

SECTION FOUR

ERRATA

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This section contains the corrections that have been made to the Draft EIR (DEIR) and Partially Recirculated Draft EIR (PRDEIR) based on comments received on both documents and updated information that has become available. The corrections on the following pages are formatted as follows: deletions to the text are shown in ~~striethrough~~ text and additions to the text are underlined.

CHAPTER TWO

PROJECT DESCRIPTION

2.1 Project Location

The project is located on the northeast corner of the intersection of Knighton Road and Interstate 5 (I-5), between Knighton Road, I-5 and Churn Creek Road. The project site is approximately five miles north of the City of Anderson and 6 miles south of the City of Redding in Shasta County (see [Figure 2-1](#) and [Figure 2-2](#)).

2.2 Proposed Action

The proposed actions required of the County of Shasta, for which this Environmental Impact Report (EIR) has been prepared, include the following:

1. A general plan amendment (GPA08-002) that would change the land use designation of an 86 acre portion of the 92 acre proposed project site from Part-Time Agricultural (A-cg) to Commercial (C).
2. A zone amendment (~~ZA08-003~~)(Z08-003) to the Shasta County Zoning Plan for the ~~same 86 acre portion~~ 92-acre project site from Limited Agriculture (A-1) and Planned Development (PD) to Planned Development (PD) incorporating a comprehensive development plan for the site. The project is also within the Restrictive Flood (F-2) combining district, which will not change with the proposed zone amendment.

2.3 Project Description

The project applicant has proposed to develop and operate a ~~commercial~~ regional retail, dining, entertainment and lodging center on approximately 92 acres in Shasta County, located at the northeast corner of the Knighton Road and the Interstate Highway 5 interchange, which includes approximately eighteen (18) acres of "Transition" area on the northerly portion of the proposed project site. When completed the project would include approximately 740,000 square feet of mixed commercial development (which may include retail shops, restaurants, lodging, food supplies, recreation activities and equipment, traveler services including gasoline fueling facilities and entertainment-related facilities) to be phased in accordance with market conditions and required improvement thresholds. There will be approximately 3,400 parking spaces, which will include the appropriate number of accessible parking spaces as required by the Americans with Disabilities Act. The northernmost 18 acres of the project site would serve as an open space Transition buffer between the proposed commercial development and existing low-density residential uses to the north, and would contain the wastewater treatment facilities, and potentially a portion of the water supply system, needed to serve the project (see [Figure 2-3](#)).

The proposed project site is bordered by I-5 to the west, Churn Creek Road to the east, and Knighton Road to the south. The proposed project, as envisioned, has primary access off Knighton Road and secondary access points off Churn Creek Road (see [Figure 2-3](#)). Proposed

transportation improvements to accommodate the volume of traffic anticipated at proposed project completion, including increases in background traffic from other sources, include: (1) reconfiguration of the Knighton Road interchange, with traffic signals at each ramp; (2) widening Knighton Road between Riverland Drive and Churn Creek Road; (3) widening Churn Creek Road between Knighton Road and the final access point to the proposed project; and (4) modification of signalization as required for safety along the access routes.

The water supply system for the proposed project would consist of a 300-gallon per minute (GPM) on-site well and water storage tanks of sufficient capacity to handle excess demands from the proposed project. The waste water system for the proposed project would consist of an on-site sewage treatment and disposal system comprised of gravity sewer mains, a central pump station, and a Membrane Bioreactor (MBR) treatment plant.

Native cold- and drought-resistant plant landscaping, and other low maintenance landscape materials would be used within the proposed project to promote energy efficiency, water conservation, aesthetic appeal and visual buffering. The landscaped areas would meet or exceed Shasta County landscape requirements. Interior parking areas would also use plant materials and trees to provide appropriate shade and landscaping. Irrigation would be provided by the on-site water supply system. Signage and exterior lighting would comply with the appropriate sections of the Shasta County Code.

PROJECT SITE CHARACTERISTICS

Land uses within the 92-acre proposed project site are varied (see [Figure 2-4](#)). The portion of the site between the north-south running irrigation ditch and Churn Creek Road is occupied by two large fallow fields, an operating wholesale nursery (Gold Leaf Nursery), and a former homesite. The area between the north-south running irrigation ditch and I-5, and south of the southern terminus of Thistle Lane, is occupied by an inactive Christmas tree farm.

SURROUNDING AREA CHARACTERISTICS

Surrounding land uses include I-5 to the west, the Travel ~~Associates~~ Centers of America, LLC truck stop to the south, a partially developed rural residential neighborhood to the east, and a rural residential neighborhood to the north. Pacheco Elementary School is located southeast of the project site at the southeast corner of Knighton Road and Churn Creek Road. Agricultural land uses and rural residential dwellings are located to the west of I-5.

2.4 Project Goals and Objectives

Objectives of the project, as identified by the project proponent, include the following:

- provide the public with regional shopping opportunities, including retail, dining, entertainment and lodging components.
- provide a regional shopping experience that is of a quality consistent with the culture of Shasta County.

- provide a regional “one-stop” destination whereby commerce is intertwined with transportation in Shasta County by utilizing the existing transportation services in the I-5 corridor, and encourage alternative forms of transportation, thereby reducing carbon emissions;
- construct buildings and improvements in the development that exceed state energy efficiency standards;
- attract regional retail customers currently using the I-5 corridor to commute through Shasta County that are currently not stopping and shopping in the County;
- develop a regional shopping destination that promotes Shasta County’s economic stability and diversity by expanding and providing a stable, long-term revenue base to Shasta County.
- develop a regional shopping center development of sufficient size that it will attract new retailers into the Shasta County market and address such retailer’s location, visibility, co-tenancy and traffic requirements and ensure long-term viability.
- provide new job opportunities for Shasta County;
- develop a regional commercial shopping development that provides a feasible economic return to its investors and Shasta County.

2.5 Subsequent Permits, Approvals, Review and Consultation Requirements

The EIR will be used to satisfy the requirements of CEQA with regards to the proposed project. The County of Shasta, acting as Lead Agency, will oversee the preparation and adoption of the EIR, and will be responsible for its availability and use by the public and other interested agencies and parties. [Table 2-1](#) includes information required by Section 15124 of the CEQA Guidelines summarizing the following intended uses of the EIR:

- A list of agencies that are expected to use the EIR in their decision-making.
- A list of permits and other approvals required to implement the project.
- A list of related environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies.

**Table 2-1
Subsequent Permits, Approvals, Review and Consultation Requirements**

Agency	Use/Action
Shasta County Department of Resource Management, Planning Division	General Plan Amendment Zoning Amendment Tentative Parcel or Subdivision Maps (Future)

Agency	Use/Action
Shasta County Department of Resource Management, Building Division	Building Permits/Elevation Certificates (F-2 Restrictive Flood District)
Shasta County Public Works Department	Encroachment Permit
Shasta County Department of Resource Management, Environmental Health Division	Small Community Water System Permit Grading Permit Sewage Disposal System Permit
California Regional Water Quality Control Board (Central Valley Region)	Approval of Notice of Intent under General Waste Discharge Order and Approval of a Stormwater Pollution Prevention (construction) Permit Section 401 Permit <u>Approval of MS4 General Permit (General Permit and the Small Municipal Separate Storm Sewer Systems Permit)</u> <u>Approval of Waste Discharge Requirements (WDRs) or a Conditional Waiver of WDRs</u>
Shasta County Air Quality Management District	Approval of air quality mitigation measures; consistency with Attainment Plans
Caltrans	Consultation Improvement permits for interchange
U.S. Army Corps of Engineers/California Department of Fish and Game	Wetlands Delineation approval/certification Section 404 Permit
California Department of Fish and Game	Streambed Alteration Agreement

Source: Quad Knopf, Inc. 2009.

**Table 3.1-3
General Plan Consistency – Aesthetics**

Policy No.	Finding	Discussion
SH-a	Consistent	The project site is not located within the vicinity of an officially designated scenic highway, nor has the County identified it as a “gateway” per Policy SH-a.
SH-b	Consistent	Project signage will be regulated as specified in the Planned Development Ordinance adopted for this project site, comply with current Shasta County Zoning Plan Section 17.84.060 through 17.84.065.

Shasta County Zoning Ordinance

The guidelines regarding lot size, structure height, lighting, landscaping, parking, walls, outdoor trash storage, and design guidelines are delineated in Section 3.9, Land Use of this DEIR.

3.1.2 THRESHOLDS OF SIGNIFICANCE

Impacts to aesthetic and visual resources will be assessed based on the following thresholds of significance. The project is considered to have a significant impact on the environment if it will:

- Have a substantial, adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings;
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

3.1.3 IMPACTS AND MITIGATION MEASURES

Impact #3.1-1: *Have a substantial adverse effect on a scenic vista or substantially degrade the existing visual character or quality of the site and its surroundings.*

Discussion/Conclusion: State and County governments designate scenic vistas; however, there are no designated scenic vistas in the vicinity of the project site. The General Plan does not designate the project site as scenic or as an area having highly-valued scenic resources. Existing views of the project site and surrounding areas are depicted in Figure 3.1-2.

The proposed project will alter the rural character of the site to one dominated by commercial use, which would include a number of single-story retail structures. The existing site does not present unique natural elements or scenic qualities, and presently includes a nursery with associated buildings and a Christmas tree farm. The project site is located to the east of I-5 and north of a truck service/travel plaza.

The proposed site development is consistent with commercial structures south of the site; however, the project is not consistent with the majority of surrounding residential and other structures. The project design includes landscaping, open-space and landscape buffers that will reduce potential visual impacts. Due to the project site's visibility from I-5, Knighton Road and Churn Creek Road, development of the project will alter viewsheds from surrounding areas. This is considered a *potentially significant* impact

Implementation of the proposed project, which will include buildings up to 40 feet in height and portions of buildings, signs and architectural features that will exceed 40 feet, will limit the field of vision from the west towards the north, northeast, and east with viewsheds of the Cascade Mountain Range. Residents on the north, northeast, and east will have limited views of the Coastal Mountain Range.

To reduce visual impacts of the project site on surrounding land uses, the project proponent has proposed a landscaped setting that would provide a perimeter buffer, separation of interior spaces, visual interest and shading to reduce visual impacts at the boundary of the project site. However, the project design will not reduce visual impacts to less than significant.

Mitigation Measures

Implementation of the following mitigation measure will reduce visual impacts, but not to a less-than-significant level. Substantial alteration to the existing visual character of the project area will result in this impact being *significant and unavoidable*.

Mitigation Measure #3.1-1:

Project signs shall be constructed to a height of not more than ~~40 feet at the Knighton Road entrance and along Churn Creek Road~~ 45 feet along Interstate 5. Additional signs at the Knighton Road entrance and along Churn Creek Road shall be constructed to heights approved in the Planned Development ~~Zone~~ Ordinance. Sign lighting shall conform to the criteria in the Planned Development Ordinance for this project.

Impact #3.1-2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway.

Discussion/Conclusion: The proposed project is not located within a state designated scenic highway. There is *no impact*.

Mitigation Measures

No mitigation measures are required.

Impact #3.1-3: Creation of a new source of substantial light or glare which would adversely affect nighttime views in the area.

Discussion/Conclusion: The project will include installation and operation of outdoor lighting throughout parking areas and on building exteriors. Light production will occur from within the buildings through windows and glass doors which will be visible from adjacent areas. Project lighting has the potential to create light pollution in the vicinity of the project site, especially in the residential areas. Light pollution is a *potentially significant* impact from the operation of light sources associated with the project at night.

Shasta County Zoning Ordinance requirements (Section 17.84.050) pertaining to light and glare reduction to surrounding properties (lighting to be directed inward and downward on the developed property) will be applicable to the proposed project.

Mitigation Measures

In combination with County Zoning Ordinance Section 17.84.050 requirements designed to reduce light and glare impacts, the following mitigation measure will reduce impacts associated with light pollution to *less-than-significant*.

Mitigation Measure #3.1-3:

Outdoor lighting shall be controlled by timers, which will include shutting off on-site lighting, with the exception of security lighting located at on-site buildings. Security lighting shall account for no more than ~~20~~50 percent of total on-site exterior lighting (watts per square foot of outdoor area). All outdoor lighting shall be directed downward to prevent unwanted spill, and away from I-5, other public roadways, and all adjoining properties. Exterior lighting shall be limited to a maximum of 0.5 horizontal foot candles (HFC) at ~~a distance of 25 feet beyond the property lines~~, and shall use "cutoff" light fixtures.

Impact #3.1-4: Creation of a new source of glare.

Discussion/Conclusion: The proposed project will include buildings constructed to a height of 40 feet, potentially with portions of buildings and some architectural features that will exceed 40 feet. Light reflecting off surfaces during daylight hours has the potential to create a source of glare in the vicinity of the project site. On-site landscaping will help reduce glare from car windshields and other glass surfaces. However, depending on the building materials used, project structures will have the potential to create glare; therefore, this impact is considered *potentially significant*.

Mitigation Measures

Implementation of the following mitigation measure as well as Mitigation Measure #3.1-1 will reduce the impact to a *less-than-significant* level.

IMPORTANT FARMLANDS

The Farmland Mapping and Monitoring Program is a farmland classification system that is administered by the California Department of Conservation. The system classifies agricultural land by combining current land use information with U.S. Department of Agriculture-Natural Resources Conservation Service (NRCS) soil survey data according to its soil quality and irrigation status. The best quality agricultural land is called “Prime Farmland.” Prime Farmland is land that has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed according to current farming methods. The land must have been used for production of irrigated crops at least sometime during the two crop cycles prior to the mapping date.

The 2004-2006 Shasta County Soil Survey, which covers 1,021,213 acres of the county, indicates that 25,727 acres of the County are considered Important Farmland, 13,282 acres of which are considered Prime Farmland (California Department of Conservation, Division of Land Resource Protection). Between 2004 and 2006, the portion of the County included in the soil survey experienced a net loss of 202 acres of agricultural land to urban and built-up land, 67 of which were classified as Prime Farmland. The soil survey encompasses land within Shasta County’s incorporated cities as well as unincorporated areas.

As shown in Figure 3.2-2, ~~78.4~~ 67.2 acres of the project site are designated as Prime Farmland and 6.8 acres are designated as Unique Farmland. The remaining portion of the project site (~~7.5~~ 18 acres) is classified as Grazing Land, Other Land or Urban and Built Up Land. ~~Large~~ An areas (approximately 20 acres) of Prime Farmland ~~are is~~ located ~~to the northeast and southeast~~ of the site. Larger areas of Prime Farmland are located farther north and northeast of the site. Nearby lands to the east are classified as Other Land and lands to the south are classified as Urban and Built-Up.

WILLIAMSON ACT

As of 2007, there were approximately 187,184 acres in Shasta County under Williamson Act contracts. None of the parcels on the project site are currently under a Williamson Act contract. Additionally, no lands adjacent to the project site are currently under Williamson Act contracts (Figure 3.2-3).

LAND EVALUATION AND SITE ASSESSMENT MODEL (LESA)

The Land Evaluation and Site Assessment (LESA) model was released by the Natural Resources Conservation Service (NRCS) in 1981. It is designed to provide objective ratings of the agricultural suitability of land compared to demands for nonagricultural uses of land. The model is composed of two sets of factors. The first set, Land Evaluation (LE), includes factors that measure the inherent soil-based qualities of land as they relate to agricultural suitability. The second set, Site Assessment (SA), includes factors that are intended to measure social, economic, and geographic attributes that also contribute to the overall value of agricultural land. The final LESA score is based on a scale of 0 to 100 with each set of factors contributing up to 50 points. [Table 3.2-2](#) below shows the thresholds of significance established by the NRCS.

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use
- Conflict with existing zoning for agricultural use, or a Williamson Act contract
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use

3.2.3 IMPACTS AND MITIGATION MEASURES

Impact #3.2-1: Conversion and loss of Prime Farmland to a non-agricultural use.

Discussion/Conclusion: A large portion of the project site is designated as Prime Farmland or Unique Farmland. Implementation of the proposed project would therefore result in the conversion of approximately ~~67.2~~60.5 acres of Important Farmland (18 acres of the project site will remain viable for farming above the on-site waste water treatment plant subterranean leach field).

According to the County General Plan, there has been a significant loss of agricultural land in Shasta County since 1969.

As discussed above, a Land Evaluation and Site Assessment (LESA) model was prepared for the proposed project. The final score, 83.58, indicates that the conversion of the project site to a non-agricultural use is considered significant.

Because prime agricultural land is a non-renewable environmental resource, this impact is ***potentially significant, unavoidable, and irreversible.***

Mitigation Measures

Implementation of the following mitigation measure will reduce this impact; however, there are no mitigation measures that can reduce this impact to a level of less than significant. Therefore, this impact is ***significant, unavoidable, and irreversible.***

Mitigation Measure #3.2-1:

~~Prior to recording any final map or issuance of any building permits for the project site, the project proponent shall preserve in perpetuity Prime Farmland of equal quality or better quality at a minimum ratio of 1:1, or 67.260.5 acres, and shall protect the land for agricultural uses through land use restrictions such as agricultural conservation easements. The land to be preserved shall not be located within the City of Anderson's General Plan area. A Shasta County or a qualified land conservation organization shall be used to facilitate the establishment of the conservation easements. To accomplish the above, the project proponent shall select three potential suitable sites for consideration by the County Director of Resource Management. The sites shall be available as close as~~

possible to the project site, to the satisfaction of the County Director of Resource Management. The proposed conservation easement for the selected property shall be submitted to the County for review and approval.

Impact #3.2-2: Indirect conversion and loss of surrounding Important Farmland to non-agricultural use.

Discussion/Conclusion: Based on the 2008 Farmland Mapping and Monitoring Program (FMMP) map for Shasta County, which combines current land use information with NRCS soil survey data, All lands adjacent to the project site are classified as follows: to the north, Prime Farmland (approximately 20 acres) and Other Lands (approximately 60 acres) with Prime Farmland further north and northeast; to the south, Urban and Built-Up Lands from west of the I-5 Interchange to approximately one mile east of the site; to the east, Other Lands (approximately 160 acres); to the west, Urban and Built-up Lands (Interstate Highway 5) with Other Land, Grazing Land, and Farmland of Local Importance further west across the Highway. ~~are classified by the NRCS as “Prime Farmland if Irrigated”.~~ The proposed project will not result in the expansion of any infrastructure to these lands and thereby would not facilitate ~~ing their~~ development; however, the project may still put pressure to develop on these adjacent lands by placing commercial development in close proximity. Placing commercial development adjacent to undeveloped ~~Important F~~ farmland may result in land use conflicts and nuisance complaints. In addition, the development of a retail commercial center may encourage landowners to convert agricultural land for complementary commercial uses or residential uses ~~(see impact #3.9-3).~~ Because prime agricultural land is a non-renewable environmental resource, this impact is *potentially significant, unavoidable, and irreversible.*

Mitigation Measures

No mitigation measures are available to reduce this impact to a less than significant level; therefore, this impact is *significant, unavoidable, and irreversible.*

Impact #3.2-3: Conflict with existing zoning for agricultural use.

Discussion/Conclusion: As stated above, none of the parcels on the project site are currently under a Williamson Act contract. However, most of the project site is currently zoned Limited Agriculture (A-1) and Planned Development (PD), combined with a Restrictive Flood (F-2) district. The purpose of the A-1 zoning district is to preserve agricultural lands at a size capable of supporting part-time agricultural operations, typically operated as a hobby or to supplement the occupant’s income. Permitted uses include one family residence and various agricultural uses.

Additionally, the current General Plan land use designations for the project site are Agricultural Small Scale Cropland/Grazing (A-cg) and Commercial (C). The A-cg land use designation is applied to lands capable of supporting crop production by part-time or second income operators. (See Shasta County General Plan policy AG-g above.)

With the exception of the southern portion of the project site along Knighton Road, most of the site is designated in the General Plan and zoned for agricultural uses. However, the General Plan

allows commercial development along the I-5 interchange/Knighton Road intersection. General Plan policy CO-u specifies that commercial development in the Churn Creek Bottom area shall be strictly limited to the I-5 interchange/Knighton Road intersection. Commercial development adjacent to the interchanges has been recognized in the Shasta County General Plan. The proposed project would convert adjacent acreage that contains prime agricultural land designated in the General Plan for small-scale agricultural uses to commercial uses. The proposed project raises the issue of the extent of commercial development around the I-5 interchange/Knighton

Road intersections as balanced against the amount of prime agricultural land that would be irreversibly lost as a result of commercial development. As previously noted, Shasta County has historically limited pre-zoning on properties until a specific application for development is presented. This is consistent with the County's intention to limit commercial development to the Knighton Road interchange while allowing some flexibility in setting the boundary for such development.

The proposed project would require approval of changes to the current General Plan land use designations and zoning classifications for the subject property. This potential impact related to conflicts with the existing General Plan land use designation and zoning classification that encourage agricultural use on the project site is *potentially significant*.

Mitigation Measures

No mitigation measures are available to reduce this impact to less than significant level; therefore, this impact is *significant and unavoidable*.

Impact #3.2-4: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use

Discussion/Conclusion: As described above, an open channel irrigation lateral and two irrigation ditches are located on the project site. These facilities are used to provide irrigation water to existing agricultural uses ~~that may no longer be viable if historically supplied irrigation water is diverted.~~ A conceptual site plan has been prepared for the project which indicates that at least some of these facilities could be affected by project implementation. However, the specific project design has not yet been completed and specific impacts to irrigation facilities cannot be determined at this time. This impact is *potentially significant*.

Mitigation Measures

Implementation of the following mitigation measure will reduce this impact to *less than significant*.

Mitigation Measure #3.2-4:

~~Prior to issuance of a building permit, the final project site design including a~~All proposed improvements or modification to existing irrigation facilities shall be submitted to the Anderson-Cottonwood Irrigation District (ACID) for review and any statutory approvals an encroachment permit shall be obtained. ~~The applicant shall demonstrate that they are in compliance with statutory requirements have received such encroachment permit prior to any construction activities affecting the ACID facilities. No building permits that would be dependent on use of ACID facilities for disposal of stormwater shall be issued by the County; all project related storm water shall be retained on the project site. without demonstration that the applicant is in compliance with statutory requirements. Further, p~~Prior to any construction activities on the project

site, the project proponent shall consult with ACID staff regarding short-term impacts to irrigation facilities resulting from construction of the project. All feasible mitigation measures for such impacts shall be identified and implemented. These measures may include providing a buffer around irrigation facilities during construction, the notification of water recipients that may be affected, or the temporary rerouting of irrigation waters, including piping the water through the facility.

Lead (Pb)

Lead (Pb) exposure can occur through multiple pathways, including inhalation of air and ingestion of Pb in food, water, soil, or dust. Excessive Pb exposure can cause seizures, mental retardation, and/or behavioral disorders. Low doses of Pb can lead to central nervous system damage. Recent studies have also shown that Pb may be a factor in high blood pressure and in subsequent heart disease.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. Unlike criteria pollutants, no safe levels of exposure to TACs can be established. There are many different types of TACs, with varying degrees of toxicity. Source 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 accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Diesel exhaust is a TAC of growing concern in California. The California Air Resources Board (CARB) in 1998 identified diesel engine particulate matter as a TAC. The exhaust from diesel engines contains hundreds of different gaseous and particulate components, many of which are toxic. Many of these compounds adhere to the particles, and because diesel particles are so small, they penetrate deep into the lungs. Diesel engine particulate has been identified as a human carcinogen. Mobile sources, such as trucks, buses, automobiles, trains, ships and farm equipment, are by far the largest source of diesel emissions.

ATTAINMENT STATUS

The ~~District~~ Shasta County Air Quality Management District (District) is required by the California Health and Safety Code to endeavor to achieve and maintain the state ambient air quality standards at the earliest practicable date and has developed an Attainment Plan with specific emission control strategies in order to achieve this goal. The Plan is a coordinated effort with participation from air districts in the Northern Sacramento Valley Air Basin. The Plan must be re-evaluated once every three years and must contain features such as best available control technology thresholds, use of reasonable available control technology for existing emission sources, transportation control measures, area-wide and indirect source control programs, emission inventory analysis, and public education.

Federal and state air quality laws require identification of areas not meeting the ambient air quality standards. These areas must develop regional air quality plans to eventually attain the standards. Under both the federal and state Clean Air Acts, Shasta County is a nonattainment area (standards have not been attained) for ozone and particulate matter (PM₁₀). The air basin is either attainment or unclassified for other ambient standards. [Table 3.3-2](#) summarizes the County's attainment status for each standard.

**Table 3.3-7
Estimated Unmitigated Area Source and Operational Emissions**

	Emissions In Pounds Per Day		
	Reactive Organic Gases (ROG)	NO _x	PM ₁₀
Retail Center	185.96	190.84	192.82
Level "A" Thresholds	25	25	80
Level "B" Thresholds	137	137	137

Source: Quad Knopf, Shasta County AQMD

Thresholds of significance of the SCAQMD consider emissions of ROG, NO_x or PM₁₀ to be significant if they exceed 137 pounds per day, requiring application of SMM and BAMM. Based on this criterion, the project will have a significant impact due to the generation of ROG, NO_x and PM₁₀ if mitigation measures are not incorporated into the proposed project. This impact is *significant*.

Mitigation Measures

Implementation of the following mitigation measures will substantially reduce area source and operational emissions resulting from the proposed project, but not to a level that definitively guarantees that emissions will be below the SCAQMD Level "B" thresholds; therefore, this impact is considered *significant and unavoidable*.

Mitigation Measure # 3.3-2a:

For the control of operational emissions, the project applicant shall implement all appropriate and feasible Shasta County AQMD Level "A" SMMs and Level "B" BAMMs for the control of ozone precursors. The following Shasta County AQMD operational SMMs are deemed feasible for the size, location, and character of the proposed project:

- *The project shall provide for the use of energy-efficient lighting (includes controls) and process systems, such as water heaters, furnaces, and boiler units.*
- *Individual users within the proposed project site ~~The project~~ shall utilize a central water heating system featuring the use of low-NO_x hot water heaters.*
- *The project shall utilize energy-efficient and automated controls for air conditioning.*

Table 3.3-8 contains BAMM deemed feasible for a facility of the size, location and character of the proposed project:

**Table 3.3-8
Mitigation Measures for Controlling Indirect Source Emissions**

Best Available Mitigation Measures (BAMM)	Emission Reduction Efficiency		
	ROG	NO _x	PM ₁₀
<i>The project shall improve the thermal efficiency of commercial and industrial structures as appropriate by: (1) reducing thermal load with</i>	<i>1.0 - 2.0%</i>	<i>1.0 - 3.0%</i>	<i>1.0 - 5.5%</i>
	<i>1.5%</i>	<i>2.0%</i>	<i>3.25%</i>

Best Available Mitigation Measures (BAMM)	Emission Reduction Efficiency		
	ROG	NO _x	PM ₁₀
<i>automated and timed temperature controls, or (2) occupancy load limits.</i>			
<i>The project shall incorporate shade trees, adequate in number and proportional to the project size, throughout the project site to reduce building heating and cooling requirements.</i>	1.0 - 2.0% 1.5%	1.0 - 3.0% 2.0%	1.0 - 5.5% 3.25%
<i>The project shall include the installation of solar water heaters for at least 25 percent of the building floor area.</i>	1.0 - 7.5% 4.25%	1.0 - 7.5% 4.25%	1.0 - 7.5% 4.25%
<i>The project shall orient buildings and main entrances to streets with bus services.</i>	0.2 - 1.2% 0.7%	0.2 - 1.2% 0.7%	0.2 - 1.2% 0.7%
<i>The project shall provide for and/or include on-site services such as cafeterias, food vending machines, automatic tellers, etc., as appropriate.</i>	0.2 - 3.4% 1.8%	0.3 - 4.5% 2.4%	0.3 - 4.5% 2.4%
<i>The project shall provide on-site pedestrian facility improvements such as walking paths and building access which are physically separated from street and parking lot traffic.</i>	0.2 - 1.2% 0.7%	0.2 - 1.6% 0.95%	0.2 - 1.6% 0.95%
<i>The project shall provide for shower facilities for pedestrian employee's use. The project shall provide shower/locker facilities, where appropriate, for bicycling and pedestrian commuters</i>	0.2 - 2.4% 1.3%	0.3 - 3.2% 1.75%	0.3 - 3.2% 1.75%
<i>The project shall provide for synchronized traffic signals, as deemed necessary by local transportation planning agencies, along streets impacted by project development.</i>	4.0 - 8.0% 4.0%	4.0 - 8.0% 4.0%	4.0 - 8.0% 4.0%
<i>The project shall contribute to traffic-flow improvements that are deemed not to be substantially growth-inducing.</i>	4.0 - 8.0% 6.0%	4.0 - 8.0% 6.0%	4.0 - 8.0% 6.0%
<i>The project shall design interior major streets to serve the main entrances to buildings.</i>	0.1 - 3.0% 1.55%	0.1 - 3.0% 1.55%	0.1 - 3.0% 1.55%
TOTAL EMISSIONS REDUCTION FROM BAMM	11.9 38.7% 10.5 27.6% 23.3 17.05%	12.1 43.0% 10.6 31.1% 25.6 18.90%	12.1 48.0% 10.6 36.1% 28.1 21.40%

Source: Shasta County Air Quality Management District

Mitigation Measure # 3.3-2b:

Implementation of the following mitigation measures will substantially reduce air quality impacts related to human activity within the proposed project area:

- *Trees shall be selected to shade paved areas that will shade 30% of the area within 15 years. Structural soil should be used under paved areas to improve tree growth.*
- *If transit service is available to the project site, improvements shall be made to encourage its use. If transit service is not currently available, but is planned for the area in the future, easements shall be reserved to provide for future improvements such as bus turnouts, loading areas, route signs and shade structures. In the event transit services are not planned for the area in the future, efforts to extend or expand service to the project are shall be coordinated with local transit operators.*
- *Projects shall include as many clean alternative energy features as ~~possible~~ appropriate and feasible to promote energy self-sufficiency. Examples include (but are not limited to): photovoltaic cells, solar thermal electricity systems, small wind turbines, etc. Rebate and incentive programs are offered for alternative energy equipment.*
- *Two 110/208 volt power outlets shall be installed for every two loading docks in commercial areas.*
- *Passive solar building design and landscaping conducive to passive solar energy use shall be promoted;*
- *Energy efficient windows (double pane and/or Low-E) shall be installed as feasible;*
- *High-albedo (reflecting) roofing materials shall be used as feasible;*
- *Awnings or other shading mechanism for windows shall be installed when practicable;*
- *Porch, patio and walkway overhangs shall be constructed where practicable ;*
- *Daylighting (natural lighting) systems such as skylights, light shelves, interior transom windows etc. shall be installed when practicable;*
- *Electrical outlets around the exterior of the buildings shall be installed to encourage use of electric landscape maintenance equipment to promote the use of low or non-polluting landscape maintenance equipment (e.g. electric lawn mowers, reel mowers, leaf vacuums, electric trimmers and edgers, etc.); and*
- *~~Structures shall be pre-wire with~~ Conduit to accommodate high speed modem connections/DSL and extra phone lines shall be installed in structures at the time of initial construction.*

Mitigation Measure # 3.3-2c:

The applicant shall comply with the State of California Title 24, Building Energy Efficiency Standards, to help reduce California's energy consumptions. ~~These standards are periodically updated, with~~ The applicant shall use the most recent update, at the 2008 Standards, becoming effective January 1st, 2010 time of submission of application for building permits for each individual building.

Mitigation Measures

Implementation of the following mitigation measures are required to reduce emissions from construction activities to be under the SCAQMD threshold (see Table 3.3-10 below) Implementation of these measures will result in a *less than significant* impact as reflected in Table 3.3-10.

**Table 3.3-10
Construction Equipment Exhaust Emissions - Mitigated (lbs/day)**

Year	Emissions In Pounds Per Day (Mitigated)			
	ROG	NOx	CO	PM ₁₀
Year 2010 (Mitigated)	15.14	74.37	133.05	45.68
Year 2011 (Mitigated)	6.92	23.84	94.45	1.20
Year 2012 (Mitigated)	43.40	22.40	92.40	1.14
Year 2013 (Mitigated)	79.72	22.76	85.89	1.07
Level "A" Thresholds	25	25	NA	80
Level "B" Thresholds	137	137	NA	137
Notes: ROG = Reactive Organic Gases, NOx = Nitrogen Oxides, CO = Carbon Monoxide, PM ₁₀ = Particulate Matter, 10 Microns				

Further review of the URBEMIS Model run include in Appendix B includes a detailed report for construction emissions.

Mitigation Measure #3.3-3a:

To reduce emissions and thus reduce cumulative impacts, the following measures shall be implemented:

- *The idling time of all construction equipment used at the site shall not exceed five minutes.*
- *The hours of operation of heavy-duty equipment shall be minimized.*
- *All equipment shall be properly tuned and maintained in accord with manufacturer's specification.*
- *When feasible, electric carts or other smaller equipment shall be used at the project site.*

The following URBEMIS Mitigation Measures ~~to~~ will reduce calculated emissions below SCAQMD thresholds:

- *The applicant shall be responsible for applying non-toxic soil stabilizers/dust palliatives (according to manufacturer's specifications) to all inactive construction areas (previously graded areas which remain inactive for 96 hours), in accordance with the Shasta County Grading Ordinance.*

- *All areas (including unpaved roads) with vehicle traffic shall be watered two times per day or have dust palliatives applied for stabilization of dust emissions.*
- *Aqueous diesel fuel for all diesel equipment (designed to operate with aqueous fuels) shall be used when available.*
- *Low-volatile organic compound paints capable of reducing ROG emissions by 15% compared to existing architectural coating rules shall be used.*

Mitigation Measure #3.3-3b:

During construction the following measures shall be implemented to control fugitive dust and emissions of particulates in compliance with SCAQMD SMMs:

- *Alternatives to open burning of vegetative material on the project site shall be used by the project applicant unless otherwise deemed infeasible by the SCAQMD. Among suitable alternatives are chipping, mulching, or conversion to biomass fuel.*
- *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 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 shall be suspended when sustained winds are expected to exceed 20 miles per hour measured at the project site. As used here, sustained winds refer to wind speed measured at 33 feet above the ground and sustained for a period averaged over ten (10) minutes as define by the World Meteorological Organization.*
- *All inactive portions of the development site shall be seeded and watered until a suitable grass cover is established.*
- *All trucks hauling dirt, sand, soil or other loose material shall be covered or shall maintain at least two feet of freeboard (i.e., minimum vertical distance between top of load and trailer) in accordance with the requirements of CVC Section 23114. This provision shall be enforced by local law enforcement agencies.*
- *All material transported offsite shall be either sufficiently watered or securely covered to prevent a public nuisance.*
- *During initial grading, earth moving, or site preparation, the project shall be required to construct a paved (or dust palliative treated) apron, at least 100 feet in length, onto the project site from the adjacent paved road(s).*

- *Paved streets adjacent to the development site shall be swept or washed at the end of each day to remove excessive accumulations of silt and/or mud which may have accumulated as a result of activities on the development site.*

The towns of Redding and Anderson were established on the Rancho Buena Ventura Land Grant. Elias Anderson purchased the American Ranch, as it had become to be known, in 1856, and on his land grew the nucleus of what is now the City of Anderson. The American Ranch was an early stopping place for travelers and traders on the old California-Oregon Road (Hoover, Rensch and Rensch 1970:485, 488).

By 1881, the town of Anderson had 225 residents, with two hotels, three blacksmith shops, a wagon shop, a harness shop, three saloons and a flour mill. A post office was established at American Ranch in 1855, and then was transferred to Anderson in 1878. In 1872, Elias Anderson granted a right-of-way for the California and Oregon Railroad (now Southern Pacific Railroad) through his property (Gudde 1969:10).

IDENTIFICATION OF HISTORICAL RESOURCES IN THE PROJECT SITE

Previous Studies

A records search was conducted at the Northeast Center of the California Historical Resources Information System on July 11, 2005 for the project area. The search included the following resources: National Register of Historic Places, the California Register of Historical Resources, California Points of Interest, California Inventory of Historic Resources, and California State Historic Landmarks.

The results of the records search indicated that two cultural resource studies have been conducted within portions of the Knighton & Churn Creek Commons Retail Center project site with negative results (Jensen 1998; Genesis Society, 2005). In addition to the two studies identified by the records search, a report titled *Determination of Eligibility and Effect for the Proposed Shasta Auto Mall Project, Shasta County, California* dated June 30, 2006 was prepared by Peak & Associate, Inc. in association with a previously proposed project. Known prehistoric period resources have been documented within a one-quarter mile radius of the Knighton & Churn Creek Commons Retail Center project site.

Native American Consultation

The County of Shasta, Department of Resource Management, Planning Department (“County”) contacted the Native American Heritage Commission (NAHC) with a request for a Sacred Lands File check and to obtain a list of individuals and/or groups who have requested to be notified of proposed development within the county. The County sent letters on April 14, 2009 requesting comment regarding the proposed Knighton & Churn Creek Commons Retail Center project to: Jessica Jim, Chairperson, Pit River Tribe of California; Chairperson, Greenville Rancheria of Maidu Indians; Roaring Creek Rancheria; Kelli Hayward, Wintu Tribe of Northern California; Caleen Sisk-Franco, Tribal Chair, Winnemem Wintu Tribe, Barbara Murphy, Chair, Redding Rancheria; and, Roy V. Hall, Jr., Chairperson, Shasta Nation.

Mark Franco, Headman, Winnemem Wintu Tribe responded in writing on April 25, 2009 and stated, in part:

I have reviewed the site map, additional traffic lane adjustments and other infrastructure plans and find no apparent cause for concern relative to site disturbance. However, this area of the Churn Creek "bottom" is very close to three sites we have documented and appears to lie directly across the freeway from the large

justify its eligibility for inclusion in the California Register, than the project is judged to have a significant effect upon the environment, according to Section 15064.5 of the CEQA guidelines.

The proposed project site does not contain unique architectural features, nor are such features found on surrounding properties and disturbance of unique historical architectural features or the character of surrounding buildings will not result from proposed project development.

The inspection of the Knighton & Churn Creek Commons Retail Center project site by archeologists determined that there was no significant surface evidence of historical or archaeological resources present (Jensen 1998; Genesis Society 2005; Peak and Associates 2006).

As with any inspection of the ground surface, there is always the possibility that historical or archaeological resources may be present, but are obscured from view from overlying sediments or vegetation, or have been buried by previous human activities. The proposed project site may contain buried historical or archaeological resources. This impact is ***potentially significant***.

Mitigation Measures

Implementation of the following mitigation measure will reduce the impacts to a ***less than significant*** level.

Mitigation Measure #3.5-1:

- *A representative of the Wintu and Wintu Tribe of Northern California ~~Toyon Wintu Tribes~~ shall be invited to (a) participate in any site reconnaissance, artifact evaluations or excavation determined to be necessary at the project site; and (b) to be present during ground preparation and project construction in areas determined based on evidence to be likely locations of significant cultural resources.*
- *To ensure that buried cultural resources or human remains, if encountered, are recognized by construction crews, a worker education plan shall be initiated prior to project implementation. Information describing potentially significant resource characteristics and the procedures to be followed in the event of such a discovery shall be provided.*
- *Should any artifacts, exotic rock types or unusual amounts of bone, or shell be uncovered during construction activities, work shall cease within a minimum of 100 feet of the discovery and a qualified archaeologist ~~along with~~ shall be consulted for an on-the-spot-evaluation. Also, a representative of the Wintu and Wintu Tribe of Northern California shall be ~~consulted for an on-the-spot evaluation~~ notified of such discovery.*

In the event that human burials or remains are encountered during site activities all work shall cease within 100 feet of the find, and the County Coroner shall be contacted immediately along with a representative of the Wintu and Wintu Tribe of Northern

California. In the event remains are encountered and are determined to be of Native American descent the project proponent, County Coroner, and

liquefaction. The depth to groundwater, according to the majority of the exploratory borings performed on the project site by Brown and Mills, Inc., is between 10 to 13 feet below existing grade. Although the depth to groundwater is relatively shallow, the overall potential for liquefaction is very low.

The project site consists of relatively flat topography. Additionally, no deep cuts and fill will be required during construction of the proposed project. The potential for landslides is very low.

This impact is *potentially significant* with regard to the potential for strong seismic groundshaking.

Mitigation Measures

Implementation of the following mitigation measure will reduce this impact to a level that is *less than significant*.

Mitigation Measure #3.6-1:

Structures and any other site improvements shall be designed to withstand a low-to-moderate level of ground shaking in compliance with ~~In the event the International Building Code/California Building Code (IBC/CBC) is used for earthquake design, and all structural features of the project shall be designed using a Type S₂ soil profile, an "S Factor" of 1.2, and a Soil Type 2 as recommended by~~ based upon the most recent geotechnical investigation performed by a California registered engineer on ~~a~~ that portion of the project site.

Impact #3.6-2: Result in substantial soil erosion or the loss of topsoil.

Discussion/Conclusion: The construction phase of the project may result in soil erosion and the loss of topsoil. The project applicant will be required to prepare a Storm Water Pollution Prevention Program (SWPPP) in order to comply with Clean Water Act regulations. As part of the SWPPP, the applicant will be required to identify and implement erosion control measures to prevent substantial soil erosion and the loss of topsoil. Additionally, the project will not require any excavation and only minimal grading thereby reducing the potential for such erosion. This impact is *less than significant*.

Mitigation Measures

No mitigation measures are required.

Impact #3.6-3: Result in potential hazards due to construction on expansive or otherwise unstable soils.

Discussion/Conclusion: Landslides and liquefaction are discussed in Impact 3.6-1 above. The project site has relatively level topography and no existing unstable soils. The project design does not include any construction activities such as excavations or deep cuts and fill which have

that can be continuously withdrawn from a groundwater basin without adverse effects on the basin) are currently unknown.

Percolation, the natural process by which groundwater is recharged or replenished, is the filtration of precipitation and stream flows through the soil to the water table where it is collected. Floodplains and streams that overlie porous materials such as gravel are the primary natural sources of groundwater recharge. In Shasta County, the flat agricultural lands of the Sacramento and Fall River Valleys are the most significant recharge areas. No man-made recharge processes have been developed in the County thus far due to the low level of development and an overall stable groundwater level.

Regional Water Demand

According to the Shasta County General Plan (1998), approximately 580,000 acre-feet of water annually are required to sustain all existing land uses within the County. It is also estimated that this requirement will increase to 671,850 acre-feet by 2030. Overall, the County's water supply is more than adequate to meet all existing and projected future needs. Although the supply is adequate, resources are not allocated throughout the County evenly. Certain areas of the County, including the City of Redding and the area under the jurisdiction of the Anderson-Cottonwood Irrigation District (ACID), ~~the Bella Vista Water District (BVWD)~~, and the Clear Creek Community Services District (CCCSD), have the greatest allocations of water and are therefore prime areas for future development in regards to water supply. The Bella Vista Water District (BVWD) and CCCSD use mainly surface water; BVWD has very limited groundwater resources, with CCCSD having somewhat greater groundwater resources. Currently, BVWD is experiencing water shortages because of cutbacks to their surface water supply, and therefore isn't a prime area for future development. The cities of Redding, Anderson, and Cottonwood, and the ACID all overlie the most productive parts of the Redding groundwater basin. Redding uses a mixture of surface and groundwater. Anderson and Cottonwood both rely solely on groundwater. ACID currently relies solely on surface water.

Regional Water Quality

According to the *Shasta County General Plan* (1998), both surface and groundwater quality are generally considered good; however, numerous sources of pollution are the cause of some water quality degradation. These sources include sediment from improper construction activities, coliform, warm water (in cold water streams), nitrates and dissolved solids from agricultural activities and septic tank failures, pesticides from agricultural and lawn runoff, grease, oil, antifreeze and other chemicals from road runoff, dioxin from wood products mills, and heavy metals from acid mine drainage of old copper mines. The Sacramento River in particular is impacted by sediment, heavy metals, and dioxin.

Although there are many pollutants entering County waterways, pollutant levels rarely exceed federal standards for safe drinking water and overall quality remains high as indicated by healthy fish populations and recreational fishing activities.

HYDROGEOLOGY

The project, which will use an on-site well for all potable water, is located in the Redding groundwater basin. A detailed discussion of the regional hydrogeology can be found in the *Water Supply Assessment Knighton & Churn Creek Commons Retail Center, July 2009* ([Appendix I](#)) prepared for the project.

(reference Appendix A of the *Water Supply Assessment* in Appendix I). Water for the project will be supplied by an on-site water well. There is an existing 350-foot deep, 10-inch cased production well at the site; this well, and the associated observation wells, were installed and tested for the previously proposed Flying J truck-stop project. This well is planned to serve as the supply well for the proposed project. Figure 1 in the *Update to Preliminary Water-Supply Impacts for Knighton Road Development* (Appendix A of the *Water Supply Assessment*) shows the existing well location.

Results from the Flying J drilling program showed at least three aquifer zones beneath the site from 108 to 125 feet ("upper"), 158 to 209 feet ("intermediate"), and 240 to 330 feet ("lower"). The upper two zones are separated from the lower zone by a clay layer from 209 to 240 feet below ground surface (bgs). The production well was completed below the clay layer; the 81-foot-long screened interval extends from 244.5 to 325.5 feet bgs.

Static water levels in the upper and intermediate aquifers are about 30 feet bgs; water level from the lower aquifer is about 52 feet bgs. The similarity in water levels in the upper and intermediate aquifers suggests that these two zones could be considered as one aquifer.

During the aquifer test, maximum drawdown in the Production Well (pumping well) was approximately 33 feet after 24 hours of pumping at 500 gpm. Data from the aquifer test was used to calculate aquifer coefficients (transmissivity and storativity). The calculated transmissivity (approximately 37,500 to 49,500 gpd/foot) was similar to that observed for similar deposits in the Redding ground-water basin and is good as water flows well through the aquifer in the area of the proposed project. Calculated storativity (approximately 2.5 to 4.9 x 10⁻⁴) was also similar to that observed for deposits in the Redding ground-water basin. The calculated storativity for the lower aquifer indicates that it is confined. Hydraulic conductivity (derived from transmissivity and taking into account aquifer thickness) in the lower aquifer ranged from approximately 60 to 80 feet/day. Groundwater in the Production Well flows into the well mainly from the horizontal direction because the aquifer is constrained by clay layers that inhibit the vertical movement of water (although a small amount of water still moves downward through the clay layers, whether or not the well is pumping). Vertical permeability in the clay zone between the intermediate and lower aquifers was calculated to be 0.093 gpd/square foot. This is equivalent to approximately 0.125 feet/day.

Water Demand

Project water demand is taken from the *Update to Preliminary Water-Supply Impacts for Knighton Road Development* (January 20, 2009) prepared by Lawrence & Associates (reference Appendix A of the *Water Supply Assessment* in Appendix I). Based on information provided by Pace Civil Inc. (Pace), the maximum-day demand (MDD) for non-irrigation needs will be approximately 122 gpm; and the peak demand (two-hour) will be approximately 337 gpm. For irrigation, Pace calculated a MDD of 63 gpm and a peak demand of 212 gpm. Peak demands will be met from storage, not directly from the well.

DRAINAGE

The project site is within two distinct drainage areas which are separated by the north-south main Anderson-Cottonwood Irrigation District (ACID) open channel irrigation channel serving the Churn Creek Bottom area. The easterly up gradient drainage tributary area is about 114.9 acres and the area of temporary drainage westerly of the ACID open channel is about 164.7 acres.

The project site has previously been graded for flood irrigation and slopes from north to south at a gradient of 0.002 to 0.003 excepting the area tributary to a natural drainage course in the northwest portion of the site. Water for irrigation is furnished by the ACID and is conveyed via a major open channel irrigation lateral running from north to south through the property. Approximately 76.4 acres of the project site lies easterly of the lateral. There are water take out points along the lateral allowing for flood irrigation of the adjacent lands. To the east of the lateral there are two ditches running easterly for conveyance of water to allow for irrigation from north to south across the fields. One serves the northerly 45.2 acre field and the other serves the southerly remaining 31.2 acres easterly of the lateral and terminating at Knighton Road.

There is approximately 15.6 acres of the project site to the west of the lateral. The northerly 9.8 acres drains to the existing natural swale which terminates at a 24-inch concrete pipe coursing under I-5 and thence into the Sacramento River. The southerly 5.8 acres drains to the south.

This pattern of irrigation ditches leading from the major open channel lateral to irrigate the separate fields or lands is common in the Churn Creek Bottom Area. There are no irrigation water recovery facilities in the Churn Creek Bottom. Excess irrigation water is retained on the individual fields and percolates into the soil.

There is no rainfall runoff discharge onto the easterly drainage area of the proposed project from the area up gradient of East Niles Lane. This is due to the east-west roads (East Niles Lane, Smith Road, Green Acres Drive), and east-west irrigation ditches which effectively block any storm water runoff. The irrigation ditches and roadways are built-up two to three feet above adjacent lands with no culvert crossings to allow storm water to pass. Rapid soil percolation rates in the Churn Bottom Area precludes the buildup of storm runoff and overtopping of drainage ditches or roadways.

Existing Drainage Facilities

There is an existing 24-inch concrete culvert under I-5 which provides drainage for the northwesterly corner (approximately 9.8 acres) and an up gradient tributary area (164.7 acres).

At the point where the north-south ACID open channel irrigation lateral north of Knighton Road intersects with the easterly right-of-way line of I-5, the irrigation lateral is underground in a 36-inch concrete pipe. The 36-inch pipe was installed by Caltrans at the time of construction of I-5 to both realign the channel out of the highway right-of-way and to provide drainage for lands east of the freeway. The pipe follows along the I-5 right-of-way to the southerly side of Knighton Road. The pipe then extends easterly along the south side of Knighton Road to the westerly line of Pacheco Road.

The 36-inch ACID concrete irrigation/drainage pipe passes through the project site from north to south and provides drainage for the westerly portion of the project site, ~~the proposed project site easterly drainage area~~, Knighton Road abutting the proposed project site and a portion of the existing truck stop south of Knighton Road. Also, only runoff south of Niles Lane enters the existing truck stop south of Knighton Road. As a practical matter only runoff south of Niles Lane is served by the existing drains connecting to the 36-inch pipe in Knighton Road because of

blockage by roads and east-west irrigation ditches to the north of Niles Lane. There is one 18-inch area drain inlet into the ACID 36-inch concrete irrigation/drainage pipe about 400 feet northerly of Knighton Road, and two 18-inch area drain inlets on the northerly side of Knighton Road with 12-inch laterals to the 36-inch irrigation/drainage pipe on the southerly side of Knighton Road. There are three storm drain inlets connecting directly to the 36-inch concrete irrigation/drainage pipe on the south side of Knighton Road in front of the existing truck stop.

When Knighton Road was extended to Airport Road by the County of Shasta, drain inlets were placed on the northeast and southeast corners of the intersection of Knighton and Churn Creek Roads and storm drains were extended and connected into the underground ACID lateral at the southwest corner of Knighton and Pacheco Roads.

At the northeast corner of the truck stop the ACID irrigation/drainage concrete pipe is enlarged to 42-inches and runs southerly about 500 feet. At this point the ACID lateral becomes an open channel for about 3,000 feet; then it continues southerly along I-5 in a 36-inch concrete pipe. At the point where the open channel ends and the 36-inch concrete pipe begins there is a junction box. There are three valves within this junction box. One valve is for a 24-inch irrigation lateral to the east, one valve for the 36-inch concrete pipe to the south and one valve for an 18-inch concrete drain pipe directly to the Sacramento River. The purpose of the 18-inch concrete drain is for the discharge of storm water to the Sacramento River.

~~The capacities of the drains on the north side of Knighton Road and the drain within the project site side are about 5.0 cubic feet per second (cfs) each.~~

Rainfall and Storm Water Runoff

~~The Shasta County Department of Public Works and Water Agency Method of Storm Water Runoff Hydrology Analysis for Small Watersheds~~The Redding Hydrology Manual (1993, revised 2005), HEC-1, was used to determine rainfall storm water runoff quantities and rates for the design of storm drains facilities,~~to include storm drains and detention~~ retention requirements.

~~The project site is within the design parameters~~was evaluated for a ~~25~~100-year storm event ~~when calculating storm water runoff (watershed area over 40 acres, but less than 4 square miles).~~

~~Design criteria are 2.3 inches~~are 5.71 inches of rainfall over a ~~6~~24-hour period ~~and 4.9 inches over a 24-hour period during a 25-year storm event.~~ Storm water runoff is a function of area, rainfall intensity, and coefficient of runoff (percentage of storm water that is not absorbed into the soil). Because of the soil types within the Churn Creek Bottom area there is a very low runoff coefficient. Runoff analysis is contained in EIR Appendix K, ~~Analysis of Churn Creek Floodplain and Detention Storage, May 2008~~Stormwater Retention Storage/Churn Creek Floodplain.

Potential Site Flooding

It has been determined by the Federal Emergency Management Agency (FEMA) that Churn Creek will overtop its banks during a 100-year storm event. FEMA identifies the site as Zone A

on the FEMA Flood Insurance Rate Map. This classification indicates that the flooding ~~will~~
would be

sheet flow from north to south and ~~will~~would be approximately one to two feet above existing ground level. The FEMA mapped floodzone is shown in [Figure 3.8-1](#).

Proposed Project Site Drainage

It is proposed that ~~the re-located ACID facilities continue to be utilized in combination with on-site detention. Runoff from the site would be limited to the existing (pre-development) flow rate (see Appendix K)-~~all storm water from a 100 year/24 hour storm be retained on the project site.

Regulatory Setting

FEDERAL

Clean Water Act (CWA)

The CWA administered through the Regulatory Program of the Corps regulates the water quality of all discharges into waters of the U.S. including wetlands and intermittent stream channels. Section 401, Title 33, Section 1341 of the CWA sets forth water-quality certification requirements for “any applicant applying for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable water.”

Federal Emergency Management Agency (FEMA)

The National Flood Insurance Program (NFIP) is a Federal program administered by FEMA. Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted, as a desired level of protection, an expectation that developments should be protected from floodwater damage from the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years although such a flood may occur in any given year. The State Department of Water Resources occasionally audits local agencies to insure the proper implementation of FEMA floodplain management regulations.

STATE

Regional Water Quality Control Board Permitting

The National Pollution Discharge Elimination System (NPDES) program, under Section 402(p) of the Federal Clean Water Act, is administered locally by the Central Valley Regional Water Quality Control Board on behalf of the U.S. Environmental Protection Agency. The program is designed to reduce pollution from storm water discharge and may require a permit from parties discharging to lakes, streams and other water bodies. In the case of the proposed project, a construction activity permit would be required since construction activities associated with the project would result in the disturbance of more than one acre, ~~and movement of at least 2.9 million cubic yards of soil.~~ The permit would require that the following measures be implemented during construction activities: eliminate or reduce non-storm water discharges to storm water systems and other waters of the nation, develop and implement a Storm Water

Discussion/Conclusion: Stormwater runoff leaving the site during construction activities can have a significant impact on water quality. As stormwater runoff leaves the site it can pick up pollutants, such as sediment, debris, or chemicals, and transport these pollutants to nearby stormwater systems, irrigation ditches or natural water conveyance systems, such as rivers, lakes or costal waters. To address this issue the project applicant will apply for coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Stormwater Associated with Construction Activity (Construction General Permit, 99-08-DWQ). The NPDES program requires construction site operators engaged in clearing, grading, and excavating activities that disturb 1 acre or more to obtain coverage under an NPDES permit for their stormwater discharges. In order to be granted coverage, the applicant must submit a Notice of Intent to comply with the general permit along with a site plan map and fee to the State Water Resources Control Board (SWRCB) prior to starting construction. Additionally, as part of the NPDES process, the applicant must prepare a Stormwater Pollution Prevention Plan (SWPPP) to be retained onsite. The SWPPP must include best management practices that, when implemented, prevent stormwater quality degradation to the extent practical by preventing sediments and other pollutants from leaving the project site. Compliance with the requirement of obtaining coverage under the general permit, and acquisition of a grading permit from the Shasta County Environmental Health Division, accompanied by implementation of an approved SWPPP will ensure that water quality impacts related to construction activities are *less than significant*.

Mitigation Measures

No mitigation measures are required.

Impact #3.8-2: Violation of water quality standards or waste discharge requirements during project operation.

Discussion/Conclusion: Development of the proposed project will result in the conversion of undeveloped land to commercial uses. The pollutants associated with the proposed project could affect the quality of storm water flowing into the proposed onsite drainage system and ~~detention~~retention basins. These pollutants include greases and oils from driveways and parking areas and excess pesticides and fertilizers from public and private landscaping. This impact is *potentially significant*.

Mitigation Measures

Implementation of the following mitigation measure will reduce this impact to be *less than significant*.

Mitigation Measure #3.8-2:

The applicant shall design and construct the project drainage system in accordance with the drainage system volume requirements specified by Hydmet, Inc (Stormwater Retention Storage Churn Creek Flood Plain, April 2011 by John H. Humphry). The drainage system shall be subject to review and approval by the Shasta County Public Works Department and the Shasta County Environmental Health Division prior to issuance of grading permits for the project. ~~Prior to approval of the proposed project site plan~~ At the time of application for the individual grading permits, the project

proponent shall identify all appropriate and feasible storm water runoff Best Management Practices (BMPs) for that portion of the project to be implemented within the project site. These BMPs shall be selected from the California Stormwater Quality Association's Stormwater Best Management Practice Handbook—New Development and Redevelopment and shall conform to the standards set forth by the Central Valley Regional Water Quality Control Board. Typical BMPs that could be used shall include but would not be limited to catchbasin inserts, compost stormwater filters, sandfilters, vegetated filter strips, biofiltration swales, oil/water separators, bioretention basins, or other equally effective measures. Other BMPs shall include but would not be limited to administrative controls such as signage at inlets to prevent illicit discharges into storm drains, parking lot and other pavement area sweeping, public education, and hazardous waste management and disposal programs. BMPs shall identify and implement mechanisms for the routine maintenance, inspection, and repair of pollution control mechanisms. In addition, the BMPs shall be reviewed for adequacy by the Shasta County Planning and Public Works Departments.

Impact #3.8-3: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

Discussion/Conclusion:

REGIONAL GROUNDWATER IMPACTS

To evaluate whether there is, and would be in the future, sufficient quantities of groundwater to supply to the proposed project and other users, a supply and demand analysis for the groundwater basin was conducted as part of the Water Supply Assessment (WSA) (Appendix I). The groundwater supply for the basin in which the proposed project site is located was estimated for a normal year, single dry year, multiple dry 2 year and multiple dry 3 year scenarios. [Tables 3.8-2 and 3.8-3](#) (Tables 7-1 and 7-2 in WSA), summarize the supply and demand calculations for the proposed project.

**Table 3.8-2
1997 Existing Supply & Demand*
Normal Year, Single Dry Year, & Multiple Dry Year Scenarios (AF/yr)**

	Normal Year	Single Dry Year	Multiple Dry Years	
			Year 2	Year 3
1997 Baseline Normal Year Demand from Groundwater	-37,800	-39,690	-41,670	-43,754
Project Demand	-200	-210	-221	-233
Annual inflow to Redding Basin Groundwater system	293,600	278,920	264,974	251,725
Net Balance	255,600	239,020	223,083	207,738
*Assumptions: 1) 1997 pumping rates are a sustainable groundwater withdrawal for the basin 2) There is 5% increase in demand every year added in a multiple dry year scenario 3) Recharge waters will diminish 5% every year added in a multiple dry year scenario				

Groundwater Modeling for Flying J Knighton Road Travel Plaza, Shasta County, California and Appendix I Water Supply Assessment Knighton & Churn Creek Commons Retail Center, July 2009), with modification to the pumping rate and maximum-day/annual-average demand to predict localized groundwater level impacts resulting from implementation of the proposed project.

For the maximum-day demand of 215 gpm associated with the proposed project, the model shows no detectable interference in the upper and intermediate aquifers and about 5 inches of interference at 200 feet from the well, about 3 ½ inches at 400 feet, 2 ½ inches at 800 feet, and 1 inch at 1,700 feet in the deep aquifer (from which the well pumps).

For the annual-average day demand of 122 gpm, the model shows about one foot of interference at 250 feet from the well, about 6 inches at 1,000 feet, and about 4 inches at ½ mile in the deep aquifer. In the upper and intermediate aquifers the model shows less than one inch of interference at distances beyond approximately 300 feet from the well. The slightly greater degree of interference associated with the annual-average demand in comparison with the maximum-day demand is due to the longer duration water withdrawal time frame used when modeling annual-average demand effects.

In all scenarios, the model shows no detectable interference in the upper and intermediate aquifers. Although interpretation of the 1998 well-testing data suggested that there could be interference in the intermediate aquifer from pumping the deep aquifer, recharge of the treated wastewater generated by the proposed project will ameliorate this effect. Because most domestic wells in the area are screened in the upper or intermediate aquifers, most of the domestic wells would not experience interference from the proposed project well.

Since the well for the proposed project is confined to the lower aquifer and treated wastewater will recharge the upper and middle aquifer, wells in the vicinity of the proposed project will not experience groundwater depletion and this impact is considered *less than significant*.

Mitigation Measures

No mitigation measures are required

Impact #3.8-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

Discussion/Conclusion: The proposed project would result in the creation of new impervious surfaces in the form of buildings, driveways, parking lots and other paved areas or impervious surfaces. Stormwater runoff from new impervious surfaces created by the proposed project would drain into roadside ditches, or other drainage conveyance facilities on site, and be transported to the on-site stormwater detention/retention system. ~~New impervious surfaces could result in an increase in the peak flow of runoff and/or the volume of stormwater runoff generated on the proposed project site compared to the existing conditions because rainfall would be~~

~~prevented from infiltrating into the soil. In addition, the proposed project would introduce new fill material and vegetation, and change the existing topography of the site. The proposed project in combination with frequency and intensity of precipitation could affect the peak flow and/or the volume of stormwater runoff. For example, reducing the steepness of slopes and removing the existing topsoil and exposing the underlying soils during construction could increase runoff; while changing the soil depth, adding vegetation, or constructing/implementing stormwater BMPs could increase the infiltration and water retention of the project site.~~

The project site currently contains an open channel irrigation lateral and two irrigation ditches. To address potential impacts associated with alteration of the canals, Mitigation Measure #3.2-4 shall be implemented. In order to protect these drainages and waterways from excess sedimentation and potential pollution from stormwater runoff during construction, grading and erosion/sediment control measures shall be designed in accordance with the SWPPP prepared for the proposed project as noted in the above discussion pertaining to Impact #3.8-1.

Stormwater will flow over asphalt and other surfaces characteristic of a commercial development ~~into a County approved on-site stormwater detention/retention system and will not cause erosion or siltation.~~ This impact is *less than significant*.

Mitigation Measures

No mitigation measures are required.

Impact #3.8-5: *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.*

Discussion/Conclusion: ~~The data and analysis contained in the Appendix KU, *Analysis of Churn Creek Floodplain and Detention Storage, May 2008 – Hydmet, Inc* Stormwater Retention Storage/Churn Creek Floodplain, indicate that the project will not cause an increase in the amount of storm water runoff off the project site or flooding onsite. There are no streams or rivers traversing the project site or affected by the project, so as to result in flooding on or off-site.~~

~~Hydmet, Inc. used the hydrologic model developed by the Army Corps of Engineers, HEC-1, to evaluate the hydrology on the project site. The HEC-1 models were used to develop 10/25/100 year recurrence hydrographs for the pre-project and project conditions. All of these model runs used the storm water system collection area of 83 acres. Table 2 of Appendix K lists peak flows for pre-project and project with detention. Table 2 of Appendix K shows that the proposed on-site detention facilities control runoff from the project to pre-project levels or lower for the 10/25/100 year flood events (that is, 15-17 cfs, the capacity of the 18" culvert near the intersection of Knighton Road and Churn Creek Road). The detention facilities prevent increases in peak flow at all downstream locations. With the proposed detention facilities controlling runoff from the project to pre-project levels, or below, this impact is *less than significant*.~~

Mitigation Measures

No mitigation measures are required.

Impact #3.8-6: Creation or contribution of runoff which will exceed the capacity of planned storm drainage systems or provide substantial additional sources of polluted runoff.

Discussion/Conclusion: ~~The data and analysis cited in the discussion/conclusion section of Impact #3.8-5 substantiates that~~ The planned stormwater drainage retention system will be of adequate capacity to accommodate project runoff. The data and analysis cited in the discussion/conclusion sections of Impacts #3.8-1 and 3.8-2 document that stormwater runoff pollution will be mitigated to a less than significant level. As stated in Impact #3.8-1, the applicant will be required to file a SWPPP for proposed project construction and obtain a NPDES General Construction Activity Stormwater Permit from the Central Valley Regional Water Quality Control Board (RWQCB). This impact is *potentially significant*.

Mitigation Measures

The proposed project will not create or contribute to runoff which will exceed the capacity of planned storm drainage systems as noted in Impact #3.8-5 or provide substantial additional sources of polluted runoff during construction as noted in Impact # 3.8-1. The proposed project will not result in substantial additional sources of polluted runoff during operation with the implementation of Mitigation Measure #3.8-2 and this impact is considered *less than significant*.

No additional mitigation measures are required.

Impact #3.8-7: 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.

Discussion/Conclusion: The proposed project is a commercial project and will therefore not place housing units 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. There is *no impact*

Mitigation Measures

No mitigation measures are required.

Impact #3.8-8: Placement of structures within a 100-year flood hazard area that would impede or redirect flood flows.

Discussion/Conclusion: The *Analysis of Churn Creek Floodplain and Detention Storage, May 2008* prepared by Hydmet, Inc. as supplemented with the analysis in Appendix U, Stormwater Retention Storage/Churn Creek Floodplain notes that the proposed project is designed and will be constructed to allow for the passage of any flood waters through and around the project site without

increasing the flood water depth on ~~the any~~ adjacent property ~~up gradient~~. Flood water passage will be handled by swales between buildings and around the project site ~~designed for passage of any flood waters through the project site~~. Although the analysis notes that the proposed project is designed to allow the passage of flood water through and around the project site, FEMA identifies the site as Zone A on the FEMA Flood Insurance Rate Map, requiring the issuance of Elevation Certificates for all structures located within the Restrictive Flood (F-2) zoned portion of the project site to ensure that the bottom floor of all occupied buildings are constructed above the base flood elevation. With the issuance of Elevation Certificates, this impact is *less than significant*.

Mitigation Measures

No mitigation measures are required.

Impact #3.8-9: 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.

Discussion/Conclusion: The proposed project would allow new development to occur in an area subject to the risk of inundation due to dam failure. In the case of dam failure, the project site could be subject to flooding. However, the risk of dam failure is low due to the conducting of annual dam inspections by the California Department of Water Resources for the purpose of safeguarding life and preventing the destruction of property. Because the risk of dam failure is low this impact is considered *less than significant*.

~~The effective FEMA floodplains are shown on Figure 3.8-1. Nearly the entire project is in Zone AO, an estimated shallow flood zone without determination of water surface elevations. The shallow flood zone was re-studied using a HEC-RAS model and detailed cross sections as seen in Appendix K. Figure 5 of Appendix K shows the revised flood zone with actual water surface elevations. The revised analysis showed that overflow flood water from Churn Creek cannot reach the northwest part of the project area, due to existing berms and high ground. In addition, overflow flood water from Churn Creek cannot cross Knighton Road east of the project and is diverted by the Knighton Road embankment to the intersection of Churn Creek Road and Knighton Road.~~

~~The purpose of the HEC RAS analysis was to determine the influence of the project on the Churn Creek overflow 100-year floodplain. The project grading plan diverts part of the shallow overflow to the east side of the project (see Figure 6 of Appendix K). A channel will be constructed on the west side of Churn Creek Road to carry the diverted flow. The channel is adjacent to Churn Creek Road on the west. It varies from 30 ft wide and three feet deep for the north half to 50 ft wide and one foot deep for the south half. Table 4 of Appendix K shows the Churn Creek overflow 100-year floodplain elevations with and without the project. The proposed bypass ditch creates decreases in the 100-year water surfaces and more than compensates for flow displacement due to project grading and fill. Because the FEMA Flood Zone for areas of the proposed project is AO, the applicant must obtain base elevation certifications and design the proposed building foundation height accordingly to preclude sheet flow flooding of the building~~

during a 100 year storm. Compliance with this requirement reduces this impact to be *less than significant*.

Mitigation Measures

No mitigation measures are required.

Impact #3.8-10: Have a significant risk of inundation by seiche, tsunami, or mudflow.

Discussion/Conclusion: Seiches, or waves generated in bodies of water similar to the back-and-forth sloshing of water in a tub, could possibly occur in natural lakes and reservoirs. Both Lake Shasta and Whiskeytown Reservoir are subject to seiches in the event of an earthquake. If the seiche overtops either of the dams, failure could result. Failure of either dam could potentially cause flooding at the proposed project site. Given the distance ~~between~~ from the lakes, and from any major faults, the risk of seiche is extremely low and this impact is considered *less than significant*.

The proposed project site is not at risk from tsunami due to its inland location. Finally, the proposed project site is also not at risk of mudflows due to its relatively flat topography and distance from any hillsides. Risk of inundation by seiche, tsunami or mudflow is a *less than significant* impact.

Mitigation Measures

No mitigation measures are required.

Impact #3.9-2: Conflicts with land use policies adopted for the purpose of avoiding or mitigating an environmental effect.

Discussion/Conclusion: The General Plan (Policy CO-r) states that the County should develop a specific plan for the Churn Creek Bottom area, where the proposed project site is located, which should emphasize maintaining and preserving a variety of long-range agricultural options for the area (Impacts to Agricultural Resources and related General Plan policies are addressed in Section 3.2.). However, the policy is suggestive rather than prescriptive or mandatory. General Plan Policy CO-u states that “commercial development in the Churn Creek Bottom area shall be strictly limited to the I-5 interchange/Knighton Road intersection.” The proposed project extends commercial development approximately one-half mile north along Interstate 5 and approximately one-half mile north along Churn Creek Road. Because Policy CO-u does not define boundaries for commercial development at the I-5 interchange/Knighton Road intersection nor states what environmental effects it is designed to mitigate or avoid, this impact is considered *less than significant*.

Mitigation Measures

No mitigation measures are required.

Impact #3.9-3: Potential land use conflicts created by pressure to convert additional land to commercial uses.

Discussion/Conclusion: Development of the proposed retail center may generate interest by developers to propose complementary developments, such as residential development, which would convert additional land from agricultural uses. In addition, the project will increase traffic in the Churn Creek Bottom area, which could also encourage further commercial development, especially given the proximity of I-5. The development of these additional commercial uses might cause environmental impacts to existing neighborhoods as well as to Pacheco School. Potential indirect conversion of agricultural lands is addressed under Impact #3.2-2. The mere existence of the proposed retail center does not guarantee that it will create pressures to convert other land for commercial uses. Nevertheless, the project is likely to generate demand for additional commercial sites and residential development in and around the Churn Creek Bottom area, potentially causing future land-use incompatibilities. Therefore, this impact is considered *potentially significant*.

Mitigation Measures

There are no available mitigation measures which would reduce this impact to a less-than-significant level. The impact remains *potentially significant and unavoidable*.

Impact #3.9-4: Conflict with any applicable habitat conservation plan or natural community conservation plan.

Discussion/Conclusion: There are no adopted Habitat Conservation Plans, Natural Community, Conservation Plans, or other approved local, regional, or state habitat conservation plans for the project site or project area. There is *no impact*.

Mitigation Measures

No mitigation measures are required.

Impact #3.9-5: Directly or indirectly induce substantial population growth.

Discussion/Conclusion: Direct population growth occurs when a project results in the construction of a substantial amount of new housing or otherwise directly causes a substantial increase in the area's population. The proposed project will not directly induce population growth since residential units are not proposed with this project. Indirect growth inducement occurs when a project extends infrastructure to undeveloped areas or otherwise removes obstacles to population growth. Surrounding land uses include I-5 to the west, the Travel Associates truck stop to the south, a partially developed rural residential neighborhood to the east, and a rural residential neighborhood to the north. Pacheco Elementary School is located southeast of the project site at the southeast corner of Knighton Road and Churn Creek Road. Agricultural land uses and rural residential dwellings are located to the west of I-5. The proposed project could indirectly induce population growth by encouraging extension of infrastructure from Redding or Anderson closer to these undeveloped or lesser developed areas; however, a significant increase in population is not expected. This impact is *less than significant*.

Mitigation Measures

No mitigation measures are required.

Impact #3.9-6: Displace substantial numbers of people and/or existing housing, thereby necessitating the construction of replacement housing elsewhere.

Discussion/Conclusion: Implementation of the proposed project will result in the demolition of one existing residential unit. The displacement of one existing residential unit will not necessitate the construction of replacement housing elsewhere. There is *no impact*.

Mitigation Measures

No mitigation measures are required.

CUMULATIVE IMPACTS

Impact #3.9-7: Land use conflicts created by cumulative pressure to convert additional land to commercial uses.

Discussion/Conclusion: Development of the proposed retail center, in combination with other projects, may generate interest by developers to propose complementary developments, which would convert additional land from agricultural uses. In addition, the proposed project will increase traffic in the Churn Creek Bottom area, which could also encourage commercial or

residential development, especially given the proximity of I-5. The development of these additional commercial uses might cause environmental impacts to existing neighborhoods as well as to Pacheco School. Potential indirect conversion of agricultural lands is addressed under Impact #3.2-2. The mere existence of the proposed retail center does not guarantee that it will create pressures to convert this land for commercial or residential uses. Nevertheless, the project is likely to generate demand for commercial sites and residential development in and around the Churn Creek Bottom area, causing future land-use incompatibilities. Therefore, this impact is considered *cumulatively considerable* and therefore *potentially significant*.

Mitigation Measures

There are no available mitigation measures which would reduce this impact to a *less-than-significant* level. The impact remains *potentially cumulatively significant and unavoidable*.

Impact #3.9-8: Potential urban decay impacts to the City of Redding which could lead to abandonment of existing buildings.

Discussion/Conclusion: When analyzed cumulatively, potential for urban decay exists as the result of development of the proposed retail center, and all other, existing, approved, and potential retail developments in the Redding market area. The cumulative impact of developing the proposed project and approved or potential retail projects in the Redding area could increase the extent and duration of the Redding area market's oversupply, possibly triggering the physical abandonment of existing buildings. With the potential to trigger physical abandonment of existing buildings this impact is *potentially significant*.

Mitigation Measures

Although the potential of urban decay could be avoided or reduced by a variety of factors, including; market adaptation of existing centers, repositioning of existing centers to non-retail uses or encouraging a mix of diverse tenants to prevent excessive competition, it is uncertain that these measures have the full potential to reduce abandonment of existing buildings and implementation of the measures are beyond the control of Shasta County or the project applicant. This impact is considered *potentially cumulatively significant and unavoidable*.

Mitigation Measure #3.10-2a:

A barrier 8-feet in height shall be constructed along the east property line, adjacent to the loading dock areas as shown on Figure 3.10-3.

Mitigation Measure #3.10-2b:

Loading dock operations along the east side of the project site shall be restricted to the daytime hours of 7:00 a.m. to 10:00 p.m.

Impact #3.10-3: Roof-top HVAC equipment may result in noise levels which exceed the Shasta County noise level criteria.

Discussion/Conclusion: During the summer months HVAC equipment may run continually during the nighttime hours. Therefore, the HVAC equipment would be required to comply with the 45 dB Leq hourly noise level criterion. This is a potentially significant impact.

Mitigation Measures

Implementation of the following noise mitigation measures would reduce this impact to a *less than significant* level.

Mitigation Measure #3.10-3:

Commercial buildings located along the perimeter of the project site will require parapets 4-feet in height along the facades facing residential uses. As an alternative to parapets, roof-top HVAC equipment can be fitted with exhaust silencers or individual barriers. Since roof-top plans are not available at this time, a supplemental noise study shall be provided when the roof-top mechanical plan is available. As an alternative, HVAC equipment could be located on the ground and shielded from residences by building facades or wing walls.

Impact #3.10-4: Activities associated with construction will result in temporary elevated noise levels within the immediate area.

Discussion/Conclusion: Activities involved in construction would generate maximum noise levels, as indicated in Table 3.10-12, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Because construction activities could result in periods of elevated noise levels at existing residences, this impact is considered *significant*.

Mitigation Measures

Implementation of the following noise mitigation measures would reduce this impact to a *less than significant level*.

Mitigation Measure #3.10-4:

On-site construction activities shall be restricted to daytime hours. Construction equipment shall be equipped with proper mufflers and in good working order.

Fixed construction equipment such as compressors and generators shall be located as far as possible from sensitive receptors. All impact tools shall be shrouded or shielded and all intakes and exhaust ports on power construction equipment muffled or shielded.

Impact #3.10-5: Activities associated with construction will result in groundborne vibrations within the immediate area.

Discussion/Conclusion: The primary construction activities associated with the project would occur when the infrastructure such as buildings and utilities are constructed. Comparing Table 3.10-15 which contains the criteria for acceptable vibration levels to Table 3.10-13, which shows potential vibration impacts, it is not expected that vibration impacts would occur which would cause any structural damage. This impact is considered to be *less than significant*.

Mitigation Measures

No mitigation measures are required.

Impact #3.10-6: Activities associated with the wastewater treatment plant will result in elevated noise levels within the immediate area.

Discussion/Conclusion: Activities associated with the wastewater treatment plant include pumps, aerators, emergency generators and blowers which could result in noise impacts at nearby residences. Noise levels associated with influent pumps are in the range of 50 dB to 60 dB at a distance of 25 feet. Blowers and compressors which are generally located inside block buildings can produce noise levels as high as 80 dB at 20 feet. Aerators which are located in oxidation ditches can produce noise levels of approximately 65 dB at 50 feet. This impact is *significant*.

Mitigation Measures

Implementation of the following noise mitigation measures would reduce this impact to a *less than significant level*.

Mitigation Measure #3.10-6:

~~All pumps shall be submersible pumps or located inside of enclosures. The blowers shall be located inside a concrete block building. Aerators shall be located below perimeter ground level in the aeration basins. All equipment operations shall comply with the daytime exterior noise level criterion of 55 dB Leq, and the nighttime exterior noise level criterion of 45 dB Leq at the nearest residential property lines.~~

The applicant shall construct a wastewater treatment plant, which will result in compliance with the noise criteria contained within Shasta County General Plan Policy N-b, Table N-IV.

FIRE

Fire protection services in Shasta County are provided primarily by the Shasta County Fire Department. The Department currently consists of 19 volunteer fire companies ~~in 12 fire districts and one career-staffed fire engine~~. Station 43 located at the Redding Municipal Airport approximately 1.6 miles east of the project site is the nearest fire station. This station is shared by the California Department of Forestry and Fire Protection and the Shasta County Fire Department. Services provided by this station include fire suppression, emergency response and hazardous material response.

Station 43 has a total of 18 paid staff during the summer and a total of 8 paid staff and 10 volunteer staff during the winter. The Department currently has ~~three~~ two fire engines, a dozer transport, ~~a hazardous materials unit, a hazardous materials support unit, an air supply unit,~~ and a mobile communications unit. The Shasta County Fire Department's Fire Marshall estimates a response time to the project site of fewer than five minutes.

The Fire Department contracts with the California Department of Forestry and Fire Protection (CAL FIRE) for fire protection services including all dispatching services. CAL FIRE maintains fire stations throughout the County and is primarily responsible for wildland fires. CAL FIRE maintains a wildland fire hazard classification system in the area under which the project site and adjacent lands are not currently classified. The project site is, however, surrounded to the east and south by lands classified as "high" fire hazard areas.

SCHOOLS

Public schools in the vicinity of the project area are administered by the Pacheco Union School District and the Anderson Union High School District. The Pacheco Union School District consists of three schools including two elementary schools and one community day school. The District has a total enrollment of 684 students and employs 33 teachers resulting in a pupil-to-teacher ratio of 20.3. The District has 199 classes with an average class size of 21.7. This is slightly lower than the County's average class size of 22.6.

The Anderson Union High School District consists of seven schools including three high schools, one alternative school, one continuation school, and two community day schools. The District has a total enrollment of 2,195 students and employs over 97 teachers resulting in a pupil-to-teacher ratio of 22.5. The District has 502 classes with an average class size of 19.5. This is also slightly lower than the County's average class size of 22.6.

PARKS

Parks in the unincorporated areas of Shasta County are managed by the County's Public Works Department. This department currently manages three parks: (1) Hat Creek Park located in the Fall River Valley 75 miles east of the City of Redding along SR 299E; (2) French Gulch Park located in the French Gulch area 12 miles west of Redding along Clear Creek; and (3) Balls Ferry Boat Ramp along the Sacramento River. Additionally, various state and federal agencies manage recreational open space areas throughout the County.

of the public services including fire protection, police protection, schools, parks, and other public facilities.

- Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

3.11.3 IMPACTS AND MITIGATION MEASURES

Impact #3.11-1: Increased demand for police protection services on the project site.

Discussion/Conclusion: Retail centers similar to the proposed project will typically contract with a private security company to provide on-site nighttime security surveillance during operation of the project. However, the construction and operation of a 740,660-square-foot commercial facility in unincorporated Shasta County will result in greater demands for the services of the Shasta County Sheriff's Office. In order to provide this service the department may require additional equipment, vehicles, and/or staff. The Sheriff's Office has estimated that the proposed project will result in a significant increase in calls for service and require the addition of three Deputy Sheriffs and several support staff. Additional staffing costs will be offset by Proposition 172 funds and General Fund revenues while capital costs will be addressed in accordance with Mitigation Measure #3.11-1 below. This impact is *potentially significant*.

Mitigation Measures

Implementation of the following mitigation measure will reduce this impact to a *less-than-significant* impact.

Mitigation Measure #3.11-1:

~~The applicant shall enter into a contract for services or similar mechanism for the required additional law enforcement services. A fully executed agreement, including a schedule for providing additional services based on project buildout or other mutually agreed upon criteria, shall be submitted to the Planning Division, prior to issuance of building permits.~~

The applicant shall be required to pay a fair share of additional capital cost by paying the amount required by and in accordance with Shasta County Ordinance 665.

Impact #3.11-2: Increased demand for fire protection services on the project site.

Discussion/Conclusion: The proposed project will include the installation of a fire sprinkler system in all structures on the site. Water will be supplied to the project site via an on-site

groundwater well(s) and a ground-level storage tank with a separate fire booster pumping system to meet this requirement.

The Shasta County Fire Department will provide fire protection services to the project site from Station 43 located within two miles of the site. The estimated response time to the site is less than five minutes.

Construction and operation of a ~~740,660~~740,000-square-foot commercial facility in unincorporated Shasta County will result in greater demands for the services of the Shasta County Fire Department. In order to provide this service the department may require additional equipment, vehicles, and/or staff. Additional staffing costs will be offset by General Fund revenues while capital costs will be addressed in accordance with Mitigation Measure #3.11-2b below. This impact is *potentially significant*.

Mitigation Measures

Implementation of the following mitigation measures will reduce this impact to a *less-than-significant* impact.

Mitigation Measure #3.11-2a:

Prior to issuance of any building permits for structures, the Planning Division and County Building Division shall verify that Shasta County Fire Department has reviewed and approved any proposed development plans for compliance with relevant fire protection standards in the Uniform Building Code, Uniform Fire Code, and Shasta County Fire Safety Standards.

Mitigation Measure #3.11-2b:

~~*In accordance with Shasta County Ordinance 665 Development Impact Fees, the applicant shall be required to pay a fair share of the cost of additional staff and equipment capital cost by paying the amount required by and in accordance with Shasta County Ordinance 665. prior to development of the project site. A fully executed agreement describing the fair share cost and a schedule for payment based on project buildout or other mutually agreed upon criteria shall be submitted to the Planning Division, prior to issuance of buildings permits.*~~

Impact #3.11-3: Potential impact on schools related to increased population and school enrollment from the proposed development.

Discussion/Conclusion: The project applicant has estimated that the project will employ approximately 1,000 employees once operational. It is anticipated that a portion of these new employment opportunities will be filled by current County residents. The addition of up to 1,000 employees and their families represents a significant increase to the County population and may result in a significant increase in local school enrollment and associated impacts on school facilities. The project proponent will be required to pay a school impact fee pursuant to

Education Code Section 17620 to offset impacts to local public schools. The current school impact fee for commercial development in the school district is \$0.47 per square foot of enclosed building space (Shasta County Office of Education). As referenced in the *Regulatory Setting* above, the payment of school impact fees at levels established by SB 50 are deemed legally sufficient mitigation for any impacts based on generation of students on school facilities. Payment of this fee will reduce this impact to a *less-than-significant* level.

**3.12 Transportation and Circulation –
See Errata to Partially Recirculated DEIR (PRDEIR)
following Errata to DEIR Appendix L**

3.13 Utilities and Service Systems

This section of the Draft EIR analyzes the potential demands on utility systems generated by the proposed project and makes determinations regarding the significance of these impacts. Utility systems included in this analysis are wastewater, storm drainage, water supply, solid waste, electric and natural gas, and telecommunications. Drainage, flooding, and groundwater impacts are discussed in Section 3.8 of this EIR, *Hydrology and Water Quality*. During the NOP period, comments were received regarding the use of groundwater to support the proposed project and the reliability of the wastewater treatment plant.

3.13.1 SETTING

Environmental Setting

SOLID WASTE

Solid waste services for the unincorporated areas of Shasta County are managed by the Shasta County Waste Management Agency. The agency contracts with two private companies, Waste Management, Inc. and Burney Disposal, Inc. for collection services. There are 11 transfer stations located throughout the County as well as two active landfills.

It is anticipated that the West Central Landfill located at 14095 Clear Creek Road in Igo on 1,058 acres is the nearest landfill to will serve the proposed project site. The landfill is permitted to accept up to 700 tons of waste per day on a permitted disposal area of 107 acres. The landfill has a capacity of 7,078,000 cubic yards with a remaining capacity, as of 2001, of 6,605,722 cubic yards and is projected to close in 2019. Another landfill (such as the Anderson Landfill) may be determined by the County to be the appropriate landfill at the time service is required.

According to Bill Ramsdell with the Shasta County Public Works Department, the County has prepared and adopted a Solid Waste Reduction and Recycling Element. The California Integrated Waste Management Board has recorded a diversion rate of 62 percent for the years 2005 and 2006. This is well above the required 50 percent diversion rate mandated by AB 939 (California Integrated Waste Management Act of 1989).

ELECTRIC AND GAS

Electric and natural gas services can be provided to the project site by Pacific Gas and Electric Company.

WASTEWATER

Regional Wastewater Treatment

Wastewater collection, treatment, and disposal process or techniques vary throughout Shasta County. Community wastewater disposal is provided in two forms; central wastewater treatment plants and smaller package treatment plants. Community disposal in the form of a central plant is provided in the City of Shasta Lake, the City of Anderson and the City of Redding, as well as

100% disposal field replacement area per County Standards. Although a drip disposal system would maximize the separation to groundwater, a pressurized distribution system is recommended due to the large area requirement. This type of distribution system allows for alternatively dosing a number of zonal areas. It is anticipated that up to four zones will be required at full project buildout.

Sludge Disposal: It is proposed that digested sludge be removed from the aerobic digester and hauled to the Shasta County Septage Ponds once a week. Shasta County has expanded the septage ponds and has indicated it has surplus capacity to receive sludge.

Project Wastewater Flows

Based on the analysis contained in the PACE CIVIL narrative, a peak wet weather flow design capacity of 265,000 gallons of wastewater per day was determined to be more than adequate.

Groundwater Levels

Three regional aquifers have been delineated at the site, and there is at least one shallower aquifer; the perched zone, ranging from 11 to 25 feet below ground surface (bgs). Although three regional aquifer zones have been delineated at the project site, similar water levels in the upper two zones suggest that these zones could be considered as one (see Appendix I, *Water Supply Assessment Knighton & Churn Creek Commons Retail Center, July 2009*). Static water levels in observation wells completed in the upper and intermediate zones are about 30 feet below ground surface (the upper aquifer extends from 108 to 125 feet bgs and the intermediate aquifer extends from 158 to 209 feet bgs). Static water level for water from the deep zone is about 52 feet bgs (the actual aquifer is between 240 and 325 feet bgs). There may be deeper zones (below 325 feet bgs), also. Thus, the lower aquifer is distinct from the intermediate and upper zones. Most of the domestic wells in the *vicinity* are screened in the upper aquifer or above, with a few in the intermediate zone. The site production well was screened in the lower aquifer.

WATER SUPPLY

The project site is remote from urban water systems, and must therefore be served by on-site water supply and distribution facilities. The source for all potable water will be an on-site well installed and tested in 1998 as part of the environmental review process for the formerly proposed Flying J Travel Plaza project (see Appendix J, *Well Installation, Aquifer Testing and Groundwater Modeling for Flying J Knighton Road Travel Plaza, Shasta County, California*). This well, which is 325 feet deep, is located in the southwest portion of the project site (see Figure 6-1 of Appendix I, *Water Supply Assessment Knighton & Churn Creek Commons Retail Center, July 2009*). The screened interval (where groundwater enters the well casing) is from 245 to 325 feet below ground surface (bgs); the sanitary seal extends to 235 feet bgs. The casing is 10 inches in diameter; the screened interval is wire-wrapped stainless-steel.

The water-supply well is, and the treatment system will be, located in the western part of the site. The well will be equipped with a maximum 500 gpm pump, which will deliver water to a 300,000-gallon water-storage tank to be centrally located along the north boundary of the proposed project site. The storage tank will provide for all on-site water demands beyond

maximum-day demand. Separate booster pump stations will charge a pressure system to deliver all domestic and fire-flow demands.

Water Demand

Water demand for the project has been estimated at approximately 200 acre-feet per year in the *Water Supply Assessment Knighton & Churn Creek Commons Retail Center, July 2009* provided in Appendix I.

Regulatory Setting

FEDERAL

~~There are no federal regulations applicable to the proposed utility service systems.~~

Clean Water Act (CWA)

The CWA administered through the Regulatory Program of the Corps regulates the water quality of all discharges into waters of the U.S. including wetlands and intermittent stream channels. Section 401, Title 33, Section 1341 of the CWA sets forth water-quality certification requirements for “any applicant applying for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable water.”

STATE

Waste Discharge Requirements

The Central Valley Regional Water Quality Control Board (RWQCB) considers the adoption of waste discharge requirements (WDRs) for all package treatment plants (see [Appendix Q](#), Municipal and Domestic Wastewater: Treatment, Disposal, and Reclamation). The WDR will contain specific effluent limitations. The WDR will also include monitoring and reporting requirements. Monitoring of the effluent may include analyses for the following parameters: flow, biological and/or chemical oxygen demand (BOD/COD), total dissolved solids, suspended solids, total and fecal coliform bacteria, nitrate, total nitrogen, total phosphorus, methylene blue active substances (MBAS), and purgeable halocarbons and aromatics. Monitoring requirements will include monitoring of the receiving water, including the underlying groundwater. The process for obtaining WDRs includes the following steps:

1. File the Report of Waste Discharge form with the necessary supplemental information with the RWQCB at least 120 days before beginning to discharge waste.
2. RWQCB staff reviews the application for completeness and may request additional information.
3. Once the application is complete, staff determines whether to propose adoption of the WDRs, prohibit the discharge, or waive the WDRs.
4. If WDRs are proposed, staff prepares draft WDRs and distributes them to persons and public agencies with known interest in the project for a minimum 30-day comment period. Staff

may modify the proposed WDRs based upon comments received from the discharger and interested parties.

5. The RWQCB holds a public hearing with at least a 30-day public notification. If WDRs are uncontested, the notice requirement is only 10 days. The RWQCB may adopt the proposed WDRs or modify and adopt them at the public hearing by majority vote.

Safe Drinking Water Act (Chapter 7 of the California Health and Safety Code)

The adoption of implementing regulations and the enforcement of the drinking water laws of California are the responsibility of the California Department of Public Health Services (~~Department~~CDPH). A key feature of the Safe Drinking Water Act is the requirement that no person may operate a public water system without having secured a domestic water supply permit from the ~~Department~~CDPH. The statutes provide a clear definition of a public water system. Basically, anyone who serves drinking water to at least 25 persons for at least 60 days out of the year, or who serves domestic water to 15 or more service connections, is a public water system and must have a domestic water supply permit.

California Code of Regulations, Title 22, Reclamation Criteria

The California Department of Public Health Services (~~CDPH~~DHS) has established statewide reclamation criteria in Chapter 3, Division 4, Title 22, California Code of Regulations (CCR), Section 60301, et seq. (Title 22) for the use of reclaimed water for food crop, fodder, fiber, seed crop and landscape irrigation and impoundment supply. The permit implements the reclamation criteria in Title 22.

In 1996, the State Water Quality Control Board and ~~CDPH~~DHS set forth principles, procedures, and agreements to which the agencies committed themselves, relative to the use of recycled water in California, in a document titled *Memorandum of Agreement Between the Department of Health Services and the State Water Resources Control Board on the Use of Reclaimed Water* (MOA). Consistent with the MOA and as authorized by the California Water Code [Section 13522.5(a)] Regional Water Quality Control Boards may issue Master Reclamation Permits, which are required for “any person recycling or proposing to recycle water, or using or proposing to use recycled water, within any region for any purpose for which recycling criteria have been established.”

SB 610 Water Supply Assessment

Senate Bill 610 (SB 610), passed in 2001, amended the California Water Code, to require a written water supply assessment for projects of 500 or more residential units, 500,000 square feet of retail commercial space, or 250,000 square feet of office commercial space.

California Urban Water Management Planning Act

~~The Urban Water Management Planning Act (§10610-10656 of the California Water Code) requires that all urban water suppliers prepare urban water management plans and update them every five years.~~

AB 939 California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of by transformation or land disposal, the State Legislature passed Assembly Bill 939, the California Integrated Waste Management Act of 1989, effective January 1990. According to AB 939, all cities and counties in California are required to divert 25 percent of all solid waste from landfill or transformation

facilities by January 1, 1995, and 50 percent by January 1, 2000, through source reduction, recycling and composting, and environmentally safe transformation.

AB 1327 California Solid Waste Reuse and Recycling Access Act

The Solid Waste Reuse and Recycling Access Act of 1991 requires each jurisdiction to adopt an ordinance by September 1, 1994, requiring each development project to provide an adequate storage area for collection and removal of recyclable materials.

California Public Utilities Commission (CPUC)

~~The CPUC regulates privately owned telecommunication, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. It is the responsibility of the CPUC to: assure California utility customers receive safe, reliable utility service at reasonable rates; protect utility customers from fraud; and promote a healthy California economy. The Public Utilities Code, adopted by the legislature, defines the jurisdiction of the CPUC.~~

Title 24 Building Energy Efficiency Standards

Building energy consumption is regulated under Title 24 of the California Code of Regulations. The efficiency standards contained in this title apply to new construction of both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting.

LOCAL

Small Public Community Water System Permit

A permit from the Shasta County Environmental Health Division is required to operate a small public community water system, transient or non-transient non-community public water system, and state small public water system. A complete set of plans and specifications must be submitted when applying for this permit. An annual fee is charged based on the type of water system.

Shasta County General Plan

Policy W-b: Septic systems, waste disposal sites, and other sources of hazardous or polluting materials shall be designed to prevent contamination to streams, creeks, rivers, reservoirs, or groundwater basins in accordance with standards adopted by the County.

Policy W-c: All proposed land divisions and developments in Shasta County shall have an adequate water supply, from a quantity and a quality standpoint, for the planned uses. Furthermore, the potential adverse impacts on the existing reasonable and beneficial uses of utilizing that same water supply should not be significant. Project proponents shall submit data and reports, when requested, which demonstrate that these criteria can be met. In the case of land divisions, the reports shall be submitted to the County for review and acceptance prior to a

- Comply with federal, state, and local statutes and regulations related to solid waste.

3.13.3 IMPACTS AND MITIGATION MEASURES

Impact #3.13-1: Potential to violate RWQCB, Central Valley Region wastewater treatment requirements and cause degradation of groundwater quality.

Discussion/Conclusion: Wastewater discharges from operation of the proposed sanitary wastewater treatment and disposal system could potentially cause nitrogen contamination to groundwater in the project area. The Water and Wastewater Facilities Narrative provided by PACE CIVIL, INC (January 20, 2009) describes the operation of the system and how it will meet the standard of ≤ 10 mg/liter for nitrogen concentrations established in RWQCB's basin goals. The analysis found that nitrogen attributable to project discharges would be essentially nondetectable below the upper aquifer, beneath the project site and nondetectable in all aquifers beyond the project boundary. Additionally, the Project's wastewater-treatment system will reduce the nitrogen concentrations in the effluent so that there will not be a statistically significant impact on the underlying groundwater (this will be the standard to which the State permit will hold the Project). Wastewater quality impacts would not adversely affect groundwater pumped from neighboring wells.

The project proponent will be required to file a Report of Waste Discharge form with RWQCB. In addition, the project proponent will be required to meet Title 22 requirements if reclaimed water from the wastewater treatment system is to be used for irrigation of landscaping. This is a *potentially significant* impact.

Mitigation Measures

Although the sanitary wastewater treatment and disposal system non-degradation plan for the proposed project is designed to meet RWQCB regulations and avoid increases of nitrogen levels in groundwater. Implementation of the following mitigation measure will ensure proper design, installation and operation and reduce this impact to a *less-than-significant* level.

Mitigation Measure #3.13-1:

The project proponent shall establish an appropriate mechanism to maintain and operate the on-site wastewater treatment facility in compliance with Regional Water Quality Control Board requirements as delineated in Waste Discharge Requirements that shall be issued for the facility. ~~and the facility shall be in place, operational, and certified by the Regional Board prior to issuance of certificates of occupancy.~~

Impact #3.13-2: Construction of new water or wastewater treatment facilities, which could cause significant environmental effects.

Discussion/Conclusion: The proposed project includes the construction of new water supply and wastewater treatment and disposal facilities on the project site. Because these new facilities are an inherent aspect of the proposed project, potential environmental impacts and mitigation

associated with their construction and operation are addressed as a component of project development throughout this EIR. With implementation of applicable federal, State and local regulations and the mitigation measures included in this EIR, *potentially significant* impacts

Global climate change is expected to influence many interconnected phenomena, which will in turn affect the rate of climate change itself. Faced with this overwhelmingly complex system, scientists who model climate change must make decisions about how to simplify the phenomenon, such as assuming a fixed rate of temperature change or a certain level of aerosol production or a particular theory of cloud formation. These assumptions make the models applicable to particular aspects of the changing ecosystem, given a good guess about how the future will be. Rather than try to be predictive, the models represent possible scenarios that come with a set of presuppositions. Even when results are quantified, such quantifications are meaningless unless viewed in the light of those presuppositions. For these reasons, a range of models must be examined when trying to assess the potential effects of climate change and the resulting analysis is most appropriately qualitative (See Intergovernmental Panel on Climate Change (IPCC) 2001). This section, therefore, provides a qualitative analysis of the impacts of global climate change as they affect water resources in California and in the project area.

In 2003, global emissions of carbon (i.e., only the carbon atoms within CO₂ molecules) solely from fossil fuel burning totaled an estimated 7,303 million metric tons (Marlands et al. 2006). This translates to approximately 29,400 million tons of CO₂. This is only a portion of global CO₂ emissions because it addresses only fossil fuel burning and does not address other CO₂ sources such as burning of vegetation. Total estimated CO₂ emissions from all sources associated with the proposed project would be less than 0.000073% of this partial global total. CO₂ emissions in California totaled approximately 391 million tons in 2004 (California Energy Commission 2006a). Total CO₂ emissions from the Project, as estimated above, would be less than 0.0055% of this statewide total.

The project will have a significant cumulative impact of global climate change due to the increase of vehicles in the area. CO₂ emissions created from the Project as mentioned above will contribute to GHG's local, regionally, and globally.

Development of the proposed project in combination with growth and development at the local regional and state level, would result in a ***significant, cumulatively considerable and unavoidable*** impact.

Mitigation Measures

Although the following mitigation measures have been determined to be feasible and will reduce impacts affecting global climate change, their implementation will not reduce this impact to a less than significant level and this impact will remain ***significant, cumulatively considerable and unavoidable***.

Mitigation Measure #3.14-1a:

The proposed project shall reduce its cumulative contribution to greenhouse gases ~~in the spirit of AB 32, pursuant to~~ The Global Warming Solutions Act of 2006, by implementing ~~the following suggested~~ appropriate and feasible measures or such replacement measures that Shasta County determines to be effectively equivalent from the California Climate Action Team Strategies and the Department of Justice Attorney General.

- *Truck idling shall be restricted during construction.*
- *The following design features shall be implemented into the proposed project:*
 1. *Recycling:*
 - *Design locations for separate waste and recycling receptacles;*
 - *Reuse and recycle construction and demolition waste;*
 - *Provide education and publicity about reducing waste and available recycling services.*
 2. *Large canopy trees shall be carefully selected and located to protect the building(s) from energy consuming environmental conditions, and to shade 30% of paved areas within 15 years. Trees near structures act as insulators from weather thereby decreasing energy requirements. Trees also store carbon.*
 3. *Impose measures to address the "urban heat island" effect by, e.g. requiring light-colored and reflective roofing materials and paint; light-colored roads and parking lots; shade trees in parking lots' and shade trees on the south and west sides of new or renovated buildings.*
 4. *Transportation and motor vehicle emissions reduction:*
 - ~~*Use low or zero emission vehicles, including construction vehicles;*~~
 - *During construction, post signs that restrict truck idling;*
 - *Set specific limits on idling time for commercial vehicles, including delivery and construction vehicles;*
 - *Coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where signals are installed, require the use of Light Emitting Diode (LED) traffic lights; and*
 5. *Water Use Efficiency:*
 - *Use of both potable and non-potable water to the maximum extent practicable; low flow appliances (i.e., toilets, dishwashers, shower heads, washing machines, etc.); automatic shut off valves for sinks in restrooms; drought resistant landscaping; "Save Water" signs near water faucets;*
 - *Create/use water efficient landscapes;*
 - *Provide education about water conservation and available programs and incentives.*

6. *Energy Efficiency:*

- *Automated control system for heating/air conditioning and energy efficient appliances;*
- *Utilize lighting controls and energy-efficient lighting in buildings;*
- *Use light colored roof materials to reflect heat;*
- *Take advantage of shade (save healthy existing trees when feasible), prevailing winds, landscaping and sun screens to reduce energy use; and*
- ~~*Install solar panels on top of buildings; and*~~
- *Increase building energy efficiency percent beyond Title 24 requirements. In addition implement other green building design ((i.e., natural daylighting and on-site renewable).*

Mitigation Measure #3.14-1b:

Give prioritized parking within commercial and retail areas to electric vehicles, hybrid vehicles, and alternative fuel vehicles.

Impact #3.14-2: Climate Change could potentially result in an impact on Project water resources

Discussion/Conclusion: From a statewide perspective, global climate change could affect California's environmental resources through potential, though uncertain, changes related to future air temperatures and precipitation and their resulting impacts on water temperatures, reservoir operations, stream runoff, and sea levels (Kiparsky and Gleick 2003). These changes in hydrological systems could threaten California's economy, public health, and environment (California Energy Commission 2003). The types of potential climate effects that could occur on California's water resources include:

Water Supply. Several recent studies have shown that existing water supply systems are sensitive to climate change (Wood, 1997). Potential impacts of climate change on water supply and availability could directly and indirectly affect a wide range of institutional, economic, and societal factors (Gleick 1997). Much uncertainty remains, however, with respect to the overall impact of global climate change on future water supplies. For example, models that predict drier conditions (i.e., parallel climate model [PCM]) suggest decreased reservoir inflows and storage and decreased river flows, relative to current conditions. By comparison, models that predict wetter conditions (i.e., HadCM2) project increased reservoir inflows and storage, and increased river flows (Brekke, 2004). Both projections are equally probable based on which model is chosen for the analyses (Ibid.). Much uncertainty also exists with respect to how climate change will affect future demand for water supply (DWR 2006). Still, changes in water supply are expected to occur and many regional studies have shown that large changes in the reliability of

4.2 Project Objectives

As stated in Chapter Two of this Draft EIR, the objectives of the project proponent for this project are as follows:

- provide the public with regional shopping opportunities, including retail, dining, entertainment and lodging components.
- provide a regional shopping experience that is of a quality consistent with the culture of Shasta County.
- provide a regional “one-stop” destination whereby commerce is intertwined with transportation in Shasta County by utilizing the existing transportation services in the I-5 corridor and encourage alternative forms of transportation thereby reducing carbon emissions;
- construct buildings and improvements in the development that exceed state energy efficiency standards;
- attract regional retail customers currently using the I-5 corridor to commute through Shasta County that are currently not stopping and shopping in the County;
- develop a regional shopping destination that promotes Shasta County’s economic stability and diversity by expanding and providing a stable, long-term revenue base to Shasta County.
- develop a regional shopping center development of sufficient size that it will attract new retailers into the Shasta County market and address such retailer’s location, visibility, co-tenancy and traffic requirements and ensure long-term viability.
- provide new job opportunities for Shasta County;
- develop a regional commercial shopping development that provides a feasible economic return to its investors and Shasta County.

4.3 Alternatives Rejected

According to the CEQA Guidelines, two major provisions are necessary for an adequate alternative site analysis—feasibility and location. The EIR should consider alternate project locations if a significant project impacts could be avoided or substantially lessened by moving the project to an alternate site.

Various potential off-site locations were identified for possible analysis in this document (see [Figure 4-1](#)). As summarized below ~~V~~vacant parcels within this 10 mile radius were not large enough to accommodate a regional retail shopping center, had insufficient access to I-5, or would not result in the elimination or lessening of any environmental impacts.

- **Fawndale.** The location is significantly north of the existing population base and no apparent land for development has been identified. All land surrounding the interchange is mountainous or currently used for mobile home/RV purposes.
- **Wonderland.** The location is significantly north of the existing population base. All of the available sites observed were substantially smaller than required for a regional development.
- **Shasta Dam.** The location is north of the existing population base. The only available site appeared to be 8-10 acres in size, which is substantially too small for a comparable project. The location also had limited I-5 visibility and inferior access.
- **Pinegrove.** This intersection is north of the existing population base. The only available site appeared to be an approximately 5 acre parcel, which is too small for any shopping center development.
- **Oasis.** Other than the Levinson project that has already received EIR approval at this intersection, no other parcels of property appeared to be of sufficient size to develop any retail shopping center, regional or otherwise. In addition, the market would not support further commercial development in competition with the Levinson project. Finally, all such available land had inferior visibility off of I-5 and inferior access.
- **Twin View.** One 6-10 acre developable parcel was located, which is too small to be comparable to the proposed project. Visibility from I-5 is limited and the access is inferior.
- **Lake/299 E.** One 8.5 acre parcel near the I-5 interchange was located, but it was not visible from I-5. In addition, access to this site is inferior.
- **Cypress.** No vacant sites we identified at the interchange.
- **Bonnyview.** An 18 acre site at Bonnyview and Churn Creek was identified as suitable for a neighborhood/community retail shopping center or for one regional superstore tenant. The access to this site is inferior as is visibility from I-5. A 19 acre site at the northwest corner of Bonnyview & I-5 was also located. This site may have wetland issues. The "for sale" sign on the site indicated it was zoned for multi-family use. Access to this site is substantially inferior.
- **Riverside.** Two parcels that could be assembled into a 41 acre development were located; however, they are still too small for a regional shopping center. The location has inferior access to the site. In addition, high-voltage power lines traverse a portion of the site, which may make that portion undevelopable.
- **Anderson S/B.** A fairly large parcel at Balls Ferry & I-5 was located. Access to the property is substantially inferior and the main hard corner is already developed. Therefore, any new development would have to develop around this existing development. The site has minimal street frontage but does have equivalent I-5 visibility. The surrounding area, however, is

improved for industrial uses. Finally, further studies would be required to determine the extent, if any, of potential wetland issues.

- **Anderson N/B.** One site of approximately 10-15 acres was located across the street from the existing Wal-Mart development which would be ideally suited as a complementary use to that existing development. The site has limited visibility off of I-5 and access is substantially inferior to the proposed project site.
- **Gas Point.** A 24 acre site at the northwest corner of Gas Point and I-5 was located; however, it is too small for a retail shopping center. In addition, this location is too far south of the existing population base. The access to the site appears to be through a residential street, which would create significant other issues against and such commercial development.

Appendix E
Cultural Resources Report

Identification of Historical Resources in the Project Site

Previous Studies

A cultural record search was conducted by the Northeast Center of the California Historical Resources Information System at California State University, Chico on July 11, 2005. The search included the following resources: National Register of Historic Places, the California Register of Historical Resources, California Points of Interest, California Inventory of Historic Resources, and California State Historic Landmarks.

The results of the records search indicated that two cultural resource studies have been conducted within portions of the Knighton & Churn Creek Commons Retail Center project site with negative results (Jensen 1998; Genesis Society, 2005). In addition to the two studies identified by the records search, a report titled *Determination of Eligibility and Effect for the Proposed Shasta Auto Mall Project, Shasta County, California* dated June 30, 2006 was prepared by Peak & Associate, Inc. in association with a previously proposed project. Known prehistoric period resources have been documented within a one-quarter mile radius of the Knighton & Churn Creek Commons Retail Center project site.

SB 18 Consultation

The County of Shasta, Department of Resource Management, Planning Department (“County”) contacted the Native American Heritage Commission (NAHC) with a request for a Sacred Lands File check and to obtain a list of individuals and/or groups who have requested to be notified of proposed development within the county. The County sent letters on April 14, 2009 requesting comment of the proposed Knighton & Churn Creek Commons Retail Center project to: Jessica Jim, Chairperson, Pit River Tribe of California; Chairperson, Greenville Rancheria of Maidu Indians; Roaring Creek Rancheria; Kelli Hayward, Wintu Tribe of Northern California; Caleen Sisk-Franco, Tribal Chair, Winnemem Wintu Tribe, Barbara Murphy, Chair, Redding Rancheria; and, Roy V. Hall, Jr., Chairperson, Shasta Nation.

Mark Franco, Headman, Winnemem Wintu Tribe responded in writing on April 25, 2009 and stated, in part:

I have reviewed the site map, additional traffic lane adjustments and other infra-structure plans and find no apparent cause for concern relative to site disturbance. However, this area of the Churn Creek "bottom" is very close to three sites we have documented and appears to lie directly across the freeway from the large village that yielded over 100 sets of human remains. Roadwork on the west side of the freeway should be monitored as well as any other appurtenant work on roads and water distribution. We believe that although the freeway has transected the site boundary, that additional human remains and items will be discovered on the east side at a depth of 4 to 5 feet. We ask that the Wintu Tribe of Northern California (WTNC) be notified of this concern as this area is within their tribal land

Appendix I

Water Supply Assessment

CHAPTER FOUR – PROJECT WATER DEMAND

4.1 Project Demand

According to the Preliminary Water Supply Analysis (L&A, 2008) (Appendix A), for potable water, Pace Civil, Inc.(Pace) calculated the annual-average project demand to be approximately ~~9063~~ gpm with a MDD of approximately ~~425122~~ gpm and a peak demand (two-hour) of approximately ~~400337~~ gpm. For irrigation, Pace calculated the average annual project demand to be approximately 32 gpm with a MDD of approximately ~~9063~~ gpm and a peak demand (two hour) of ~~275212~~ gpm. Peak demands will be met from storage, not directly from the well.

The highest irrigation demand will probably occur at night, while the highest potable water demand will occur during the day. Therefore, the potable and irrigation peak demands will not occur at the same time. For analysis of impacts, however, the Preliminary Water Supply Analysis assumed that both potable and irrigation maximum-day demands occur at the same time, and that the average annual demands are additive. Therefore, the maximum-day demand (MDD) for irrigation and non-irrigation needs combined will be approximately 122 per minute (gpm). This approach is conservative and will not lead to underestimation of impacts.

Yearly, the project would use approximately 200 acre-feet of water (122gpm x 1,440 minutes/day x 365 days/year divided by 325,851 gallons/acre-foot). One acre-foot is the amount of water that would cover one acre, one-foot deep. A typical household uses up to one acre-foot of water a year.

4.2 Existing Demand

Currently, a portion of the project site is used for seasonal crop agriculture and a small wholesale nursery. Water demand for these uses is primarily met by surface water supplied from the Anderson Cottonwood Irrigation District (ACID).

It is estimated that the average consumptive irrigation use for historic agricultural uses on the project site was approximately 2.1 acre-feet per acre per year, or about 193 acre-feet a year.

4.3 Net Demand

Although only a portion of the project site has been used for agricultural purposes in recent years, almost all of the site has been historically used for crop production. Table 4-1 compares the historic water demand of the site with the proposed project demand.

Table 4-1
Comparison of Historic Water Demand of Site with Proposed Project Demand

	AF per Year
Proposed Project Water Demand in AF per year	200
Proposed Project Site Historic Water Demand in AF per year	193
Net Water Demand Difference In AF per year	007

As shown in Table 4-1, the net difference in total water demand for the proposed project amounts to about 7 acre-feet per year.

4.4 Future Demand

It is not anticipated that future water demands will exceed the 200 acre-feet anticipated to meet the needs of the proposed project in that the on-site well is intended to solely serve the proposed project.

CHAPTER FIVE – GROUNDWATER SUPPLY INFORMATION

Water Code Section 10910 requires additional specific information if the water sources that will serve the Project include groundwater.

The County of Shasta has no intrinsic water rights to groundwater used by its citizens (other than beneath specific County-owned property), and the County does not directly supply water to most residents (the Shasta County Water Agency assists with some small County Service Area water suppliers). Each landowner in the County has an overlying right to use the groundwater beneath their land for beneficial uses. ~~historically supplied its residents with native groundwater derivative of the Redding basin through appropriative and prescriptive groundwater rights (overlying rights of the overlying landowners).~~

5.1 Groundwater Availability

In addition to the relatively short-term or immediate impacts from interference associated with well withdrawals, long-term water availability impacts must be considered. If withdrawals from a groundwater basin are greater than long-term recharge (replenishment of the water), "overdraft" occurs. One result of overdraft is declining groundwater levels, usually over a period of years. Therefore, project water use must be compared to the quantity of water in the aquifer and the amount of annual recharge. Chapter Seven provides analysis of the proposed project's normal year, single dry year, & multiple dry year water supply and demand scenarios

The groundwater budget for the Redding basin as a whole was estimated in the Shasta County Water Resources Master Plan (1997). Total inflow into the groundwater system of the Redding basin is estimated to be 293,600 acre-feet. Groundwater discharge from the basin is estimated to be about 37,300 acre-feet from pumping and about 266,000 acre-feet to surface streams.

The total water demand in the Redding basin as of the date of the Shasta County Water Resources Master Plan was 280,460 acre-feet. This demand was met mainly with surface water. The projected demand estimated for the year 2030 is 342,350 acre-feet, or an increase of about 62,000 acre-feet. To conservatively estimate groundwater-availability impacts, the *Update to Preliminary Water-Supply Impacts for Knighton Road Development* (L&A, 2009) (Appendix A) assumes that all of the additional year 2030 demand will be supplied by groundwater. This gives a total groundwater pumpage for the year 2030 of 99,300 acre-feet (62,000 + 37,300 acre-feet).

Current total pumpage in the Redding Basin is about 13% of groundwater recharge (37,300 +293,600 acre-feet). Estimated total future pumpage would be about 33% of groundwater inflow/recharge (99,300 +293,600 acre-feet). Pumping from the project (200 acre-feet/year) would be about 0.07% of total Redding basin groundwater inflow.

It is important to note that the net amount of water that the project will remove from the groundwater basin will be less than the 200 acre-feet/year pumped. About 90 acre-feet/year will be returned to the basin from recharge of the treated wastewater. Thus, the net withdrawal will be about 110 acre-feet per year.

Because the proposed project will use the same well analyzed previously, we can use the same groundwater model set up for the Flying J and Auto Mall projects, and change the pumping rate to the current maximum-day and annual-average demands to predict groundwater impacts.

For the MDD of ~~184~~122 gpm, the model shows about one foot of interference at 2,250 feet (0.4 miles) from the well and about six inches at 4,050 feet (0.8 miles) (reference Figure 2 in Appendix A). For the annual-average demand of ~~122~~90 gpm, the model shows about one foot of interference at 1,200 feet (0.2 miles) from the well and about six inches at 3,000 feet (0.6 miles) in the deep aquifer (reference Figure 3 in Appendix A).

In all scenarios, the model shows no detectable interference in the upper and intermediate aquifers. Although interpretation of the 1998 well-testing data suggested that there could be interference in the intermediate aquifer from pumping the deep aquifer, recharge of the treated wastewater for the current project will ameliorate those effects. Because most domestic wells in the area are screened in the upper or intermediate aquifers, most of the domestic wells would not experience interference from the project well. Current seasonal variation of water levels is about 20 to 25 feet in the area.

6.3 Urban Water Management Plan

At the time of this assessment, the proposed Project is not covered by an adopted Urban Water Management Plan (UWMP) due to the project's current number of service connections and/or current water demand.

6.4 Water Supply Entitlements

The project will obtain 100 percent of its Domestic Water System supply from groundwater. The project has the legal right, as an appropriator and as the agent of its overlaying landowners, to extract groundwater from within its boundaries without payment of pump taxes or fees.

6.5 Supply Demand Discussion

The water supply well serving the proposed project will be designed to interface with an on-site storage tank of sufficient capacity to provide for adequate fire flow and water conveyance system pressure throughout the proposed development. The entire water supply system (tank, pumps, pipes, etc.) will be designed to adequately serve the proposed development.

Appendix L

Knighton and Churn Creek Commons Urban Decay Analysis

Table 3-1
Knighton and Churn Creek Commons
Urban Decay Analysis
Summary of Existing Local, Community, and Regional Retail

Existing Retail
<u>5.0% Supply Contingency</u>

Item	Location	Retail Type	Sq. Ft.	Note	Anchor Tenants
Community Retail					
84 Lumber (closed)	City of Redding	Community	50,000		Vacant
Churn Creek (North of HWY 44) [1]	City of Redding	Community	163,000	[5]	Home Depot, Barnes and Noble, Food 4 Less, Office Max
Dana Drive [2]	City of Redding	Community	112,500	[5]	Wal-Mart, Costco, (vacant former Circuit City store)
Discovery Village	City of Redding	Community	37,000		Men's Warehouse, Aaron Brothers
Downtown Mall [3]	City of Redding	Community	225,300		Boutiques, Restaurants, Cascade Theater
K-Mart	City of Redding	Community	120,000	[5]	
Lowe's	City of Redding	Community	125,000	[5]	
Hilltop Pavilion	City of Redding	Community	178,000		Kohl's department store, Trader Joe's
Old Alturas Drive	City of Redding	Community	125,000	[5]	WinCo Foods, Cinemark Movies 10
Shasta Crossroads	City of Redding	Community	321,000		Target, Sports Authority, Ashley Furniture, Food Maxx
Village Plaza	City of Redding	Community	80,000		
Anderson Marketplace	City of Anderson	Community	208,600		Wal-Mart Supercenter
			<u>87,000</u>		
Uncaptured Retail [4]			349,000		
			<u>1,832,400</u>		
Subtotal Community Retail			2,094,400		
Regional/Super-Regional Retail					
Churn Creek (North of HWY 44) [1]	City of Redding	Regional	82,000	[5]	See above
Dana Drive [2]	City of Redding	Regional	112,500	[5]	See above
Hilltop Center	City of Redding	Regional	110,000		Petco, Gottshalks
Hilltop Drive	City of Redding	Regional	300,000		Best Buy; Michael's; Big Lots!; PetSmart
Mt. Shasta Mall	City of Redding	Regional	590,000		Macy's, Old Navy, Sears, JCPenney
Prime Outlets at Anderson	City of Anderson	Regional	165,000		Gap Outlet, Tommy Hilfiger, Dress Barn, Prime Cinemas
			<u>68,000</u>		
Uncaptured Retail [4]			272,000		
			<u>1,427,500</u>		
Subtotal Regional/Super-Regional Retail			1,634,500		
			<u>3,259,900</u>		
Subtotal Comm. & Regional/Super-Regional Retail			3,725,900		
			<u>3,259,900</u>		
Total Retail			3,725,900		

"existing"

Source: NRB Shopping Center Directory, Redding Record Searchlight, LoopNet, Redding Mall Properties, and EPS.

- [1] Estimated to be 2/3 community-serving and 1/3 region-serving retail.
- [2] Estimated to be 1/2 community-serving and 1/2 region-serving retail.
- [3] Redding Mall Properties has estimated that approximately 338,000 square feet of gross leasable space exists in the Downtown Mall. EPS has estimated that 2/3 of this space is occupied as retail.
- [4] EPS added a 20-5% contingency factor to include any retail supply that was omitted by the NRB Shopping Center Directory and unaccounted in EPS's supplemental research.
- [5] Square footage reflects rough estimates based on average sizes for selected tenants.

**Table 3-2
Knighton and Churn Creek Commons
Urban Decay Analysis
Summary of Developed, Planned, and Approved Retail Square Footage**

Proposed Retail

Project Name	Community				Regional				Total Retail Development
	Under Construction	Approved	Planned	Total	Under Construction	Approved	Planned	Total	
City of Anderson									
Vineyards at Anderson [1]	-	-	100,000	100,000	-	-	-	-	100,000
City of Redding									
Bonnyview Shopping Center [2]	-	210,000	-	210,000	-	-	-	-	210,000
Oasis Road Specific Plan [3]	-	-	-	-	-	<u>300,000</u>	<u>750,000</u>	<u>1,050,000</u>	<u>1,050,000</u>
Downtown Gateway [4]	-	10,000	-	10,000	-	<u>340,000</u>	<u>2,660,000</u>	<u>3,000,000</u>	<u>3,000,000</u>
Redding Riverfront Specific Plan	-	-	187,200	187,200	-	-	-	-	187,200
Wal-Mart Expansion [5]	-	80,000	-	80,000	-	-	-	-	80,000
Shasta County (Unincorporated)									
Knighton and Churn Creek Commons [6]	-	-	290,000	290,000	-	-	447,000	447,000	737,000
Total Projected Square Footage	-	300,000	577,200	877,200	-	<u>300,000</u>	<u>1,197,000</u>	<u>1,497,000</u>	<u>2,374,200</u>
						<u>340,000</u>	<u>3,107,000</u>	<u>3,447,000</u>	<u>4,324,200</u>

"nonres_sum"

Source: City of Redding, Shasta County, Villages at Anderson DEIR, and EPS.

- [1] This project proposes 40,000 square feet of commercial and 200,000 square feet of mixed use office-retail. The amount of retail-specific land uses in the project has not yet been determined.
- [2] Estimated to be 100 percent community-serving retail.
- [3] Development of the Oasis Road Specific Plan is in the long-term horizon and anticipated to occur over the next two or three decades. Approved development refers to the Oasis Towne Center.
- [4] The Downtown Gateway is anticipated to contain approximately 13,800 commercial square feet. EPS has estimated that approximately 10,000 square feet will be community-serving retail.
- [5] Estimated based on average sizes of Walmart discount stores and supercenters.
- [6] Derived in Table 1-1.

**Table 3-9
Knighton and Churn Creek Commons
Urban Decay Analysis
Net Retail Demand from Cumulative Development**

Cumulative Development
<u>5.0% Supply Contingency</u>

Retail Category	Demand (Sq. Ft.) [1]	Supply (Sq. Ft.) [1]	Difference:		CTA and RTA % Oversupplied/ Undersupplied
			Undersupply/(Oversupply) Sq. Ft.	Acres [2]	
Regional Retail					
2009	2,933,000	1,428,000 1,632,000	1,505,000 1,301,000	138.2 119.5	-
2015	3,303,000	2,175,000 2,419,000	1,128,000 884,000	103.6 81.2	-
2020	3,595,700	2,175,000 2,419,000	1,420,700 1,176,700	130.5 108.1	-
Community Retail					
2009	628,000	1,832,000 2,094,000	(1,204,000) (1,466,000)	(110.6) (134.6)	-
2015	690,000	2,522,000 2,784,000	(1,832,000) (2,094,000)	(168.2) (192.3)	-
2020	767,000	2,522,000 2,784,000	(1,755,000) (2,017,000)	(161.2) (185.2)	-
Net Retail Demand - Regional and Community Retail					
2009	3,561,000	3,260,000 3,726,000	301,000 (165,000)	27.6 (15.2)	-9.2% 4.4%
2015	3,993,000	4,697,000 5,203,000	704,000 (1,210,000)	(64.6) (111.1)	15.0% 23.3%
2020	4,362,700	4,697,000 5,203,000	(334,300) (840,300)	(30.7) (77.2)	7.1% 16.2%

"net_demand"

Source: EPS.

[1] Cumulative totals. See Table 3-9 and Table 3-10 for supply and demand comparisons.

[2] A FAR of 0.25 is assumed in calculating acreage undersupply/oversupply.

**Table 3-10
Knighton and Churn Creek Commons
Urban Decay Analysis
Net Retail Demand from Individual Project**

**Individual Project
(Existing Supply + Project)
5.0% Supply Contingency**

Retail Category	Demand (Sq. Ft.) [1]	Supply (Sq. Ft.) [1]	Difference:		CTA and RTA % Oversupplied/ Undersupplied
			Undersupply/(Oversupply) Sq. Ft.	Acres [2]	
Regional Retail					
2009	2,933,000	1,428,000 1,632,000	1,505,000 1,301,000	138.2 119.5	-
2015	3,303,000	1,875,000 2,079,000	1,428,000 1,224,000	131.1 112.4	-
2020	3,595,700	1,875,000 2,079,000	1,720,700 1,516,700	158.0 139.3	-
Community Retail					
2009	628,000	1,832,000 2,094,000	(1,204,000) (1,466,000)	(110.6) (134.6)	-
2015	690,000	2,122,000 2,384,000	(1,432,000) (1,694,000)	(131.5) (155.6)	-
2020	767,000	2,122,000 2,384,000	(1,355,000) (1,617,000)	(124.4) (148.5)	-
Net Retail Demand - Regional and Community Retail					
2009	3,561,000	3,260,000 3,726,000	301,000 (165,000)	27.6 (15.2)	-9.2% 4.4%
2015	3,993,000	3,997,000 4,463,000	4,000 (470,000)	(0.4) (43.2)	0.1% 10.5%
2020	4,362,700	3,997,000 4,463,000	(365,700) (100,300)	(33.6) (9.2)	-9.1% 2.2%

"net_proj"

Source: EPS.

[1] Cumulative totals. See Table 3-9 and Table 3-10 for demand calculations.

Supply resulting from the proposed project is derived in Table 3-2.

[2] A FAR of 0.25 is assumed in calculating acreage undersupply/oversupply.

Errata to
Partially Recirculated Draft EIR (PRDEIR)

The daily, PM, and MD peak hour traffic volume forecasts for the following scenarios were developed.

- **Proposed Project.** Trip generation and distribution information for the proposed project is based on the trip generation rates in the *ITE Trip Generation 8th Edition*. Assignment of project traffic to roadways was estimated based on general locations of population centers in Shasta and Tehama Counties.
- **Existing Plus Project.** Existing Conditions plus traffic from the proposed project.
- **Cumulative (2030) No Project.** Year 2030 conditions were developed using the Shasta County Travel Demand Forecasting model updated May 2008. Land use and roadway network assumptions were updated to account for pending projects in the area and roadway improvements identified by the RTPA.
- **Cumulative Plus Project.** Cumulative (Year 2030) No Project conditions plus traffic from the proposed project.

Project Trip Estimates

Trip generation for the proposed project was estimated using the trip generation rates found in the *ITE Trip Generation 8th Edition*. Project trip distribution for the project site was estimated using population data and the Shasta County Travel Demand Forecasting Model. Figure 3.12-4 presents the assumed trip distribution of the proposed project. Table 3.12-8 shows a summary of the vehicle trip generation.

**Table 3.12-8
Vehicle Trip Generation Summary**

Land Use	Weekday				Saturday			
	Daily	PM Peak Hour			Daily	Mid-Day Peak Hour		
		Total	In	Out		Total	In	Out
158,700 sf Discount Club	6,634	755 673	378 336	377 337	10,100 8,530	1,087	533	554
425,496 sf Shopping Center	17,407	1,679	823 822	856 857	22,000 23,007	2,196	1,098 1,142	1,098 1,054
18,863 sf High-Turnover Restaurant	2,398	210	124	86	2,700 2,987	265	140 141	125 124
3,600 sf Fast Food Restaurant	1,786	122	63	59	2,100 2,599	214	109	105
3,500 sf Drive In Bank	519	93 90	47 45	46 45	600 302	93	48	45
130,501 sf Home Improvement Store	3,889	309	148	161	5,900 7,402	589	300	289
Sub-Total	32,633 32,632	3,168 3,083	1,583 1,538	1,585 1,545	43,400 44,828	4,444	2,228 2,273	2,216 2,171
Internalization	7,832	729 709	364 354	365 355	10,400 10,759	1,289	646 659	643 630

Land Use	Weekday				Saturday			
	Daily	PM Peak Hour			Total	Daily		
		Total						Total
Diverted Link Trips	7,179	697	348	349	9,548	978	490	488
	5,456	522	261	262	7,495		355	339
Total	17,622	1,742	871	871	23,452	2,177	1,092	1,085
	19,344	1,852	924	928	26,574	2,461	1,259	1,202

Source: Trip Generation 8th Edition 2008, Institute of Transportation Engineers, and Fehr & Peers, 2010, and Kittelson & Associates, Inc., 2011

Using the trip generation and trip distribution estimates described above, project trips were assigned to the surrounding roadway network (see [Figure 3.12-5](#)). Access to the project is

**Table 3.12-10
Roadway Level of Service – Existing Plus Project Conditions**

Roadway Segment	Lanes	Existing No Project			Existing Plus Project			V/C
		Volume	V/C	LOS	Volume	V/C	LOS	Difference
Knighton Rd – I-5 SB Ramps to I-5 NB Ramps ¹	2				12,621	0.84	D	0.47
		5,572	0.37	A	15,492	1.03	F	0.66
		(4,466)	(0.30)	(A)	(13,847)	(0.92)	(E)	(0.62)
					(18,093)	(1.20)	(F)	(0.9)
Knighton Rd – I-5 NB Ramps to Churn Creek Rd ¹	2				20,626	1.38	D	0.93
		6,705	0.45	A	26,049	1.74	F	1.29
		(4,772)	(0.32)	(A)	(23,299)	(1.55)	(F)	(1.23)
					(31,345)	(2.09)		(1.77)
Knighton Rd – Churn Creek Rd to Airport Rd ¹	2	3,756 (2,379)	0.25 (0.16)	A (A)	6,047 (5,428)	0.40 (0.36)	A (A)	0.15 (0.20)
Churn Creek Rd – Knighton Rd to E. Niles Ln ¹	2	2,753 (1,946)	0.18 (0.13)	A (A)	3,987 (3,588)	0.27 (0.24)	A (A)	0.09 (0.11)
Churn Creek Rd – E. Niles Ln to Rancho Rd ¹	2	4,100 (3,336)	0.27 (0.22)	A (A)	5,157 (4,743)	0.34 (0.32)	A (A)	0.07 (0.10)
Churn Creek Rd – Rancho Rd to I-5 ²	2	15,296 (12,824)	0.85 (0.71)	D (C)	15,472 (13,059)	0.86 (0.73)	D (C)	0.01 (0.02)

Notes: XX (YY) = Weekday (Weekend)
 Volume to capacity ratio (V/C) measures the actual volume of vehicles observed or counted on any street segment in relation to the throughput capacity of the facility. Any measure higher than about 0.80 indicates congestion. The number can exceed 1.00, indicating an overloaded situation with stop and go traffic.
 V/C Difference = Existing Plus Project V/C – Existing V/C
 Shaded areas indicate deficiency.
¹ Minor Collector
² Major Collector

Source: Fehr & Peers, 2010 and Kittelson & Associates, Inc., 2011

The results indicate that the following roadway segment will operate at an unacceptable level under Existing Plus Project Conditions:

- **Knighton Road, between I-5 Northbound Ramps and Churn Creek Road** – The addition of project traffic will degrade operations from an acceptable LOS A to an unacceptable LOS F during both the weekday (PM) and Saturday (mid-day) peak hours, respectively. This impact is *significant*.

Mitigation Measures

Implementation of the following mitigation measure will reduce the impact to a *less-than-significant* level.

Table 3.12-11 presents the results of the roadway level of service evaluation with the identified mitigations in-place.

Knighton Road – I-5 Northbound Ramps to Churn Creek Road: Widening Knighton Road between the I-5 northbound ramps and Churn Creek Road to a six-lane arterial will result in the segment operating at LOS A. This improvement is consistent with the Major Road Impact Fees program (*Shasta County Resolution 91-115*) adopted by the Board of Supervisors in June 1991.

The proposed mitigation exceeds the target of LOS C in accordance with the Shasta County General Plan; however, it is preferred by the project applicant.

Mitigation Measure #3.12-1:

Widen Knighton Road to a six-lane arterial between the I-5 northbound ramps and Churn Creek Road. This improvement will result in LOS A-C or better operations during both the weekday PM peak hour and Saturday mid-day peak hour.

Impact #3.12-2: Impacts to intersections under Existing Plus Project conditions

Discussion/Conclusion: The intersection traffic volumes shown on Figure 3.12-7 were used to evaluate level of service at the study intersections. Table 3.12-12 presents the intersection operations with the proposed project.

**Table 3.12-12
Intersection Level of Service – Existing Plus Project Conditions**

Intersection	Control	PM Peak		MD Peak	
		Delay	LOS	Delay	LOS
Cypress Ave / I-5 SB Ramps	Signal	34	C	15	B
Cypress Ave / I-5 NB Ramps	Signal	32	C	64	E
Bonnyview Rd / I-5 SB Ramps	Signal	15	B	13	B
Bonnyview Rd / I-5 NB Ramps	Signal	22	C	20	B
Churn Creek Rd / Rancho Rd	Side-street Stop	25	C	18	C
Churn Creek Rd / E Niles Lane	Side-street Stop	10	B	10	A
Knighton Rd / Airport Road	Signal	17	B	20	B
Knighton Rd / Churn Creek Rd	Signal	6	A	7	A
Knighton Rd / Churn Creek Rd / Pacheco Rd	Signal	22	C	11	B
Knighton Road / I-5 NB Ramps	Side-street Stop	--*	F	--*	F
Knighton Road / I-5 SB Ramps	Side-street Stop	--*	F	--*	F
Knighton Road / Riverland Drive	All-way Stop	8	A	8	A
Riverside Avenue / I-5 SB Ramps	Side-street Stop	24	C	22	C
Riverside Avenue / I-5 NB Ramps	Side-street Stop	17	C	16	C
Knighton Rd/Project Access	Signal	29	C	43	D
Churn Creek Rd / Project Access (1)	Side-Street Stop	12	B	11	B
Churn Creek Rd / Project Access (2)	Side-Street Stop	12	B	11	B
Churn Creek Rd / Project Access (3)	Side-Street Stop	12	B	11	B
Churn Creek Rd / Project Access (4)	Side-Street Stop	11	B	11	B

Notes:

- Delay measured in seconds per vehicle.
- Delay for side-street stop unsignalized intersections reported for worst-case approach. Delay for all-way stop intersections reported for the average of all approaches.
- Shaded areas indicate deficiency.
- LOS = Level of Service
- * = Modeling Results Exceed the Ability to Determine LOS (Default to LOS F is Applied)

Source: Fehr & Peers, 2010 / Quad Knopf, 2010 / Kittelson & Associates, 2010

The results indicate that the following intersections will operate at an unacceptable level:

- **Knighton Road/I-5 Northbound Ramps** – The intersection will operate at acceptable levels without the proposed project. The addition of project-generated traffic will degrade operations to LOS F during the weekday PM peak hour and Saturday mid-day peak hour. This impact is *significant*.

- **Knighton Road/I-5 Southbound Ramps** – The intersection will operate at acceptable levels without the proposed project. The addition of project-generated traffic will degrade operations to LOS F during both the weekday PM peak hour and Saturday mid-day peak hour. This impact is *significant*.

Mitigation Measures

The project will be subject to the Public Facilities Impact Fee program (*Shasta County Ordinance 665*), which includes improvements to the Knighton Road/I-5 southbound and northbound ramps to accommodate the wider overpass (previously cited); however, because full funding for the identified improvements has not been secured, this impact is considered *significant and unavoidable*. When funded, implementation of the following mitigation measures will reduce the impacts to a less-than-significant level.

Table 3.12-13 presents the results of the intersection level of service evaluation with the identified mitigations in-place. Figure 3.12-8 presents the recommended Existing Plus Project Condition mitigation measures.

Knighton Road/I-5 Northbound Ramps: Improve the intersection by adding a traffic signal and travel lanes.

Mitigation Measure #3.12-2a:

Install a traffic signal and add the following travel lanes to the intersection:

Northbound Approach – A right-turn lane

Eastbound Approach – Two through lanes and one left-turn lane

Westbound Approach – Two through lanes and a right-turn lane

This improvement will result in LOS BC or better operations during both the weekday PM peak hour and Saturday mid-day peak hour at the intersection. Payment of fees designated by and in accordance with Shasta County Ordinance 665 ~~Public Facilities Impact Fees~~ and Shasta County Resolution 91-115 would cover the project’s “fair share” of these improvements. ~~this impact.~~

Knighton Road/I-5 Southbound Ramps: Improve the intersection by adding a traffic signal and travel lanes.

Mitigation Measure #3.12-2b:

Install a traffic signal and add the following travel lanes to the intersection:

Southbound Approach – A left-turn lane and right-turn lane for a total of two left and one right-turn lanes

Westbound Approach – A left-turn lane and a through lane

This improvement will result in LOS C operations during both the weekday PM peak hour and Saturday mid-day peak hour at the intersection. Payment of fees in accordance

with Shasta County Ordinance 665 and Shasta County Resolution 91-115 Public Facilities Impact Fees would cover the project's "fair share" of these improvements. ~~this impact.~~

the following mitigation measure, or equivalent alternative measures acceptable to the agency with jurisdiction, will reduce the impact to a less-than-significant level.

Implementation of the following mitigation measure will allow the freeway on-ramp weave area to operate at an acceptable level of service. Table 3.12-15 presents the freeway on-ramp weave area operating conditions with mitigation.

**Table 3.12-15
Freeway Ramp Merge/Diverge/Weave – Existing Plus Project Conditions Mitigated**

Direction	Merge, Diverge or Weave	PM Peak		MD Peak	
		Density ¹	LOS ²	Density ¹	LOS ²
Cypress Ave / I-5 NB on-ramp	Weave	25.7	C	30.1	D
Notes: ¹ Density in passenger cars per mile per lane. ² LOS = Level of Service. Weave LOS calculated using Leisch Method. Shaded area indicates deficiency.					

Source: Fehr & Peers, 2010 / Quad Knopf, 2010

Cypress Avenue/I-5 Northbound On-Ramp Weave: Improve the weave operation by adding an additional northbound travel lane on I-5. This improvement is within the jurisdiction of the California Department of Transportation and outside the jurisdiction of the lead agency.

Mitigation Measure #3.12-3:

Add a third northbound travel lane or the effective equivalent for the on-ramp merge/diverge/weave lane to I-5. This improvement will result in LOS C operations during the weekday PM peak hour and LOS D operations during the Saturday mid-day peak hour at the weave to I-5 from the northbound Cypress Avenue on-ramp.

Impact #3.12-4: Impacts to the I-5 mainline under Existing Plus Project conditions.

Discussion/Conclusion: The Existing Plus Project traffic volumes were used to conduct the freeway mainline operations analysis. The results of the analysis are summarized below in Table 3.12-16.

The results of the I-5 mainline analysis indicate that the following freeway facilities will operate at an unacceptable level.

- **Northbound I-5 mainline between Cypress Avenue and SR 44:** The addition of project traffic will exacerbate unacceptable operations to LOS E during the Saturday mid-day peak hour. This impact is *significant*.

Mitigation Measures

Any improvements to mainline I-5, as recommended below, are the jurisdiction of the California Department of Transportation (Caltrans). Nevertheless, because a guaranteed funding source for the identified improvements has not been identified, or secured, the impacts are considered *significant and unavoidable*. When funded, implementation of the following mitigation

measure, or equivalent alternative measures acceptable to the agency with jurisdiction, will reduce the impact to a less-than-significant level.

Northbound I-5 mainline between Cypress Avenue and SR 44: Add a third northbound mixed flow travel lane to I-5.

Mitigation Measure #3.12-4:

Add a third northbound mixed flow travel lane or the effective equivalent to I-5. This improvement will result in LOS C operations during the Saturday mid-day peak hour.

Knighton Road/I-5 Southbound Ramps to I-5 Northbound Ramps:

Mitigation Measure #3.12-4.5:

Widen Knighton Road to a six-lane arterial plus turn lanes (7 total lanes) between the I-5 southbound ramps and I-5 northbound ramps. This improvement will result in the segment operating at an acceptable level of service and would reduce the impact to a less-than-significant level. This project shall pay its fair share fees toward these improvements in accordance with Shasta County Ordinance 665 and Shasta County Resolution 91-115.

Cumulative Conditions Plus Project Scenario

This section describes the results of the cumulative assessment. Cumulative Conditions are defined as Year 2030 Conditions in the study area. Traffic forecasts were developed using the Shasta County Travel Demand Forecasting model after updating the model to include reasonably foreseeable projects in the study area. Additionally, roadway improvements that were identified to have full funding prior to Year 2030 were also incorporated into the assessment.

Impact #3.12-5: Impacts to roadway segments under Cumulative Plus Project conditions

Discussion/Conclusion: The daily roadway segment traffic volumes shown on [Figure 3.12-9](#) and [Figure 3.12-10](#) were compared to the roadway segment thresholds summarized in Table 3.12-1 to analyze traffic operations on the study area roadway segments. [Table 3.12-17](#) presents the Cumulative Conditions roadway segment operations with and without the proposed project.

**Table 3.12-17
Roadway Level of Service – Cumulative Conditions**

Roadway Segment	Lanes	Cumulative No Project			Cumulative Plus Project			V/C
		Volume	V/C	LOS	Volume	V/C	LOS	Difference
Knighton Road – I-5 SB Ramps to I-5 NB Ramps ¹	2	7,500	0.50	A	14,549	0.97	<u>E</u>	0.47
		17,420			17,420	1.16	F	0.66
		(6,300)	(0.42)	(A)	(15,681)	(1.05)	(F)	(0.63)
					(19,927)	(1.33)		(0.91)
Knighton Road – I-5 NB Ramps to Churn Creek Rd ¹	2	11,100	0.74	C	25,021	1.67		0.93
		37,149			37,149	2.48	F	1.74
		(9,200)	(0.61)	(B)	(27,727)	(1.85)	(F)	(1.24)
					(40,545)	(2.70)		(2.09)
Knighton Road – Churn Creek Rd to Airport Rd ²	2	5,600	0.37	A	7,891	0.53	A	0.16
		(4,500)	(0.30)	(A)	(7,549)	(0.50)	(A)	(0.20)

Roadway Segment	Lanes	Cumulative No Project			Cumulative Plus Project			V/C Difference
		Volume	V/C	LOS	Volume	V/C	LOS	
Churn Creek Road – Knighton Rd to E. Niles Ln ²	2	4,800 (3,900)	0.32 (0.26)	A (A)	6,034 (5,542)	0.40 (0.37)	A (A)	0.08 (0.11)
Churn Creek Road – E. Niles Ln to Rancho Rd ²	2	5,000 (4,300)	0.33 (0.29)	A (A)	6,057 (5,707)	0.40 (0.38)	A (A)	0.07 (0.09)
Churn Creek Road – Rancho Rd to I-5 ²	2	17,000 (13,300)	0.94 (0.74)	E (C)	17,176 (13,535)	0.95 (0.75)	E (C)	0.01 (0.01)

Notes: XX (YY) = Weekday (Weekend)

Volume to capacity ratio (V/C) measures the actual volume of vehicles observed or counted on any street segment in relation to the throughput capacity of the facility. Any measure higher than about 0.80 indicates congestion. The number can exceed 1.00, indicating an over-capacity situation with stop and go traffic.

V/C Difference = Cumulative Plus Project V/C – Cumulative V/C

Shaded indicates deficiency.

¹ Minor Collector

² Major Collector

Source: Fehr & Peers, 2010 and Kittelson & Associates, Inc., 2011

The results indicate that the following roadway segments will operate at an unacceptable level under Cumulative Plus Project Conditions:

- **Knighton Road – I-5 Southbound Ramps to I-5 Northbound Ramps.** The addition of project traffic will degrade operations from an acceptable LOS E or better to an unacceptable LOS F during the weekend. The project will increase the volume-to-capacity ratio by more than 0.05. This impact is *significant*.
- **Knighton Road – I-5 Northbound Ramps to Churn Creek Road.** The addition of project traffic will degrade operations from an acceptable LOS E or better to an unacceptable LOS F during both the weekday and weekend, respectively. The project will increase the volume-to-capacity ratio by more than 0.05. This impact is *significant*.

Mitigation Measures

Because a guaranteed funding source for the identified improvements to Knighton Road between the I-5 southbound ramps and I-5 northbound ramps has not been secured, this impact is considered *significant and unavoidable*. When funded, implementation of Mitigation Measure #3.12-5a below will reduce the impact to a less-than-significant level. Implementation of Mitigation Measure #3.12-5b will reduce the impact to Knighton Road between the I-5 northbound ramps and Churn Creek Road to a *less-than-significant* level.

Table 3.12-18 presents the results of the roadway level of service evaluation with the identified mitigations in-place.

Knighton Road – I-5 Southbound Ramps to I-5 Northbound Ramps: Widening Knighton Road between the I-5 southbound ramps and I-5 northbound ramps to a six-lane arterial will result in the segment operating at an acceptable level of service and would reduce the impact to a less-than-significant level. The improvement is consistent with the Public Facilities Impact Fee program (*Shasta County Ordinance 665*) adopted by Shasta County.

Mitigation Measure #3.12-5a:

Widen Knighton Road to a six-lane arterial plus turn lanes (7 total lanes) per Figure 2-3 between the I-5 southbound ramps and I-5 northbound ramps. This improvement will result in the segment operating at an acceptable level of service and would reduce the impact to a less-than-significant level. This project shall pay its “fair share” fees toward these improvements in accordance with Shasta County Ordinance 665 and Shasta County Resolution 91-115. ~~Public Facilities Impact Fees.~~

Knighton Road – I-5 Northbound Ramps to Churn Creek Road: Widening Knighton Road between the I-5 northbound ramps and Churn Creek Road to a six-lane arterial will result in the segment operating at an acceptable level of service and would reduce the impact to a less-than-significant level.

Mitigation Measure #3.12-5b:

Widen Knighton Road to a six-lane arterial between the I-5 northbound ramps and Churn Creek Road. This improvement will result in LOS ~~A~~ C or better operations during both the weekday PM peak hour and Saturday mid-day peak hour.

Impact #3.12-6: Impacts to intersections under Cumulative Plus Project conditions

Discussion/Conclusion: The PM peak hour and MD peak hour intersection turning movement forecasts shown on Figure 3.12-11 and Figure 3.12-12 were used to analyze traffic operations at the study intersections under Cumulative conditions. Tables 3.12-19 and 3.12-20 present cumulative intersection operation with and without traffic from the proposed project.

**Table 3.12-19
Intersection Level of Service – Cumulative No Project Conditions**

Intersection	Control	PM Peak		MD Peak	
		Delay	LOS	Delay	LOS
Cypress Ave / I-5 SB Ramps	Signal	87	F	24	C
Cypress Ave / I-5 NB Ramps	Signal	75	F	147	F
Bonnyview Rd / I-5 SB Ramps	Signal	45	D	50	D
Bonnyview Rd / I-5 NB Ramps	Signal	73	E	52	D
Churn Creek Rd / Rancho Rd	Side-street Stop	203	F	24	C
Churn Creek Rd / E Niles Ln	Side-street Stop	10	B	10	B
Knighton Rd / Airport Rd	Signal	18	B	13	B
Knighton Rd / Churn Creek Rd	Signal	7	A	7	A
Knighton Rd / Churn Creek Rd / Pacheco Rd	Signal	15	B	11	B
Knighton Rd / I-5 NB Ramps	Side-street Stop	18	C	15	C
Knighton Rd / I-5 SB Ramps	Side-street Stop	69	F	16	C
Knighton Rd / Riverland Dr	All-way Stop	8	A	8	A
Riverside Ave / I-5 SB Ramps	Side-street Stop	--*	F	447	F
Riverside Ave / I-5 NB Ramps	Side-street Stop	52	F	43	E

Notes: Delay measured in seconds per vehicle.
 Delay for side-street stop unsignalized intersections reported for worst-case approach. Delay for all-way stop intersections reported for the average of all approaches.
 LOS = Level of Service
 Shaded areas indicate deficiency.
 --* = Modeling Results Exceed the Ability to Determine LOS (Default to LOS F is Applied)

Source: Fehr & Peers, 2010

Road Impact Fees for the South Central Regional Area). Mitigation measures which are not included in the Major Road Impact Fees Program assign a “fair share” attributable to the project, based on a cost and demand data formula derived from methodology used by Caltrans modified to account for unacceptable LOS prior to the proposed project (see Appendix C). Other improvements, such as those identified for the I-5/Cypress Road interchange are within the jurisdiction of other public agencies including the City of Redding, City of Anderson and California Department of Transportation, and are outside the jurisdiction of the lead agency for this project.

Table 3.12-21 presents the results of the intersection level of service evaluation with the identified mitigations in-place. Figure 3.12-13 presents the Cumulative Plus Project Conditions recommended mitigation measures.

Cypress Avenue/I-5 Southbound Ramps: Improve the intersection by adding travel lanes.

Mitigation Measure #3.12-6a:

Add a left-turn lane to the southbound intersection approach to make two left-turn and two right-turn lanes. This improvement will result in LOS E operations during the weekday PM peak hour and LOS ~~B~~ C or better operations during the Saturday mid-day peak hour at the intersection. Payment of fees in accordance with Shasta County Resolution 91-115 establishing fees for the South Central Regional Area would cover the project’s “fair share” of this impact.

Cypress Avenue/I-5 Northbound Ramps: Improve the intersection by adding travel lanes.

Mitigation Measure #3.12-6b:

Add a left-turn lane to the northbound intersection approach for a total of two left-turn and two right-turn lanes. This improvement will result in LOS E operations during the weekday PM peak hour and LOS F operations during the Saturday mid-day peak hour at the intersection. Payment of fees in accordance with Shasta County Resolution 91-115 establishing fees for the South Central Regional Area would cover the project’s “fair share” of this impact.

Bonnyview Road/I-5 Northbound Ramps: Improve the intersection by adding travel lanes.

Mitigation Measure #3.12-6c:

Add an additional northbound left-turn lane for a total of two left-turn and one right-turn lane. This improvement will result in LOS E operations during the weekday PM peak hour and LOS D operations during the Saturday mid-day peak hour at the intersection. The project’s “fair share” of the improvement is 12%. Payment of fees in accordance with Shasta County Resolution 91-115 establishing fees for the South Central Regional Area would cover the projects fair share of this impact.

Churn Creek Road/Rancho Road: Improve the intersection to add a traffic signal.

Mitigation Measure #3.12-6d:

Install a traffic signal to the intersection. This improvement will result in LOS C operations during the weekday PM peak hour and LOS B operations during the Saturday mid-day peak hour at the intersection. Payment of fees in accordance with Shasta County Resolution 91-115 establishing fees for the South Central Regional Area would cover the project's "fair share" of this cumulative impact.

Knighton Road/I-5 Southbound Ramps: Improve the intersection by adding a traffic signal and travel lanes.

Mitigation Measure #3.12-6e:

Install a traffic signal and add the following travel lanes to the intersection:

*Southbound Approach – Two left-turn lanes and a right-turn lane
Westbound Approach – Two left-turn lanes and a through lane*

This improvement will result in LOS C operations during both the weekday PM peak hour and Saturday mid-day peak hour at the intersection. Payment of fees in accordance with Shasta County Ordinance 665 and Resolution 91-115 Public Facilities Impact Fees would cover the project's "fair share" of this impact.

Knighton Road/I-5 Northbound Ramps: Improve the intersection by adding a traffic signal and travel lanes.

Mitigation Measure #3.12-6f:

Install a traffic signal and add the following travel lanes to the intersection:

*Northbound Approach – A left-turn lane for a left and right-turn lane configuration
Eastbound Approach – Two through lanes and one left-turn lane
Westbound Approach – Two through lanes and a free right-turn lane*

This improvement will result in LOS E operations during the weekday PM peak hour and LOS C operations during the Saturday mid-day peak hour at the intersection. Payment of fees in accordance with Shasta County Ordinance 665 and Shasta County Resolution 91-115 Public Facilities Impact Fees would cover the project's "fair share" of this impact.

Riverside Avenue/I-5 Southbound Ramps: Improve the intersection by adding a traffic signal.

Mitigation Measure #3.12-6g:

Install a traffic signal to the intersection. This improvement will result in LOS D operations during the weekday PM peak hour and LOS C operations during the Saturday mid-day peak hour at the intersection. The project's "fair share" of the improvement is 8%.

Riverside Avenue/I-5 Northbound Ramps: Improve the intersection by adding a traffic signal.

Mitigation Measure #3.12-6h:

Install a traffic signal to the intersection. This improvement will result in LOS B operations during the weekday PM peak hour and LOS C operations during the Saturday mid-day peak hour at the intersection. The project's "fair share" of the improvement is 5%.

- **Riverside Avenue/I-5 NB off-ramp** – The addition of project traffic will exacerbate unacceptable operations during the PM peak hour and Saturday mid-day peak hour. This impact is *significant*.
- **Riverside Avenue/I-5 SB off-ramp** – The addition of project traffic will exacerbate unacceptable operations during the PM peak hour. This impact is *significant*.
- **Riverside Avenue/I-5 SB on-ramp** – The addition of project traffic will exacerbate unacceptable operations during the PM peak hour. This impact is *significant*.

Mitigation Measures

Any improvements to mainline I-5 or merge/diverge/weaving areas on I-5, as recommended below, are wholly or partly within the incorporated City of Redding, incorporated City of Anderson, or within the jurisdiction of the California Department of Transportation, and are wholly or partly outside the jurisdiction of the lead agency: Riverside Avenue/I-5 Southbound Diverge, Riverside Avenue/I-5 Southbound Merge, Riverside Avenue/I-5 Northbound Diverge, Riverside Avenue/I-5 Northbound Merge, Riverside Avenue/I-5 Northbound Merge, Riverside Avenue/I-5 Northbound Merge, Bonnyview Road/I-5 Northbound Diverge, Bonnyview Road/I-5 Southbound Diverge, Bonnyview Road/I-5 Southbound Merge, Cypress Avenue/I-5 Northbound Diverge, Cypress Avenue/I-5 Northbound Merge, Cypress Avenue/I-5 Southbound Diverge, and Cypress Avenue/I-5 Southbound Merge. Nevertheless, because a guaranteed funding source for the identified improvements has not been identified, or secured, the impacts are considered *significant and unavoidable*. The project’s “fair share” contribution calculations are found in Appendix C. When funded, implementation of the following mitigation measures, or equivalent alternative measures acceptable to the agency with jurisdiction, will reduce the impacts to a less-than-significant level.

Northbound I-5 between Cypress Avenue and SR 44: Improve the mainline operation by adding an additional northbound travel lane on I-5.

Mitigation Measure #3.12-7a:

Add a third northbound mixed flow travel lane or the effective equivalent to I-5 between Cypress Avenue and SR 44. This improvement will result in LOS D operations during the PM peak hour and LOS E during the Saturday mid-day peak hour. The project’s “fair share” of the improvement is 3%.

Northbound I-5 between Bonnyview Road and Cypress Avenue: Improve the mainline operation by adding an additional northbound travel lane on I-5.

Mitigation Measure #3.12-7b:

Add a third northbound mixed flow travel lane or the effective equivalent to I-5 between Bonnyview Road and Cypress Avenue. This improvement will result in LOS C operations during the PM peak hour and LOS D during the Saturday mid-day peak hour. The project’s “fair share” of the improvement is 6%.

Northbound I-5 between Knighton Road and Bonnyview Road: Improve the mainline operation by adding an additional northbound travel lane on I-5.

Mitigation Measure #3.12-7c:

Add a third northbound mixed flow travel lane or the effective equivalent to I-5 between Knighton Road and Bonnyview Road. This improvement will result in LOS C operations during the PM peak hour and LOS D during the Saturday mid-day peak hour. The project's "fair share" of the improvement is 10%.

Northbound I-5 between Riverside Ave. and Knighton Road: Improve the mainline operation by adding an additional northbound travel lane on I-5.

Mitigation Measure #3.12-7d:

Add a third northbound mixed flow travel lane or the effective equivalent to I-5 between Riverside Avenue and Knighton Road. This improvement will result in LOS C operations during both the PM peak hour and Saturday mid-day peak hour. The project's "fair share" of the improvement is 9%.

Southbound I-5 SR 44 to Cypress Avenue: Improve the mainline operation by adding an additional southbound travel lane on I-5.

Mitigation Measure #3.12-7e:

Add a third southbound mixed flow travel lane or the effective equivalent to I-5 between SR 44 and Cypress Avenue. This improvement will result in LOS D operations during the PM peak hour. The project's "fair share" of the improvement is 5%.

Southbound I-5 Cypress Avenue to Bonnyview Road: Improve the mainline operation by adding an additional southbound travel lane on I-5.

Mitigation Measure #3.12-7f:

Add a third southbound mixed flow travel lane or the effective equivalent to I-5 between Cypress Avenue and Bonnyview Road. This improvement will result in LOS D operations during the PM peak hour. The project's "fair share" of the improvement is 8%.

Southbound I-5 Bonnyview Road to Knighton Road: Improve the mainline operation by adding an additional southbound travel lane on I-5.

Mitigation Measure #3.12-7g:

Add a third southbound mixed flow travel lane or the effective equivalent to I-5 between Bonnyview Road and Knighton Road. This improvement will result in LOS D operations during the PM peak hour. The project's "fair share" of the improvement is 14%.

Southbound I-5 Knighton Road to Riverside Avenue: Improve the mainline operation by adding an additional southbound travel lane on I-5.

Mitigation Measure #3.12-7h:

Add a third southbound mixed flow travel lane or the effective equivalent to I-5 between Knighton Road and Riverside Avenue. This improvement will result in LOS D operations during the PM peak hour. The project's "fair share" of the improvement is 13%.

Southbound I-5 Riverside Avenue to North Street-Balls Ferry Road: Improve the mainline operation by adding an additional southbound travel lane on I-5.

Mitigation Measure #3.12-7i:

Add a third southbound mixed flow travel lane or the effective equivalent to I-5 between Riverside Avenue and North Street-Balls Ferry Road. This improvement will result in LOS D operations during the PM peak hour. The project's "fair share" of the improvement is 10%.

Cypress Avenue/I-5 NB on-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour and Saturday mid-day peak hour.

Mitigation Measure #3.12-7j:

Add a third northbound travel lane or the effective equivalent to I-5. This improvement will result in LOS D operations during the weekday PM peak hour and LOS E operations during the Saturday mid-day peak hour at the weave to I-5 from the northbound Cypress Avenue on-ramp. The project's "fair share" of the improvement is 3%. Payment of fees in accordance with Shasta County Resolution 91-115 would cover the project's fair share of this impact.

Cypress Avenue/I-5 NB off-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour and Saturday mid-day peak hour.

Mitigation Measure #3.12-7k:

Add a third northbound travel lane or the effective equivalent to I-5. This improvement will result in LOS D operations during both the weekday PM peak hour and the Saturday mid-day peak hour at the diverge from I-5 to the northbound off-ramp to Cypress Avenue. The project's "fair share" of the improvement is 6%. Payment of fees in accordance with Shasta County Resolution 91-115 would cover the project's fair share of this impact.

Cypress Avenue/I-5 SB off-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour and Saturday mid-day peak hour.

Mitigation Measure #3.12-7i:

Add a third southbound travel lane or the effective equivalent to I-5. This improvement will result in LOS D operations during the weekday PM peak hour and LOS C operations during the Saturday mid-day peak hour at the weave from I-5 to the southbound off-ramp to Cypress Avenue. The project's "fair share" of the improvement is 5%. Payment of fees in accordance with Shasta County Resolution 91-115 would cover the project's fair share of this impact.

Cypress Avenue/I-5 SB on-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour.

Mitigation Measure #3.12-7m:

Add a third southbound travel lane or the effective equivalent to I-5. This improvement will result in LOS D operations during the weekday PM peak hour and LOS C operations during the Saturday mid-day peak hour at the merge to I-5 to from the southbound Cypress Avenue on-ramp. The project's "fair share" of the improvement is 8%. Payment of fees in accordance with Shasta County Resolution 91-115 would cover the project's fair share of this impact.

Bonnyview Road/I-5 NB on-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour and Saturday mid-day peak hour.

Mitigation Measure #3.12-7n:

Add a third northbound travel lane or the effective equivalent to I-5 between Bonnyview Road and Cypress Avenue. This improvement will result in LOS D operations during both the PM peak hour and the Saturday mid-day peak hour. The project's "fair share" of the improvement is 6%. Payment of fees in accordance with Shasta County Resolution 91-115 would cover the project's fair share of this impact.

Bonnyview Road/I-5 NB off-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour and Saturday mid-day peak hour.

Mitigation Measure #3.12-7o:

Add a third northbound travel lane or the effective equivalent to I-5 between Knighton Road and Bonnyview Road. This improvement will result in LOS D operations during both the PM peak hour and the Saturday mid-day peak hour. The project's "fair share" of the improvement is 10%. Payment of fees in accordance with Shasta County Resolution 91-115 would cover the project's fair share of this impact.

Bonnyview Road/I-5 SB off-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour.

Mitigation Measure #3.12-7p:

Add a third southbound travel lane or the effective equivalent to I-5. This improvement will result in LOS D operations during the weekday PM peak hour and LOS C operations during the Saturday mid-day peak hour at the diverge from I-5 to the southbound off-ramp to Bonnyview Road. ~~The project's "fair share" of the improvement is 8%. Payment of fees in accordance with Shasta County Resolution 91-115 would cover the project's fair share of this impact.~~

Bonnyview Road/I-5 SB on-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour.

Mitigation Measure #3.12-7q:

Add a third southbound travel lane or the effective equivalent to I-5. This improvement will result in LOS D operations during the weekday PM peak hour and LOS C operations during the Saturday mid-day peak hour at the merge to I-5 from the southbound Bonnyview Road on-ramp. ~~The project's "fair share" of the improvement is 14%. Payment of fees in accordance with Shasta County Resolution 91-115 would cover the project's fair share of this impact.~~

Knighton Road/I-5 NB on-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour and Saturday mid-day peak hour.

Mitigation Measure #3.12-7r:

Add a third northbound travel lane or the effective equivalent to I-5 between Knighton Road and Bonnyview Road. This improvement will result in LOS C operations during the PM peak hour and LOS D operations during the Saturday mid-day peak hour. ~~The project's "fair share" of the improvement is 10%. Payment of fees in accordance with Shasta County Ordinance 665 and Resolution 91-115 would cover the project's fair share of this impact.~~

Knighton Road/I-5 NB off-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour and Saturday mid-day peak hour.

Mitigation Measure #3.12-7s:

Add a third northbound travel lane or the effective equivalent to I-5. This improvement will result in LOS C operations during the weekday PM peak hour and LOS D operations during the Saturday mid-day peak hour at the diverge from I-5 to the northbound off-ramp to Bonnyview Road. ~~The project's "fair share" of the improvement is 9%. Payment of fees in accordance with Shasta County Ordinance 665 and Resolution 91-115 would cover the project's fair share of this impact.~~

Knighton Road/I-5 SB off-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour.

Mitigation Measure #3.12-7t:

Add a third southbound travel lane or the effective equivalent to I-5. This improvement will result in LOS D operations during the weekday PM peak hour and LOS C operations during the Saturday mid-day peak hour at the diverge from I-5 to the southbound off-ramp to Knighton Road. ~~The project's "fair share" of the improvement is 14%. Payment of fees in accordance with Shasta County Ordinance 665 and Resolution 91-115 would cover the project's fair share of this impact.~~

Knighton Road/I-5 SB on-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour.

Mitigation Measure #3.12-7u:

Add a third southbound travel lane or the effective equivalent to I-5. This improvement will result in LOS D operations during the weekday PM peak hour and LOS C operations during the Saturday mid-day peak hour at the merge to I-5 from the southbound Knighton Road on-ramp. ~~The project's "fair share" of the improvement is 13%. Payment of fees in accordance with Shasta County Ordinance 665 and Resolution 91-115 would cover the project's fair share of this impact.~~

Riverside Avenue/I-5 NB on-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour and Saturday mid-day peak hour.

Mitigation Measure #3.12-7v:

Add a third northbound travel lane or the effective equivalent to I-5. This improvement will result in LOS C operations during both the weekday PM peak hour and the Saturday mid-day peak hour at the merge to I-5 from the northbound Riverside Avenue on-ramp. The project's "fair share" of the improvement is 9%.

Riverside Avenue/I-5 NB off-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour and Saturday mid-day peak hour.

Mitigation Measure #3.12-7w:

Add a third northbound travel lane or the effective equivalent to I-5. This improvement will result in LOS C operations during both the weekday PM peak hour and the Saturday mid-day peak hour at the diverge from the northbound Riverside Avenue off-ramp. The project's "fair share" of the improvement is 8%.

Riverside Avenue/I-5 SB off-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour.

Mitigation Measure #3.12-7x:

Add a third southbound travel lane or the effective equivalent to I-5. This improvement will result in LOS D operations during the weekday PM peak hour and LOS C operations during the Saturday mid-day peak hour at the mainline diverge from I-5 to the southbound off-ramp to Riverside Avenue. The project's "fair share" of the improvement is 13%.

Riverside Avenue/I-5 SB on-ramp: The addition of project traffic will exacerbate unacceptable operations during the PM peak hour.

Mitigation Measure #3.12-7y:

Add a third southbound travel lane or the effective equivalent to I-5. This improvement will result in LOS D operations during the weekday PM peak hour and LOS B operations during the Saturday mid-day peak hour at the mainline merge to I-5 from the southbound Riverside Avenue on-ramp. The project's "fair share" of the improvement is 10%.

Impact #3.12-8: *Potential increase in hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).*

Discussion/Conclusion: The proposed roadways within the project site and roadways connecting to the regional transportation system may increase hazards due to design features or incompatible land uses. Of particular concern is an existing Travel Centers of America (TA) truck stop located on the south side of Knighton Road, between Churn Creek Road-Pacheco Road and the I-5 Northbound Off-Ramp, directly across from the proposed project site. Four driveways on Knighton Road currently provide access to the TA. [Figure 3.12-14](#) shows the TA study area relative to the proposed project.

As part of the proposed project, a reconfiguration of the access points along Knighton Road is proposed to accommodate the site circulation for the proposed project and the TA and improve

and it eliminates trucks using Churn Creek-Pacheco Road to enter the TA site. The auto access points are consolidated into a single, signalized access point that serves entering and exiting vehicles as well as minimal trucks entering from the east. All trucks leaving the site would travel via an exit-only access on Churn Creek Road-Pacheco Road and turn onto Knighton Road via the signalized intersection of Knighton Road and Churn Creek Road-Pacheco Road.

Figure 3.12-20 also shows the truck exit relocated onto Churn Creek Road-Pacheco Road, eliminating the existing unsafe westbound and eastbound maneuvers of trucks turning onto Knighton Road in the vicinity of an adjacent intersection. Based on existing traffic count data for the TA site, it is anticipated that approximately 40 trucks would use the Churn Creek Road-Pacheco Road access during the weekday p.m. peak hour.

The proposed circulation plan improves safety by reducing unsignalized left-turn movements onto Knighton Road and providing signalized left-turn access from the TA site for both automobiles and trucks at the main access and at the Knighton Road/Churn Creek Road-Pacheco Road intersection, respectively. This configuration, reflected as Mitigation Measure #3.12-8a below, significantly improves the long-term capability and capacity of the TA site accesses and will improve long-term safety on Knighton Road and reduces the potentially significant safety impact associated with TA site truck movements in the vicinity of the proposed project to *less than significant*. Implementation of Mitigation Measure #3.12-8a shall occur concurrently with other mitigation measures on Knighton Road between I-5 and Churn Creek/Pacheco Road (i.e., Mitigation Measures #3.12-1, #3.12-2b, #3.12-5b, and #3.12-6f).

Since the Shasta County improvement standards are developed to minimize hazards due to design features or incompatible uses, implementation of the following mitigation measure (Mitigation Measure #3.12-8b) would reduce the impact to *less than significant*.

Mitigation Measure #3.12-8a:

Construct the proposed circulation plan shown in Figure 3.12-20 or the effective equivalent as approved by the Shasta County Department of Public Works, serving the Travel Centers of America site and proposed project. The proposed circulation plan provides a single, signalized access point for autos and westbound trucks. In addition, the existing two truck-only driveways would be constructed as right-in only truck accesses. Finally, a new outbound access point for trucks would be provided on Churn Creek Road-Pacheco Road.

Mitigation Measure #3.12-8b:

All roadways and access points shall be designed according to current Shasta County roadway and intersection improvement standards, to the satisfaction of the County's Public Works Department.

Impact #3.12-9: Potential inadequate emergency access.

Discussion/Conclusion: The proposed preliminary site plan has been reviewed by the local fire and police departments to ensure adequate emergency access. Preliminary design standards were

provided by the fire and police departments and incorporated into the design of the proposed project site. Because the final site plan has not yet been reviewed by the local fire and police departments, this impact is *potentially significant*.

Mitigation Measures

The following mitigation measure would reduce the impact to a level that is *less than significant*.

Mitigation Measure #3.12-9:

The final site plan shall be reviewed by the local fire and police departments to ensure adequate emergency access, to the satisfaction of the County's Public Works Department.

Impact #3.12-10: Potential inadequate parking supply.

Discussion/Conclusion: The proposed preliminary site plan identifies parking supply for the proposed project and is consistent with Shasta County zoning requirements. Because the final site plan has not yet been reviewed by the County Planning Department, this impact is *potentially significant*.

Mitigation Measures

The following mitigation measure would reduce the impact to a level that is *less than significant*.

Mitigation Measure #3.12-10:

The final site plan shall be reviewed by the County's Planning Division to ensure parking supply remains consistent with County zoning requirements and with the standards adopted in the Planned Development Ordinance for commercial retail centers.

Impact #3.12-11: Potential conflict with adopted policies, plans or programs supporting alternative transportation.

Discussion/Conclusion: The Shasta County Regional Bikeway Plan is the only plan supporting alternative transportation adopted by the County. The Regional Bikeway Plan does not identify any facilities in the study area. The applicant will be subject to all County regulations regarding inclusion of bike lanes and other facilities to support alternatives to automotive travel. Therefore, the proposed project does not conflict with adopted policies, plans or programs supporting alternative transportation. This impact is *less than significant*.

Mitigation Measures

No mitigation measures are required.