard (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020. The 33 percent standard (which added Section 705 to the Fish and Game Code; amended Sections 25740, 25740.5, 25741, 25742, 25746, 25747, 25751 of the Public Resources Code, added Section 25519.5 and added Article 11 (commencing with Section 910) to Chapter 4 of Part 1 of Division 1 to the Public Resources Code, and added and repealed Section 25741.5 of the Public Resources Code, amended Sections 399.11, 399.12, 399.20, and 454.5 of the Public Utilities Code, amended, renumbered, and added Sections 399.13 and 399.16 of the Public Utilities Code, added Sections 399.18, 399.19, 399.26, 399.30, 399.31, and 1005.1 to the Public Utilities Code, repealed Section 387 of the Public Utilities Code, and repealed and added Sections 399.14, 399.15, and 399.17 of the Public Utilities Code) is consistent with the RPS goal established in the Scoping Plan. The passage of Senate Bill 350 in 2015 (which added Section 44258.5 to the Health and Safety Code, amended Section 1720 of the Labor Code, amended Sections 25310 and 25943 of the Public Resources Code, added Sections 25302.2 and 25327 to the Public Resources Code, amended Sections 359, 399.4, 399.11, 399.12, 399.13, 399.15, 399.16, 399.18, 399.21, 399.30, 454.55, 454.56, 701.1, 740.8, 9505, and 9620 of the Public Utilities Code, amended and repealed Sections 337 and 352 of the Public Utilities Code, added Sections 237.5, 365.2, 366.3, 454.51, 454.52, 740.12, 9621, 9622, Article 17 (commencing with Section 400) to Chapter 2.3 of Part 1 of Division 1 to the Public Utilities Code, added and repealed Article 5.5 (commencing with Section 359.5) of Chapter 2.3 of Part 1 of Division 1 of the Public Resources Code, and repealed Article 5 (commencing with Section 359) of Chapter 2.3 of Part 1 of Division 1 of the Public Utilities Code) updates the RPS to require the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. The bill would make other revisions to the RPS program and to certain other requirements on public utilities and publicly owned electric utilities.

California Building Energy Efficiency Standards

In general, the California Building Energy Efficiency Standards require the design of building shells and building components to conserve energy. The California Energy Commission adopted changes to the 2013 Building Energy Efficiency Standards in 24 CCR Part 6 (also known as the California Energy Code) and associated administrative regulations in Part 1.² The 2016 Building Energy Efficiency Standards are 28 percent more efficient than previous standards for residential construction and 5 percent more efficient for nonresidential construction. The standards require better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses. Energy-efficient buildings reduce fossil fuel consumption and decrease GHG emissions.

California Green Building Standards

² California Energy Commission, June 2015, <http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf>, accessed October 19, 2017.

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The California Green Building Standards Code (24 CCR Part 11), or CALGreen, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures in planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

The primary acts that have driven GHG regulation and analysis in California include the California Global Warming Solutions Act of 2006 (California Health and Safety Code, Division 25.5, Sections 38500 to 38599), which instructs CARB to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. AB 32 directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner. The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020.

CARB Scoping Plan

On December 11, 2008, CARB adopted its Scoping Plan, which functions as a roadmap to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's Scoping Plan contains the main strategies California will implement to reduce CO₂e emissions by 174 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMTCO₂e under a business as usual (BAU) scenario. This is a reduction of 42 MMTCO₂e, or almost 10 percent, from 2002 to 2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.

CARB's Scoping Plan calculates 2020 BAU emissions as the emissions that would be expected in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors (e.g., transportation, electrical power, commercial and residential, industrial, etc.). CARB used three-year average emissions, by sector, for 2002 to 2004 to forecast emissions to 2020. At the time CARB's Scoping Plan process was initiated, 2004 was the most recent year for which actual data was available.

AB 32 requires CARB to update the Scoping Plan at least once every five years. The Scoping Plan summarizes the most recent science related to climate change, including anticipated impacts to California and the levels of GHG reduction necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32. The Scoping Plan update also looks beyond 2020 toward the 2050 goal established in Executive Order S-3-05, though not yet adopted as state law, and observes that "a mid-term statewide emission limit will ensure that the state stays on course to meet our long-term goal." The Scoping Plan update does not establish or propose any

GREENHOUSE GASES

specific post-2020 goals, but identifies such goals adopted by other governments or recommended by various scientific and policy organizations.

Amendments to California Global Warming Solutions Act of 2006: Emission Limit (Senate Bill 32)

Signed into law in September 2016, SB 32 codifies the 2030 target in the recent Executive Order B-30-15. The bill authorizes the state board to adopt an interim GHG emissions level target to be achieved by 2030. SB 32 states that the intent is for the legislature and appropriate agencies to adopt complementary policies which ensure that the long-term emissions reductions advance specified criteria. CARB is tasked with updating the Scoping Plan to provide guidance for compliance with SB 32. The next updated Scoping Plan is expected to be adopted by the end of 2017.

SB 32 codified a GHG reduction target of 40 percent below 1990 levels by 2030, and, as previously discussed, EO S-3-05 established a long-term goal of reducing statewide GHG emissions to 80 percent below 1990 levels by 2050. Achieving these long-term GHG reduction policies will require systemic changes in how energy is produced and used.

There are a number of studies that discuss potential mechanisms for limiting statewide GHG emissions to meet the aggressive goals identified by SB 32 and EO S-3-05. In general, these studies reach similar conclusions—deep reductions in GHG emissions can *only* be achieved with significant changes in electricity production, transportation fuels, and industrial processes (e.g., decarbonizing electricity production, electrifying transportation, utilizing alternative fuels for aviation).

The systemic changes that will be required to achieve SB 32 and the goals of EO S-3-05 include significant policy, technical, and economic solutions. Some changes, such as the use of alternative fuels (e.g., biofuel) to replace petroleum for aviation, cannot be accomplished without action by the federal government. Similarly, achieving the reduction goals will require California to dramatically increase the amount of electricity that is generated by renewable generation sources and, correspondingly, advance the deployment of energy storage technology and smart-grid strategies, such as price-responsive demand and the smart charging of vehicles. This would entail a significant redesign of California's electricity system, which can only be accomplished through state action. Accordingly, in evaluating the Project's emissions for consistency with SB 32 and EO S-3-05, it is important to note that many of the broad-scale shifts needed to meet the reduction goals are outside of the control of the City and beyond the scope of the Project.

The long-term climate change policy and regulatory changes that will be enacted to meet post-2020 emissions reduction targets are unknown at this time. As a consequence, the extent to which the Project's emissions and resulting impacts would be mitigated through implementation of statewide (and nationwide) changes is not known.

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Regional Regulations

Shasta Regional Transportation Agency Regional Transportation Plan / Sustainable Communities Strategy

In 2018, the Shasta Regional Transportation Agency (SRTA) adopted the 2018 Regional Transportation Plan/ Sustainable Communities Strategy (2018 RTP/SCS). The 2018 RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The 2018 RTP/SCS is a long-range visioning plan to encourage and promote the safe and efficient management, operation, and development of a regional intermodal transportation system that, when linked with appropriate land use planning, will serve the mobility needs of goods and people. The RTP/SCS is required to meet the region's GHG emissions reduction targets, established by CARB for the years 2020 and 2035. Currently, SRTA's is tasked by CARB to achieve a 4 percent reduction in mobile-source GHG emissions compared to 2005 vehicle emissions in 2020 and 2035.

Shasta Regional Climate Action Plan

In 2010, the Shasta County Air Quality Management District (SCAQMD) initiated the regional climate action planning (RCAP) process. The primary objectives of the RCAP process are to contribute to the State's climate protection efforts and to provide CEQA review streamlining benefits for development projects in the region's four jurisdictions: the City of Anderson, the City of Redding, the City of Shasta Lake, and the unincorporated areas of Shasta County. To facilitate these objectives, the SCAQMD worked with the four jurisdictions to prepare community-specific, independent climate action plans that contain GHG emission inventories and forecasts, emission reduction measures, and implementation and monitoring programs. The RCAP document serves as a collection of the individual climate action plans and demonstrates the region's commitment to the State's GHG reduction efforts (Shasta County 2012). It should be noted that neither Shasta County or the City of Redding adopted their respective components of the RCAP. The discussion is included in this document to only demonstrate those project components that would be consistent with the RCAP should the draft document be adopted in the future.

City of Redding General Plan

The City of Redding General Plan serves as a long-term policy guide for physical, economic, and environmental growth. It is a statement of the community's vision for ultimate growth. State law requires that every City prepare and adopt a comprehensive long-range plan to serve as a guide for the development of the community. City actions, such as those relating to land use allocations, annexations, zoning, subdivision and design review, redevelopment and capital improvements must be consistent with the General Plan. The General Plan contains several policy provisions that reduce GHG emissions associated with land use development.

GREENHOUSE GASES**4.6.1.2 EXISTING CONDITIONS****Climate and Meteorology**

The proposed Project is located at the northern end of the Northern Sacramento Valley Air Basin (NSVAB). Prevailing winds in the area are from the south and southwest. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas. Growth and urbanization in Shasta County have also contributed to an increase in emissions.

Global Climate Change—Greenhouse Gases

The natural process through which heat is retained in the troposphere is called the “greenhouse effect.” The greenhouse effect traps heat in the troposphere through a threefold process: short wave radiation emitted by the sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long wave radiation; and GHGs in the upper atmosphere absorb this long wave radiation and emit it into space and toward the Earth. This “trapping” of the long wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

The most abundant GHGs are water vapor and CO₂. Many other trace gases have greater ability to absorb and reradiate long wave radiation, but these gases are not as plentiful. For this reason, and to gauge the potency of GHGs, scientists have established a global warming potential (GWP) for each GHG based on its ability to absorb and reradiate long wave radiation. Table 4.6-1 describes the most common GHGs associated with development similar to the proposed Project.

TABLE 4.6-1 COMMON GREENHOUSE GASES

GHG	GWP	Description
Water Vapor (H ₂ O)	n/a	Water is the primary contributor to the greenhouse effect. Natural processes, such as evaporation from oceans and rivers and transpiration from plants contribute 90 percent and 10 percent of the water vapor in our atmosphere respectively. The primary human related source of water vapor comes from fuel combustion in motor vehicles; however, this is not believed to contribute a significant amount (less than 1 percent) to atmospheric concentrations of water vapor. The Intergovernmental Panel on Climate Change has not determined a GWP for water vapor.
Carbon Dioxide (CO ₂)	1	Carbon dioxide is primarily generated by fossil fuel combustion in stationary and mobile sources. Carbon dioxide is the most widely emitted GHG and is the reference gas for determining GWPs for other GHGs.
Methane (CH ₄)	25	Methane is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane are landfills, natural gas systems, and animal digestion. Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation.
Nitrous Oxide (N ₂ O)	298	Nitrous oxide is produced by both natural and human related sources. Primary human related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic and nitric acid production.

Source: California Air Resources Board, 2014a.

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Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural emissions sectors. California is a significant emitter of CO₂e in the world and produced 459 million gross metric tons of CO₂e in 2012. In the state, the transportation sector is the largest emitter of GHGs, followed by electricity generation.³

Effects of Climate Change on the Environment

The Intergovernmental Panel on Climate Change was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme to provide the world with a scientific view on climate change and its potential effects. According to the Panel, global average temperature is expected to increase from the 1986–2005 period by 0.3 to 4.8 degrees Celsius (°C) (0.5–8.6 °F) by the end of the 21st century, depending on future GHG emission scenarios.⁴ According to the California Natural Resources Agency, temperatures in California are projected to increase 2.7°F above 2000 averages by 2050 and, depending on emission levels, 4.1 to 8.6°F by 2100.⁵

Physical conditions other than average temperatures could also be affected by the accumulation of GHG emissions. For example, changes in weather patterns resulting from increases in global average temperature are expected to result in less precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. Based upon historical data and modeling, the California Department of Water Resources projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historical average by 2050.⁶ An increase in precipitation falling as rain rather than snow could also lead to increased potential for floods, because water that would normally be held in the Sierra Nevada until spring could flow into the Central Valley concurrently with winter storms. This scenario puts more pressure on California's dam, levee, and flood control system.

As the existing climate throughout California changes, the ranges of various plant and wildlife species could shift or shrink, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or extirpated from the state.

Changes in precipitation patterns and increased temperatures are expected to alter the distribution and character of natural vegetation and associated moisture content of plants and soils. An increase in frequency of extreme heat events and drought are also expected. These changes are expected to lead to increased frequency and intensity of large wildfires.

³ California Air Resources Board, 2014a. *California Greenhouse Gas Inventory for 2000–2012*.

⁴ Intergovernmental Panel on Climate Change (IPCC), 2014. *Climate Change 2014 Synthesis Report: Approved Summary for Policymakers*.

⁵ California Natural Resources Agency (CNRA), 2012. *Our Changing Climate: Vulnerability & Adaptation to the Increasing Risks of Climate Change in California*.

⁶ California Department of Water Resources, 2008. *Managing an Uncertain Future: Climate Change Adaptation Strategies for California's Water*.

GREENHOUSE GASES

Determining Significance Thresholds

According to Appendix G of the State CEQA Guidelines, the proposed Project would have a significant impact if it would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Section 15064.4 of the CEQA Guidelines recommends that lead agencies quantify GHG emissions of projects and consider several other factors that may be used in the determination of significance of GHG emissions from a project: the extent to which the project may increase or reduce GHG emissions; whether a project exceeds an applicable significance threshold; and the extent to which the project complies with regulations or requirements adopted to implement a reduction or mitigation of GHGs.

Section 15064.4 does not establish a threshold of significance. Lead agencies have the discretion to establish significance thresholds for their respective jurisdictions, and in establishing those thresholds, a lead agency may appropriately look to thresholds developed by other public agencies, or suggested by other experts, such as the California Air Pollution Control Officers Association (CAPCOA), as long as any threshold chosen is supported by substantial evidence (see CEQA Guidelines Section 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130(f)).⁷ As a note, the CEQA Guidelines were amended in response to SB 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project.⁸ To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency.⁹ Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions."¹⁰ Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than

⁷ See, generally, Section 15130(f); see also Letter from Cynthia Bryant, Director of the Office of Planning and Research to Mike Chrisman, Secretary for Natural Resources, dated April 13, 2009.

⁸ 14 CCR § 15064(h)(3).

⁹ 14 CCR § 15064(h)(3).

¹⁰ 14 CCR § 15064(h)(3).

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significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.¹¹

Neither the City nor the SCAQMD has not established, and does not provide any guidance regarding, significance thresholds for GHG emissions. In the absence of any applicable adopted numeric threshold, the significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Therefore, the Project will be assessed for consistency with the GHG-reducing provisions promulgated by the State of California, in addition to those contained in the SRTA RTP/SCS, draft Shasta Regional Climate Action Plan, and GHG-reducing provisions of the City of Redding General Plan.

4.6.2 IMPACT DISCUSSION

GHG-1	Greenhouse gas emissions generated by the Project would not have a significant impact on global climate change since the Project would be consistent with and would not conflict with applicable greenhouse gas reduction plans, policies, and regulations. [Less than Significant Impact]
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The proposed Project would result in direct and indirect emissions of CO₂, CH₄, and N₂O and would not generate other GHGs of sufficient quantity to affect the analysis. Therefore, this analysis focuses on these three forms of GHG emissions. Direct Project-related GHG emissions include emissions from construction activities, area sources, and mobile sources, while indirect sources include emissions from electricity consumption, water demand, and solid waste generation. Project-related GHG emissions were quantified with the California Emissions Estimator Model (CalEEMod). CalEEMod relies upon vehicle trip rates and Project-specific land use data to calculate emissions. The proposed Project would result in approximately 9,160 average daily trips per the River Crossing Marketplace Specific Plan Traffic Impact Analysis Report (refer to Appendix 4.12-1). Table 4.6-2 presents the estimated CO₂, N₂O, and CH₄ emissions (in the form of MTCO₂e) of the proposed Project. CalEEMod outputs with the GHG emissions data are in Appendix 4.6-1.

¹¹ See, for example, San Joaquin Valley Air Pollution Control District, CEQA Determinations of Significance for Projects Subject to ARB's GHG Cap-and-Trade Regulation, APR—2030 (June 25, 2014), in which the SJVAPCD "determined that GHG emissions increases that are covered under ARB's Cap-and-Trade regulation cannot constitute significant increases under CEQA..." Further, the South Coast Air Quality Management District (SCAQMD) has taken this position in CEQA documents it has produced as a lead agency. The SCAQMD has prepared three Negative Declarations and one Draft Environmental Impact Report that demonstrate the SCAQMD has applied its 10,000 MTCO₂e/yr. significance threshold in such a way that GHG emissions covered by the Cap-and-Trade Program do not constitute emissions that must be measured against the threshold. See: SCAQMD, Final Negative Declaration for: Ultramar Inc. Wilmington Refinery Cogeneration Project, SCH No. 2012041014 (October 2014); SCAQMD, Final Negative Declaration for Phillips 66 Los Angeles Refinery Carson Plant—Crude Oil Storage Capacity Project, SCH No. 2013091029 (December 2014); Final Mitigated Negative Declaration for Toxic Air Contaminant Reduction for Compliance with SCAQMD Rules 1420.1 and 1402 at the Exide Technologies Facility in Vernon, CA, SCH No. 2014101040 (December 2014); and Draft Environmental Impact Report for the Breitburn Santa Fe Springs Blocks 400/700 Upgrade Project, SCH No. 2014121014 (April 2014).

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TABLE 4.6-2 ESTIMATED GREENHOUSE GAS EMISSIONS

	Source	Total MTCO ₂ e
Direct Emissions	Construction (amortized over 30 years) ¹	163 65
	Vegetation Removal (amortized over 30 years) ¹	93
	Area Source (hearths and landscape equipment)	0 0.02
	Mobile Source (automobiles)	9,059 12,118
	Total Direct Emissions	12,276
Indirect Emissions	Energy (electricity and natural gas consumption)	423
	Solid Waste (hauling and decomposition)	410
	Water Demand (water and wastewater conveyance)	62 32
	Total Indirect Emissions	895 864
Total Project-Related Emissions		9,954 13,140

Source: CalEEMod, version 2016.3.1. See Appendix 4.6-1 for emission model outputs.

Notes: ¹ Construction emissions include the one-time release of CO₂ from the removal of trees on-site, on-site construction, and off-site construction

As depicted in Table 4.6-2, the total amount of unmitigated Project-related GHG emissions from direct and indirect sources combined would total ~~9,954~~ 13,140 MTCO₂e/year. The following discussion address the proposed Project's consistency with applicable plans and policies for GHG reduction.

California State Greenhouse Gas Emissions Reduction Strategies

As previously described, AB 32 directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. This target was achieved in 2016, four years ahead of the target date (CARB 2018). On January 20, 2017, CARB released its proposed 2017 Climate Change Scoping Plan Update (2017 Scoping Plan Update), which lays out the framework for achieving the 2030 reductions as established in SB 32 (discussed above). The proposed 2017 Scoping Plan Update identifies the GHG reductions needed by each emissions sector to achieve a statewide emissions level that is 40 percent below 1990 levels before 2030. The proposed Project's consistency with statewide GHG reduction strategies is analyzed in detail in Table 4.6-3.

TABLE 4.6-3 CONSISTENCY WITH APPLICABLE STATE GREENHOUSE GAS REDUCTION STRATEGIES

Sector/Source	Category Description	Consistency Analysis
Energy		
California Renewables Portfolio Standard and SB 350	Increases the proportion of electricity from renewable sources to 33 percent renewable power by 2020. SB 350 requires 50 percent by 2030. It also requires the State Energy Resources Conservation and Development Commission to double the energy efficiency savings in electricity and	Consistent. The Project would use electricity provided by Redding Electric Utility (REU), which is required to meet the 2020 and 2030 standards. The Project would also meet the applicable requirements from the 2016

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TABLE 4.6-3 CONSISTENCY WITH APPLICABLE STATE GREENHOUSE GAS REDUCTION STRATEGIES

<u>Sector/Source</u>	<u>Category Description</u>	<u>Consistency Analysis</u>
	natural gas end uses of retail customers through energy efficiency and conservation.	CalGreen Building Standards Code related to energy efficiency and conservation.
California Code of Regulations, Title 24	Energy Efficiency Standards for Residential and Nonresidential Buildings.	Consistent. The Project would meet the energy efficiency standards of Title 24.
Assembly Bill 1109	The Lighting Efficiency and Toxics Reduction Act (AB 1109) prohibits manufacturing specified general purpose lights that contain levels of hazardous substances prohibited by the European Union. AB 1109 also requires a reduction in average statewide electrical energy consumption by not less than 50 percent from the 2007 levels for indoor residential lighting and not less than 25 percent from the 2007 levels for indoor commercial and outdoor lighting by 2018.	Consistent. The Project would meet the applicable requirements from Title 24. In addition, the Project would utilize highly efficient LED lighting and LED lamps to provide even light distribution and utilize less energy in indoor and outdoor lighting in parking lots. The lighting would also be controlled by the Project energy management system, which would include Photo sensor and time clock-controlled parking lot and exterior lights.
California Green (CalGreen) Building Standards Code Requirements	All bathroom exhaust fans shall be ENERGY STAR compliant.	Consistent. The Project would utilize energy efficiency appliances and equipment and would meet the energy standards in ASHRAE 90.1-2010, Appendix G and the Title 24, 2019 Building Energy Efficiency Standards.
	Refrigerants used in newly installed HVAC systems shall not contain any CFCs.	Consistent. The Project would meet this requirement as part of its compliance with the 2016 2019 CalGreen Building Standards Code.
California Green (CalGreen) Building Standards Code Requirements (Continued)	Parking spaces shall be designed for clean air vehicles (e.g., carpool/vanpool, low-emitting or fuel-efficient vehicles) depending on the number of total parking spaces provided. For projects with over 201 parking spaces, at least eight percent of total parking spaces will be designed for such vehicles.	Consistent. The Project would meet this requirement as part of its compliance with the 2016 2019 CalGreen Building Standards Code. The Project would include parking spaces for clean air vehicles for at least for 8% of total parking spaces. The Project would have 1,117 spaces and would include at least 90 spaces for clean air vehicles.

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TABLE 4.6-3 CONSISTENCY WITH APPLICABLE STATE GREENHOUSE GAS REDUCTION STRATEGIES

<u>Sector/Source</u>	<u>Category Description</u>	<u>Consistency Analysis</u>
	Long-term and short-term bike parking shall be provided for five percent of vehicle parking spaces with a minimum of one two-bike capacity rack.	Consistent. The Project would meet this requirement as part of its compliance with the 2016 2019 CalGreen Building Standards Code. The Project would include short-term and long-term bike parking for 5% of total vehicle parking spaces. The Project would have 1,100 vehicle parking spaces and would include at least 55 bicycle parking spaces.
	Include a stormwater soil loss prevention plan through a local ordinance such as with a Stormwater Pollution Prevention Plan (SWPPP) or an effective combination of erosion and sediment control and good housekeeping best management practices.	Consistent. The Project would meet this requirement as part of its compliance with the Construction General Permit, Order No. 2012-0006-DWQ, which requires a SWPPP.
	All irrigation controllers must be installed with weather sensing or soil moisture sensors.	Consistent. The Project would meet this requirement as part of its compliance with the 2016 2019 CalGreen Building Standards Code.
	Requires a minimum of 65 percent recycle or salvaged for reuse of nonhazardous construction and demolition debris or meet a local construction and demolition waste management ordinance, whichever is more stringent.	Consistent. The Project would meet this requirement as part of its compliance with the 2016 2019 CalGreen Building Standards Code by recycling and salvaging for reuse at least 65% of nonhazardous construction debris.
	Requires documentation of types of waste recycled, diverted or reused.	Consistent. The Project would meet this requirement as part of its compliance with the 2016 2019 CalGreen Building Standards Code.
Mobile Sources		
AB 1493 (Pavley Regulations)	Reduces GHG emissions in new passenger vehicles from model year 2012 through 2016 (Phase I) and model years 2017–2025 (Phase II). Also reduces gasoline consumption to a rate of 31 percent of 1990 gasoline consumption (and associated GHG emissions) by 2020.	Consistent. The Project would be consistent with this regulation as all members' vehicles would be subject to this standard and would not conflict with implementation of the vehicle emissions standards.

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TABLE 4.6-3 CONSISTENCY WITH APPLICABLE STATE GREENHOUSE GAS REDUCTION STRATEGIES

<u>Sector/Source</u>	<u>Category Description</u>	<u>Consistency Analysis</u>
Low Carbon Fuel Standard (Executive Order S-01-07)	Establishes protocols for measuring life-cycle carbon intensity of transportation fuels and helps to establish use of alternative fuels.	Consistent. The Project would be consistent with this regulation and would not conflict with implementation of the transportation fuel standards by including electric vehicle supply equipment, which will allow charging stations to be supplied based on demand.
Advanced Clean Cars Program	In 2012, CARB adopted the Advanced Clean Cars (ACC) program to reduce criteria pollutants and GHG emissions for model year vehicles 2015 through 2025. ACC includes the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.	Consistent. The Project would be consistent with this regulation and would not conflict with implementation of the transportation fuel standards by including electric vehicle supply equipment, which will allow charging stations to be supplied based on demand.
SB 375	SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. Under SB 375, CARB is required, in consultation with the state's Metropolitan Planning Organizations, to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035.	Consistent. Table 2 demonstrates the Project's consistency with SB 375 through its consistency with the 2015 Regional Transportation Plan for Shasta County as established by Shasta Regional Transportation Agency (SRTA). Table 2 also describes the Project's relevant transportation related mitigation measures.
Water		
CCR, Title 24	Title 24 includes water efficiency requirements for new residential and non-residential uses.	Consistent. The Project would meet this requirement as part of its compliance with the 2016 2019 CalGreen Building Standards Code
Senate Bill X7-7	The Water Conservation Act of 2009 sets an overall goal of reducing per capita urban water use by 20 percent by December 31,	Consistent. The Project was designed in accordance with the 2016 CalGreen Building Standards

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TABLE 4.6-3 CONSISTENCY WITH APPLICABLE STATE GREENHOUSE GAS REDUCTION STRATEGIES

<u>Sector/Source</u>	<u>Category Description</u>	<u>Consistency Analysis</u>
	2020. Each urban retail water supplier shall develop water use targets to meet this goal.	Code, which includes water conservation measures. The City of Redding Water Utility would be able to supply the demands of the project. In addition, the City of Redding Water Utility met its goal to reduce per capital water usage by 10% by 2015 and is implementing additional water conservation measures (e.g., water conservation pricing, outreach, water saving devices) as part of its 2015 Urban Water Management Plan to meet its goal of reducing per capita urban water use by 20% by 2020.

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TABLE 4.6-3 CONSISTENCY WITH APPLICABLE STATE GREENHOUSE GAS REDUCTION STRATEGIES

<u>Sector/Source</u>	<u>Category Description</u>	<u>Consistency Analysis</u>
Solid Waste		
California Integrated Waste Management Act (IWMA) of 1989 and Assembly Bill (AB) 341.	The IWMA mandated that state agencies develop and implement an integrated waste management plan which outlines the steps to be taken to divert at least 50 percent of their solid waste from disposal facilities. AB 341 directs CalRecycle to develop and adopt regulations for mandatory commercial recycling and sets a statewide goal for 75 percent disposal reduction by the year 2020.	Consistent. The Project will institute a recycling and composting program and will be serviced by the Solid Waste Utility.
Other Sources		
Climate Action Team	Reduce diesel-fueled commercial motor vehicle idling.	Consistent. The Project's mitigation measures would be consistent with the CARB Air Toxics Control Measure to limit heavy duty diesel motor vehicle idling to no more than 5 minutes at any given time.
	Achieve California's 50 percent waste diversion mandate (Integrated Waste Management Act of 1989) to reduce GHG emissions associated with virgin material extraction.	Consistent. The Project would meet this requirement as part of its compliance with the 2016 CalGreen Building Standards Code. The Project will institute a recycling and composting program and will be serviced by the Solid Waste Utility.
	Plant five million trees in urban areas by 2020 to effect climate change emission reductions.	Consistent. The Project would provide appropriate landscaping on the Project Site including over 100,000 square feet of drought-tolerant shrubs, grasses, and will plant or retain at least 330 trees in planters in the parking lot, adjacent to the buildings, along adjacent streets, and within a "buffer yard" (a 20-foot-wide vegetated area typically required by the City between commercial and residential land uses) along the north property line of the Project.
Climate Action Team	Implement efficient water management practices and incentives, as saving water	Consistent. The Project would meet this requirement as part of its

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TABLE 4.6-3 CONSISTENCY WITH APPLICABLE STATE GREENHOUSE GAS REDUCTION STRATEGIES

<u>Sector/Source</u>	<u>Category Description</u>	<u>Consistency Analysis</u>
(Continued)	saves energy and GHG emissions.	compliance with the 2016 2019 CalGreen Building Standards Code.
	Reduce GHG emissions from electricity by reducing energy demand. The California Energy Commission updates appliance energy efficiency standards that apply to electrical devices or equipment sold in California. Recent policies have established specific goals for updating the standards; new standards are currently in development.	Consistent. The Project would utilize energy efficiency appliances and equipment and would meet the energy standards in ASHRAE 90.1- 2010 Appendix G, the Title 24, 2019 Building Energy Efficiency Standards, the 2016 CalGreen Building Standards Code, and it will incorporate energy savings measures to reduce any increase in energy demand with the measures listed in the Project description.
	Apply strategies that integrate transportation and land-use decisions, including but not limited to promoting jobs/housing proximity, high-density residential/commercial development along transit corridors, and implementing intelligent transportation systems.	Consistent. The Project would comply with state, regional, and local transportation measures. The Project's Specific Plan would be consistent with the City of Redding General Plan policies to coordinate transportation and land-use planning. The Project would establish a commercial center in an appropriate location that maximizes the property's use potential and economic vitality for the community and the region, contributes to job growth in the City of Redding, provides an Interstate 5 (I-5) interchange location within the City of Redding to facilitate the development of a discount warehouse with fuel sales and retail/restaurant uses to serve local and travelling customers, provides for the construction of complementary retail and restaurant uses with shared access and parking, provides access to the commercial development to existing residents in close proximity on the both sides of Interstate 5 and future development of residentially zoned land north of

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TABLE 4.6-3 CONSISTENCY WITH APPLICABLE STATE GREENHOUSE GAS REDUCTION STRATEGIES

<u>Sector/Source</u>	<u>Category Description</u>	<u>Consistency Analysis</u>
		the Project, and provides access to the Redding Area Bus Authority Route 4 that less than a mile away.
Climate Action Team (Continued)	Apply strategies that integrate transportation and land-use decisions, including but not limited to promoting jobs/housing proximity, high-density residential/commercial development along transit corridors, and implementing intelligent transportation systems. (Continued)	Note: most traffic to the discount warehouse is expected to be by single-occupancy vehicle, but the surrounding retail and restaurants that are part of the project may utilize alternative forms of transportation including transit that is already nearby.
	Reduce energy use in private buildings.	Consistent. The Project would utilize energy efficiency appliances and equipment and would meet the energy standards in ASHRAE 90.1- 2010 Appendix G, the Title 24, 2019 Building Energy Efficiency Standards, the 2016 2019 CalGreen Building Standards Code, and it will incorporate energy savings measures to reduce any increase in energy demand with the measures listed in the Project description.

Abbreviations:

AB - Assembly Bill

ACC - Advanced Clean Cars

ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers

CARB - California Air Resources Board

CFC - Code of Federal Regulations

GHG - Greenhouse Gas

HVAC - Heating, Ventilation and Air Conditioning

IMWA - California Integrated Waste Management Act

LEV - Low-Emission Vehicle

PHEV - plug-in hybrid electric vehicles

REU - Redding Electric Utility

SB - Senate Bill

SRTA - Shasta Regional Transportation Agency

SWPPP - Stormwater Pollution Prevention Plan

ZEV - Zero-Emission Vehicle

Statewide GHG-reducing strategies are greatly reducing GHG emissions. As shown, the proposed Project is consistent with and would not conflict with the applicable GHG-reduction strategies of the State of California.

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Shasta Regional Transportation Association Regional Transportation Plan / Sustainable Communities Plan

The 2018 RTP/SCS embodies a collective vision for the region's future and is developed with input from local governments, including the City of Redding. The RTP/SCS establishes GHG emissions goals for automobiles and light-duty trucks for 2020 and 2035 and establishes an overall GHG target for the region consistent with both the statewide GHG-reduction targets for 2020 and the post-2020 statewide GHG reduction goals. The 2018 RTP/SCS is a long-range visioning plan to encourage and promote the safe and efficient management, operation, and development of a regional intermodal transportation system that, when linked with appropriate land use planning, will serve the mobility needs of goods and people. Future investments seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices. The RTP/SCS is an important planning document for the region, allowing project sponsors to qualify for federal funding. In addition, the RTP/SCS is supported by a combination of transportation and land use strategies that help the region achieve state GHG emission reduction goals and federal Clean Air Act requirements, preserve open space areas, improve public health and roadway safety, support the vital goods movement industry, and use resources more efficiently. The proposed Project's consistency with the RTP/SCS goals is analyzed in detail in **Table 4.6-4**.

TABLE 4.6-4 CONSISTENCY WITH APPLICABLE SRTA RTP/SCS ACTIONS AND STRATEGIES

Goals	Objectives	Consistency Analysis
Shasta Regional Transportation Association (SRTA) Regional Transportation Plan (RTP)		
1. Optimize the use of existing interregional and regionally significant roadways to prolong functionality and maximize return-on-investment.	Proactively maintain interregional and regionally significant roadways in a manner that balances cost and facility lifecycle.	N/A. The Project does not relate to the maintenance of interregional and regionally significant roadways.
	Increase the throughput of people and freight on interregional and regionally significant roadways.	Consistent. The Project would comply with state, regional, and local transportation measures. The Project's Specific Plan would be consistent with the City of Redding General Plan policies to ensure interagency and regional coordination with regard to transportation planning and improvements. The Project would establish a commercial center in an appropriate location that serves the demands of the community and the region by providing an Interstate 5 (I-5)

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TABLE 4.6-4 CONSISTENCY WITH APPLICABLE SRTA RTP/SCS ACTIONS AND STRATEGIES

Goals	Objectives	Consistency Analysis
		interchange location within the City of Redding to facilitate the development of a discount warehouse with fuel sales and retail/restaurant uses to serve local and travelling customers and include a series of transportation mitigation measures to assist with the reduction of emissions from single-occupancy vehicle trips (e.g., installation of electric vehicle supply equipment, increased pedestrian sidewalks, bicycle lanes, designated carpool/rideshare parking, and access to the Redding Area Bus Authority Route 4 that less than a mile away). Note: most traffic to the discount warehouse is expected to be by single-occupancy vehicle, but the surrounding retail and restaurants that are part of the project may utilize alternative forms of transportation including transit that is already nearby.
2. Strategically increase capacity on interregional and regionally significant roadways to keep people and freight moving effectively and efficiently.	Maximize funding available for transportation and mobility improvements in the region.	<p>Consistent. The Project would comply with state, regional, and local transportation measures. To meet the City of Redding's level of service (LOS) standards, the Traffic Impact Analysis identified necessary off-site improvements to address impacts of the proposed Project either as mitigation, or through payment of traffic impact fees through the City's Development Impact Fees program. The relevant improvements to interregional transportation are as follows:</p> <ul style="list-style-type: none"> • Adding additional lanes on I-5 • Adding additional turn lanes to I-5 overcrossing <p>In addition, With the project mitigation measures TRANS 1.2 and TRANS 1.3, the project would not conflict with level of service standards established by the county congestion management agency for designated roads or highways.</p>
	Maintain adequate traffic capacity on the core interregional network	

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TABLE 4.6-4 CONSISTENCY WITH APPLICABLE SRTA RTP/SCS ACTIONS AND STRATEGIES

Goals	Objectives	Consistency Analysis
3. Provide an integrated, context-appropriate range of practical transportation choices.	Develop an integrated, context-appropriate range of local transportation choices.	Consistent. The Project would comply with state, regional, and local transportation measures. The Project's Specific Plan would be consistent with the City of Redding General Plan policies to promote multi-modal transportation options. The Project would establish a commercial center in an appropriate location that serves the demands of the community and the region by providing an Interstate 5 (I-5) interchange location within the City of Redding to facilitate the development of a discount warehouse with fuel sales and retail/restaurant uses to serve local and travelling customers, increasing pedestrian sidewalks and bicycle lanes and including access to Redding Area Bus Authority Route 4 that is less than a mile away. Note: most traffic to the discount warehouse will be by single-occupancy vehicle, but the surrounding retail and restaurants that are part of the project may utilize alternative forms of transportation including transit that is already nearby.
3. Provide an integrated, context-appropriate range of practical transportation choices. (Continued)	Develop an integrated, context-appropriate range of interregional transportation choices. (Continued)	Consistent. The Project would comply with state, regional, and local transportation measures. To meet the City of Redding's level of service (LOS) standards, the Traffic Impact Analysis identified necessary off-site improvements to address impacts of the proposed Project either as mitigation or through payment of traffic impact fees through the City's Development Impact Fees program.

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TABLE 4.6-4 CONSISTENCY WITH APPLICABLE SRTA RTP/SCS ACTIONS AND STRATEGIES

Goals	Objectives	Consistency Analysis
Shasta Regional Transportation Association (SRTA) Regional Transportation Plan (RTP) (Continued)		
3. Provide an integrated, context-appropriate range of practical transportation choices. (Continued)	Develop an integrated, context-appropriate range of interregional transportation choices. (Continued)	<p>The relevant improvements to interregional transportation are as follows:</p> <ul style="list-style-type: none"> • Adding additional lanes on I-5 ramps • Adding additional turn lanes to I-5 overcrossing <p>In addition, with the project mitigation measures TRANS 1.2 and TRANS 1.3, the project would not conflict with level of service standards established by the county congestion management agency for designated roads or highways.</p>
4. Create vibrant, people-centered communities.	Support local governments in implementing the Sustainable Communities Strategy	<p>Consistent. The Project would comply with state, regional, and local transportation measures. The Project's Specific Plan would be consistent with the City of Redding General Plan policies to provide "Complete Streets." The Project would establish a commercial center in an appropriate location that maximizes the property's use potential and economic vitality for the community and the region, contributes to job growth in the City of Redding, facilitates the development of a discount warehouse with fuel sales and retail/restaurant uses to serve local and travelling customers.</p>
4. Create vibrant, people-centered communities. (Continued)	Enhance community health, safety, and well-being.	<p>The Project would establish a commercial center in an appropriate location that provides for the construction of complementary retail and restaurant uses with shared access and parking, provides access to the commercial development to existing residents in close proximity on the both sides of Interstate 5 and future development of residentially zoned land north of the Project, and includes a series of measures to enhance health, safety, and well-being through the reduction of emissions from single-occupancy vehicle trips (e.g., installation of electric vehicle supply equipment, increased pedestrian sidewalks, bicycle lanes, designated carpool/rideshare parking, and access to Redding Area Bus Authority Route 4 that less than a mile away).</p>

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TABLE 4.6-4 CONSISTENCY WITH APPLICABLE SRTA RTP/SCS ACTIONS AND STRATEGIES

Goals	Objectives	Consistency Analysis
		Note: most traffic to the discount warehouse will be by single-occupancy vehicle, but the surrounding retail and restaurants that are part of the project may utilize alternative forms of transportation including transit that is already nearby.
5. Strengthen regional economic competitiveness for long-term prosperity.	Facilitate sustainable economic development programs and projects.	Consistent. The Project would comply with state, regional, and local transportation measures. The Project's Specific Plan would be consistent with the City of Redding General Plan policies to ensure interagency and regional coordination with regard to transportation planning and improvements. The Project would establish a commercial center in an appropriate location that maximizes the property's use potential and economic vitality to serve the demands of the community and the region by contributing to job growth in the City of Redding.
5. Strengthen regional economic competitiveness for long-term prosperity. (Continued)	Resolve transportation related barriers to increased economic activity and productivity	The project would facilitate the development of a discount warehouse with fuel sales and retail/restaurant uses to serve local and travelling customers and providing for the construction of complementary retail and restaurant uses with shared access and parking. The Project would also include a series of traffic-related mitigation measures to assist with the integration of transportation and land-use.
6. Promote public access, awareness, and action in planning and decision-making processes.	Utilize a broad range of public participation involvement strategies	Consistent. The Project would comply with state, regional, and local transportation measures. Project's off-site improvements are identified in the Traffic Impact Analysis as necessary to address impacts of the proposed Project either by implementing physical improvements, or through payment of traffic impact fees through the City's Development Impact Fees program. Additionally, the preparation of an EIR goes through a public process with a public comment period so the
	Provide meaningful opportunities for the public to participate in regional planning and decision-making.	

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TABLE 4.6-4 CONSISTENCY WITH APPLICABLE SRTA RTP/SCS ACTIONS AND STRATEGIES

Goals	Objectives	Consistency Analysis
		general public can participate in the decision-making process.
7. Practice and promote environmental and natural resource stewardship.	Identify and minimize the direct and indirect adverse impacts of transportation on the environment, including but not limited to: climate change, air quality, healthy watersheds, and essential wildlife habitat.	Consistent. The Project would comply with state, regional, and local transportation measures. Project's off-site improvements are identified in the Traffic Impact Analysis as necessary to address impacts of the proposed Project either by implementing physical improvements, or through payment of traffic impact fees through the City's Development Impact Fees program.
7. Practice and promote environmental and natural resource stewardship. (Continued)	Lead the development of resilient transportation systems and services in the face of increasing environmental change and societal shifts in mobility.	Consistent. The Project would comply with state, regional, and local transportation measures. Project's off-site improvements are identified in the Traffic Impact Analysis as necessary to address impacts of the proposed Project either by implementing physical improvements, or through payment of traffic impact fees through the City's Development Impact Fees program.
Sustainable Community Strategies (SCS): GHG		
Expanded plug-in electric vehicle charging infrastructure, including fast charging stations needed to accelerate the market penetration of zero-emission electric vehicles		Consistent. The Project would install at least 90 clean air vehicles parking spaces, including 68 stalls for electric vehicle supply equipment, to meet the 2016 CalGreen requirements.
Expansion of interregional public transportation options, with a focus on replacing long-distance interregional vehicle trips to airports and other large-urban destination.		Consistent. The Project would also include access to public transportation that is already nearby. Project's off-site improvements are identified in the Traffic Impact Analysis as necessary to address impacts of the proposed Project either by implementing physical improvements, or through payment of traffic impact fees through the City's Development Impact Fees program.
Consolidated goods and freight hub, including capital infrastructure investments needed to support the aggregation, wholesale, and distribution of agricultural commodities, natural resources, and other key industries in Shasta County and the North State.		N/A. The Project does not include consolidated goods and freight.

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TABLE 4.6-4 CONSISTENCY WITH APPLICABLE SRTA RTP/SCS ACTIONS AND STRATEGIES

Goals	Objectives	Consistency Analysis
Expanded bicycle and pedestrian infrastructure, including the completion of network gaps, enhanced integration with public transportation, and connections between regional trail corridors and the roadway network.		Consistent. The Project would comply with state, regional, and local transportation measures. The Project's Specific Plan would be consistent with the City of Redding General Plan policies to provide safe, efficient, and comfortable routes for walking, bicycling, and public transportation to increase use of these modes of transportation, enable a convenient and active travel as part of daily activities, and meet the needs of all users of the streets. The Project would establish a commercial center in an appropriate location that serves the demands of the community and the region by providing an Interstate 5 (I-5) interchange location within the City of Redding to facilitate the development of a discount warehouse with fuel sales and retail/restaurant uses to serve local and travelling customers, increasing pedestrian sidewalks and bicycle lanes connected to existing residences in close proximity on both sides of Interstate 5 and future development of residentially zoned land north of the Project and including access the Redding Area Bus Authority Route 4 that less than a mile away. Note: most traffic to the discount warehouse will be by single-occupancy vehicle, but the surrounding retail and restaurants that are part of the project may utilize alternative forms of transportation including transit that is already nearby.
Incentives for infill and redevelopment projects, needed to spur location-efficient development patterns.		N/A. The Project is not an infill or redevelopment project in the context of the SCS.
Technology-based strategies, including intelligent transportation systems (ITS) applications designed to enhance traffic operations and provide real-time travel information to system users		Consistent. The Project would comply with state, regional, and local transportation measures. The Project would also include a series of traffic-related mitigation measures to assist with the integration of transportation and land-use.

Abbreviations:

GHG - Greenhouse Gas

N/A - not applicable

SCS - Sustainable Community

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TABLE 4.6-4 CONSISTENCY WITH APPLICABLE SRTA RTP/SCS ACTIONS AND STRATEGIES

Goals	Objectives	Consistency Analysis
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Strategies

SRTA - Shasta Regional Transportation Agency

RTP - Regional Transportation Plan

Implementing SRTA's RTP/SCS will greatly reduce the regional GHG emissions from transportation, helping to achieve statewide emission reduction targets. As shown, the proposed Project would be consistent with and would not conflict with the stated goals of the RTP/SCS; therefore, the proposed Project would not interfere with SRTA's ability to achieve the region's year 2020 and post-2020 mobile source GHG reduction targets outlined in the 2018 RTP/SCS, and it can be assumed that regional mobile emissions will decrease in line with the goals of the RTP/SCS.

Draft Shasta Regional Climate Action Plan

In 2010, the SCAQMD initiated the regional climate action planning (RCAP) process. The primary objectives of the RCAP process are to contribute to the State's climate protection efforts and to provide CEQA review streamlining benefits for development projects in the region's four jurisdictions. The Draft RCAP establishes a community-wide emissions reduction target of 15 percent below 2008 levels by 2020, following guidance from CARB and the Governor's Office of Planning and Research. CARB and the California Attorney General have determined this approach to be consistent with the statewide AB 32 goal of reducing emissions to 1990 levels by the year 2020. Progress toward achieving the 2020 emissions reduction target will be monitored over time through progress indicators, where possible. The Draft RCAP progress indicators provide mid-course checks to evaluate if a measure is on the right path to achieving targeted GHG reductions.

To meet emissions reduction targets, the Draft RCAP relies on a combination of statewide actions and local emissions reduction efforts. As previously described, statewide emissions reduction programs have been developed to implement AB 32. These statewide actions provide the majority of reductions under the Draft RCAP. Local reduction measures and actions are included to address the remaining gap between the reduction targets and statewide actions. These draft local actions are organized into reduction categories according to the source of emissions that they address. Reduction categories include energy, solid waste, transportation, water, and carbon sequestration. While the Draft RCAP has not yet been adopted, the proposed Project's consistency with the RCAP is analyzed in detail in **Tables 4.6-5** ([countywide](#)) and **4.6-6** ([City of Redding](#)) for informational purposes.

TABLE 4.6-5 CONSISTENCY WITH APPLICABLE DRAFT SHASTA REGIONAL CLIMATE ACTION PLAN GHG MEASURES

Measure	Actions and Indicators	Consistency Analysis
Focus Area: Building Energy		

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TABLE 4.6-5 CONSISTENCY WITH APPLICABLE DRAFT SHASTA REGIONAL CLIMATE ACTION PLAN GHG MEASURES

Measure	Actions and Indicators	Consistency Analysis
BE-1 Existing Buildings	<p>Actions: Promote PG&E incentives and energy conservation programs for older homes and develop comprehensive public outreach campaign promoting energy-efficiency improvements.</p> <p>Indicators: 10% of existing non-residential buildings implement energy efficiency retrofits by 2020 and 22.5% of existing non-residential buildings implement energy efficiency retrofits by 2035.</p>	N/A. The Project will not include existing buildings.
BE-2 New Construction	<p>Action: Develop a priority permitting program for new residential projects that demonstrate 15% higher efficiency than Title 24 requirements.</p> <p>Indicators: 50% of non-residential construction achieves 25% reduction in energy use above 2008 Title 24 by 2020 and 75% of non-residential construction achieves 25% reduction in energy use above 2008 Title 24 by 2035.</p>	Consistent. The Project would meet the requirements of the 2019 Title 24, which result in a 60% reduction in energy use compared to 2008 Title 24.
BE-3 Commercial Indoor Lighting	<p>Action: Discuss applicable rebates and incentive programs with building developers during the building permit phase and provided targeted outreach to building owners/managers of large non-residential buildings.</p> <p>Indicators: 10% of non-residential buildings reduce indoor lighting load by 40% by 2020 and 22.5% of non-residential buildings reduce indoor lighting load by 40% by 2035.</p>	Consistent. Project buildings would include energy-saving lighting such as highly efficient LED lighting and outdoor lamps and an energy management system with sensors/timers to reduce lighting load.
BE-4 Energy-Efficient Appliances	<p>Action: Collaborate with PG&E to promote existing financial incentives programs to encourage voluntary replacement of inefficient appliances with new ENERGY STAR appliances and Advertise energy-efficient appliance rebates at community events.</p> <p>Indicators: New homes install ENERGY STAR appliances at the following rates: 40% refrigerators, 40% clothes washers, and 70% dishwashers and Existing homes replace ENERGY STAR appliances at the following rates: 20% refrigerators, 20% clothes washers, and 20% dishwashers by 2020. New homes install ENERGY STAR appliances at the following rates: 90% refrigerators, 90% clothes washers, and 90% dishwashers and Existing homes replace ENERGY STAR appliances at the following rates: 90% refrigerators, 90% clothes washers, and 90% dishwashers by 2035.</p>	Consistent. The Project would be required to comply with Title 24 building energy efficiency standards, which establish minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the Title 24 standards significantly reduces energy usage.

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TABLE 4.6-5 CONSISTENCY WITH APPLICABLE DRAFT SHASTA REGIONAL CLIMATE ACTION PLAN GHG MEASURES

Measure	Actions and Indicators	Consistency Analysis
BE-5 Smart Grid Integration	<p>Action: Develop an outreach program with PG&E that informs businesses about smart grid and smart appliance technologies, as well as energy conservation opportunities using smart meter technology.</p> <p>Indicators: 10% of existing commercial customers adopt smart-grid technology by 2020, 30% of new commercial customers adopt smart-grid technology by 2020, 22.5% of existing commercial customers adopt smart-grid technology by 2035 and 67.5% of new commercial customers adopt smart-grid technology by 2035.</p>	<p>Consistent. The Project would implement the following smart-meter/smart-appliance technologies:</p> <ul style="list-style-type: none"> • HVAC comfort systems controlled by a computerized building management system to maximize efficiency. • Photo sensor and time clock-controlled parking lot and exterior lights. • Lighting is controlled by the overall Project energy management system. • The use of variable speed motors make-up air units and booster pumps.
BE-6 Solar Water Heaters	<p>Action: Work with PG&E and California Solar Initiative to develop an outreach program to maximize installation of solar hot water systems in commercial buildings, Encourage the use of California Solar Initiative, US EPA, PG&E, and other rebates for solar hot water heaters, Streamline permitting (e.g., building, electric, plumbing) for solar hot water system installation, and Reduce or waive fees associated with installation of solar water heaters.</p> <p>Indicators: 5% of nonresidential buildings install a solar hot water system by 2020 and 11.3% of nonresidential buildings install a solar hot water system by 2035.</p>	<p>N/A. This measure only calls for 5% of nonresidential buildings install a solar hot water system by 2020 and 11.3% by 2035. It is not mandatory for nonresidential buildings.</p>
BE-7 Photovoltaic Systems	<p>Action: Remove regulatory barriers to installation of PV systems, provide streamlined permitting and reduce permitting fees related to installation of PV systems, and Develop public outreach campaign that explains benefits of PV systems, highlights available rebates/incentives, explains PPAs and identifies solar service providers in the area.</p> <p>Indicators: County government installs 6.5 MW of solar power by 2020 and 15 MW of solar power by 2035.</p>	<p>N/A. The measure pertains to removing regulatory barriers to installation of PV systems and public outreach.</p>

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TABLE 4.6-5 CONSISTENCY WITH APPLICABLE DRAFT SHASTA REGIONAL CLIMATE ACTION PLAN GHG MEASURES

Measure	Actions and Indicators	Consistency Analysis
Focus Area: Water		
W-1: Residential Fixture and Fittings Retrofit	<p>Action: Develop informational materials that describe benefits of installing high-efficiency water fixtures/appliances and Identify water efficiency rebates or incentives applicable to unincorporated Shasta County residents.</p> <p>Indicators: 5% of residential households install high-efficiency toilets, showerheads, faucets, dishwashers, and clothes washers by 2020. 11.3% of residential households install high-efficiency toilets, showerheads, faucets, dishwashers, and clothes washers by 2035.</p>	N/A. The Project does not include residential buildings.
Focus Area: Solid Waste		
SW-1 Lumber Waste Diversion Ordinance	<p>Action: Adopt 75% lumber diversion ordinance applicable to commercial construction and renovation projects</p> <p>Indicators: 100% of commercial projects participate in 75% lumber waste diversion by 2020 and 2035.</p>	Consistent. The discount warehouse would use pre-manufactured building components to minimize waste during construction. The project would also recycle and salvage for reuse at least 65% of nonhazardous construction debris as part of its compliance with the 2016 CalGreen Building Standards Code.
SW-2 Methane Recovery	<p>Action: Complete installation of methane capture facilities at West Central Landfill and Evaluate future proposals for construction of landfill energy-to-gas system at West Central Landfill</p> <p>Indicators: Methane recovery efficiency at West Central Landfill improved from 0% to 75% by 2020. Methane recovery efficiency at West Central Landfill continued at 75% by 2035.</p>	N/A. The Project does not include a landfill.

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TABLE 4.6-5 CONSISTENCY WITH APPLICABLE DRAFT SHASTA REGIONAL CLIMATE ACTION PLAN GHG MEASURES

Measure	Actions and Indicators	Consistency Analysis
Focus Area: Transportation		
T-1 Bicycle Lane Expansion	Action: Pursue funding to implement Bicycle Transportation Plan; construct proposed bicycle paths and Discuss benefits of providing end-of-trip facilities at large employment centers with project developers. Indicators: 43 miles of bicycle paths constructed by 2020 and 97 miles of bicycle paths constructed by 2035.	Consistent. The Project would construct a new 6-foot-wide Class II bicycle facility on the northerly side of South Bonnyview Road and the easterly side of Bechelli Lane along the Project frontage.
T-2 Commute Trip Reduction	Action: Develop a ride-matching website, identify transit stops in high-activity areas that would benefit from additional enhancements (e.g., shelter, seating, electronic arrival/departure information), and Pursue funding for transit stop improvements. Indicators: 5% of employees in unincorporated Shasta County commute via carpool or public transit by 2020 and 2035.	Consistent. The Project would install designated carpool/rideshare parking. Note: most traffic to the discount warehouse will be by single-occupancy vehicle, but the warehouse employees, as well as the customers and employees of the surrounding retail and restaurants that are part of the project may utilize alternative forms of transportation including transit that is already nearby.
Focus Area: Carbon Sequestration		
GI-1 Urban Forest	Action: Work with PG&E to advertise the benefits of planting shade trees around buildings and parking lots. Indicators: 400 shade trees are planted by 2020 and 900 shade trees are planted by 2035.	Consistent. The landscape plan includes a variety of shade trees that would be used throughout the parking field and along the Project perimeter and that are appropriate for the climate in Redding.

Abbreviations:

CAP - Climate Action Plan

GHG - Greenhouse Gas

HVAC - Heating, Ventilation and Air Conditioning

LED - Light-emitting diode

N/A - not applicable

PG&E - Pacific Gas & Electric

PV - Photovoltaic

USEPA - United States Environmental Protection Agency

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**TABLE 4.6-6 CONSISTENCY WITH APPLICABLE DRAFT CAP GREENHOUSE GAS EMISSION REDUCTION MEASURES
APPLICABLE TO THE CITY OF REDDING**

Measure	Actions and Indicators	Consistency Analysis
Focus Area: Building Energy		
BE-1 Energy Efficiency Retrofits	Actions: Continue to promote and improve utility incentives for energy conservation programs for existing homes and buildings (Redding Electric Utility). Indicators: Contractors embrace program; customers move forward with projects by 2020 and large commercial customers implement custom energy and demand savings projects by 2035.	N/A. The Project will not include existing buildings.
BE-2 New Construction	Action: Continue to offer incentives to commercial customers that install energy demand saving/shifting technology and Consider expanding Home Performance Program to new residential construction (Redding Electric Utility). Indicators: All new construction to achieve 25% reduction in energy use above 2008 Title 24 energy efficiency standards by 2020.	Consistent. The Project would meet the requirements of the 2019 Title 24, which result in a 60% reduction in energy use compared to 2008 Title 24.
BE-3 Energy Management Systems	Action: Continue to encourage web-based electric load profiling tool and thermal energy storage (TES) system installation (Redding Electric Utility). Indicators: TES systems continue to be installed by 2020.	N/A. This measure applies to the Redding Electric Utility.
BE-4 Photovoltaic Systems	Action: Review City regulations, ordinances, and codes to identify and remove, when appropriate, any barriers to solar PV system installation (Development Services Department) and continue to encourage customers to install solar PV systems (Redding Electric Utility). Indicators: Solar PV systems continue to be installed by 2020.	Consistent. The Project would meet Title 24's requirement to be solar ready with the warehouse which would be structurally ready for future solar PV. In addition, 1 year after the warehouse is open, the owner will determine if installing solar PV is feasible.
BE-5 Building Shade Trees	Action: Continue existing tree planting requirements. Indicators: 3,800 shade trees are planted by 2020.	Consistent. The landscape plan includes a variety of shade trees that would be used throughout the parking field and along the Project perimeter and that are appropriate for the climate in Redding.
Focus Area: Solid Waste		

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TABLE 4.6-6 CONSISTENCY WITH APPLICABLE DRAFT CAP GREENHOUSE GAS EMISSION REDUCTION MEASURES
APPLICABLE TO THE CITY OF REDDING

Measure	Actions and Indicators	Consistency Analysis
SW-1 Methane Recovery	Action: Consult with County staff to verify the installed methane capture system at the West Central Landfill achieves the estimated 75% control efficiency. Indicators: Methane recovery efficiency at West Central Landfill improved from 0% to 75% by 2020.	N/A. The Project does not include a landfill.
Focus Area: Transportation		
T-1 Mixed Use Development	Action: Create streamlined permitting process for higher density and mixed-use developments and coordinate bicycle and pedestrian infrastructure improvements with planning for mixed-use, transit-oriented developments to ensure infrastructure improvements target higher density areas first to maximize trip reduction benefits. Indicators: 5% of all new residential units are constructed in mixed-use development by 2020.	N/A. This measure is directed at City consideration of future projects, and while the Project does not include residential land use, the Project's Specific Plan would be consistent with the City of Redding General Plan to coordinate transportation and land-use planning. The Project would establish a commercial center in an appropriate location that maximizes the property's use potential and economic vitality for the community and the region, contributes to job growth in the City of Redding, provides an Interstate 5 (I-5) interchange location within the City of Redding to facilitate the development of a discount warehouse and retail/restaurant uses with fuel sales to serve local and travelling customers, provides for the construction of complementary retail and restaurant uses with shared access and parking, provides access to the commercial development to existing residents in close proximity on both sides of Interstate 5 and future development of residentially zoned land north of the Project, and provides access to the Redding Area Bus Authority Route 4 that less than a mile away. Note: most traffic to the discount warehouse is expected to be by single-occupancy vehicle, but <u>warehouse employees and the customers and employees of the surrounding retail and restaurants that are part of the</u>

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**TABLE 4.6-6 CONSISTENCY WITH APPLICABLE DRAFT CAP GREENHOUSE GAS EMISSION REDUCTION MEASURES
APPLICABLE TO THE CITY OF REDDING**

Measure	Actions and Indicators	Consistency Analysis
		project may utilize alternative forms of transportation including transit that is already nearby.
T-2 Bicycle Infrastructure	Action: Continue to pursue grant funding opportunities to implement the Bikeway Action Plan in the Short-Term and Update Bikeway Action Plan to increase bicycle infrastructure expansion goals, with a focus on connecting activity centers (e.g., school campuses, shopping areas, job centers) with residential neighborhoods in the Medium-Term. Indicators: 96.4 new miles of Class I and II bicycles lanes constructed by 2020.	Consistent. The Project would construct a new 6-foot-wide Class II bicycle facility on the northerly side of South Bonnyview Road and the easterly side of Bechelli Lane along the Project frontage.
T-3 Pedestrian Network	Action: Information not provided Indicators: Information not provided	Consistent. Pedestrian connection will be provided to accommodate the future residential development to the north to provide direct access to the proposed Project.
T-4 Service and Maintenance Efficiency	Action: Use GIS mapping to reduce VMT associated with service calls and Implement substation modernization such as through the installation of microwave radios to reduce maintenance service VMT (Redding Electric Utility). Indicators: Reduce service call and maintenance VMT annually by 2020.	N/A. This measure applies to the Redding Electric Utility.

Abbreviations:

CAP - Climate Action Plan
GHG - Greenhouse Gas
N/A - not applicable

REU - Redding Electric Utility
TES - thermal energy storage
VMT - vehicle miles traveled

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The Project would be consistent with, and not conflict with, the applicable policies of the RCAP overall (Table 4.6-5), and with the policies in the Draft RCAP specifically drafted for the City of Redding (Table 4.6-6). The proposed Project would be required to adhere to all applicable City regulations, and no aspects of the Project would inhibit RCAP measures.

City of Redding General Plan

The City of Redding General Plan serves as a long-term policy guide for physical, economic, and environmental growth. The General Plan contains several policy provisions that reduce GHG emissions associated with land use development. The proposed Project's consistency with the GHG-reducing policy provisions of the Redding General Plan is analyzed in detail in **Table 4.6-7**.

TABLE 4.6-7 CONSISTENCY WITH APPLICABLE CITY OF REDDING GENERAL PLAN ELEMENTS

Action	Consistency Analysis	Document Name/Section/ Page Number
Focus Area: Transportation		
Revise the City's current Construction Standards to incorporate: * Desired design features for arterials, including landscape strips between the curb and sidewalk, Class II bicycle lanes, and landscaped medians. Transitions between standard sidewalk layouts and the new designs should also be addressed. (Policy T3A) * Standards for the full range of potential bicycle and pedestrian facilities expected to be developed within the City. (Policy T6A, T8A) * Criteria for Planning Commission and/or City Engineer approval of exceptions to standard street dedication and improvement requirements.	Consistent. The Project would increase pedestrian sidewalks and bicycle lanes.	General Plan Implementation/ Transportation/ Page 4
Prepare and implement a Comprehensive Bikeway Plan to specifically locate, prioritize, and identify funding sources for commuter and recreational bicycle facilities. (Pol. T8A)	Consistent. Project would construct a new 6-foot-wide Class II bicycle facility on the northerly side of South Bonnyview Road along the Project frontage.	General Plan Implementation/ Transportation/ Page 4

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TABLE 4.6-7 CONSISTENCY WITH APPLICABLE CITY OF REDDING GENERAL PLAN ELEMENTS

Action	Consistency Analysis	Document Name/Section/ Page Number
Streets should be designed to maximize pedestrian access to transit stops.	Consistent. The Project would increase pedestrian sidewalks. No new transit is expected, but there is a Redding Area Bus Authority Route 4 that less than a mile away. Note: most traffic to the discount warehouse will be by single-occupancy vehicle, but the surrounding retail and restaurants that are part of the project may utilize alternative forms of transportation including transit that is already nearby.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 27
Large residential, commercial, and industrial projects should include bus shelters at transit access points.	N/A. No new transit is expected as a result of this Project; current transit is less than one mile away. There is a bus stop that provides transit access via the Redding Area Bus Authority Route 4 that less than a mile away, but a bus shelter is not available. Note: most traffic to the discount warehouse will be by single-occupancy vehicle, but the surrounding retail and restaurants that are part of the project may utilize alternative forms of transportation including transit that is already nearby.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 27
Provide temporary traffic control as appropriate during all phases of construction to improve traffic flow (e.g., flag person).	Consistent. The construction contractor will manage traffic as needed during the construction phase.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 27
Schedule construction activities that affect traffic flow to off-peak hours.	Consistent. The Project would schedule construction activities that affect traffic flow to off-peak hours where it is determined that traffic flow would be unreasonably affected by peak-hour construction.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 27
Contribute to traffic-flow improvements that are not growth-inducing (e.g., right-of-way, capital improvements, etc.).	Consistent. The proposed Project would comply with state, regional, and local transportation measures. The Project would also include a series of traffic-related mitigation measures to assist with the integration of transportation and land-use, such as providing an Interstate 5 (I-5) interchange location within the City of Redding to facilitate the development of a	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 28

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TABLE 4.6-7 CONSISTENCY WITH APPLICABLE CITY OF REDDING GENERAL PLAN ELEMENTS

Action	Consistency Analysis	Document Name/Section/ Page Number
	discount warehouse with fuel sales and retail/restaurant uses to serve local and travelling customers.	
Provide preferential parking spaces for carpools and vanpools and provide 7-foot 2-inch minimum vertical clearance in parking facilities for vanpool access.	Consistent. The Project would also include a series of transportation mitigation measures to assist with the reduction of emissions from single-occupancy vehicle trips (e.g., installation of electric vehicle supply equipment, increased pedestrian sidewalks, bicycle lanes, designated carpool/rideshare parking, and access to public transportation that is already nearby).	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29
Telecommuting programs, alternate work schedules, and guaranteed ride home programs shall be established as appropriate.	N/A. These programs would not be applicable to employees of a club discount warehouse and retail stores and restaurants.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29
Provide for transit-use incentives such as subsidized transit passes and accommodation of unusual work schedules to encourage transit use.	N/A. These programs would not be applicable to employees of a club discount warehouse and retail stores and restaurants.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29
Convert fleet vehicles to clean-burning fuel as appropriate.	Consistent. All trucks that travel to/from the Project will be required to comply with the California Air Resources Board's On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation. The conversion to alternative fueled vehicles can be used to meet the requirements of this regulation.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29

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TABLE 4.6-7 CONSISTENCY WITH APPLICABLE CITY OF REDDING GENERAL PLAN ELEMENTS

Action	Consistency Analysis	Document Name/Section/ Page Number
Shower/locker facilities shall be provided when appropriate for bicycling and pedestrian commuters.	N/A. These facilities would not be applicable to employees of a club discount warehouse and retail stores and restaurants. However, the Project includes measures to encourage commuting alternatives such as installation of electric vehicle supply equipment, increased pedestrian sidewalks, bicycle lanes, designated carpool/rideshare parking, and access to public transportation provided by the Redding Area Bus Authority Route 4 that less than a mile away. In addition, the Transportation and Traffic Analysis does not require the Project to include a TDM.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29
Construct off-site bicycle and pedestrian facility improvements such as trails linking the facility to designated pedestrian/bicycle commuting routes.	Consistent. The Project would increase pedestrian sidewalks and bicycle lanes.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29
Provide on-site services such as cafeterias, food vending machines, automatic tellers, etc., as appropriate.	Consistent. The Project will include a food court in the Costco Warehouse.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29
Contribute to construction of off-site park-n-ride lots	N/A. The Project's off-site improvements are identified in the Traffic Impact Analysis as necessary to address impacts of the proposed Project either as mitigation, or through payment of traffic impact fees through the City's Development Impact Fees program. The Transportation and Traffic Analysis does not require the Project to contribute to the construction of off-site park-n-ride lots.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29
Provide on-site child care and after-school facilities or contribute to off-site development within walking distance.	N/A. There are four child care centers within two miles of the proposed Project, the nearest being 0.6 miles (Lil Miracles Childcare). A new child care center on-site would not be warranted.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29

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TABLE 4.6-7 CONSISTENCY WITH APPLICABLE CITY OF REDDING GENERAL PLAN ELEMENTS

Action	Consistency Analysis	Document Name/Section/ Page Number
Construct on-site pedestrian facility improvements such as walk paths and building access which is physically separated from street and parking lot traffic.	Consistent. The project would add new pedestrian sidewalks and accessible paths of travel from the public streets to project buildings.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29
Implement compressed work-week schedules where weekly work hours are compressed into fewer than five days, such as 9/80, 4/40 or 3/36.	N/A. These programs would not be applicable to employees of a club discount warehouse and retail stores and restaurants.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29
Construct on-site and off-site bus turnouts, passenger benches, or shelters	N/A. No new transit is expected as a result of this Project; current transit is less than one mile away. Nevertheless, there is a bus shelter at the which provides transit access via the Redding Area Bus Authority Route 4 that less than a mile away and bus turnout that is already nearby. Note: most traffic to the discount warehouse will be by single-occupancy vehicle, but the surrounding retail and restaurants that are part of the project may utilize alternative forms of transportation including transit that is already nearby.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29
Provide adequate bicycle storage/parking facilities	Consistent. The Project would meet this requirement as part of its compliance with the 2016 CalGreen Building Standards Code.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29
Implement alternative transportation program such as Caltrans rideshare.	Consistent. The Project would install designated carpool/rideshare parking. Note: most traffic to the discount warehouse will be by single-occupancy vehicle, but the surrounding retail and restaurants may utilize alternative forms of transportation including transit that is already nearby.	Air Quality Element/ VI. Air Quality Analysis and Best Available Mitigation Measures/ Page 29
Focus Area: Energy/GHG		
Provide energy-efficient process systems, such as water heaters,	Consistent. The Project would meet the energy standards in ASHRAE 90.1-2010,	Air Quality Element/ VI. Air Quality Analysis

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TABLE 4.6-7 CONSISTENCY WITH APPLICABLE CITY OF REDDING GENERAL PLAN ELEMENTS

Action	Consistency Analysis	Document Name/Section/ Page Number
furnaces, and boiler units.	Appendix G and the Title 24, 2019 Building Energy Efficiency Standards.	and Best Available Mitigation Measures/ Page 27
Policy NR14A. Provide an electric-usage analysis and efficiency recommendations for those customers who request the service.	N/A. This initiative pertains to the electric utility, REU.	Natural Resources Element/ Energy Resources and Conservation/ Page 13
Policy NR14B. Encourage electric utility customers to alter their consumption of electric power to reduce the City's overall and peak electric load.	Consistent. The Project would utilize energy efficiency appliances and equipment and would meet the energy standards in ASHRAE 90.1- 2010 Appendix G, the Title 24, 2019 Building Energy Efficiency Standards, the 2016 CalGreen Building Standards Code and it will incorporate energy savings measures to reduce any increase in energy demand with the measures listed in the Project description.	Natural Resources Element/ Energy Resources and Conservation/ Page 13
Policy NR14C. Explore the commercial viability of extracting natural gas resources within the vicinity of the Redding Municipal Airport.	N/A. This initiative pertains to the Redding Municipal Airport.	Natural Resources Element/ Energy Resources and Conservation/ Page 13
Policy NR14D. Continue current source-reduction, recycling, and composting programs that are contained in the joint County of Shasta, City of Redding, and City of Anderson Source Reduction and Recycling Element.	Consistent. The Project will institute a recycling and composting program and will be serviced by the Solid Waste Utility.	Natural Resources Element/ Energy Resources and Conservation/ Page 13
Policy NR14E. Encourage design that takes advantage of solar orientation and access.	Consistent. The Project would also meet the applicable requirements from the 2016 CalGreen Building Standards Code related to energy efficiency and conservation.	Natural Resources Element/ Energy Resources and

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TABLE 4.6-7 CONSISTENCY WITH APPLICABLE CITY OF REDDING GENERAL PLAN ELEMENTS

Action	Consistency Analysis	Document Name/Section/ Page Number
		Conservation/ Page 13
Focus Area: Water		
<p>Goal NR3: Preserve and protect the quantity and quality of groundwater resources within the planning area.</p> <p>-Policy NR3A. Provide maximum groundwater-recharge opportunities by maintaining the natural condition of waterways and floodplains to the extent feasible, given flood-control requirements.</p> <p>-Policy NR3B. Comply with the Regional Water Quality Control Board's regulations and standards to maintain and improve groundwater quality in the Planning Area.</p> <p>-Policy NR3C. Support the preparation of a groundwater management plan for the Redding Groundwater Basin that will address long- term sustainability of the resource.</p> <p>-Policy NR3D. Support efforts to prevent exportation of groundwater to other areas of the state and to retain local control over the resource.</p> <p>-Policy NR3E. Work with appropriate state, federal, and local agencies to protect, improve, and enhance groundwater quality in the region.</p>	<p>Consistent. The Project water demands would not deplete groundwater supplies due to the recharge from the Project's stormwater infiltration system. Note: future projects may have cumulative effects that would be mitigated through adherence with applicable permits.</p>	<p>Natural Resources Element/ Stormwater Management/ Groundwater Recharge/ Page 4</p>

GREENHOUSE GASES

TABLE 4.6-7 CONSISTENCY WITH APPLICABLE CITY OF REDDING GENERAL PLAN ELEMENTS

Action	Consistency Analysis	Document Name/Section/ Page Number
Focus Area: Waste		
<p>GOAL PF8. Provide for efficient collection and disposal of solid waste while maintaining an adequate waste disposal capacity.</p> <p>-Policy PF8A. Establish the following thresholds for solid waste collection and disposal facilities:</p> <p>+Pursue expansion of the City's solid waste transfer station when collection activities approach 85 percent of facility capacity or additional space is needed to accommodate desired separation and recycling activities</p> <p>-Policy PF8B. Continue to require solid waste collection service for residential, commercial and industrial uses within the incorporated area.</p> <p>-Policy PF8C. Continue to implement the City's Source Reduction and Recycling Element and expand identified programs, when feasible, in order to meet or exceed state mandated waste diversion goals.</p> <p>-Policy PF8D. Promote recycling and other measures designed to reduce the generation of solid waste.</p> <p>-Policy PF8E. Continue to work cooperatively with Shasta County to address regional issues related to solid waste disposal and waste reduction.</p>	<p>Consistent. The Project will institute a recycling and composting program and will be serviced by the Solid Waste Utility.</p>	<p>Public Facilities and Services Element/</p> <p>Solid Waste Collection and Disposal/</p> <p>Pages 8-9</p>

Abbreviations:

ASHRAE - American Society of Heating, Refrigerating and

Air-Conditioning Engineers

GHG - Greenhouse Gas

N/A - not applicable

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As shown in Table 4.6-7, the Project would be consistent with, and would not conflict with, the applicable GHG-reducing policy provisions of the Redding General Plan.

Greenhouse gas emissions generated by the Project would not have a significant impact on global climate the Project would be consistent with, and would not conflict with, the greenhouse gas reduction plans and policies governing the region.

Significance Without Mitigation: Less than significant.

4.6.3 CUMULATIVE IMPACTS

GHG-2	Greenhouse gas emissions generated by the Project would not have a significant impact on global climate change. [Less Than Significant]
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Under AB 32 and SB 32, CARB has been tasked with adopting regulations for reduction of GHG emissions. The effects of this Project are evaluated based not upon the quantity of emissions, but rather on whether the Project implements reduction strategies identified in AB 32, SB 32, the Governor's Executive Order S-3-05, or other strategies to help reduce GHGs to the level proposed by the governor. If so, it could reasonably follow that the Project would not result in a significant contribution to the cumulative impact of global climate change.

It is generally the case that an individual project of this size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are exclusively cumulative impacts. The additive effect of Project-related GHGs would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the proposed Project as well as other cumulative related projects would be subject to all applicable regulatory requirements, which would further reduce GHG emissions. As shown in Tables 4.6-3 through 4.6-6, the proposed Project would implement and not impede the applicable GHG-reduction strategies established to ensure progress toward statewide reduction targets. Therefore, the Project's cumulative GHG impacts would also be less than significant.

Significance Without Mitigation: Less than significant.

GREENHOUSE GASES

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TRANSPORTATION AND TRAFFIC

4.12 TRANSPORTATION AND TRAFFIC

This section of the Draft Environmental Impact Report (Draft EIR) evaluates the potential for implementation of the proposed Project to result in transportation and traffic impacts in the City of Redding. The analysis in this section is based in part on the following:

- *River Crossing Marketplace Specific Plan Traffic Impact Analysis Report, (TIAR)) Omni-Means Ltd., updated September 2019, included as Appendix 4.12-1. The updated document was modified to incorporate information that was previously provided in an errata to the November 2017 TIAR to make the document easier to review. Clarification was also made where appropriate.*
- *Proposed Project Impacts in Year 2040 with Proposed Redding Rancheria, Omni-Means Ltd., October 9, 2019, included as Appendix 4.12-2. This memo addresses the Year 2040 cumulative project impacts of the proposed Project with traffic from the Redding Rancheria as part of the future baseline. The analysis, impact conclusions, and mitigation measures in this memorandum supersede those in the TIAR for the Year 2040 scenario and are therefore included below. This memorandum was updated from the December 21, 2017 memo to include an analysis of Saturday afternoon peak traffic.*
- *Year 2040 Plus Proposed Project and Year 2040 with Year 2040 Plus Proposed Project with Rancheria” Impacts Comparison, Omni-Means Ltd., October 10, 2019, included as Appendix 4.12-3. While the proposed Redding Rancheria casino project requires analysis as a pending project under CEQA, there is significant uncertainty as to whether that project will be allowed to proceed since the Federal process of converting the property from “fee to trust” has not been accomplished. The purpose of this memo is to determine, for informational purposes, the additional mitigation measures that may be required of the Rancheria project under the very likely scenario that the River Crossing Marketplace Project is constructed prior to the proposed casino project. This memo addresses Year 2040 cumulative River Crossing Marketplace project impacts and indicates additional recommended mitigation measures should the Redding Rancheria project be subsequently constructed. As the impacts would result from the implementation of the Rancheria project, and not the proposed Project, the mitigation measures in the memo would be the responsibility of the Rancheria project. This memorandum was updated from the January 26, 2018 memo to include an analysis of Saturday afternoon peak traffic.*
- *Left-Out Analysis for the Southern Bechelli Lane Driveway, Omni Means, Ltd., January 31, 2018, included as Appendix 4.12-4. The intent of this memo is to evaluate whether the turning movements out of the proposed Project’s driveway would conflict with traffic on Bechelli Lane. The analysis, impact conclusions, and mitigation measures supersede those in the TIAR with respect to Intersection 29.*
- *Loma Vista Cut-Through, Omni Means, Ltd., February 16, 2018, included as Appendix 4.12-5. This memo addresses concerns expressed during two neighborhood meetings that the Project could result in additional cut through traffic on Loma Vista Drive and that traffic speed would be unsafe on this collector street given the existence of Lassen View Elementary School.*

In addition to the above memoranda, two additional technical memoranda were produced to address public concerns expressed during the project scoping and public comment process:

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- Review of Traffic Volumes for Rivercrest Park, December 22, 2017. This memorandum which was prepared at the request of neighboring property owners who suggested that the Project traffic, in addition to the neighborhood park traffic, would be intolerable given that Rivercrest Park draws traffic from a larger geographic area than just the Rivercrest Estate neighborhood. As the park is existing and its traffic reflected in the existing conditions in the TIAR, this analysis is very conservative in that it adds Park traffic on top of the existing conditions. Nonetheless, this memorandum concludes that the additional traffic volumes specifically attributed to the Park does not significantly increase delay or reduce the LOS at area intersections as shown in the TIAR. This memo is included as Appendix 4.12-6.
- Full RM-10 Development (South of Rivercrest Subdivision)- Impact Assessment, June 15, 2018, which was prepared for informational purposes to present trip generation and impacts to the Rivercrest Parkway and Chinook Drive intersections with Bechelli Lane, from the hypothetical future development of currently vacant land between the Project and the Rivercrest Subdivision. As there is no plan for such development, any analysis of traffic from such development is speculative. Therefore, such development was not included in the cumulative analysis in the TIAR, other than the basic growth assumptions of development contained in the Shasta County Travel Demand Model (SRTA). Nonetheless, for informational purposes the memorandum assumed that the site would be developed to the fullest intensity allowed under the existing zoning. This memo is included as Appendix 4.12-7.

The City determined that maintaining the above memoranda as stand-alone documents separate from the TIAR would facilitate ease of use by members of the public who may be interested in those specific topics and not necessarily the full project analysis contained in TIAR. However, where relevant, these memoranda are incorporated into the analysis. To the extent that there are any apparent conflicts between the TIAR and this section, this section shall control.

The following is a summary of the street improvements that the Project will complete, either as condition of approval or mitigation measure. The summary describes, in simple terms, the modifications that will be made to area streets and intersections upon development of the Project. Please refer to Section 4.12.4 for a discussion of each Project impact and proposed mitigation measure.

The improvements that will be in place at the time of Project opening include the following:

- Widen Bechelli Lane and South Bonnyview Road to City of Redding standards along the property frontage. The improvements will add one travel lane and one turn lane, three project driveways, sidewalks, bicycle lane, and other street improvements such as street lighting. These are standard City-required improvements of any development project and are not Project-specific mitigation measures.
- Construct a multilane roundabout at the intersection of South Bonnyview Road and Bechelli Lane. The reader will note that the TIAR provides two options for improving the Bechelli Lane/South Bonnyview Road intersection: construction of the roundabout or the addition of a number of turn lanes at the intersection. The City has determined that that it will allow only construction of the multilane roundabout as that improvement is consistent with ultimate plans for the interchange area improvements developed in concert with the Caltrans Project Study Report (PSR) and accepted by the Redding City Council at its meeting of October 23, 2017.
- Add additional through and turn lanes on Bechelli Lane and South Bonnyview Road.

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- Improve the “Blue Shield” traffic signal to accommodate a major driveway entrance into the proposed Project.
- Add additional lanes to the Interstate 5 (I-5) southbound and northbound off ramps to provide additional storage and dedicated turn lanes.
- Restripe to modify through and turn lanes on the I-5 overcrossing to accommodate projected traffic movements.
- Construct traffic calming features on Loma Vista Drive.
- Install a traffic signal at the Loma Vista Drive and Bechelli Lane intersection.
- Provide a center turn lane on Bechelli Lane from South Bonnyview Road to Chinook Drive.

The following improvements will be constructed approximately one year after project opening:

- Reconstruct the Churn Creek Road/Rancho Road/Victor Avenue intersection into a single lane roundabout; construct a turn lane or other improvements to the Churn Creek Road corridor between the Churn Creek Bridge and Rancho Road to improve Huntington Drive access.

The Project will contribute its fair share of the estimated cost of the following improvements located in Shasta County jurisdiction. It is not known when improvements will be constructed.

- Reconstruct the Churn Creek Road/Hartmeyer Lane intersection to accommodate truck movements.

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Table 4.12-0 Transportation Mitigation Responsibility and Funding Table

<u>Mitigation</u>	<u>Intersection/Roadway</u>	<u>Project Proportionate Share</u>	<u>Funding Source</u>	<u>Timing</u>	<u>Responsible Party</u>
<u>Year 2020 + Project</u>					
<u>TRANS-1.1</u>	<u>#5 South Bonnyview Road/Bechelli Lane (Roundabout)</u>	<u>53%</u>	<u>TIF</u>	<u>Occupancy</u>	<u>COR</u>
<u>TRANS-1.2</u>	<u>#7 South Bonnyview Road/I-5 Southbound Ramps (Additional lanes)</u>	<u>48%</u>	<u>TIF</u>	<u>Occupancy</u>	<u>COR</u>
<u>TRANS-1.3</u>	<u>#8 South Bonnyview Road/I-5 Northbound Ramps (Additional lane)</u>	<u>22%</u>	<u>TIF</u>	<u>Occupancy</u>	<u>Under Construction (Churn Creek Marketplace)</u>
<u>Completed as part of Trans-1.1, 1.2, and 1.3.</u>	<u>Roadway Segment #1 South Bonnyview Road from SR 273 to Churn Creek Road.</u>	<u>43%</u>	<u>Project</u>	<u>Occupancy</u>	<u>Project</u>
<u>TRANS-1.4</u>	<u>Roadway Segment #2 Churn Creek Road between South Bonnyview Road and Victor Avenue (Intersection improvements)</u>	<u>32%</u>	<u>Project</u>	<u>1 yr. After Project Occupancy*</u>	<u>Project</u>
<u>TRANS-1.4</u>	<u>Intersection #11 Churn Creek/Hartmeyer Lane* (Intersection Improvements)</u>	<u>13%</u>	<u>Project</u>	<u>Unknown</u>	<u>Shasta County</u>
<u>TRANS-1.4</u>	<u>Intersection #12 Churn Creek Road/Huntington Drive* (Intersection Improvements)</u>	<u>22%</u>	<u>TIF1</u>	<u>1 yr. After Project Occupancy</u>	<u>COR</u>
<u>TRANS-1.4</u>	<u>Intersections #13 and #14 Churn Creek Road/Victor Avenue and Churn Creek Road/Rancho Road* (Roundabout)</u>	<u>25%/14%</u>	<u>TIF1</u>	<u>1 yr. After Project Occupancy</u>	<u>COR</u>
<u>TRANS-1.5</u>	<u>Loma Vista Drive between Churn Creek Road and Bechelli Lane (Traffic Calming)</u>	<u>100%</u>	<u>Project</u>	<u>Occupancy</u>	<u>Project</u>
<u>TRANS-4</u>	<u>#29 Bechelli Lane/Southern Driveway (Project access)</u>	<u>100%</u>	<u>Project</u>	<u>Occupancy</u>	<u>Project</u>
<u>Year 2040 + Project</u>					
<u>TRANS-7.1</u>	<u>#7 South Bonnyview Road/I-5 Southbound ramps*</u>	<u>40%</u>	<u>TIF</u>	<u>Unknown</u>	<u>COR</u>
<u>TRANS-7.2</u>	<u>#8 South Bonnyview Road/I-5 Northbound ramps*</u>	<u>33%</u>	<u>TIF</u>	<u>Unknown</u>	<u>COR</u>
<u>TRANS-7.3</u>	<u>#21 Bechelli Lane/Loma Vista Drive (Traffic Signal)</u>	<u>10%</u>	<u>TIF/City</u>	<u>Occupancy</u>	<u>COR</u>
<u>TRANS-7.4</u>	<u>Roadway #2 Churn Creek Road between South Bonnyview Road and Victor Avenue</u>	<u>16%</u>	<u>TIF</u>	<u>1 yr. After Project Occupancy</u>	<u>COR</u>

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	<u>Intersection #11 Churn Creek/Hartmeyer Lane*</u>	<u>12%</u>	<u>Project Share</u>	<u>Unknown*</u>	<u>Shasta County</u>
	<u>Intersection #12 Churn Creek Road/Huntington Drive (improvements also address necessary roadway corridor improvements)*</u>	<u>22%</u>	<u>TIF1</u>	<u>1 yr. After Project Occupancy</u>	<u>COR</u>
	<u>Intersections #13 and #14 Churn Creek Road/Victor Avenue and Churn Creek Road/Rancho Road*</u>	<u>22%/13%</u>	<u>TIF1</u>	<u>1 yr. After Project Occupancy</u>	<u>COR</u>
<u>TRANS-7.5</u>	<u>Roadway Segment #4 Bechelli Lane from South Bonnyview Road to Chinook Drive (stripe for center turn lane)</u>	<u>42%</u>	<u>Project/COR</u>	<u>Occupancy</u>	<u>Project/COR</u>

¹ [Transportation Impact Fee](#)

² [Improvements to this intersection included in TRANS-7.4](#)

³ [Warrants not met for signalization, so no mitigation required; however, it is included in improvements for TRANS-7.4.](#)

[*Significant and Unavoidable impact subject to Statement of Overriding Considerations.](#)

[These improvements are described in greater detail below and in the TIAR. \(Appendix 4.12-1\)](#)

4.12.1 ENVIRONMENTAL SETTING

4.12.1.1 REGULATORY FRAMEWORK

State Regulations

California Department of Transportation

The Caltrans *Guide for the Preparation of Traffic Impact Studies* (December 2002) states the following:

“The level of service (LOS) for operating State highway facilities is based upon measures of effectiveness (MOEs). These MOEs describe the measures best suited for analyzing State highway facilities (i.e., freeway segments, signalized intersections, on- or off-ramps, etc.). Overall, Caltrans endeavors to maintain a target LOS at the transition between LOS “C” and LOS “D” (see Appendix “C-3”) on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE should be maintained.”

Regional Regulations

2015 Regional Transportation Plan for Shasta County

Shasta Regional Transportation Agency (SRTA) is the federally-designated metropolitan planning organization (MPO) and state-designated regional transportation planning agency (RTPA) for Shasta

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County. SRTA is required to prepare and adopt a comprehensive regional transportation plan (RTP) covering a minimum 20-year planning horizon. The RTP for Shasta County is updated every four years.

The purpose of the RTP is to “encourage and promote the safe and efficient management, operations, and development of a regional intermodal transportation system that, when linked with appropriate land use planning will serve the mobility needs of goods and people” (California Transportation Commission 2010 RTP Guidelines). The RTP is implemented by way of shorter term transportation improvement and work programs.

Bicycle Facilities

Within the City of Redding and Shasta County, the goals for bicycle and trail facilities are contained in the Bikeway Action Plan 2010-2015,¹ and the *Shasta County 2010 Bicycle Transportation Plan*.²

The California Streets and Highways Code defines the various classes of bicycle facilities as follows:

- (a) Bike paths or shared use paths, also referred to as "Class I bikeways", which provide a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians with cross-flows by motorists minimized.*
- (b) Bike lanes, also referred to as "Class II bikeways", which provide a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted.*
- (c) Bike routes, also referred to as "Class III bikeways", which provide a right-of-way on- street or off-street, designated by signs or permanent markings and shared with pedestrians and motorists.*
- (d) Cycle tracks or separated bikeways, also referred to as "Class IV bikeways", which promote active transportation and provide a right-of-way designated exclusively for bicycle travel adjacent to a roadway and which are separated from vehicular traffic. Types of separation include, but are not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.*

¹ Bikeway Action Plan 2010-2015, <http://healthyshasta.org/downloads/biking/ReddingBikePlan2010.pdf/>, accessed February 15, 2018.

² Shasta County 2010 Bicycle Transportation Plan, http://www.co.shasta.ca.us/docs/Public_Works/docs/2010-sc-bike-plan.pdf?sfvrsn=2/, accessed February 15, 2018.

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Local Regulations

Redding Transportation Element (General Plan Element)

The transportation goals included in the City of Redding Transportation Element are as follows:

Goal T1: Provide safe, efficient, and comfortable routes for walking, bicycling, and public transportation to increase use of these modes of transportation, enable convenient and active travel as part of daily activities, and meet the needs of all users of the streets.

Goal T5: Coordinate transportation and land use planning; protect existing and planned land uses from transportation-related conflicts; promote multi-modal transportation options.

Policy T5A: Establish the following peak-hour LOS standards for transportation planning and project review. They reflect the special circumstances of various areas of the community:

- Use LOS “C” – for most arterial streets and their intersections.
- Use LOS “D” – for the Downtown area where vitality, activity, and pedestrian and transit use are primary goals.
- Use LOS “D” – for streets within the State highway system and interchanges.
- Use LOS “D” – for river-crossing street corridors whose capacity is affected by adjacent intersections.

Goal T7: Build and maintain a safe and efficient local street system with the aim of meeting LOS standards.

Goal T8: Ensure interagency and regional coordination with regard to transportation planning and improvements.

Goal T9: Protect residential neighborhoods from excessive through traffic, where feasible.

Goal T10: Provide an attractive, safe, and continuous system of sidewalks and other pedestrian facilities.

Goal T11: Ensure that sufficient, well-designed, and convenient on-street and off-street parking facilities are provided to serve land uses throughout the city

Goal T12: Make it easier and safer for people to travel by bicycle.

Traffic Impact Fee

The City of Redding adopted the current Citywide Transportation Development Impact Fee Program (TIF) as part of the comprehensive fee study in 2000. Between 2000 and 2009 the transportation fees were increased to reflect inflation and the projects prioritized for construction scheduling. In 2013, the TIF Program was updated through a comprehensive fee study along with the other city development impact fees. A nexus study for an update to the 2013 Study to account for changes in population growth rates

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and the expected intensity of future development within the City was adopted in 2017. The Development Impact Fee program is contained in Chapter 16.20 of the Redding Municipal Code.

2010 – 2015 Bikeway Action Plan

The Bikeway Action Plan, adopted in 2010, inventories the City's existing bikeway network, and plans for new bikeways consistent with the General Plan, and the complete streets goal of the circulation element.

Redding Municipal Code

Title 11, *Vehicles and Traffic*, of the Redding Municipal Code regulates traffic signs and signals; traffic on public and private roads; parking restrictions; turning movement restrictions; allowable speed limit under different circumstances; crosswalks and bicycle lanes; as well as many other chapters that deal with traffic restrictions.

[Traffic Impact Analysis Guidelines](#)

[The City of Redding has established guidelines for the preparation of Traffic Impact Analysis Report \(TIAR\) reports. The purpose of these guidelines is to streamline development review and approval by promoting consistent and adequate traffic analyses. A TIA is prepared for a project before a discretionary action, such as a land use zoning change, subdivision map, use permit, or other development application, is approved. By providing clear assumptions, methods, and format, these guidelines help to facilitate the creation and review of TIA reports consistent with requirements of the California Environmental Quality Act \(CEQA\), Subdivision Map Act, and Redding Municipal Code \(RMC\).](#)

[The Guidelines are intended to establish basic parameters for the development of traffic impact analysis reports and to provide general guidance on mitigating project impacts for typical projects. As such, they serve as a tool for City staff to utilize in its review and approval of development projects. By their very nature, the guidelines are not intended to establish project mitigation parameters, or eliminate City discretion to determine whether a mitigation measure recommended by the guidelines based on a project's fair share of impacts is appropriate or feasible given the specific circumstances of a given project. As such, determinations of significance are not necessarily based on fair share percentages. Further, the Guidelines are not intended to implement or direct the use of the provisions of Chapter 16.20 of the Redding Municipal Code \(Development Impact Fees program\) pertaining to reimbursement/credit for construction activities or to prevent the City Council from authorizing participation in construction activities for projects contained within the Citywide Transportation Impact Fee program. The Guidelines are for staff use in directing the preparation of TIA reports and have not been adopted by the City Council.](#)

4.12.1.2 EXISTING CONDITIONS

Existing Road and Bicycle Network

Roadways included in the ~~TIA~~ TIAR for the proposed Project are as follows:

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I-5: I-5 is an interstate freeway facility that traverses the State of California extending from the Mexico Board to the south to the Canadian border to the north. In northern California, I-5 serves as the primary inter-regional auto and truck travel route that connects the northern counties with the Sacramento Valley. The proposed Project is adjacent to, and served by, the Bonnyview Road interchange with I-5. Within Shasta County, I-5 serves as a major commuter and truck route linking the Cities of Anderson, Redding, and Shasta Lake. I-5 forms the eastern boundary of the Project site, with access from the Bonnyview Road Interchange. There are no pedestrian, bicycle or transit facilities on I-5.

South Bonnyview Road: South Bonnyview Road is a four-lane, east-west arterial that runs between State Route 273 and Churn Creek Road. South Bonnyview Road has a full interchange with I-5 and is the southern boundary of the Project site. There is a sidewalk along a portion of the property frontage on South Bonnyview Road extending approximately 350 feet west from the I-5 interchange. The sidewalk ends approximately halfway along the property frontage. There is no connecting sidewalk to the South Bonnyview intersection with Bechelli Lane. A Class III bike lane extends along South Bonnyview Road from the I-5 interchange past the intersection with Bechelli Lane. There is no transit stop on this section of Bonnyview Road, and no indication on the Redding Area Bus Authority (RABA) route map that the roadway is part of an existing transit route.

Bechelli Lane: Bechelli Lane is a two- to four-lane, north-south arterial that runs between south of South Bonnyview Road to its northern terminus, approximately 1 mile to the north of East Cypress Avenue. Bechelli Lane is the western boundary of the Project site. There is no sidewalk connecting Bechelli Lane to the intersection of South Bonnyview Road along the western boundary of the Project site. A Class III bike lane exists along the frontage of the proposed Project. Sidewalk exists north of the Project site, and RABA bus route 4 has a stop approximately 0.8 miles north of the Project site. There is a bus turnout on the southbound reach of Bechelli Lane in front of the Blue Shield office building; however, there is no indication that the turnout is part of the transit system.

Churn Creek Road: Churn Creek Road is a two- to four-lane, north-south arterial that runs between Airport Road and College View Drive. Churn Creek Road runs in the east-west direction between South Bonnyview Road and Rancho Road, and a north-south direction between South Bonnyview Road and Hartnell Avenue. East of South Bonnyview Road, Churn Creek has sidewalks but no bicycle lane. There is no transit stop along Churn Creek Road. North of Bonnyview Road, Churn Creek parallels I-5 and has continuous sidewalk on the west side of the roadway. Class III Bicycle lanes exist on both sides of the roadway.

Rancho Road: Rancho Road is a two-lane, east-west arterial that runs between the eastern terminus of Churn Creek Road and Airport Road. There is no continuous sidewalk or bicycle lane along Rancho Road. There are not shown transit stops.

Hartnell Avenue: Hartnell Avenue is a two to four-lane, east-west arterial that runs between East Cypress Avenue and Airport Road. The roadway has continuous sidewalks and Class III bicycle lanes. RABA Route 5 has several stops along the roadway.

Loma Vista Drive: Loma Vista Drive is a two-lane, undivided, residential collector facility that connects Bechelli Lane and Churn Creek Road across I-5. Loma Vista Elementary School and the Neighborhood

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Church of Redding are both present on the southerly side of Loma Vista Drive. The roadway currently operates at a posted speed limit of 35 mph with a 25-mph school zone. Between Bechelli Lane and Churn Creek Road, Loma Vista Drive intersects with several residential roadways creating several signalized and stop-control intersections. Two school cross-walks are present, one at the Travers Street and one at the easterly school driveway. There is sidewalk along the northerly side of the roadway between Bechelli Lane and Traverse Street. Along the southerly side, sidewalk is present between Traverse Street and Churn Creek Road. Loma Vista Drive varies from approximately 32 feet to 40 feet wide, with on-street parking permitted along some sections.

Intersections

Table 4.12-1 lists the intersections included in the ~~TIA~~ [TIAR](#). Intersections 6B, 28 and 29, are part of the proposed Project improvements (see Figure 4.12-1).

Roadway Segments

The ~~TIA~~ [TIAR](#) studied the following roadway segments:

1. S. Bonnyview Road, from State Route 273 to Churn Creek Road
2. Churn Creek Road, from S. Bonnyview Road to Victor Avenue
3. Rancho Road, from Churn Creek Road to Airport Road
4. Bechelli Lane from S. Bonnyview Road to Chinook Drive (two-lane section)
5. Bechelli Lane, from Chinook Drive to 3rd Street (three-lane section)
6. Churn Creek Road, from S. Bonnyview Road to Hartnell Avenue
7. Churn Creek Road, from Rancho Road to Knighton Road

Freeway Mainline and Ramp Segments

The following I-5 mainline and ramp segments were selected for analysis in coordination with City of Redding and Caltrans staff:

1. Cypress Avenue Off Ramp NB – Diverge
2. North of S. Bonnyview NB – Mainline
3. S. Bonnyview Road On Ramp NB – Merge
4. Knighton Road Off Ramp NB – Diverge
5. North of Knighton Road (six-lane section) NB – Mainline
6. North of Knighton Road (four-lane section) NB – Mainline
7. Knighton Road On Ramp NB – Merge
8. Knighton Road Off Ramp SB – Diverge
9. [South Bonnyview to Knighton Road \(4-Lane Section\) SB – Mainline](#)
10. [South Bonnyview to Knighton Road \(6-Lane Section\) NB – Mainline](#)
11. [South Bonnyview Road On Ramp SB – Merge](#)
12. [South Bonnyview Road Off Ramp SB – Diverge](#)
13. [Cypress Avenue to South Bonnyview Road SB – Mainline](#)
- ~~14.~~ [Cypress Avenue On Ramp SB - Merge](#)

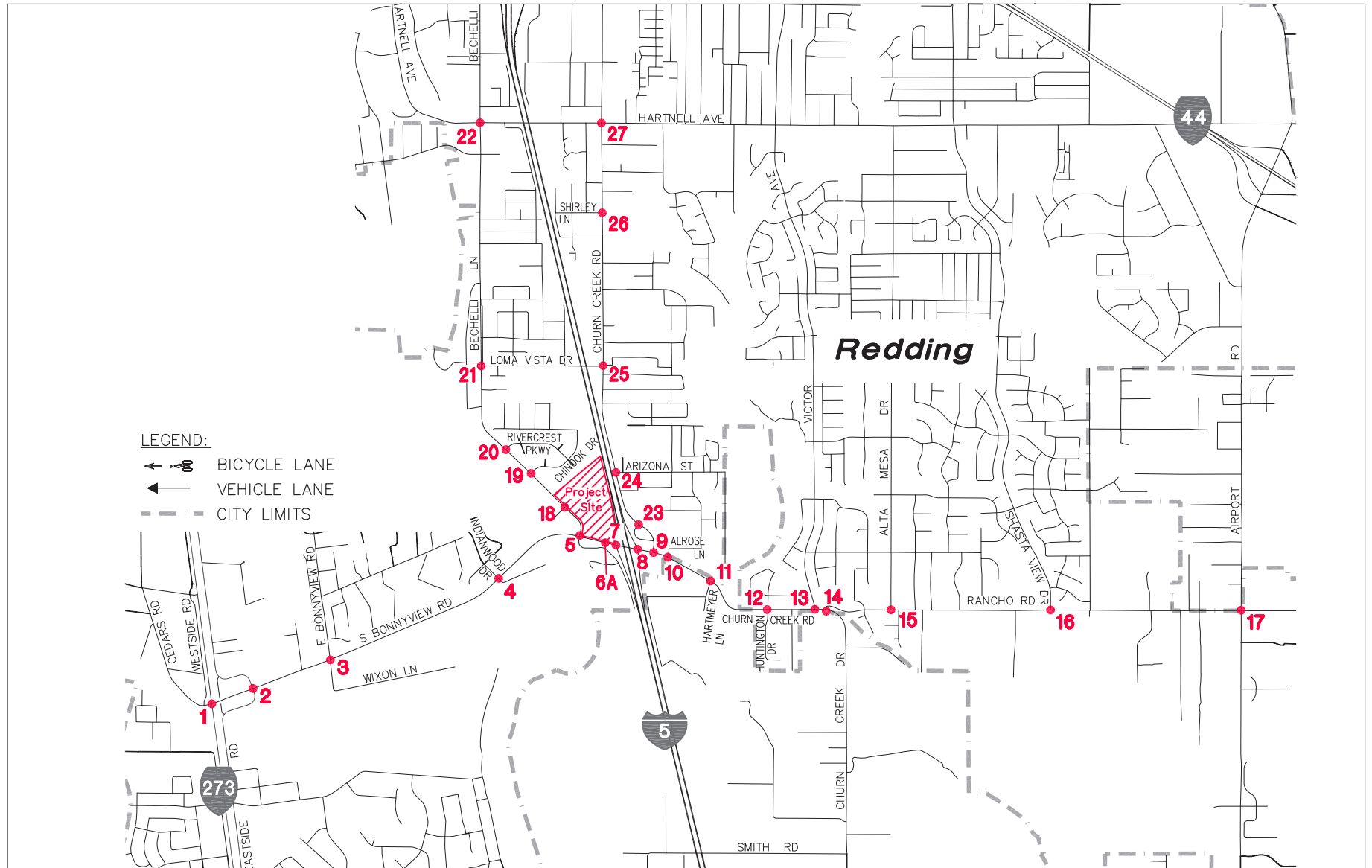
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TABLE 4.12-1 INTERSECTION LEVEL OF SERVICE THRESHOLD, JURISDICTION, AND TARGET LEVEL OF SERVICE

#	Intersection	Jurisdiction	Target LOS
1	South Bonnyview Road/Cedars Road & SR 273	Caltrans	D
2	South Bonnyview Road/Eastside Road	City of Redding	D
3	South Bonnyview Road/E Bonnyview Road	City of Redding	D
4	South Bonnyview Road/Indianwood Drive	City of Redding	D
5	South Bonnyview Road/Bechelli Lane	City of Redding	D
6A	South Bonnyview Road/Texaco Driveway	City of Redding	D
6B	South Bonnyview Road/South Bonnyview Driveway ^a		
7	South Bonnyview Road/I-5 Southbound Ramps	Caltrans	D
8	South Bonnyview Road/I-5 Northbound Ramps	Caltrans	D
9	South Bonnyview Road/Churn Creek Road	City of Redding	D
10	Churn Creek Road/Alrose Lane	City of Redding	D
11	Churn Creek Road/Hartmeyer Lane	Shasta County	E
12	Churn Creek Road/Huntington Drive	City of Redding	D
13	Churn Creek Road/Victor Avenue	City of Redding	D
14	Churn Creek Road/Rancho Road	City of Redding	C
15	Rancho Road/Alta Mesa Drive	City of Redding	C
16	Rancho Road/Shasta View Drive	City of Redding	C
17	Rancho Road/Airport Road	City of Redding	C
18	Bechelli Lane/Blue Shield Driveway	City of Redding	C
19	Bechelli Lane/Chinook Drive	City of Redding	C
20	Bechelli Lane/Rivercrest Parkway	City of Redding	C
21	Bechelli Lane/Loma Vista Drive	City of Redding	C
22	Bechelli Lane/Hartnell Avenue	City of Redding	C
23	Churn Creek Road/Public ROW to Chevron	City of Redding	C
24	Churn Creek Road/Arizona Lane	City of Redding	C
25	Churn Creek Road/Loma Vista Drive	City of Redding	C
26	Churn Creek Road/Shirley Lane & Enterprise High School Driveway	City of Redding	C
27	Churn Creek Road/Hartnell Avenue	City of Redding	C
28	Bechelli Ln/Northern Driveway ^a		
29	Bechelli Ln/Southern Driveway ^a		

a. Private Driveway LOS C assumed ~~For TIA~~ For EIR.
Source: Appendix 4.12-1.

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Source: Omni-Means, 2017.

Figure 4.12-1
Study Area Intersections and Roadway Segments

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Transit Facilities

Existing transit service is provided primarily by the Redding Area Bus Authority (RABA). RABA provides fixed route services, express route services and demand response services to the general public within the urbanized area of the Shasta County. RABA operates 15 fixed routes within the Cities of Redding, Shasta Lake, and Anderson with the route maps available at: <http://www.rabaride.com/stops.html>.

There is a bus turnout on the southbound section of Bechelli Lane in front of the Blue Shield Building; there is no bus stop, signage, or indication of a link to any existing bus RABA bus route. A bus turnout also exists on the east side of Bechelli Lane, immediately north of the proposed Project's north property line. The nearest bus stop to the proposed Project is located at Loma Vista Drive and Bechelli Lane (near Lassen School) and is served by Route 4. The proposed Project site is approximately 0.8 miles from this bus stop on Loma Vista Drive and Bechelli Lane.

Pedestrian Facilities

Bechelli Lane, from Chinook Drive to South Bonnyview Road, does not contain a continuous sidewalk along either the easterly or westerly sides of the roadway. There is sidewalk from the intersection of Chinook Drive and Bechelli Lane to the approximate northwest corner of the Project site. There is no sidewalk along the easterly side of Bechelli Lane to the intersection of S. Bonnyview Road and Bechelli Lane. Sidewalks exist on the westerly side of Bechelli Lane but ends approximately 760 feet to the north of the intersection of South Bonnyview Road and Bechelli Lane at the proposed main signalized entrance to the Project. No marked crosswalks are present within this segment of Bechelli Lane between Chinook Drive and South Bonnyview Road.

South Bonnyview Road, from Bechelli Lane to I-5 SB Off/On Ramps at S. Bonnyview Road, does not contain continuous sidewalks along the northerly side of the roadway. From the intersection of the I-5 southbound off-ramp and South Bonnyview Road, approximately 385 feet of sidewalks exist on the southerly side of South Bonnyview Road.

4.12.2 METHODOLOGY

The ~~TIA~~ traffic impact analysis (TIA/TIAR) prepared for the River Crossing Marketplace project follows the requirements and guidelines set forth by the City of Redding and Caltrans. The study area was established by the City after consultation with Caltrans and considering the Project and the probable sources of vehicles headed to the proposed Project. The intersection analysis methodology and performance criteria used in this analysis conform to the City of Redding requirements for traffic impact studies prepared consistent with the California Environmental Quality Act (CEQA) Guidelines.

The ~~TIA~~TIAR contains an estimate of vehicle trips attributed to the Project, and a distribution of the trips over area roadways. This information is combined with a traffic model forecast and the results are used to inform this EIR section. The ~~TIA~~TIAR evaluates the proposed Project's traffic impact in three scenarios: Existing Year, Year 2020, and Year 2040. For each scenario, a *no-project* and a *with-project* condition is evaluated. Each table in this EIR includes the study area roadways and intersections and summarizes the

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findings of the ~~TIA~~TIA/R. In addition to City and Shasta County roadways and intersections, the ~~TIA~~TIA/R also evaluates I-5 near the proposed Project, and the South Bonnyview interchange.

Scenario	Description
Existing Year	No Project: Reflects the conditions of the study area intersections and roadway segments at the time of TIA TIA/R preparation. This information is used as the base condition against which project impacts are measured.
	With Project: Calculates the estimated change in traffic from the existing condition based on an assumption of project-related traffic.
Year 2020	No Project: Includes area-wide traffic growth estimates and/or traffic from approved projects that would affect traffic in the study area, but that have not been built so the traffic does not show up in the existing condition measurements.
	With Project: Compares the estimated traffic from the Project to the Year 2020 No Project Conditions.
Year 2040	No Project: Estimates the regional traffic that may exist in 2040 based on population and employment growth, general and specific plans, or other development plans, <u>including the proposed Redding Rancheria casino project</u> , that may have a longer buildout timeline.
	With Project: Compares the estimated traffic from the Project to the year 2040 No Project Conditions.

For each scenario, the proposed Project impacts are compared to the thresholds of significance adopted by the agency with jurisdiction over the roadway or intersection. If the traffic from the proposed Project is estimated to exceed the adopted threshold, the EIR will recommend improvements that are changes to the roadway or intersection designed to reduce the Project's share of impact to below the threshold. If a modification to the Project or the study intersections or roadways must be made to reduce an impact it is called a mitigation measure. The analysis then determines whether the mitigation measure will reduce traffic impacts to below the threshold.

As a general rule, the City cannot require a project to mitigate more than its fair share of an impact. As a result, if regional growth, or another project, would add to an impact, only the proposed Project's "fair share" of the mitigation measure may be required. That said, the City's Traffic Impact Analysis Guidelines include a general guideline ~~provide~~ that if a project's fair share of a cumulative impact is 25 percent or more then the recommended improvements must be installed at the time of development, subject to being at least partially repaid through a reimbursement agreement. If the Project's fair share is less than 25 percent and the recommended improvement is included in the current TIF project list, the TIF payment is generally considered mitigation for the impact. As noted above, the City's guidelines are not prescriptive and are used to assist staff in evaluating proposed development projects. Strict application of the guidelines regarding recommended mitigation measures based on fair share percentages, for instance, are not necessarily appropriate for regional scale projects such as the South Bonnyview Interchange, where ultimate improvements have been planned to be phased as development occurs over time and the need for additional capacity exists. Therefore, the City, as lead agency, has the discretion to grant exceptions from the general guideline and not require a project to physically construct a particular mitigation measure. Conversely, the City has the discretion to require a project to physically construct a

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measure even if the project's fair share is less than 25 percent. As some improvements are ~~expensive,~~ time consuming or outside the jurisdiction of the City, the impact may get worse than shown in the EIR before the mitigation can be fully implemented. Because of this, the City may find the impact significant and unavoidable as it is not certain that the improvement will be constructed when needed by the Project to reduce the impact to a less than significant level.

Traffic Count Data

To evaluate existing traffic and establish a baseline for traffic conditions, weekday AM and PM and Saturday mid-day peak hour intersection turn movement traffic counts were collected at all study intersections on Tuesday September 13, 2016, Wednesday September 14, 2016, and Saturday September 10, 2016. Schools in the area were in regular session and no known special events were occurring in the area at the time of the traffic counts. Counts were obtained in the absence of inclement weather.

The AM peak hour is defined as the highest continuous hour of peak traffic flow counted between 7:00 p.m. and 9:00 a.m., and the PM peak hour is defined as the highest continuous hour of peak traffic flow counted between 4:00 p.m. and 6:00 p.m. under typical weekday conditions. The Saturday mid-day peak hour is defined as the highest continuous hour of peak traffic flow counted between 12:00 noon and 2:00 p.m.

Project Trip Generation

As the proposed project contains fast food restaurants and a retail center in addition to the Costco warehouse and the fuel station, this project would be considered as a multi-use development.

In order to calculate trip generation for the proposed Costco and Costco gas station, the trip generation memorandum, Redding Costco/Trip Information, prepared by Kittelson & Associates, Inc. dated September 13, 2016 (Appendix E to the TIAR) was consulted. The trip generation memorandum provides trip generation estimates for weekday AM and PM and Saturday mid-day peak hours for Costco locations throughout the Western Region of the US. The memorandum also provides rates for the generation of gas station trips. In addition to trip rates, customer survey information was included in the memorandum that provided the percentage of primary, pass-by and diverted link trips. Trip generation of the commercial and fast food restaurant uses were calculated based on the rates in the ITE Trip Generation Manual 9th Edition.

Internal trips are anticipated between the fast food restaurant, shopping center, Costco warehouse, and fuel station.

Table 4.12-2 presents the resulting trip generation estimates that were calculated using the rates provided in the Kittelson memorandum and the ITE Trip Generation Manual 9th Edition as discussed above. Table 4.12-2 also presents the internally captured trips within the project site, for the weekday AM and PM and Saturday mid-day peak hour periods. Pass-by trips for the weekday AM and PM and Saturday mid-day peak hour periods are also presented within Table 4.12-2. ~~As the proposed Project contains fast food restaurants and a retail center in addition to the Costco warehouse and the fuel station, it is considered as a multi-use development for purposes of calculating trip generation. Trip rates were obtained from a~~

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~~technical memorandum specifically prepared for a Costco and Costco fueling station, and trip rates from the ITE Trip Generation Manual 9th Edition were obtained for other retail uses. Table 4.12-2 presents the trip rates and resulting trip generation estimates for the weekday AM and PM and Saturday mid-day peak hour periods.~~

Vehicle Trip Distribution

Figure 4.12-2 shows the trip distribution assumed for the proposed Project. The vehicle trip distribution was developed based on the Shasta Regional Transportation Agency (SRTA) Shasta County Regional Activity-based Travel Model (ShastaSIM). ShastaSIM is an advanced activity-based tour model that simulates the travel behavior of all residents in Shasta county over the course of a typical 24-hour weekday. ShastaSIM represents these travel activities as a series of "trip-legs" or "tours" connecting activities each person engages in, such as going to work, shopping, or attending school. The county population is represented by a "synthetic population" which is based on socio-demographic data collected by the US Census. General land use information (such as residential, office or commercial) is represented at the parcel-level. This level of detail allows SRTA to evaluate how changes in local/regional/state policies, completion of infrastructure projects or demographic changes of the population (e.g., an aging population) may impact transportation on our highways and local roads, the transit system and/or land use in the region. The current model version (ShastaSIM 1.1) was adopted on June 30, 2015.

Vehicle Queue Lengths

Vehicle queue lengths are measured at intersections and driveways to ensure adequate room for vehicles waiting to move through the intersection. The TIAR evaluated queue lengths for each scenario to determine whether queue length would interfere with the operation of another signalized intersection and used the results to recommend the lane lengths in the mitigation measures. The queue lengths for the I-5 ramps were set in consultation with Caltrans recognizing the future diverging diamond interchange anticipated for South Bonnyview Road. The TIAR also evaluated the 95th percentile on-site queues for proposed driveways for the Existing Plus Project and Year 2020 condition.

Level of Service

Level of service is a qualitative measure of traffic operating conditions, whereby a letter grade A through F is assigned to an intersection or roadway segment representing progressively worsening traffic conditions. For signalized intersections, intersection delays and level of service are average values for all intersection movements. For two-way stop-control (TWSC) intersections, the intersection delays and level of service are measured using the greatest delay from each leg of the intersection. Table 4.12-3 presents the

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TABLE 4.12-2 PROPOSED PROJECT TRIP GENERATION

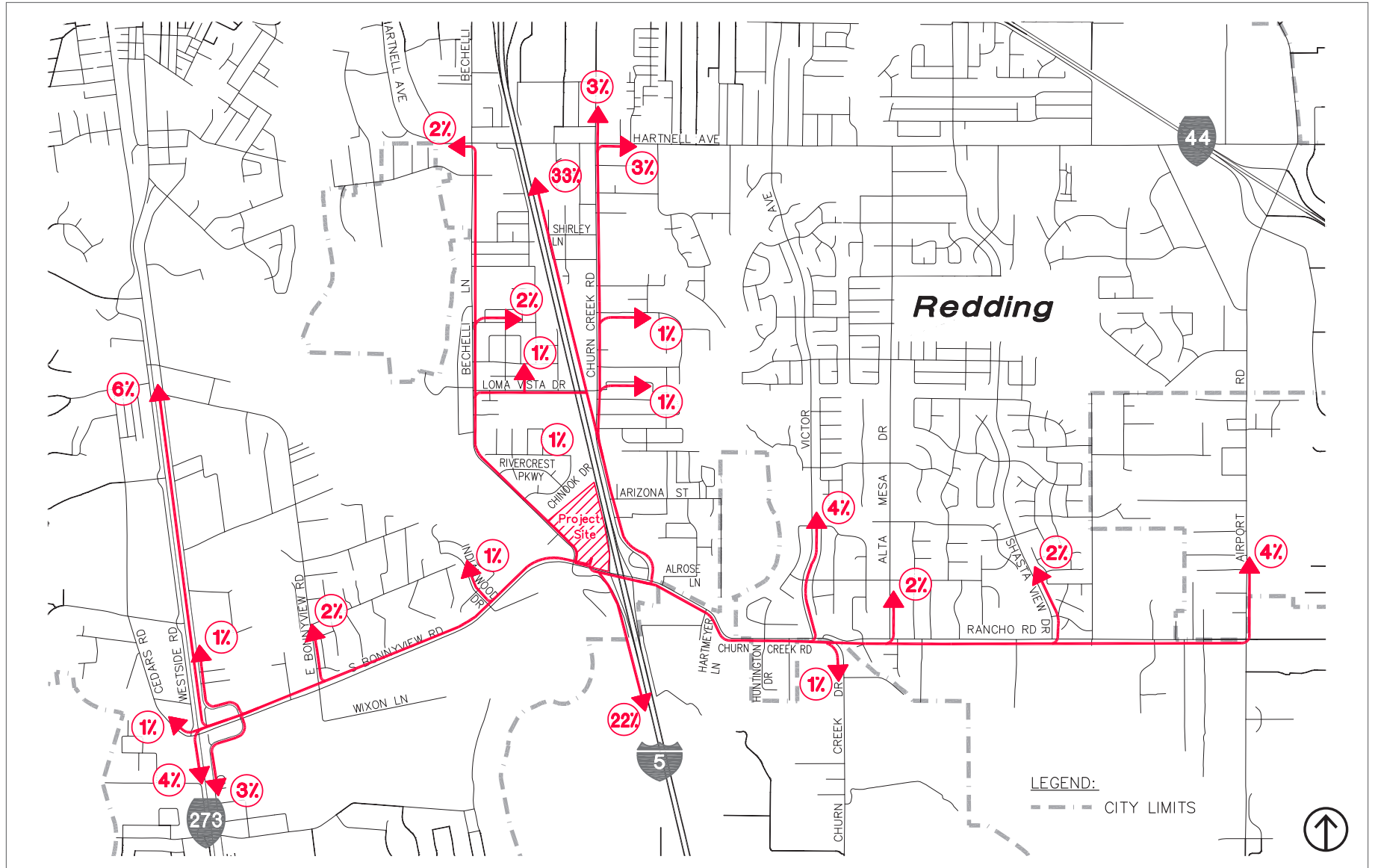
Land Use Category (ITE Code)	Unit ^a	Daily Trip Rate/Unit ^b	AM			PM			Saturday		
			Total	In	Out	Total	In	Out	Total	In	Out
Discount Club (857)	KSF	79.27	0.49	70%	30%	7.17	40%	51%	0.79	51%	40%
Gasoline/Service Station (944)	Pumps	=	14.06	51%	49%	-	-	-	-	-	-
Shopping Center (820)	KSF	51.95	1.16	62%	38%	4.65	48%	52%	6.69	48%	52%
Fast Food with Drive Through Window (934)	KSF	496.12	45.42	51%	49%	32.65	52%	48%	59.00	51%	49%

Project Feature	Quantity (Units)	Daily Trips	AM			PM			Saturday		
			Total	In	Out	Total	In	Out	Total	In	Out
Costco Warehouse	152.2	12,065	75	52	22	1,091	535	557	1,490	760	730
To Fast Food			-	-	-	(76)	(43)	(33)	(139)	(80)	(59)
Costco Gas Station	30.0	-	449	229	220	-	-	-	-	-	-
To Fast Food			(46)	(18)	(28)	-	-	-	-	-	-
Commercial Retail	63.3	3,286	73	45	28	294	141	153	423	203	220
To Fast Food			(6)	(3)	(3)	(76)	(43)	(33)	(139)	(80)	(59)
Fast Food with Drive Through Window	6.8	3,374	309	158	151	222	115	107	401	205	197
To Costco Warehouse			-	-	-	(76)	(33)	(43)	(139)	(59)	(80)
To Costco Gas Station			(46)	(28)	(18)	-	-	-	-	-	-
To Commercial Retail			(6)	(3)	(3)	(76)	(33)	(43)	(139)	(59)	(80)
New Project Driveway Trips		18,724	801	432	369	1,304	639	664	1,758	890	869
Costco - Pass-by		(3,016)	-	-	-	(254)	(123)	(131)	(338)	(170)	(168)
Costco Gas Station – Pass-by		-	(101)	(53)	(48)	-	-	-	-	-	-
Commercial Retail – Pass-by & Diverted Link		(1,094)	(7)	(4)	(3)	(74)	(33)	(41)	(74)	(32)	(42)
Fast Food with Drive Through Window – Pass-by		(1,653)	(126)	(62)	(64)	(35)	(25)	(10)	(62)	(43)	(18)
Costco - Diverted Link		(3,800)	-	-	-	(325)	(157)	(168)	(284)	(143)	(141)
Net New Project Trips		9,160	568	313	255	616	301	315	1,001	502	500

a. ksf = 1,000 square feet.

b. Costco Gas Station trip generation combined with Costco Warehouse rate for PM and Saturday mid-day peak hour.

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Source: Omni-Means, 2017.

Figure 4.12-2
Vehicle Trip Distribution

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TABLE 4.12-3 LEVEL OF SERVICE DEFINITIONS

LOS	Type of Flow	Delay	Maneuverability	Stopped Delay/Vehicle (sec)	
				Signalized/ Roundabouts	Unsignalized/ All-Way Stop
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	< 10.0	< 10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10.0 and < 20.0	>10.0 and < 15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.	>20.0 and < 35.0	>15.0 and < 25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>35.0 and < 55.0	>25.0 and < 35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>55.0 and < 80.0	>35.0 and < 50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	> 80.0	> 50.0

delay-based level of service criteria for different types of intersection control. Level of service is one of several metrics used to determine the level of impact at an intersection or roadway segment. In the Thresholds section of this Chapter, the impact metric for each type of intersection, roadway segment, or freeway component is explained in detail.

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Traffic Signal Warrants

Traffic signals are used to improve the flow of vehicles through an intersection by creating breaks in the traffic that allow side streets to access a major road, and often left-turns. Signals do not increase the capacity of an intersection and may reduce the number of total vehicles that can pass through an intersection in a given period of time. The placement of traffic signals is important as accidents can increase if they are placed in inappropriate locations.

The term “signal warrants” refers to the list of established criteria used to quantitatively justify the need for installation of a traffic signal at an unsignalized intersection. The ~~THA~~ [TIAR](#) employed the signal warrant criteria presented in the 2014 California Manual on Uniform Traffic Control Devices (MUTCD) for all study intersections. Signal warrant criteria are based upon several factors, including the volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The California MUTCD indicates that the installation of a traffic signal should be considered if one or more of nine signal warrants are met.³

Specifically, the ~~THA~~ [TIAR](#) for the proposed Project utilizes the peak hour volume-based Warrant 3 as one representative type of traffic signal warrant analysis. The Peak-Hour-Volume Warrant is only applied when the intersection is found to be operating at unacceptable level of service. Therefore, there may be instances when the unsignalized intersection operates at acceptable level of service conditions, but still meets the Peak-Hour-Volume Warrant.

South Bonnyview Interchange Improvements

At its regular meeting on October 3, 2017, the City Council approved a Project Study Report –Project Development Support (PSR-PDS) for improvements to the South Bonnyview Interchange. The improvements will support projected traffic loads through 2045 and potentially beyond. The proposed 2045 design includes the use of multi-lane roundabouts at the intersections of Bechelli Lane and Churn Creek Road with South Bonnyview Road, additional lanes on three of the four ramps, and the widening of South Bonnyview Road between the ramps and the intersections with Bechelli Lane and Churn Creek Road.⁴ The interchange itself is proposed to be an innovative design type called a diverging diamond interchange (DDI) (see Figure 4.12-3). The DDI is being considered here because of safety, operational, and cost benefits.

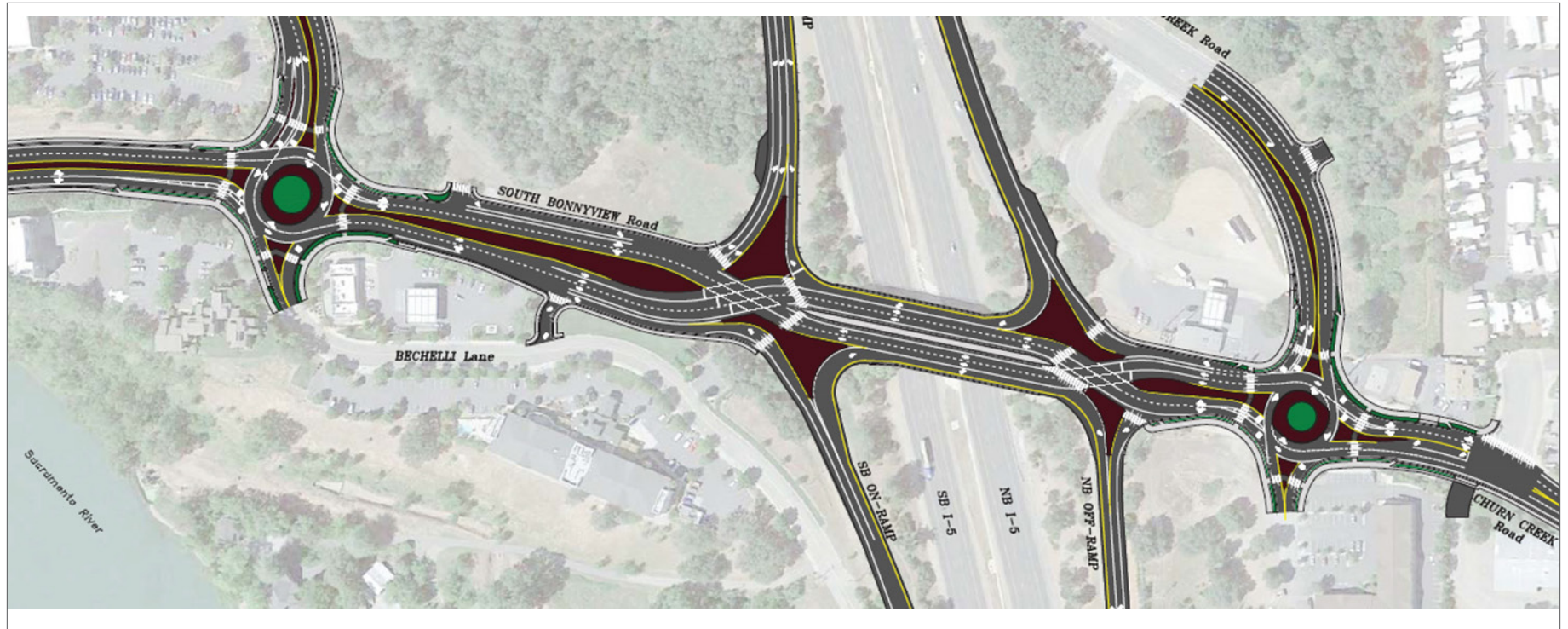
Without other funding sources, the Project is expected to be built in phases as development occurs in and around the interchange.

One benefit of the DDI is the elimination of the left-turn movement conflicting with the through movements. This increases vehicle movement by allowing free right or free left turns and eliminates the left-turn phase of traffic signals onto the on ramps. While funding for the improvements is not complete,

³ Section 4C.01 *Studies and Factors for Justifying Traffic Control Signals*.

⁴ Improvements to the northbound leg of the interchange are under construction as part of the Churn Creek Marketplace Project.

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Source: Rich Development Enterprise.

Figure 4.12-3
Diverging Diamond Interchange

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and there is no timeline for construction, both the proposed Project site design and the ~~TIA~~ [TIAR](#), consider the DDI in the analysis, and as a mitigation alternative for Project impacts.

4.12.3 STANDARDS OF SIGNIFICANCE

The following standards of significance are based on Appendix G of the State CEQA Guidelines, and the *City of Redding Traffic Impact Analysis Guidelines* (January 2009).

1. Conflict 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.

In accordance with the January 2009 City of Redding [Traffic Impact Analysis \(TIA\)](#) Guidelines, the following thresholds of significance, based on past City determinations and industry standards, are used to determine if the proposed Project causes a significant impact and requires mitigation:

Signalized Intersections

- The Project causes an acceptable level of service to decline to an unacceptable level of service; or
- The Project increases the overall average delay by more than 5 seconds per vehicle at an intersection having an unacceptable level of service without Project traffic.
- Vehicle queue length interferes with the operation of another signalized intersection.

Two-Way Stop Intersections

The Project causes the following to occur for the worst-case movement:

- The level of service declines to an unacceptable level of service; and
- The volume to capacity ratio exceeds 0.75; and
- The 95th percentile queue exceeds 75 feet (3 vehicles); or
- The Project causes the worst-case movement's acceptable level of service to decline to an unacceptable level of service and the peak hour volume signal warrant is met; or
- The Project increases the average delay for the worst-case movement by more than 5 seconds per vehicle at an intersection that has an unacceptable level of service without the Project and the intersection also meets the peak hour volume signal warrant.
- [Project](#) driveways are considered two-way stop intersections for purposes of analysis.

Roadways

City of Redding TIA_Guidelines contain the first three items described below to establish significance thresholds for Roadway Segments. The fourth item is standard industry practice and is included for

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purposes of significance determination where it is determined that future traffic *may* affect a residential collector street. Therefore, the Project is considered to have a significant impact if it would:

- Result in a roadway that will operate at an acceptable level of service in the No Project condition to deteriorate to an unacceptable level of service in the Plus Project condition; or,
- Increase in the V/C ratio by more than 5 percent at a roadway that will operate at an unacceptable level of service in the No Project condition; or
- Decrease in the average arterial speed by more than 5 percent at a roadway that will operate at an unacceptable level of service in the No Project condition.
- The Project causes the amount of traffic on a residential collector, having individual access to single family lots, to exceed 4,000 daily vehicles or 360 peak hour vehicles; or adds any amount of traffic to a residential collector which exceeds these limits without the Project.

Freeway Mainline/Ramp Merge-Diverge/Weave

The Project is considered to have a significant impact if it would:

- Result in a facility that will operate at an acceptable level of service in the No Project condition to deteriorate to an unacceptable level of service in the Plus Project condition; or
 - Increase the density by more than 5 percent at a facility that will operate at an unacceptable level of service in the No Project condition.
2. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
 3. Result 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 increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
 5. Result in inadequate emergency access.
 6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

The proposed Project is not within the land use influence area of any airport and therefore will not affect air traffic patterns. Therefore threshold 3 will not be discussed in this EIR.

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4.12.4 IMPACT DISCUSSION

This section analyzes potential project-specific and cumulative impacts to transportation and traffic.

TRANS-1 The Project would create a significant impact at several intersections and roadway segments under existing plus project and Year 2020 scenarios. [Less than Significant with Mitigation Incorporated]

Intersections Existing Year (2017)

No Project

Table 4.2-4 shows that for the existing year scenario, under no-project conditions, all *but the following* of the study area intersections operate at an acceptable level of service during the AM, PM, and Saturday peak hour.

#	Intersection	Control Type	Peak Hour
21	Bechelli Lane/Loma Vista Drive	Two-Way Stop-Control	AM/PM
27	Churn Creek Road/Hartnell Avenue	Signal	AM/PM

~~Further, a~~ None of the unsignalized intersections currently meet the warrant for signalization.

With Project

For the existing year with-Project condition, the following five intersections are projected to operate at unacceptable levels of service during the AM and PM peak hour:

#	Intersection	Control Type	Peak Hour
7	South Bonnyview Road/I-5 Southbound Ramps	Signal	AM/PM
8	South Bonnyview Road/I-5 Northbound Ramps	Signal	AM/PM
13	Churn Creek Road/Victor Avenue	Two-Way Stop-Control	PM
21	Bechelli Lane/Loma Vista Drive	Two-Way Stop-Control	AM/PM
27	Churn Creek Road/Hartnell Avenue	Signal	AM/PM

The Project would result in significant impacts at intersections #7 and #8

For intersections #7 and #8, the proposed mitigation measure for the existing with-project and the Year 2020 with project condition are the same. See Mitigation Measures TRANS-1.2 and TRANS-1.3 that would provide for additional left-turn lanes leading to the northbound ramps, and additional right-turn lanes leading to the southbound ramps for I-5 *or a diverging diamond interchange*.

Neither intersection #13 nor #21 meet the warrants for signals, and therefore per the threshold for TWSC intersections proposed Project impacts at these intersections are less than significant. The increase in

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delay of intersection #27 is less than 5 seconds, which is below the threshold for signalized intersections, therefore, the Project impact at this intersection is also less than significant.

Significance With Mitigation: Less than significant.

TABLE 4.12-4 EXISTING INTERSECTION AND WITH PROJECT INTERSECTION OPERATIONS

#	Intersection	Control Type	Target LOS	No Project						With Project					
				Weekday						Weekday					
				AM		PM		Saturday		AM		PM		Saturday	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	S Bonnyview Rd/ Cedars Rd & SR 273	Signal	D	32.7	C	31.6	C	26.8	C	35.6	D	32.1	C	27.1	C
2	S Bonnyview Rd/ Eastside Rd	Signal	D	30.3	C	35.3	D	21.5	C	31.2	C	36.9	D	22.4	C
3	S Bonnyview Rd/ E Bonnyview Rd	Signal	D	25.4	C	29	C	13.3	B	28.8	C	29.7	C	13.7	B
4	S Bonnyview Rd/ Indianwood Dr	Signal	D	4.6	A	7.8	A	5.1	A	4.8	A	8.3	A	5.1	A
5	S Bonnyview Rd/ Bechelli Ln	Signal	D	17.8	B	21.2	C	14.3	B	26.7	C	40.8	D	25.6	C
6A	S Bonnyview Rd/ Texaco Dwy	TWSC	D	17.7	C	16.5	C	11.5	B	21.1	C	22.4	C	15	C
6B	S Bonnyview Rd/ S Bonnyview Dwy	TWSC	D	Does Not Exist						34.8	D	22.1	C	21.6	C
7	S Bonnyview Rd/ I-5 SB Ramps	Signal	D	24.5	C	18.6	B	14.6	B	62.3	E	74.4	E	25.9	C
8	S Bonnyview Rd/ I-5 NB Ramps	Signal	D	43.3	D	27.5	C	26.1	C	73	E	67.5	E	38.9	D
9	S Bonnyview Rd/ Churn Creek Rd	Signal	D	20.5	C	22.5	C	21	C	20.8	C	22.6	C	21.1	C
10	Churn Creek Rd/ Alrose Ln	TWSC	D	12	B	15.7	C	12.9	B	12.3	B	16.4	C	13.7	B
11	Churn Creek Rd/ Hartmeyer Ln	TWSC	E	19.5	C	21.3	C	13.4	B	21.4	C	23.9	C	15.2	C
12	Churn Creek Rd/ Huntington Dr	TWSC	D	23.8	C	19.5	C	14.3	B	26.5	D	21.5	C	16.4	C
13	Churn Creek Rd/ Victor Ave	TWSC	D	18.2	C	29.2	D	14.9	B	20.5	C	37.3	E	17.8	C
14	Churn Creek Rd/ Rancho Rd	TWSC	C	15.6	C	16.2	C	10.6	B	16.9	C	17.8	C	11.1	B
15	Rancho Rd/ Alta Mesa Dr	TWSC	C	13	B	11.7	B	10.5	B	13.6	B	11.9	B	10.9	B
16	Rancho Rd/ Shasta View Dr	TWSC	C	15.7	C	12	B	10.6	B	18.5	C	12.3	B	11	B
17	Rancho Rd/ Airport Rd	Signal	C	18.9	B	21.4	C	12.8	B	20.1	C	25	C	13.9	B
18	Bechelli Ln/ Blue Shield Dwy	Signal	C	6.9	A	5.8	A	2.6	A	18.7	B	22.9	C	20.2	C

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19	Bechelli Ln/ Chinook Dr	TWSC	C	12	B	13.1	B	10.6	B	12.3	B	13.5	B	11	B
20	Bechelli Ln/ Rivercrest Pkwy	TWSC	C	13.8	B	12.4	B	10.2	B	14.4	B	13.1	B	10.7	B
21	Bechelli Ln/ Loma Vista Dr	TWSC	C	31.2	D	35.6	E	12.6	B	39.8	E	44.5	E	13.9	B
22	Bechelli Ln/ Hartnell Ave	Signal	C	32.8	C	30.7	C	21.3	C	32.9	C	30.8	C	21.4	C
23	Churn Creek Rd/ Public ROW to Chevron	TWSC	C	13	B	14.6	B	11.3	B	13.3	B	15	C	11.8	B
24	Churn Creek Rd/ Arizona Ln	TWSC	C	11.6	B	10.8	B	9.9	A	11.8	B	10.9	B	10.1	B
25	Churn Creek Rd/ Loma Vista Dr	Signal	C	16.2	B	12.6	B	13.4	B	16.5	B	13.5	B	14	B
26	Churn Creek Rd/ Shirley Ln & Enterprise HS Dwy	Signal	C	31.4	C	12.8	B	7.2	A	31.5	C	12.9	B	7.3	A
27	Churn Creek Rd/ Hartnell Ave	Signal	C	39.6	D	42.3	D	28.5	C	40.5	D	43.4	D	29.5	C
28	Bechelli Ln/ Northern Dwy	TWSC	C	Does Not Exist						15.4	C	19.6	C	14.9	B
29	Bechelli Ln/ Southern Dwy	TWSC	C	Does Not Exist						12.2	B	11	B	11.2	B

Notes:

1. TWSC = Two Way Stop Control.

2. LOS = Delay based on worst approach for TWSC intersections, average of all approaches for signalized intersection.

3. Warrant = Based on California MUTCD Warrant 3.

4. **Bold** = Unacceptable Conditions.

Source: Appendix 4.12-1

Intersections Year 2020

No Project

Table 4.2-4~~5~~ shows that for the Year 2020 scenario, under no-Project conditions, the following three study area intersections operate at an unacceptable level of service during the AM and PM peak hour. Saturday operations operate acceptably:

#	Intersection	Control Type	Peak Hour	LOS
13	Churn Creek Road/Victor Avenue	Two-Way Stop-Control	PM	E
21	Bechelli Lane/Loma Vista Drive	Two-Way Stop-Control	AM/PM	F/E
27	Churn Creek Road/Hartnell Avenue	Signal	AM/PM	D/D

The signal warrants are met for intersection #13 Churn Creek Road/Victor Avenue, suggesting that a signal or roundabout should be installed by Year 2020 at this intersection regardless of whether the proposed Project is constructed. Improvements to this intersection are programmed as part of the City of Redding Development Impact Fee program as part of the roundabout planned for the #14 Churn Creek/Rancho

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Road intersection.⁵ The roundabout would replace the intersections of both #13 Churn Creek/Victor Avenue and #14 Churn Creek/Rancho Road.

~~As the signal warrant is not met for #21 Bechelli Lane/Loma Vista Drive, there is no impact, the level of service impact at this intersection is acceptable, and is not considered significant.~~

With Project

Table 4.2-5 shows ~~For the existing~~ Year 2020 with-project Project condition. ~~The following five-six intersections~~ intersections are projected to operate at unacceptable levels during the AM and PM peak hour:

#	Intersection	Control Type	Peak Hour	LOS
5	South Bonnyview Rd. & Bechelli Ln.	Signal	Queue	N/A
7	South Bonnyview Road/I-5 South Ramps	Signal	AM/PM	E/E
13	Churn Creek Road/Victor Avenue	Two-Way Stop-Control	PM	F
14	Churn Creek/Rancho Road	Two-Way Stop-Control	PM	D
21	Bechelli Lane/Loma Vista Drive	Two-Way Stop-Control	AM/PM	F/F
27	Churn Creek Road/Hartnell Avenue	Signal	AM/PM	D/D
<u>29</u>	<u>Bechelli Lane / Southern Driveway</u>	<u>Two-Way Stop-Control</u>	<u>AM/PM</u>	<u>D/D</u>

Improvements to the #8 South Bonnyview Road/I-5 northbound ramps that will add an additional eastbound left-turn lane (for a total of two turn lanes) will be completed by the Churn Creek Marketplace. The additional lane was recommended by the Churn Creek Marketplace TIAR (May, 2016) and required by that project's use permit entitlement to mitigate 2035 cumulative conditions. The improvements ~~are expected to be constructed in the fall of 2018 and~~ will be in place and operational by Year 2020, before the assumed date that the discount warehouse portion of the Project will be open. Because of these improvements, the with-project level of service at intersection #8 is improved from the existing with-Project level of service shown in Table 4.12-5. The with-Project impact at #21 Bechelli Lane/Loma Vista Drive fails to meet the warrant for installation of a signal; therefore, per the threshold for two-way stop-controlled intersections, this impact is less than significant. The change in delay at intersection #27 Churn Creek/Hartnell is less than the 5-second change in delay considered significant in the threshold for signalized intersections. As the delay is less than 5 seconds, this impact is less than significant. Therefore, the Project would result in significant impacts at the following intersections:

South Bonnyview Road/Bechelli Lane

The ~~TIAR~~ TIAR shows that vehicles waiting to turn left onto South Bonnyview Road from intersection #5 South Bonnyview Road/Bechelli Lane may exceed the available vehicle storage on Bechelli Lane. If the queue of vehicles waiting to turn exceeds the available storage length, they will interfere with operations

⁵ Project CC2, Table 11, Development Impact Fee Mitigation Nexus Study.

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at intersection #18 Bechelli Lane/Blue Shield Driveway. Although this impact can be mitigated by modifying lane configurations and signalization, Mitigation Measure TRANS-1.1, provides for the construction of a multi-lane roundabout replacing the existing signal [at the direction of the City to ensure that improvements are consistent with year 2040 improvements planned for the interchange area developed by the City and Caltrans](#). The roundabout will result in a more efficient movement of vehicles through the intersection and eliminate the potential for vehicle queues to interfere with intersection #18.

TABLE 4.12-5 YEAR 2020 NO PROJECT AND WITH PROJECT INTERSECTION OPERATIONS

#	Intersection	Control Type	Target LOS	No Project						With Project					
				Weekday						Weekday					
				AM		PM		Saturday		AM		PM		Saturday	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	S Bonnyview Rd/ Cedars Rd & SR 273	Signal	D	36	D	34.6	C	27.2	C	36.7	D	35.2	D	27.6	C
2	S Bonnyview Rd/ Eastside Rd	Signal	D	31.9	C	38.7	D	22.7	C	33	C	40.8	D	23.7	C
3	S Bonnyview Rd/ E Bonnyview Rd	Signal	D	33.8	C	31	C	14.5	B	38.4	D	32.5	C	15	B
4	S Bonnyview Rd/ Indianwood Dr	Signal	D	6.1	A	8	A	6.9	A	6.3	A	8.6	A	7.4	A
5	S Bonnyview Rd/ Bechelli Ln	Signal	D	20.1	C	21.6	C	15	B	34.9	C	46.2	D	26.3	C
6A	S Bonnyview Rd/ Texaco Dwy	TWSC	D	16.9	C	19.1	C	12.8	B	19.3	C	26.6	D	17	C
6B	S Bonnyview Rd/ S Bonnyview Dwy	TWSC	D	Does Not Exist						27	D	22.9	C	22.3	C
7	S Bonnyview Rd/ I-5 SB Ramps	Signal	D	29.6	C	21	C	17.5	B	63.7	E	75.2	E	26.6	C
8	S Bonnyview Rd/ I-5 NB Ramps	Signal	D	30.1	C	24.5	C	23.1	C	39	D	30.9	C	25.1	C
9	S Bonnyview Rd/ Churn Creek Rd	Signal	D	31.1	C	30.3	C	28.8	C	31.1	C	30.4	C	29	C
10	Churn Creek Rd/ Alrose Ln	TWSC	D	13.3	B	20.3	C	14.3	B	13.8	B	21.6	C	15.3	C
11	Churn Creek Rd/ Hartmeyer Ln	TWSC	E	23.3	C	27.7	D	14.9	B	25.9	D	31.7	D	16.9	C
12	Churn Creek Rd/ Huntington Dr	TWSC	D	28.4	D	20.3	C	18.6	C	32.5	D	22.3	C	22.4	C
13	Churn Creek Rd/ Victor Ave	TWSC	D	26.9	D	53.7	F	18.5	C	32.8	D	78.7	F	23.7	C
14	Churn Creek Rd/ Rancho Rd	TWSC	C	21.2	C	21.8	C	11.8	B	24.3	C	25.7	D	12.5	B
15	Rancho Rd/ Alta Mesa Dr	TWSC	C	15.3	C	12.3	B	11	B	16.1	C	12.6	B	11.6	B
16	Rancho Rd/ Shasta View Dr	TWSC	C	21	C	12.9	B	11.2	B	23.2	C	13.3	B	11.7	B
17	Rancho Rd/ Airport Rd	Signal	C	29.9	C	21.8	C	16.7	B	32.8	C	25.9	C	16.9	B

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TABLE 4.12-5 YEAR 2020 NO PROJECT AND WITH PROJECT INTERSECTION OPERATIONS

#	Intersection	Control Type	Target LOS	No Project						With Project					
				Weekday						Weekday					
				AM		PM		Saturday		AM		PM		Saturday	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
18	Bechelli Ln/ Blue Shield Dwy	Signal	C	7.3	A	6.1	A	3.2	A	19.5	B	23.5	C	21.2	C
19	Bechelli Ln/ Chinook Dr	TWSC	C	12.7	B	13.3	B	10.8	B	13	B	13.7	B	11.2	B
20	Bechelli Ln/ Rivercrest Pkwy	TWSC	C	15.3	C	12.9	B	10.6	B	16	C	13.6	B	11.2	B
21	Bechelli Ln/ Loma Vista Dr	TWSC	C	69.5	F	44.8	E	13.8	B	105.3	F	59.1	F	15.5	C
22	Bechelli Ln/ Hartnell Ave	Signal	C	33.1	C	31.5	C	22.3	C	33.4	C	31.6	C	22.5	C
23	Churn Creek Rd/ Public ROW to Chevron	TWSC	C	14.8	B	20.4	C	19.2	B	18.1	B	23.8	C	19.5	B
24	Churn Creek Rd/ Arizona Ln	TWSC	C	12.6	B	11.2	B	10.4	B	12.8	B	11.4	B	10.6	B
25	Churn Creek Rd/ Loma Vista Dr	Signal	C	18.6	B	14	B	13.5	B	18.8	B	14.2	B	14.2	B
26	Churn Creek Rd/ Shirley Ln & Enterprise HS Dwy	Signal	C	33.9	C	14	B	9.3	A	34.2	C	14.4	B	10.5	B
27	Churn Creek Rd/ Hartnell Ave	Signal	C	43.3	D	47.2	D	30.5	C	44.6	D	48.4	D	31.5	C
28	Bechelli Ln/ Northern Dwy	TWSC	C	Does Not Exist						16.8	C	20.9	C	15.4	C
29	Bechelli Ln/ Southern Dwy	TWSC	C	Does Not Exist						12.4 25.0	B D	10.7 26.5	B D	11.1 21.4	B C

Notes:

1. TWSC = Two Way Stop Control.

2. LOS = Delay based on worst approach for TWSC intersections, average of all approaches for signalized intersection.

3. Warrant = Based on California MUTCD Warrant 3.

4. **Bold** = Unacceptable Conditions.

Source: 4.12-1

South Bonnyview Road/I-5 North and Southbound Ramps

For intersections #7 and #8, vehicles unable to access the existing turn lanes on eastbound South Bonnyview drive leading to the northbound ramp backs up on the overpass and blocks traffic attempting to access the southbound on-ramps. This lack of stacking for vehicles on the overpass is the cause for the increase in traffic delay leading to the unacceptable level of service for the AM/PM peak hour. Mitigation Measures TRANS-1.2 and TRANS-1.3 would provide for additional left-turn lanes leading to the northbound ramps, and additional right-turn lanes leading to the southbound ramps for I-5.

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Churn Creek Road/Victor Avenue and Churn Creek Road/Rancho Road

Intersections #13 Churn Creek Road/Victor Avenue and #14 Churn Creek Road/Rancho Road would meet the warrant for signals by Year 2020. Improvements to these intersections consisting of the construction of a roundabout are programmed as part of the City of Redding Development Impact Fee program. Design and the right-of-way acquisition process is underway, and for purposes of this EIR, however, the roundabout is not anticipated to be constructed and operational until ~~2021~~ approximately one year ~~potentially~~ after full or partial occupancy of the proposed Project. The proposed Project is required to pay Development Impact Fees which will meet their proportionate share of impact. As payment of the fee is required by Chapter 16.20 of the Redding Municipal Code (RMC), no mitigation measure is necessary.

Mitigation Measure TRANS-1.1: Prior to occupancy, the Project developer shall complete the following improvements to intersection #5 South Bonnyview Road/Bechelli Lane:

- Reconstruct the intersection and approaches into a four-leg, multi-lane roundabout in accordance with the specifications of the City Engineer.

If a multi-lane roundabout is not constructed at intersection #5 South Bonnyview Road/Bechelli Lane, widen the southbound approach to provide:

- Two 325-foot long left-turn lanes
- One 325-foot long shared through/left-turn lane
- One 325-foot long right-turn lane

Mitigation Measure TRANS-1.2: Prior to occupancy, the Project developer shall complete the following improvements to intersection #7 South Bonnyview Road/ I-5 Southbound Ramps:

- Widen the eastbound approach to provide:
 - Two through lanes that transition into two trap ~~become~~ left-turn lanes at the next easterly intersection (#8 South Bonnyview/I-5 Northbound Ramps.)
- Widen the southbound I-5 off-ramp approach to provide:
 - One shared through/left-turn lane.
 - Two 275-foot long right-turn lanes.
- Alternatively, construct the intersections of South Bonnyview Road/ I-5 Southbound Ramps and South Bonnyview Road/ I-5 Northbound Ramps into a diverging diamond interchange

Mitigation Measure TRANS-1.3: Prior to occupancy, the Project developer shall complete the following improvements to intersection #8 South Bonnyview Road/ I-5 Northbound Ramps:

- Widen the eastbound approach to provide:
 - Two left-turn lanes.
- Widen the northbound approach to provide:
 - One 300-foot shared through/left-turn lane.
 - One 300-foot right-turn lane.
- Alternatively, construct a diverging diamond interchange.

Significance With Mitigation: Significant and unavoidable ~~=~~ at intersections #13 and #14.

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For intersection #5 South Bonnyview Road/Bechelli Lane, implementation of Mitigation Measure TRANS-1.1 would improve operation of the intersection to LOS D with the signal improvements, or LOS A with the roundabout. For intersections #7 and #8 South Bonnyview Road/I-5 South and Northbound Ramps, implementation of Mitigation Measure TRANS-1.2 and TRANS-1.3 will result in LOS C for both intersections. The diverging diamond interchange would result in LOS B for both intersections. As set forth in Table 4.12-5.5, Project impacts would be less than significant at these intersections with mitigation.

TABLE 4.12-5.5 YEAR 2020 UN-MITIGATED AND MITIGATED INTERSECTION OPERATIONS

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
				Un-Mitigated	Mitigated	Un-Mitigated	Mitigated	Un-Mitigated	Mitigated
				Delay LOS	Delay LOS	Delay LOS	Delay LOS	Delay LOS	Delay LOS
5	S. Bonnyview Rd/ Bechelli Ln	Signal	D	34.9 C	52.0 D	46.2 D	31.3 C	26.3 C	32.8 C
7	S. Bonnyview Rd/ I-5 SB Ramps	Signal	D	63.7 E	23.3 C	75.2 E	22.5 C	-	-
8	S. Bonnyview Rd/ I-5 NB Ramps	Signal	D	39.0 D	22.3 C	30.9 C	27.1 C	-	-
13	Churn Creek Rd/ Victor Ave	TWSC	D	-	-	78.7 F	32.8 D	-	-
14	Churn Creek Rd/ Rancho Rd	TWSC	C	-	-	25.7 D	15.3 C	-	-

Notes:

1. TWSC = Two Way Stop Control

2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for

For intersections #13 Churn Creek Road/Victor Avenue and #14 Churn Creek Road/Rancho Road, the ~~TIA~~ TIA includes ~~individual intersection improvements~~ southbound right turn pockets for both intersections; however, these improvements will be unnecessary once the roundabout is completed. As the effort to construct the roundabout is underway, the City does not want to install interim improvements which would not be a prudent infrastructure investment. The roundabout is anticipated to be operational ~~in~~ 2024 approximately 1 year after ~~perhaps following~~ the construction and opening of the initial phase of the Project and as shown in Table 4.12-5.5, will improve the LOS to the Target LOS of D. As such, However, as the improvement will not be in place before opening, this impact is considered significant and unavoidable.

Roadways Existing Year (2017)

No Project

Table 4.12-6 shows that all roadway segments operate acceptably under no-project conditions.

With Project

Table 4.12-6 shows that all roadway segments operate acceptably under with-project conditions.

Roadways Year 2020

No Project

Table 4.12-7 shows that all roadway segments operate acceptably ~~#2 Churn Creek Road between South Bonnyview and Victor Avenue would operate unacceptably~~ under no-project conditions.

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With Project

Roadway Segment #2

Roadway segment #2 Churn Creek Road between South Bonnyview Road and Victor Avenue will ~~continue to~~ operate at unacceptable levels with the addition of Project traffic. The reduction in the PM peak hour level of service from LOS D to E, results in a significant impact. Improvements to the intersections along the roadway segment will result in better traffic flow allowing for more efficient vehicle movement. Mitigation Measure TRANS-1.4 would make improvements to intersection #11 Churn Creek/Hartmeyer Lane and #12 Churn Creek Road/Huntington Drive and also includes the roundabout that will include intersections #13 Churn Creek/Victor and #14 Churn Creek/Rancho Road.

Loma Vista Drive

An additional analysis was conducted to determine what impacts cut-through traffic would have on Loma Vista Drive (see Appendix 4.12-5). The average ADT for Loma Vista Road is approximately 2,600 vehicles, an average AM peak hour of 370, and an average PM peak hour of 260 vehicles. From the City of Redding TIA_Guidelines, the threshold for traffic on a residential collector is 4,000 vehicles per day and 360 vehicles per peak hour. Based on these criteria, Loma Vista Drive AM peak hour traffic volumes exceeds the ~~TIA~~ TIAR guideline volume.

Three percent of the proposed Project traffic is projected to use Loma Vista Road as a cut-through between Churn Creek Road and Bechelli Lane. With the addition of this traffic, the ADT is projected to increase by 550 vehicles, assuming 275 vehicles in both the eastbound and westbound directions. The AM peak hour is projected to increase by 17 vehicles and the PM peak hour is projected to increase by 18 vehicles. This would bring the ADT of the roadway to approximately 3,150 vehicles, the average AM peak hour to approximately 390 vehicles, and the average PM peak hour to approximately 280 vehicles. The City of Redding threshold for residential collectors considers any additional traffic to be significant if the roadway currently operates unacceptably. At the November 27, 2017 and February 15, 2018 neighborhood meetings, attendees expressed concerns regarding the speed, safety, and congestion of the traffic on Loma Vista Drive. As the proposed Project will be adding trips to Loma Vista Drive, this impact is considered significant.

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TABLE 4.12-6 EXISTING YEAR (2017) ROADWAY LEVEL OF SERVICE, NO PROJECT AND WITH PROJECT

#	Roadway Segment	Roadway Type	Target LOS	No Project						With Project					
				AM		PM		Sat.		AM		PM		Sat.	
				Vol.	LOS	Vol.	LOS	Vol.	LOS	Vol.	LOS	Vol.	LOS	Vol.	LOS
1	S. Bonnyview Rd between SR 273 & Churn Creek Rd	Divided Arterial	D	22.2	C	21.3	D	26.4	C	21.3	D	20.2	D	23.4	C
2	Churn Creek Rd between S. Bonnyview Rd & Victor Ave	Undivided Arterial	D	492	C	504	C	309	A	525	C	540	C	366	A
3	Rancho Rd between Churn Creek Rd & Airport Rd	Undivided Arterial	C	280	A	277	A	189	A	298	A	296	A	222	A
4	Bechelli Ln between S. Bonnyview Rd & Chinook Dr	Undivided Arterial	C	439	B	346	A	226	A	372	A	520	C	378	A
5	Bechelli Ln between Chinook Dr & 3rd St	Divided Arterial	C	411	A	509	B	245	A	427	A	539	B	284	A
6	Churn Creek Rd between S. Bonnyview Rd & Hartnell Ave	Divided Arterial	C	302	A	277	A	177	A	310	A	286	A	192	A
7	Churn Creek Rd between Rancho Rd & Knighton Rd	Collector	C	176	A	173	A	132	A	179	A	176	A	137	A

TABLE 4.12-7 YEAR (2020) ROADWAY LEVEL OF SERVICE NO PROJECT AND WITH PROJECT

#	Roadway Segment	Roadway Type	Target LOS	No Project						With Project					
				AM		PM		Sat.		AM		PM		Sat.	
				Vol.	LOS	Vol.	LOS	Vol.	LOS	Vol.	LOS	Vol.	LOS	Vol.	LOS
1	S. Bonnyview Rd between SR 273 & Churn Creek Rd	Divided Arterial	D	21.1	D	21.2	D	25.7	C	19.5	D	19.7	D	23.5	C
2	Churn Creek Rd between S. Bonnyview Rd & Victor Ave	Undivided Arterial	D	689 581	F D	600 587	D	426 370	B A	728 614	F E	637 623	E	488 427	E B
3	Rancho Rd between Churn Creek Rd & Airport Rd	Undivided Arterial	C	335	A	318	A	224	A	356	A	337	A	256	A
4	Bechelli Ln between S. Bonnyview Rd & Chinook Dr	Undivided Arterial	C	472	C	354	A	237	A	399	A	530	C	392	A
5	Bechelli Ln between Chinook Dr & 3rd St	Divided Arterial	C	450	A	537	B	265	A	466	A	557	B	303	A
6	Churn Creek Rd between S. Bonnyview Rd & Hartnell Ave	Divided Arterial	C	335	A	338	A	231	A	344	A	347	A	246	A
7	Churn Creek Rd between Rancho Rd & Knighton Rd	Collector	C	205	A	200	A	160	A	208	A	203	A	165	A

Implementation of Mitigation Measure TRANS-1.5 would reduce vehicle speed, and improve pedestrian visibility, on the segment of Loma Vista Drive between Churn Creek and Bechelli Lane. The traffic calming improvements would reduce the desirability of using this Loma Vista Drive as a cut-through for traffic headed to the proposed Project and would ensure that any additional traffic moved at lower speeds, addressing the concerns of the public made during the neighborhood meetings. These features are

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designed to slow traffic by creating narrower travel lanes, provide additional visibility for pedestrians with raised crosswalks, and provide pedestrian refuge islands in the crosswalks.

Significance Without Mitigation: Significant.

Mitigation Measure TRANS-1.4: Prior to occupancy, the Project developer shall construct improvements and/or pay the City Development Impact Fee, or proportionate share of improvement cost as noted, toward completing the following for roadway segment #2 Churn Creek Road between South Bonnyview Road and Victor Avenue:

- The Project shall demonstrate payment of proportionate share of the following Improvements to Shasta County for Intersection #11 - Churn Creek Road/Hartmeyer Lane:
 - Eliminate westbound left movement.
 - Provide a receiving lane on westbound Churn Creek Road for northbound left-turns from Hartmeyer Lane.
 - Provide northbound right-turn lane.
 - Widen adjacent bridge to accommodate intersection improvements.
- Improvements to Intersection #12 – Churn Creek Road & Huntington Drive:
 - ~~Provide~~ Construct a Two-Way-Left-Turn-lane (TWLTL) from approximately the bridge over Churn Creek to intersections #13 and #14; or,
 - Construct a TWLTL, from approximately the bridge over Churn Creek to intersections 13 and 14, however, eliminate left-turns at Huntington Drive, close gap in Huntington Drive, and construct a compact roundabout at the Victor Avenue and El Verano Drive intersection.
- Improvements to Intersections #13 and #14 (Churn Creek Road/Victor Avenue and Churn Creek Road/Rancho Road):
 - Construct the intersections of Churn Creek Road/Victor Avenue and Churn Creek Road/Rancho Road into a four-leg, single-lane roundabout.

Mitigation Measure TRANS-1.5: Prior to occupancy, the Project developer shall complete the following improvements on Loma Vista Drive between Churn Creek Road and Bechelli Lane:

- Construct raised crosswalks at two locations on Loma Vista Drive.
- Construct median pedestrian refuge islands at the crosswalks.
- Construct curb bulb-outs at the raised crosswalks.

Significance With Mitigation: Significant and unavoidable for roadway segment #2. ~~Less than significant.~~

The City of Redding does not have jurisdiction over intersection #11 Churn Creek Road/Hartmeyer Lane as it is wholly within Shasta County. In order to ensure that the proposed Project contributes its fair share of the cost of the improvements as required by Mitigation Measure TRANS-1.4, the City will collect the proportionate share and turn the money over to Shasta County. However, as the City cannot be certain that the improvements will be operational by ~~Year 2020~~ Project opening, and as the intersection is outside of the City's jurisdiction, this impact is conservatively considered significant and unavoidable. While the process for constructing a roundabout that would encompass intersections #13 Churn Creek Road/Victor Avenue and #14 Churn Creek Road/Rancho Road is underway, the improvements are not anticipated to be complete by ~~Year 2020~~ Project opening therefore this impact is considered significant and unavoidable.

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Improvements at the Intersection #12 Churn Creek Road/Huntington Drive will be coordinated with the roundabout project at Churn Creek Road/Victor Avenue and Churn Creek Road/Rancho Road and may include other designs than construction of a two-way-left-turn-lane. While design of the roundabout and related corridor improvements is underway, the improvements will not be constructed by ~~the year 2020~~ Project opening, this impact is considered significant and unavoidable.

Implementation of Mitigation Measure TRANS-1.5 would reduce vehicle speed, and improve pedestrian visibility, on the segment of Loma Vista Drive between Churn Creek and Bechelli Lane. This impact is considered less than significant with mitigation.

As shown in Table 4.12-7.5 the operations of Roadway #2 for the Year 2020 scenario would be improved from LOS E to LOS C which is less than significant, however as noted above, because the improvements will not be in place at the time of project opening, this impact remains significant and unavoidable.

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TABLE 4.12-7.5 YEAR (2020) UN-MITIGATED AND MITIGATED ROADWAY OPERATIONS

<u>Capacity Configuration</u>												
#	<u>Roadway Segment</u>	<u>Un-Mitigated</u>	<u>Mitigated</u>	<u>Target</u> <u>LOS</u>	<u>AM Peak Hour</u>				<u>PM Peak Hour</u>			
					<u>Un-Mitigated</u>		<u>Mitigated</u>		<u>Un-Mitigated</u>		<u>Mitigated</u>	
					<u>ATS ²/</u> <u>Volume</u>	<u>LOS</u>	<u>ATS ²/</u> <u>Volume</u>	<u>LOS</u>	<u>ATS ²/</u> <u>Volume</u>	<u>LOS</u>	<u>ATS ²/</u> <u>Volume</u>	<u>LOS</u>
2	<u>Churn Creek Rd</u> <u>between</u> <u>S. Bonnyview Rd &</u> <u>Rancho Rd</u>	<u>Undivided</u> <u>Arterial</u>	<u>Divided</u> <u>Arterial</u>	<u>D</u>	<u>614</u>	<u>E</u>	<u>614</u>	<u>C</u>	<u>623</u>	<u>E</u>	<u>623</u>	<u>C</u>

Notes:

1. Roadway Type as designated by Table 4.5 E of the City of Redding TIA Guidelines
2. ATS= Arterial Travel Speed. ATS is indicated only for the S. Bonnyview Road corridor between SR 273 & Churn Creek Rd.
3. Volume indicates Maximum Peak Hour Volume Per Lane.

TRANS-2 The Project would create a less than significant impact at several Freeway mainline segments under 2020 conditions. [Less Than Significant]

When measured against the threshold criteria, proposed Project traffic impacts for the existing (2017) and Year 2020 scenarios are less than significant. As shown in Table 4.12-8, all study elements operate at an acceptable level of service.

Significance Without Mitigation: Less than significant.

TRANS-3 The Project would conflict with level of service standards established by the county congestion management agency for designated roads or highways. [~~Less Than Significant with Mitigation Incorporated~~ Significant and Unavoidable]

Shasta Regional Transportation Agency (SRTA) is the federally-designated metropolitan planning organization (MPO) and state-designated regional transportation planning agency (RTPA) for the Shasta County region. Shasta County has not prepared a congestion management program but includes standards for roadway facilities in its General Plan Circulation Element. The County Plan states that new development which may result in exceeding LOS E on existing facilities shall demonstrate that all feasible methods of reducing travel demand have been attempted to reach LOS C.

Table 4.12-4 shows that in the existing scenario, the with-project condition results in a significant impact at intersection #7 South Bonnyview Road/I-5 Southbound Ramps and #8 South Bonnyview Road/I-5 northbound ramps. Mitigation Measures TRANS-1.1 and TRANS-1.2, requires improvements at these two intersections resulting in additional vehicle stacking. The improved stacking is unnecessary if the planned diverging diamond interchange is constructed. Intersections #7 and #8 are within the Caltrans right of way, and the City has no ability to ensure that the improvements will be made. However, the City and the

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applicant have been working with Caltrans to design the extent and timing of the improvements. This coordination, and the wording of the mitigation measure that requires the improvements to be installed prior to occupancy of the Project, provide the City with the assurance needed to determine that the mitigation will occur and reduce this impact to less than significant.

As shown in Tables 4.12-6 and 4.12-7, only one of the study area roadways is affected by the proposed Project. Roadway segment #2, Churn Creek Road between South Bonnyview Road and Victor Avenue is projected to operate at LOS ~~D~~^F during the AM and PM peaks hour without the Project in Year 2020, and at LOS ~~E~~^F and ~~E~~ with the Project during AM and PM peak hours. ~~respectively~~. Mitigation Measure TRANS-1.2 improves intersections #11 Churn Creek Road/Hartmeyer Lane and #12 Churn Creek Road/Huntington Drive, and includes a roundabout at the intersections of #13 Churn Creek Road/Victor Avenue and #14 Churn Creek Road/Rancho Road.

Table 4.12-8 shows that all of the study area I-5 mainline and merge facilities will operate at an acceptable level of service in the existing year and with-project condition.

Significance Without Mitigation: ~~Potentially significant~~ Significant.

Mitigation Measure TRANS-3: Implement Mitigation Measures TRANS-1.2 and TRANS-1.3.

Significance With Mitigation: Significant and unavoidable for roadway segment #2. ~~Less than significant.~~

The mitigation measures for Mitigation Measures TRANS-1.2 and TRANS-1.3, will improve the vehicle stacking at the ramps, and also improve the efficiency of the impacted roadway segment. With implementation of the mitigation measures, the level of service for all affected intersections is C for the Year 2020 condition. However, as intersection #11 is outside of City jurisdiction the City cannot be certain that the improvements will be made, and that roadway segment improvements will not be completed prior to project opening; therefore, this impact is conservatively considered significant and unavoidable.

TRANS-4 The Project would not increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). [Less Than Significant with Mitigation Incorporated]

Driveways

Access to the proposed Project will be via three proposed driveways along Bechelli Lane and one proposed driveway along South Bonnyview Road as shown in Figure 3-7, Site Plan, in Chapter 3, Project Description. The driveways are included in the intersection analysis as follows:

#	Driveway	
6B	South Bonnyview Road	Right In/Right Out
18	Bechelli/Blue Shield (Existing Signal)	Full Access
28	Bechelli Lane/Northern Driveway	Full Access

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29	Bechelli Lane/Southern Driveway	Right In/Right Out/Left Out
----	---------------------------------	-----------------------------

Turning movements onto Bechelli Lane can disrupt traffic and lead to congestion and increased hazards if delay is too long that drivers become frustrated and take chances in merging into traffic, or when queues of vehicles waiting to make a turn block intersections and lanes. As evaluated [in Appendix 4.12-4](#), driveway #29 is assumed to be right in/right out/left out, meaning that no left turns [into the driveway](#) from southbound Bechelli Lane would be permitted. A supplemental analysis to the ~~HAT~~ [TIAR](#) was conducted to determine if [whether the left out movement would result in any queuing or other impacts](#) ~~impacts there was a way to allow full access at this location~~ (see Appendix 4.12-4).

TABLE 4.12-8 MERGE DIVERGE LEVEL OF SERVICE RESULTS FOR EXISTING AND YEAR 2020

#	Interchange Location	Target LOS	Segment Type	Lanes	Existing LOS						Year 2020 LOS					
					No Project			With Project			No Project			With Project		
					AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
1	Cypress Ave Off-Ramp NB	D	Diverge	1	B	B	C	C	B	C	C	C	C	C	C	C
2	Bonnyview Rd to Cypress Ave NB	D	Mainline	3	B	B	B	B	B	B	B	B	C	B	B	C
3	S. Bonnyview Rd On-Ramp NB	D	Merge	1	B	B	B	B	B	B	C	B	C	C	B	C
4	S. Bonnyview Rd Off-Ramp NB	D	Diverge	1	B	B	B	B	B	B	B	B	C	B	B	C
5	Knighton Rd to Bonnyview Rd NB	D	Mainline	3	B	B	B	B	B	B	B	B	B	B	B	B
6	Knighton Rd to Bonnyview Rd NB	D	Mainline	2	C	B	C	C	B	C	C	C	D	C	C	D
7	Knighton Rd On-Ramp NB	D	Merge	1	C	C	C	C	C	C	C	C	D	D	C	D
8	Knighton Rd Off-Ramp SB	D	Diverge	1	B	C	C	B	C	C	B	D	D	B	D	D
9	S. Bonnyview Rd to Knighton Rd SB	D	Mainline	2	B	C	C	B	C	C	B	D	C	B	C	C
10	S. Bonnyview Rd to Knighton Rd SB	D	Mainline	3	A	B	B	A	B	B	A	B	B	A	B	B
11	S. Bonnyview Rd On-Ramp SB	D	Diverge	1	B	B	B	B	C	B	B	C	B	B	C	B
12	S. Bonnyview Rd Off-Ramp SB	D	Mainline	1	B	B	B	B	B	B	B	C	B	B	C	C
13	Cypress Ave to S Bonnyview Rd SB	D	Mainline	3	A	B	B	A	B	B	A	B	B	A	B	B
14	Cypress Ave On-Ramp SB	D	Merge	1	B	C	B	B	C	B	B	C	B	B	C	C

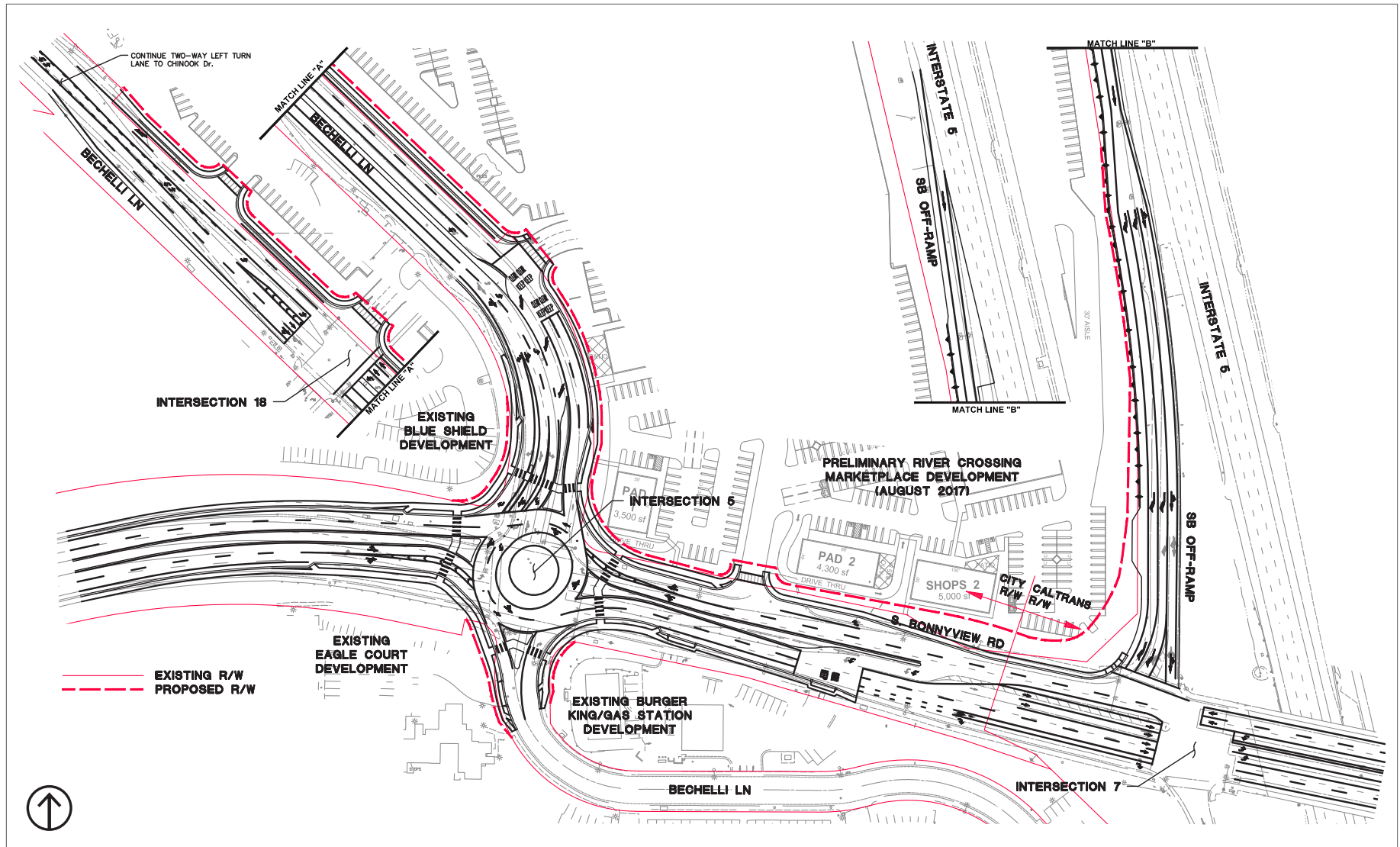
Source: Appendix 4.12-1.

The supplemental analysis evaluated the left-turn movements from the southern driveway during Year 2020, Year 2040 and with the Rancheria project traffic and assumes construction of the South

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Bonnyview/Bechelli Lane roundabout. In all instances the driveway operated below LOS C during one or more peak hours. The queue analysis showed that there is adequate room in the turning lane to accommodate the vehicle queue. Recommendations in the supplemental analysis were for “keep clear” to be painted on the roadway at the driveway to prevent vehicle queueing at intersection #18 Bechelli/Blue Shield signal, or at intersection #5 South Bonnyview and Bechelli Lane, from blocking the southern driveway (see Figure 4.12-4). The supplemental analysis also recommended modifications to the signal at intersection #18 Bechelli/Blue Shield to extend the green period for northbound Bechelli Lane traffic if the vehicle queue length obstructs the southern driveway. Mitigation Measure TRANS-4 incorporates the recommendation of the supplemental analysis.

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Source: Omni-Means, 2018.

Figure 4.12-4
South Driveway Improvements

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~~The TIA/TIA/R includes an analysis of vehicle queuing on and off site. With the exception of a queue that would block an intersection of a public roadway as discussed here, the queue length analysis is used by traffic engineers to inform roadway design and does not have an adopted environmental threshold.~~

Significance Without Mitigation: ~~Potentially~~ Significant.

Mitigation Measure TRANS-4: If a roundabout is constructed at intersection #5 South Bonnyview/Bechelli Lane (see Mitigation Measure TRANS-1.1), prior to permitting left turns from the proposed Project at intersection #29 Bechelli Lane/Southern Driveway onto Bechelli Lane, the following roadway and signal improvements shall be made to City of Redding standards:

- “Keep Clear” markings shall be painted on Bechelli Lane at intersection #29 Bechelli Lane/Southern Driveway.
- Queue detectors shall be installed at intersection #18 Bechelli/Blue Shield.

If no roundabout is constructed, no outbound left turns shall be permitted from the Project site at intersection #29 Bechelli Lane/Southern Driveway.

Significance With Mitigation: Less than significant.

Provided a roundabout is constructed at intersection #5 South Bonnyview Road/Bechelli Lane, the implementation of Mitigation Measure TRANS-4, a left-out at intersection #29 Bechelli Lane/Southern Driveway could be provided during the AM, PM, and Saturday peak hours for Year 2040 Plus Project and Year 2040 Plus Project with Redding Rancheria conditions.

Roundabout

Intersection #5 South Bonnyview/Bechelli Lane is signalized and was analyzed in the ~~TIA~~TIA/R as both as a signalized intersection and a roundabout intersection. The long-term plans for the South Bonnyview Interchange with I-5 would change the existing configuration to a diverging diamond design. This change in configuration would work more effectively if a roundabout is constructed at intersection #5.

The City is in the process of redesigning intersections #13 Churn Creek Road/Victor Avenue and #14 Churn Creek Road/Rancho Road into a roundabout and will coordinate the Huntington Drive intersection improvements with the roundabout project. The roundabout, part of the City’s Development Fee Program, is expected to be operational ~~by 2021~~ approximately one year after project opening.

Roundabouts improve safety because regardless of the location and speed limit, drivers must navigate roundabouts between 15 and 25 mph. Also, roundabouts reduce the number of conflict points at an intersection (from 32 down to eight at a traditional four-legged intersection on a two-lane road) and change the types of crashes that occur, reducing the number of right-angle crashes significantly. Roundabouts improve traffic flow by reducing delay, idling, and “hard” acceleration. These factors also can reduce vehicular emissions and noise.

The ~~TIA~~TIA/R includes the projected level of service for both the signalized intersection and with a roundabout. In all instances, the level of service with the roundabout is better than with a signal. Because

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a roundabout allows for better vehicle mobility, and reduces the severity of accidents, roundabouts are not considered a hazardous or dangerous.

Turn Lane Queue Lengths

Vehicle queue lengths are measured at intersections and driveways to ensure adequate room for vehicles waiting to move through the intersection. The ~~TIA~~ [TIAR](#) evaluated queue lengths for each scenario and used the results to recommend the lane lengths in the mitigation measures [as appropriate](#). The queue lengths for the I-5 ramps were set in consultation with Caltrans recognizing the future diverging diamond interchange anticipated for South Bonnyview Road. The ~~TIA~~ [TIAR](#) also evaluated the 95th percentile on-site queues for proposed driveways for the [Existing Plus Project and](#) Year 2020 condition and determined that vehicle stacking on-site would be adequate to prevent vehicles from backing into the travel lanes during peak hours. [Additional queuing data for the westbound outbound turn lane for Intersection 29 is included in Appendix 4.12-4.](#)

[With mitigation, no](#)~~None~~ hazardous design conditions would result from proposed Project implementation, and impacts would be less than significant.

[Significance With Mitigation: Less than significant.](#)

TRANS-5	The Project would not result in inadequate emergency access. [Less Than Significant]
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The proposed Project will widen South Bonnyview Road and Bechelli Lane consistent with City of Redding standards as shown in Figure 3-7 in Chapter 3, Project Description. Access to the Project from public roads is provided by three proposed driveways along Bechelli Lane and one proposed driveway along South Bonnyview Road. On-site circulation allows for access to all sides of each building through parking lot aisle, delivery lane, or public roadway. All site improvement designs are evaluated and approved by the City of Redding Fire Department. All on-site circulation roadways and the improvements on Bechelli Lane and Bonnyview Road along the Project site would be constructed according to City requirements. As the site allows for access to all buildings consistent with City of Redding standards, and all improvements must be inspected for compliance by the City of Redding Fire Department, this impact is less than significant.

Significance Without Mitigation: Less than significant.

TRANS-6	The Project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. [Less than Significant]
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Currently pedestrian activity is very light on stated roadways due to lack of connectivity and significant development in the immediate Project vicinity. With the development of the proposed Project, the pedestrian traffic is expected to increase slightly due to its commercial and retail components located within close proximity to surrounding residential developments and employment centers.

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The segments of Bechelli Lane and South Bonnyview Road adjacent to the site do not contain continuous sidewalks. A pedestrian pathway that complies with the Americans with Disabilities Act would extend from the discount warehouse to the western property boundary where it would connect to the sidewalk on Bechelli Lane. All signals and roadway improvements associated with the proposed Project would include pedestrian crossing controls consistent with City of Redding standards.

The study roadways currently have very light bicycle use. With development of the proposed Project, the bicycle traffic is expected to increase slightly due to its commercial and retail components located due to proximity to surrounding residential developments. A new 6-foot-wide Class II bicycle facility is proposed on the northerly side of South Bonnyview Road along the Project frontage. All off-site roadway improvements would be designed to accommodate bicycle traffic consistent with the City and County adopted plans. Consistent with the California Building Code, the proposed Project will include bicycle racks.

There is currently no transit available to the Project site. On the west side of Bechelli Lane across from the proposed Project, the roadway widens to include a bus turn out, however the turnout is not part of any Redding Area Bus Authority (RABA) route. The same is true with the bus turnout that was constructed with the Rivercrest subdivision just north of the Project boundary. The short Project frontage on South Bonnyview, coupled with the southbound off ramp of I-5, and the pending improvements associated with the I-5 South Bonnyview Interchange, preclude a transit stop along the Project frontage. The Redding Area Bus Authority is the agency with jurisdiction over bus routes and there are no current plans to extend service, or create transit stops for the proposed Project⁶. The proposed Project improvements will widen both Bechelli Lane and South Bonnyview Road consistent with City of Redding and Caltrans Standards. None of the proposed improvements would preclude future activation of the bus turnouts on the east and west sides of Bechelli Lane.

Development of the Project would improve pedestrian and bicycle facilities and would not conflict with policies in the Circulation Element related to alternative transportation and transit. [*These policies include, but are not limited to, incorporation of bicycle facilities in the design of intersection, interchanges, and street improvement projects and to provide bicycle facilities.*](#) This impact is less than significant.

Significance Without Mitigation: Less than significant.

4.12.5 CUMULATIVE IMPACTS

Cumulative Setting

The traffic study considered both project-specific impacts and the Project's cumulative contribution to traffic in Project vicinity. The traffic forecasts are based on the Shasta County Regional Transportation Model maintained by the Shasta Regional Transportation Agency (SRTA). The county-wide model incorporates regional growth projections. The regional model is adjusted to include a number of known projects (pending and approved) including, but not limited to, buildout of phase 2 of the Blue Shield

⁶ Personal communication, Chuck Aukland, February 14, 2018.

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complex, development at the south-east quadrant of the interchange, the addition of Churn Creek Marketplace on the east side of the freeway, and the proposed Redding Rancheria Casino project. The Year 2040 no-project condition includes results of the regional model, including the Redding Rancheria project.

The Year 2040 analysis does not assume that any of the improvements listed above are in place ~~with. The only changes to the study area are~~ with the exception of the improvements to the northbound onramp to I-5 at South Bonnyview Road under construction ~~con-struction~~ as part of the Churn Creek Marketplace. Because of this assumption, the mitigation measures for Year 2020 are referenced in the Year 2040 mitigation. ~~The City of Redding policy generally requires construction of improvements if the Project's fair share of the impact is greater than 25 percent. For Project impacts less than 25 percent fair share, contribution to the City's Development Impact Fee program is considered adequate mitigation~~

During preparation of this EIR the Redding Rancheria ~~(casino)~~ was able to provide additional ~~sufficient~~ detail concerning their future project (casino) that a new more accurate Year 2040 analysis could be conducted, and in particular analysis of Saturday operations. This analysis evaluates the added impact to study area intersections that result from the construction of the Rancheria project. As analyzed in Appendix 4.12-2, the Redding Rancheria project is assumed to consist of a new casino and resort, an approximately 69,515-square-foot casino, a 250-room hotel, an event- convention center, and a retail center, as well as associated parking and infrastructure.

TRANS-7 The proposed Project, in combination with past, present and reasonably foreseeable projects, would result in significant cumulative impacts with respect to transportation and traffic. [Significant and Unavoidable]

Intersections Year 2040

No Project

Table 4.12-9 shows that for the Year 2040 scenario, under no-project conditions, the following study area intersections operate at an unacceptable level of service during the AM, PM, and Saturday peak hour.

#	Intersection	Control Type	Peak Hour	LOS
5	South Bonnyview Rd. & Bechelli Ln.	Signal	PM/ <u>SAT</u>	F/ <u>E</u>
7	South Bonnyview Road/I-5 South Ramps	Signal	AM/PM	E/E
11	Churn Creek Road /Hartmeyer Road	Two-Way Stop-Control	AM/PM	F/F
12	Churn Creek Road/Huntington Road	Two-Way Stop-Control	AM/PM/ <u>SAT</u>	E/E/ <u>E</u>
13	Churn Creek Road/Victor Avenue	Two-Way Stop-Control	AM/PM/ <u>SAT</u>	F/F/ <u>E</u>
14	Churn Creek Road/Rancho Road	Two-Way Stop-Control	AM/PM	E/F
16	Rancho Road/Shasta View Drive	Two-Way Stop-Control	AM/PM	F/F
17	Rancho Road/Airport Road	Signal	AM	D

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21	Bechelli Lane/Loma Vista Drive	Two-Way Stop-Control	AM/PM	F/F
27	Churn Creek Road/Hartnell Avenue	Signal	AM/PM	E/E

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TABLE 4.12-9 2040 WITH RANCHERIA WITH AND WITHOUT ~~AND~~ PROJECT INTERSECTION LEVEL OF SERVICE

#	Intersection	Existing Control	Target LOS	2040 With Rancheria – No Project						2040 With Rancheria – With Project					
				AM		PM		Saturday		AM		PM		Saturday	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	S Bonnyview Rd/Cedars Rd & SR 273	Signal	D	40.3	D	40	D	<u>30.7</u>	<u>C</u>	41.5	D	40.5	D	<u>31.5</u>	<u>C</u>
2	S Bonnyview Rd/Eastside Rd	Signal	D	39.7	D	52.8	D	<u>25.6</u>	<u>C</u>	42.2	D	54.2	D	<u>26.6</u>	<u>C</u>
3	S Bonnyview Rd/E Bonnyview Rd	Signal	D	40.6	D	47.9	D	<u>17.5</u>	<u>B</u>	50.4	D	53.4	D	<u>18.2</u>	<u>B</u>
4	S Bonnyview Rd/Indianwood Dr	Signal	D	7	A	9.5	A	<u>7.8</u>	<u>A</u>	7.1	A	10.3	B	<u>8.0</u>	<u>A</u>
5	S Bonnyview Rd/Bechelli Ln	Signal	D	47.9	D	104.1	F	<u>72.0</u>	<u>E</u>	65.1	E	152.3	F	<u>128.7</u>	<u>E</u>
6A	S Bonnyview Rd/Texaco Dwy	TWSC	D	20.2	C	32.5	D	<u>17.9</u>	<u>C</u>	23.2	C	49.8	E	<u>25.6</u>	<u>D</u>
6B	S. Bonnyview Rd/S Bonnyview Dwy	TWSC	D							52.6	F	51.4	F	<u>65.6</u>	<u>F⁵</u>
7	S Bonnyview Rd/I-5 SB Ramps	Signal	D	58.6	E	60.6	E	<u>48.2</u>	<u>D</u>	83.8	F	114.9	F	<u>55.4</u>	<u>E</u>
8	S Bonnyview Rd/I-5 NB Ramps	Signal	D	54.1	D	42.7	D	<u>40.4</u>	<u>D</u>	70.6	E	77.8	E	<u>63.0</u>	<u>E</u>
9	S Bonnyview Rd/Churn Creek Rd	Signal	D	42.4	D	42.3	D	<u>28.9</u>	<u>C</u>	42.4	D	45.5	D	<u>29.3</u>	<u>C</u>
10	Churn Creek Rd/Alrose Ln	TWSC	D	14.3	B	24.7	C	<u>15.1</u>	<u>C</u>	14.8	B	26.4	D	<u>16.3</u>	<u>C</u>
11	Churn Creek Rd/Hartmeyer Ln	TWSC	E	55.5	F	94.7	F	<u>21.0</u>	<u>C</u>	67.2	F	125.1	F	<u>25.0</u>	<u>D</u>
12	Churn Creek Rd/Huntington Dr	TWSC	D	42.1	E	35.2	E	<u>41.4</u>	<u>E</u>	48.8	E	39.5	E	<u>60.5</u>	<u>F</u>
13	Churn Creek Rd/Victor Ave	TWSC	D	68.9	F	OVR	F	<u>38.5</u>	<u>E</u>	98	F	OVR	F	<u>67.6</u>	<u>F</u>
14	Churn Creek Rd/Rancho Rd	TWSC	C	39.9	E	62.9	F	<u>14.3</u>	<u>B</u>	51	F	90.6	F	<u>16.0</u>	<u>C</u>
15	Rancho Rd/Alta Mesa Dr	TWSC	C	17.6	C	15.1	C	<u>12.7</u>	<u>B</u>	18.7	C	15.6	C	<u>13.5</u>	<u>B</u>
16	Rancho Rd/Shasta View	TWSC	C	131.3	F	76.1	F	<u>22.0</u>	<u>C</u>	164.1	F	110	F	<u>25.7</u>	<u>D</u>

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TABLE 4.12-9 2040 WITH RANCHERIA WITH AND WITHOUT ~~AND~~ PROJECT INTERSECTION LEVEL OF SERVICE

#	Intersection	Existing Control	Target LOS	2040 With Rancheria – No Project						2040 With Rancheria – With Project					
				AM		PM		Saturday		AM		PM		Saturday	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
	Dr														
17	Rancho Rd/Airport Rd	Signal	C	39.4	D	24	C	<u>17.9</u>	<u>B</u>	42.6	D	26.9	C	<u>18.6</u>	<u>B</u>
18	Bechelli Ln/Blue Shield Dwy	Signal	C	7.6	A	6.4	A	<u>4.7</u>	<u>A</u>	19.7	B	25	C	<u>22.7</u>	<u>C</u>
19	Bechelli Ln/Chinook Dr	TWSC	C	13.8	B	16.2	C	<u>12.7</u>	<u>B</u>	14.2	B	16.6	C	<u>13.3</u>	<u>B</u>
20	Bechelli Ln/Rivercrest Pkwy	TWSC	C	15.9	C	15.5	C	<u>11.7</u>	<u>B</u>	16.6	C	16.4	C	<u>12.4</u>	<u>B</u>
21	Bechelli Ln/Loma Vista Dr	TWSC	C	112.3	F	OVR	F	<u>21.6</u>	<u>C</u>	160.2	F	OVR	F	<u>26.9</u>	<u>D</u>
22	Bechelli Ln/Hartnell Ave	Signal	C	34.9	C	34.9	C	<u>24.6</u>	<u>C</u>	34.9	C	35	C	<u>24.7</u>	<u>C</u>
23	Churn Creek Rd/Public ROW to Chevron	TWSC	C	16.6	B	20.5	C	<u>19.4</u>	<u>B</u>	18.3	B	24.1	C	<u>24.5</u>	<u>C</u>
24	Churn Creek Rd/Arizona Ln	TWSC	C	13.9	B	13.2	B	<u>11.7</u>	<u>B</u>	14.1	B	13.4	B	<u>12.0</u>	<u>B</u>
25	Churn Creek Rd/Loma Vista Dr	Signal	C	21.3	C	17.4	B	<u>14.7</u>	<u>B</u>	21.8	C	17.7	B	<u>15.4</u>	<u>B</u>
26	Churn Creek Rd/Shirley Ln & Enterprise HS Dwy	Signal	C	34.2	C	14.3	B	<u>11.0</u>	<u>B</u>	34.7	C	14.5	B	<u>11.2</u>	<u>B</u>
27	Churn Creek Rd/Hartnell Ave	Signal	C	57.1	E	58.9	E	<u>33.1</u>	<u>C</u>	60	E	60.8	E	<u>34.1</u>	<u>C</u>
28	Bechelli Ln/Northern Dwy	TWSC	C							21	C	39.5	E ⁵	<u>24.7</u>	<u>C</u>
29	Bechelli Ln/Southern Dwy	TWSC	C							13.5 <u>35.5</u>	B <u>E</u>	11.9 <u>48.9</u>	B <u>E</u>	22.2 <u>30.0</u>	D <u>D</u> ⁵

Notes:

1. TWSC = Two Way Stop Control.
2. LOS = Delay based on worst approach for TWSC intersections, average of all approaches for signalized intersection.
3. Warrant = Based on California MUTCD Warrant 3.
4. **Bold** = Unacceptable Conditions.
5. Private driveway turning movement, not eligible for signal and does not trip threshold for mitigation.
6. Highlight Green does not meet warrants, Yellow highlight meets warrants

Source: Appendix 4.12-2

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Except for intersections #12 Churn Creek Road/Huntington Road and #16 Rancho Road/Shasta View Drive, all of the two-way stop-control intersections meet the warrants for installation of a traffic signal under the Year 2040 no-project condition. This means that signals, and associated intersection improvements, would be considered for installation, regardless of whether the proposed Project is constructed.

With Project

For the Year 2040 with ~~-Rancheria plus project~~ project condition, the following intersections are projected to operate at unacceptable levels: *(Note that private driveways are included for informational purposes only and are not subject to the City's LOS thresholds. However, the TIAR establishes the minimum driveway throat depths for on-site driveways that must be met to prevent impacts to the adjacent public streets. The proposed development standards (aka "conditions of approval") of the Specific Plan include a requirement that those depths be maintained and will be verified when final plans are submitted to the City.)*

#	Intersection	Control Type	Peak Hour	LOS
5	South Bonnyview Road/Bechelli Lane	Signal	AM/PM/ <u>SAT</u>	E/F/ <u>E</u>
6A	South Bonnyview Road/Texaco Driveway	Two-Way Stop-Control	PM	E
6B	South Bonnyview Road/South Driveway	Two-Way Stop-Control	AM/PM/ <u>SAT</u>	F/F/ <u>E</u>
7				
7	South Bonnyview Road/I-5 Southbound Ramps	Signal	AM/PM/ <u>SAT</u>	F/F/ <u>E</u>
8	South Bonnyview Road/I-5 Northbound Ramps	Signal	AM/PM/ <u>SAT</u>	E/E/ <u>E</u>
11	Churn Creek Road /Hartmeyer Road	Two-Way Stop-Control	AM/PM	F/F
12	Churn Creek Road/Huntington Road	Two-Way Stop-Control	AM/PM/ <u>SAT</u>	E/E/ <u>E</u>
13	Churn Creek Road/Victor Avenue	Two-Way Stop-Control	AM/PM/SAT	F/F/ <u>E</u>
14	Churn Creek Road/Rancho Road	Two-Way Stop-Control	AM/PM/ SAT	F/F/ E
16	Rancho Road/Shasta View Drive	Two-Way Stop-Control	AM/PM/ <u>SAT</u>	F/F/ <u>D</u>
17	Rancho Road/Airport Road	Signal	AM	D
21	Bechelli Lane/Loma Vista Drive	Two-Way Stop-Control	AM/PM/ <u>SAT</u>	F/F/ <u>D</u>
27	Churn Creek Road/Hartnell Avenue	Signal	AM/PM	E/E
28	Bechelli Lane/Northern Driveway	Two-Way Stop-Control	PM	E
<u>29</u>	<u>Bechelli Lane/Southern Driveway</u>	<u>Two Way Stop Control</u>	<u>AM/PM/SAT</u>	<u>E/F/D</u>

Intersections #6A South Bonnyview Road/Texaco Driveway, #6B South Bonnyview Road/South Driveway, #12 Churn Creek Road/Huntington Road, #16 Rancho Road/Shasta View Drive, #28 Bechelli Lane/North Driveway, #29 South Driveway do not meet the warrants for a traffic signal; ~~7~~ therefore, Project impacts are considered less than significant. Intersection #17 Rancho Road/Airport Road would operate at LOS D in the AM in the 2040 no-project condition. The increase in Project traffic would increase delay by approximately 3 seconds, which is below the five second threshold. As a result, impacts to intersection #17 are less than significant. The remaining intersections are discussed below.

TRANSPORTATION AND TRAFFIC**South Bonnyview Road/Bechelli Lane**

Project traffic would result in a significant increase in delay at intersection #5 South Bonnyview Road/Bechelli Lane. The increase in delay will result in more vehicle queuing which will extend beyond the available capacity. The proposed Project's fair share calculation for this impact is ~~31~~ 37 percent therefore the Project is required to implement Mitigation Measure TRANS-1.1, which requires construction of a multi-lane roundabout at this intersection prior to occupancy. Construction of a roundabout at this intersection would fully address this impact resulting in LOS B.

South Bonnyview Road/I-5 Southbound Ramps

Improvements for intersection #7 South Bonnyview Road/I-5 Southbound Ramps would include those required by Mitigation Measure TRANS-1.2, except modified to increase the length of the southbound right-turn lanes from 175 feet to 400 feet. ~~As the fair share calculation for this impact is 41-40 percent, the Project is required to implement Mitigation Measure TRANS-7.1, prior to occupancy.~~ Implementation of Mitigation Measure TRANS-7.1 would result in LOS D, with ~~7~~ construction of a diverging diamond interchange resulting in LOS C. However, even though these improvements are consistent with approved plans for the year 2040 configuration of the interchange, these improvements have yet to be programmed into the City's 5-year Capital Improvement Program. Because the City cannot be certain that the improvements for which fees are paid will be operational by the year 2040, this impact is considered significant and unavoidable.

South Bonnyview Road/I-5 Northbound Ramps

Similar to the southbound improvements, the with-project condition will require additional room for vehicle queuing in the form of left- and right-turn lanes at intersection #8. ~~While~~ Mitigation Measure TRANS-7.2 would provide for additional queuing necessary to address the projected impact resulting in LOS C ~~C, the proposed Project's fair share of these improvements is 18-33 percent therefore payment of the development impact fees is considered full mitigation.~~ LOS ~~C-B~~ would ~~also~~ result from construction of a diverging diamond interchange. However, even though these improvements are consistent with approved plans for the year 2040 configuration of the interchange, these improvements have yet to be programmed into the City's 5-year Capital Improvement Program. Because the City cannot be certain that the improvements for which fees are paid will be operational by the year 2040, this impact is considered significant and unavoidable.

Churn Creek Road/Hartmeyer Lane

Improvements to Intersection #11 are included in Mitigation Measure TRANS-1.4 to address the Year 2020 Plus Project condition impacts on Roadway Segment #2, Churn Creek Road from South Bonnyview Road to Rancho Road. For the Year 2040 with-project condition, no additional improvements would be needed at this intersection to meet the adopted level of service for Year 2040. Mitigation Measure TRANS-1.4 would reconstruct the intersection to eliminate westbound left-turn movement, provide a receiving lane on westbound Churn Creek Road for northbound left-turns, add a northbound right-turn lane and widen the adjacent bridge to accommodate intersection improvements. These improvements would result in LOS C at this intersection. The proposed Project's fair share of impact at this location is ~~12~~ 13 percent; therefore, payment of their proportionate share of the cost of the improvements to Shasta County is considered full mitigation. However, as the City does not have jurisdiction over this intersection there is no

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way to ensure the improvements will be made by 2040, ~~therefore,~~ this impact is ~~conservatively~~ considered significant and unavoidable.

Churn Creek Road/Victor Avenue and Churn Creek Road/Rancho Road

Year 2040 conditions would result in an increase in delay at these two intersections. Mitigation Measure TRANS-1.4 would require installation of a roundabout that would address impacts at both intersection #13 Churn Creek Road/Victor Avenue and #14 Churn Creek Road/Rancho Road. ~~As the proposed Project's fair share of impact at these intersections is 15.22 percent (#13) and 13 percent (#14),~~ Payment of the development impact fee is considered full mitigation. Implementation of Mitigation Measure TRANS-1.4 will result in LOS B at the affected intersections.

Bechelli Lane/Loma Vista Drive

Intersection #21 is currently a two-way stop-controlled intersection that will meet warrants for a traffic signal in the Year 2040 condition as a result of the proposed Project. Mitigation Measure TRANS-7.3 requires installation of a signal that will accommodate protected left-turn movements. Alternatively, a four-leg single-lane roundabout could be constructed. If the signal is installed the intersection is anticipated to operate at LOS C, and LOS B if a roundabout is constructed. The proposed Project's fair share of impact is 10 percent. ~~therefore, payment of the City's development impact fee is considered full mitigation.~~ The City has committed to construct the signal prior to Project opening using a combination of TIF and other funding. The Project would contribute its fair share of the cost of the signal to the City.

Mitigation Measure TRANS-7.1: Prior to occupancy, in addition to the requirements of TRANS-1.2, the Project developer shall pay the City Development Impact Fee toward the following improvements at intersection #7 South Bonnyview Road/I-5 Southbound ramps.

- Widen the westbound approach to provide:
 - Two left-turn lanes
- Widen the southbound I-5 off-ramp approach to provide:
 - One shared through/left-turn lane of length 400 feet.
 - Two right-turn lanes of length 400 feet.
- Or construct a diverging diamond interchange.

Mitigation Measure TRANS-7.2: Prior to occupancy, in addition to the requirements of TRANS-1.3, the Project developer shall pay the City Development Impact Fee toward the following improvements at intersection #8 South Bonnyview Road/I-5 Northbound ramps.

- ~~Provide all improvements from Mitigation Measure TRANS 1.3. Widen the eastbound approach to provide:~~
- ~~One additional eastbound left-turn lane~~
- Add Northbound Left-Turn Lane; and
- ~~Extend all northbound turn lanes to 500 feet. Widen the northbound approach to provide:~~
- ~~One left-turn lane of 500 feet in length~~

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- ~~One shared through/left turn lane of 500 feet in length.~~
- ~~One 500-foot long right turn lane.~~

- Or construct a diverging diamond interchange.

Mitigation Measure TRANS-7.3: Prior to occupancy, the Project developer shall complete the following improvements at Intersection #21 Bechelli Lane/Loma Vista Drive:

- Construct a traffic signal with split phasing for the eastbound and westbound approaches, and protected left-turn movements on northbound and southbound approaches; or
- Construct a four-leg, single lane roundabout.

~~Level of Significance After Mitigation~~

Significance With Mitigation: Significant and unavoidable for Intersections #5, #7, #8, and #11.

Table 4.12-9.5 shows that all intersections would operate acceptably with implementation of the above mitigation measures. However, as explained in the text, while lack of certainty in the funding results in a significant and unavoidable determination for Intersections #5, #7, #8, and #11

Table 4.12-9.5 Year 2040 With Rancheria Plus Project Intersection Mitigation LOS

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour				PM Peak Hour				Saturday Peak Hour			
				Un-Mitigated Delay	LOS	Mitigated Delay	LOS	Un-Mitigated Delay	LOS	Mitigated Delay	LOS	Un-Mitigated Delay	LOS	Mitigated Delay	LOS
5	S. Bonnyview Rd/ Bechelli Ln	Signal	D	65.1	E	28.8	C	152.3	F	52.7	D	128.7	F	39.8	D
7	S. Bonnyview Rd/ I-5 SB Ramps	Signal	D	83.8	F	26.1	C	114.9	F	33.6	C	55.4	E	34.2	C
8	S. Bonnyview Rd/ I-5 NB Ramps	Signal	D	70.6	E	31.2	C	77.8	E	39.1	D	63.0	E	32.4	C
11	Churn Creek Rd/ Hartmeyer Ln	TWSC	E	-	-	-	-	125.1	F	25.8	D	-	-	-	-
11	Churn Creek Rd/ Huntington Dr	TWSC	D	-	-	-	-	-	-	-	-	60.5	F	20.2	C
13	Churn Creek Rd/ Victor Ave	RNDBT	D	98.0	F	11.1	B	OVR	F	14.3	B	67.6	E	8.5	A
14	Churn Creek Rd/ Rancho Rd	RNDBT	C	51.0	D	11.1	B	90.6	F	14.3	B	-	-	-	-
21	Bechelli Ln/ Loma Vista Dr	Signal	C	160.2	F	25.7	C	OVR	F	23.0	C	-	-	-	-
21	Bechelli Ln/ Loma Vista Dr	RNDBT	C	160.2	F	8.4	A	OVR	F	11.6	B	-	-	-	-

Notes:

1. TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for
3. OVR = Delay exceeds 300 seconds

~~Implementation of Mitigation Measure TRANS-7.1 will result in an acceptable LOS D at intersection #7 South Bonnyview Road/I-5 Southbound ramps. Implementation of Mitigation Measure TRANS-7.2 will result in LOS C at intersection #8 South Bonnyview Road/I-5 Northbound Ramps. Implementation of Mitigation Measure TRANS-1.4 will result in improvements that will result in LOS C for the Year 2040 condition. The proposed Project's fair share of impact at this location is 12 percent, therefore, payment of their proportionate share of the cost of the improvements to Shasta County is considered full mitigation. Implementation of Mitigation Measure TRANS-1.4 would result in LOS B at intersections #13 Churn Creek~~

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~~Road/Victor Avenue and #14 Churn Creek Road/Rancho Road. Implementation of Mitigation Measure TRANS-7.3 would result in LOS C for a signal and LOS B if a roundabout is constructed.~~

Only the improvements associated with Mitigation Measure TRANS-7-3 will be in place and operational before occupancy. ~~The proposed~~ For roadways and intersections within the City, the Project will contribute its fair share through ~~either~~ payment of the City's Development Impact Fee as noted above. Outside of the City, or payment of ~~their~~ the Project's proportionate share of the impact to Shasta County for ~~impacts~~ all the remaining impacts impacts to the Hartmeyer/Churn Creek Road intersection. Because the City cannot be certain that the improvements for which fees will be paid will be operational by Year 2040, these impacts are considered significant and unavoidable.

Roadways Year 2040

No Project

Table 4.12-10 shows that the following roadway segments operate unacceptably under the no-project condition:

- #1 South Bonnyview Road between SR 273 and Churn Creek Road
- #2 Churn Creek Road between S. Bonnyview Road and Rancho Road
- #4 Bechelli Lane between S. Bonnyview Road and Chinook Drive
- #5 Bechelli Lane between Chinook Drive and 3rd Street

These ~~two~~ roadway segments are anticipated to operate at unacceptable levels in the Year 2040 condition regardless of whether the proposed Project is constructed.

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TABLE 4.12-10 YEAR 2040 NO PROJECT AND WITH PROJECT ROADWAY OPERATIONS

#	Roadway Segment	Roadway Type	Target LOS	2040 With Rancheria – No Project						2040 With Rancheria – With Project					
				AM Peak Hour		PM Peak Hour		Saturday		AM Peak Hour		PM Peak Hour		Saturday	
				Vol.	LOS	Vol.	LOS	Vol.	LOS	Vol.	LOS	Vol.	LOS	Vol.	LOS
1	S. Bonnyview Rd between SR 273 & Churn Creek Rd	Divided Arterial	D	16	E	15.4	E	19.1	D	14.8	E	12.5	F	17.2	D
2	Churn Creek Rd between S. Bonnyview Rd & Victor Ave	Undivided Arterial	D	706	F	746	F	496	C	738	F	781	F	548	D
3	Rancho Rd between Churn Creek Rd & Airport Rd	Undivided Arterial	C	451	B	415	B	305	A	472	C	434	B	337	A
4	Bechelli Ln between S. Bonnyview Rd & Chinook Dr.	Undivided Arterial	C	591	D	508	C	363	A	492	C	689	F	487	C
5	Bechelli Ln between Chinook Dr & 3rd St	Divided Arterial	C	549	B	761	E	395	A	566	C	781	E	433	A
6	Churn Creek Rd between S. Bonnyview Rd & Hartnell Ave	Divided Arterial	C	406	A	433	A	288	A	415	A	442	A	304	A
7	Churn Creek Rd between Rancho Rd & Knighton Rd	Collector	C	215	A	250	A	200	A	218	A	253	A	205	A

Note: **Bold** = Unacceptable Conditions
Source: [Appendices 4.12-2 and 4.12-3](#)

With Project

Table 4.12-10 shows that the increase in Project traffic will worsen the level of service at the roadway segments shown in the Year 2040 no-project condition. The addition of Project traffic does not exceed the adopted threshold of 5 percent reduction in arterial speed, or 5 percent increase in volume over capacity for roadway segments #2 Churn Creek Road between South Bonnyview Road and Rancho Road and #5 Bechelli Lane between Chinook Drive and 3rd Street. The change in volume for roadway segment #2 is 4.5 and 4.7 percent for the AM and PM peak hour respectively. The change in volume for roadway segment #5 is 3.1 and 2.6 percent for the AM and PM peak hour respectively. Therefore, Project impacts to these roadway segments are considered less than significant. The remaining roadway segments are discussed below.

South Bonnyview Road from SR 273 to Churn Creek Road

Roadway segment #1 South Bonnyview Road from State Route 273 to Churn Creek Road is projected to operate at LOS E and LOS F in the weekday AM and PM peak hours respectively. The proposed Project creates a significant impact by causing the average arterial speed to decrease by more than 5 percent on a roadway projected to operate unacceptably in the Year 2040 no-project condition. These impacts are related to intersection operations along the road corridor, not the roadway design itself. Implementation of Mitigation Measure TRANS-1.1, TRANS-1.2 and TRANS-1.3 would modify intersections #5, #7, and #8 resulting in the following general improvements: Construction of #5-South Bonnyview

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~~Road/Bechelli Lane to create~~ a multi-lane roundabout at the Bechelli Lane/South Bonnyview Road intersection; #7 adding an additional eastbound turn lane on the South Bonnyview Road overcrossing to the northbound freeway onramp and providing additional lanes on the southbound offramp; and adding an additional lane on the northbound offramp, respectively respectively. South Bonnyview Road/I-5 Southbound Ramps and #8 South Bonnyview/I-5 Northbound Ramps, to increase turning lanes and adding to the vehicle queue lengths, to provide acceptable roadway operations. The fair share calculation for Mitigation Measure TRANS-7.1 is 31-40 percent, therefore, the City's guidelines suggest that these improvements must be completed prior to occupancy. The fair share calculation for the improvements at intersection #8 is 18-33 percent. , which means that payment of the Development Impact Fee would result in full mitigation of Project impact. In addition, However, because the Project's fair share of impact for roadway segment #1 is 41-43 percent, all of the improvements in Mitigation Measures TRANS-7.1 and TRANS-7.2 must be completed prior to occupancy As shown in Table 4.12-10.5, implementation of the mitigation measure would increase operations from LOS F to LOS D, however, complete funding has yet to be established.

Significance With Mitigation: Significant and unavoidable.

Churn Creek Road from South Bonnyview Road to Victor Avenue

Roadway Segment #2 is projected to operate at unacceptable levels in the 2040 No Project condition as shown in Table 4.12-10. In addition to the improvements required by Mitigation Measure TRANS-1.4, Mitigation Measure 7.4 adds construction of a roundabout either the Huntington Drive or Victor Avenue/El Verano Drive intersections. The City of Redding is in the process of designing the improvements however it is uncertain whether they will be completed prior to 2040. In addition, some of the improvements are outside of the City of Redding jurisdiction therefore this impact is considered significant and unavoidable. As the proportionate share of the roadway improvements is 16 percent, payment of the DIF is considered full mitigation by the City of Redding.

Mitigation Measure TRANS-7.4: Prior to occupancy, in addition to the requirements of Mitigation Measure TRANS -1.4, the Project developer shall complete the following for roadway segment #2 Churn Creek Road between South Bonnyview Road and Victor Avenue:

- Construct a TWLTL, from approximately the bridge over Churn Creek to intersections #13 and #14, with a single-lane roundabout at the Huntington Drive Intersection; or
- Construct a TWLTL, from approximately the bridge over Churn Creek to Intersections #13 and #14, however, eliminate left-turns at Huntington Drive, close gap in Huntington Drive, and construct a compact roundabout at the Victor Avenue/El Verano Drive Intersection; or
- Construct a five-lane roadway.

Significance With Mitigation: Significant and unavoidable.

Implementation of Mitigation Measure TRANS-7.4 would improve impacts from the proposed Project on this roadway segment from LOS F to LOS C.

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Bechelli Lane from South Bonnyview Road to Chinook Drive

The proposed Project creates a significant impact by causing roadway segment #4 Bechelli Lane from South Bonnyview Road to Chinook Drive ~~the no-project condition LOS C to deteriorate from LOS D~~ in the Year 2040 Rancheria plus Project condition to ~~with project condition to~~ LOS F during the PM peak hour. The construction of a two-way left-turn lane on Bechelli Lane from Chinook Drive to Northern Driveway would result in an acceptable LOS C ~~B~~ for this roadway segment. ~~The Project's fair share of the impact to this roadway segment is 41-42 percent which means that Mitigation Measure TRANS-7.5 must be completed prior to occupancy.~~

Mitigation Measure TRANS-7.5: Prior to occupancy, the Project developer shall complete the following improvements on roadway segment #4 Bechelli Lane from South Bonnyview Road to Chinook Drive:

- Provide a two-way left-turn lane on Bechelli Lane from Chinook Drive to Northern Driveway.

Significance With Mitigation: ~~Significant and unavoidable~~ Less than significant.

As shown in Table 4.12-10.5, Implementation of Mitigation Measure TRANS-7.5 would improve impacts from the proposed Project on ~~this~~ roadway segment #4 from LOS ~~F~~ D to LOS C ~~B~~.

TABLE 4.12-10.5 YEAR 2040 WITH RANCHERIA PLUS PROJECT ROADWAY SEGMENT MITIGATION LOS

#	Roadway Segment	Capacity Configuration	Target LOS	AM Peak Hour				PM Peak Hour			
				Un-Mitigated		Mitigated		Un-Mitigated		Mitigated	
				ATS ² /Volume ³	LOS	ATS ² /Volume ³	LOS	ATS ² /Volume ³	LOS	ATS ² /Volume ³	LOS
1	S. Bonnyview Rd between SR 273 & Churn Creek Rd	Divided Arterial	D	14.8	E	19.1	D	12.5	F	17.0	D
4	Bechelli Ln between S. Bonnyview Rd & Chinook Dr	Divided Arterial	C	-	-	-	-	689	D	511	B

Notes:

1. Roadway Type as designated by Table 4.5 E of the City of Redding TIA Guidelines

2. ATS= Arterial Travel Speed. ATS is indicated only for the S. Bonnyview Road corridor between SR 273 & Churn Creek Rd.

3. Volume indicates Maximum Peak Hour Volume Per Lane.

Freeway Mainline Year 2040

No Project

In Table 4.12-11 the Year 2040 I-5 ramp and mainline freeway operations shows the following four freeway segments that are projected to operate at unacceptable levels during the no-project condition:

- #6 Knighton Road to South Bonnyview Road Northbound – Mainline (four-lane section)
- #7 Knighton Road On Ramp Northbound – Merge
- #8 Knighton Road Off Ramp Southbound – Diverge
- #9 South Bonnyview Road to Knighton Road Southbound – Mainline (four-lane section)

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These roadway segments are anticipated to operate at unacceptable levels in the Year 2040 condition regardless of whether the proposed Project is constructed.

With Project

Table 4.12-11 shows that the increase in Project traffic will worsen the level of service at the same four freeway *Knighton Road Interchange and Mainline* segments *(Interchanges #6, #7, #8, and #9)* shown in the Year 2040 *with Rancheria and with Rancheria and Project* ~~no-project~~ condition. ~~The addition of Project traffic does not exceed the threshold of 5 percent increase in density for any of the segments. Therefore, Project impacts to these roadway segments are considered less than significant.~~ *At the time of writing of this Draft EIR, Caltrans and the Shasta Regional Transportation Agency (SRTA) have programmed these improvements, and construction is underway. Caltrans estimates that the improvements will be completed by 2021, which is ahead of the projected 2040 impact shown in Table 4.12-11. As shown in Table 4.12-11.5, the improvements will result in an acceptable LOS therefore this impact is considered less than significant.*

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TABLE 4.12-11 YEAR 2040 MERGE DIVERGE RANCHERIA ~~NO~~ WITHOUT PROJECT AND WITH PROJECT AND RANCHERIA

				<div>With Rancheria Without- Project</div>								With Project and Rancheria Casino								% Change			
				AM			PM			Saturday		AM			PM								
#	Interchange Location	Segment Type	# Lanes	Vol.	Density	LOS	Vol.	Density	LOS	Density	LOS	Vol.	Density	LOS	Vol.	Density	LOS	AM	PM	Saturday			
1	Cypress Ave Off-Ramp NB	Diverge	1	969	28	C	742	23.2	C	25.2	C	979	28.4	D	755	23.8	C	1.43%	1.75%	26.2	C		
2	Bonnyview Rd to Cypress Ave NB	Mainline	3	3,912	23.2	C	3,128	18.5	C	21.7	C	3,996	23.7	C	3,232	19.1	C	2.16%	3.32%	22.7	C		
3	S Bonnyview Rd On-Ramp NB	Merge	1	1,082	26.1	C	1,136	21.4	C	23.8	C	1,168	26.8	C	1,311	22.4	C	2.68%	15.40%	25.2	C		
4	S Bonnyview Rd Off-Ramp NB	Diverge	1	1,017	26	C	839	19.9	B	22.7	D	1,088	26.6	C	970	20.6	C	2.31%	15.61%	23.7	C		
5	Knighton Rd to Bonnyview Rd NB	Mainline	3	3,847	22.8	C	2,831	16.7	B	20.1	D	3,916	23.2	C	2,891	17.1	B	1.75%	2.12%	20.7	C		
6	Knighton Rd to Bonnyview Rd NB	Mainline	2	3,847	39.9	E	2,831	25.4	C	32.3	E	3,916	41.3	E	2,891	26	D	3.51%	2.12%	33.8	D		
7	Knighton Rd On-Ramp NB	Merge	1	271	37.1	E	328	27.8	C	32.8	E	277	37.7	E	334	28.4	D	1.62%	1.83%	33.8	D		
8	Knighton Rd Off-Ramp SB	Diverge	1	228	22.9	C	384	39.6	E	36.4	C	233	23.5	C	390	40.4	E	2.62%	1.56%	37.6	E		
9	S Bonnyview Rd to Knighton Rd SB	Mainline	2	2,261	20	C	3,947	42	E	35.9	C	2,317	20.5	C	4,024	43.7	E	2.50%	1.95%	37.9	E		
10	S Bonnyview Rd to Knighton Rd SB	Mainline	3	2,261	13.4	B	3,947	23.4	C	21.4	C	2,317	13.7	B	4,024	23.9	C	2.24%	1.95%	22.1	C		
11	S Bonnyview Rd On-Ramp SB	Diverge	1	648	17.5	B	1,030	26.8	C	23.8	C	705	18	B	1,195	27.7	C	2.86%	16.02%	24.9	C		
12	S Bonnyview Rd Off-Ramp SB	Mainline	1	1,108	20.6	C	1,057	26.9	C	25.8	C	1,212	21.5	C	1,244	27.8	C	4.37%	17.69%	27.2	C		
13	Cypress Ave to S Bonnyview Rd SB	Mainline	3	2,721	16.1	B	3,974	23.6	C	22.9	C	2,824	16.7	B	4,073	24.2	C	3.73%	2.49%	24.0	C		
14	Cypress Ave On-Ramp SB	Merge	1	440	17.9	B	1,019	25.6	C	23.7	C	449	18.4	C	1,028	26.1	C	2.79%	0.88%	24.6	C		

Notes: Capacity of Upstream/Downstream Freeway segment is 7,200 pc/h or 2,400 pc/hr/ln.

Bold = Unacceptable Conditions

LOS D is the target for all Merge Diverge Study Interchanges

TRANSPORTATION AND TRAFFIC

TABLE 4.12-11.5 YEAR 2040 WITH RANCHERIA PLUS PROJECT FREEWAY MAINLINE AND RAMPS MITIGATION LOS

#	Interchange Location	Target LOS	Segment Type	No. of Lanes Un-Mitigated	No. of Lanes Mitigated	Saturday Peak Hour					
						Un-Mitigated			Mitigated		
						Density Volume (pc/mi/ln) LOS			Density Volume (pc/mi/ln) LOS		
Interstate 5 (I-5)											
9	S. Bonnyview Rd to Knighton Rd SB	D	Mainline	2	3	3,740	37.9	E	3,740	22.1	C

Notes:

Capacity of Upstream/Downstream Freeway segment is 7,200 pc/h or 2,400 pc/hr/ln

6. CEQA-Mandated Assessment

Section 15126(b) of the California Environmental Quality Act (CEQA) Guidelines requires an Environmental Impact Report (EIR) to describe any significant impacts of the proposed Project, including those which can be mitigated but not reduced to a level of insignificance. Significant impacts of a proposed Project that cannot be reduced to a less than significant level are referred to as *significant and unavoidable impacts*. This chapter provides an overview of the significant and unavoidable impacts of the proposed Project, as well as impacts found not to be significant, growth inducement, significant and unavoidable impacts, and significant irreversible changes.

A more detailed analysis of the effects the proposed Project would have on the environment, and proposed mitigation measures to minimize significant environmental impacts, are provided in Sections 4.1 through 4.15 of this EIR.

6.1 ENVIRONMENTAL TOPICS FOUND TO HAVE NO IMPACT

The following impacts were either determined by the City to have no impact and not discussed in the EIR, or evaluated in the EIR with a conclusion of no impact:

6.1.1 AGRICULTURAL RESOURCES

The Project site is neither designated nor used for agricultural purposes by the City of Redding. The State of California Department of Conservation, Farmland Mapping and Monitoring Program (FMMP) designates the site as other, which is not considered farmland.

6.1.2 HAZARDS

Section 4.7, *Hazards and Hazardous Materials*, of this EIR evaluates hazards associated with the proposed Project, the thresholds 3, 5, and 6 were determined to have no impact.

3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25-mile of an existing or proposed school.
5. Be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the Specific Plan Area.
6. Be within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the Specific Plan Area.

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The Project site is not within 0.25-mile of an existing or proposed school, and not within the airport land use plan of any airport.

6.1.3 HYDROLOGY

Section 4.8, *Hydrology and Water Quality*, of this EIR evaluates hazards associated with the proposed Project, the thresholds 7 to 10 were determined to have no impact.

7. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
8. Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
9. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
10. Be subject to inundation by seiche, tsunami, or mudflow.

The National Flood Insurance Program, Flood Insurance Rate Map (FIRM) Map Number 06089C1561G shows that the Project site is outside of any flood zone. The map also shows that there are no flood waters that flow through the site that could be impeded or redirected by development. Figures 4-5 and 4-6 of the Health and Safety Element of the City of Redding General Plan shows that the Project site is outside of the dam inundation area for Shasta and Whiskeytown Dams respectively. There are no bluffs or geologic features on or near the Project site that could result in mudflow, and the site is too far from any body of water or ocean to be subject to inundation by seiche or tsunami.

6.1.4 NOISE

Section 4.10, *Noise*, of this EIR evaluates hazards associated with the proposed Project, the thresholds 5 and 6 were determined to have no impact.

5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.
6. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

There are two airports near the proposed Project site: Benton Airpark, approximately 3 miles north and west of the Project site, and Redding Municipal Airport, approximately 3 miles south and east of the Project site. Figures 5-2 and 5-3 of the City of Redding General Plan Noise Element show that the Project site is outside of the projected 60 dB CNEL noise contours of both airports.

6.1.5 URBAN BLIGHT

Section 15064(e) of the CEQA Guidelines limits the consideration of economic impacts of a project to those that would cause a physical impact on the environment. The proposed Project will construct new commercial buildings, one of which will result in the relocation of an existing Costco from 1300 Dana

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Drive, leaving a temporarily vacant building. A physical impact to the environment could occur if maintenance on the vacant building was stopped allowing landscaping to deteriorate, waste and debris to accumulate, and the building to fall into disrepair. Redding Municipal Code Chapter 9.09 requires that a property owner maintain a building to prevent public safety hazards and minimize the appearance of vacancy. The ordinance also requires landscaping to be maintained and waste to be removed from the property. City of Redding Code Enforcement Officers work with the Redding Police Department, Planning, Building, and Public Works Departments and other local agencies to address violations of the Redding Municipal, Zoning.

Table 6-1 presents market demand information by use, who have expressed interest in the Dana Drive building once Costco has relocated.¹ While it is uncertain if any of the uses in Table 6-1 would locate in the Dana Drive building, the table shows that there is substantial economic interest in the building and therefore an economic incentive for the owner to maintain the building, and the property, for future tenants.

Because of the existing commercial demand for the Dana Drive property, and the City's regulatory requirement for property maintenance of vacant buildings, there is no physical impact to the environment resulting from the economic effects of the proposed Project.

6.1.6 PUBLIC SERVICES

The proposed Project would include development of 220,000 square feet of commercial building and restaurants replacing the existing Costco store in Redding that would be used by other commercial retailer(s). As the proposed Project does not the potential for new homes, there is no impact to schools or recreational facilities. The Project is required to pay school impact fees adopted by Shasta Union High School District.

Much of the Project-generated operational employment would be transferred from the existing Costco store to be closed such that the Project as a whole would not constitute a discernible net increase in employment in Redding that would require additional housing to be constructed. The unemployment rate in Shasta County in January 2018 was 5.6 percent.² Therefore, it is assumed the employment need for Costco, and the non-Costco

TABLE 6-1 COMMERCIAL USE DEMAND FOR DANA DRIVE PROPERTY

Tenant or Use	Size (Acres or SF)
Furniture	16,000 SF
Organic Grocery	30,000 SF
Traditional Grocery	30,000 SF
Liquidation/ Discount	35,000 SF
Liquor (wholesale/retail)	20,000 SF
Restaurant (fast food)	5,000 SF
Fashion	18,000 SF
Fashion	20,000 SF
Restaurant (full service)	6,000 SF
Restaurant (full service)	3,500 SF
Restaurant (QSR)	4,300 SF
Restaurant (fast food)	2,000 SF
Car Wash	1 acre
Restaurant (full service)	7,500 SF
Optical/Eyewear	3,500 SF
Salon	1,000 SF
Mobile Phone	3,500 SF
Mobile Phone	3,500 SF

Ken Miller, SIOR, ICSC, Northstate Commercial Partners, Sept. 2017

¹ Specific tenant names have been withheld as the terms of leases have not been fully negotiated.

² State of California Employment Development Department, [http://www.labormarketinfo.edd.ca.gov/file/lfmonth/redd\\$pds.pdf](http://www.labormarketinfo.edd.ca.gov/file/lfmonth/redd$pds.pdf), accessed March 7, 2018.

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related commercial would be absorbed from the regional labor force rather than attracting new workers into the region.

Demands for parks are generated by the population within the parks' service areas. Project development would not add population to the site and thus would not directly increase demand for parks. The proposed Project does not affect any existing or planned park site. Project development would not have a substantial indirect impact on population growth in the City of Redding due to employment generation.

6.2 SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

Sections 4.1 through 4.15 of Chapter 4, *Environmental Evaluation*, of this EIR evaluate the significant effects of the proposed Project and provide mitigation for impacts that can be reduced to a less than significant level. Each chapter discusses the significant impact and provides a corresponding mitigation measure. The mitigation measures are summarized in Chapter 2, *Executive Summary*, of this EIR.

6.3 SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

Pursuant to Section 15126.2(b) of the CEQA Guidelines, this EIR considers the significant environmental effects that cannot be avoided if the proposed Project is implemented. Impacts of the Project can be reduced to less than significant except for:

~~Compliance with 2015 Air Quality Attainment Plan~~

~~The proposed Project would conflict with implementation of the 2015 Air Quality Attainment Plan by resulting in an increase of ozone precursor emissions. As discussed in the Chapter 4.1, Air Quality, of this EIR, in Impact AQ-1 and AQ-3, the majority of Project emissions would be generated by mobile sources, which cannot be regulated by the City. While there are no feasible mitigations that would reduce vehicle trips, as discussed in Impact AQ-3, the Project will install electric vehicle supply equipment in accordance with California Building Code which will allow charging stations to be supplied based on demand. Charging stations could lead to less use of gasoline-burning automobiles and thus, less air pollutant emissions. However, in a retail environment where customers typically spend less than an hour in the store, the vehicle is not there long enough for a meaningful charge and charging stations often go unused.~~

Churn Creek Road/Victor Avenue and Churn Creek Road/Rancho Road

Intersections #13 Churn Creek Road/Victor Avenue and #14 Churn Creek Road/Rancho Road would meet the warrant for signals by Year 2020. The City has programmed a roundabout that would encompass both intersections as part of the City of Redding Development Impact Fee program. Mitigation Measure TRANS-1.4 would make improvements to intersection #11 Churn Creek/Hartmeyer Lane and #12 Churn Creek Road/Huntington Drive and also includes the roundabout that will include intersections #13 Churn

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Creek/Victor and #14 Churn Creek/Rancho Road. Installation of signal improvements would not be a prudent as the design and the right-of-way acquisition process is underway for the roundabout, however it is not anticipated to be completed until approximately on year after opening of the Project. ~~after 2021.~~ As there is no certainty that the improvements will be in place prior to ~~2020, the assumed date of the first phase of~~ Project opening, and installation of interim improvements is considered unnecessary, this impact is considered significant and unavoidable.

South Bonnyview Road/I-5 Southbound Ramps

Improvements for intersection #7 South Bonnyview Road/I-5 Southbound Ramps would include those required by Mitigation Measure TRANS-1.2, except modified to increase the length of the southbound right-turn lanes from 175 feet to 400 feet. Implementation of Mitigation Measure TRANS-7.1 would result in LOS D, with construction of a diverging diamond interchange resulting in LOS C. However, even though these improvements are consistent with approved plans for the year 2040 configuration of the interchange, these improvements have yet to be programmed into the City's 5-year Capital Improvement Program. Because the City cannot be certain that the improvements for which fees are paid will be operational by the year 2040, this impact is considered significant and unavoidable.

South Bonnyview Road/I-5 Northbound Ramps

Similar to the southbound improvements, the with-project condition will require additional room for vehicle queuing in the form of left- and right-turn lanes at intersection #8. Mitigation Measure TRANS-7.2 would provide for additional queuing necessary to address the projected impact resulting in LOS C. LOS C-B would result from construction of a diverging diamond interchange. However, even though these improvements are consistent with approved plans for the year 2040 configuration of the interchange, these improvements have yet to be programmed into the City's 5-year Capital Improvement Program. Because the City cannot be certain that the improvements for which fees are paid will be operational by the year 2040, this impact is considered significant and unavoidable.

Churn Creek/Hartmeyer Lane

Project impacts to intersection #11 Churn Creek/Hartmeyer Lane and #12 Churn Creek Road/Huntington Drive would be addressed through the improvements included in Mitigation Measure 4.12-4 requires that the Project pay its proportionate share of the cost to mitigate impacts to the City who will give the funds to Shasta County. There is no certainty that the County will make improvements at this intersection by 2020, therefore this impact is significant and unavoidable.

6.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED PROJECT SHOULD IT BE IMPLEMENTED

The CEQA Guidelines require that an EIR describe any significant irreversible environmental changes that would be caused by the proposed Project if it is implemented. Specifically, Section 15126.2(c) of the CEQA Guidelines states:

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Uses of nonrenewable resources during the initial and continued phases of the Project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highways improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the Project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The following significant irreversible changes would be caused by implementation of the proposed Project:

- Construction of the proposed improvements would require the commitment of nonrenewable and/or slowly renewable energy resources, including gasoline, diesel fuel, electricity, as discussed in Section 4.15, *Energy Consumption*, of this EIR. The proposed Project will use traditional construction methods and materials that will result in the use of natural resources such as lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metals, and water.
- Operation of the proposed Project would require the use of natural gas and electricity, petroleum-based fuels, fossil fuels, and water as discussed in Section 4.15, *Energy Consumption*, of this EIR.
- Operation of the proposed Project will also increase demand for public services. (e.g., police, fire, road, sewer, and water maintenance services) as discussed in Section 4.11, *Public Services*, of this EIR.

The commitment of resources required for the reconstruction and permanent operation of the site as a commercial center would limit the availability of resources for future generations or for other uses during the life of the Project.

6.5 GROWTH-INDUCING IMPACT OF THE PROPOSED PROJECT

Pursuant to Sections 15126(d) and 15126.2(d) of the CEQA Guidelines, this section is provided to examine 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. Also required is an assessment of related projects (see Table 3-2 in Chapter 3, *Project Description*, of this EIR) that would foster activities which could affect the environment, individually or cumulatively. To address this issue, potential growth-inducing effects will be examined through analysis of four questions:

- Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?
- Would this project result in the need to expand one or more public services to maintain desired levels of service?
- Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

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- Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Please note that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. This issue is presented to provide additional information on ways in which this Project could contribute to significant changes in the environment, beyond the direct consequences of developing the land use concept examined in the preceding sections of this EIR.

Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?

The proposed Project would construct a commercial center limited to the Project site shown in Figure 3-7 of this EIR. Mitigation measures associated with traffic impacts would require improvements outside of the Project boundaries. These improvements would modify the affected roadways and intersections to accommodate traffic associated with the Project. Some of the modifications would benefit future growth in the region, however the roadways and intersections exist today and the modifications can be considered an incremental enlargement to the existing road network rather than the removal of an obstacle to growth. As discussed in Section 4.14, *Utilities and Service Systems*, of this EIR, there are adequate electricity, natural gas, water, stormwater, and sewer services for the Project therefore there is no need for extension of major infrastructure.

Would this project result in the need to expand one or more public services to maintain desired levels of service?

Impacts to Public services are discussed in Section 4.11, *Public Services and Recreation*, of this EIR. The Project site is within existing public service boundaries, and no new buildings or other physical improvements will be needed to maintain the desired levels of service.

Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

Construction of the proposed improvements would generate short-term employment, which would be absorbed from the regional labor force and would not attract new workers to the region. Occupancy of the Project would result in the existing Costco relocated from the current location at 1600 Dana Drive. New businesses and restaurants would locate on the site. Given the unemployment rate of 5.6 percent, additional employment opportunities afforded by the Project could be absorbed without provision of additional housing in the community that could potentially have an adverse environmental impact.³ The environmental impacts of full occupancy of the proposed Project are evaluated throughout this EIR, and in particular in Sections 4.1 through 4.15. Mitigation measures proposed in this EIR address the entirety of the Project as described in Chapter 3, *Project Description*.

³ State of California Employment Development Department, [http://www.labormarketinfo.edd.ca.gov/file/lfmonth/redd\\$pds.pdf](http://www.labormarketinfo.edd.ca.gov/file/lfmonth/redd$pds.pdf), accessed March 7, 2018.

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Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

While the proposed Project includes a General Plan amendment and zone change, as shown in Figures 3-6 and 3-7 in Chapter 3, *Project Description*, of this EIR, the site has been designated for commercial development since adoption of the 2000-2020 General Plan. The Project site is surrounded by existing commercial and residential development, and the requested change is consistent with the existing commercial land use pattern established at the intersection of South Bonnyview Road and Bechelli Lane.

6.6 THE MITIGATION MEASURES PROPOSED TO MINIMIZE THE SIGNIFICANT EFFECTS

Mitigation measures linked to significant impacts are discussed in Sections 4.1 through 4.15 of this EIR. The mitigation measures are also summarized in Table 2-1 of Chapter 2, *Executive Summary*.

6.7 ALTERNATIVES TO THE PROPOSED PROJECT

Alternatives to the proposed Project are discussed in Chapter 5, *Alternatives*, of this EIR.

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