
CHAPTER 14

CUMULATIVE IMPACTS

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Cumulative impacts are those that occur as a result of regional development activity. Analysis of cumulative impacts is required under CEQA Guidelines §§15130 and 15355. The following is an excerpt from §15355 explaining cumulative impacts:

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

CEQA Guidelines §15130(b)(1) details two methods by which cumulative impacts may be evaluated. One of these is to summarize growth projections in an adopted general plan or in a prior certified environmental document. The other method involves the compilation of a list of past, present, and reasonably foreseeable future projects producing related or cumulative impacts.

The cumulative analysis for the Orchard at Penryn project considers the proposed project and other known approved, active, or reasonably foreseeable projects in the vicinity of the project area. These projects are briefly summarized below.

This cumulative analysis also incorporates information from the *Horseshoe Bar/Penryn Community Plan EIR* (Jones & Stokes 1994), which evaluates the environmental effects associated with implementation of the Community Plan. The *Horseshoe Bar/Penryn Community Plan EIR* analysis is incorporated here by reference. The relevant portions of the analysis are summarized by topic below and the *Horseshoe Bar/Penryn Community Plan EIR* is available for review from Placer County.

Bickford Ranch - The Bickford Ranch Plan Area is located in the southern portion of Placer County, between the City of Lincoln and the communities of Penryn and Newcastle. The Plan Area is located approximately seven miles north of Interstate 80 and immediately south of Highway 193. It is bounded on the west by Sierra College Boulevard and Highway 193 on the north. The Bickford Ranch Specific Plan was approved by the Placer County Board of Supervisors in December 2001. The Bickford Ranch project is a mixed-use development of that provides for 1,890 dwelling units with a variety of housing types, lot sizes and densities. In addition to the various residential communities, the plan area contains approximately 8 acres of commercial area, natural open spaces, public facilities and recreation amenities on 1,942 acres. To date, no significant development has occurred on the site.

Brennan's Point - This project is located on Brennan's Road, north of Balmoral Drive. It is a 14 lot single-family residential subdivision (±2.3 acre lots).

Village at Horseshoe Bar - Located on three acres at the northeast corner of Horseshoe Bar Road and Auburn/Folsom Road, the Village at Horseshoe Bar is a small commercial

village consisting of three buildings that would consist of a neighborhood market, a restaurant and specialty retail space.

Village at Loomis – Located on approximately 54 acres in the Town of Loomis and situated north along Interstate 80, between King Road and Horseshoe Bar Road, the Village at Loomis project is proposed to include commercial and residential land uses. The site is planned to be divided into seven districts, which include a Commercial District (± 4.1 acres), an Office District (± 2.8 acres), a Residential District (± 9.7 acres), a Live-Work District (± 0.5 acres), a Single-Family District (± 18.6 acres), a Multi-Family District (± 3.1 acres), and an Open Space District (including several parks). Total planned residential units include 433 units. Commercial components would include a retail center, and professional offices.

Loomis Marketplace – The Loomis Marketplace project as proposed would develop 394,850 square feet of retail and commercial uses, including two service stations, stores, restaurants, offices, and two hotels with 120 and 151 rooms on both sides of Horseshoe Bar Road at Interstate 80 in the Town of Loomis. The site is approximately 63.5 acres.

Cumulative Impact Assessment

When other reasonably foreseeable projects are considered, the cumulative impacts to some resources would be more severe than the impacts from the proposed project alone. The analysis in this EIR concluded that most impacts of the proposed project associated with Land Use, Biological Resources, Visual Resources, Noise, Geology, Hydrology and Water Quality, Utilities, and Hazards and Hazardous Materials would be Less than Significant with implementation of mitigation measures. The project would result in Significant and Unavoidable impacts to the visual character and quality of the project area, transportation and circulation, and air quality.

The project's potential contribution to cumulative impacts in the project region is evaluated below. For each topic, the geographic area applicable to the analysis is defined, the types and extent of cumulative impacts are identified, and the project's contribution to each impact is assessed.

Land Use

Cumulative Land Use impacts would occur throughout Placer County and the Horseshoe Bar/Penryn area. The cumulative Land Use impacts identified in the *Horseshoe Bar/Penryn Community Plan EIR* include increased residential units and population in the area, conversion of undeveloped land to rural residential uses, and substantial growth in the area. The addition of the approved, active, or reasonably foreseeable projects in the area (particularly those that are not included in the growth assumptions for the Community Plan) would exacerbate each of these impacts. The proposed project is consistent with the Community Plan land use designation and the zoning designation for the project site. Development of the project would convert undeveloped land to residential uses – but this impact is anticipated under the Community Plan. The residential units proposed for the site and the associated population that would be supported onsite are also anticipated under the Community Plan. The proposed project would contribute to the cumulative Land Use impacts identified in the *Horseshoe*

Bar/Penryn Community Plan EIR, but the project's contribution to these impacts is not considered cumulatively considerable. These cumulative impacts would occur at the same magnitude with or without the proposed project.

Biological Resources

With respect to biological resources, the project site is located in an area of transition between the Sacramento Valley and Sierra Nevada foothills regions. Significant cumulative impacts in both regions include loss of habitat types, such as oak woodlands, riparian areas, and federally-protected wetlands, and loss of special-status species. The proposed project would result in the loss of 6.41 acres of oak woodland, 0.95 acres of riparian habitat, and 0.42 acres of federally-protected wetlands, which represents an incremental contribution to the cumulative losses of these habitats. CHAPTER 5 BIOLOGICAL RESOURCES contains mitigation measures that require the project applicant to compensate for unavoidable impacts to onsite habitat types by restoring or preserving comparable habitat offsite. These compensatory mitigation requirements ensure that the project's contribution to the cumulative impact is not cumulatively considerable, in keeping with CEQA Guidelines §15130(c), which states that a project's "contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact." The mitigation requirements of the project are consistent with the requirements of the Federal Endangered Species Act, the California Endangered Species Act, and the Clean Water Act. Further, the mitigation requirements are consistent with the principles, objectives, and strategy of the Placer County Conservation Program, which is intended to provide comprehensive regional compliance with federal and state biological resources regulations and to minimize cumulative impacts to the resources included in the program.

The project site is not known to support any special-status species, though it has potential to support nesting raptors. *Mitigation Measure 5.4a* requires completion of a pre-construction survey and avoidance of impacts to any identified active nests. The project is not expected to adversely affect special-status species, and would not contribute to this cumulative impact.

Visual Resources

The project site is located in a rural community, where visual resources include areas of open space, natural vegetation, and agricultural crops. The geographic scope for cumulative impacts to visual resources is the *Horseshoe Bar/Penryn Community Plan* area, which defines a cohesive area with similar visual characteristics. Development of the proposed project would contribute to loss of visual resources as the project would convert undeveloped open space to a multi-family residential complex. Natural vegetation onsite would be lost as a result of site remediation and project construction. While the project includes landscaping around all site boundaries as well as internal to the site and preservation of a small amount of open space in the center of the site, the project's individual impacts to visual resources are expected to be Significant and Unavoidable. In addition, the project's contribution to cumulative losses of visual resources in the Community Plan area is expected to be considerable, as discussed below.

IMPACT 14.1: Contribute to Cumulative Degradation of Existing Visual Character or Quality

SIGNIFICANCE BEFORE MITIGATION: ***SIGNIFICANT***

Mitigation Measures

Proposed: Mitigation Measures 14.1a and 14.1b

Significance with Proposed Mitigation: Significant

Recommended: Mitigation Measure 14.1c

SIGNIFICANCE AFTER MITIGATION: ***SIGNIFICANT AND UNAVOIDABLE***

The project site is in a visible location along Penryn Road, a primary point of access for the Community Plan area, and the project would result in a highly-noticeable change in visual characteristics of the site and in the general vicinity. The project includes landscaped building setbacks, a landscape easement along Penryn Road, and a detailed Landscaping Plan (*Mitigation Measures 14.1a and 14.1b*), which would help restore some of the existing visual character of the site. The project would also be subject to the County’s Design Review process, which would ensure that the project’s effects on existing visual character of the project site are minimized. Implementation of these measures would reduce the project’s contribution to cumulative visual impacts, but the measures would not reduce the project’s contribution to a level that is less than cumulatively considerable. Therefore, the project has a Significant and Unavoidable contribution to this cumulative impact.

Mitigation Measure 14.1a: The project applicant shall implement *Mitigation Measure 6.1a*, which requires minimum 15-foot building setbacks from the northern and southern property lines and minimum 40-foot building setbacks from the edge of the highway easement along Penryn Road.

Mitigation Measure 14.1b: The project applicant shall implement *Mitigation Measure 6.1b*, which requires implementation of the Landscaping Plan to provide visual screening of the project site and project structures

Mitigation Measure 14.1c: The project applicant shall implement *Mitigation Measure 6.1c*, which describes the requirement approval of a Design/Site Agreement for this project.

Transportation and Circulation

Based on the project’s size and associated trip generation, the project is expected to influence traffic and circulation patterns in the local area. Traffic generated by the proposed project would not make a noticeable contribution to regional traffic patterns. Thus, the geographic scope of this analysis includes the intersections and roadway segments in the project vicinity. The analysis presented in this section is taken from the *Traffic Impacts Analysis* (KHA 2011) provided in Appendix D to this Draft EIR. The year used to define the cumulative condition is 2030.

Cumulative Conditions

To estimate the Cumulative peak-hour turning movement volumes, the existing (2010) turning movements at each study intersection were factored up based on the projected average daily traffic (ADT) volumes for the intersection approaches. The methodology used complies with the methodology described in the National Cooperative Highway Research Program (NCHRP)

255, Highway Traffic Data for Urbanized Area Project Planning and Design, Chapter 8. Traffic patterns in the cumulative condition are modeled based on existing and projected average daily traffic (ADT) volumes for roadway segments, existing peak-hour turning movements at intersections, the existing peak factor, and anticipated future traffic distribution patterns. The anticipated Cumulative LOS for each study area intersection is identified in *Table 14.1*.

Table 14.1
Cumulative Intersection Levels of Service

Intersection	Traffic Control	Weekday				Traffic Signal Warrants Met?	
		A.M. Peak Hour (7:00 to 9:00 a.m.)		P.M. Peak Hour (4:00 to 6:00 p.m.)		a.m. peak hour	p.m. peak hour
		LOS	Average Delay (sec's per vehicle)	LOS	Average Delay (sec's per vehicle)		
Taylor Road @ English Colony Way/Rock Springs Road	AWSC	D	32.6	B	13.6	Yes	Yes
Penryn Road @ Taylor Road*	TWSC**	F	183.9 (NB)	D	25.6 (SB)	Yes	No
Penryn Road @ I-80 Westbound Ramps/Boyington Road	Signal	C	25.2	C	25.1	No	
Penryn Road @ I-80 Eastbound Ramps/Boulder Creek Place	TWSC*	C	15.4 (EB)	E	35.7 (EB)	No	
Taylor Road @ King Road	Signal	F	93.4	D	38.0	No	
Taylor Road @ Horseshoe Bar Road	Signal	D	47.9	F	98.7	No	No

Bold = Substandard

* The worst movement is experienced traveling to and from Penryn Road and the private driveway facing Penryn Road, while traffic on Taylor Road flows more freely. The Kimley-Horn Traffic Impact Analysis describes the worst movement through this intersection as westbound (AM Peak Hour) and eastbound (PM Peak Hour), however, this Draft EIR describes this movement as northbound/southbound to more closely reflect the travel direction on Penryn Road

** Control delay for worst minor approach (worst minor movement) for TWSC

As shown in *Table 14.2*, the study roadway segments are expected to operate at LOS B, C, and D under the cumulative scenario.

Table 14.2
Cumulative Roadway Segment Levels of Service

Roadway Segment	Number of Lanes	Daily Volume	LOS
Penryn Rd between I-80 EB Ramps/Boulder Creek Rd and I-80 WB Ramps/Boyington Rd	2	5,009	B
Penryn Rd between I-80 WB Ramps/Boyington Rd and Taylor Rd	2	6,127	C
Taylor Rd between Penryn Rd and English Colony Way/Rock Springs Rd	2	12,471	D
Taylor Rd between Penryn Rd and King Rd	2	10,319	D

Cumulative Plus Project Impacts

IMPACT 14.2: Substantially Increase Traffic or Conflict with Level of Service Standards in the Cumulative Plus Project Condition

SIGNIFICANCE BEFORE MITIGATION: *SIGNIFICANT*

Mitigation Measures

Proposed: None

Significance with Proposed Mitigation: **Significant**

Recommended: Mitigation Measures 14.2a and 14.2b

SIGNIFICANCE AFTER MITIGATION: *SIGNIFICANT AND UNAVOIDABLE*

Trip generation from the project and the anticipated distribution of those trips are defined in CHAPTER 7 TRANSPORTATION AND CIRCULATION. Based on the trip generation and distribution, the peak-hour traffic associated with the proposed project was added to the Cumulative traffic volumes and LOS at each study facilities was determined. As shown in Table 14.3, addition of project-generated traffic in the cumulative condition would not result in reduced LOS at any study intersection. However, the project would add traffic to intersections that are projected to operate at unacceptable LOS in the Cumulative condition. Addition of any traffic to intersections operating at unacceptable LOS is considered a significant impact, and a considerable contribution to cumulative impacts.

As shown in Table 14.4, addition of project-generated traffic in the cumulative condition would not result in reduced LOS for any roadway segment. However, the project would add traffic to segments that are projected to operate at unacceptable LOS in the Cumulative condition. Addition of any traffic to segments operating at unacceptable LOS is considered a significant impact, and a considerable contribution to cumulative impacts.

Table 14.3
Cumulative plus Proposed Project Intersection Levels of Service

Intersection	Analysis Scenario*	Traffic Control	AM Peak-Hour		PM Peak-Hour	
			Delay (seconds)	LOS	Delay (seconds)	LOS
Taylor Road @ English Colony Way/Rock Springs Road	Cum	AWSC	32.6	D	13.6	B
	Cum + PP		32.9	D	13.7	B
Penryn Road @ Taylor Road	Cum	TWSC**	183.9 (NB)	F	25.6 (NB)	D
	Cum + PP		187.8 (NB)	F	26.3 (NB)	D
Penryn Road @ I-80 Westbound Ramps/Boyington Road	Cum	Signal	25.2	C	25.1	C
	Cum + PP		26.1	C	27.0	C
Penryn Road @ 1-80 Eastbound Ramps/Boulder Creek Place	Cum	TWSC**	15.4 (EB)	C	35.7 (EB)	E
	Cum + PP		16.1 (EB)	C	47.5 (EB)	E
Penryn Road @ Project Site Access Driveway	Cum	n/a				
	Cum + PP	TWSC**	11.4 (EB)	B	10.0 (EB)	A
Taylor Road @ Project Site Access Driveway (Exit Only)	Cum	n/a				
	Cum + PP	TWSC**	16.7 (NB)	C	12.1 (NB)	B

Intersection	Analysis Scenario*	Traffic Control	AM Peak-Hour		PM Peak-Hour	
			Delay (seconds)	LOS	Delay (seconds)	LOS
Taylor Road @ King Road	Cum	Signal	93.4	F	38.0	D
	Cum + PP		94.1	F	38.5	D
Taylor Road @ Horseshoe Bar Road	Cum	Signal	47.9	D	98.7	F
	Cum + PP		48.0	D	100.3	F

Bold = Substandard

* Cum = Cumulative (2030), Cum + PP = Cumulative (2030) plus Proposed Project

** Control delay for worst minor approach (worst minor movement) for TWSC

Table 14.4
Cumulative plus Proposed Project Roadway Segment Levels of Service

Roadway Segment	# Lanes	Analysis Scenario*	Daily Volume	LOS
Penryn Rd between I-80 EB Ramps/Boulder Creek Rd and I-80 WB Ramps/Boyington Rd	2	Cum	5,009	B
		Cum + PP	5,450	B
Penryn Rd between I-80 WB Ramps/Boyington Rd and Taylor Rd	2	Cum	6,127	C
		Cum + PP	6,689	C
Taylor Rd between Penryn Rd and English Colony Way/Rock Springs Rd	2	Cum	12,471	D
		Cum + PP	14,501	D
Taylor Rd between Penryn Rd and King Rd	2	Cum	10,319	D
		Cum + PP	10,417	D

Source: Traffic Impact Analysis for The Orchard at Penryn (Kimley-Horn and Associates, Inc., 2011)

Bold = Substandard per County

* Cum = Cumulative (2030), Cum + PP = Cumulative (2030) plus Proposed Project

As shown in Tables 14.3 and 14.4, the proposed project would make considerable contributions to cumulative impacts at five intersections and on two roadway segments. *Mitigation Measure 14.2a* requires the project to contribute fair-share payments towards improvements that would provide acceptable LOS at most of the impacted facilities. The resulting intersection LOS are shown in Table 14.5.

Table 14.5
Mitigated Intersection Levels of Service

Intersection	Traffic Control	Weekday			
		A.M. Peak Hour (7:00 to 9:00 a.m.)		P.M. Peak Hour (4:00 to 6:00 p.m.)	
		LOS	Average Delay (sec's per vehicle)	LOS	Average Delay (sec's per vehicle)
Taylor Road @ English Colony Way/Rock Springs Road	Signal	C	27.8	C	21.6
Penryn Road @ Taylor Road	AWSC	C	15.3	B	12.5

Intersection	Traffic Control	Weekday			
		A.M. Peak Hour (7:00 to 9:00 a.m.)		P.M. Peak Hour (4:00 to 6:00 p.m.)	
		LOS	Average Delay (sec's per vehicle)	LOS	Average Delay (sec's per vehicle)
Penryn Road @ I-80 Eastbound Ramps/Boulder Creek Place	AWSC	A	9.3	C	16.3
Taylor Road @ King Road	Signal	C	32.7	C	33.4
Taylor Road @ Horseshoe Bar Road	Signal	C	26.2	E	69.0

Source: Traffic Impact Analysis for The Orchard at Penryn (Kimley-Horn and Associates, Inc., 2011)

Bold = Substandard

* Control delay for worst minor approach (worst minor movement) for TWSC

Two of the impacted intersections are located in the Town of Loomis. For the intersection of Taylor Road at Horseshoe Bar Road, there is not sufficient right-of-way to construct the physical improvements that would be necessary to provide acceptable LOS during the PM peak hour at this intersection. Therefore this impact is considered Significant and Unavoidable.

For the intersection of Taylor Road at King Road, the *Traffic Impacts Analysis* identifies the physical improvements that would be necessary to provide acceptable LOS and an estimate of costs to construct these improvements was provided by the project applicant's engineer. *Mitigation Measure 14.2a* requires the project applicant to make a fair-share contribution towards those improvements. However, there is no existing fee-payment agreement between the Town and Placer County. Thus there is no existing mechanism by which the project applicant can make a fair-share payment to the Town of Loomis. Placer County and the project applicant will work with the Town to identify a mechanism for this payment, but in the absence of an existing agreement or payment mechanism, it is not certain that the fair-share payment will be made. Placer County would require the applicant to make the fair share payment or demonstrate a good-faith effort at negotiating this payment with the Town of Loomis. However Placer County cannot guarantee that the applicant and Town would reach agreement on this payment. Due to the uncertainty regarding the fair share payment to the Town of Loomis and the lack of feasible mitigation to improve LOS at the intersection of Taylor Road at Horseshoe Bar Road, this impact is considered Significant and Unavoidable.

Mitigation Measure 14.2a: Prior to Improvement Plan approval, the applicant shall make a good faith effort to pay the Town of Loomis their fair share cost of \$728 for constructing modified intersection geometries and signal phasing at the intersections of Taylor Road/King Road and Taylor Road/Horseshoe Bar Road. The fair share percentages are identified as 0.34% and 0.36%, respectively.

Mitigation Measure 14.2b: The project shall implement *Mitigation Measure 7.1a*, which requires the project to pay traffic impact fees that are in effect in this area (Newcastle/Horseshoe Bar/Penryn), pursuant to applicable Ordinances and Resolutions.

IMPACT 14.3: Conflict with Transportation and Circulation Plans and Policies in the Cumulative Plus Project Condition

SIGNIFICANCE BEFORE MITIGATION: ***SIGNIFICANT***

Mitigation Measures

Proposed: None

Significance with Proposed Mitigation: Significant

Recommended: Mitigation Measure 14.3a

SIGNIFICANCE AFTER MITIGATION: ***SIGNIFICANT AND UNAVOIDABLE***

An analysis of the project’s consistency with General Plan and Community Plan policies is provided in Appendix B to this Draft EIR. As discussed in Impact 14.2, the traffic generated by the project would increase delay at five intersections and on two roadway segments in the project area. The intersections would operate at LOS D, E, and F while the roadway segments would operate at LOS D. These conditions would conflict with the LOS standards established in the General Plan and Community Plan. *Mitigation Measure 14.3a* requires the project applicant to make a fair share contribution to improvements that would provide acceptable LOS at most intersections and on both roadway segments. However, as discussed in Impact 14.3, there is not sufficient right-of-way to construct improvements that would provide acceptable LOS at one intersection and Placer County cannot guarantee that the applicant and Town would reach agreement regarding payment of fair share costs towards improvements at another intersection. Therefore this impact is Significant and Unavoidable. There is no feasible mitigation that would avoid the project’s cumulatively considerable contribution to traffic operations that conflict with applicable plans and policies.

Mitigation Measure 14.3a: The project applicant shall implement *Mitigation Measure 14.2a* and *Mitigation Measure 7.1a*, which require payment of a proportionate share of the total cost for roadway facility improvements.

Air Quality

The project site is located within the Sacramento Valley Air Basin, which defines the geographic scope for the analysis of cumulative air quality impacts. As identified in **CHAPTER 8 AIR QUALITY**, the project region is in non-attainment for ozone and particulate matter standards. The State Implementation Plan (SIP) for the Sacramento Valley Air Basin identifies how the region can achieve attainment with the federal ozone standards. In its New Source Review Rule, the Placer County Air Pollution Control District (APCD) has established pollutant emissions limits. If project emissions exceed those limits, the project is considered to have a significant impact to air quality. The project’s near-term effect on air quality is evaluated in Chapter 8, while the analysis below considers the project’s long-term (cumulative) effect on air quality.

IMPACT 14.4: Increase Cumulative Concentrations of ROG or NO_x

SIGNIFICANCE BEFORE MITIGATION: ***SIGNIFICANT***

Mitigation Measures

Proposed: None

Significance with Proposed Mitigation: Significant

Recommended: Mitigation Measure 14.4a

SIGNIFICANCE AFTER MITIGATION: ***SIGNIFICANT AND UNAVOIDABLE***

Air quality in the Sacramento Valley Air Basin does not meet state or federal standards for concentrations of ground-level ozone. Ongoing regional development in the cumulative scenario would continue to contribute to emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_x), which are precursors to the formation of ground-level ozone. This is a significant impact from regional development in the cumulative scenario.

To evaluate whether an individual project would make a considerable contribution to this cumulative impact, the Placer County APCD has adopted a threshold of 10 pounds per day for each pollutant. Emissions in excess of this threshold would make a considerable contribution to the significant cumulative impact of ozone concentrations that exceed state and federal standards.

The URBEMIS modeling for the proposed project indicates emissions of ROG and NO_x that would exceed the APCD threshold. Mitigation measures included in Chapter 8 would reduce ROG and NO_x emissions to the extent feasible. However, these emissions would remain above the APCD threshold, as shown in *Table 14.6*. Emissions of NO_x throughout each construction phase except for architectural coatings would exceed the APCD threshold. Conversely, the architectural coatings phase is in the only construction phase during which emission of ROG would exceed the APCD threshold, even when low-VOC coatings are used. During project operation, emissions of both ROG and NO_x would exceed the APCD threshold in summer and in winter.

Table 14.6
Mitigated ROG and NO_x Emissions (pounds per day)

Project Phase/Emission Source		Air Pollutant Emissions	
		ROG	NO _x
Project Construction	Site Remediation	10.0	132.63
	Mass Grading	4.44	47.68
	Fine Grading	2.85	23.48
	Paving	4.16	20.34
	Building Construction	3.87	18.72
	Architectural Coating	165.92	0.10

Project Phase/Emission Source		Air Pollutant Emissions	
		ROG	NO _x
Project Operation - Summer	Area Sources	8.52	1.04
	Vehicle Use	8.88	10.79
	Total Summer Operation	17.40	11.83
Project Operation – Winter	Area Sources	8.45	1.85
	Vehicle Use	9.68	15.49
	Total Winter Operation	18.13	17.34

As noted above, the values provided in *Table 14.6* assume implementation of the mitigation measures identified in Chapter 8. In addition, *Mitigation Measure 14.4a* is provided to offset some of the project's long-term air pollutant emissions. As stated in the measure, it would effectively offset emissions from one year of the project. There are no feasible mitigation measures that would offset or reduce emissions in additional years, thus the project's contribution to cumulative air pollutant concentrations would remain considerable and this impact remains Significant and Unavoidable.

Mitigation Measure 14.4a: Prior to Improvement Plan approval, the project applicant shall implement one or more of the following mitigation strategies. The mitigation shall be sufficient to offset the amount of summertime project operation emissions of ROG and NO_x that exceed 10 pounds per day. The estimated amount that the mitigation must be sufficient to offset is 0.67 pounds per day of ROG and 0.17 pounds per day of NO_x, a total of 0.84 pounds per day for a 182-day period (summer days).

a. Establish mitigation onsite by incorporating design features within the project. This may include, but not be limited to: "green" building features such solar panels, energy efficient heating and cooling, exceeding Title 24 standards, bike lanes, bus shelters, etc. NOTE: The specific amounts of "credits" received shall be established and coordinated through the Placer County Air Pollution Control District.

b. Establish mitigation offsite within west Placer County by participating in an offsite mitigation program, coordinated through the Placer County Air Pollution Control District. Examples include, but are not limited to participation in a "Biomass" program that provides emissions benefits; retrofitting, repowering, or replacing heavy duty engines from mobile sources (i.e. busses, construction equipment, road haulers); or other program that the project proponent may propose to reduce emissions.

c. Participate in the Placer County Air Pollution District Offsite Mitigation Program by paying the equivalent amount of money, which is equal to the project's contribution of pollutants (ROG and NO_x) in excess of the cumulative threshold of 10 pounds per day during summertime. The estimated payment for the proposed project is \$12,012 based on \$14,300 per ton for a 182-day period. The actual amount

to be paid shall be determined, and satisfied per current California Air Resource Board guidelines, at the time of Improvement Plan approval.

Noise

The existing ambient noise environment in the immediate project vicinity is defined primarily by traffic on Penryn Road and Interstate 80. Noise-sensitive land uses in the immediate project vicinity include a church to the south and existing single-family residences to the north and west. In the cumulative scenario, ongoing development would be expected to increase the ambient noise environment in the area as a result of increased traffic volumes and increased residential population and commercial activities. The increased residential population would also represent an increase in the amount of noise-sensitive land uses in the vicinity.

IMPACT 14.5: Generate Noise Levels in Excess of General Plan and Community Plan Standards or Cause a Substantial Permanent Increase in Ambient Noise Levels

SIGNIFICANCE BEFORE MITIGATION: *LESS THAN SIGNIFICANT*

Mitigation Measures: No mitigation measures are proposed or recommended.

SIGNIFICANCE AFTER MITIGATION: *LESS THAN SIGNIFICANT*

As described in CHAPTER 9 NOISE, Bollard Acoustical Consultants used the future traffic volumes data from the Traffic Impacts Analysis for this project and the FHWA Traffic Noise Prediction Model to predict cumulative traffic noise levels in the project vicinity. The modeling estimates L_{dn} noise levels at 100 feet from the centerline of each roadway segment. Comparison of the modeling results for cumulative conditions (year 2030) to the modeling results for cumulative plus project conditions found that the project-generated traffic would increase future noise levels by one dB for two segments of Penryn Road. The predicted cumulative noise level for Penryn Road between the east project entrance and Boyington Road is 60 dB, and the predicted cumulative plus project noise level in this location is 61 dB. The predicted cumulative noise level for Penryn Road between Boyington Road and Boulder Creek Road is 59 dB, and the cumulative plus project noise level predicted at this location 60 db. These noise levels comply with the County’s standards and the change in noise levels is less than the FICON guidelines provided in Table 9.4 in CHAPTER 9 NOISE for identifying a noticeable change in noise conditions. Therefore, the project is expected to have a less than cumulatively considerable contribution to cumulative transportation-related noise levels.

Geology and Soils

Many impacts related to geology and soils are site-specific and do not contribute to cumulative effects. For example, an individual project is unlikely to influence subsurface geologic stability outside of the project site.

Individual project impacts of loss of soil resources, increased soil erosion, and alteration of natural topography can contribute to cumulative impacts. The geographic scope for consideration of these cumulative impacts is the Sacramento Valley.

The project would remove 11,600 cubic yards of soil from the project site and would cover most of the remaining soil onsite with impervious surfaces and landscaping. This would contribute

to a loss of soil resources in the Sacramento Valley. As land in the Sacramento Valley continues to be converted from agricultural and rural uses to more urban and suburban development, the cumulative loss of soil resources could adversely affect the ability of the area to support agricultural activities. This is a potentially significant cumulative impact. However the proposed project makes a less-than-considerable contribution to this impact because the soil at the project site contains substantial pollutant concentrations and because the project site is not in an area that supports commercial agricultural activities.

Site remediation and project construction activities onsite would increase the potential for erosion to affect site soils. Mitigation measures in chapters 5, 8, 10, and 11 include requirements for the project to implement Best Management Practices to control soil erosion. With implementation of these measures, soil erosion at the project site would be minimal and the project would make a less-than-considerable contribution to cumulative impacts related to soil erosion.

Ongoing development in the Sacramento Valley, particularly in the foothills where natural topography is more varied than in the valley, could result in a loss of natural landforms and unique geologic features. This is a potentially significant cumulative impact. The proposed project would have a less-than-considerable contribution to this impact. The project site supports generally flat to gently rolling terrain. Elevations onsite range between 460 and 480 feet above mean sea level. The proposed project would not substantially alter existing elevations. Finished ground elevations would be between 465 and 475 feet. This minimal alteration of existing topography would not influence regional topography patterns.

Hydrology and Water Quality

The proposed project site is located in the Dry Creek watershed, which lies above the Sacramento Valley groundwater basin. Development throughout this area would increase the amount of impervious surfaces and urban pollutants in the region. This could result in significant cumulative impacts to groundwater and surface water quality and to flooding and drainage system operations. However, regional planning and state and federal permitting requirements would ensure that each individual project mitigates its impacts. Water quality would be protected with the use of Best Management Practices (BMPs) required under the NPDES program and grading and erosion control measures required by Placer County and other local jurisdictions. Flooding would not be increased as long as projects comply with the requirements of Placer County and the Placer County Flood Control and Water Conservation District that post-development drainage flows be reduced to 90 percent of the pre-development flows. Continued enforcement of existing regulations related to water quality, use of BMPS, flooding and drainage would ensure that new development does not worsen groundwater and surface water quality and existing flooding conditions. Therefore these cumulative impacts are expected to be less than significant.

Utilities

Water Supply: As documented in CHAPTER 12 UTILITIES, PCWA has sufficient water to serve the proposed project and anticipated cumulative development. There are no significant cumulative impacts related to Water Supply in the project region.

Wastewater Treatment: As documented in CHAPTER 12 UTILITIES, the South Placer Municipal Utility District has sufficient capacity to serve the proposed project and anticipated future development. There are no significant cumulative impacts related to Wastewater Treatment in the project region.

Solid Waste: As documented in CHAPTER 12 UTILITIES, the Western Regional Sanitary Landfill has sufficient capacity to dispose solid waste through the year 2036, including waste generated by new land development projects. There are no significant cumulative impacts related to solid waste collection and disposals in the project region.

Hazards and Hazardous Materials

Impacts related to hazards and hazardous materials are site-specific and do not contribute to cumulative effects. For example, development on a contaminated site would not alter conditions at another site in the same region or expose people within the region generally to hazardous materials. There are no significant cumulative impacts related to hazards and hazardous materials in the project region.

Climate Change

Existing Setting

Significant changes in global climate patterns have been associated with global warming, an increase in the average temperature of the atmosphere near the Earth's surface. This has been attributed to accumulation of greenhouse gases (GHGs) in the atmosphere. The most prevalent GHG is carbon dioxide; other GHGs include methane, ozone, water vapor, nitrous oxide, and chlorofluorocarbons. GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth.

While the greenhouse effect is a naturally occurring process that aids in maintaining the Earth's climate, human activities, such as burning fossil fuels and clearing forests, generate additional GHG emissions which contribute to the greenhouse effect and result in increased average global temperatures. Data indicate that global surface temperatures have increased 0.8°C (1.4°F) in the past century, and 0.6°C (1.1°F) in the past three decades. Temperatures are expected to continue to increase as a result of increasing concentrations of GHGs. The increased temperatures are anticipated to lead to modifications in the timing, amount, and form (rain vs. snow) of precipitation; changes in the timing and amount of runoff; deterioration of water quality; and elevated sea levels. In turn, these changes could be associated with increased flooding and other weather-related events, increased salinity levels in coastal groundwater basins, changes in water supply availability, changes in agricultural activities, changes in the range and diversity of wildlife and vegetation, and changes in conditions related to wildfires.

The project site is vacant. There are no existing sources of GHG emissions at the site.

Regulatory Framework

Although the U.S. Supreme Court ruled that the U.S. EPA has the authority under the Clean Air Act to regulate carbon dioxide, no federal regulations or policies regarding GHG emissions have been adopted.

The State of California has adopted several rules and regulations intending to avoid or reduce consequences of climate change. Senate Bill (SB) 97, enacted in 2007, amended CEQA to establish that GHG emissions and their effects are a prominent environmental issue that requires analysis under CEQA. In accordance with SB 97, the CEQA Guidelines have been amended to address GHG emissions.

With the passage of the California Global Warming Solutions Act of 2006, widely known as Assembly Bill (AB) 32, the State recognized the myriad environmental problems in California that are caused by global warming and demonstrated California's commitment to reducing the rate of GHG emissions and the state's associated contribution to climate change. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by the year 2020, and requires the California Air Resources Board (CARB) to adopt rules and regulations that will ensure this reduction target is met.

In accordance with the requirements of AB 32, CARB has adopted a Climate Change Proposed Scoping Plan, which identifies the main strategies California will implant to achieve a reduction of 169 million metric tons of carbon dioxide equivalent emissions, which is a 30 percent reduction in the amount of GHG emissions anticipated to occur in the "business as usual" scenario (i.e., continuation of current practices with no effort to reduce GHGs). These strategies include improvement emission standards for light-duty vehicles, implementation of the Low-Carbon Fuel Standard, energy efficiency measures in buildings and appliances, and development of renewable energy supplies.

CARB has already adopted the Low-Carbon Fuel Standard. This regulation establishes average carbon intensity requirements for transportation fuels, including gasoline, diesel, and alternative fuels. The carbon intensity of gasoline and diesel fuels must be lowered each year, starting in 2011, to achieve a 10 percent reduction by 2020.

The California Building Standards Commission adopted a mandatory Green Building Code (CALGREEN) on January 12, 2010, which became effective on January 1, 2011. CALGREEN applies to all new construction (residential, commercial, schools and hospitals) and will require:

- ❖ 20 percent reduction in indoor water use;
- ❖ separate water meters for nonresidential buildings' indoor and outdoor water use;
- ❖ diversion of 50 percent construction waste from landfills; and
- ❖ low emitting interior finish materials (paints, carpet, vinyl flooring, particle board).

CALGREEN is expected to reduce greenhouse gas emissions by 3 million metric tons in 2020, assisting California in meeting its AB32 GHG reduction targets.

Other laws California has enacted regarding GHG emissions include Senate Bills (SB) 375, 1368, and 1078. SB 375 integrates regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocations. This law requires Metropolitan Planning Organizations (MPOs) to adopt either a Sustainable Communities Strategy or an Alternative Planning Strategy. These documents must define land use allocations for the region, which will then be used as the basis for that MPO's Regional Transportation Plan. No strategy documents have been adopted for the project region at this time. SB 1368 requires the California Public

Utilities Commission to establish a GHG emission standard for energy generation facilities while SB 1078 requires retail sellers of electricity to provide a minimum of 20 percent of their supply from renewable sources by 2017.

There are no local regulations that govern GHG emissions.

IMPACT 14.6: Substantial Greenhouse Gas Emissions During Site Remediation and Construction

SIGNIFICANCE BEFORE MITIGATION: *LESS THAN SIGNIFICANT*

Mitigation Measures: No mitigation measures are proposed or recommended.

SIGNIFICANCE AFTER MITIGATION: *LESS THAN SIGNIFICANT*

GHG emissions during site remediation and project construction would primarily be generated by worker vehicle trips to the site and by emissions from operation of gas and diesel-powered construction equipment, including trucks used to import and export soil. The URBEMIS computer modeling program (refer to Appendix F of this Draft EIR) estimates that site remediation activities would generate 134.09 metric tons of carbon dioxide, and that project construction would generate a 214.70 metric tons of carbon dioxide. This results in a total of 348.79 metric tons of carbon dioxide emissions.

The Placer County APCD has not adopted thresholds for GHG emissions. Instead, the thresholds recently adopted by the Bay Area Air Quality Management District are applied to this analysis. The thresholds adopted by the Bay Area Air Quality Management District were based on statewide data relating land uses to GHG emission rates and statewide targets for reductions in GHG emissions. The thresholds were adopted following a process that provided opportunity for public review and comment. Information regarding the process by which the thresholds were developed and adopted is available at the Bay Area District's website at:

<http://www.baaqmd.gov>

The Bay Area Air Quality Management District did not adopt a threshold specifically for analysis of construction emissions. However, for this analysis, the Bay Area Air Quality Management District for operation of a project is applied to the construction phase. This threshold states that a project that generates a per capita volume of 4.6 metric tons of GHG emissions per person per year would have a less than cumulatively considerable contribution to global climate change. Additionally, annual construction emissions less than 4.6 metric tons of GHG emissions per person are considered to be consistent with the State's GHG reduction goals identified in AB 32. The number of people on which this per capita rate is calculated is the total anticipated residential population of the project site. With an average population rate of 2.8 persons per household in the Horseshoe Bar/Penryn Community Plan area, the proposed project is expected support a population of 420 people.

Site remediation and project construction would generate an estimated 383 tons of carbon dioxide emissions in the single year during which remediation and construction activities occur. With a future site population of 420 people, this results in a per capita emission rate of less than one ton per person. This is less than the threshold established by the Bay Area Air Quality Management District, indicating that the project would have a less than significant contribution

to GHG emissions and would be consistent with the State's GHG reduction goals identified in AB 32.

IMPACT 14.7: Substantial Greenhouse Gas Emissions During Project Operation

SIGNIFICANCE BEFORE MITIGATION: *LESS THAN SIGNIFICANT*

Mitigation Measures: No mitigation measures are proposed or recommended.

SIGNIFICANCE AFTER MITIGATION: *LESS THAN SIGNIFICANT*

GHG emissions during operation of the proposed project would include direct emissions associated with vehicle trips to and from the project site and onsite emissions from landscape and building maintenance activities, as well as indirect emissions associated with energy consumption within each home; energy consumption associated with water conveyance, treatment, and distribution; energy consumption associated with wastewater treatment; and emissions associated with solid waste disposal.

The energy supplier for the proposed project is Pacific Gas and Electric (PG&E). GHG emission rates for PG&E were obtained from PG&E's online Carbon Footprint Calculator which identifies an average energy usage of 540 kilowatt hours per month per household and an average CO₂ emission rate of 0.524 pounds of CO₂ per kilowatt hour. The data provided at the Carbon Footprint Calculator is based on PG&E's ClimateSmart program as authorized by the California Public Utilities Commission. The California Public Utilities Commission has approved the ClimateSmart electric emissions rate of 0.524 lbs pounds of CO₂ per kilowatt hour, finding that it is a reasonable approximation of emissions based on the average emissions rate for PG&E's electric portfolio, and consistent with the emissions rate that is independently certified and registered each year with the California Climate Action Registry.

The GHG emissions from each of the sources described above were estimated as follows:

- ❖ The URBEMIS computer modeling program estimates that area sources within the project (landscaping and building maintenance, space and water heating) would generate 239.76 metric tons per year of carbon dioxide.
- ❖ The URBEMIS modeling program estimates that vehicular traffic associated with operation of the proposed project would generate 1,370.13 metric tons per year of carbon dioxide. The URBEMIS program does not include emission reductions from implementation of the Pavley 1 Regulation and Low Carbon Fuel Standard. Reductions from those regulations were modeled using two additional modeling programs developed by the California Air Resources Board - Emfac2007 and the Pavley I + LCFS Postprocessor. These modeling programs show that the effect of the Pavley 1 Regulation and the Low Carbon Fuel Standard would be to reduce annual carbon dioxide emissions from vehicular traffic associated with operation of the project by 47.2 metric tons in the first year of project operation (year 2012). This results in a total generation of 1,322.93 metric tons per year of carbon dioxide. As part of the required frontage improvements on Penryn Road, the project would construct a Class II bike lane. The project's proximity to this Class II bike lane allows for an assumed reduction in VMT of 0.625 percent (CAPCOA 2010). This would further reduce carbon dioxide emissions by 6.29 metric tons per year, resulting in a total generation from vehicular traffic of 1,316.64 metric tons per year of carbon dioxide in year 2012. The Pavley 1

Regulation requires increasing fuel efficiency in each year, so annual GHG emissions from vehicular traffic associated with the project would gradually decrease over time.

- ❖ Based on PG&E's online Carbon Footprint Calculator tool energy usage and emission factors, each household in the project site would use 6,480 kilowatt hours of energy annually, which correlates to 3,395.52 pounds (1.54 metric tons) of carbon dioxide emissions. For the project as a whole, in-home energy consumption would generate 231 metric tons of carbon dioxide emissions annually.
- ❖ As evaluated in CHAPTER 12 UTILITIES, each unit within the proposed project would use approximately 3,000 gallons of water each month. Over the course of one year, the 150-unit project would use 5.4 million gallons of water. The California Energy Commission's *California's Water-Energy Relationship Final Staff Report* finds that consumption of one million gallons of water requires 1,500 kilowatt hours of energy. This includes energy needs for obtaining, conveying, treating, and distributing the water. The project's water consumption would require 8,100 kilowatt hours of energy use. Based on the emission factors from PG&E as stated above, this energy use correlates to 1.93 metric tons of carbon dioxide emissions annually.
- ❖ As described in CHAPTER 12 UTILITIES, the South Placer Municipal Utility District Wastewater Collection System Master Plan (January 2009) establishes an average residential daily flow of 190 gallons of wastewater per equivalent dwelling unit. Based on this rate, the project would generate 28,500 gallons of wastewater daily, which is 10.4 million gallons annually. Based on energy demand factors provided by the California Energy Commission's *California's Water-Energy Relationship Final Staff Report* (treatment of one million gallons of wastewater requires 2,500 kilowatt hours of energy), treatment of the wastewater generated by the proposed project would require 26,000 kilowatt hours of energy use. Based on the emission factors from PG&E as stated above, this energy use correlates to 6.18 metric tons of carbon dioxide emissions annually.
- ❖ CARB's Landfill Emissions Tool Version 1.2 was used to estimate emissions associated with solid waste disposal from the proposed project. This modeling found that the project would generate 5 metric tons per year of carbon dioxide equivalent emissions.

Table 14.7
Annual GHG Emissions

Source	Metric Tons of Carbon Dioxide Equivalent Emissions
Area Sources	239.76
Mobile Sources	1,316.64
Energy Demand	231
Water Consumption	1.93
Wastewater Treatment	6.18
Solid Waste Disposal	5
TOTAL	1,800.51

The emissions estimates described above and summarized in Table 14.7 indicate that operation of the proposed project would generate a total of 1,800.51. This is considered a conservative

estimate of actual GHG emissions from the proposed project. Compliance with the CALGREEN building standards would result in reduced water consumption and solid waste generation, which would lower the project's GHG emissions. However, because CALGREEN standards became effective on January 1, 2011 and have not been widely implemented, there is a lack of data regarding the actual effect that meeting CALGREEN standards has on GHG emissions. Therefore, no reduction in GHG emissions from the proposed project has been assumed based on compliance with CALGREEN.

The Bay Area Air Quality Management District threshold applicable to the analysis of operational emissions is a per capita volume of 4.6 metric tons per person per year. With a population rate of 2.8 persons per household, the proposed project is expected support a population of 420 people. With total annual emissions of 1,800.51 metric tons of CO₂, the project is expected to generate 4.29 metric tons of carbon dioxide emissions per year per person. This emission rate is less than the Bay Area Air Quality Management District per capita threshold. Under this threshold, the project's contribution to cumulative GHG emissions will be less-than-considerable and this impact is less than significant.

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