4.0 ENVIRONMENTAL ANALYSIS

4.0.1 SUMMARY OF EIR SCOPE

In accordance with CEQA Guidelines §§ 15126-§15126.4, this EIR Section 4.0, *Environmental Analysis*, provides analyses of potential direct, indirect, and cumulatively considerable impacts that could occur from planning, constructing, and operating the proposed Project.

In compliance with the procedural requirements of CEQA, an Initial Study was prepared to determine the scope of environmental analysis for this EIR. Public comment on the scope consisted of written comments received by the City of Lake Elsinore in response to the NOP issued for this EIR. Taking all known information and public comments into consideration, ten primary environmental subject areas are evaluated in this Section 4.0, as listed below. Each subsection evaluates several specific subject matters related to the general topic of the subsection. The title of each subsection is not limiting; therefore, refer to each subsection for a full account of the subject matters addressed therein.

4.1 Aesthetics
4.2 Air Quality
4.3 Biological Resources
4.4 Cultural Resources
4.5 Geology and Soils
4.6 Greenhouse Gas Emissions
4.7 Hydrology and Water Quality
4.8 Noise
4.9 Transportation and Circulation
4.10 Utilities and Service Systems

Seven (7) environmental subjects were determined by the City to have no potential to be significantly impacted by the Project, as concluded by the Project's Initial Study (included in *Technical Appendix A* to this EIR) and after consideration of all comments received by the City on the scope of this EIR and documented in the City's administrative record. These seven (7) subjects are discussed briefly in Section 5.0, *Other CEQA Considerations*, and include: Agricultural Resources; Hazards and Hazardous Materials; Land Use and Planning; Mineral Resources; Population and Housing; Public Services; and Recreation.

4.0.2 SCOPE OF CUMULATIVE EFFECTS ANALYSIS

CEQA requires that an EIR contain an assessment of the cumulative impacts that may be associated with a proposed project. As noted in CEQA Guidelines § 15130(a), "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable..." "…[A] cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects ~~creating~~ causing related impacts" (CEQA Guidelines § 15130(a)(1)). As defined in CEQA Guidelines § 15355:

> *'Cumulative Impacts' refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.*
>
> *(a) The individual effects may be changes resulting from a single project or a number of separate projects.*
>
> *(b) 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) describes two acceptable methods for identifying a study area for purposes of conducting a cumulative impact analysis. These two approaches include: 1) a list of past, present, and probable future projects producing related or cumulative impacts, including if necessary, those projects outside the control of the agency ("the list of projects approach") or 2) a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact ("the summary of projections approach").

For purposes of evaluating the Project's near-term (Existing plus Ambient Growth plus Project plus Cumulative (2016)) traffic and traffic-related impacts (e.g., ~~air quality, greenhouse gas, and~~ transportation-related noise impacts), the analysis of cumulatively considerable impacts uses the list approach, which includes present, and reasonably foreseeable projects known to the Lead Agency (City of Lake Elsinore), the City of Wildomar, and the County of Riverside at the time the Project's Notice of Preparation (NOP) was distributed for public review in June 2015. This approach was determined to be appropriate by the City of Lake Elsinore because the City determined that the comprehensive list of cumulative projects provides a sufficient amount of information to enable an analysis of near-term cumulative effect for the subject areas of ~~air quality, greenhouse gas emissions,~~ transportation-related noise~~,~~ and transportation/traffic.

For purposes of evaluating the Project's Horizon Year (2035) traffic and traffic related-impacts, (e.g., transportation-related noise impacts), the analysis of cumulatively considerable impacts uses the "buildout" approach, which utilizes a cumulative impact network using RivTAM, which includes transportation networks and land uses expected to occur within the City of Lake Elsinore and surrounding areas within Riverside County with General Plan buildout. This approach was determined to be appropriate by the City of Lake Elsinore because the City determined that the "buildout" approach accounts for growth through the buildout of the General Plans for jurisdictions located within the Project's study area, and provides a sufficient amount of information to enable an analysis of Horizon Year (2035) cumulative effect for the subject areas of transportation-related noise, and transportation/traffic.

A cumulative project list was developed in consultation with City of Lake Elsinore planning and engineering staff, the City of Wildomar, and Riverside County. The cumulative project list includes known and foreseeable projects that are anticipated to contribute traffic to intersections that would receive 50 or more peak hour trips from the Project. (Urban Crossroads, 2016d, p. 50)~~(Urban Crossroads, 2015d, p. 50)~~ This methodology presents a more reasonable approach to cumulative traffic analysis than the General Plan projection approach by recognizing development projects that actually have the potential to contribute traffic to the same intersections, roadway segments, and/or freeway segments as the Project and have the potential to be made fully operational during a similar timeframe as the Project. Specific development projects included in the traffic impact cumulative analysis are listed in Table 4.0-1, *Summary of Cumulative Development Projects*.

For the issue of air quality, the cumulative impact analysis relies on guidance from the South Coast Air Quality Management District (SCAQMD). The SCAQMD published a report giving direction on

Table 4.0-1 Summary of Cumulative Development Projects

No.	Project Name	Location	Land Use	Quantity[1]	
City of Lake Elsinore					
LE1	Greenwald[2]	Lake Elsinore	Shopping Center	104.450	TSF
LE2	Ramsgate	Lake Elsinore	Single Family Residential	1,012	DU
			Condo/Townhomes	120	DU
LE3	Trieste Residential (Tract 36624)	Lake Elsinore	Single Family Residential	75	DU
LE4					
LE5	1400 Minthorn Street[3]	Lake Elsinore	Single Family Residential	84	DU
LE6	Spyglass Ranch[4]	Lake Elsinore	Single Family Residential	523	DU
			Condo/Townhomes	171	DU
			Shopping Center	145.00	TSF
LE7	South Shore I (Tract 31593)[5]	Lake Elsinore	Single Family Residential	521	DU
	South Shore II (Tract 36567)[5]	Lake Elsinore	Single Family Residential	147	DU
LE8	La Strada (Tract 32077)	Lake Elsinore	Single Family Residential	134	DU
LE9	Tuscany West (Tract 25473)[5]	Lake Elsinore	Single Family Residential	164	DU
LE10	Marina Village Condos (Tract 33820)[6]	Lake Elsinore	Condo/Townhomes	94	DU
LE11	Watersedge[5]	Lake Elsinore	Single Family Residential	170	DU
			Condo/Townhomes	250	DU
			Apartments	110	DU
			Office	54.600	TSF
			Hotel	150	RM
			Boat/Watercraft Dealers & Service	50.000	TSF
			Mini-Warehouse (Boat & Watercraft Stora	76.000	TSF
			Shopping Center	86.600	TSF
	Cottages by the Lake	Lake Elsinore	Condo/Townhomes	169	DU
LE12	Tessera[5]	Lake Elsinore	Single Family Residential	90	DU
LE13	TAG Property[6]	Lake Elsinore	New Car Sales	50.000	TSF
LE14	City Center Condos[6]	Lake Elsinore	Condo/Townhomes	144	DU
LE15	Lake View Villas	Lake Elsinore	Condo/Townhomes	155	DU
LE16	Diamond Specific Plan[7]	Lake Elsinore	Condo/Townhomes	600	DU
			Hotel	150	RM
			General Office	425.000	TSF
			Shopping Center	472.000	TSF
LE17	The Colony[6]	Lake Elsinore	Apartments	211	DU
	Back Basin Specific Plan & East Lake Specific Plan	Lake Elsinore	Single Family Residential	2,407	DU
			Condo/Townhomes	324	DU
	John Laing Homes (Phase 2)	Lake Elsinore	Single Family Residential	506	DU
			Condo/Townhomes	1,141	DU
			Apartments	308	DU
			Shopping Center	117.000	TSF
LE18	Canyon Hills Estates (Tract 34249)	Lake Elsinore	Single Family Residential	302	DU
	Canyon Hills (Multiple Tracts)	Lake Elsinore	Single Family Residential	2,700	DU
			Apartments	1,575	DU
	Audie Murphy (Tract 36484)	Lake Elsinore	Single Family Residential	109	DU
	Audie Murphy (Tract 36485)	Lake Elsinore	Single Family Residential	1,003	DU

(Urban Crossroads, 2016d, Table 4-6)~~(Urban Crossroads, 2015d, Table 4-6)~~

Table 4.0-1 Summary of Cumulative Development Projects (Continued)

No.	Project Name	Location	Land Use	Quantity[1]	
LE19	Gruneto Hills	Lake Elsinore	Single Family Residential	191	DU
LE20	Hotel at 17584 Lawrence Way	Lake Elsinore	Hotel	57	RM
LE21	Alberhill Ridge (Tract 35001)	Lake Elsinore	Single Family Residential	1,056	DU
			Apartments	345	DU
			Shopping Center	679.000	TSF
			General Office	679.000	TSF
LE22	Alberhill Ranch	Lake Elsinore	Single Family Residential	1,986	DU
LE23	Lake Elsinore Walmart	Lake Elsinore	Free-Standing Discount Superstore	154.487	TSF
			Specialty Retail	4.600	TSF
			Fast Food w/Drive Thru	6.800	TSF
			Fast Food w/o Drive Thru	4.600	TSF
LE24	Circle K	Lake Elsinore	Gas Station	4.500	TSF
LE25	Alberhill Villages	Lake Elsinore	Single Family Residential	9,536	DU
LE26	Terracina	Lake Elsinore	Single Family Residential	365	DU
LE27	Encore at Cambria Hills	Lake Elsinore	Single Family Residential	214	DU
LE28	Family Dollar Store	Lake Elsinore	Discount Store	8.320	TSF
LE29	Fisherman's Wharf	Lake Elsinore	Fisherman's Wharf	12.748	TSF
LE30	Wake Rider Beach Resort	Lake Elsinore	Beach Resort	11.350	TSF
LE31	Lakeshore Town Center	Lake Elsinore	Town Center	237.400	TSF
LE32	Ortega	Lake Elsinore	Single Family Residential	105	DU
LE33	Summerly	Lake Elsinore	Single Family Residential	142	DU
LE34	Beazer, KB Homes, McMillin Homes, Richmond American	Lake Elsinore	Single Family Residential	395	DU
LE35	Village at Lake Elsinore SPA #1	Lake Elsinore	Single Family Residential	163	DU
LE36	Lake Shore Pointe Phase I	Lake Elsinore	Single Family Residential	43	DU
			Apartments	161	DU
LE37	Golden Corral Restaurant	Lake Elsinore	Restaurant	7.798	TSF
County of Riverside					
RC1	Lennar (Tract 31792)	County of Riverside	Single Family Residential	191	DU
RC2	PM33840	County of Riverside	Single Family Residential	4	DU
RC3	PP20158R1	County of Riverside	Storage Facility	103.727	TSF
RC4	CUP03651	County of Riverside	Recycling Facility	0.504	TSF
City of Wildomar					
W1	Rancon Monte Vista Residential (TTM No. 31409, APN: 367-110-007, 367-110-008)	Wildomar	SFDR	126	DU
W2	Wildomar Walmart	Wildomar	Free-Standing Discount Superstore	200.000	TSF
			Specialty Retail	3.900	TSF
			Fast-food with Drive-Through	126.000	TSF
W3	Cornerstone Church Pre-School Expansion (PUP No. 778)[4]	Wildomar	Pre-School/Day Care	180	STU
W4	Sehremelis PAR (TTM 29426, APN:367-250-007)	Lake Elsinore	SFDR	80	DU
W5	Subway (Case No. 10-0222, APN:366-390-026, 366-390-027)	Wildomar	Specialty Retail	10.500	TSF

(Urban Crossroads, 2016d, Table 4-6)~~(Urban Crossroads, 2015d, Table 4-6)~~

Table 4.0-1 Summary of Cumulative Development Projects (Continued)

No.	Project Name	Location	Land Use	Quantity[1]	
W6	Orange Bundy (TPM 30522, APN: 367-100-024, 367-100-026)	Wildomar	Retail	79.497	TSF
			Fast Food w/Drive Thru	1.500	TSF
			Gas Station w/ Market	6	VFP
W7	Bundy Canyon Plaza (Case No. 08-0179, TPM 32257, APN:367-100-019)	Wildomar	Retail	33.800	TSF
			Fast Food w/Drive Thru	6.200	TSF
			Gas Station w/ Market	12	VFP

[1] TSF = Thousand Square Feet; DU = Dwelling Unit; AC = Acres; STU = Students; VFP = Vehicle Fueling Positions
[2] Source: Greenwald Avenue Commercial Center TIA, Urban Crossroads, Inc., May 2008.
[3] Source: 1400 Minthorn Street Traffic Study Report, ASM Consulting, August 2007.
[4] Source: Spyglass Ranch TIA (Revised), Kunzman Associates, February 2007.
[5] Source: Porto Romano SP TIA (Revised), Urban Crossroads, Inc., May 2007.
[6] Source: Lake Elsinore TAG Property TIA (Revised), Urban Crossroads, Inc., August 2008.
[7] Source: The Diamond Specific Plan TIA, Urban Crossroads, Inc., April 2009.
(Urban Crossroads, 2016d, Table 4-6)~~(Urban Crossroads, 2015d, Table 4-6)~~

how to address cumulative impacts from air pollution: *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution* (SCAQMD, 2003b). In this report the AQMD states on page D-3:

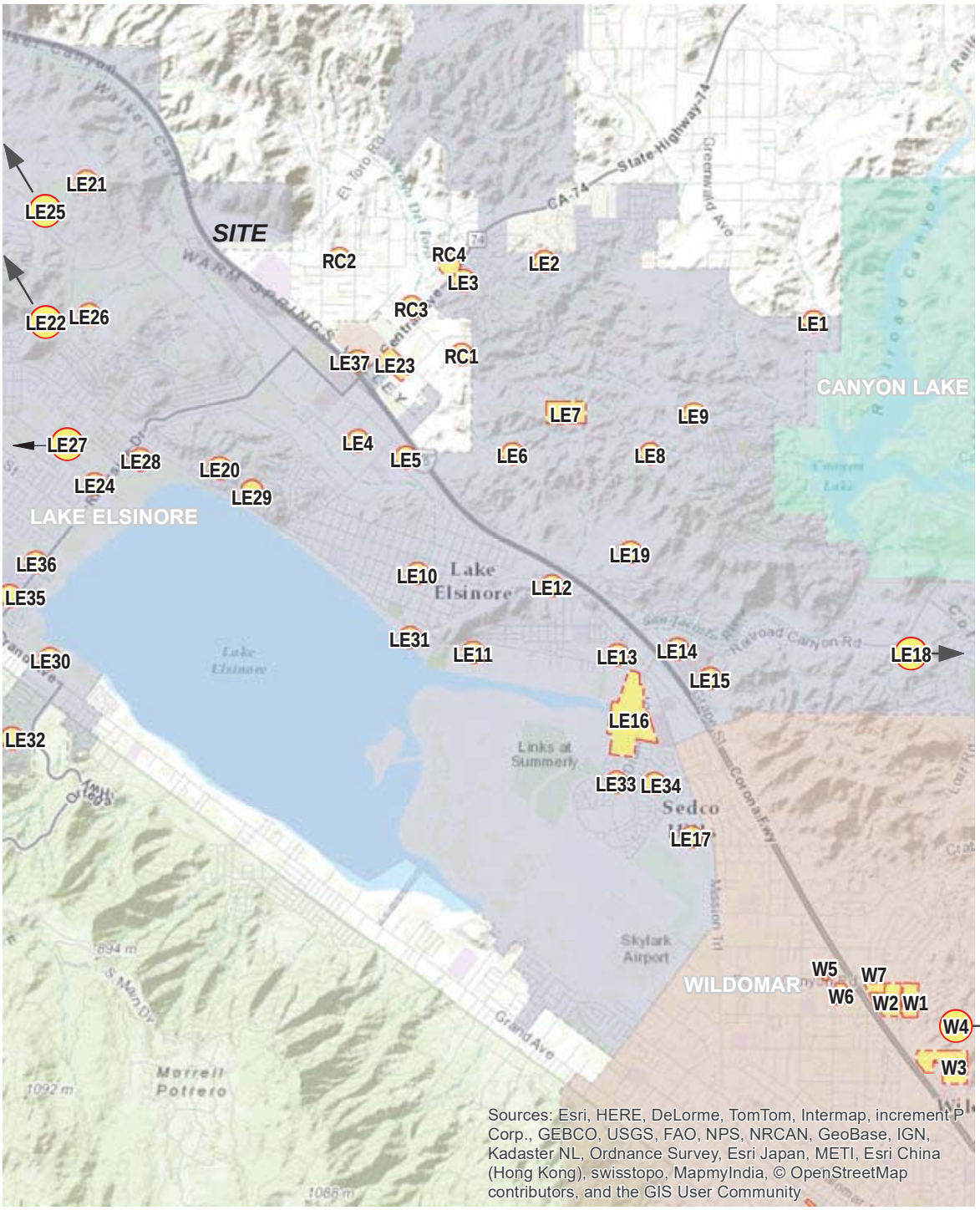
> *"…the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for toxic air contaminant (TAC) emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.*
>
> *Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."*

The cumulative analysis provided in EIR Subsection 4.2 assumes that individual projects that do not generate emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related emissions that exceed SCAQMD thresholds for Project-specific impacts would be considered cumulatively considerable. (Urban Crossroads, 2016a, p. 43)

Compliance with the SCAQMD guidelines for evaluating direct and cumulatively considerable impacts due to air quality emissions has been shown to result in a demonstrable reduction in air quality pollutants within the South Coast Air Basin. As more thoroughly discussed in EIR Subsection 4.2.2.E and as shown on EIR Tables 4.2-3 through 4.2-7, regulations promulgated by the SCAQMD have led to a dramatic reduction in the level of air quality pollutants within the South Coast Air Basin (SCAB), including levels of ozone, particulate matter (PM_{10} and $PM_{2.5}$), carbon monoxide, and oxides of nitrogen. As noted in the SCAQMD 2012 AQMP, "the remarkable historical improvement in air quality since the 1970's is the direct result of Southern California's comprehensive, multiyear strategy of reducing air pollution from all sources as outlined in its AQMPs" (SCAQMD, 2013a). Improvements have also been seen in ozone levels. Part of the control processes of the SCAQMD's duty to greatly improve the air quality in the SCAB is the uniform CEQA review procedures required by SCAQMD's CEQA Handbook (SCAQMD, 2003a). The single threshold of significance used to assess Project direct and cumulative impacts has in fact been successful, as evidenced by the track record of the air quality in the Basin dramatically improving over the course of the past decades (please refer to EIR Subsection 4.2 for an additional discussion on the improvements of the SCAB).

The list of projects method also was not use for the issue area of greenhouse gas (GHG) emissions, because GHG impacts are inherently cumulative in nature. The Project does not have the potential to result in direct significant effects due to global climate change (GCC) because GCC is a global phenomenon resulting from global emissions of GHGs, and the proposed Project has no potential to individually cause or perceptively exacerbate the effects of GCC due to GHGs. Additionally, it is not feasible to list every project throughout the globe that would have a potential for contributing to GHG emissions. Instead, the analysis of cumulatively-considerable GHG impacts relies on SCAQMD's interim screening threshold of 10,000 $MTCO_2e$ per year in determining whether additional analysis is needed to determine the cumulative significance of Project-related GHG emissions. (Refer to EIR Subsection 4.6 for additional discussion of the thresholds of significance evaluated for the issue of GHG emissions).

For the issue areas of aesthetics, biological resources, cultural resources, hydrology/water quality, and utilities/service systems, the cumulative study area is defined in each Subsection of Chapter 4.0, and relies on the "summary of projections" approach. For example, the issue of aesthetics considers the Project's viewshed – which is defined as the geographical area that is visible from a given location – and represents the area within which the Project has the potential to result in adverse impacts to scenic resources. Within the Project's viewshed, which includes portions of the City of Lake Elsinore and County of Riverside, the cumulative analysis of aesthetics assumes buildout in accordance with the County and City General Plans. For the issue of biology, the cumulative study area corresponds to the boundaries of the Western Riverside County Multiple Habitat Species Conservation Plan (MSHCP), as the MSHCP provides for the conservation of a wide variety of special status plant and animal species and encompasses a broad region that generally represents biological conditions associated with the Project area; thus, the cumulative study area for biological resources includes all future land uses within western Riverside County as called for by the General Plans of the County and the various cities that are included in the MSHCP (including the City of Lake Elsinore). Please refer to the cumulative impact analysis provided in each Subsection in Chapter 4.0 for an issue-specific discussion of the cumulative study area. Specific cumulative projects are shown in Figure 4.0-1, *Cumulative Development Projects Location Map*.



Source(s): Urban Crossroads (08-17-2015)

Figure 4.0-1

NOT TO SCALE

CUMULATIVE DEVELOPMENT PROJECTS LOCATION MAP

4.0.3 IDENTIFICATION OF IMPACTS

Subsections 4.1 through 4.10 of this EIR evaluate the ten environmental subjects warranting detailed analysis, as determined by this EIR's Initial Study and in consideration of public comment on this EIR's NOP. The format of discussion is standardized as much as possible in each section for ease of review. The environmental setting is discussed first, followed by a discussion of the Project's potential environmental impacts based on specified thresholds of significance used as criteria to determine whether potential environmental effects are significant.

The thresholds of significance used in this EIR are based on the thresholds presented in CEQA Guidelines Appendix G and as applied by the City of Lake Elsinore to create the Project's Initial Study Checklist (included in *Technical Appendix A* to this EIR). The thresholds are intended to assist the reader of this EIR in understanding how and why this EIR reaches a conclusion that an impact would or would not occur, is significant, or is less than significant.

Serving as the CEQA Lead Agency for this EIR, the City of Lake Elsinore is responsible for determining whether an adverse environmental effect identified in this EIR should be classified as significant or less than significant. While the City of Lake Elsinore has generally elected to use ~~use~~ the thresholds presented in CEQA Guidelines Appendix G, it should be noted that CEQA affords the City discretion to formulate standards of significance, and recognizes that the significance of a particular impact may vary with the setting. (14 Cal. Code Regs., § 15064(b).) The standards of significance used in this EIR are based on the independent judgment of the City of Lake Elsinore, taking into consideration CEQA Guidelines Appendix G, the City of Lake Elsinore's Municipal Code and adopted City policies, the judgment of the technical experts that prepared this EIR's Technical Appendices, performance standards adopted, implemented, and monitored by regulatory agencies, significance standards recommended by regulatory agencies, and the standards in CEQA that trigger the preparation of an EIR. As required by CEQA Guidelines § 15126.2(a), impacts are identified in this EIR as direct, indirect, cumulative, short-term, long-term, on-site, and/or off-site impacts of the proposed Project. A summarized "impact statement" is provided in each subsection following the analysis.

The following terms are used to describe the level of significance related to the physical conditions within the area affected by the proposed Project:

- No Impact: An adverse change in the physical environment would not occur.

- Less-than-Significant Impact: An adverse change in the physical environment would occur but the change would not be substantial or potentially substantial and would not exceed the threshold(s) of significance presented in this EIR.

- Significant Impact: A substantial or potentially substantial adverse change in the physical environment would occur and would exceed the threshold(s) of significance presented in this EIR, requiring the consideration of mitigation measures.

Each subsection also includes a discussion or listing of the applicable regulatory criteria (laws, policies, regulations) that the Project is required to comply with (if any). If impacts are identified as significant after mandatory compliance with regulatory criteria, feasible mitigation measures are presented that would either avoid the impact or reduce the magnitude of the impact. The following

terms are used to describe the level of significance following the application of recommended mitigation measures:

- Less-than-Significant Impact with Mitigation: A substantial or potentially substantial adverse change in the physical environment would occur that would exceed the threshold(s) of significance presented in this EIR; however, the impact can be avoided or reduced to a less than significant level through the application of feasible mitigation measures.

- Significant and Unavoidable Impact: A substantial or potentially substantial adverse change in the physical environment would occur that would exceed the threshold(s) of significance presented in this EIR. Feasible and enforceable mitigation measures that have a proportional nexus to the Project's impact are either not available or would not be fully effective in avoiding or reducing the impact to below a level of significance.

For any impact identified as significant and unavoidable, the City of Lake Elsinore would be required to adopt a statement of overriding considerations pursuant to CEQA Guidelines § 15093 in order to approve the Project despite its significant impact(s) to the environment. The statement of overriding considerations would list the specific economic, legal, social, technological, and other benefits of the Project, supported by substantial evidence in the Project's administrative record, that outweigh the unavoidable impacts.

4.1 AESTHETICS

This Subsection describes the aesthetic qualities and visual resources present on the Project site and in the site's vicinity and presents an analysis of the potential effects that the Project could have on these resources. Potential aesthetic impacts that could result from implementing the proposed Project are based in part upon anon analysis of aerial photography (Google Earth, imagery dated ~~September 2014~~February 2016) (Google Earth, 2016)~~(Google Earth, 2015)~~, visual simulations provided by the Project Applicant, photographs taken by T&B Planning in August 2015, and information provided in technical reports appended to this EIR. This Subsection also is based in part on information contained in the City of Lake Elsinore General Plan (City of Lake Elsinore, 2011a) and the City of Lake Elsinore General Plan Update Final Recirculated Program Environmental Impact Report, Section 3.3, Aesthetics (SCH No. 2005121019), certified December 13, 2011 (City of Lake Elsinore, 2011b).

4.1.1 SCOPE OF REVIEW

The Nichols Canyon Mine, as discussed in Section 2.0, *Environmental Setting*, is an existing, ongoing surface mining operation operating pursuant to vested mining rights and an approved reclamation plan (RP 2006-01A1), which was analyzed in a prior MND. Although the City has chosen to prepare an EIR for the Project evaluated herein, the scope of review addresses those impacts resulting from the Project as described in Section 3.0, *Project Description*, and not impacts related to existing, approved operations, which form the environmental baseline, as discussed in Subsection 2.7, *Existing Physical Site Conditions*. As disclosed in Section 3.0, *Project Description*, an asphalt batch plant is an existing, approved, on-site use pursuant to Conditional Use Permit No. CUP 2014-07 approved by the City of Lake Elsinore in 2015. Thus, the batch plant has already been approved by the City along with a CEQA environmental compliance document that was not challenged by any third party. During the public comment period on the DEIR, several third parties incorrectly asserted that the DEIR failed to adequately analyze the proposed Project's impacts. Several of these commentators also incorrectly claimed that the DEIR needed to re-analyze and include the batch plant's impacts as part of this EIR. While the City disagrees with these claims because the batch plant has already been approved under CUP 2014-07 and previously evaluated in an approved MND Addendum that was not challenged, in an effort to provide a conservative and overly-inclusive analysis of the Project's impacts on the environment (as opposed to potentially underestimating the Project's impacts), and to remove this issue from being a point of contention, this EIR includes analyses of the batch plant's impacts in all relevant CEQA Appendix G topics. Accordingly, this Subsection analyzes aesthetic impacts related to the currently-proposed Project, as well as the previously-approved asphalt batch plant. This Subsection does not analyze aesthetic impacts related to existing, approved mining operations (with the exception of the previously approved asphalt batch plant) because the approved mining operations are a baseline condition and not a part of the proposed Project.

4.1.2 EXISTING CONDITIONS

Pursuant to CEQA Guidelines § 15125, the physical environmental condition for purposes of establishing the setting of an EIR is the environment as it existed at the time the EIR's NOP was released for public review. The NOP for this EIR was released on June 25, 2015. As of that date, approximately 116 acres of the Mine had been mined and/or disturbed, with excavations occurring along the upper portion of a slope. Previous mining activities created a series of progressively lower

benches with associated high walls. ~~Under existing conditions, approximately 116 acres of the Mine are currently used for mining activities.~~ The Nichols North site comprises approximately 156 acres and the Nichols South site comprises approximately 43 acres. Under existing conditions, areas that were previously subject to mining on the Nichols North site contain stockpiles, dirt roadways, and the locations of the aggregate processing equipment and the previously-approved asphalt batch plant, while the upper elevations of the hillsides, including areas that are currently permitted for mining activities but have not yet been mined, are undisturbed and primarily consist of sagebrush associations. Under existing conditions, the Nichols South site consists of a mostly disturbed site where overburden has been removed and much of the area is subject to regular disking as part of on-going fire abatement activities, with a drainage (Stovepipe Creek) traversing the southeastern portion of the Nichols South site.

As required by the approved Conditional Use Permit (CUP 2014-07) for the on-site asphalt batch plant, and since issuance of the Project's Notice of Preparation in June 2015, the Project Applicant has commenced construction on an approximate 14- to 34-foot tall berm located along the western and southern boundaries~~y~~ of the ~~mining~~ Nichols North site, adjacent to I-15 and along the north edge of Nichols Road within the first 550 feet of the I-15 northbound on- and off-ramps.~~.~~

The EDA is an undeveloped hillside formed in bedrock terrain that includes surface rock outcrops. To illustrate the existing visual conditions of the EDA in more detail, a photographic inventory was prepared by T&B Planning. Figure 4.1-1, *Site Photograph Key Map*, depicts the locations of five (5) vantage point photographs, each of which are described below. These photographs, shown on Figure 4.1-2, *Site Photographs 1 and 2;* Figure 4.1-3, *Site Photographs 3 and 4*; and Figure 4.1-4, *Site Photograph 5* , provide a representative visual inventory of the Mine's visual characteristics as seen from surrounding public viewing areas and from within the Mine property.

- Site Photograph 1 (Figure 4.1-2): Site Photograph 1 was taken from western edge of the Nichols Canyon Mine just west of I-15, looking east. This photograph depicts the existing vested mining operations as a series of benched slopes, and shows the natural hillsides in the background, which are also a part of the Nichols Canyon Mine property and a portion of which is the EDA[1]. In the foreground is the on-ramp of I-15, with a chain link fence that delineates the western edge of the Nichols Canyon Mine.
- Site Photograph 2 (Figure 4.1-2): Site Photograph 2 was taken from Nichols Road, facing the portion of the Mine site referred to in this EIR as Nichols North. This photograph shows power poles along Nichols Road, beyond which is the vested mining operation. A berm that is being constructed on the Mine site beyond the chain link fence obscures views to the locations of the Mine's processing area and previously-approved, asphalt batch plant from this view point along Nichols Road. Existing disturbed/mined areas are clearly visible from this location in the middle ground, while undisturbed areas on- and off-site can be seen in the distance in the right portion of the photo[1].

[1] It should be noted that the some of the natural hillsides shown at the edges of the existing mining limits already are permitted for mining activities pursuant to approved RP 2006-01A1, although mining activities have not yet reached the existing approved mining limits.



Figure 4.1-1

SITE PHOTOGRAPH KEY MAP



Site Photo 1: From Western Edge of Project Boundary, along Interstate 15, looking Northeast to Southeast.



Site Photo 2: Overview of the Existing Quarry Operation, from Western Corner of Project Boundary looking North to East.

Source(s): Brian F. Smith & Associates, Inc. (07-09-2015), Site Photo Visit (08-26-15)

Figure 4.1-2

SITE PHOTOGRAPHS 1 AND 2



Site Photo 3: From Southern Edge of Project Boundary, along Nichols Road, looking West to East.



Site Photo 4: From Southeastern Edge of Project Boundary looking West to North.

Source(s): Site Photo Visit (08-26-15)

Figure 4.1-3

SITE PHOTOGRAPHS 3 AND 4



Site Photo 5: From South of Project Boundary looking Northwest to Northeast.

Source(s): Brian F. Smith & Associates, Inc. (07-09-2015)

Figure 4.1-4

NOT TO SCALE

SITE PHOTOGRAPH 5

- Site Photograph 3 (Figure 4.1-3): Site Photograph 3 was taken along Nichols Road, looking northwest and northeast. As shown, in the foreground is the existing driveway access that provides access to trucks into the Mine. Telephone poles along Nichols Road also are visible from this location. In the distance, the existing fencing that controls access to the site is visible, beyond which are numerous piles of large rock. From this vantage, the undisturbed portions of the Mine dominate views, with some disturbances associated with on-going mining activities ~~are~~ visible in the distance in the left portion of the photo[1]. Distant views of the Santa Ana Mountains also can be seen from this vantage.
- Site Photograph 4 (Figure 4.1-3): Site Photograph 4 was taken from the eastern boundary of the Mine, along Nichols Road, looking northwest. Nichols Road is visible in the left portion of the photo, while in the near-ground in the center and right portions of the photo is disturbed natural vegetation. In the distance, and dominating views in the right portion of the photo, are the existing undisturbed slopes located east of the ~~Project's proposed Expanded Development Area (EDA)~~areas that have previously been subject to mining activities[1]. Disturbances associated with mining activities are visible in the distance in the left portion of the photo. Distant views of the Santa Ana Mountains also can be seen from this vantage.
- Site Photograph 5 (Figure 4.1-4): Site Photograph 5 shows views of the Mine property from the northbound shoulder of I-15, on the approach to the Nichols Road off-ramp. The portion of the Mine site referred to in this EIR as Nichols South is visible to the south of Nichols Road, and the portion of the Mine site referred to as Nichols North is visible north of Nichols Road. Mined and disturbed areas are visible on both portions of the property, beyond which are undisturbed hillsides[1].

Under existing conditions, the Nichols Canyon Mine contains little artificial lighting. Some limited lighting ~~occurs~~ is utilized in areas where mining activities occur in the early morning and after dark. Street lights are located near the intersection of Nichols Road and the I-15/Nichols Road off-ramp. In the surrounding area, vehicle headlight illumination affects the Mine site along the I-15 corridor. Artificial lighting also is present at the Lake Elsinore Outlets shopping area to the west, Temescal Canyon High School to the south, and single family homes to the east and southeast.

The Mount Palomar Observatory, located in the northern portion of San Diego County, has noted that the continued urbanization of southwestern Riverside County reduces the usefulness of the observatory due to emission of artificial lighting from streetlights, automobiles, residences, and businesses (CalTech, n.d.). This type of lighting condition is known as "sky glow." Properties located within a 45-mile radius of the Mount Palomar Observatory are considered to have the potential to contribute to lighting impacts at the observatory. The Nichols Canyon Mine is located approximately 37 miles northwest of the Mount Palomar Observatory. Therefore, the EDA is located within a 45-mile distance of the facility, which is referred to as "Zone B" of the "Mt. Palomar Nighttime Lighting Policy Area" (Riverside County, 2003a).

Figure 4.1-5, *Caltrans Scenic Highway Map*, shows that there are no officially designated State or County Scenic Highways in the vicinity of the Nichols Canyon Mine. This figure shows that both I-15 and State Route 74 (SR-74) are State Eligible as scenic highways, but are not officially designated as scenic.



Figure 4.1-5
CALTRANS SCENIC HIGHWAY MAP

A. Applicable Regulatory Requirements

1. City of Lake Elsinore General Plan

The City of Lake Elsinore General Plan Section 4.8, Aesthetics, states that "[s]cenic resources within and surrounding the City of Lake Elsinore include the lake, Cleveland National Forest, rugged hills, mountains, ridgelines, rocky outcroppings, streams, vacant land with native vegetation, buildings of historical and cultural significance such as the cultural center, bathhouse and military academy, parks, and trails." (City of Lake Elsinore, 2011a, p. 4-72)

The City of Lake Elsinore General Plan Chapter 4.0, *Resource Protection and Preservation*, addresses sources of light and glare in the City and contains goals, policies, and implementation programs regarding aesthetics, which generally require the following: contour grading along steep slopes; preservation of the City's visual character, in particular the surrounding hillsides, which topographically define the Lake Elsinore region; the application of design strategies for historical buildings; preservation or retention of existing scenic landscape resources, such as existing mature trees, streetscapes, and other landscape elements; the preservation of "valued" public views throughout the City, with particular emphasis on views of Lake Elsinore and local ridgelines; and the regulation of mining activities in a manner that does not adversely affect the City's visual character. Additionally, the General Plan also identifies 15 landscape viewshed units in the City. As depicted in General plan Figure 4.9, *Landscape Viewshed Units*, the Nichols Canyon Mine is located in Landscape Viewshed Unit 12, which is the location of the Lake Elsinore Outlet stores and of which "a large portion to the east is vacant for future expansion" (City of Lake Elsinore, 2011a, p. 4-73). The viewshed units identified in the City's General Plan tend to focus on Lake Elsinore. The Nichols Canyon Mine is located approximately 2.0 miles from the lake, and is not visible from the lake due to orientation and intervening development and topography. (City of Lake Elsinore, 2011a, Chapter 4.0)

2. Alberhill Ranch Specific Plan

The Project site falls within the boundaries of the Alberhill Ranch Specific Plan, which was adopted in 1989 and amended several times, with the most recent amendment being Specific Plan Amendment No. 3. (KCT Consultants, 1997, p. 1) Alberhill Ranch Specific Plan Amendment No. 3 provides lighting standards for new development, including standards that address exterior lighting and lighting for parking areas for the properties within the Specific Plan area. The lighting standards set forth in the Alberhill Ranch Specific Plan Amendment No. 3 are not applicable to the proposed Project because the proposed Project is an expansion of existing vested mining operation, which is allowed to continue to operate pursuant to the General Plan's Extractive Overlay land use designation that is applied to the existing and proposed mining and disturbance limits associated with the Mine.

3. City of Lake Elsinore Municipal Code

The City of Lake Elsinore's Zoning Code (Municipal Code Title 17) regulates the character and use of property throughout the various zones in the City (City of Lake Elsinore, 2015). Title 17 of the City's Municipal Code designates overlay zones that affect aesthetic and visual qualities, including the: Scenic Overlay Zone (Chapter 17.16), Lakeshore Overlay Zone (Chapter 17.20), Hillside Planned Development Overlay (Chapter 17.36), and Historic Downtown Elsinore Overlay District

(Chapter 17.40). (City of Lake Elsinore, 2011b, p. 3.3-24) The Nichols Canyon Mine site is not located in any of these overlay zones.

City Municipal Code Chapter 17.112.040 identifies outdoor lighting standards for nonresidential development in the City. All outdoor lighting fixtures in excess of 60 watts ~~shall~~ are required to be oriented and shielded to prevent any glare or direct illumination on adjacent properties or streets. Additionally, due to the City's proximity to the Mount Palomar Observatory, the use of low pressure sodium lighting is explicitly encouraged. (City of Lake Elsinore, 2011b, p. 3.3-24)
~~Additionally, City Municipal Code Chapter 17.148.110 addresses potential light and glare issues by providing that "Lighting shall be located and designed so as to preclude the direct glare of light shining onto adjacent property, streets, or into the sky above a horizontal plane passing through the luminaire." (City of Lake Elsinore, 2011b, p. 3.3-24)~~

4.1.3 BASIS FOR DETERMINING SIGNIFICANCE

The proposed Project would result in a significant impact to aesthetics if the Project or any Project-related component would:

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

The above-listed thresholds are derived directly from Section I of Appendix G to the CEQA Guidelines and address typical adverse effects to aesthetics -(OPR, 2009).

4.1.4 IMPACT ANALYSIS

Threshold a. Would the Project have a substantial adverse effect on a scenic vista?

Under existing conditions, areas that have been mined on the Nichols North site contain stockpiles, dirt roadways, and locations of the aggregate processing equipment and previously-approved asphalt batch plant. The upper elevations of the hillsides and eastern portions of Nichols North are undisturbed, although portions of the slopes to the northwest and east of the Nichols North site are permitted for mining activities, meaning that mining of portions of these slopes is permitted to occur, and will occur, with or without the proposed Project. The Nichols South site consists of a mostly disturbed site where overburden has been removed by mining operations and much of the area is subject to regular discing as part of on-going fire abatement activities. Stovepipe Creek traverses the southeastern portion of the Nichols South site. Implementation of the proposed Project would result in an expansion~~ding~~ of the approved mining boundaries to accommodate an additional +/- 24 acres of mining area (the EDA). The EDA is visible from off-site locations, and mining of these additional 24 acres would slightly reduce the amount of undisturbed hillside visible from these off-site locations, including views available to the public along Nichols Road and along northbound and southbound I-15.

The photographs provided previously on Figure 4.1-2 through Figure 4.1-4 depict the Nichols Canyon Mine ~~and~~ including the EDA under existing conditions. As shown, the EDA appears as an undisturbed hillside, higher in elevation than existing mining operations. As previously indicated, the existing conditions photographs shown on Figure 4.1-2 through Figure 4.1-4 also depict portions of undisturbed on-site hillsides that are permitted for mining activities. The mining operator intends to conduct mining activities on those portions of the undisturbed slopes currently approved for mining with or without the proposed Project. Additionally, the existing photograph shown on Figure 4.1-2 depict the location of the previously-approved asphalt batch plant. The mining operator intends to conduct asphalt batch plant activities on the Nichols North portion of the site with or without the proposed Project.

The Nichols Canyon Mine property, including the proposed EDA, is not a scenic vista and does not contribute to a scenic vista. The City of Lake Elsinore General Plan EIR states that the City is surrounded by small hills and larger mountains to the south and west. The Santa Ana Mountains in the southwest are visible from much of the City, which are scenic. The Project site is not located in any important hillside areas, which are designated by the General Plan as Hillside Residential in General Plan Figure 2.1A, *City of Lake Elsinore Land Use Plan*. (City of Lake Elsinore, 2011b, p. 3.3-28) The Santa Ana Mountains/Cleveland National Forest are located approximately 3.6 miles northwest, 3.0 miles west, and 3.3 miles southwest of the Project site. The Project proposes to expand mining activities on the Nichols Canyon Mine by 24 acres. No buildings are proposed, nor are any structures that would have the potential to block or obscure views to the Santa Ana Mountains. The previously-approved asphalt batch plant is a low-stature structure that would have no potential to block scenic views. ~~; a~~As such, the Project would have no impact on views of the Santa Ana Mountains. (Google Earth, 2016)~~(Google Earth, 2015)~~

Lake Elsinore is considered a scenic resource by the City of Lake Elsinore General Plan. The Nichols Canyon Mine is located approximately 2.3 miles from the lake, and is not prominently visible from the lake due to orientation, distance, and intervening development and topography. As such, the Project would have no impact on scenic views to or from the lake. The City of Lake Elsinore General Plan Chapter 4.0, *Resource Protection and Preservation- Part 2*, focuses on views to Lake Elsinore, and identifies 15 landscape viewshed units in the City (City of Lake Elsinore, 2011a, p. 4-72) The Nichols Canyon Mine and its proposed EDA are located within Landscape Viewshed Unit 12, which is the location of the Lake Elsinore Outlet stores and of which "a large portion to the east is vacant for future [development] expansion" (City of Lake Elsinore, 2011a, p. 4-73). The proposed Project is compatible with the description for Viewshed Unit 12 because mining and subsequent reclamation would occur on-site, leaving the Mine property available for the future establishment of an end-use east of the Lake Elsinore Outlet stores. Any future development after reclamation of the Nichols Canyon Mine site would be subject to separate review under the California Environmental Quality Act.

Accordingly, and based on the foregoing analysis, the Project would not have a substantial adverse effect on a scenic vista, and impacts would be less than significant.

Threshold b. Would the Project substantially damage scenic resources, including, but not limited to trees, rock outcroppings and historic buildings within a state scenic highway?

The Nichols Canyon Mine site is not located within or adjacent to a scenic highway corridor, nor is it visible from any state-designated scenic highway corridor. I-15, located immediately to the west of the Mine site, and SR-74, located approximately 1.4 miles south of the Mine site, are identified by Caltrans as "State Eligible" scenic highways (Riverside County, 2003a, Figure C-9) (Caltrans, 2011). The Nichols Canyon Mine, including its proposed 24-acre EDA, and the locations of the aggregate processing equipment and previously-approved batch plant, are~~is~~ not prominently visible from SR-74 due to distance, intervening development, and topography. (Google Earth, 2016)~~(Google Earth, 2015)~~. Although I-15 is not officially designated as a state scenic highway, the proposed expansion of mining limits would be visible to traffic along northbound and southbound I-15, and may occasionally be visible to traffic along SR-74, depending on how clear the sky is. Because the EDA and the locations of the aggregate processing equipment and previously-approved batch plant are~~is~~ not visible from an officially designated state scenic highway, the proposed Project would not adversely impact the viewshed within a scenic highway corridor and would not damage important scenic resources within a scenic highway corridor, including trees and historic buildings.

Mining activities within the EDA would impact existing rock outcroppings; however, these rock outcroppings are generally sparse and covered with natural vegetation, which primarily consists of native grasses. There are no trees within the EDA. ~~Further, the Project site is surrounded by other large surface mining operations.~~ Because the City of Lake Elsinore has not identified the sparse rock outcroppings or native grasses on the Project site as being a scenic resource or part of a scenic resource, the Project would have a less-than significant-impact to scenic resources.

Based on the foregoing analysis, the proposed Project would not have an adverse effect on scenic resources visible from a state scenic highway; as such, impacts would be less than significant.

Threshold c. Would the Project substantially degrade the existing visual character or quality of the site and its surroundings?

Implementation of the proposed Project would result in the expansion of the existing mining limits to accommodate an additional +/- 24 acres of mining area. The Nichols Canyon Mine site is largely disturbed under existing conditions and the expansion of mining activities would be viewed as an additional area of mining disturbance visible from off-site areas. As previously indicated, however, portions of the existing undisturbed slopes located east and northwest of the existing active mining areas already are permitted for mining activities, and the mining operator intends to conduct mining in these areas with or without the proposed Project. As detailed in Section 3.0, *Project Description*, during mining activities a variety of equipment would be used, which would be visible to the immediately surrounding areas during mining activities. The proposed mining activities in the EDA would not be visually ~~different or~~ discernable from existing and vested mining activities at the Nichols Canyon Mine because ~~,~~proposed Mine operations in the EDA and the locations of the aggregate processing equipment and previously-approved asphalt batch plant would appear as a continuation of existing and previously-permitted mining activities visible from off-site areas. Therefore, mining activities in the EDA would not substantially degrade the area's visual quality, which is already affected by mining operations on the property and ~~on surrounding~~ other properties located to the north of Lake Elsinore. As of 2010, six mines were active in the Lake Elsinore area,

producing clay, stone/rock, sand, and gravel, with the nearest active mine occurring approximately 0.9 mile west of the Project site. The Nichols Canyon Mine and this existing off-site mine, which is located east of Lake Street and south of I-15, both occur within the same viewshed when viewed from areas south of these two mines. (City of Lake Elsinore, 2011a, p. 3.12-2). As such, mining is a use that is typical in the area and characterizes a part of the existing viewshed in the Project vicinity.

Expansion of the permitted mining area by +/- 24 acres would result in a visual change to the lower and upper elevations of an undeveloped hillside. The hillside would be mined, and then reclaimed. The proposed mining of these +/- 24 acres is compatible with the visual character of existing and previously-permitted mining operations at the Nichols Canyon Mine and mining operations that occur on other properties to the west~~, southwest, and south~~ of the Project site. Following completion of the mining activities at the Nichols Canyon Mine, all mining equipment would be removed and the mined areas would be reclaimed and revegetated. Project-related changes to local visual character and quality by expanding the mined area by 24 acres would be less than significant in the context of existing, on-going and previously-permitted mining activities at the site.

To verify that the proposed Project would not substantially degrade the existing visual character/quality of the site and its surroundings, three~~four~~ visual simulations were prepared showing views of the Nichols Canyon Mine as it exists currently on-site, the Mine during interim mining operations, and the Mine after it is reclaimed, which are described below.

- Figure 4.1-6, *Visual Simulation 1 of 3*~~*Visual Simulation 1 of 4*~~: Visual Simulation 1 utilizes a photograph collected at the southwest corner of the Nichols North site, looking north and northeast. The ~~e~~"Existing" conditions on-site are shown in the top portion of Figure 4.1-6, followed by the "Interim" mining conditions in the center of the figure, while the "Ultimate" reclaimed conditions are visible in the bottom portion of the figure. The "Existing" photograph (shown on the top) shows power poles and haul trucks in the foreground with on-site trailer and truck ramps in the background under existing conditions, which are partially obstructed from view by the berm that is being constructed pursuant to CUP 2014-07. Also partially obstructed from view by the berm that is under construction are the locations of the aggregate processing equipment and previously-approved asphalt batch plant. This photograph also depicts the steep terrain located north of Nichols Road. It should be noted that the Existing conditions photo represents conditions at the Mine at the time the Project's NOP was circulated for public review (June 25, 2015), and does not depict future mining that would occur to the north and east of the existing disturbed mining areas pursuant to the adopted Reclamation Plan No. 2006-01A1 (RP 2006-01A1). The "Interim" ~~Proposed~~ conditions visual simulation (shown in the center) shows conditions following the completion of construction of the berm along the west and southwest boundaries of the site. The berm is currently under construction pursuant to CUP 2014-07, and is anticipated to be fully constructed prior to or soon after commencement of mining activities within the EDA. As shown, following construction of the berms, views from this location would be similar to existing conditions, except that portions of the existing disturbed areas, ~~and~~ the trailer, and the locations of the aggregate processing equipment and previously-approved asphalt batch plant would be obstructed by the berm. It should be noted that the slope shown in the left



EXISTING



INTERIM



ULTIMATE



Source(s): VisionScape Imagery (05-24-2016)

NOT TO SCALE

Figure 4.1-6

VISUAL SIMULATION 1 OF 3

portion of the photo as well as a portion of the disturbed slope shown in the right portion of the photo will be mined pursuant to approved RP 2006-01A1 and this permitted mining activity will occur with or without the proposed Project. As shown, t~~T~~he sloped hillsides that will be mined pursuant to approved RP 2006-01A1 would be graded and designed with slope benching (creating steps in the hillside to create slope stability)~~, and planted to return the hillside to a more natural appearance, compared to existing conditions~~. From this location, mining in the proposed EDA would ~~not be prominently~~ be visible in the right portion of the photo and would appear as a continuation of the disturbed mining areas already permitted for the site. The "Ultimate" visual simulation shown at the bottom of Figure 4.1-6 depicts reclaimed conditions following the construction of the berm along the west and southwest boundaries of the site and following reclamation of the ~~existing~~ mined slope visible under ~~existing~~ Interim conditions in the center and right portions of the photo. After mining activities have ended, the slopes would be planted in order to return the hillside to a more natural appearance, and would appear similar to the natural hillsides present in the background of the photograph.

- Figure 4.1-7, *Visual Simulation 2 of 3*~~*Visual Simulation 2 of 4 (Interim Condition)*~~: Figure 4.1-7 shows visual simulations based on a photograph collected at the western boundary of the Nichols North site, looking east, and represents views of the Project site from this portion of I-15. ~~existing and interim conditions~~ As shown under "Existing" conditions, ~~after~~ the berm ~~that is~~ required by CUP No. 2014-07 ~~and that is currently under construction is completed~~has been constructed in this location and obstructs views of the majority of the Mine from this vantage point. ~~This photo location represents views of the Mine from I-15 following completion of the landscaped berm. As shown in Visual Simulation 2, under existing conditions mining areas and equipment are prominently visible from this location.With construction of~~ Specifically, ~~the tall berm~~ views of the active mining areas on the Nichols Canyon Mine site, as well as the locations of the aggregate processing equipment and previously-approved asphalt batch plant largely ~~would be blocked~~ are obstructed from view for~~from~~ motorists traveling along I-15, as well as motorists traveling on the on-ramp to merge onto the I-15 Freeway, going northbound. ~~The berm would only allow those at the~~ Views from ground level are limited to ~~to see~~ views of the hillside in the distance ~~and~~ because the berm ~~would~~ blocks ~~any~~ most views of ~~Nichols Canyon Mine~~the active mining areas. The "Interim" condition visual simulation shows mining activities that would be visible on the right side of the hillside in the distance. It should be noted that the Interim condition simulation shows mining activities both within the EDA as well as within areas west of the EDA. Areas west of the EDA will be mined in accordance with existing permits, regardless as to whether the proposed Project is approved. As shown, the sloped hillside would be graded to provide slope benching (i.e., creating steps in the hillside to create slope stability). From this location the proposed EDA is visible in the right portion of the photo and above areas that will be mined in conformance with existing permits. The "Ultimate" condition shows conditions following the reclamation of the existing berm and reclamation of the areas that would be subject to mining. After mining activities have ended, both the berm and the slope would be planted in order to return the hillsides



EXISTING



INTERIM



ULTIMATE



Source(s): VisionScape Imagery (05-24-2016)

NOT TO SCALE

Figure 4.1-7

VISUAL SIMULATION 2 OF 3

to a more natural appearance, and would largely appear similar to natural hillsides visible in the background of the photograph. ~~Refer to Visual Simulations 3 and 4, which describes how this portion of the site would be ultimately reclaimed.~~

- Figure 4.1-8, *Visual Simulation 3 of 3*~~*Visual Simulation 3 of 4 (Ultimate Condition)*~~: Visual Simulation 3 shows visual simulations based on a photograph collected along I-15, just south of the Project site, looking north and northwest. ~~existing and proposed conditions, after the Nichols Canyon Mine has been reclaimed and all mining activities on-site have terminated. The existing photograph for Visual Simulation 3 is the same as the existing photograph for Visual Simulation 2, described above.~~ The "Existing" conditions photograph shows the existing view of the hillsides in the distance from the shoulder of the I-15 Northbound lanes near the Nichols Road exit. As shown, the existing disturbed hillsides, locations of the aggregate processing equipment and previously-approved asphalt batch plant, as well as some of the mining equipment that occurs on-site under existing conditions are visible in the distance. It should be noted that portions of these hillsides that appear undisturbed under the "Existing" condition photograph already are permitted for mining pursuant to RP 2006-01A1. The "Interim" conditions visual simulation shows conditions following mining activities on-site. From this location, permitted mining disturbance areas are shown in the central portion of the photo, which would occur in conformance with the approved RP 2006-01A1. In the right portion of the photo, proposed disturbances associated with the EDA are shown. As depicted in this simulation, the sloped hillsides would be graded to provide slope benching (i.e., creating steps in the hillside to create slope stability).~~Visual Simulation 3 shows how the site conditions would change after the site has been reclaimed. As shown in Visual Simulation 3, the berm installed in the interim while mining operations were ongoing is removed.~~ As ~~an~~shown under the ~~u~~"Ultimate" condition visual simulation, the sloped hillsides that were subject to mining activities would be graded and planted to return the hillside to a more natural appearing state, ~~compared to existing conditions~~and would appear similar in character to the natural hillsides visible in the distance. ~~Visual Simulation 3 shows the EDA and how the reclaimed slopes would be approximately 440 feet high. This simulation also shows the proposed slope benching (at 25 foot wide with 25 foot high inter bench verticals [faces]), resulting in an overall slope ratio of 1 horizontal to 1 vertical (45 degrees). (CHJ, 2015, p. 2)~~

~~Figure 4.1 9, *Visual Simulation 4 of 4*: Visual Simulation 4 shows existing and proposed conditions, after the Nichols Canyon Mine has been reclaimed and all mining activities on-site have terminated. This photo location was taken along the northbound edge of I 15looking north and northeast. This photograph shows a four wire fence in the foreground, with the Nichols North portion of Nichols Canyon Mine in the background. The left side of the photograph shows the Nichols Road off ramp from I-15, as well as the portion of Nichols Road that traverses over I-15. Mining operations can be seen in the distance at Nichols North. Visual Simulation 4 shows how the site conditions would change after the site has been reclaimed. As shown in Visual Simulation 4, the stockpiles of materials shown on the left side of the simulation would be removed and the hillsides would be graded and designed with slope benching and planted to return the hillside to a more natural appearance, compared to existing conditions. Additionally, the hills shown in the background, at Nichols North, would also be reclaimed and planted in the same manner.~~



EXISTING



INTERIM



ULTIMATE



Source(s): VisionScape Imagery (05-24-2016)

NOT TO SCALE

Figure 4.1-8

VISUAL SIMULATION 3 OF 3

A. *Potential Visual Impacts During Mining Operations*

- Views from North of the Project Site: The Project site would not be visible from the north due to ~~the~~ intervening topography that blocks views of the existing ~~m~~Mine and EDA~~,~~ and a lack of public viewing locations to the north.

- Views from South of the Project Site: As shown in Figure 4.1-6, and Figure 4.1-8, ~~M~~mining activities, along with the location of the previously-approved asphalt batch plant would be visible to those motorists and persons traveling along Nichols Road, although the berm ~~required~~ that is currently being constructed under ~~by~~ the authorization of CUP No. 2014-07 would partially obstruct views of the M~~m~~ine at the approaches to and from the I-15 off ramps under interim conditions while mining activities are taking place. Views from I-15 northbound also would be possible, although for only a very brief stretch along I-15 due to intervening topography to the north and south along the I-15 corridor. Due to the orientation of the EDA relative to views from the south, and as shown on Figure 4.1-8, the majority of the mining activity disturbance area that would be visible from the south would result from the activities associated with approved RP 2006-01A1, which will occur with or without approval of the proposed Project.

- Views from East of the Project Site: The nearest residential land uses to the EDA are the homes located southeast of Nichols Road and Wood Mesa Court, approximately .06 mile from the eastern boundary of the proposed EDA (Google Earth, 2016)~~(Google Earth, 2015)~~. Based on the location of the closest home in relation to the eastern boundary of the EDA, mining activities would be visible from the homes adjacent to Nichols Road and the terminus of Wood Mesa Court, and potentially from the home at the southwest corner of El Toro Road and Nichols Road. However, for those homes located southeast of the EDA, views from the east would not be substantially affected because mining activities would go into the hillside and ~~thus,~~ views of the mining operations would be blocked by the intervening hillside. Thus, views of the mining operations on-site would only be possible at the extreme southeast corner of the EDA.

- Views from West of the Project Site: As depicted in Figure 4.1-7 ~~Figure 4.1-7, neither~~ the existing mining operation ~~nor~~ as well as the proposed EDA would be visible from I-15, although views of portions of the Mine would be obstructed by ~~due to~~ the ~~presence of a~~ tall berm that ~~would be placed~~occurs along the western and southern boundaries~~y~~ of the Nichols North site, as required by CUP No. 2014-07. Thus, during mining operations~~,~~ views of the Nichols Canyon Mine, including the EDA, would be mostly blocked by the berm that occurs along the southern and western boundaries of the Mine. Because the elevation of areas to the west of I-15 are lower than elevations at the Mine, the berms would effectively obstruct most views of the disturbance areas in the EDA from areas west of I-15.

B. *Potential Visual Impacts After Mining Operations*

- Views from North of the Project Site: The Project site would not be visible from the north due to the intervening topography that blocks views of the Nichols Canyon Mine and EDA.

- Views from South of the Project Site: As ~~detailed~~ shown on~~in~~ Figure 4.1-6 and Figure 4.1-8~~Figure 4.1-9~~, ~~Visual Simulation 4 shows how~~ the site conditions as viewed from the south would change after the site has been reclaimed. The equipment ~~stockpiles of materials~~ shown on the left and right side of the "Existing" conditions photo in Figure 4.1-6 ~~the simulation~~ would be removed from the site. The hillsides would be graded and designed with slope benching and would be planted to return the hillside to a more natural appearance. As depicted on these figures, the reclaimed slopes would appear similar in character to the natural undisturbed hillsides visible in the distance.~~Additionally, the hills shown in the background, at Nichols North, also would be reclaimed and planted in the same manner.~~

- Views from East of the Project Site: For those homes located southeast of the EDA, views from the east would not be substantially affected because mining activities would go into the hillside and ~~thus,~~ views of the post-mining reclamation would be blocked by the intervening hillside.

- Views from West of the Project Site: ~~As detailed in~~ Figure 4.1-7~~Figure 4.1-8, Visual Simulation 3~~ depicts how the Mine and the EDA would look from I-15 after termination of all mining on-site and with implementation of reclamation. Upon reclamation of the mined areas, including the proposed EDA, ~~from the vantage point of I-15,~~ the hillside would more closely resemble ~~pre-Project conditions~~ the natural slopes visible from the I-15 corridor because the EDA would be seeded such that natural vegetation would return to the slope-benched hillside. Furthermore, the berm would be retained on-site following reclamation, which would preclude the majority of views of the reclaimed mining areas to the west, particularly west of I-15 where the elevation is lower than the elevation of the Mine.

During mining of the EDA, the aesthetics and natural look of the hillside would change from an untouched state to one with active mining and reclamation activities. However, less-than-significant impacts would occur because the Project is a 24-acre expansion of mining activities within an already vested and active mining site, and would appear as a continuation of existing and previously-permitted mining activities on site. Thus, new disturbances and future reclamation within the EDA would not substantially change the ultimate conditions on site when considered in the context of mining activities that would occur with or without the proposed Project ~~conditions would not change substantially from what already occurs just west of the EDA~~.

As indicated in the above descriptions, reclamation of the Mine site would change the existing visual character of the Project site from an active mining site to that of a reclaimed site, where mining activities are no longer conducted and the slopes have been stabilized and planted. Although the aesthetic changes to the Project site during mining activities would be noticeable, reclamation of the EDA after mining activities have ceased would result in a less-than-significant alternation to the visual character of the Project site. Moreover, implementation of the proposed Project, which for visual quality purposes would affect only the +/- 24-acre EDA, would appear as a continuation of the existing and planned disturbance areas that would occur in conformance with RP 2006-01A1. Therefore, based on the foregoing analysis, implementation of the proposed Project would ~~not~~ result in ~~any~~ less-than-significant adverse impacts to the visual character ~~or~~ and quality of the Project site.

With respect to the visual character of the surrounding area, the proposed Project would be visually compatible with the existing mining land uses to the west~~, south, and southwest~~ and northwest of the Project site, which occur in the same viewshed as the proposed Project. Thus, mining to the west and northwest of the Project site would have similar visual impacts as those that would be created by the proposed Project. Based on the foregoing analysis, expansion of the existing mining operations would not substantially degrade the visual quality or character of the Project site or surrounding area. As such, the Project would result in a less-than-significant impact.

Threshold d. Would the Project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Implementation of the proposed Project would expand the existing mining limits of Nichols Canyon Mine to accommodate an additional +/- 24 acres of mining area, and an increase in the Mine's hours of operation. Lighting for the EDA would be supplied from current lighting elements on the site. Lighting elements on the site are portable, and the existing lighting elements on the Project site would be moved from current and previously approved mining areas to the EDA as mining of the hillsides progresses. No new lighting elements would be required in the EDA, however existing lighting would be used over a longer duration to provide light during the expanded hours of operation. There would be no increase in the number of lighting elements on the site; however, the hours of operation for the existing lights would be increased, compared to existing conditions. There would be no new lighting impact to surrounding areas because intervening topography would prevent lights from impacting the homes located to the east of the EDA. The existing lighting elements on-site are required to comply with City of Lake Elsinore Municipal Code § 17.112.040 (Nonresidential Development Standards – Lighting), which requires that all lighting fixtures in excess of 60 watts be oriented and shielded to prevent direct illumination above the horizontal plane passing through the luminaire and prevent any glare or direct illumination on adjacent properties or streets, and requires the use of low-pressure sodium fixtures. Additionally, lighting elements would not be oriented toward the I-15 freeway because the lighting elements would be focused to the north and east along the hillsides, and not towards the freeway. Any potential impact due to glare would be further reduced due to the presence of the berms on-site which would shield I-15 motorists from views of existing and proposed Mine operations, as shown in Figure 4.1-6, and Figure 4.1-7. Thus, the continued use of the existing lighting elements in the late evening/early morning hours would not adversely affect nighttime views in the surrounding area.

Implementation of the proposed Project would not result in substantial impacts regarding glare because the Project does not propose additional sources of glare such as highly reflective surfaces or buildings with reflective glass. Mining equipment and vehicles associated with the few additional employees at the EDA would not produce substantial glare should sunlight be reflected from their surfaces. Thus, the Project would have a less than significant impact regarding the creation of glare.

As noted previously, the Project site is located within a 45-mile radius of the Mount Palomar Observatory. The 45-mile radius surrounding the Mount Palomar Observatory is defined by Riverside County Ordinance No. 655 as an area in which light pollution may impact the functionality of the observatory. Any development project within a 45-mile radius of the observatory that would add artificial light sources has the potential to contribute to sky glow effects, which could adversely affect operations at the observatory. The Project would have a less-than-significant impact regarding lighting impacts to the Palomar Observatory because the Project would comply with City of Lake

Elsinore requirements regarding outdoor lighting standards (such as City Municipal Code Chapter 17.112.040, which states that all outdoor lighting fixtures in excess of 60 watts shall be oriented and shielded to prevent any glare or direct illumination on adjacent properties or streets and that the use of low pressure sodium lighting shall be encouraged). (City of Lake Elsinore, 2011b, p. 3.3-24) The Project would use low sodium lighting on-site to ensure compliance with City Municipal Code Chapter 17.112.040. Lighting for the EDA would be supplied from current lighting elements on the site. Lighting elements on the site are portable, and the existing lighting elements on the Project site would be moved from current mining areas to the EDA as mining of the hillsides progresses. No new sources of light are proposed as part of the Project. Although the hours for lighting would be extended, there would be a less-than-significant impact because the lights on the Mine site comply with City lighting standards regarding light wattage, type of lighting, and shielding of lights, resulting in~~s~~ less-~~-~~than-~~–~~significant impacts to the Palomar Observatory. Mandatory compliance with applicable City lighting standards would reduce potential impacts regarding lighting and the Palomar Observatory to a less than significant level. Although a less-than-significant impact would occur, out of an abundance of caution, Mitigation Measure MM 4.1-1, below, is identified to require the use of low pressure sodium bulbs for all portable lighting elements on-site. Implementation of Mitigation Measure 4.1-1 would ensure the Project complies with the recommendations of City Municipal Code Chapter 17.112.040, thereby ensuring lighting impacts affecting the Mount Palomar Observatory are less than significant.

4.1.5 CUMULATIVE IMPACT ANALYSIS

For purposes of analysis herein, the Project's cumulative study area for aesthetics comprises all areas visible from and visible to the Project site. Existing and planned development located outside the Project's viewshed have no potential to cumulatively contribute to visual quality effects.

As noted under the discussion of Threshold a., implementation of the proposed Project would expand permitted mining boundaries to accommodate an additional +/-24 acres of mining area. The expanded mining activities would be visible from off-site locations, and would reduce the amount of undisturbed hillside visible from off-site locations, such as traffic along Nichols Road or along north- or southbound I-15. The Project site is not located in a designated scenic hillside area. The proposed Project would not have an impact to views of the Santa Ana Mountains, because no buildings or other visual obstructions would be caused by the Project. Similarly, the Project would not obstruct views to Lake Elsinore or adversely affect views from the lake, due to the Project's orientation and its distance of approximately 2.0 miles north of the lake. Mining of an additional +/- 24 acres would affect views of the EDA from I-15. However, given that the land directly west~~, south,~~ and ~~southwest~~ northwest of the Project site has been mined in the past and is currently being mined/disturbed, and because mining within the EDA would appear as a continuation of existing and previously-permitted mining activities on-site, the general character of the Project area (i.e. the hillside on which mining is currently occurring and would occur with the Project) would not change substantially. Accordingly, the Project would not result in a cumulatively considerable impact to scenic vistas.

As noted under the analysis of Threshold b., the Project site is not located within close proximity to any designated Scenic Routes and does not contain any scenic resources under existing conditions. The EDA does contain sparse rock outcroppings, however the land in the vicinity of the rock outcroppings is vested for mining, and the rock outcroppings on the Project site have not been designated by the City of Lake Elsinore as a visual resource and are not prominently visible from off-

site locations. Therefore, the proposed Project would not contribute to a cumulatively significant scenic resource impact to designated scenic routes. As such, a less-than-significant cumulatively considerable impact would occur.

With respect to visual quality and character of the site and surrounding area, under cumulative conditions the geographic area of the Project site includes mining ~~uses on the hillside~~activities to the west and northwest and single family residential uses to the southeast. ~~Vested mining operations are also located south of the Project site.~~ Mining is a long-standing use in the City and surrounding area. Expanding the permitted mining hours and expanding the permitted mining area of Nichols Canyon Mine by 24 acres would not significantly and adversely affect the visual quality and character of the area beyond mining disturbances that already have occurred and mining disturbances that will occur in the future under existing permits. Thus, the Project's impact would be less than cumulatively considerable and the proposed Project would not considerably contribute to an adverse cumulative impact to the existing visual character or quality of the Project site or its surroundings.

With respect to potential cumulative light and glare impacts, City of Lake Elsinore Municipal Code § 17.112.040 (Nonresidential Development Standards – Lighting), requires that all lighting fixtures in excess of 60 watts shall be oriented and shielded to prevent any glare or direct illumination on adjacent properties or streets, and ~~requires~~recommends the use of low-pressure sodium fixtures. Cumulative development projects in the unincorporated areas of Riverside County and City of Murrieta would comply with Riverside County Ordinance No. 655 (Regulating Light Pollution) or City of Murrieta Municipal Code § 16.18.110 (Mount Palomar Lighting Pollution Control Standards). The requirements to shield lighting enforced by these lighting regulations has the effect of minimizing light and glare that would create sky glow. Additionally, development projects with artificial light sources in surrounding jurisdictions would be required to comply with the light reduction requirements applicable in their respective jurisdiction. Therefore, because City of Lake Elsinore Municipal Code § 17.112.040 and the light control regulations of other jurisdictions within the 45-mile radius of the Mount Palomar Observatory would minimize the amount of sky glow that could affect nighttime operations at the observatory the cumulative effect would be less than significant. Because the proposed Project is mandated to comply with the City's Municipal Code (including the requirement to use low pressure sodium lights, per Mitigation Measure MM 4.1-1, the Project's contribution to sky glow impacts to the Mount Palomar Observatory is determined to be less-than-cumulatively considerable.

4.1.6 SIGNIFICANCE OF IMPACTS BEFORE MITIGATION

Threshold a: Less-than-Significant Impact. No unique or scenic vistas would be impacted by the Project. The Project site does not contain any scenic vistas, nor does it offer unique views of any visually prominent features; therefore, impacts to scenic vistas resulting from the Project would be less than significant.

Threshold b: Less-than-Significant Impact. The Project has no potential to damage scenic resources within a scenic highway corridor, because the property is not visible from a designated scenic highway corridor.

Threshold c: Less-than-Significant Impact. The Project would not substantially degrade the existing visual character or quality of the site or its surrounding areas during mining operations. Although the

Project would expand the permitted limits of mining by 24 acres, the expansion would be viewed as a logical extension of existing mining activities at the Nichols Canyon Mine, and would be visually similar to other mining activities that occur to the west, south, and southwest of the EDA.

Threshold d: Less-than-Significant Impact. The Project would not create substantial amounts of light or glare. Compliance with the City of Lake Elsinore Municipal Code § 17.112.040 would ensure less-than-significant impacts associated with light and glare affecting day or nighttime views in the area. Although not required because impacts would be less than significant, Mitigation Measure MM 4.1-1 has nonetheless been identified to be required on the Project to ensure the use of low pressure sodium lighting on-site, consistent with the recommendation of City Municipal Code § 17.112.040.

4.1.7 MITIGATION

Although Project i~~I~~mpacts due to lighting would be less than significant requiring~~; therefore,~~ no mitigation~~, is required~~ Mitigation Measure MM 4.1-1 has nonetheless been identified for the proposed Project to implement the low pressure sodium lighting recommended by City Municipal Code § 17.112.040.

MM 4.1-1 All portable lighting elements used for mining activities shall be required to use low pressure sodium light bulbs in order to follow the recommendation of City Municipal Code Chapter § 17.112.040. This requirement shall be enforced by the Mine Operator.

4.2 AIR QUALITY

This Subsection is based on two technical studies that were prepared by Urban Crossroads, Inc. to evaluate the proposed Project's potential to adversely affect local and regional air quality. These studies include the following: 1) "Amendment No. 2 to Reclamation Plan 2006-001 Air Quality Impact Analysis City of Lake Elsinore," dated ~~October 14, 2015~~July 14, 2016 and prepared by Urban Crossroads, which is included as *Technical Appendix B* to this EIR (Urban Crossroads, 2016a)~~(Urban Crossroads, 2015a)~~; and 2) "Amendment No. 2 to Reclamation Plan 2006-01 ~~Diesel Particulate Matter~~Air Toxics Health Risk Assessment, City of Lake Elsinore," dated ~~October 14, 2015~~July 14, 2016 and prepared by Urban Crossroads, which is included as *Technical Appendix C* to this EIR (Urban Crossroads, 2016b)~~(Urban Crossroads, 2015b)~~. Refer to Section 7.0, *References*, for a complete list of reference sources.

4.2.1 SCOPE OF REVIEW

The Nichols Canyon Mine, as discussed in Section 2.0, *Environmental Setting*, is an existing, ongoing surface mining operation operating pursuant to vested mining rights and an approved reclamation plan (RP 2006-01A1), which was analyzed in a prior MND. Although the City has chosen to prepare an EIR for the Project here, the scope of review addresses those impacts resulting from the Project as described in Section 3.0, *Project Description*, and not impacts related to existing, approved operations, which form the environmental baseline, as discussed in Subsection 2.7, *Existing Physical Site Conditions*. As disclosed in Section 3.0, *Project Description*, an asphalt batch plant is an existing, approved, on-site use pursuant to Conditional Use Permit No. CUP 2014-07 approved by the City of Lake Elsinore in 2015. Thus, the batch plant has already been approved by the City along with a CEQA environmental compliance document that was not challenged by any third party. During the public comment period on the DEIR, several third parties incorrectly asserted that the DEIR failed to adequately analyze the proposed Project's impacts. Several of these commentators also incorrectly claimed that the DEIR needed to re-analyze and include the batch plant's impacts as part of this EIR. While the City disagrees with these claims because the batch plant has already been approved under CUP 2014-07 and previously evaluated in an approved MND Addendum that was not challenged, in an effort to provide a conservative and overly-inclusive analysis of the Project's impacts on the environment (as opposed to potentially underestimating the Project's impacts), and to remove this issue from being a point of contention, this EIR includes analyses of the batch plant's impacts in all relevant CEQA Appendix G topics. Accordingly, this Subsection analyzes air quality impacts related to the currently-proposed Project, as well as the previously-approved asphalt batch plant. This Subsection does not analyze air quality impacts related to existing, approved mining operations (with the exception of the previously-approved asphalt batch plant) because the approved mining operations are a baseline condition and not a part of the proposed Project.

4.2.2 EXISTING CONDITIONS

A. Atmospheric Setting

The Project site is located in the South Coast Air Basin (SCAB, or "Basin"), which is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SCAB encompasses approximately 6,745 square miles and includes Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The SCAB is bound by the Pacific Ocean to the west; the San Gabriel, San Bernardino, and the Jacinto Mountains to the north and east,

respectively; and the San Diego County line to the south (Urban Crossroads, 2016a, p. 5)~~(Urban Crossroads, 2015a, p. 5)~~.

B. Regional Climate and Meteorology

The regional climate (temperature, wind, humidity, precipitation, and the amount of sunshine) has a substantial influence on air quality. The distinctive climate of the SCAB is determined by its terrain and geographical location, which comprises a coastal plain connected to broad valleys and low hills surrounded by the Pacific Ocean and high mountains. The annual average temperatures throughout the SCAB vary from the low to middle 60s, measured in degrees Fahrenheit (F). Inland areas of the SCAB, including where the Project site is located, show more variability in annual minimum and maximum temperatures than coastal areas within the SCAB due to a decreased marine influence. (Urban Crossroads, 2016a, p. 5)~~(Urban Crossroads, 2015a, p. 5)~~

The climate of the SCAB is characterized as semi-arid; however, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of SCAB climate. Humidity restricts visibility in the SCAB and the relative high humidity heightens the conversion of sulfur dioxide to sulfates. The marine layer provides an environment for that conversion process, especially during the spring and summer months. The annual average relative humidity within the SCAB is 71 percent along the coast and 59 percent inland. (Urban Crossroads, 2016a, p. 5)~~(Urban Crossroads, 2015a, p. 5)~~

Dominant airflow direction and speed are the driving mechanisms for transport and dispersion of air pollution. During the late autumn to early spring rainy season, the SCAB is subjected to wind flows associated with storms moving through the region from the northwest. This period also brings five to ten periods of strong, dry offshore winds, locally termed "Santa Anas" each year. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is bimodal, typified by a daytime onshore sea breeze and a nighttime offshore drainage wind. Summer wind flows are created by the pressure differences between the relatively cold ocean and the unevenly heated and cooled land surfaces that modify the general northwesterly wind circulation over southern California. During the nighttime, heavy, cool air descends mountain slopes and flows through the mountain passes and canyons as it follows the lowering terrain toward the ocean. Another characteristic wind regime in the SCAB is the "Catalina Eddy," a low level cyclonic (counter-clockwise) flow centered over Santa Catalina Island which results in an offshore flow to the southwest. On most spring and summer days, some indication of an eddy is apparent in coastal sections (Urban Crossroads, 2016a, p. 6)~~(Urban Crossroads, 2015a, p. 6)~~.

In the SCAB, there are two distinct temperature inversion structures that control vertical mixing of air pollution. During the summer, warm high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing which effectively acts as an impervious lid to pollutants over the entire SCAB. The mixing height for the inversion structure is normally situated 1,000 to 1,500 feet above mean sea level. (Urban Crossroads, 2016a, p. 6)~~(Urban Crossroads, 2015a, p. 6)~~

A second inversion-type forms in conjunction with the drainage of cool air off of the surrounding mountains at night followed by the seaward drift of this pool of cool air. The top of this layer forms a sharp boundary with the warmer air aloft and creates nocturnal radiation inversions. These

inversions occur primarily in the winter, when nights are longer and onshore flow is weakest. They are typically only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as nitrogen oxides and carbon monoxide, as the pool of cool air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline. (Urban Crossroads, 2016a, p. 6)~~(Urban Crossroads, 2015a, p. 6)~~

C. Air Quality Pollutants and Associated Health Effects

The federal government and State of California have established maximum permissible concentrations for common air pollutants that may pose a risk to human health or would otherwise degrade air quality and adversely affect the environment. These regulated air pollutants are referred to as "criteria pollutants." An overview of the common criteria air pollutants in the SCAB, their sources, and associated effects to human health are summarized on the following pages. (Urban Crossroads, 2016a, pp. 10, 13-16)~~(Urban Crossroads, 2015a, pp. 10-16)~~

- Carbon Monoxide (CO) is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline or wood. CO concentrations tend to be the highest in the winter during the morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. CO is emitted directly from internal combustion engines; therefore, motor vehicles operating at slow speeds are the primary source of CO in the SCAB. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections. (Urban Crossroads, 2016a, p. 10)~~(Urban Crossroads, 2015a, p. 10)~~

  CO combines with hemoglobin to produce carboxyhemoglobin (COHb), which interferes with the transport of oxygen throughout the body. Individuals most at risk to the effects of CO include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic oxygen deficiency. (Urban Crossroads, 2016a, p. 14)~~(Urban Crossroads, 2015a, p. 14)~~

- Sulfur Dioxide (SO_2) is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO_2 oxidizes in the atmosphere, it forms sulfates (SO_4). Collectively, these pollutants are referred to as sulfur oxides (SO_X). (Urban Crossroads, 2016a, p. 10)~~(Urban Crossroads, 2015a, p. 10)~~

  SO_2 is a respiratory irritant to people afflicted with asthma. After a few minutes exposure to low levels of SO_2, asthma sufferers can experience breathing difficulties, including airway constriction and reduction in breathing capacity. Although healthy individuals do not exhibit similar acute breathing difficulties in response to SO_2 exposure at low levels, animal studies suggest that very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract. (Urban Crossroads, 2016a, p. 15)~~(Urban Crossroads, 2015a, p. 15)~~

- Nitrogen Oxides (NO_X) consist of nitric oxide (NO), nitrogen dioxide (NO_2) and nitrous oxide (N_2O) and are formed when nitrogen (N_2) combines with oxygen (O_2). Their lifespan in the atmosphere ranges from one to seven days for nitric oxide and nitrogen dioxide, to 170 years for nitrous oxide. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO_2 absorbs blue light, resulting in a brownish-red cast to the atmosphere, and reduced visibility. Of the nitrogen oxide compounds,

NO_2 is the most abundant in the atmosphere. As ambient concentrations of NO_2 are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO_2 than those indicated by regional monitoring stations. (Urban Crossroads, 2016a, p. 13)~~(Urban Crossroads, 2015a, p. 13)~~

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposure to NO_2. Short-term exposure to NO_2 can result in resistance to air flow and airway contraction in healthy subjects. Exposure to NO_2 can result in larger decreases in lung functions in individuals with asthma or chronic obstructive pulmonary diseases (e.g., chronic bronchitis, emphysema), as these individual are more susceptible to the effects of NO_X than healthy individuals. (Urban Crossroads, 2016a, p. 15)~~(Urban Crossroads, 2015a, p. 15)~~

- Ozone (O_3) is a highly reactive and unstable gas that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NO_X) undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, warm temperatures, and light wind conditions are favorable to the formation of this pollutant. (Urban Crossroads, 2016a, p. 13)~~(Urban Crossroads, 2015a, p. 13)~~

  Short-term exposure (lasting for a few hours) to ozone at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible sub-groups for ozone effects. An increased risk for asthma is found in children who participate in multiple sports and live in communities with high ozone levels. (Urban Crossroads, 2016a, p. 14)~~(Urban Crossroads, 2015a, p. 14)~~

- Particulate Matter (PM) is a major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. Particles less than 10 microns or smaller (PM_{10}) easily become airborne and can reduce visibility. Particles less than 2.5 microns or smaller ($PM_{2.5}$) are formed in the atmosphere by sulfates or nitrates, a byproduct of primary gaseous emissions of SO_2 and NO_X. Ozone concentrations are generally highest during the summer months when diorect sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant. (Urban Crossroads, 2016a, p. 13)~~(Urban Crossroads, 2015a, p. 13)~~

  Elevated ambient concentrations of fine particulate matter (PM_{10} and $PM_{2.5}$) are linked to an increase in respiratory infections, number, and severity of asthma attacks, and increased hospital admissions. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer. Daily fluctuations in $PM_{2.5}$ concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to a decrease in respiratory lung volumes in normal children, and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate matter. The elderly, people with pre-existing respiratory or cardiovascular disease, and children appear to be more susceptible to the effects of

high levels of PM_{10} and $PM_{2.5}$. (Urban Crossroads, 2016a, pp. 14-15)~~(Urban Crossroads, 2015a, pp. 14-15)~~

- Volatile Organic Compounds (VOCs) and Reactive Organic Gasses (ROGs) are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. Both VOCs and ROGs are precursors to ozone and contribute to the formation of smog through atmospheric photochemical reactions. VOCs and ROGs have different levels of reactivity; that is, they do not react at the same speed or do not form ozone to the same extent when exposed to photochemical processes. VOCs often have an odor, including such common VOCs as gasoline, alcohol, and the solvents used in paints. (Urban Crossroads, 2016a, p. 13)~~(Urban Crossroads, 2015a, p. 13)~~

  Odors generated by VOCs can irritate the eye, nose, and throat, which can reduce respiratory volume. In addition, studies have shown that the VOCs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. (Urban Crossroads, 2016a, p. 16)~~(Urban Crossroads, 2015a, p. 16)~~

- Lead (Pb) is a heavy metal that is highly persistent in the environment. Historically, the primary source of lead in the air was emissions from vehicles burning leaded gasoline. As a result of the removal of lead from gasoline, there have been no violations at any of the SCAQMD's regular air monitoring stations since 1982. Currently, emissions of lead are largely limited to stationary sources such as lead smelters. (Urban Crossroads, 2016a, p. 13)~~(Urban Crossroads, 2015a, p. 13)~~

  Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death. Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. (Urban Crossroads, 2016a, pp. 15-16)~~(Urban Crossroads, 2015a, pp. 15-16)~~

D. Existing Air Quality

"Air quality" is based upon ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) currently in effect, as well health effects of each pollutant regulated under these standards are detailed in Table 4.2-1, *Ambient Air Quality Standards*.

The determination of whether a region's air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to the State and federal standards presented in Table 4.2-1. The air quality in a region is considered to be in attainment by the State if the measured ambient air pollutant levels for O_3, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are not equaled or exceeded at any time in any consecutive three-year period; and the federal standards (other than O_3, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not exceeded more than once per year. The O_3 standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99

Table 4.2-1 Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM10)[8]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[8]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[9]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[10]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[10]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[10]	—	
Lead[11,12]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[13]	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[11]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			
See footnotes at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf						

Source: Urban Crossroads, 2015a, Table 2-1

percent of the daily concentrations, averaged over three years, are equal to or less than the standard. (Urban Crossroads, 2015a, p. 7)

Regional Air Quality

Criteria Air Pollutants

The SCAQMD monitors levels of various criteria air pollutants at 30 monitoring stations throughout its jurisdiction. In 2014, the most recent year for which detailed data was available at the time the Notice of Preparation (NOP) for this EIR was issued (June 2015), the federal and State ambient air quality standards for O_3, PM_{10}, and $PM_{2.5}$ were exceeded on one or more days at most monitoring locations within the SCAB. Measured levels of NO_2, SO_2, CO, sulfates, and lead within the SCAB did not exceed federal or State standards in 2014. (Urban Crossroads, 2016a, p. 11)~~(Urban Crossroads, 2015a, p. 10)~~

The attainment status for criteria pollutants within the SCAB is summarized in Table 4.2-2, *Attainment Status of Criteria Pollutants in the South Coast Air Basin*

Table 4.2-2 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Criteria Pollutant	State Designation	Federal Designation
Ozone - 1hour standard	Nonattainment	No Standard
Ozone - 8 hour standard	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead[1]	Attainment	Attainment

Source: Urban Crossroads, 2015a, Table 2-2

E. Air Quality Trends

Criteria Air Quality Pollutant Trends

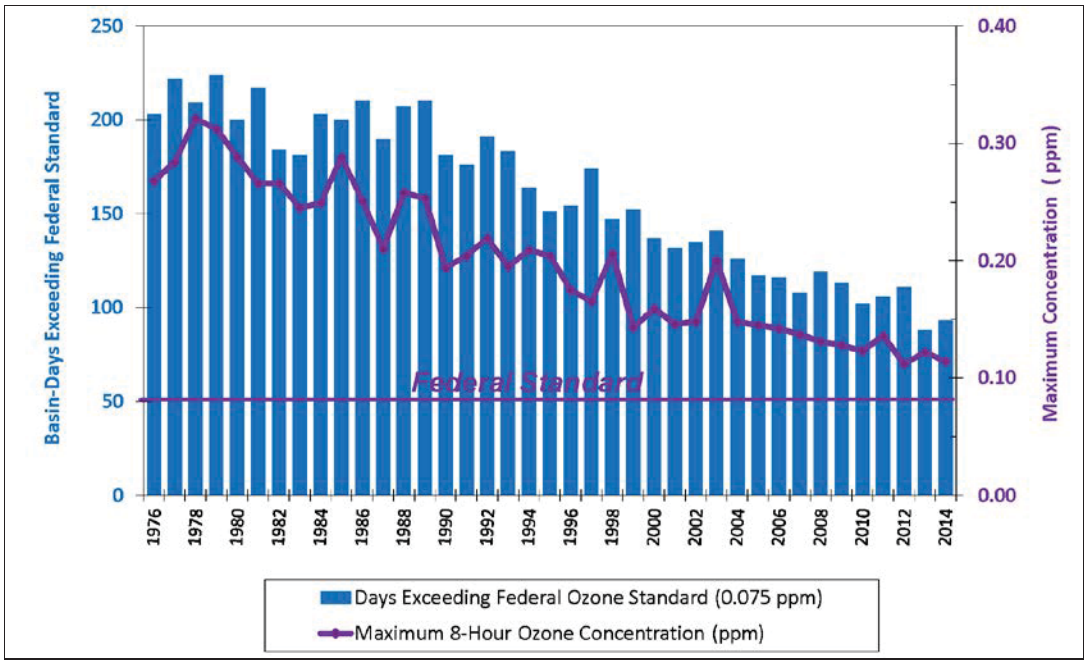
The SCAB has experienced unhealthful air since World War II and is one of the most unhealthful air basins in the United States; however, as a result of the region's air pollution control efforts over the last 65 years, air pollution concentrations in the SCAB were reduced dramatically. For example, peak ozone levels were cut by almost three-fourths since air monitoring began in the 1950 and population exposure was cut in half during the 1980s alone (SCAQMD, 2013b, p. 2). Thus, overall air quality within the SCAB is dramatically improving as the result of regulatory programs and is expected to continue to improve in the future as regulations become more stringent.

The 2012 AQMP states, "the remarkable historical improvement in air quality since the 1970's is the direct result of Southern California's comprehensive, multiyear strategy of reducing air pollution from all sources as outlined in its AQMPs" (SCAQMD, 2013a). Ozone, NOx, VOC, and CO have been decreasing in the Basin since 1975 and are projected to continue to decrease through 2020. These decreases result primarily from motor vehicle controls and reductions in evaporative emissions. Although vehicle miles traveled in the Basin continue to increase, NOx and VOC levels

are decreasing because of the mandated controls on motor vehicles and the replacement of older polluting vehicles with lower-emitting vehicles. NOx emissions from electric utilities have also decreased due to use of cleaner fuels and renewable energy. Ozone contour maps show that the number of days exceeding the national 8-hour standard decreased between 1997 and 2007. The overall trends of PM_{10} and $PM_{2.5}$ in the air (not emissions) show an overall improvement since 1975. Direct emissions of PM_{10} have remained somewhat constant in the Basin and direct emissions of $PM_{2.5}$ have decreased slightly since 1975. (Urban Crossroads, 2016a, pp. 18-19) ~~The graphs below show trend information as reported by the SCAQMD.~~

Ozone levels in the SCAB have decreased substantially over the last 30 years as shown in Table 4.2-3, *Ozone Trend in the SCAB*. Today, the maximum measured concentrations are approximately one-third of concentrations within the late 70's. (Urban Crossroads, 2016a, pp. 18-19)The American Lung Association website includes data collected from State air quality monitors that are used to compile an annual State of the Air report. These reports have been published over the last 13 years. The latest State of the Air Report compiled for the Basin was in 2010. As noted in this report, air quality in the SCAB has significantly improved in terms of both pollution levels and high pollution days over the past three decades. The area's average number of high ozone days dropped from 189.5 day per year in the initial 2000 State of the Air report (1996–1998) to 141.8 in the 2006–2008 report. The region has seen dramatic reduction in particle pollution since the initial State of the Air report. (Urban Crossroads, 2016a, p. 22)

~~Table 4.2-2~~Table 4.2-3 Ozone Trend in the SCAB

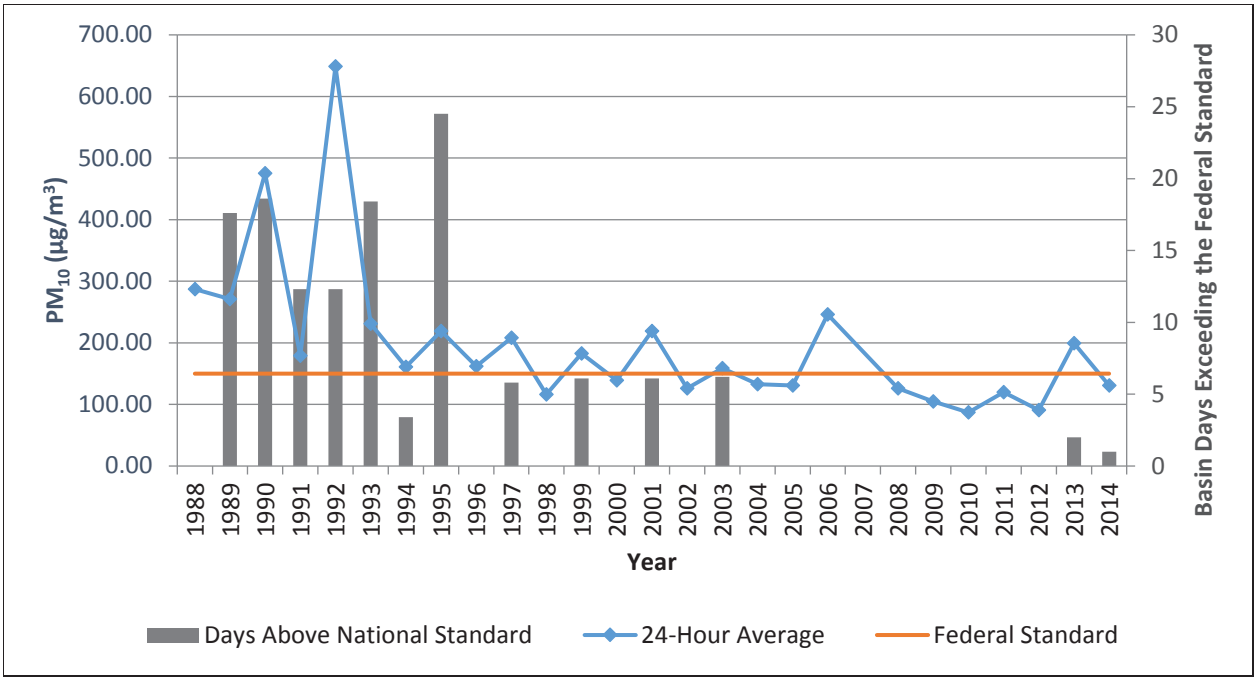


(Urban Crossroads, 2016a, Table 2-4)

As with other pollutants, the most recent PM_{10} statistics also show overall improvement, as illustrated in Table 4.2-4, *PM10 Trend in the SCAB*. During the period for which data are available, the 24-hour national annual average decreased by almost 45 percent, from 103.7 µg/m³ in 1989 to 57.6 µg/m³ in 2014. Although the values in the late 1990's show some variability, this is probably

due to meteorology rather than a change in emissions. Despite the overall decrease, ambient concentrations still exceed the State annual and 24-hour PM_{10} standards. Similar to the ambient concentrations, the calculated number of days above the 24-hour PM_{10} standards has also shown an overall drop. During 1995, there were 25 calculated days above the national standard. By 2014, there was one calculated national standard exceedance days. (Urban Crossroads, 2016a, p. 19)

~~Table 4.2-3~~Table 4.2-4 PM_{10} Trend in the SCAB



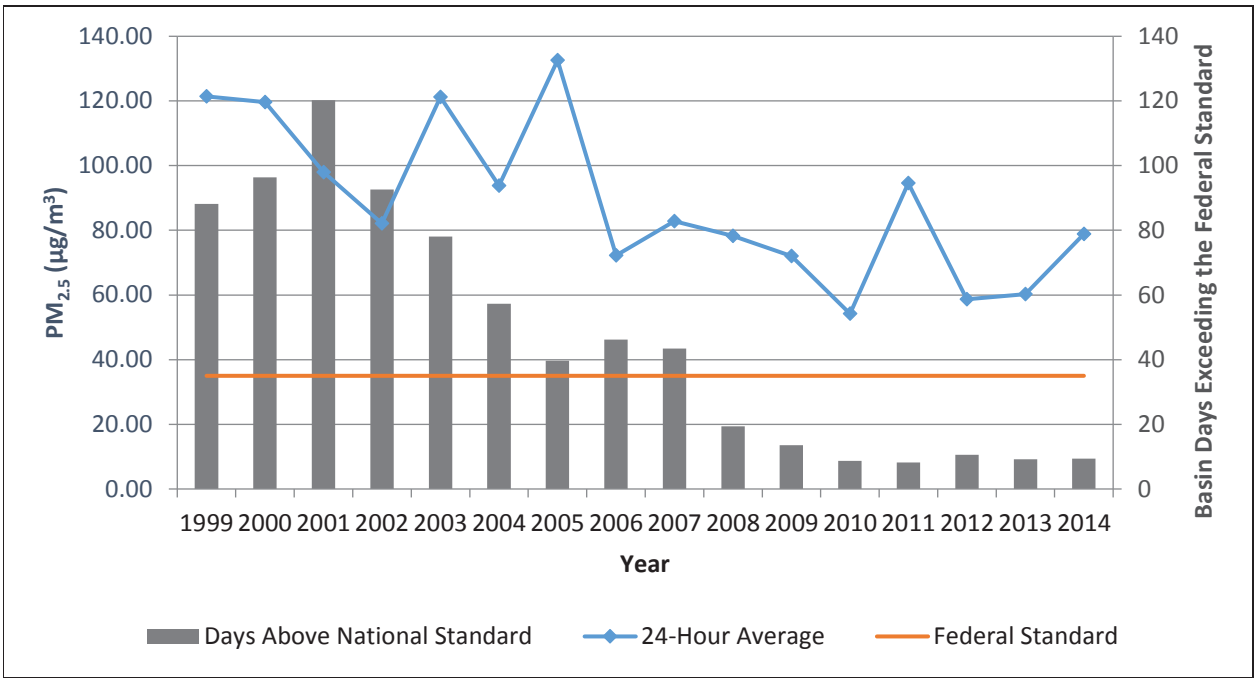
(Urban Crossroads, 2016a, Table 2-5)

Table 4.2-5, *PM2.5 Trend in the SCAB*, shows the most recent 24-hour average $PM_{2.5}$ concentrations in the SCAB from 1999 through 2014. Overall, the annual average concentrations have decreased by almost 52 percent. The calculated number of days above the national standard also decreased, from about 88 days in 1999 to about 9 days in 2014. The SCAB is currently designated as nonattainment for the State and national $PM_{2.5}$ standards. Measures adopted as part of the upcoming $PM_{2.5}$ State Implementation Plan (SIP), as well as programs to reduce ozone and diesel PM will help in reducing public exposure to $PM_{2.5}$ in this region. (Urban Crossroads, 2016a, p. 19)

The most recent CO_2 concentrations in the SCAB dating back to 1986 are shown in Table 4.2-6, *CO Trend in the SCAB*. Carbon monoxide concentrations in the SCAB have decreased markedly — a total decrease of more about 80 percent in the peak 8-hour concentration since 1986. The number of exceedance days has also declined. The entire SCAB is now designated as attainment for both the state and national CO standards. Ongoing reductions from motor vehicle control programs should continue the downward trend in ambient CO concentrations. (Urban Crossroads, 2016a, p. 19)

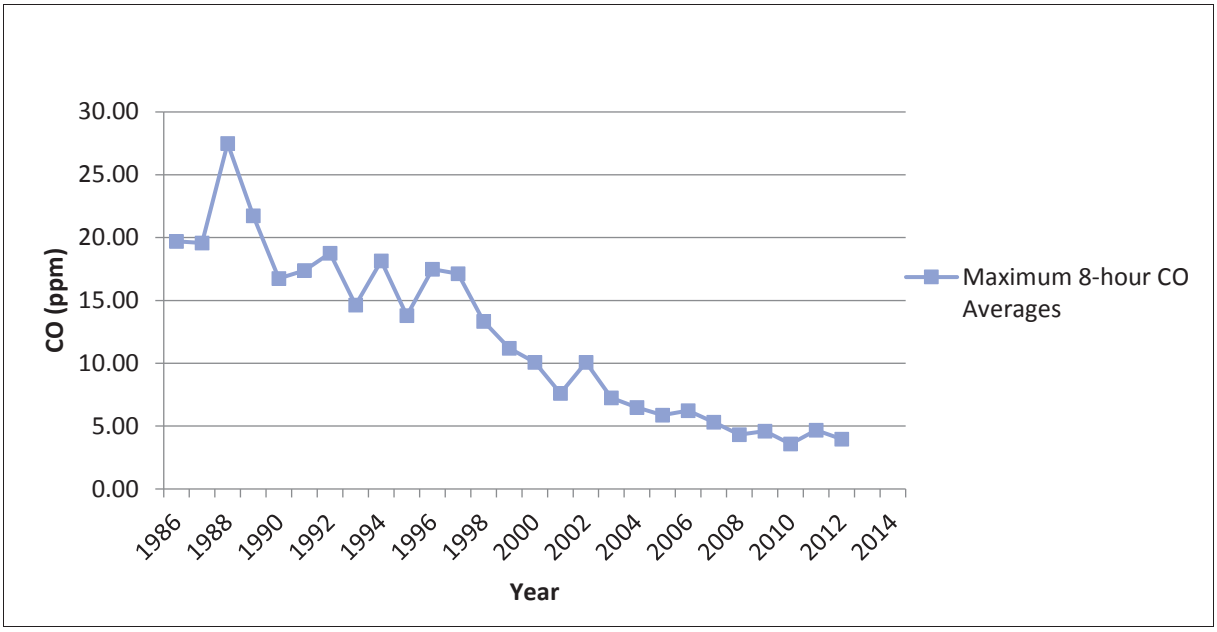
The most recent NO_2 data for the SCAB is shown in Table 4.2-7, *NO2 Trend in the SCAB*. Over the last 50 years, NO_2 values have decreased significantly; the peak 1-hour average for 2013 was almost 74 percent lower than what it was during 1963. The SCAB attained the State 1-hour NO_2 standard in

~~Table 4.2-4~~Table 4.2-5 $PM_{2.5}$ Trend in the SCAB



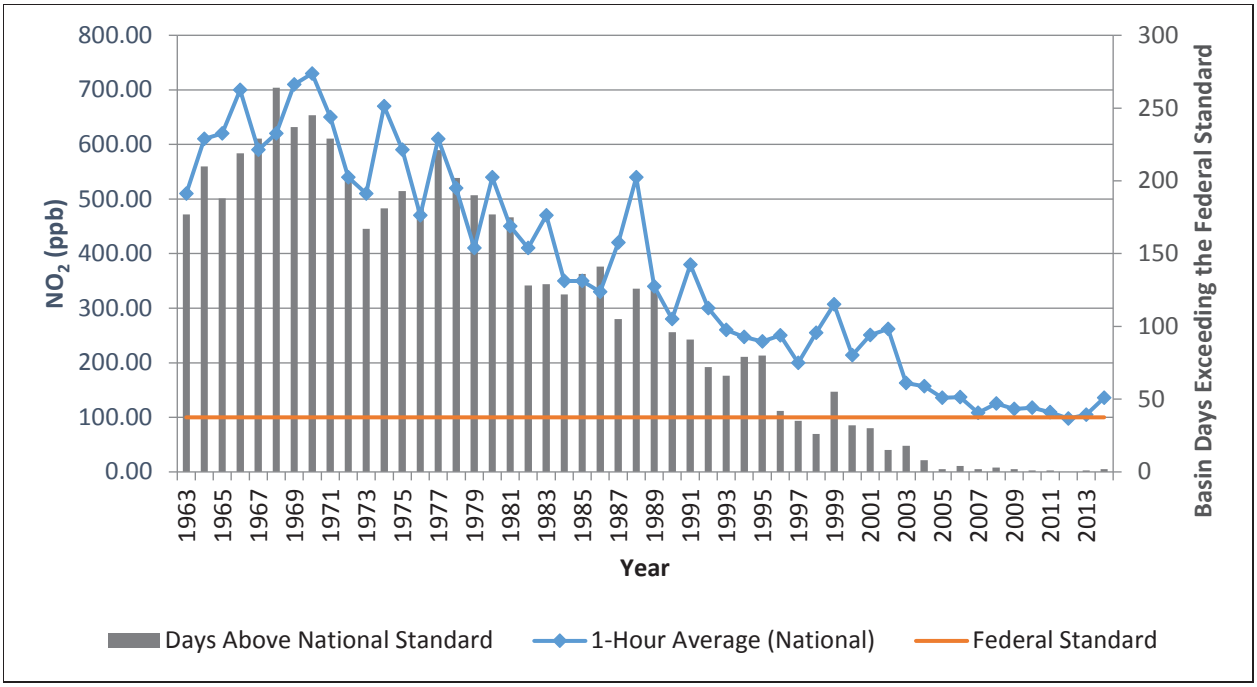
(Urban Crossroads, 2016a, Table 2-6)

~~Table 4.2-5~~Table 4.2-6 CO Trend in the SCAB



(Urban Crossroads, 2016a, Table 2-7)

~~Table 4.2-6~~Table 4.2-7 NO_2 Trend in the SCAB



(Urban Crossroads, 2016a, Table 2-8)

1994, bringing the entire State into attainment. A new state annual average standard of 0.030 parts per million was adopted by the ARB in February 2007. The new standard is just barely exceeded in the South Coast. NO_2 is formed from NO_X emissions, which also contribute to ozone. As a result, the majority of the future emission control measures will be implemented as part of the overall ozone control strategy. Many of these control measures will target mobile sources, which account for more than three-quarters of California's NOx emissions. These measures are expected to bring the South Coast into attainment of the State annual average standard. (Urban Crossroads, 2016a, p. 22)

According to SCAQMD:

> *"Ozone levels have fallen by about three-quarters since peaks in the mid-1950s. Lead, nitrogen dioxide, sulfur dioxide, and carbon monoxide levels have gone down from nonattainment to full attainment of federal health standards. In November 2008, US EPA revised the lead standard from a 1.5 µg/m^3 quarterly average to a 0.15 µg/m^3 rolling 3-month average. The current Basin lead network remains below the new standard. In 2011, the Basin exceeded the current federal 8-hour ozone standard on 107 days. 2010 was the cleanest year on record for ozone in the Basin, exceeding the federal standard on 102 days. The standard was exceeded on 113 days in 2009.* (SCAQMD, 2003, p. 3)
>
> *In 2007 US EPA formally redesignated the Basin from nonattainment to full attainment of the federal health standard for carbon monoxide. Basin-wide maximum levels of carbon monoxide have been consistently measured at more than 30% below the federal standard since 2004. In 2010, US EPA established a new NO_2 1-hour standard at a level of 100 ppb (0.100ppm) and SO_2 1-hour standard at a level*

> *of 75 ppb (0.075 ppm). In 2011, a few sites in Los Angeles County exceeded the new 1-hour NO_2 standard on one day. Based on the 3-year design values, the region continues to remain in attainment of the NO_2 and SO_2 standards.* (SCAQMD, 2013b, p. 4)
>
> *In 2006, US EPA rescinded the annual federal standard for PM_{10} but retained the 24-hour standard. Ambient levels of PM_{10} in the Basin meet the federal 24-hour PM_{10} standard and the SCAQMD has requested US EPA to redesignate the Basin as in attainment of the health based standard for PM_{10}. $PM_{2.5}$ levels have decreased dramatically in the Basin since the beginning of the decade; however, regional concentrations continue to exceed the federal annual and 24-hour standards."* (SCAQMD, 2013b, p. 4)

Continued improvement in air quality is expected to occur through the continued implementation of federal, State, and SCAQMD regulations such as California's low-sulfur diesel fuel programs and renewable electricity standards. California AB 1493, enacted on July 22, 2002, required the California Air Resources Board (CARB) to develop and adopt regulations that reduce passenger vehicle and light duty truck emissions. Although the regulation was stalled by automaker lawsuits and by the U.S. Environmental Protection Agency (EPA) denial of an implementation waiver to the State of California, in June 2009, the U.S. EPA granted the waiver request. The standards phase-in during the 2009 through 2016 vehicle model years. The CARB Truck and Bus Regulation (amended, approved 2014) requires diesel-powered trucks and buses to be upgraded to reduce emissions. The regulation applies to nearly all privately- and federally-owned diesel-fueled trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. By January 1, 2012, heavier trucks were required to be retrofitted with PM filters. By January 1, 2015, older trucks were required to be replaced. By January 1, 2023, nearly all trucks and buses must have 2010 model year engines or equivalent.

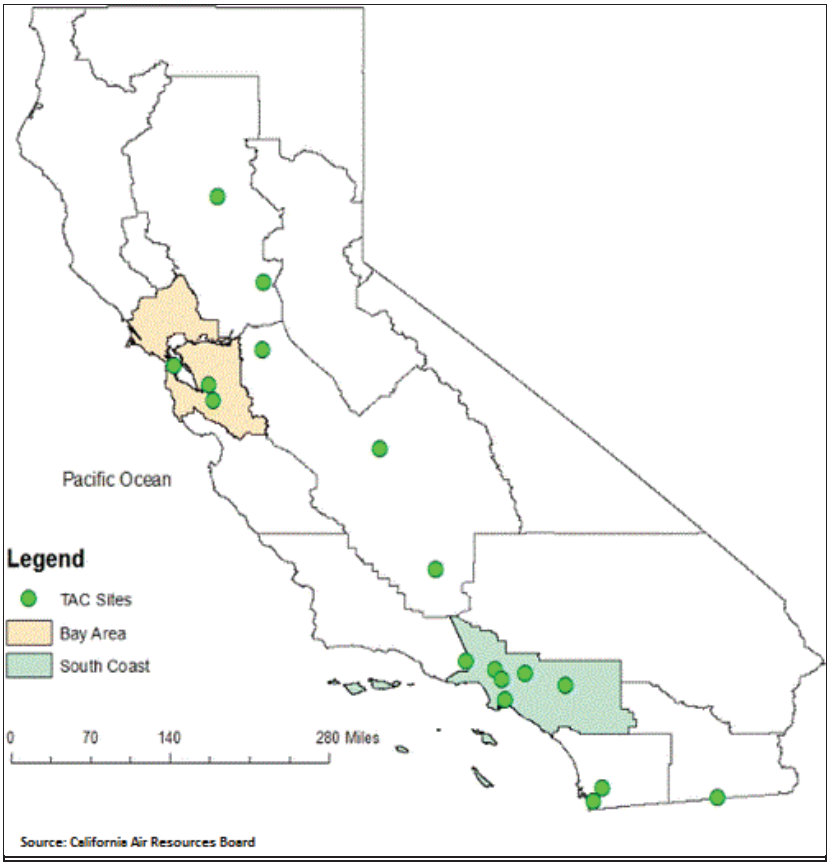
Part of the control process of the SCAQMD's duty to greatly improve the air quality in the SCAB is the uniform CEQA review procedures required by SCAQMD's CEQA Handbook (SCAQMD, 2003a). The single threshold of significance used to assess Project direct and cumulative impacts has in fact been successful, as evidenced by the track record of the air quality in the Basin dramatically improving over the course of the past decades (refer to Table 4.2-3 through Table 4.2-7). As stated by the SCAQMD the District's thresholds of significance are based on factual and scientific data and are therefore appropriate thresholds of significance to use for this Project. (Urban Crossroads, 2016a, pp. 21-22)

Toxic Air Contaminant Trends

In 1984, as a result of public concern for exposure to airborne carcinogens, the CARB adopted regulations to reduce the amount of air toxic contaminant emissions resulting from mobile and area sources, such as cars, trucks, stationary products, and consumer products. According to the Ambient and Emission Trends of Toxic Air Contaminants in California journal article which was prepared for CARB, results show that, between 1990-2012, ambient concentration and emission trends for the seven TACs responsible for most of the known cancer risk associated with airborne exposure in California have declined significantly. The seven TACs studied shown below include those that are derived from mobile sources: diesel particulate matter (DPM), benzene, and 1,3-butadiene; those that are derived from stationary sources: perchloroethylene and hexavalent chromium; and those derived

from photochemical reactions of emitted VOCs: formaldehyde and acetaldehyde. TACs data was gathered at monitoring sites from both the Bay Area and South Coast Air Basins, as shown on Figure 4.2-1, *California Toxic Air Contaminant Sites*. Several of the sites in the SCAB include Reseda, Compton, Rubidoux, Burbank, and Fontana. The decline in ambient concentration and emission trends of these TACs are a result of various regulations CARB has implemented to address cancer risk. The overall declining trend in TACs is expected to continue in California from implementation of toxic air controls. (Urban Crossroads, 2016a, pp. 23, 25)

Figure 4.2-1 California Toxic Air Contaminant Sites



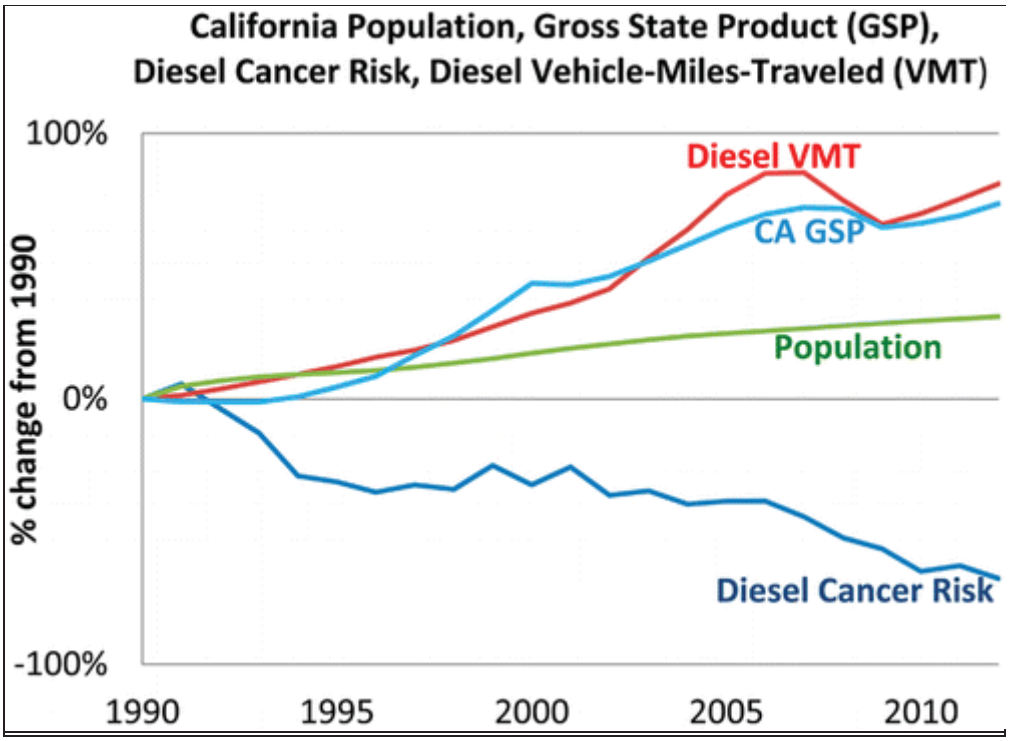
(Urban Crossroads, 2016a, p. 23)

Mobile Source TACs

The CARB introduced two programs that aimed at reducing mobile emissions for light and medium duty vehicles through vehicle emissions controls and cleaner fuel. Since 1996, light-duty vehicles sold in California are equipped with California's second-generation On-Board Diagnostic (OBD-II) system as a result of about half of total car emissions stemming from emissions control device malfunctions. CARB's phase II Reformulated Gasoline (RFG-2) regulation, adopted in 1996, also led to a reduction of mobile source emissions. Through such regulations, benzene levels declined 88% from 1990-2012. 1,3-Butadiene concentrations also declined 85% from 1990-2012 as a result of the motor vehicle regulations. (Urban Crossroads, 2016a, p. 24)

In 2000, CARB's Diesel Risk Reduction Plan (DRRP) recommended the replacement and retrofit of diesel-fueled engines and the use of ultra-low-sulfur (<15ppm) diesel fuel. As a result of these measures, DPM concentrations have declined 68%, even though the state's population increased 31% and the amount of diesel vehicles miles traveled increased 81%, as shown on Table 4.2-8, *Diesel Particulate Matter and Diesel Vehicle Miles Trend*. With the implementation of these diesel-related control regulations, ARB expects a DPM decline of 71% for 2000-2020.

Table 4.2-8 Diesel Particulate Matter and Diesel Vehicle Miles Trend



(Urban Crossroads, 2016a, Exhibit 2-B)

Stationary Source TACs

Various regulations led to a decrease in perchloroethylene and hexavalent chromium, with a 92% and 86% decline, respectively. By 1993, several local air districts required dry cleaning businesses to use a carbon absorber and refrigerated condenser, as well as, dry-to-dry machines and closed-looped machines instead of vented transfer machines. Starting in 2003, California provided financial incentives for dry cleaners to use other solvents and soon after, the CARB banned the use of perchloroethylene in automotive products, aerosol coatings, and most consumer products. In 2007, CARB's dry cleaning regulation was amended to require phase-out of perchloroethylene machines by 2023, which would further reduce emissions to minimal levels. (Urban Crossroads, 2016a, p. 25)

Hexavalent chromium emissions began to decline in 1988 with the ARB-regulated regulations contributing to more than 97% emission reduction within four years. The various regulations include prohibiting the use of hexavalent chromium in cooling towers (1989), in motor vehicle and mobile equipment coatings (2001), and in thermal spraying operations (2005). By 2005, hexavalent chromium emissions were 99.97% less than in 1987, far exceeding expectations. In 2006, hexavalent

chromium emissions were further reduced with the 2006 ARB regulation requiring add-on air pollution control devices and chemical fume suppressants. (Urban Crossroads, 2016a, p. 25)

Secondary TACs

Between 1996-2012, ambient concentrations of formaldehyde and acetaldehyde declined 22% and 21%, respectively. The decline in these TACs are attributed from increasingly stringent motor vehicle exhaust emission standards, vehicle fleet turnover, fuel reformulation, and the switch from MTBE (formaldehyde precursor) to ethanol in gasoline. (Urban Crossroads, 2016a, p. 25)

Diesel Regulations

The CARB and the Ports of Los Angeles and Long Beach have adopted several iterations of regulations for diesel trucks that are aimed at reducing diesel particulate matter (DPM). More specifically, the CARB Drayage Truck Regulation, the CARB statewide On-road Truck and Bus Regulation, and the Ports of Los Angeles and Long Beach "Clean Truck Program" (CTP) require accelerated implementation of "clean trucks" into the statewide truck fleet. In other words, older more polluting trucks will be replaced with newer, cleaner trucks as a function of these regulatory requirements. (Urban Crossroads, 2016a, p. 25)

Moreover, the average statewide DPM emissions for Heavy Duty Trucks (HHDT), in terms of grams of DPM generated per mile traveled, will dramatically be reduced due to the aforementioned regulatory requirements. Diesel emissions identified in the Project's Air Quality Report (EIR Appendix B) would therefore overstate future DPM emissions since not all the regulatory requirements are reflected in the modeling. (Urban Crossroads, 2016a, p. 25)

Cancer Risk Trends

Based on information available from CARB, overall cancer risk throughout the basin has had a declining trend since 1990. In 1998, following an exhaustive 10-year scientific assessment process, the State of California Air Resources Board (ARB) identified particulate matter from diesel-fueled engines as a toxic air contaminant. In 2000, the SCAQMD prepared a comprehensive urban toxic air pollution study, called *Multiple Air Toxics Exposure Study in the South Coast Air Basin* (MATES-II). MATES-II showed that average cancer risk in the SCAB ranges from 1,100 in a million to 1,750 in a million, with an average regional risk of about 1,400 in a million. Moreover, diesel particulate matter (DPM) was estimated to account for more than 70 percent of the cancer risk. (Urban Crossroads, 2016a, p. 26)

In 2008 the SCAQMD prepared an update to the MATES-II study, referred to as MATES-III. MATES-III estimates the average excess cancer risk level from exposure to TACs is approximately 1,200 in one million basin-wide (a decrease in a regional risk by 200 in a million in comparison to the MATES-II study). (Urban Crossroads, 2016a, p. 26) ~~SCAQMD has updated their urban toxic air pollution survey twice since 2000, with the 2008 (MATES III) and 2014 updates (MATES IV) showing improvements to the average cancer risk within the SCAB as compared to *MATES-II*.~~

The current version of the urban toxic air pollution survey, *MATES-IV*, is the most comprehensive dataset of ambient air toxic levels and health risks within the SCAB. MATES-IV study represents the baseline health risk for a cumulative analysis. The MATES IV study shows that cancer risk has decreased more than 50% between MATES III (2008) and MATES IV (2012) MATES-IV estimates

the average excess cancer risk level from exposure to Toxic Air Contaminants (TAC) is approximately 367 in one million basin-wide (SCAQMD, 2015a, p., 4-11). These model estimates were based on monitoring data collected at ten fixed sites within the South Coast Air Basin. None of the fixed monitoring sites are within the local area of the Project site. However, MATES-IV has extrapolated the excess cancer risk levels throughout the basin by modeling the specific grids. MATES-IV modeling predicted an excess cancer risk of 402.04~~164~~ in one million for the Project area. Diesel Particulate Matter (DPM) is included in this cancer risk along with all other TAC sources. DPM accounts for approximately ~~80~~ 68 percent of the total risk shown in MATES-IV. Cumulative Project generated TACs are limited to DPM. (Urban Crossroads, 2016b, p. 26; SCAQMD, 2015b)~~(Urban Crossroads, 2015b, p. 21)~~

Local Air Quality

The nearest long-term monitoring air quality monitoring site for O_3, Co, and NO_2 is the SCAQMD Lake Elsinore monitoring station, located approximately two miles south of the Project site. Data for PM_{10} was obtained from the Perris Valley monitoring station located approximately 10 miles northeast of the Project site. Data for $PM_{2.5}$ was obtained from the Metropolitan Riverside County 2 monitoring station, located approximately 22 miles north of the Project site. The Perris Valley and Metropolitan Riverside County two monitoring stations were utilized in lieu of the Lake Elsinore monitoring station only where data was not available from the nearest monitoring site. (Urban Crossroads, 2016a, p. 10)~~(Urban Crossroads, 2015a, p. 10)~~

Table 4.2-9, *Project Area Air Quality Monitoring Summary 2013-2015*, provides a summary of ambient air quality conditions in the general vicinity of the Project site over the most recent three-year period for which air quality data is available, that being the years 2012-2014. The data for SO_2 was omitted because the SCAB regularly attains the applicable NAAQS and CAAQS and few monitoring stations measure SO_2 concentrations. (Urban Crossroads, 2016a, p. 10)~~(Urban Crossroads, 2015a, p. 10)~~

~~E.~~F. Applicable Regulatory Requirements

1. Federal Regulations

The U.S. Environmental Protection Agency (U.S. EPA) is responsible for setting and enforcing the NAAQS for O_3, CO, NO_X, SO_2, PM_{10}, and lead. The U.S. EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters. The U.S. EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet CARB's stricter emission requirements. (Urban Crossroads, 2016a, p. 20)~~(Urban Crossroads, 2015a, p. 16)~~

The Federal Clean Air Act (CAA) was first enacted in 1955 and was amended numerous times in subsequent years. The CAA establishes the federal air quality standards, the NAAQS, and specifies future dates for achieving compliance. The CAA also mandates that states submit and implement State Implementation Plans (SIPs) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met. (Urban Crossroads, 2016a, p. 20)~~(Urban Crossroads, 2015a, p. 16)~~

~~Table 4.2-7~~Table 4.2-9 Project Area Air Quality Monitoring Summary 2013-2015~~2012-2014~~

POLLUTANT	STANDARD	YEAR		
		2013	2014	2015
Ozone (O3)[1]				
Maximum 1-Hour Concentration (ppm)		0.102	0.104	0.131
Maximum 8-Hour Concentration (ppm)		0.089	0.086	0.098
Number of Days Exceeding State 1-Hour Standard	> 0.09 ppm	6	4	18
Number of Days Exceeding State 8-Hour Standard	> 0.07 ppm	25	13	35
Number of Days Exceeding Federal 1-Hour Standard	> 0.12 ppm	0	0	1
Number of Days Exceeding Federal 8-Hour Standard	> 0.075 ppm	12	6	19
Number of Days Exceeding Health Advisory	≥ 0.15 ppm	0	0	0
Carbon Monoxide (CO)				
Maximum 1-Hour Concentration (ppm)		--	2	--
Maximum 8-Hour Concentration (ppm)		0.6	1.4	--
Number of Days Exceeding State 1-Hour Standard	> 20 ppm	--	0	--
Number of Days Exceeding Federal / State 8-Hour Standard	> 9.0 ppm	0	0	--
Number of Days Exceeding Federal 1-Hour Standard	> 35 ppm	--	0	--
Nitrogen Dioxide (NO2)				
Maximum 1-Hour Concentration (ppm)		0.0466	0.0453	0.0472
Annual Arithmetic Mean Concentration (ppm)		0.0084	0.0082	0.008
Number of Days Exceeding State 1-Hour Standard	> 0.18 ppm	0	0	0
Particulate Matter ≤ 10 Microns (PM10)[2]				
Maximum 24-Hour Concentration (µg/m3)		70	87	188
Annual Arithmetic Mean (µg/m3)		33.6	35.1	33.1
Number of Samples		57	60	--
Number of Samples Exceeding State Standard	> 50 µg/m3	10	8	4
Number of Samples Exceeding Federal Standard	> 150 µg/m3	0	0	1
Particulate Matter ≤ 2.5 Microns (PM2.5)[3]				
Maximum 24-Hour Concentration (µg/m3)		53.7	30.9	--
Annual Arithmetic Mean (µg/m3)		11.28	--	--
Number of Samples		117	--	--
Number of Samples Exceeding Federal 24-Hour Standard	> 35 µg/m3	1	--	--

[1] Referenced Lake Elsinore (SRA 25) monitoring station data for O3, CO, NO2 concentrations
[2] Referenced Perris Valley (SRA 24) monitoring station data for PM10 concentrations
[3] Referenced Metropolitan Riverside County 2 monitoring station data for PM2.5 concentrations
-- = data not available from SCAQMD or ARB

Source: Urban Crossroads, 2015a, Table 2-3

The 1990 amendments to the CAA, that identify specific emission reduction goals for areas not meeting the NAAQS, require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the Project site include Title I (Non-

Attainment Provisions) and Title II (Mobile Source Provisions). Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants: O_3, NO_2, SO_2, PM_{10}, CO, $PM_{2.5}$, and lead. The NAAQS were amended in July 1997 to include an additional standard for O_3 and to adopt a NAAQS for $PM_{2.5}$. Table 4.2-1 provides the NAAQS within the SCAB. (Urban Crossroads, 2016a, pp. 20-21)~~(Urban Crossroads, 2015a, p. 16)~~

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner burning gasoline and other cleaner burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of hydrocarbons and NO_X, which is a collective term that includes all forms of nitrogen oxides (NO, NO_2, NO_3) which are emitted as byproducts of the combustion process. (Urban Crossroads, 2016a, p. 21)~~(Urban Crossroads, 2015a, p. 17)~~

2. California Regulations

CARB, which became part of the California EPA in 1991, is responsible for ensuring implementation of the California Clean Air Act (AB 2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. The California CAA mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date. The CARB established the CAAQS for all pollutants for which the federal government has NAAQS and, in addition, established standards for sulfates, visibility, hydrogen sulfide, and vinyl chloride. However at this time, hydrogen sulfide and vinyl chloride are not measured at any monitoring stations in the SCAB because they are not considered to be a regional air quality problem. Generally, the CAAQS are more stringent than the NAAQS. (Urban Crossroads, 2016a, p. 21)~~(Urban Crossroads, 2015a, p. 17)~~

All air pollution control districts are formally designated as being in attainment or non-attainment for each CAAQS (refer to Table 4.2-2). Serious non-attainment areas are required to prepare air quality management plans that include specified emission reduction strategies in an effort to meet clean air goals. However, air basins may use alternative emission reduction strategy that achieves a reduction of less than 5 percent per year under certain circumstances. (Urban Crossroads, 2016a, p. 21)~~(Urban Crossroads, 2015a, p. 17)~~

Additionally, CARB has adopted standards to address cancer and non-cancer risks associated with diesel particulate matter (DPM) emissions. CARB estimates that the average Californian is exposed to 1.2-1.8 $\mu g/m^3$ of DPM, this exposure results in an average cancer risk of 360-540 in one million for the average Californian exposed to DPM. The Project's Health Risk Assessment (HRA, EIR *Technical Appendix C*) is based on SCAQMD guidelines to produce conservative estimates of risk posed by exposure to DPM. The CARB-adopted diesel exhaust unit risk factor (URF) of 300 in one million per $\mu g/m^3$ is based upon Scientific Review Panel's review of the report *Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant* prepared by CARB. CARB's basis for determining diesel exhaust a toxic air contaminant is based on epidemiological studies as outlined in the Scientific Review Panel's assessment. The risk estimates assume sensitive receptors will be subject to DPM for 24 hours a day, 350 days a year. As a conservative measure, the SCAQMD does not recognize indoor adjustments for residents. However, the typical person spends the majority of their time indoors versus remaining outdoors for 24 hours a day, 350 days a year. The exposure to DPM is assumed to be constant for the given period analyzed (i.e., 70 years). It should be noted

however that emissions from DPM are expected to substantially decrease in the future with the implementation of standard regulatory requirements and technological advancement to reduce DPM. The emissions derived assume that every truck accessing the project site will idle for 15 minutes, this is an overestimation of actual idling times and thus conservative. (Urban Crossroads, 2016b, p. 7)~~(Urban Crossroads, 2015b, p. 6)~~

3. Air Quality Management Planning

Currently, the NAAQS and CAAQS are exceeded in most parts of the SCAB. In response, and in conformance with California Health & Safety Code § 40702 et seq. and the California Clean Air Act, the SCAQMD has adopted an Air Quality Management Plan (AQMP) to plan for the regional improvement of air quality (SCAQMD, 2013a). AQMPs are updated regularly in order to more effectively reduce emissions and accommodate growth. Each version of the plan is an update of the previous plan and has a 20-year horizon with a revised baseline. The most recent AQMP was adopted by the AQMD Governing Board on December 7, 2012. The 2012 AQMP incorporates the latest scientific and technological information and planning assumptions, including the *2012-2035 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) and updated emission inventory methodologies for various source categories. The 2012 AQMP is based on assumptions provided by the Emission FACtor model (EMFAC) developed by CARB for motor vehicle information and assumptions provided by SCAG for demographics. The air quality levels projected in the 2012 AQMP are based on the assumption that development associated with general plans, specific plans, residential projects, and wastewater facilities will be constructed in accordance with population growth projections identified by SCAG in its *2012 RTP/SCS*. The 2012 AQMP also assumes that such development projects will implement strategies to reduce emissions generated during the construction and operational phases of development. (Urban Crossroads, 2016a, pp. 17-18)~~(Urban Crossroads, 2015a, pp. 17-18)~~

4.2.3 METHODOLOGY FOR ESTIMATING PROJECT-RELATED AIR QUALITY IMPACTS

A. Methodology for Calculating Project Operational Emissions

On October 2, 2013, the SCAQMD released the latest version of the California Emissions Estimator Model (CalEEMod v 2013.2.2). This model was used to estimate Project-related emissions of criteria pollutants NO_X, VOC, PM_{10}, $PM_{2.5}$, SO_X, and CO, from direct and indirect sources. The CalEEMod calculations are supplemented by engineering calculations for fugitive dust associated with the crushing and processing of aggregate materials. (Urban Crossroads, 2016a, p. 20)~~(Urban Crossroads, 2015a, p. 20)~~ Operational emissions would be expected from the following primary sources, which are discussed further below (Urban Crossroads, 2016a, p. 21)~~(Urban Crossroads, 2015a, p. 21)~~:

1) On-Site Operational Equipment;
2) Mobile Source (Passenger Cars and Truck Traffic) Emissions;
3) Fugitive Dust from Material Processing; and
4) Diesel Particulate Matter (DPM) Emissions.

Air quality emissions for projects such as the proposed Project are evaluated for significance based on the daily level of anticipated emissions based on SCAQMD regional and localized emission thresholds. Table 4.2-10, *Maximum Daily Regional Emissions Thresholds*, presents the regional emissions thresholds, while the localized significance thresholds (LSTs) are presented in

Table 4.2-11, *SCAQMD Localized Significance Thresholds*. Projects that exceed the project-specific significance thresholds presented in Table 4.2-10 and Table 4.2-11 are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant. (SCAQMD, 2003b).

The Project would not result in an increase in the amount of natural gas and the electricity usage on-site. It should be noted that natural gas is utilized in conjunction with the asphalt batch plant operations; however, asphalt batch operations would not increase under the proposed Project on a daily or annual basis, as compared to existing conditions. Although under long-term operating conditions the Project could result in a net increase in the duration of asphalt batch operations on-site due to the increased amount of aggregate reserves that would be made available by the Project, there would be no net change in the daily or annual emissions from the site associated with natural gas or electricity usage. (Urban Crossroads, 2016a, p. 21) ~~(Urban Crossroads, 2015a, p. 21)~~

~~Table 4.2-8~~Table 4.2-10 Maximum Daily Regional Emissions Thresholds

Pollutant	Operations
Regional Thresholds	
NOx	55 lbs/day
VOC	55 lbs/day
PM10	150 lbs/day
PM2.5	55 lbs/day
SOx	150 lbs/day
CO	550 lbs/day
Lead	3 lbs/day

Urban Crossroads, 2015a, Table 3-1

~~Table 4.2-9~~Table 4.2-11 SCAQMD Localized Significance Thresholds

CO		NO_2		PM_{10}		PM2.5
Averaging Time						
1-Hour	8-Hour	1-Hour	Annual	24 Hours	Annual	24 Hours
20.0	9.0	0.18	0.03	2.5	1.0	2.5

Urban Crossroads, 2015a, Table 3-5

~~2.~~1. Operational Equipment

Table 4.2-12, *Operational Equipment*, summarizes the equipment utilized at the Mine on a daily basis for the baseline operating period, proposed Project operating characteristics, and net new equipment activity. As shown, mining activities during the baseline period result in approximately 20,316 horsepower hours per day. However, during most of the baseline operating period, the Mine was under different ownership, and the equipment utilized during that period is not reflective of the equipment utilized on-site since 2014. At the time the Project's NOP was distributed for public review in June 2015, existing mining operations onsite were estimated to be approximately 25,158

~~Table 4.2-10~~Table 4.2-12 Operational Equipment

Baseline Operational Equipment Summary				
Hours/Day	Description	Quantity	Horsepower	Total Horsepower Hours Per Day
2	Skidsteer	1	51	102
6	769C Haul Truck	1	474	2,844
10	980K Wheel Loader	1	406	4,060
10	980H Wheel Loader	1	393	3,930
10	988G Wheel Loader	1	520	5,200
4	D8R Dozer	1	337	1,348
8	Water Truck 4000 Gal	1	354	2,832
Total Baseline Horsepower Hours				**20,316**
Proposed Project Equipment Summary				
Hours/Day	Description	Quantity	Horsepower	Total Horsepower Hours Per Day
4	Skidsteer	1	51	204
8	769C Haul Truck	2	474	7,584
10	980K Wheel Loader	1	406	4,060
10	980H Wheel Loader	1	393	3,930
10	988G Wheel Loader	1	520	5,200
4	D8R Dozer	1	337	1,348
8	Water Truck 4000 Gal	1	354	2,832
Subtotal Project Horsepower Hours				**25,158**
Additional Equipment Summary				
Hours/Day	Description	Quantity	Horsepower	Total Horsepower Hours Per Day
4	Skidsteer	1	51	204
4.4	769C Haul Truck	1	474	2,085
Subtotal Additional Equipment Horsepower Hours				**2,289**
Total Project Horsepower Hours				**27,447**
Net New Project Equipment Summary				
Hours/Day	Description	Quantity	Horsepower	Total Horsepower Hours Per Day
6	Skidsteer	1	51	306
2	769C Haul Truck	1	474	948
8	769C Haul Truck	1	474	3,792
4.4	769C Haul Truck	1	474	2,085
Total Net New Project Horsepower Hours				**7,131**

Urban Crossroads, 2015a, Table 3-2

horsepower hours per day (hh/d), representing an approximate ~~35~~ 23.8 percent increase as compared to the horsepower hours per day that was were associated with mining operations under previous ownership. Although the Project would not increase the amount of hh/d as compared to the existing operational conditions that existed onsite at the time the Project's NOP was distributed for public review, in an effort to be conservative, and consistent with the annual tonnage increase of 35.05%, the analysis ~~compares~~ assumes an increase in the Project's hh/d to approximately 35.05% above what was in use~~the hh/d in use~~ under previous ownership. Thus, for analytical purposes ~~of analysis~~, it is assumed that equipment used under the proposed Project would require approximately ~~25,158~~27,495 horsepower hours per day, reflecting an approximate ~~23.8~~35.05 percent increase in horsepower as compared to the baseline condition. (Urban Crossroads, 2016a, p. 21)~~(Urban Crossroads, 2015a, p. 21)~~.

~~3.~~2. Mobile Source Emissions

As shown in the Project's traffic study (*Technical Appendix J* to this EIR), the Project is estimated to generate 140 net new daily truck trips above the historical baseline and 4 net new employee trips above the historical baseline. The CalEEMod default of a 20 mile one-way trip length for trucks was increased to 25 miles based on discussion with the Project ~~a~~Applicant and based on regional aggregate studies that have found that 25 miles is generally the maximum distance for aggregate to travel before the cost outweigh distance of travel. (Urban Crossroads, 2016a, p. 29; SANDAG, 2011, p. 8-1; Berck, 2005)~~(Urban Crossroads, 2015a, p. 21; SANDAG, 2011, p. 8-1; Berck, 2005)~~.

The Project would serve a regional need and would likely reduce vehicle miles traveled (VMT) by diverting trips that would otherwise travel to/from other aggregate facilities in the region. Notwithstanding, for purposes of this analysis, no "credit" was taken and emissions associated with the Project are considered "new" as a conservative measure. The fact is that aggregate will be consumed with or without the proposed Project. The Project would not have an effect on demand for aggregate but would have an effect on the distance that aggregates travel within the region. Project aggregate would replace materials hauled from farther distances and supply new demand for aggregate that will occur in the Riverside County region. This rationale is supported by Dr. Peter Berck's "Working Paper No. 994 – A Note on the Environmental Costs of Aggregate" (Department of Agricultural and Resource Economics and Policy, Division of Agricultural and Natural Resources, University of California Berkley, January 2005). (Urban Crossroads, 2016a, p. 31)~~(Urban Crossroads, 2015a, p. 23)~~ Dr. Berck states that:

> *"The opening of a new quarry for aggregates will change the pattern of transportation of aggregates in the area served by the quarry. In this note, we will show that, so long as aggregate producers are cost minimizing, the new pattern of transportation requires less truck transport than the pattern of transportation that existed before the opening of the new quarry. Since the costs of providing aggregates falls, it is reasonable to assume that the price of delivered aggregates also will fall. This note also shows that the demand expansion effect is of very small magnitude. Since the demand increase from a new quarry is quite small, the dominant effect is that the quarries are on average closer to the users of aggregates and, as a result, the truck mileage for aggregate hauling decreases. To summarize the effects of a new quarry project:*

> *a) The project in itself will not significantly increase the demand for construction materials in the region through market forces, which include the downward pressure on pricing.*
> *b) Truck traffic (i.e. vehicle miles traveled) in the region will not increase and may decrease as a result of the project."* (Berck, 2005, p. 3)

Furthermore, a study prepared by the San Diego Association of Governments (SANDAG) found that when aggregate is transported by truck to the point of use, the price of the material increases about 15 cents per ton for every mile hauled, and concluded that "…the point of diminishing marginal benefit – that is, where the largest number of projects can be served with the least additional distance – occurs at the 20- to 25-mile driveshed" (SANDAG, 2011, pp. ES-4 and 3-9).

In its guidance document *CEQA and Climate Change*, the California Air Pollution Control Officers Association (CAPCOA) lists various mitigation measures that can be implemented to reduce air quality and greenhouse gas (GHG) emissions for various projects. One particular mitigation measure for reducing air quality and GHG emissions during construction activity is Mitigation Measure C-5 "Use of Local Building Materials." The Project would provide local building materials to projects throughout the western Riverside County region, thus resulting in a reduction in emissions associated with transport of materials from outlying suppliers of aggregate products. However, no "credit" is taken for this measure in this analysis in an effort to be conservative. (Urban Crossroads, 2016a, p. 31)

~~4.~~3. Fugitive Dust from Material Processing

The emissions from the aggregate processing plant are not accounted for in CalEEMod. An engineering analysis that was prepared for the Project in support of the permitting process required by SCAQMD was utilized to determine the amount of fugitive dust attributable to the Project. The *Application for a Stationary Crushing & Screening Plant Nichols Road Facility, SCAQMD Facility ID: 177101* prepared for submittal to the SCAQMD on August 21, 2014 by Associates Environmental indicates that the Project operating at a maximum daily capacity of 5,000 tons processed would yield approximately 9.25 pounds per day of PM_{10} emissions. As such, the amount attributable to the proposed Project is 3.24 pounds per day of PM_{10} (or 35.05 percent), which indicates the net increase from the existing baseline. For analytical purposes $PM_{2.5}$ fugitive dust emissions are assumed to be 21 percent of the PM_{10} emissions totals consistent with guidance from SCAQMD. The *Application for a Stationary Crushing & Screening Plant Nichols Road Facility, SCAQMD Facility ID: 177101* report is included in its entirety in Appendix 3.3 to the Project's Air Quality Impact Analysis (*EIR Technical Appendix B*). (Urban Crossroads, 2016a, p. 32)~~(Urban Crossroads, 2015a, pp. 23-24)~~

Based on discussion with the Project Applicant, a maximum of 15,000 square foot (SF) surface area for blasting is a reasonable working estimate for analytical purposes on days when blasting were to occur. Fugitive dust emissions during blasting activities were estimated using the US EPA AP-42 emission factor (Table 11.9-1, on Page 11.9-5 from AP-42) (23). (Urban Crossroads, 2016a, p. 32)

~~5.~~4. Asphalt Batch Plant Emissions

The Nichols North site is also subject to approved Conditional Use Permit (CUP 2014-07) which allows for the operation of a portable asphalt batch plant on approximately 1.76 acres. The asphalt

batch plant is previously approved and fully entitled. Nonetheless, and in an effort to be conservative, the analysis herein assumes 100% of the impacts from the previously entitled asphalt batch plant. (Urban Crossroads, 2016a, p. 32)

Emissions estimates for the asphalt batch plant were obtained from the report *Comparison of Uncontrolled and Controlled Hot Mix Asphalt Plant Emissions*, prepared by Associates Environmental, which is included in its entirety in Appendix 3.5 to the Project's Air Quality Impact Analysis (*EIR Technical Appendix B*). (Urban Crossroads, 2016a, p. 32)

~~6.~~5. Diesel Particulate Emissions

Vehicle DPM emissions were estimated using emission factors for particulate matter less than 10µm in diameter (PM_{10}) generated with the 2014 version of the EMFAC model developed by the CARB. EMFAC 2014 is a mathematical model that CARB developed to calculate emission rates from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by the CARB to project changes in future emissions from on-road mobile sources. The most recent version of this model, EMFAC 2014, incorporates regional motor vehicle data, information and estimates regarding the distribution of VMT by speed, and number of starts per day (Urban Crossroads, 2016b, pp. 7-8)~~(Urban Crossroads, 2015b, pp. 6-7)~~. Refer to Section 2.2 of the Project's Mobile Source Health Risk Assessment (*Technical Appendix C* to this EIR) for a detailed description of the model inputs and equations used in the estimation of Project-related DPM emissions.

The potential health effects of Project-related DPM emissions were quantified in accordance with the SCAQMD's *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis.* Pursuant to SCAQMD's recommendations, emissions were quantified using the U.S. EPA's AERMOD model. Refer to Section 2.4~~3~~ of the Project's Mobile Source Health Risk Assessment (*Technical Appendix C* to this EIR) for a detailed description of the model inputs and equations used in the estimation of average particulate concentrations associated with operations at the Project site. (Urban Crossroads, 2016b, pp. 14-15)~~(Urban Crossroads, 2015b, p. 11)~~

Health risks associated with exposure to DPM emissions are defined in terms of the probability of developing cancer as a result of exposure to DPM emissions at a given concentration. Based on the SCAQMD guidance document noted earlier, this analysis applies a risk threshold of ten in one million as the incremental level of cancer risk considered to be significant. (Urban Crossroads, 2016b, p. 12)~~(Urban Crossroads, 2015b, p. 12)~~. Refer to Section 2.5~~4~~ of the Project's Mobile Source Health Risk Assessment (*Technical Appendix C* to this EIR) for a detailed description of the variable inputs and equations used in the estimation of receptor population health risks associated with Project operations. (Urban Crossroads, 2016b, p. 15)

The exposure to DPM is assumed to be constant for the given period analyzed (i.e., 70 years). It should be noted however that emissions from DPM are expected to substantially decrease in the future with the implementation of standard regulatory requirements and technological advancement to reduce DPM. The emissions derived assume that every truck accessing the Project site would idle for 15 minutes; this is an overestimation of actual idling times and thus conservative because California Code of Regulations Title 13, Division 3, Chapter 10, Article 1, Section 2485, "Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling," which restricts

idling to a maximum of 5.0 minutes at any location. (Urban Crossroads, 2016b, p. 7)~~(Urban Crossroads, 2015b, p. 6)~~

For assessing the cumulative impacts of a new source of TAC emissions associated with a project in combination with existing sources and probable future sources, a project radius is necessary. Assessment of impacts from existing sources within 1,000 feet of the new source in combination with risks and hazards from the new source is recommended. Then, once the location of the maximally impacted receptor is identified for the project, cumulative impacts from other sources within the radius of the project (i.e., not the receptor) are assessed at that location. (Urban Crossroads, 2016b, pp. 25-26)~~(Urban Crossroads, 2015b, p. 22)~~ For purposes of this assessment, a one-quarter mile radius or 1,320 feet geographic scope is utilized for determining potential cumulative impacts. This radius is more robust than, and provides a more health protective scenario for evaluation than, the 1,000-foot buffer identified above. ~~(Urban Crossroads, 2015b, p. 23)~~ Potential receptor population health risks were calculated for the maximally exposed residential receptor (MEIR), the maximally exposed individual worker (MEIW), and the maximally exposed school child (MEISC) located within a 1,320 foot radius of the Project site. (Urban Crossroads, 2016b, p. 26)~~(Urban Crossroads, 2015b, pp. 22-23)~~ Refer to Section 2.7 of the Mobile Source Health Risk Assessment (*Technical Appendix C* to this EIR) for a detailed description of the cumulative impact analysis methodology.

The residential land use with the greatest potential exposure to Project DPM source emissions is located approximately 3862~~0~~ feet southeast of the Project's mining impact area ~~(Urban Crossroads, 2015b, p. 14)~~. The non-residential land use with the greatest potential exposure of workers to Project DPM source emissions, as well as the nearest school site land use, is the Temescal Canyon High School at 28755 El Toro Road, Lake Elsinore, CA 92532, which is approximately 5861~~,000~~ feet south of the Project's mining impact area. (Urban Crossroads, 2016b, pp. 17-18)~~(Urban Crossroads, 2015b, p. 15)~~.

4.2.4 BASIS FOR DETERMINING SIGNIFICANCE

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. The City has chosen to rely on SCAQMD significance criteria, as discussed further below. The proposed Project would result in a significant impact to air quality if the Project or any Project-related component would:

a. *Conflict with or obstruct implementation of the applicable air quality plan?*

b. *Violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

c. *Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?*

d. *Expose sensitive receptors to substantial pollutant concentrations?*

e. *Create objectionable odors affecting a substantial number of people?*

The above-listed thresholds are drawn directly from Section III of Appendix G to the CEQA Guidelines and address typical adverse project effects on regional air pollution and nearby sensitive receptors (OPR, 2009). The City has chosen to apply SCAQMD significance thresholds, as presented in SCAQMD's CEQA Air Quality Significance Thresholds (March 2011), to evaluate the Project's air quality impacts against the above Appendix G standards.

Accordingly, Threshold a., which addresses Section III.a of Appendix G to the State CEQA Guidelines, evaluates whether the proposed Project would conflict with SCAQMD's 2012 AQMP, which addresses state and federal requirements under the CAA. A conflict with the AQMP standards and requirements would inhibit the SCAQMD's ability to achieve State and federal standards for air quality.

Thresholds b. and c., address Sections III.b and III.c, respectively, of Appendix G to the CEQA Guidelines, while Threshold d. addresses Section III.d of Appendix G to the State CEQA Guidelines. Under these thresholds, emissions generated by a development project would be significant under Thresholds b. and c. if emissions are projected to exceed the regional thresholds established by the SCAQMD for criteria pollutants and would be significant under Threshold d. if emissions are projected to exceeded the localized thresholds established by the State of California and the SCAQMD for criteria pollutants.

Additionally, and based on the SCAQMD's CEQA Air Quality Handbook (1993), a project's localized CO emissions impacts would be significant if they exceed the following California standards for localized CO concentrations (Urban Crossroads, 2016a, p. 27)~~(Urban Crossroads, 2015a, p. 19)~~:

- 1-hour CO standard of 20.0 parts per million (ppm)
- 8-hour CO standard of 9.0 ppm

The SCAQMD has also developed regional and localized thresholds for other regulated pollutants, as summarized above in Table 4.2-10, *Maximum Daily Regional Emissions Thresholds*. The SCAQMD's CEQA Air Quality Significance Thresholds (March ~~2011~~2015) indicate that any projects in the SCAB with daily emissions that exceed any of the indicated thresholds should be considered as having an individually and cumulatively significant air quality impact, as discussed in further detail below. (Urban Crossroads, 2016a, pp. 27-28)~~(Urban Crossroads, 2015a, p. 19)~~

Similarly, a project's emissions would be considered significant if they were to exceed the SCAQMD's Localized Significance Thresholds, which are presented above in Table 4.2-11. The SCAQMD published a report giving direction on how to address cumulative impacts from air pollution: *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution* (SCAQMD, 2003b). In this report the AQMD states on page D-3:

> *"…the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for toxic air contaminant (TAC) emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It*

should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.

Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."

This analysis assumes that individual projects that do not generate emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual ~~P~~project-related emissions that exceed SCAQMD thresholds for Project-specific impacts would be considered cumulatively considerable. (Urban Crossroads, 2016a, p. 43)~~(Urban Crossroads, 2015a, p. 33)~~

Given this direction from the SCAQMD, for example, a proposed project would result in a significant direct and cumulatively considerable impact under Threshold d. if it would emit toxic air contaminants, like DPM, to such a degree that it would expose sensitive receptor populations to an incremental cancer risk of greater than 10 in one million. (Urban Crossroads, 2016b, p. 3)

The SCAQMD has also established risk parameters for non-carcinogenic risks such as emphysema or reproductive disorders caused by toxic air contaminants (TACs). Non-carcinogenic risks are quantified by calculating a "hazard index," expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). An REL is a concentration at or below which health effects are not likely to occur. A hazard index less of than one (1.0) means that adverse health effects are not expected (Urban Crossroads, 2016b, p. 4) ~~(Urban Crossroads, 2015b, p. 3)~~. Thus, non-carcinogenic exposures of less than 1.0 are considered less-than-significant on a direct and cumulatively considerable basis under Threshold d.

Threshold e. evaluates Section III.e of Appendix G of the State CEQA Guidelines. SCAQMD Rule 402 ("Nuisance") and California Health & Safety Code, Division 26, Part 4, Chapter 3, Section § 41700 prohibit the emission of any material which causes nuisance to a considerable number of persons or endangers the comfort, health or safety of the public, including odors. The potential to violate Rule 402 or § 41700 could be a basis to consider a project's odors or other emissions to be significant and require feasible mitigation measures.

4.2.5 IMPACT ANALYSIS

Threshold a. Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The 2012 SCAQMD AQMP is the applicable air quality plan for the Project area, and estimates long-term air quality conditions for the SCAB. The 2012 AQMP was based on assumptions provided by

both CARB and SCAG in the latest available EMFAC model for the most recent motor vehicle and demographics information, respectively. The air quality levels projected in the 2012 AQMP are based on several assumptions. For example, the 2012 AQMP has assumed that development associated with general plans, specific plans, residential projects, and wastewater facilities will be constructed in accordance with population growth projections identified by SCAG in its 2012 RTP. The 2012 AQMP also has assumed that such development projects will implement strategies to reduce emissions generated during the construction and operational phases of development. (Urban Crossroads, 2016a, p. 50)~~(Urban Crossroads, 2015a, p. 31)~~

The SCAQMD has established criteria for determining consistency with the 2012 AQMP. These criteria are defined in Chapter 12, Sections 12.2 and 12.3 of the SCAQMD *CEQA Air Quality Handbook* and are discussed below.

- ***Consistency Criterion No. 1:*** *The proposed Project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.*

As discussed under the analysis of Threshold d., and as summarized in Table 4.2-13, *Operational Localized Emissions Summary*, below, the Project's operational-source emissions have the potential to ~~would not~~ exceed applicable LSTs for emissions of PM_{10} and $PM_{2.5}$ only, and ~~are~~ therefore the Project has a potential to result in a ~~less than~~ significant impact. (Urban Crossroads, 2016a, p. 39)

~~Table 4.2-11~~Table 4.2-13 Operational Localized Emissions Summary

Operation	CO		NO_2		PM_{10}		$PM_{2.5}$
	Averaging Time						
	1-Hour	8-Hour	1-Hour	Annual	24-Hours	Annual	24-Hours
Peak Day Localized Emissions	0.13	0.06	0.02	0.001	9.98	1.87	9.62
Background Concentration[A]	2	1.4	0.05	0.01			
Total Concentration	**2.13**	**1.46**	**0.07**	**0.0101**	**9.98**	**1.87**	**9.62**
SCAQMD Localized Significance Threshold	20	9	0.18	0.03	2.5	1	2.5
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**YES**	**YES**	**YES**

[A]Highest concentration from the last three years of available data
Note: PM_{10} and $PM_{2.5}$ concentrations are expressed in $\mu g/m^3$. All others are expressed in ppm
~~*Source:*~~ (Urban Crossroads, 2016a, Table 3-5)~~*Urban Crossroads, 2015a, Table 3-5*~~

For operational LSTs, on-site passenger car, truck travel, operational equipment, and fugitive dust emissions were modeled in AERMOD, which is an atmospheric dispersion modeling system. The location of the Project proximate to I-15 acts to reduce vehicle miles traveled (VMTs) associated with haul truck trips and associated air emissions. Project aggregate would replace materials hauled from farther distances and supply new demand for aggregate that will occur in the Riverside County region. This rationale is supported by Dr. Peter Berck's "Working Paper No. 994 – A Note on the Environmental Costs of Aggregate" (Department of Agricultural and Resource Economics and Policy, Division of Agricultural and Natural Resources, University of California Berkley, January 2005). (Urban Crossroads, 2016a, p. 23)~~(Urban Crossroads, 2015a, p. 23)~~ Furthermore, a study prepared by the San Diego Association of Governments

(SANDAG) found that when aggregate is transported by truck to the point of use, the price of the material increases about 15 cents per ton for every mile hauled, and concluded that "…the point of diminishing marginal benefit – that is, where the largest number of projects can be served with the least additional distance – occurs at the 20- to 25-mile driveshed" (SANDAG, 2011, pp. ES-4 and 3-9). The Project's proximity to I-15, a major north-south thoroughfare linking to other regional transportation facilities, is consistent with and supports AQMP air pollution reduction strategies and promotes timely attainment of AQMP air quality standards. These Project attributes and features are consistent with and support AQMP air pollution reduction strategies and promote timely attainment of AQMP air quality standards. Moreover, and as shown in Table 4.2-17 (presented in EIR Subsection 4.2.9), with mitigation the Project's localized emissions of PM_{10} and $PM_{2.5}$ would be reduced to below a level of significance. On the basis of the preceding discussion, the Project is determined to be consistent with the first criterion. (Urban Crossroads, 2016a, pp. 39-40)~~(Urban Crossroads, 2015a, p. 31)~~

- ***Consistency Criterion No. 2:*** *The proposed Project will not exceed the assumptions in the AQMP based on the years of Project buildout phase.*

The 2012 AQMP demonstrates that the applicable ambient air quality standards can be achieved in SCAB within the timeframes required under federal law. Growth projections from local general plans adopted by cities in the district are provided to the Southern California Association of Governments (SCAG), which develops regional growth forecasts, which are then used to develop future air quality forecasts for the AQMP. Development consistent with the growth projections in the City of Lake Elsinore General Plan is considered to be consistent with the AQMP. (Urban Crossroads, 2016a, p. 40)~~(Urban Crossroads, 2015a, p. 31)~~

The Project is consistent both with the site's land use at the time the 2012 AQMP was adopted, and the site's "Extractive Overlay" General Plan land use designation and would therefore result in emissions "accounted for" in the AQMP based on the mining activities that occurred on-site in 2012 and the site's General Plan land use designation. (Urban Crossroads, 2016a, p. 40)~~(Urban Crossroads, 2015a, p. 31)~~ However the Project's operational impacts would exceed the applicable regional thresholds for VOCs, NOx, and $PM_{2.5}$, as shown in Table 4.2-14, *Summary of Peak Operational Emissions (Without Mitigation)*. As such, the Project would not be consistent with the AQMP. The Project would have a significant impact and mitigation is required.

Based on the preceding discussion, and based on the level of regional emissions of VOCs, NOx, and $PM_{2.5}$ that would be generated by the Project, as well as the level of localized emissions of PM_{10} and $PM_{2.5}$, the Project has the potential to result in a significant impact with respect to AQMP consistency. (Urban Crossroads, 2016a, p. 40)

~~Table 4.2-12~~Table 4.2-14 Summary of Peak Operational Emissions (Without Mitigation)

Operational Activities – Summer Emissions	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Operational Equipment	2.08	24.06	11.63	0.03	0.92	0.85
Mobile Sources	2.81	47.74	30.28	0.13	3.84	1.53
Fugitive Dust Material Processing/Blasting	--	--	--	--	9.94	2.08
Asphalt Batch Plant Emissions	101.11	52.6	272.37	6.81	75.47	72.75
Maximum Daily Emissions	**106**	**106.71**	**53.54**	**6.97**	**90.17**	**77.21**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**YES**	**YES**	**NO**	**NO**	**NO**	**YES**

Operational Activities – Winter Emissions	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Operational Equipment	2.08	24.06	11.63	0.03	0.92	0.85
Mobile Sources	2.95	49.51	34.21	0.13	3.84	1.53
Fugitive Dust Material Processing/Blasting	--	--	--	--	9.94	2.08
Asphalt Batch Plant Emissions	101.11	52.6	272.37	6.81	75.47	72.75
Maximum Daily Emissions	**106.14**	**126.17**	**318.21**	**6.97**	**90.17**	**77.21**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**YES**	**YES**	**NO**	**NO**	**NO**	**YES**

(Urban Crossroads, 2016a, Table 3-3)~~*Source: Urban Crossroads, 2015b, Table 3-3*~~

Threshold b. ***Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?***

Threshold c. ***Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?***

As detailed in Threshold a. and as shown in Table 4.2-13, above, prior to mitigation the Project would ~~not~~ exceed ~~any of~~ the SCAQMD LSTs for PM_{10} and $PM_{2.5}$; this is evaluated as a direct and cumulatively considerable impact of the proposed Project for which mitigation would be required. ~~However~~Additionally, the Project would exceed the numerical regional thresholds of significance established by the SCAQMD for emissions of NO_X. As depicted in Table 4.2-14, above, the SCAMD's thresholds for VOCs, NO_X, and $PM_{2.5}$ for both summer and winter emissions ~~is~~ are 55 pounds per day (ppd).~~,~~ The Project's operational emissions of VOCs would equal approximately 106 ppd during summer months and 106.14 during winter months. The ~~while the~~ Project's operational emissions of NO_X are estimated to be ~~64.13~~106.71 ppd during summer and ~~65.91~~126.17 ppd during winter. The Project's operational emissions of $PM_{2.5}$ would be approximately 77.21 ppd in both summer and winter months. The Project's unmitigated air quality emissions of VOCs, NO_X, and $PM_{2.5}$ would contribute to the SCAB's existing air quality violations ~~for NO_X~~ these pollutants. The Project's emissions of NO_X and VOCs would contribute to the formation of ozone, a criteria pollutant for which the region is considered non-attainment. Additionally, emissions of $PM_{2.5}$ also would contribute to the region's non-attainment status for this pollutant.~~and would result in a cumulatively considerable net increase of NO_X, a criteria pollutant for which the Project region is non-attainment;~~ ~~t~~Therefore, the Project's emissions of VOCs, NO_X, and $PM_{2.5}$ ~~would result in~~

represent significant direct and cumulatively considerable impacts to air quality for which mitigation would be required.

Threshold d. Would the Project expose sensitive receptors to substantial pollutant concentrations?

The potential impact of Project-generated air pollutant emissions at sensitive receptors was considered. Sensitive receptors ~~can~~ include uses such as long-term health care facilities, rehabilitation centers, and retirement homes. Residences, schools, playgrounds, child care centers, and athletic facilities ~~can~~ also ~~be~~ are considered ~~as~~ sensitive receptors. (Urban Crossroads, 2016a, p. 40)~~(Urban Crossroads, 2015a, p. 32)~~ Refer to Figure 4.2-2, *Air Quality Sensitive Receptor Locations*, which shows the nearest sensitive receptor land uses the Project site, which were used in modeling in the Project's air quality analysis. The nearest sensitive receptor is located approximately 386~~414~~ feet southeast of the Project's proposed Expanded Disturbance Area (EDA). ~~It should be noted that the Project's Air Quality Impact Analysis (EIR *Technical Appendix B*) assumes a conservative distance of 320 feet between on-site mining activities and the nearest sensitive receptor to provide a "worst case" analysis of potential localized impacts.~~ As detailed in Threshold a. and as shown in Table 4.2-13, above, prior to mitigation the Project would ~~not~~ exceed ~~any of~~ the SCAQMD LSTs for PM_{10} and $PM_{2.5}$. ~~; thus~~Accordingly, the Project's localized air quality emissions would ~~not~~ result in ~~any~~ significant direct ~~or~~ and cumulatively considerable impacts to sensitive receptors due to the emission of PM_{10} and $PM_{2.5}$ that would exceed the SCAQMD LSTs for these pollutants. (Urban Crossroads, 2016a, p. 35)~~Further~~

Additionally, the Project was evaluated for the potential to expose nearby sensitive receptors to substantial pollutant concentrations associated with CO "Hot Spots" and/ DPM emissions. As discussed below, the Project was found not to result in a significant impact for either CO "Hot Spots" or DPM emissions. (Urban Crossroads, 2016a, pp. 37-38)

1. CO "Hot Spot" Analysis

A CO "hotspot" would occur if an exceedance of the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm were to occur. At the time SCAQMD prepared the 1993 Handbook, the SCAB was designated nonattainment under the California AAQS and National AAQS for CO. As discussed below, the Project would not result in potentially adverse CO concentrations or "hot spots." Further, detailed modeling of Project-specific CO "hot spots" is not needed to reach this conclusion. (Urban Crossroads, 2016a, p. 37)~~(Urban Crossroads, 2015a, p. 29)~~

It has long been recognized that adverse localized CO concentrations ("hot spots") are caused by vehicular emissions, primarily when idling at congested intersections. In response, vehicle emissions standards have become increasingly stringent in the last twenty years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentrations in the air basin have steadily declined, as indicated by historical emissions data presented previously in Table 4.2-9. (Urban Crossroads, 2016a, p. 37)~~(Urban Crossroads, 2015a, p. 29)~~

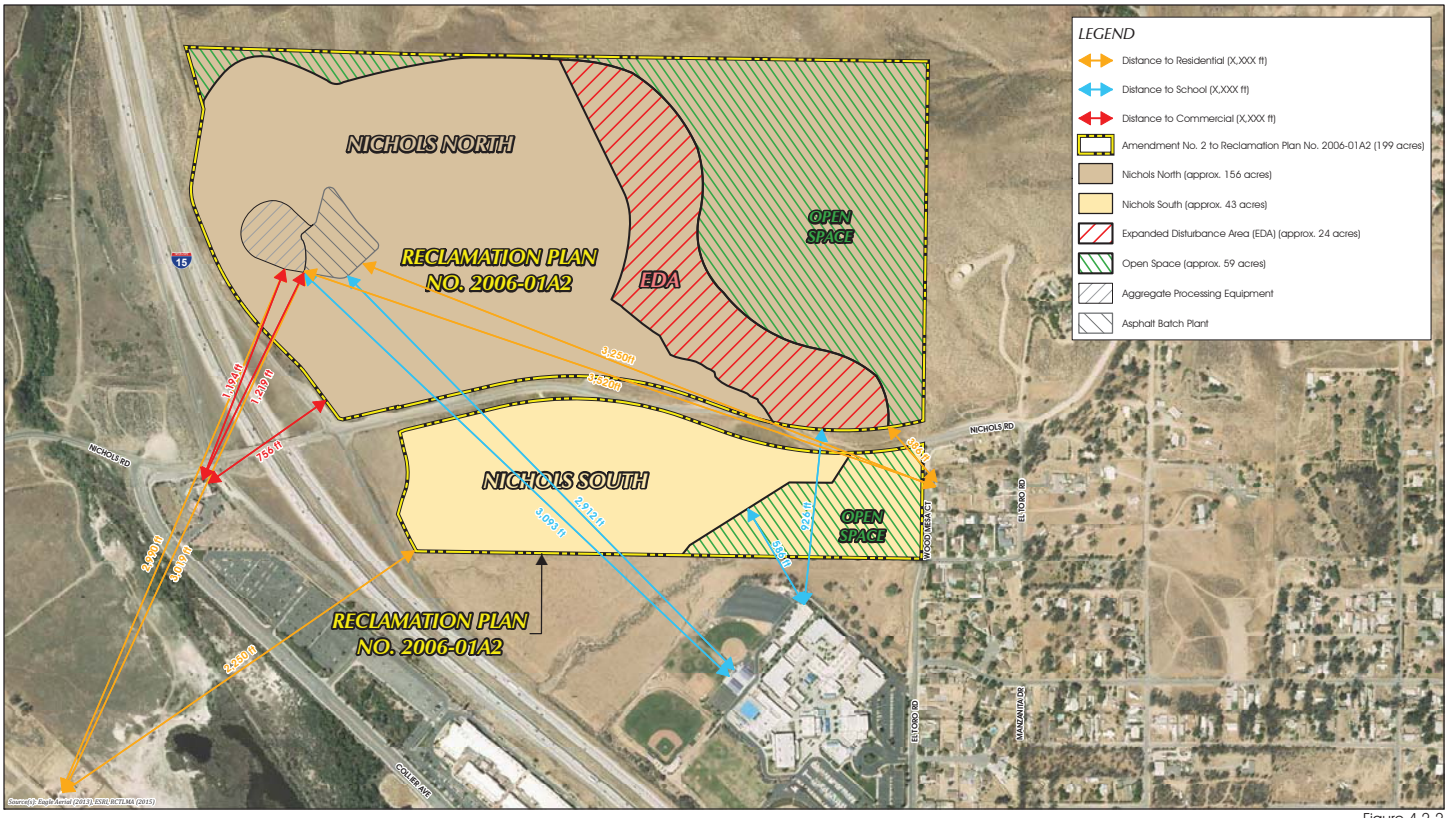


Figure 4.2-2
AIR QUALITY SENSITIVE RECEPTOR LOCATIONS

A CO "hot spot" analysis was conducted in 2003 by the South Coast Air Quality Management District (SCAQMD) for four busy intersections in Los Angeles that represent extreme vehicle volumes at the peak morning and afternoon time periods. The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour. This hot spot analysis did not predict any violation of the state's CO 1-hour standard of 20.0 parts per million (ppm) or 8-hour standard of 9.0 ppm. (SCAQMD, 2003a; Urban Crossroads, 2016a, pp. 37-38)

Furthermore, a study prepared by the Bay Area Air Quality Management District (BAAQMD) determined that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour (or 24,000 vehicles per hour where vertical and/or horizontal air does not mix) to generate a significant CO "Hot Spot" impact. The SCAQMD has not undertaken a similar study, so use of the BAAQMD study is appropriate here. ~~(Urban Crossroads, 2015a, p. 30)~~ The Project would not produce the volume of traffic required to generate a CO hotpot either in the context of the 2003 Los Angeles hot spot study, or based on representative BAAQMD CO threshold considerations (refer to Table 4.2-15, *Project Peak Hour Traffic Volumes*, below). It can therefore be reasonably concluded that projects (such as the proposed Project) that are not subject to the extremes in vehicle volumes and vehicle congestion that was evidenced in the 2003 Los Angeles hot spot analysis would similarly not create or result in CO hot spots ~~(Urban Crossroads, 2015a, p. 29)~~. Additionally, even under Horizon Year (2035) conditions, all study area intersections would receive fewer than 44,000 vehicles per hour, thereby indicating that a CO "Hot Spot" would not occur due to Project-related traffic when combined with traffic from cumulative (long-term) developments. Therefore, CO hotspots are not an environmental impact of concern for the proposed Project, and localized air quality impacts related to CO "Hot Spots" would therefore be less than significant. (Urban Crossroads, 2016a, p. 38)~~(Urban Crossroads, 2015a, p. 30)~~

~~Table 4.2-13~~Table 4.2-15 Project Peak Hour Traffic Volumes

Intersection Location	Northbound (AM/PM)	Southbound (AM/PM)	Eastbound (AM/PM)	Westbound (AM/PM)	Total (AM/PM)
I-15 SB Ramps & Nichols Rd.	--/--	520/470	1,025/1,033	529/786	2,074/2,289
I-15 NB Ramps & Nichols Rd.	503/643	--/--	886/625	523/290	1,912/1,558
Driveway 1 & Nichols Rd.	--/--	73/32	1,003/380	450/259	1,526/671
Driveway 2 & Nihcols Rd.	--/--	--/--	1,003/380	450/259	1,453/639

AM= 7am-9am, PM= 4pm-6pm
(Urban Crossroads, 2016a, Table 3-7)~~*Urban Crossroads, 2015b, Table 3-6*~~

2. DPM Emissions Analysis

An air toxics health risk assessment (HRA) was prepared for the proposed Project and is included as EIR *Technical Appendix C* (Urban Crossroads, 2016b) ~~(Urban Crossroads, 2015b)~~. As detailed in the HRA, and discussed in more detail below, the Project would not result in a significant adverse health impact to sensitive receptors and would not result in a significant health risk impact. Thus a

less-than-significant impact to sensitive receptors during operational activity is expected. (Urban Crossroads, 2016a, p. 40)~~(Urban Crossroads, 2015a, p. 32)~~

To evaluate the Project's potential to expose nearby sensitive receptors to substantial amounts of DPM during long-term operation, a Mobile Source Health Risk Assessment was prepared for the proposed Project and is included as *Technical Appendix C* to this EIR. The following three scenarios are analyzed below: 1) Residential exposure scenario, 2) Worker exposure scenario, and 3) School child exposure scenario.

Based on the SCAQMD guidance document noted earlier, this analysis applies a risk threshold of ten in one million as the incremental level of cancer risk considered to be significant. The SCAQMD has also established risk parameters for non-carcinogenic risks such as emphysema or reproductive disorders caused by toxic air contaminants (TACs). Non-carcinogenic risks are quantified by calculating a "hazard index," expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). An REL is a concentration at or below which health effects are not likely to occur. A hazard index less of than one (1.0) means that adverse health effects are not expected (Urban Crossroads, 2016b, pp. 3-4)~~(Urban Crossroads, 2015b, p. 3)~~.

Residential exposure scenario

The residential land use with the greatest potential exposure to Project DPM source emissions is located approximately 386~~320~~ feet southeast of to the Project's mining impact area. At the MEIR, the maximum incremental cancer risk attributable to Project DPM source emissions is estimated at ~~0.96~~2.15 in one million, which is less than the threshold of 10 in one million. At this same location, non-cancer risks were estimated to be 0.0008~~6~~, which would not exceed the applicable threshold of 1.0. (Urban Crossroads, 2016b, p. 17)~~(Urban Crossroads, 2015b, p. 1)~~

Worker Exposure Scenario

The worker land use with the greatest potential exposure to Project DPM source emissions is located at Temescal Canyon High School at 28755 El Toro Road, Lake Elsinore, CA 92532 which is approximately 586~~1,000~~ feet south of the Project's mining impact area. At the MEIW, the maximum incremental cancer risk impact at this location is 0.36~~13~~ in one million, which is less than the threshold of 10 in one million. At this same location, non-cancer risks were estimated to be 0.011~~004~~, which would not exceed the applicable threshold of 1.0. (Urban Crossroads, 2016b, p. 18)~~(Urban Crossroads, 2015b, p. 1)~~

School Child Exposure Scenario

The school site land use with the greatest potential exposure to Project DPM source emissions is located at Temescal Canyon High School, which is approximately 586~~1,000~~ feet south of the Project's mining impact area. At the MEISC, the maximum incremental cancer risk impact at this location is ~~0.10~~3.3 in one million, which is less than the threshold of 10 in one million. At this same location, non-cancer risks were estimated to be 0.0014~~05~~, which would not exceed the applicable threshold of 1.0. (Urban Crossroads, 2016b, pp. 18-19)~~(Urban Crossroads, 2015b, p. 1)~~

3. Conclusion

Based on the foregoing analysis, the proposed Project has no potential to result in or contribute to any CO "Hot Spots," and the Project's incremental cancer and non-cancer risks would be below the thresholds of significance for the MEIR, MEIW, and the MEISC. There are no other components of the proposed Project that have the potential to expose nearby sensitive receptors to substantial pollutant concentrations. Accordingly, impacts would be less than significant on both a direct and cumulative basis, requiring no mitigation

Threshold e. Would the Project create objectionable odors affecting a substantial number of people?

Substantial odor-generating sources include land uses such as agricultural activities, feedlots, wastewater treatment facilities, landfills or heavy manufacturing uses. Potential sources of operational odors generated by the Project would include disposal of miscellaneous refuse. However, only a nominal increase in solid waste would occur in association with the proposed Project. Moreover, SCAQMD Rule 402 acts to prevent occurrences of odor nuisances. Consistent with City requirements, all Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with solid waste regulations. (Urban Crossroads, 2016a, p. 41) ~~(Urban Crossroads, 2015a, p. 2)~~

In order to evaluate the Project's potential to expose nearby sensitive receptors to odors associated with the asphalt batch plant operation, an Odor Impact Analysis was prepared by Giroux and Associates, the results of which are included in the Project's administrative record as " (Giroux, 2014)." The analysis includes a quantification of odor strength. Quantification of odor strength has traditionally been accomplished by presenting a panel of average people with an air sample and having them progressively dilute the sample with clean air until fewer than half the panel could still smell the underlying odor. The number of fresh air dilutions was called the number of odor units (OU) per unit volume, or the dilutions-to-threshold (D/T) of the sample. Some more recent approaches have been to automate the process to feed the odorant and dilution air in a dynamic mixing chamber. Fence-line surveys of odor strengths have been conducted for various asphalt plants and the theoretical limit of odor detection has been estimated using dispersion models to extrapolate the on-site measurement to the distance where natural dilution has achieved a 1.0 D/T odor level. It should be noted that the SCAQMD CEQA Air Quality Handbook identifies an odor strength of 5.0 D/T as an odor impact condition and 10.0 D/T as a significant impact under CEQA. Given the sensitivity of some people to odor, and in an effort to be conservative, for purposes of analysis herein a significant odor impact would occur if sensitive receptors were to be exposed to odors in excess of 1.0 D/T. (Giroux, 2014, p. 2)

A very detailed asphalt plant odor study in Australia (Kilburn Odour Study, 2005) observed an asphalt plant odor level of 6 D/T at the plant fence-line. A similar detailed study in Everett, Washington (PCCAA Regional Odor Monitoring Program, 2014) found that the CEMEX/Granite Asphalt Plant generated less than 1.0 D/T at any downwind sensitive receptor. If one assumes that the Kilburn measured odor plume would expand in a random Gaussian dispersion pattern, nearby sensitive receptors (i.e., residential homes and the high school) would only be exposed to plant-related odors up to 0.07 D/T, which is well below the identified threshold of significance of 1.0 D/T. (Giroux, 2014, p. 2)

In addition, odor impact assessment requires knowledge of the volume of odorant released, the wind direction carrying the odor off-site, and the amount of dilution that the odor plume will experience between the source and the receptor. For the proposed Project, none of these parameters are static during any 24-hour period. Asphalt production as the period of maximum odor generation occurs during an early morning window. Early mornings have very poor turbulent dispersion, but winds blow primarily SE to NW during the morning hours. By the time winds reverse to blow SE toward the high school, odor generation would be small and daytime turbulence would progressively increase. Even without a distance separation of more the 0.5 mile between the plant site and the nearest homes or school, meteorology, and production schedules combine to minimize any adverse impact potential. Since prevailing winds generally follow I-15 (toward Corona at night and in the early morning, toward Temecula from mid- morning to evening), there is further minimal potential to exposure the closest homes east and west of I-15 to the residual of any on-site odor emissions from asphalt production, storage and distribution. (Giroux, 2014, p. 1)

Accordingly, due to the low level of odors affecting sensitive receptors, likely production schedules, and prevailing wind patterns, the Project would not expose nearby sensitive receptors to substantial odors, and impacts would be less than significant. ~~The Nichols Canyon Mine currently includes operation of an asphalt batch plant, which could be a potential source of odor. The asphalt batch plant, however, was approved by the City under Conditional Use Permit (CUP) No. 2014-07, and is not part of the Project. It should be noted that an analysis of the asphalt batch plant's potential odor impacts was prepared in association with CUP 2014-07 (Giroux, 2014), and which showed that the asphalt batch plant would not result in significant odor impacts. The Project would not expose nearby sensitive receptors to substantial odors associated with refuse disposal, and impacts would be less than significant.~~

4.2.6 CUMULATIVE IMPACT ANALYSIS

1. AQMP Consistency (Threshold a.)

As described under the analysis for Threshold a., the Project is consistent with the site's land use at the time the 2012 AQMP was adopted and the site's "Extractive Overlay" General Plan land use designation and would therefore result in emissions "accounted for" in the AQMP based on the mining activities that occurred on-site in 2012 and the site's General Plan land use designation. ~~However, because t~~The Project's unmitigated localized emissions of PM_{10} and $PM_{2.5}$ would exceed the SCAQMD localized thresholds. Additionally, the Project's operational emissions of VOCs, NO_X, and $PM_{2.5}$ would exceed SCAQMD regional thresholds~~,~~ prior to mitigation. ~~and p~~Pursuant to SCAQMD recommendations for assessing cumulative impacts, the Project's operational emissions of VOCs, NO_X, and $PM_{2.5}$, as well as the level of localized emissions of PM_{10} and $PM_{2.5}$, ~~would~~ represent both a direct and cumulatively considerable impact due to a conflict with the AQMP for which mitigation would be required.

2. Air Quality Violations (Thresholds b. and c.)

As indicated in the analysis of Thresholds b and c, the Project would exceed SCAQMD criteria pollutant standards for emissions of VOCs, NO_X, and $PM_{2.5}$ during operational activities. Pursuant to SCAQMD guidance for determining cumulative impacts, the Project's emissions of VOCs, NO_X, and $PM_{2.5}$ would be both directly and cumulatively considerable.

3. *Impacts to Sensitive Receptors (Threshold d.)*

As discussed under Threshold d., ~~the proposed Project would not cumulatively expose nearby sensitive receptors to substantial pollutant concentrations due to CO "Hot Spots" and DPM emissions.~~

~~Based on the analysis presented under Threshold d.,~~ the proposed Project would not result in or contribute to a CO "Hot Spot," because even under cumulative conditions none of the Project's study area intersections would receive more than 44,000 vehicles per hour (or 24,000 vehicles per hour where vertical and/or horizontal air does not mix). As such, the Project would not contribute to any CO "Hot Spots," and impacts would be less than cumulatively considerable.

The cumulative carcinogenic health risk from DPM emissions in the Project's cumulative study area is presented in Table 4.2-16, *Cumulative Cancer Risk*. Refer to the Diesel Particulate Matter Health Risk Assessment for the Project (*Technical Appendix C*), which provides both a list of cumulative development projects as well as a map depicting their location. With respect to incremental cancer risks, the cumulative health risk is significant since the existing conditions plus cumulative projects would generate greater than a 10 in one million cancer risk. Notwithstanding, the Project's contribution is less than cumulatively considerable because it is less than the 10 in one million incremental cancer risk threshold established by the SCAQMD. Lastly, it should be noted that although there will be ambient growth in the Project vicinity, any increase in emissions and consequently cancer risk from ambient growth would be offset by the expected decrease in future risk estimates due to the natural turnover of older fleets and equipment being replaced by more efficient, less polluting engines and regulatory actions being phased in. A summary of impacts to the MEIR, MEIW, and MEISC is presented below. (Urban Crossroads, 2016b, p. 26)~~(Urban Crossroads, 2015b, p. 23)~~

~~Table 4.2-14~~Table 4.2-16 Cumulative Cancer Risk

	Cancer Risk as Maximum Sensitive Receptor (risk in one million)			
	Existing	Project Site	Cumulative Projects	Total Cumulative Risk
Maximum Impact to All Receptors Without Project	402.04		--	~402.04
Maximum Impact to Nearest Residential With Project	402.04	2.15	--	~404.19
Maximum Impact to Nearest Worker With Project	402.04	0.36	--	~402.40
Maximum Impact to Nearest School With Project	402.04	3.3	--	~405.35

Source: **MATES IV Carcinogenic Risk Interactive Map** (http://www3.aqmd.gov/webappl/OI.Web/OI.aspx?jurisdictionID=AQMD.gov&shareID=73f55d6b-82cc-4c41-b779-4c48c9a8b15b).
-- = negligible
(Urban Crossroads, 2016b, Table 2-5)~~*Source: Urban Crossroads, 2015b, Table 2-5*~~

Residential Exposure Scenario:

The highest cumulative with Project cancer risk is approximately ~~164.96~~404.19 in one million. The Project's maximum incremental contribution to the cumulative health risk in the Project area is ~~0.96~~2.15 in one million which is not above the 10 in one million incremental threshold set by SCAQMD, and is therefore less-than-significant. Accordingly, pursuant to SCAQMD cumulative impact criteria, the Project's Residential Exposure impacts would not be cumulatively considerable. (Urban Crossroads, 2016b, p. 31)~~(Urban Crossroads, 2015b, p. 28)~~

Worker Exposure Scenario:

The highest cumulative with Project cancer risk after is approximately ~~164.13~~402.40 in one million. The Project's maximum incremental contribution to the cumulative health risk in the Project area is ~~0.13~~0.36 in one million which is not above the 10 in one million incremental threshold set by SCAQMD, and is therefore less-than-significant. Accordingly, pursuant to SCAQMD cumulative impact criteria, the Project's Worker Exposure impacts would not be cumulatively considerable. (Urban Crossroads, 2016b, p. 28)~~(Urban Crossroads, 2015b, p. 28)~~

School Child Exposure Scenario:

The highest cumulative with Project cancer risk after is approximately ~~164.10~~405.35 in one million. The Project's maximum incremental contribution to the cumulative health risk in the Project area is ~~0.10~~3.3 in one million which is not above the 10 in one million incremental threshold set by SCAQMD, and is therefore less-than-significant. Accordingly, pursuant to SCAQMD cumulative impact criteria, the Project's School Child Exposure impacts would not be cumulatively considerable. (Urban Crossroads, 2016b, pp. 28-29) ~~(Urban Crossroads, 2015b, pp. 28-29)~~

4. Odors

As indicated in the analysis of Threshold e, above, there are no components of the proposed Project's long-term operation, including operation of the asphalt batch plant, ~~that~~ which would result in the exposure of a substantial number of sensitive receptors to objectionable odors. There are no land uses surrounding the Project site with the potential to significantly contribute to odors associated with the Nichols Canyon Mine. Accordingly, impacts would be less-than-cumulatively considerable.

4.2.7 SIGNIFICANCE OF IMPACTS BEFORE MITIGATION

Threshold a: Significant Direct and Cumulatively Considerable Impact. Project attributes and features are consistent with and support AQMP air pollution reduction strategies and promote timely attainment of AQMP air quality standards. However, the Project's operational impacts would exceed the ~~applicable~~ SCAQMD localized thresholds for PM_{10} and $PM_{2.5}$, and also would exceed the SCAQMD regional thresholds for VOCs, NO_X, and $PM_{2.5}$. As such, prior to mitigation the Project would not be consistent with the AQMP. Impacts would be significant on a direct and cumulatively considerable basis.

Thresholds b and c: Significant Direct and Cumulatively Considerable Impact. The Project would exceed the SCAQMD regional thresholds for VOCs, NO_X, and $PM_{2.5}$ emissions during Project operation. Emissions of VOCs and NO_X would contribute to the regions non-attainment status for ozone, and the Project's emissions of $PM_{2.5}$ would contribute to the region's non-attainment status for particulate matter. As such, Project-related air emissions would violate SCAQMD air quality

standards and contribute to the non-attainment of ~~a~~ criteria pollutants (~~NO$_x$~~ozone and $PM_{2.5}$), which is a significant direct and cumulatively considerable impact.

Threshold d: Less than Significant Impact. The Project would not result in or contribute to a CO "Hot Spot." The Project also would not result in a significant adverse health impact to sensitive receptors and would not result in a significant health risk impact. Thus a less-than-significant impact to sensitive receptors during operational activity is expected. The carcinogenic risk attributable to DPM emissions from the proposed Project would be less than 10 in one million for the residential, worker, and school child exposure scenarios. Thus, the Project's DPM emissions would be below the SCAQMD's threshold for direct and cumulatively considerable emissions and would be less than significant.

Threshold e: Less-than-Significant Impact. The Project does not propose any uses or activities that would result in potentially significant operational-source odor impacts. Potential sources of operational odors generated by the Project would include disposal of miscellaneous refuse and the operation of the asphalt batch plant. Consistent with City requirements, all Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with solid waste regulations. ~~Although the Project would not affect asphalt batch plant operations on-site, o~~Odors associated with the asphalt batch plant ~~were previously shown to~~would be less than significant on both a direct and cumulative basis due to the low level of odors affecting sensitive receptors, likely production schedules, and prevailing wind patterns. Accordingly, operational-source odor impacts would be less than significant.

4.2.8 MITIGATION

MM 4.2-1 The Project Applicant shall ensure that all net new Project equipment horsepower hours as summarized in Table 3-2 of the "Amendment No. 2 to Reclamation Plan 2006-001 Air Quality Impact Analysis City of Lake Elsinore," dated ~~October~~ July 14, 201~~5~~, by Urban Crossroads, shall be California Air Resources Board (CARB) Tier 4 Certified or better. A list of construction equipment shall be maintained on-site by the Mine operator demonstrating compliance with this requirement, and the list shall be made available to the City upon request and during annual reporting for the Mine.

MM 4.2-2 Prior to operation of the asphalt batch plant on-site, the Project Applicant shall provide evidence to the City of Lake Elsinore Planning Division that a Permit to Operate (PTO) for the asphalt batch plant has been obtained through SCAQMD. The PTO shall specify Best Available Control Technologies (BACT), which may include, but shall not necessarily be limited to, the operation of a natural gas with low NO_X burner, consistent with SCAQMD BACT Guidelines for operation of asphalt batch plants (SCAQMD, 2008c, Part D).

4.2.9 SIGNIFICANCE OF IMPACTS AFTER MITIGATION

Threshold a: ~~Less than Significant~~Significant Unavoidable Direct and Cumulatively-Considerable Impact. As shown in Table 4.2-17, *Localized Significance Summary – Operations (With Mitigation)*, implementation of the required mitigation would reduce the Project's localized emissions of PM_{10} and $PM_{2.5}$ to below a level of significant. As shown in Table 4.2-18, *Summary of Peak Operational Emission (With Mitigation)*, with implementation of ~~Mitigation Measure MM 4.3-1~~the required

mitigation, the Project's regional operational emissions of VOCs and $PM_{2.5}$ ~~NO_X~~ also would be reduced to below a level of significance. However, the required mitigation would not reduce the Project's emissions of NO_X to below a level of significance. ~~Additionally, and as discussed under the analysis of Threshold a.,~~Although the Project would not exceed the regional growth forecasts, the Project's impacts due to a conflict with the AQMP is a significant direct and cumulatively-considerable impact of the proposed Project that cannot be reduced to a level below significant. ~~Accordingly, implementation of the required mitigation would ensure that the Project and its associated emissions would be consistent with the AQMP and would reduce the Project's impacts due to a potential conflict with the AQMP to below a level of significance~~. (Urban Crossroads, 2016a, p. 24)~~(Urban Crossroads, 2015a, p. 24)~~

Thresholds b and c: Significant Unavoidable Direct and Cumulatively-Considerable ~~Less than Significant~~ Impact. As shown in Table 4.2-18, with implementation of ~~Mitigation Measure MM 4.3-1~~the required mitigation the Project's peak operational emissions of ~~NO_X~~ VOCs and PM_{10} would be reduced to less-than-significant levels. However, the Project's emissions of NO_X still would exceed the SCAQMD's Regional Thresholds even with the incorporation of mitigation. NO_X emissions would contribute to the region's non-attainment status for ozone. Accordingly, the Project's impact ~~Accordingly, the Project would have a less than significant impact~~ due to a violation of air quality standards for an ozone precursor (NO_X), a contribution to air quality violations for ozone, ~~or~~ and a cumulatively considerable net increase of ~~a criteria pollutant~~ozone precursors ~~for which the SCAB has non-attainment~~represent significant and unavoidable impacts of the proposed Project on both a direct and cumulatively-considerable basis for which additional feasible mitigation is not available.

Table 4.2-17 Localized Significance Summary – Operations (With Mitigation)

Operation	CO		NO_2		PM_{10}		$PM_{2.5}$
	Averaging Time						
	1-Hour	8-Hour	1-Hour	Annual	24-Hours	Annual	24-Hours
Peak Day Localized Emissions	0.05	0.02	0.01	0.0003	1.54	0.35	1.48
Background Concentration[A]	2	1.4	0.05	0.01			
Total Concentration	**2.05**	**1.42**	**0.06**	**0.01**	**1.54**	**0.35**	**1.48**
SCAQMD Localized Significance Threshold	20	9	0.18	0.03	2.5	1	2.5
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

[A]Highest concentration from the last three years of available data
Note: PM_{10} and $PM_{2.5}$ concentrations are expressed in $\mu g/m^3$. All others are expressed in ppm

(Urban Crossroads, 2016a, Table 3-6)~~(Urban Crossroads, 2016a, Table 3-5)~~

~~Table 4.2-15~~Table 4.2-18 Summary of Peak Operational Emission (With Mitigation)

Operational Activities – Summer Emissions	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Operational Equipment	0.37	2.17	13.52	0.03	0.05	0.05
Mobile Sources	2.81	47.74	30.28	0.13	3.84	1.53
Fugitive Dust Material Processing/Blasting	--	--	--	--	9.94	2.08
Asphalt Batch Plant Emissions	12.32	19.58	99.49	4.15	11.61	11.19
Maximum Daily Emissions	**15.50**	**69.49**	**143.29**	**4.31**	**25.44**	**14.85**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**NO**	**YES**	**NO**	**NO**	**NO**	**NO**

Operational Activities – Winter Emissions	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Operational Equipment	0.37	2.17	13.52	0.03	0.05	0.05
Mobile Sources	2.95	49.51	34.21	0.13	3.84	1.53
Fugitive Dust Material Processing/Blasting	--	--	--	--	9.94	2.08
Asphalt Plant Emissions	12.32	19.58	99.49	4.15	11.61	11.19
Maximum Daily Emissions	**15.64**	**71.26**	**147.22**	**4.31**	**25.44**	**14.85**
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**NO**	**YES**	**NO**	**NO**	**NO**	**NO**

(Urban Crossroads, 2016a, Table 3-4)~~*Source: Urban Crossroads, 2015b, Table 3-4*~~

4.3 BIOLOGICAL RESOURCES

This Subsection assesses the Project's potential to impact sensitive biological resources. The analysis in this Subsection is based primarily on information contained in a site-specific technical report prepared by Alden Environmental, Inc. (hereafter, "Alden") titled, "Biological Technical Report for the Nichols Mine Project" and dated ~~November 9, 2015~~ June 08, 2016. The technical report is included as *Technical Appendix D* to this EIR (Alden, 2016) ~~(Alden, 2015)~~.

Because the Project evaluated in this EIR and as described in EIR Section 3.0, *Project Description*, involves a proposed 24-acre expansion of the Nichols Canyon Mine physical disturbance area, which is the only area of the site containing biological resources that could be directly affected by the Project~~biological impacts~~, the information and analyses presented herein and in *Technical Appendix D* are focused on the +/- 24-acre EDA and a 100-foot buffer surrounding the EDA to the north and northeast (hereafter, the "Study Area"). For purposes of discussion within this Subsection, "EDA" refers to the approximately 24-acre Expanded Disturbance Area, while "Study Area" refers to both the EDA and the 100-foot buffer surrounding the EDA. Because the Project would not authorize any new physical disturbances within the remaining portions of the Project site as compared to the Mine's existing entitlements, this Subsection and the Project's Biological Technical Report are focused on new impacts that could occur as a result of the Project. The biological resources evaluation included the review of relevant literature, field surveys, and mapping of vegetation communities. ~~(Alden, 2015, pp. 1-2)~~ The field study performed by Alden included the following field surveys within the Study Area: 1) vegetation mapping; 2) a spring rare plant survey; 3) a jurisdictional delineation; 4) Quino checkerspot butterfly (QCB), and coastal California gnatcatcher (CAGN) protocol surveys; and 5) habitat assessment for the Stephen's kangaroo rat (SKR) and the Burrowing Owl (BUOW). (Alden, 2016, pp. 1-2)~~(Alden, 2015, p. 2)~~ Refer to *Technical Appendix D* for detailed descriptions of the survey dates, scope of study, and research and survey methodologies used for the biological resources assessment. Additionally, delineation of jurisdictional areas within the Study Area was performed on August 7, 2015, by VCS Environmental (VCS), the results of which are documented in the Project's Biological Technical Report (*Technical Appendix D* to this EIR). (Alden, 2016, p. 4)~~(Alden, 2015, p. 4)~~

4.3.1 SCOPE OF REVIEW

The Nichols Canyon Mine, as discussed in Section 2.0, *Environmental Setting*, is an existing, ongoing surface mining operation operating pursuant to vested mining rights and an approved reclamation plan (RP 2006-01A1), which was analyzed in a prior MND Addendum. Although the City has chosen to prepare an EIR for the Project here, the scope of review addresses those impacts resulting from the Project as described in Section 3.0, *Project Description*, and not impacts related to existing, approved operations, which form the environmental baseline, as discussed in Subsection 2.7, *Existing Physical Site Condition*. As disclosed in Section 3.0, *Project Description*, an asphalt batch plant is an existing approved on-site use pursuant to Conditional Use Permit CUP 2014-07 approved by the City of Lake Elsinore in 2015. Thus, the batch plant has already been approved by the City along with a CEQA environmental compliance document that was not challenged by any third party. During the public comment period on the proposed Project's DEIR, several third parties incorrectly asserted that the DEIR failed to adequately analyze the proposed Project's impacts. Several of these commentators also incorrectly claimed that the batch plant's impacts needed to be re-analyzed as part of this EIR. While the City disagrees with these claims because the batch plant has already been approved under CUP 2014-07 and previously evaluated in an approved MND Addendum that was not challenged, in an

effort to provide a conservative and overly-inclusive analysis of the Project's impacts on the environment (as opposed to potentially underestimating the Project's impacts), and to remove this issue from being a point of contention, this EIR includes analyses of the batch plant's impacts in all relevant and CEQA Appendix G topics. However, the construction and operation of an asphalt batch plant on the site is not relevant to the issue of Biological Resources because the asphalt batch plant site is located in an area previously subject to disturbance and mining activity, and would not impact sensitive biological resources. As part of reclamation activities at the Mine, the asphalt batch plant would be removed from the Project site. ~~Accordingly, this Subsection analyzes biological impacts related to the Project specifically~~ This Subsection does not analyze biological impacts related to existing, approved mining operations because the approved mining operations are a baseline condition and not a part of the proposed Project.

4.3.2 EXISTING CONDITIONS

The Project site, which for purposes of evaluating direct physical impacts to the environment, comprises only the +/- 24-acre EDA, consists of a large hill in the northeast portion of the Nichols Canyon Mine property that transitions down to lower, flatter areas to the west and south. Elevations of the existing Mine range from about 1,320 to 1,840 feet above mean sea level (amsl), while elevations in the Study Area range from about 1,345 amsl to 1,840 amsl. The soil types within the Study Area consist of Cieneba rocky sandy loam (15 to 50 percent slopes) and Hanford coarse sandy loam (two to eight percent slopes). Much of the western portion of the Nichols North site is an active mine area. The remainder of the Mine (both north and south of Nichols Road) contains some scattered mining activity. Temescal Canyon High School ~~borders the Mine property~~is located to the south, residential areas are located to the east, undeveloped land is located to the north, and I-15 is located to the west. (Alden, 2016, p. 9)~~(Alden, 2015, p. 8)~~

A. Vegetation Communities

1. Vegetation Communities Present within the Study Area

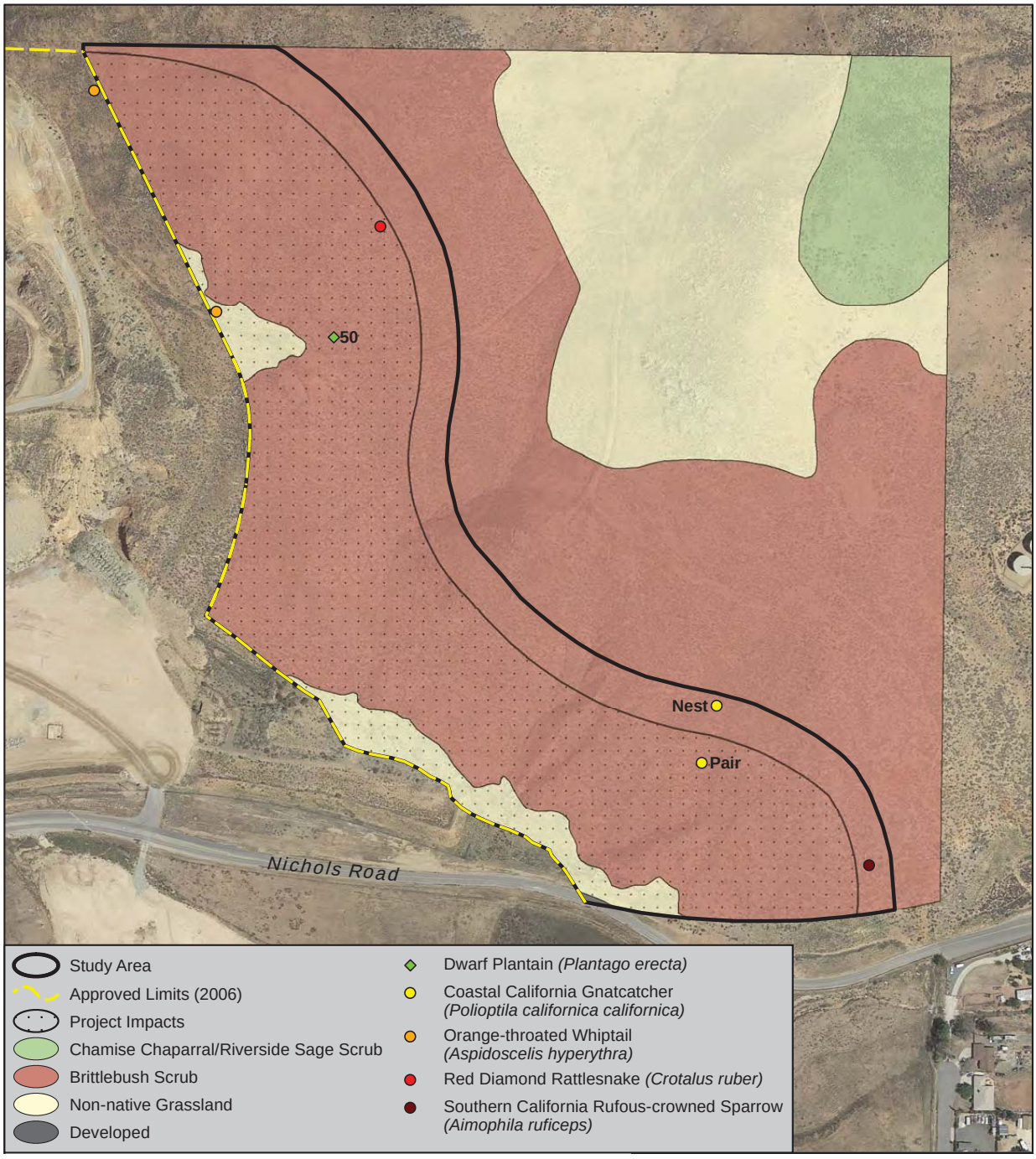
Alden conducted a spring rare plant survey and vegetation mapping within the Study Area on April 7, 2015. Three vegetation communities were identified within the Study Area, each of which is described below. The vegetation communities observed within the Study Area are illustrated on Figure 4.3-1, *Biological Resources,* and are summarized in Table 4.3-1, *Existing Vegetation Communities.*

Table 4.3-1 Existing Vegetation Communities

Vegetation Communities	Acreage
Upland Vegetation Communities[1]	
Brittlebush scrub	27.1
Non-native grassland	2.1
Other Areas	
Developed Land	< 0.1
Total	**29.2**

[1]Upland acreages rounded to 0.1 acre

[2]Table 4.3-1 depicts existing vegetation communities within the Project's biological Study Area, only. The Study Area is the +/- 24 acre EDA and 100 foot buffer surrounding the EDA.
(Alden, 2016, Table 2)~~(Alden, 2015, Table 2)~~



Source(s): Alden Environmental (08-27-2015)

NOT TO SCALE

Figure 4.3-1

BIOLOGICAL RESOURCES

- Brittlebush Scrub. Brittlebush scrub occupies dry sites characterized by shallow soils. This habitat is dominated by brittlebush. Brittlebush scrub occurs throughout the majority of the Study Area, covering 27.1 acres. In addition to brittlebush, California sagebrush is common throughout this community in the Study Area. (Alden, 2016, p. 9)~~(Alden, 2015, p. 9)~~ Brittlebush scrub is a subset of coastal sage scrub. Brittlebush scrub is a common, non-sensitive component of coastal sage scrub habitat in the region. Brittlebush scrub is called out separately in this discussion because of its predominance in the Study Area, however, it is still treated as coastal sage scrub habitat.

- Non-native Grassland. Approximately 2.1 acres of non-native grassland occurs within the Study Area. Characteristic species within this vegetation community include wild oats (*Avena* spp.), foxtail chess (*Bromus madritensis* ssp. *Rubens*), ripgut grass (*B. diandrus*), filaree (*Erodium* spp.), and mustard (*Brassica* sp.). These grasslands serve as valuable raptor foraging habitat. (Alden, 2016, p. 10)~~(Alden, 2015, p. 9)~~

- Developed Land. Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation. Developed area includes a portion of Nichols Road in the southwestern corner of the Study Area. Less than 0.1 acre of developed area occurs within the Project site. (Alden, 2016, p. 10)~~(Alden, 2015, p. 9)~~

2. Sensitive Vegetation Communities

Sensitive vegetation communities are considered rare within the region or sensitive by the California Department of Fish and Wildlife (CDFW). These communities in any form are considered sensitive because they have been historically depleted, are naturally uncommon, or support sensitive species. The Study Area supports two sensitive vegetation communities: brittlebush scrub (a non-sensitive component of coastal sage scrub treated in this EIR as coastal sage scrub) and non-native grassland. (Alden, 2016, p. 11)~~(Alden, 2015, p. 10)~~

B. Sensitive Plant Species

Sensitive plant species are considered rare, a characteristic that may be based on three distributional traits: geographic range, habitat specificity, or population size. A species that exhibits a small or restricted geographic range are geographically rare. A species may be more or less abundant but occur only in very specific habitats. Lastly, a species may be widespread but exist naturally in small populations. Alden observed 56 plant species during the rare plant survey conducted in 2015 within the Study Area, none of which are sensitive species. A list of plant species observed or with the potential to occur within the Study Area is included as Appendix D of the Project's Biological Technical Report (*Technical Appendix D* to this EIR). (Alden, 2016, pp 10-11) ~~(Alden, 2015, pp 10-11)~~

C. Sensitive Animal Species

Alden observed or detected 46 animal species in the Study Area during the 2015 on-site surveys. A list of these animal species is presented in Appendix E of the Project's Biological Technical Report (*Technical Appendix D* to this EIR). Four of these species are considered sensitive and are described below (Alden, 2016, pp. 14) ~~(Alden, 2015, pp. 13-14)~~.

- Coastal California Gnatcatcher (*Polioptila californica californica*). The coastal California gnatcatcher is Federally Listed as Threatened and is identified as a California Species of Special Concern. Coastal sage scrub provides habitat for the coastal California gnatcatcher within the Study Area. The Federal Endangered Species Act (FESA) designated Critical Habitat for the coastal California gnatcatcher over the entire Project Study Area (Alden, 2016, p. 7). ~~Two individual~~ One pair of gnatcatchers were observed by Alden on three separate occasions in the northwest portion of the Study Area. The pair was observed with two juveniles (i.e., a family unit) during the first two site visits. Two immature gnatcatchers were also observed nearby during the third site visit, and were presumed to be the juveniles from the first two site visits. (Alden, 2016, p. 14)~~(Alden, 2015, p. 13)~~

- Orange-throated Whiptail (*Aspidoscelis hyperythra*). The orange-throated whiptail is a California Species of Special Concern. Habitat for this species includes Chaparral, sage scrub, and open edges of riparian areas. Two individuals were observed by Alden on separate occasions in the northwestern portion of the Study Area. (Alden, 2016, p. 14)~~(Alden, 2015, p. 13)~~

- Red Diamond Rattlesnake (*Crotalus ruber*). The red diamond rattlesnake is a California Species of Special Concern. Habitat for this species includes Chaparral, woodland, grassland, and desert areas, primarily in rocky areas and dense vegetation. One individual was spotted by Alden in the northwestern portion of the Study Area. (Alden, 2016, p. 14)~~(Alden, 2015, p. 14)~~

- Southern California Rufous-crowned Sparrow (*Aimophila ruficeps*). The southern California rufous-crowned sparrow is included on the State of California Watch List. Habitat for this species includes rocky slopes, especially where a relatively open shrub cover dominated by California sagebrush is interspersed with grassy areas. One individual of this species was identified by Alden during site surveys in the southeastern corner of the Study Area. (Alden, 2016, p. 14)

Additional sensitive animal species that were not observed or detected but have potential to occur in the Study Area are listed in Appendix E of the Project's Biological Technical Report (*Technical Appendix D* to this EIR). Of those animal species not observed but with the potential to occur and that are federally listed as endangered include the quino checkerspot butterfly and Stephens' kangaroo rat. The sensitive (non-listed) western burrowing owl also has the potential to occur. The quino checkerspot butterfly was not observed during focused surveys. The h~~H~~abitat assessments for the Stephens' kangaroo rat ~~and the burrowing owl were~~ was negative. A burrowing owl habitat assessment was conducted as part of the initial vegetation mapping. Per the CDFW's *Staff Report on Burrowing Owl Mitigation*: "A habitat assessment is the first step in the evaluation process and will assist investigators in determining whether or not occupancy surveys are needed" (CDFW, 2012, p. 5). The habitat assessment followed the Staff Report requirements and included, for example, identifying potential habitat on-site (vegetation type, structure, height, etc.) and conducting a site survey for burrowing owls, potential burrowing owl burrows, and any recent or historic (within the last 3 years) sign of burrowing owls (e.g., pellets, pretty remains, whitewash). No signs of owls were observed and the Study Area was determined to be unsuitable to support the burrowing owl; therefore, no protocol surveys were required to demonstrate that the

burrowing owl is not present within the Study Area. The remaining sensitive animal species identified in *Technical Appendix D* as having the potential to occur are not federal- or state-listed and are not anticipated to occur in the Study Area due to unsuitable habitat conditions. (Alden, 2016, pp. 5, 22)~~(Alden, 2015, p. 22)~~

D. Jurisdictional Waters and Wetlands

No wetlands occur in the Study Area. (Alden, 2016, p. 10)~~(Alden, 2015, p. 10)~~ Jurisdictional waters that occur in the Study Area include non-wetland Waters of the United States (WUS) and Waters of the State (WS). Each is discussed below.

1. Non-Wetland Waters of the United States (WUS)

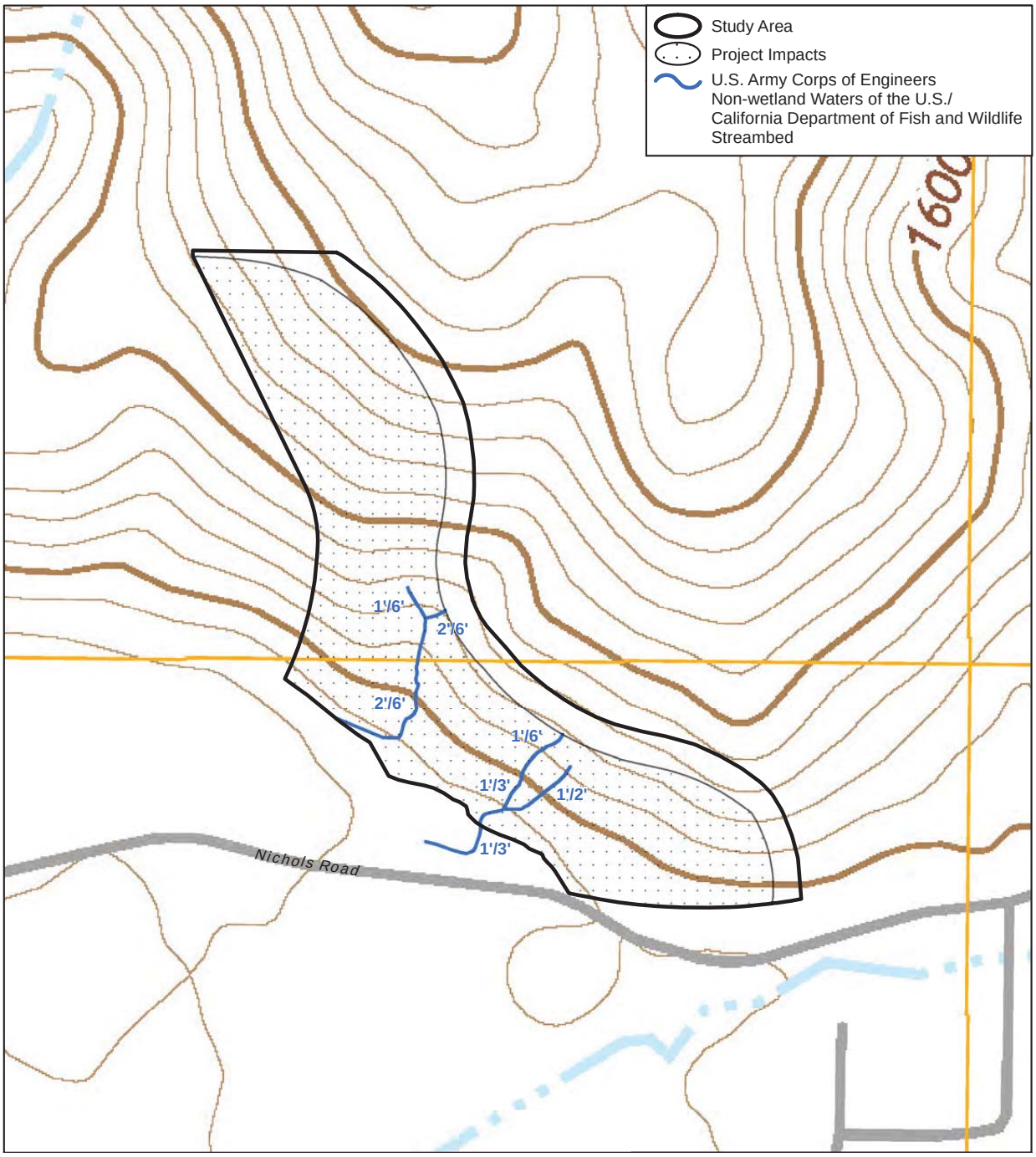
While not meeting the three necessary criteria to be considered wetlands under the federal Clean Water Act, non-wetland WUS protect the chemical and physical functions of the nation's wetlands, and for those reasons, are considered sensitive. Non-wetland WUS include 0.05 acre of ephemeral drainage in the central portion of the Study Area, which is considered jurisdictional by the U.S. Army Corps of Engineers (Corps). Refer to Figure 4.3-2, *Jurisdictional Features*, which depicts the location of the ephemeral drainage within the Study Area. (Alden, 2016, p. 10)~~(Alden, 2015, p. 10)~~

2. Waters of the State

The California Fish and Game Code provides specific protection for WS (both wetlands and non-wetlands) when an activity would alter the flow or change or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, and/or lake as such an activity may substantially adversely affect fish and wildlife resources conserved, protected, and managed by CDFW. The Corps jurisdictional drainage in the center of the Study Area is also considered to be CDFW jurisdictional. A total of 0.17 acre of CDFW streambed occurs on the Project site, as depicted in Figure 4.3-2. (Alden, 2016, p. 10)~~(Alden, 2015, p. 10)~~

E. Regulatory Setting

The Study Area is subject to state and federal and City of Lake Elsinore regulations associated with a number of regulatory programs. These programs often overlap and were developed to protect natural resources, including: state- and federally-listed plants and animals; aquatic resources including rivers and creeks; ephemeral streambeds; wetlands and areas of riparian habitat; other special-status species which are not listed as threatened or endangered by the state or federal governments; and other special-status vegetation communities. The federal government administers non-marine plant and wildlife related regulations through the United States Fish and Wildlife Service (USFWS), while WUS are administered by the Corps. California law regarding wetland, water-related, and wildlife issues is administered by the CDFW. The City administers the regulations of CEQA through the Natural Community Conservation Planning (NCCP) program and guidelines of the Final Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), although the Project site is exempted from the MSHCP pursuant to a Memorandum of Understanding (MOU) and Settlement Agreement between the prior landowner and Riverside County Redevelopment Agency in 2004. The biological resources located in the Study Area are subject to regulatory administration by the federal government, State of California, and City of Lake Elsinore as detailed below.



Source(s): Alden Environmental (08-27-2015)

NOT TO SCALE

Figure 4.3-2

JURISDICTIONAL FEATURES

1. Federal Regulations

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973 designates threatened and endangered animals and plants and provides measures for their protection and recovery. "Take" of listed animal species and of listed plant species in areas under federal jurisdiction is prohibited without obtaining a federal permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Harm includes any act that actually kills or injures fish or wildlife, including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife. Activities that damage the habitat of (i.e., harm) listed wildlife species require approval from the USFWS for terrestrial species. The FESA also generally requires determination of Critical Habitat for listed species. If a project involves a federal action potentially affecting Critical Habitat, the federal agency would be required to consult with USFWS. Critical habitat for the coastal California gnatcatcher has been designated by the USFWS over the entire Study Area. (Alden, 2016, p. 6)~~(Alden, 2015, p. 6)~~

FESA Section 7 and Section 10 provide two pathways for obtaining authority to take listed species. Under Section 7 of the FESA, a federal agency that authorizes, funds, or carries out a project that "may affect" a listed species or its Critical Habitat must consult with USFWS. Under Section 10 of the FESA, private parties with no federal nexus (i.e., no federal agency will authorize, fund, or carry out the project) may obtain an Incidental Take Permit to harm listed species incidental to the lawful operation of a project. (Alden, 2016, p. 6)~~(Alden, 2015, p. 6)~~

Under FESA Section 7, federal agencies must consult with the USFWS when any action the agency carries out, funds, or authorizes (such as through a permit) may affect a listed endangered or threatened species. This process usually begins as informal consultation. A federal agency, in the early stages of project planning, approaches the USFWS and requests informal consultation. Discussions between the two agencies may include what types of listed species may occur in the proposed action area, and what effect the proposed action may have on those species. Formal consultation may last up to 90 days, after which the USFWS would prepare a biological opinion on whether the proposed activity would jeopardize the continued existence of a listed species. The USFWS has 45 days after completion of formal consultation to write the opinion. (USFWS, 2016)

In making a determination on whether an action will result in jeopardy, the USFWS begins by looking at the current status of the species, or "baseline." Added to the baseline are the various effects – direct, indirect, interrelated, and interdependent – of the proposed federal action. The USFWS also examines the cumulative effects of other non-federal actions that may occur in the action area, including state, tribal, local, or private activities that are reasonably certain to occur in the project area. (USFWS, 2016)

The USFWS's analysis is then measured against the definition of jeopardy. Under the FESA, jeopardy occurs when an action is reasonably expected, directly or indirectly, to diminish a species' numbers, reproduction, or distribution so that the likelihood of survival and recovery in the wild is appreciably reduced. When the USFWS makes a jeopardy determination, the USFWS also will provide the consulting federal agency with reasonable and prudent alternative actions, which likely would be developed with input from the Corps. Alternatives must: (USFWS, 2016)

- be consistent with the purpose of the proposed project
- be consistent with the federal agency's legal authority and jurisdiction
- be economically and technically feasible
- in the USFWS's opinion, avoid jeopardy

In some cases, the USFWS may find that an action may adversely affect a species, but not jeopardize its continued existence. When this happens, the USFWS prepares an incidental take statement for the proposed project. Under most circumstances, the FESA prohibits take, which is defined as harming (includes killing) or harassing a listed species. Incidental take – take that results from a federal action but is not the purpose of the action – may be allowed when the USFWS approves it through an incidental take statement. The statement includes the amount or extent of anticipated take due to the federal action, reasonable and prudent measures to minimize the take, and terms and conditions that must be observed when implementing those measures. (USFWS, 2016)

After the USFWS issues its biological opinion, the federal agency then decides how to proceed. With an opinion that determines adverse effects, the federal agency is be able to adopt the reasonable and prudent measures outlined in an incidental take statement and proceed with the project. (USFWS, 2016)

If the USFWS makes a jeopardy determination, the federal agency has several options: (USFWS, 2016)

- implement one of the reasonable and prudent alternatives;
- modify the proposed project and consult again with the USFWS;
- decide not to undertake (or fund, or authorize) the project;
- disagree with the opinion and proceed;
- apply for an exemption.

The federal agency may apply for an exemption if it believes it cannot comply with the requirements of the biological opinion. The application is considered by the Endangered Species Committee, comprised of Cabinet-level members from various federal agencies and administered by the Interior Department's Assistant Secretary for Policy, Management and Budget. To be considered by the Committee for an exemption, a federal agency must have carried out the consultation in good faith and made a reasonable effort to develop and consider modifications or alternatives to the proposed action. It must also have conducted any required biological assessment, and refrained from making any irreversible or irretrievable commitment of resources to the project during consultation. (USFWS, 2016)

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA; 16 U.S. Code Sections 703-711) includes provisions for protection of migratory birds, including the non-permitted take of migratory birds. The MBTA regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50 Code of Federal Regulations § 10.13. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many others. Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country,

and is enforced in the United States by the USFWS. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors). (Alden, 2016, p. 6)~~(Alden, 2015, p. 6)~~

Clean Water Act

Under § 404 of the Clean Water Act, the Corps is charged with regulating the discharge of dredge and fill materials into jurisdictional WUS. The terms "WUS" and "jurisdictional waters" have a broad meaning that includes special aquatic sites, such as wetlands. Corps wetland boundaries are determined using three criteria (vegetation, hydrology, and soils) established for wetland delineations, as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. (Alden, 2016, p. 6)~~(Alden, 2015, p. 6)~~

WUS, as defined by regulation and refined by case law include: (1) the territorial seas; (2) coastal and inland waters, lakes, rivers, and streams that are navigable WUS, including their adjacent wetlands; (3) tributaries to navigable WUS, including adjacent wetlands; and (4) interstate waters and their tributaries, including adjacent isolated wetlands and lakes, intermittent and ephemeral streams, prairie potholes, and other waters that are not a part of a tributary system to interstate waters or navigable WUS, the degradation or destruction of which could affect interstate commerce. (Alden, 2016, pp. 6-7)~~(Alden, 2015, p. 6)~~

Section 401 of the Clean Water Act requires that any applicant for a federal license or permit to conduct any activity that may result in a discharge to WUS must obtain a Water Quality Certification, or a waiver thereof, from the state in which the discharge originates. In California, the Regional Water Quality Control Board (RWQCB) issues Water Quality Certifications. (Alden, 2016, pp. 6-7)~~(Alden, 2015, pp. 6-7)~~

2. State Regulations

State of California Endangered Species Act

California's Endangered Species Act (CESA) established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats. Under State law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. CESA authorizes that private entities may "take" plant or wildlife species listed as endangered or threatened under the federal ESA and CESA, pursuant to a federal Incidental Take Permit if the CDFW certifies that the incidental take is consistent with the CESA (Fish & Game Code § 2080.1[a]). For State-only listed species, § 2081 of the CESA authorizes the CDFW to issue an Incidental Take Permit for a State listed threatened or endangered species if specific criteria are met. (Alden, 2016, p. 7)~~(Alden, 2015, p. 7)~~

Native Plant Protection Act

§ 1900-1913 of the California Fish and Game Code (Native Plant Protection Act) direct the CDFW to carry out the Legislature's intent to "…preserve, protect, and enhance endangered or rare native plants of this state." The Native Plant Protection Act gives the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take. (Alden, 2016, p. 7)~~(Alden, 2015, p. 7)~~

California Fish and Game Code

The California Fish and Game Code provides specific protection and listing for several types of biological resources. § 1600 of California Fish and Game Code requires a Streambed Alteration Agreement for any activity that would alter the flow, change or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, and/or lake. Typical activities that require a Streambed Alteration Agreement include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement. Notification is required prior to any such activities, and CDFW will issue a Streambed Alteration Agreement with any necessary mitigation to ensure protection of State fish and wildlife resources. (Alden, 2016, p. 8)~~(Alden, 2015, p. 7)~~

Pursuant to California Fish and Game Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Raptors and owls and their active nests are protected by California Fish and Game Code § 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW. § 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA. These regulations could require that construction activities (particularly vegetation removal or construction near nests) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFW and/or USFWS. (Alden, 2016, p. 8)~~(Alden, 2015, p. 8)~~

Porter-Cologne Water Quality Control Act of 1970

The Porter-Cologne Water Quality Control Act of 1970 grants the State Water Resource Control Board and its regional offices power to protect water quality and is the primary vehicle for implementation of the State's responsibilities under § 401 of the Clean Water Act. The Porter-Cologne Act grants the State Water Resource Control Board authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. (Alden, 2016, p. 8)~~(Alden, 2015, p. 8)~~

3. Local and Regional Regulations

Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP)

The Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP) was prepared under the direction of the Riverside County Habitat Conservation Agency (RCHCA) Board of Directors, in consultation with USFWS and CDFW. The City of Lake Elsinore is a member agency of the RCHCA. The 30-year SKR HCP was designed to acquire and permanently conserve, maintain and fund the conservation, preservation, restoration, and enhancement of Stephens' kangaroo rat-occupied habitat. The SKR HCP covers approximately 534,000 acres within the member jurisdictions and includes an estimated 30,000 acres of occupied Stephens' kangaroo rat habitat. The SKR HCP requires members to preserve and manage 15,000 acres of occupied habitat in seven Core Reserves encompassing over 41,000 acres.

On May 3, 1996, the USFWS issued a permit to the Riverside County Habitat Conservation Agency to incidentally take the federally endangered Stephens' kangaroo rat (*Dipodomys stephensi*). Similarly, the CDFW issued a California Endangered Species Act Management Authorization for Implementation of the Stephens' kangaroo rat on May 6, 1996. To date, more than $50 million has

been dedicated to the establishment and management of a system of regional preserves designed to ensure the survival of SKR in the plan area. This effort resulted in the permanent conservation of approximately 50% of the SKR-occupied habitat remaining in the HCP area. Through direct funding and in-kind contributions, SKR habitat in the regional reserve system is managed to ensure its continuing ability to support the species. Core reserves were deemed complete in December of 2003.

City of Lake Elsinore Tree Preservation and Palm Tree Preservation Ordinances

The City of Lake Elsinore Municipal Code Chapter 5.120, *Tree Preservation*, creates and establishes a City Tree Committee that has the responsibility to study, investigate, counsel and develop and/or update annually, and administer a written plan for the care, preservation, pruning, planting, replanting, removal or disposition of trees and shrubs in parks and in the public right-of-way. Additionally, City Municipal Code Chapter 5.116, *Significant Palm Trees*, provides a mechanism to regulate the removal, destruction, and relocation of significant palms within the City limits. (Lake Elsinore, 2015)

4.3.3 BASIS FOR DETERMINING SIGNIFICANCE

Environmental impacts to biological resources are assessed using impact significance thresholds criteria, which reflect the policy statement contained in CEQA § 21001(c) of the Public Resources Code. Accordingly, the State Legislature has established it to be the policy of the State of California to:

> *"Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities..."*

In the development of thresholds of significance for impacts to biological resources, CEQA provides guidance primarily in § 15065, Mandatory Findings of Significance, and the CEQA Guidelines, Appendix G, Environmental Checklist Form. CEQA Guidelines § 15065(a) states that a project may have a significant effect where:

> *"The project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or wildlife community, reduce the number or restrict the range of an endangered, rare, or threatened species ..."*

Therefore, for the purpose of analysis in this EIR, the Project would result in a significant impact to biological resources if the Project or any Project-related component would:

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

b. *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.*

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

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites

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

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.3.4 IMPACT ANALYSIS

Threshold a.	***Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***

A. Direct Impacts to Biological Resources

Implementation of the Project would result in the expansion of approved mining limits by approximately 24 acres, while also reducing the allowable annual tonnage and adjusting the allowed hours of operation (as discussed in further detail in EIR Section 3.0, *Project Description*). Within the EDA, existing vegetation would be removed, the area would be mined, and all existing biological resources would be directly impacted. Provided below is a discussion of the Project's direct and indirect impacts to species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

1. Impacts to Sensitive Plant Species

Implementation of the Project would not impact any sensitive plant species because no sensitive species were observed in the Study Area during field surveys and the potential for additional sensitive plant species to occur in the Study Area is low. (Alden, 2016, p. 21)~~(Alden, 2015, p. 21)~~. The potential for additional federal- or state-listed plants to occur in the Study Area is very low because suitable habitat/soils are not present. The loss of other non-listed plant species would be considered less than significant due to their low levels of sensitivity. (Alden, 2016, p. 22)~~(Alden, 2015, p. 22)~~

2. Impacts to Sensitive Animal Species

Implementation of the Project would ~~impact the~~remove habitat ~~of~~for the federally listed threatened coastal California gnatcatcher in the EDA. Critical Habitat for the coastal California gnatcatcher habitat has been identified by the Federal Endangered Species Act across the entire Project site (Alden, 2016, p. 6). Additionally, there is a potential for direct impacts to the coastal California gnatcatcher if any individuals were to be present within the area subject to blasting during blasting activities within the EDA. Impacts to this species are considered significant before mitigation. Given that the Project site is not subject to the Western Riverside County MSHCP, there is no USFWS take authorization for impacts to the listed coastal California gnatcatcher. As such, take authorization would require a Section 7 Consultation between the Corps and the USFWS. The Corps would request the consultation with

the USFWS as part of the permitting process for the jurisdictional impacts on-site. The USFWS would then analyze the Project per the FESA and issue a Biological Opinion (BO) for the Project. The BO would be required to provide the authorization to impact ("Take") the occupied coastal California gnatcatcher~~CAGN~~ habitat. No other federal- or state-listed animal species would be directly impacted by the Project. Impacts to the orangethroat whiptail, red-diamond rattlesnake, Southern California rufous-crowned sparrow are considered less than significant because of these species' low sensitivity. (Alden, 2016, pp. 21-22)~~(Alden, 2015, pp. 21-22)~~

Of those animal species not observed but with the potential to occur in the Study Area, potential impacts to the federal-listed endangered quino checkerspot butterfly, Stephens' kangaroo rat, and the sensitive (non-listed) western burrowing owl, should they be present at the time that mining activities in the EDA commence, would be considered significant. The quino checkerspot butterfly was not observed during focused surveys and habitat assessments for the Stephens' kangaroo rat and the burrowing owl were negative. As previously noted in Subsection 4.3.2C, no signs of owls were observed and the site was determined to be unsuitable to support the burrowing owl; therefore, no protocol surveys were required to demonstrate that owls are not present and that impacts to the burrowing owl would not occur due to mining activities within the EDA. The chance that the EDA could become occupied by Quino checkerspot butterfly, Stephens' kangaroo rat, or the burrowing owl is considered "very low" by the Project's Biologist, Alden Environmental, in particular due to the noise and activity related to ongoing nearby surface mining operations; thus, Project impacts to sensitive animal species with the potential to occur on-site but that were not observed on-site during field surveys would be less than significant requiring no mitigation. The remaining sensitive animal species with the potential to occur are not federal- or state- listed and are very unlikely to occur in the Study Area due to unsuitable habitat conditions. Because of their low level of sensitivity, impacts to other potentially occurring species would be considered less than significant if present in the Study Area. (Alden, 2016, p. 22)~~(Alden, 2015, p. 22)~~

3. Vegetation Communities

As depicted in Table 4.3-2, *Project Impacts to Vegetation Communities*, approximately 23.5 acres of the Study Area would be physically impacted with implementation of the Project. The impacted areas include 21.4 acres of brittlebush scrub, 2.1 acres of non-native grassland, and less than 0.1 acre of developed land. The less than 0.1 acre of developed land would be a less-than-significant direct impact, because this habitat type does not provide habitat for candidate, sensitive, or special status species.

Table 4.3-2 Project Impacts to Vegetation Communities

Vegetation Communities[1]	Acreage
Brittlebush scrub	21.4
Non-native grassland	2.1
Developed	< 0.1
Total Impacts:	**23.5**

[1]Upland acreages rounded to 0.1 acre

[2]Table 4.3-2 depicts existing vegetation communities impacted by the proposed Project within the Project's biological Study Area, only. The Study Area is the +/- 24 acre EDA and 100 foot buffer surrounding the EDA.
(Alden, 2016, Table 5)~~(Alden, 2015, Table 5)~~

However, impacts to 21.4 acres of brittlebush scrub (treated in this EIR as coastal sage scrub) would reduce habitat for sensitive species, including, but not limited to, the coastal California gnatcatcher; this is a significant impact for which mitigation would be required. Although non-native grassland does not provide habitat for candidate, sensitive, or special status species, impacts to 2.1 acres of non-native grassland would be considered a significant impact on a cumulatively considerable basis if it were to occur during the breeding season for MBTA-protected birds and raptors (February 1 to September 15), as such disturbance would indirectly impact the foraging habitat of raptor and bird species protected by the MBTA. (Alden, 2016, pp. 21-22)~~(Alden, 2015, pp. 21-22)~~

B. *Indirect Impacts to Biological Resources*

Potential indirect impacts consist of secondary effects of the Project, including habitat insularization, drainage/water quality, lighting, noise, exotic plant species, reduction of area for raptor foraging/nesting, and nuisance animal species. The magnitude of an indirect impact can be the same as a direct impact, but the effect usually takes a longer time to become apparent. Many of these potential indirect impacts are associated with urban development and would not be significant for the Nichols Canyon Mine Project. Potential indirect impacts to sensitive plant and animal species and their habitats are discussed below. (Alden, 2016, p. 22)~~(Alden, 2015, p. 22)~~

1. *Habitat Insularization*

As discussed in *Technical Appendix D*, the Project was assessed by Alden for its potential to cause indirect impacts regarding habitat insularization, which is the fragmentation of large habitat areas into smaller "islands" effectively isolated from one another. Such fragmentation presents barriers to wildlife movement and breeding, splits animal and plant populations, and increases edge effects. Often, habitat insularization is associated with local species extirpation, since smaller habitat areas support relatively fewer species than larger ones. The proposed Project would result in the expansion of an existing Mine's permitted disturbance area by approximately 24 acres. Brittlebush scrub and non-native grassland within the areas of the Mine site that would not be impacted by the Project would continue to be connected to open space areas to the east and north, and no "island" effect would occur as a result of the proposed Project. Accordingly, indirect impacts due to habitat insularization would be less than significant. (Alden, 2016, p. 22)~~(Alden, 2015, p. 22)~~

2. *Drainage/Water Quality*

Water runoff is often associated with increased erosion, sedimentation, and pollution, which could significantly impact water quality in adjacent sensitive habitats. The use of structural and non-structural Best Management Practices (BMPs) and Best Available Control Technology (BACT), as required by the Project's proposed Surface Mining Permit (SMP) No. 2015-01, would reduce potential impacts associated with water runoff associated with expanded mining activities. The operation of the Mine complies with the Standard Urban Stormwater Management Plan and Municipal Stormwater Permit criteria of the RWQCB and City of Lake Elsinore, and as such, erosion and water quality pollution would be minimized and would not cause indirect impacts to biological resources. Refer to EIR Section 4.7, *Hydrology and Water Quality*, for a complete discussion of the Project's potential impacts associated with drainage/water quality. (Alden, 2016, p. 22)~~(Alden, 2015, p. 23)~~

3. Lighting

Night lighting can expose ~~adjacent~~ wildlife species using adjacent habitat to an unnatural light regime, may alter their behavior patterns, and consequently result in a loss of species diversity. No additional sources of light would occur with the Project. Lighting for activity within the EDA would be supplied from current lighting elements on-site, which are portable and would be moved into the EDA as mining activities progress, and~~; however,~~ the existing lighting associated with the Mine's operation would occur over three more ~~longer~~ hours each day per the proposed changes to the Mine's operating hours. Because no new lighting elements would be introduced as a result of the Project, and because lighting already occurs under existing conditions adjacent to open space areas during evening and early morning operations, the extended time period of existing lighting would have a less-than-significant indirect impact on adjacent wildlife communities. (Alden, 2016, p. 23)~~(Alden, 2015, p. 23)~~

4. Noise

Mining-related noise has the potential to indirectly impact wildlife. Noise-related impacts would be considered significant if sensitive species were displaced from their nests or territories and failed to breed. Indirect noise impacts to breeding gnatcatchers could occur if mining activities create noise in excess of 60 decibels (dB) hourly average in occupied brittlebush scrub during the gnatcatcher breeding season (February 15 to August 30~~March 1 to August 15~~). The 60 dB sound level is a well-established threshold for indirect noise effects to the gnatcatcher as well as other bird species. The 60 dB threshold is used by the USFWS, CDFW, and City and County governments throughout the region. There is no direct rule, ordinance, or law that establishes this as a threshold; rather, the USFWS and other agencies typically refer to various older studies conducted over the years that suggest this is an appropriate noise threshold to use. Nonetheless, the 60 dB sound level limit is used herein to determine whether Project-related noise impacts would be significant. Project mining activities would expose open space areas located east or north of the EDA to noise levels exceeding 60 dB; this is a significant indirect impact of the proposed Project.

There is also a potential for indirect noise impacts during blasting activities. Startle response is defined as the natural involuntary reaction to sudden or threatening stimuli, such as a loud noise. Startle response of 100% has been reported when the single event maximum noise exceeds 80 dB L_{max} at more than 2,000 feet from the blast site. Calculations were conducted by the Project's noise consultant, Giroux & Associates, to determine the distance needed in order to protect nesting gnatcatchers from mining-related noise. Calculations were conducted for an acoustically "hard" reflective underlying surfaces, and for vegetated irregular "soft" surfaces. Calculations factored in if there was a direct line of source to receiver line of sight, a partially obstructed view, and a substantially blocked direct sight. The aerial propagation equation is as follows:

60 = dBref – (20+ **α**) * log (D/50)- TSF

Where:

dBref = 80 feet
α = 0 for flat, hard terrain and 5 for vegetated rolling terrain
D = distance to 60 dB Leq contour
TSF = terrain screening factor =
0 for line of sight (LOS),
6 for 1-2 foot interruption of LOS,

12 for 5-10 foot interruption of LOS

Solving for D:

TSF	$\alpha = 0$	$\alpha = 5$
0	500’	315’
6	250’	180’
12	125’	105’

For flat, hard terrain, an avian startle response would occur at a distance less than 500 feet, if a line of sight exists. For irregular terrain, this would translate into a full avian startle response at less than 315 feet from mining activities if a line of sight exists. With a shielded line of sight for hard terrain or soft irregular terrain, the impact distance would be smaller. For a benched mining pattern, the noise and air pressure waves would generally be bounced back into the already mined pit and not toward undisturbed biotic habitat ahead of the mining face. (Giroux, 2016a; Giroux, 2016b) Based on the positive gnatcatcher survey results, there is potential for a significant indirect noise impact to breeding gnatcatchers if an appropriate distance is not maintained between any gnatcatcher nests and mining activities during the gnatcatcher breeding season. Impacts would be considered significant if the gnatcatchers were displaced from their nests and failed to breed; thus, impacts would be less than significant outside of the breeding season because the gnatcatchers would not fail to breed. (Alden, 2016, p. 23)~~(Alden, 2015, p. 23)~~ Thus, mitigation for potential indirect impacts to gnatcatchers is warranted.

5. Exotic Plant Species

Non-native plants could colonize areas disturbed by mining and could potentially spread into the adjacent vegetation communities, particularly following disturbances such as fire. Such invasions could displace native plant species, reducing diversity, increasing flammability and fire frequency, change ground and surface water levels, and adversely affect the native wildlife that are dependent on native vegetation. Invasion of exotic plant species would not occur from the Project during mining activities because the Mine’s Reclamation Plan contains a weed management and control subsection, which contains a monitoring program and threshold values that trigger weed control and abatement activities. Invasion of exotic plant species also would not occur from the post-Project conditions because the landscaping associated with the Mine’s Reclamation Plan revegetation plan does not include any of non-native species. Rather, it includes a seed mix of native annual and perennial herbaceous and shrub species found in the Mine’s vicinity and/or in similar scrub communities in southwestern California. (Alden, 2016, p. 23)~~(Alden, 2015, p. 23)~~

6. Raptor Foraging/Nesting

Loss of non-native grassland in western Riverside County represents a cumulative loss of raptor foraging habitat. The loss of 2.1 acres of non-native grassland in the EDA would contribute to this cumulative loss, and is considered a cumulatively considerable Project-related impact. Indirect impacts to nesting raptor habitat also may occur if clearing of non-native grassland in the EDA occurs during the nesting season of birds protected by the MBTA (February 1 to September 15), which is a potentially significant impact of the Project for which mitigation is required. Impacts would be considered significant if the gnatcatchers were displaced from their nests and failed to breed; thus,

impacts would be less than significant outside of the breeding season because the gnatcatchers would not fail to breed. (Alden, 2016, p. 23)~~(Alden, 2015, p. 24)~~

7. Nuisance Animal Species

Because the Project does not involve residential development, the potential for domestic animals to enter the site vicinity as a result of the Project is low to none. Therefore, potential indirect impacts to sensitive wildlife in the area as a result of nuisance animals (pets) would not occur. (Alden, 2016, p. 23)~~(Alden, 2015, p. 24)~~

Threshold b.	***Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***

As indicated under the discussion and analysis of Threshold a., the Project would result in significant impacts associated with the loss of 21.4 acres of brittlebush scrub, which is a subset of coastal sage scrub, and 2.1 acres of non-native grassland. The loss of Brittlebush scrub is considered significant because this vegetation community provides habitat for sensitive wildlife, including the coastal California gnatcatcher. Critical habitat for the coastal California gnatcatcher has been designated over the entire study area by the Federal Endangered Species Act (Alden, 2016, p. 6). The loss of 21.4 acres of brittlebush scrub and 2.1 acres of non-native grassland is cumulatively considerable in association with the cumulative loss of habitat for raptors in western Riverside County, and also would be significant if the removal of habitat including brittlebush scrub and non-native grassland were to occur during the breeding season for MBTA-protected birds and raptors (February 1 to September 15). The loss of 21.4 acres of brittlebush scrub represents a significant direct Project impact, while the loss of 2.1 acres of non-native grassland represents a cumulatively considerable impact as well as a significant indirect impact if removed during the nesting season for MBTA-protected birds and raptors.

Threshold c.	***Would the Project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?***

The Project would impact approximately 0.05 acre of Corps non-wetland WUS and 0.17 acre of CDFW streambed, as depicted in Figure 4.3-2. The impact would occur within ephemeral channels in the central portion of the Study Area. Impacts to this jurisdictional feature would require permits from the Corps, RWQCB, and the CDFW. (Alden, 2016, p. 21)~~(Alden, 2015, p. 21)~~. As indicated in Table 4.3-1, there are no wetland plant communities within the Study Area. The Project's impacts to 0.05 acre of Corps non-wetland WUS and 0.17 acre of CDFW streambed are significant impacts of the proposed Project for which mitigation would be required.

The Study Area does not contain any wetlands (Alden, 2016, p. 10)~~(Alden, 2015, p. 10)~~. Therefore, the Project would not result in a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means. No impact to wetlands would occur and mitigation is not required.

Threshold d. Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

There are no water bodies on or adjacent to the Project site that could support fish; therefore, there is no potential for the Project to interfere with the movement of native resident migratory fish. In addition, implementation of the Project would not have the ability to interfere with an established migratory wildlife corridor, because the Project site does not serve as a wildlife corridor or is it connected to an established corridor. A~~dditionally, and a~~lthough the Mine is not subject to the MSHCP, the MSHCP nonetheless identifies corridors and linkages that are intended to provide for regional wildlife corridors in western Riverside County. The MSHCP does not identify the Project site as being part of any proposed linkages or corridors (RCA, 2003, Figure 3-2). Movement within the Project area already is constrained by I-15 to the west and existing residential development to the east. No native wildlife nurseries were identified in the Biological Technical Report contained in *Technical Appendix D* as being located on or adjacent to the Project site; therefore, there is no potential for the Project to impede the use of a native wildlife nursery site. Moreover, even with implementation of the proposed Project, ample amounts of undisturbed open space areas would remain east of the proposed EDA, and would be available to facilitate any wildlife movement in the local area. Accordingly, no impact would occur to any native resident or migratory fish, established wildlife corridor, or native wildlife nursery sites.

Although the Project would not directly affect wildlife movement corridors, mining activities on the Project site have the potential to impact native, migratory, and nesting birds protected by the MBTA. The Project's potential to impact birds protected by the MBTA is a significant impact for which mitigation is required.

Threshold e. Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

As detailed in the Biological Technical Report contained in *Technical Appendix D,* there are no tall trees located in the Study Area (Alden, 2016, p. 15) ~~(Alden, 2015, p. 15)~~. Three vegetation communities occur in the Study Area: brittlebush scrub (a subset of coastal sage scrub), non-native grassland, and other upland (developed land) (Alden, 2016, pp. 9-10)~~(Alden, 2015, pp. 8-9)~~. The scrub and non-native grassland do not contain large stands of trees. The Project would not conflict with City Municipal Code Chapter 5.120, *Tree Preservation*, because there are no trees located in the Study Area and no trees are located within the public right-of-way. Additionally, no palm trees are located on the Project site. The City has not adopted an Oak Tree Preservation ordinance to extend protection to native oaks located outside of MSHCP Criteria Cells and Conservation Areas, and the Project site also does not contain any oak trees (Lake Elsinore, 2011b, p. 3.8-53).

The City adopted Ordinance 1124, which is a local development mitigation fee funding the preservation of natural ecosystems in accordance with the Western Riverside MSHCP. The Project site is located within the MSHCP area, and is subject to Ordinance 1124. As explained in more detail below, under the discussion of Threshold f, the Project site is within Cell Group W (Cells 4067 and 4070) of the MSHCP. (RCA, 2003, pp. 3-149, 3-152; Riverside County, 2016).

Pursuant to a March 2004 Settlement Agreement and MOU (herein incorporated by reference pursuant to CEQA Guidelines § 15150, and available for review at the City of Lake Elsinore Planning Division,

130 South Main Street, Lake Elsinore, CA 92530) signed between Riverside County and the former landowner, the 199-acre Nichols Canyon Mine site is fully exempt from the provisions and requirements of the MSHCP (Riverside County, 2004, p. 5). A copy of the March 2004 Settlement Agreement and MOU are included as part of the Project's administrative record. As discussed below in Subsection 4.3.7, the Project would be subject to mitigation for site-specific impacts to brittlebush scrub (a subset of coastal sage scrub), non-native grassland, and jurisdictional areas as part of a Section 404 Permit from the Corps, Section 1602 Streambed Alteration Agreement from CDFW, a Section 401 Water Quality Certification from the RWQCB, and a Biological Opinion from the USFWS. Thus, the Project would provide direct mitigation for impacts to biological resources on-site and would not rely on the take coverage granted by the MSHCP and Ordinance 1124; thus, payment of the fees pursuant to Ordinance 1124 is not required and would not serve to mitigate any of the Project's direct, indirect, or cumulatively considerable impacts to biological resources.

CEQA Guidelines Section 15126.4.4.B states that mitigation measures must be "roughly proportional" to the impacts of the project; thus, because the identified mitigation measures would reduce Project impacts to below a level of significance, payment of the Ordinance 1124 fees would constitute double mitigation and would not be proportional to the Project's impacts to sensitive biological resources. However, the Project site is located within MSHCP Cell Group W. Pursuant to the MSHCP and Ordinance 1124, conservation within Cell Group W is intended to encompass 80%-90% of the Cell Group focusing in the northwestern portion of the Cell Group. The Mine and the EDA occur in the eastern portion of Group W. Notwithstanding the fact that the mitigation identified in EIR Subsection 4.3.7 would reduce the Project's impacts to below a level of significance, the Project would nonetheless not comply with the MSHCP objectives for Cell Group W because strict compliance with the MSHCP would require the conservation of the EDA, which inherently conflicts with the Project's primary objective to increase the availability of aggregate reserves within the local area. Moreover, on-going mining operations at the site have fully disturbed the western portions of the Mine site that are intended for conservation under the MSHCP. Thus, even if the EDA were to be conserved, the site still would not meet the objectives for Cell Group W and any preserved habitat would be disconnected from the portions of Cell Group W located west of the Project site. The option of conserving the entire 23.5-acre EDA is considered as part of the No Project Alternative in EIR Subsection 6.3.1. Accordingly, the Project's direct impact due to non-compliance with City Ordinance 1124 and due to non-compliance with the MSHCP conservation requirements for the site represent significant direct impacts of the proposed Project that cannot be mitigated to below a level of significance. However, because the vast majority of properties within the MSHCP area and that are subject to Ordinance 1124 (or other the implementing ordinance of other local jurisdictions) would be required to comply with the provisions of the MSHCP and all MSHCP-related requirements, the Project's non-compliance with Ordinance 1124 and the MSHCP would be less-than-cumulatively considerable. ~~Thus, the Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and no impact would occur.~~

Threshold f. Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

~~Although t~~The Nichols Canyon Mine is located within the Western Riverside County MSHCP area. The Project site is within Cell Group W (Cells 4067 and 4070). Conservation within Cell Group W would contribute to assembly of Proposed Core 1, and focuses on riparian scrub, woodland, and forest habitat associated with Alberhill Creek and adjacent coastal sage scrub and grassland habitat.

According to the Riverside County MSHCP, conservation within Cell Group W will range from 80%-90% of the Cell Group focusing in the northwestern portion of the Cell Group. (RCA, 2003, pp. 3-149, 3-152; Riverside County, 2016).

However, pursuant to a March 2004 Settlement Agreement and MOU (herein incorporated by reference) signed between Riverside County and the former landowner, the 199-acre Nichols Canyon Mine site is fully exempt from the provisions and requirements of the MSHCP (Riverside County, 2004, p. 5). A copy of the March 2004 Settlement Agreement and MOU are included as part of the Project's administrative record. ~~As discussed below in Section 4.3.7, the Project would be subject to mitigation as part of a Section 404 Permit from the Corps, Section 1602 Streambed Alteration Agreement from CDFW, a Section 401 Water Quality Certification from the RWQCB, and a Biological Opinion from the USFWS.~~ Project impacts to habitat, sensitive species, and jurisdictional areas would be mitigated to below a level of significance through the implementation of the mitigation measures provided in EIR Subsection 4.3.7, which includes a requirement for the Project Applicant to obtain appropriate permits for site-specific impacts to brittlebush scrub (a subset of coastal sage scrub), non-native grassland, and jurisdictional areas directly through the Wildlife Agencies. Permits that may be required include a Section 404 Permit from the Corps, Section 1602 Streambed Alteration Agreement from the CDFW, a Section 401 Water Quality Certification from the RWQCB, and a Biological Opinion/Incidental Take Permit (BO/ITP) from the USFWS. Thus, the Project would provide direct mitigation for impacts to biological resources on-site and would not rely on the take coverage granted by the MSHCP; thus, payment of the fees of impacts to the MSHCP is not required and would not serve to mitigate any of the Project's direct, indirect, or cumulatively considerable impacts to biological resources.

However, the Project site is located within MSHCP Cell Group W. Pursuant to the MSHCP, conservation within Cell Group W is intended to encompass 80%-90% of the Cell Group focusing in the northwestern portion of the Cell Group. The Mine and the EDA occur in the eastern portion of Group W. Notwithstanding the fact that the mitigation identified in EIR Subsection 4.3.7 would reduce the Project's impacts to below a level of significance, the Project would nonetheless not comply with the MSHCP objectives for Cell Group W because strict compliance with the MSHCP would require the conservation of the EDA, which inherently conflicts with the Project's primary objective to increase the availability of aggregate reserves within the local area. Moreover, on-going mining operations at the site have fully disturbed the western portions of the Mine site that are intended for conservation under the MSHCP. Thus, even if the EDA were to be conserved, the site still would not meet the objectives for Cell Group W and any preserved habitat would be disconnected from the portions of Cell Group W located west of the Project site. The option of conserving the entire 23.5-acre EDA is considered as part of the No Project Alternative in EIR Subsection 6.3.1. Accordingly, the Project's direct impact due to a non-compliance with the MSHCP conservation requirements for the site represent significant impacts of the proposed Project that cannot be mitigated to below a level of significance. However, because the vast majority of properties within the MSHCP area and that are subject to Ordinance 1124 (or other the implementing ordinance of other local jurisdictions) would be required to comply with the provisions of the MSHCP and all MSHCP-related requirements, the Project's non-compliance with the MSHCP would be less-than-cumulatively considerable.

Additionally, the Study Area also is located within the SKR HCP. According to Figure 21 of the SKR HCP, the Project site is not located within any "Core Reserve" areas that are being assembled to provide for the long-term conservation of the SKR. The nearest "Core Reserve" is the Lake Mathews Core

Reserve area, located approximately 4.1 miles northwest of the Mine. Although the Study Area is not targeted for conservation under the SKR HCP, the Project would be subject to the payment of fees towards the SKR HCP conservation efforts, as required by City of Lake Elsinore Municipal Code Chapter 19.04, *Conservation*. Chapter 19.04 requires the payment of an impact and mitigation fee. With mandatory payment of impact fees pursuant to Chapter 19.04, the proposed Project would be fully consistent with the SKR HCP; accordingly, no impact would occur. Although payment of impact fees would be required by law pursuant to Chapter 19.04, and mitigation measures are not required to duplicate mandatory regulatory requirements, Mitigation Measure MM 4.3-10 has nonetheless been imposed on the proposed Project requiring payment of the required fees prior to any mining activities occurring within the EDA.

There are no other adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans, applicable to the Project area. ~~Therefore, the Project would not conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan., and no impact would occur. (Alden, 2015, p. 21).~~

4.3.5 CUMULATIVE IMPACT ANALYSIS

Although the Project site is not subject to the MSHCP, the cumulative study area for biological resources is the Western Riverside County MSHCP. This study area is appropriate because the MSHCP encompasses a large area surrounding the Project site, and provides for the long-term protection of sensitive plant, animal, and plant communities throughout the MSHCP area. Additionally, most cumulative development projects within the Project vicinity would be subject to the provisions of the MSHCP, and the general range of habitats, species, climate, etc. are fairly consistent throughout the MSHCP.

As indicated under the discussion and analysis of Threshold a., the Project would not impact any sensitive plant species, so the Project has no potential to contribute cumulatively considerable impacts to the loss of sensitive plant species in the region; no impact would occur. The Project would result in direct impacts to habitat for the coastal California gnatcatcher through the elimination habitat in the Study Area, which includes ~~of~~ approximately 21.4 acres of brittlebush scrub (a subset of coastal sage scrub). ~~habitat in the Study Area,~~ The brittlebush scrub habitat has been designated as Critical Habitat for the coastal California gnatcatcher by the Federal Endangered Species Act.~~and~~ Removal of this habitat has the potential to directly impact coastal California gnatcatchers during blasting activities within the EDA. As other developments occur in the region, it is likely that additional loss of coastal California gnatcatcher habitat would occur. Thus, the loss of approximately 21.4 acres of brittlebush scrub in the Study Area would be a significant cumulatively considerable impact. Additionally, loss of 2.1 acres of non-native grassland in the Study Area has the potential to impact nesting birds, including raptors and other birds protected by the MTBA, if the clearing of this vegetation occurs within the raptor breeding season (February 1 to September 15). As other developments occur in the region, it is likely that MBTA-protected species could be cumulatively impacted during the breeding season. As such, the loss of 2.1 acres of non-native grassland in the Study Area would be a significant cumulatively considerable impact if habitat clearing occurs during the breeding season. Furthermore, impacts to non-native grassland would reduce areas suitable as raptor foraging habitat. Other developments in the region also may result in impacts to non-native grassland. Thus, the Project's impacts to non-native grassland and potential impacts to birds protected by the MBTA during the

breeding season represents cumulatively considerable impacts of the proposed Project for which mitigation would be required. (Alden, 2016, pp. 24-25)~~(Alden, 2015, p. 24)~~.

The Project also has the potential to cause indirect impacts to sensitive plant and animal species. However, the Project would not result in cumulatively considerable effects due to habitat insularization, given the urban nature of areas to the west, south, and east. Additionally, the Project's drainage plan incorporates water quality measures that would preclude potential cumulatively considerable impacts associated with drainage and water quality. Because there are no new sources of lighting proposed on-site, and no other sources of nighttime lighting substantially affecting proposed open space areas to the east and north of planned mining activities, cumulatively considerable effects due to lighting would not occur. Although proposed mining activities have the potential to affect nearby habitat with noise, particularly during the nesting season, and based on the information provided in the Project's Noise Impact Analysis (*EIR Technical Appendix I*), other sources of noise in the Project vicinity do not reach levels that would cumulatively contribute to the Project's potential indirect noise impacts, as the slight increase with the addition of background ambient noise sources would not result in a perceptible change in noise levels associated with the Project within the EDA; as such, the Project's indirect impacts due to noise would not be cumulatively considerable. Indirect cumulatively considerable impacts associated with non-native species and nuisance animals would not occur, as the Project's reclamation landscape plan includes only native species and no residences are proposed that could result in the introduction of nuisance animal species (domestic pets). As noted above, indirect impacts to raptor foraging/nesting habitat during the breeding season (February 1 through September 15) would be a significant cumulatively considerable impact.

As indicated above under the discussion and analysis of Threshold c, the Project would impact approximately 0.05 acre of Corps non-wetland WUS and 0.17 acre of CDFW streambed, as depicted in Figure 4.3-2. The impact would occur within ephemeral channels in the central portion of the Study Area. Impacts to this jurisdictional feature would require permits from the Corps, RWQCB, and the CDFW. (Alden, 2016, p. 21)~~(Alden, 2015, p. 21)~~. As other developments in the region occur, it is likely that additional impacts to jurisdictional features protected by the Corps, RWQCB, and/or the CDFW. Accordingly, the Project's impacts to non-wetland waters and CDFW streambed are cumulatively considerable.

As indicated above under the discussion and analysis of Threshold d, the Project would not significantly impact wildlife movement corridors because none exist within the EDA. In addition, there are no native wildlife nursery sites within the Project vicinity. However, the Project has the potential to impact native, migratory, and nesting birds protected by the MBTA. Other projects within the region also have the potential to impact protected nesting birds and be subject to compliance with applicable federal and State regulations. The Project's potential impact to nesting birds during the breeding season would be cumulatively considerable.

As indicated above under the discussion and analysis of Threshold e, the Project would ~~not conflict~~ not comply with City of Lake Elsinore ~~any local policies or~~ ~~o~~Ordinance~~s~~ 1124 which protect~~sing~~ biological resources in accordance with the MSHCP. Although the Project is not subject to compliance with the MSHCP, (and thus not subject to compliance with Ordinance 1124) the Project's non-compliance with Ordinance 1124 is evaluated as a significant and unavoidable impact on a direct basis. Although the Project would result in a significant direct impact due to non-compliance with Ordinance 1124, the vast majority of properties within the MSHCP area included in Ordinance 1124 are subject

to the provisions of the MSHCP and would be required to comply with all MSHCP-related requirements. Thus, the Project's non-compliance with Ordinance 1124 would be less-than-cumulatively considerable. Accordingly, cumulatively considerable impacts associated with compliance to local policies or ordinances protecting biological resources would ~~not occur~~ be less-than-cumulatively considerable.

As indicated above under the discussion and analysis of Threshold f, the Project site is not subject to compliance with the MSHCP; however, the Project's non-compliance with the MSHCP is evaluated as a significant and unavoidable impact on a direct basis because the proposed Project would conduct mining activities on land identified by the MSHCP for conservation. Although the Project would result in a significant direct impact due to a non-compliance with the MSHCP, the vast majority of properties within the 1.26 million acre MSHCP area are subject to the provisions of the MSHCP and would be required to comply with all MSHCP-related requirements. The proposed Project's EDA which would not comply with the MSHCP represents 0.00002% of the overall 1.26 million acre MSHCP area Thus, the Project's non-compliance with the MSHCP would be less-than-cumulatively considerable.~~, and~~ Additionally, the Project would be required to pay fees in conformance with the SKR HCP (see Mitigation Measure MM 4.3-10). Other projects subject to the SKR HCP similarly would be required to contribute impact fees for impacts to habitat located within the SKR HCP but outside of the "Core Reserve" areas. Thus, the Project's would not conflict with the SKR HCP on a direct or cumulative basis. There are no other adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans. Therefore, and based on the foregoing analysis, the Project would result in a less-than-cumulatively considerable impact due to a conflict with an applicable conservation plan.

4.3.6 SIGNIFICANCE OF IMPACTS BEFORE MITIGATION

Threshold a: Significant Direct/Indirect and Cumulatively Considerable Impact. Implementation of the Project would not impact any sensitive plant species. The Project would impact the habitat of the federally-listed threatened coastal California gnatcatcher and could potentially directly impact the coastal California gnatcatcher during blasting activities by displacing or potentially harming individual gnatcatchers in the area subject to blasting. Impacts to coastal California gnatcatcher habitat would be significant. Impacts to other sensitive plant or animal species not identified on-site during biological field surveys would be less than significant based on substantial evidence that the species do not ~~due to the very low likelihood that these species~~ occur on-site. Cumulatively considerable impacts to nesting raptors may occur if construction occurs within the raptor breeding season (February 1 to September 15), and impacts to 2.1 acre of raptor foraging habitat (non-native grassland) also represent a cumulatively considerable impact. Also, based on the positive gnatcatcher survey results, there is potential for significant indirect noise impact to breeding gnatcatchers that may be located within the open space areas located east and north of the EDA. Mining operational noise and noise from blasting activities also would indirectly impact coastal California gnatcatchers in areas within the range of a startle response reaction, prior to mitigation.

Threshold b: Significant Direct and Cumulatively Considerable Impact. The Project would result in the loss of 21.4 acres of brittlebush scrub (a subset of coastal sage scrub) and 2.1 acres of non-native grassland. The loss of ~~B~~brittlebush scrub is considered significant on a direct and cumulatively considerable basis because this vegetation community provides habitat for sensitive wildlife, including the coastal California gnatcatcher. Impacts to 2.1 acres of non-native grassland would be significant on a cumulatively considerable basis because it would cumulatively affect foraging habitat for raptors.

Additionally, the clearing of non-native grassland areas ~~on-site~~in the EDA during the breeding season for MBTA-protected birds and raptors (February 1 to September 15) represents a potential significant direct and cumulatively considerable impact.

Threshold c: Significant Direct and Cumulatively Considerable Impact. The Project would impact approximately 0.05 acre of Corps non-wetland WUS and 0.17 acre of CDFW streambed. Impacts to this jurisdictional feature would be significant on a direct and cumulatively considerable basis and require permits from the Corps, RWQCB, and the CDFW.

Threshold d: Significant Cumulatively Considerable Impact. There is no potential for the Project to interfere with the movement of fish or impede the use of a native wildlife nursery site. The Project has the potential to impact nesting birds protected by federal and State regulations on a cumulatively considerable basis, if clearing of 2.1 acres of non-native grassland were to occur during the nesting season (February 1 to September 15).

Threshold e: ~~No~~Significant Direct Impact. The Project is not subject to the requirements of the MSHCP, and would therefore not be subject to Ordinance 1124 which created a development mitigation fee in accordance with the MSHCP. Project impacts to habitat, sensitive species, and jurisdictional areas would be mitigated to below a level of significance through the implementation of the mitigation measures provided in EIR Subsection 4.3.7, which includes a requirement for the Project Applicant to obtain appropriate permits directly through the Wildlife Agencies. Permits that may be required include a Section 404 Permit from the Corps, Section 1602 Streambed Alteration Agreement from the CDFW, a Section 401 Water Quality Certification from the RWQCB, and a Biological Opinion/Incidental Take Permit (BO/ITP) from the USFWS. Thus, the Project would provide direct mitigation for impacts to biological resources on-site and would not rely on the take authority granted by the MSHCP and Ordinance 1124; thus, payment of the fees pursuant to Ordinance 1124 is not required and would not serve to mitigate any of the Project's direct, indirect, or cumulatively considerable impacts to biological resources. Nonetheless, the Project's direct impact due to non-compliance with City Ordinance 1124 represents a significant and unavoidable direct impact of the proposed Project that cannot be mitigated to below a level of significance. However, because the vast majority of properties within the City and surrounding areas are subject to Ordinance 1124 or other MSHCP implementing ordinances of other local jurisdictions, and would not conflict with these ordinances; therefore, the Project's non-compliance with Ordinance 1124 and the MSHCP would be less-than-cumulatively considerable. The Project would not conflict with any other local policies or ordinances protecting biological resources.

Threshold f: ~~No~~Significant Direct Impact. The Project site is ~~not subject to~~ exempt from the Western Riverside County MSHCP~~,~~; nonetheless, the Project would not implement the MSHCP conservation goals for MSHCP Cell Group W. As such, and for purposes of fully disclosing impacts that may result from the proposed Project, the Project's non-compliance with the MSHCP represents a significant direct impact. The Project Applicant is required to ~~and would~~ contribute ~~impact and~~ mitigation fees pursuant to the SKR HCP, which would ensure Project consistency with the SKR HCP; accordingly, impacts due to a conflict with the SKR HCP would be less than significant. Although impacts are less than significant, Mitigation Measure MM 4.3-10 has been imposed on the Project to ensure the timely payment of fees pursuant to Chapter 19.04 of the City of Lake Elsinore's Municipal Code.~~; thus, the Project would not conflict with the MSHCP and would be consistent with the SKR HCP.~~ The proposed Project is not subject to any additional Habitat Conservation Plans, Natural Community Conservation

Plans, or other approved local, regional, or state habitat conservation plans. Therefore, no additional impacts due to a conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan would occur beyond the Project's significant direct impact due to non-compliance with the MSHCP.

4.3.7 MITIGATION

MM 4.3-1 Prior to any ~~mining~~ activities affecting jurisdictional waters ~~on site~~within the EDA, the Project Applicant shall obtain the necessary authorizations from the Corps, CDFW, and RWQCB for impacts to 0.17 acre of jurisdictional waters. Authorizations may include a Section 404 Permit from the Corps, Section 1602 Streambed Alteration Agreement from the CDFW, and a Section 401 Water Quality Certification from the RWQCB. Evidence of all required authorizations shall be provided to the City of Lake Elsinore.

MM 4.3-2 Prior to any ~~mining~~ activities affecting jurisdictional waters ~~on site~~ within the EDA, the Project shall mitigate impacts to 0.17 acres of jurisdictional waters and 0.05 acre Corps non-wetland Waters of the U.S. ~~shall be mitigated~~ at a minimum 1:1 ratio. This mitigation ratio was selected based on ratios used in many other cities and counties in southern California. The minimum 1:1 ratio is within the range of ratios established by other jurisdictions and agencies. The 0.17 acre jurisdictional mitigation requirement shall be met by the Project Applicant through one or a combination of both of the following two options:

a) In Lieu Fee Option: Mitigation can be fully or partially satisfied via an in-lieu fee payment to a mitigation bank pursuant to California Fish and Game Code Section 1797-1799.1, which establishes a system of conservation and mitigation banks in order to provide a means of mitigating impacts to wetlands, endangered/threatened species, and otherwise sensitive resources. The Project Applicant would contribute funds to such a bank that would in turn be used to create, restore, protect, or enhance streambed habitats~~, either at the source of the impact or elsewhere at a larger, more functional and longer lasting ecological system~~. The CDFW-approved Soquel Canyon Mitigation Bank that serves Riverside County has jurisdictional water credits for sale and is one option for this mitigation (CDFW, 2016). Other options also may be available.

b) Habitat Restoration Option or Equivalent: Mitigation can be fully or partially satisfied by creation, restoration, and/or enhancement. The methods and location for this mitigation shall be determined through consultation with the regulatory agencies during the federal and state permitting process. Plant species used for any of these mitigation methods must be locally native (seeds, container, and/or cuttings) and mitigation by any of these methods must be accompanied by a three-year mitigation monitoring plan prepared by a professional restoration ecologist. The mitigation monitoring plan is required to identify performance, schedule, monitoring, and maintenance criteria. Mitigation for impacts to State streambeds shall be considered complete only when monitoring is complete and the following success criteria is met: (1) At least 50% of the vegetation present is dominated by locally native species, (2)

there is evidence of natural recruitment of multiple locally native species, (3) no more than 15% cover by California Invasive Plant Council (Cal-IPC) List A and B species, and (4) no more than 15% cover by other weedy species.

~~Alternative equivalent mitigation may be determined through consultation with regulatory agencies during the permitting process required by state and federal law as indicated in Mitigation Measure MM 4.3-1. In such a case, mitigation required by the consultation process shall supersede the identified jurisdictional mitigation measure identified in this Mitigation Measure MM 4.3-2.~~

MM 4.3-3 Prior to any mining activities within the EDA, the Project Applicant shall mitigate impacts to 21.4 acres of brittlebush scrub at a ratio of 1.5:1. The mitigation site for brittlebush scrub (a subset of coastal sage scrub) shall support the coastal California gnatcatcher and shall have long-term ecological value based upon patch size and spatial relationship to other natural lands, as determined by the City of Lake Elsinore, CDFW, and/or USFWS.~~,~~ Additionally, the Project Applicant ~~and~~ shall mitigate impacts to 2.1 acres of non-native grassland at a 0.5:1 ratio. The mitigation ratios for brittlebush scrub and non-native grassland were selected based on ratios used in many other cities and counties in southern California. The ratios are within the range of ratios established by other jurisdictions and agencies. The 32.1-acre mitigation requirement for brittlebush scrub and the 1.1-acre mitigation requirement for non-native grassland shall be met through one or a combination of both of the following two options:

a) In Lieu Fee Option: Mitigation can be fully or partially satisfied via an in-lieu fee payment to a mitigation bank pursuant to California Fish and Game Code Section 1797-1799.1, which establishes a system of conservation and mitigation banks in order to provide a means of mitigating impacts to wetlands, endangered/threatened species, and otherwise sensitive resources. The Project Applicant would contribute funds to such a bank that would in turn be used to create, restore, protect, or enhance streambed habitats~~, either at the source of the impact or elsewhere at a larger, more functional and longer lasting ecological system~~. The CDFW-approved Soquel Canyon Mitigation Bank that serves Riverside County has coastal sage scrub credits for sale and is one option for this mitigation (CDFW, 2016). Other options also may be available.

b) Preservation of Habitat: Mitigation can be fully or partially satisfied by preservation of suitable habitat. Habitat proposed to be preserved as brittlebush scrub mitigation must meet the general criteria for coastal sage scrub habitat (Holland 1986), support the coastal California gnatcatcher, have long-term ecological value based upon patch size and spatial relationship to other natural lands, and be of high quality. Habitat preserved for nonnative grassland impacts must meet the criteria for non-native grassland habitat (Holland 1986). Non-native grassland impacts also may be mitigated through preservation of coastal sage scrub habitat as it is considered to be a higher quality habitat. The location(s) for habitat preservation shall be approved by the City of Lake Elsinore.

MM 4.3-4 Prior to any mining activities within the +/- 24-acre EDA, the Project ~~a~~Applicant shall provide a completed Biological Opinion/Incidental Take Permit (ITP) from the USFWS to the Director of the City of Lake Elsinore Planning Division (or his/her designee).

MM 4.3-5 ~~Prior to approval of~~As required by the Project's Surface Mining Permit ~~or~~ and Amendment No. 2 to Reclamation Plan No. 2006-01A1, the ~~Director of the City of Lake Elsinore Planning Division (or his/her designee) shall verify that the plans incorporate a prohibition against the~~ removal of habitat, including brittlebush scrub or non-native grassland, in the +/- 24-acre EDA during the general avian breeding season (February 1~~5~~ to September 15) shall be prohibited. If vegetation must be removed during this season, the Project Applicant shall direct a qualified biologist to conduct a nesting bird survey of potentially suitable nesting vegetation prior to removal. Surveys shall be conducted no more than three (3) days prior to scheduled removals. If active nests are identified, the biologist shall establish buffers around the vegetation containing the active nest (300 feet for the California gnatcatcher and raptors; 100 feet for other non-raptors). The vegetation containing the active nest shall not be removed, and no ~~grading~~clearing or mining activities shall occur within the established buffer, until a qualified biologist has determined that the nest is no longer active (i.e., the juveniles are surviving independent from the nest). If clearing is not conducted within three days of a negative survey, the nesting survey shall be repeated to confirm the absence of nesting birds. The Project Applicant shall maintain records of: a) all new clearing activities that occur during the general avian breeding season; b) the results of all pre-construction nesting surveys; c) mitigation or avoidance measures that were undertaken during the breeding season; and d) areas within the EDA that have been disturbed outside of the general avian breeding season. These records shall be maintained on-site at all times and made available for City inspection upon request.

MM 4.3-6 Prior to any mining activities within the EDA, the Project Applicant shall provide evidence (in the form of a letter from a qualified biologist) to the City of Lake Elsinore Planning Division that a qualified biologist has met with the mine operator to explain the Project's biological mitigation requirements and techniques to minimize indirect effects. The biologist shall be contracted by the Project Applicant to perform any necessary follow up to ensure that mine personnel are informed and minimizing indirect effects to areas outside of the approved limits of mine disturbance.

MM 4.3-7 Mining activities located more than 500~~315~~ feet away from the open space area within or east of the EDA can occur without limitations. If between February 15 and August 30 (the breeding season of the coastal California gnatcatcher) mining activities will move within 500~~315~~ feet of the open space within or east of the EDA, or if mining activities are already occurring within 500~~315~~ feet of the open space within or east of the EDA and will move closer to the open space within or east of the EDA, then a qualified biologist shall conduct a nesting survey for the coastal California gnatcatcher in the open space area that falls within 500~~315~~ feet of the planned mining activity. The survey shall be conducted no more than three days ~~seven days~~ before the mining activity moves closer to the open space. If the nesting survey is negative, then mining activities may move closer to the open space within three days ~~seven days~~ of the nesting

survey. In the event that a nesting survey is positive, then mining activities shall not be allowed to move within 500~~315~~ feet of the bird's nest (or any closer to the nest if mining is already occurring within 500~~315~~ feet) until the nesting period ends (August 30) or until a qualified biologist has determined that the young have fledged or the nest is no longer active. Areas subject to avoidance shall be marked with orange construction fencing. Compliance with these requirements will be assured through the annual mining inspections, as required and reviewed by the Office of Mine Reclamation and Department of Conservation.

MM 4.3-8 Within three days prior to any blasting activities within the proposed EDA from February 15 through August 30, a nesting survey for the coastal California gnatcatcher shall be conducted by a qualified biologist within 1,250 feet of the blasting site. If any costal California gnatcatcher ~~are~~ nests are located within 1,250 feet and within line-of-sight of the blasting site, no blasting shall occur until August 30 or until a qualified biologist has determined that the coastal California gnatcatcher young have fledged or the nest is no longer active. If any active coastal California gnatcatcher nests are located ~~within~~ more than 500 feet but not within line-of-sight of the blasting site, blasting may proceed after verification by the biologist that the nest is not in the line of sight. All vegetation within areas that would be subject to mining during the next coastal California gnatcatcher nesting season (February 15 through August 30) must be cleared outside the nesting season at least 2 weeks prior to blasting and no more than 1 year prior to blasting.

MM 4.3-9 For ~~B~~blasting activities that occur outside the coastal California gnatcatcher nesting season (September 1 through February 14), or blasting activities during the nesting season subject to the requirements Mitigation Measure MM 4.3-8, ~~shall not have~~ vegetation shall not be present within 75~~50~~ feet of the ~~actual~~ charge location (i.e., the location in which the charge is placed) for the blast site. ~~This v~~Vegetation within 75 feet must be cleared at least 2 weeks and no more than 1 year prior to blasting.

~~MM 4.3-9~~MM 4.3-10 Prior to any mining activities within the EDA, the Project Applicant shall pay fees pursuant to Chapter 19.04 of the City of Lake Elsinore's Municipal Code for the planned 23.5-acre impact to SKR habitat that would result from mining in the EDA. Such fees shall be used to support the formation of the Riverside County Habitat Conservation Authority Core Reserves as identified in the Habitat Conservation Plan for the Stephens' Kangaroo Rat in Western Riverside County, California.

4.3.8 SIGNIFICANCE OF IMPACTS AFTER MITIGATION

Thresholds a. and b.: Less-than-Significant Impact with Mitigation. Implementation of Mitigation Measure MM 4.3-3 would ensure that the Project's impacts to 21.4 acres of brittlebush scrub, which provides habitat for the coastal California gnatcatcher, and impacts to 2.1 acres of non-native grassland, which provides foraging habitat for raptors, are mitigated to below a level of significance. Additionally, implementation of Mitigation Measure MM 4.3-4 would ensure that impacts to coastal California gnatcatcher habitat are addressed through a Biological Opinion with the USFWS~~, along with any supplemental mitigation that may be required pursuant to the BO~~ pursuant to Section 7 of the FESA. In the case of the proposed Project, the Corps would be required to issue a Section 404 permit pursuant to the federal Clean Water Act (CWA), requiring consultation between the Corps and the

USFWS regarding planned impacts to critical habitat for the coastal California gnatcatcher and/or for incidental take of this species. Refer to EIR Subsection 4.3.2.E.1 for a description of the Section 7 process. With implementation of the required mitigation, the Project's impacts to coastal California gnatcatcher habitat would be reduced to less-than-significant levels.

Implementation of Mitigation Measure MM 4.3-5 would ensure that indirect impacts to nesting birds or raptors, including birds protected by the MBTA, are protected during the nesting season (February 1~~5~~ to September 15). With implementation of the required mitigation, the Project's cumulatively considerable impacts to nesting birds and raptors would be less than significant. Furthermore, implementation of Mitigation Measure MM 4.3-6 would ensure that potential inadvertent impacts to biological resources located outside of the proposed EDA would be precluded through education of construction personnel, thereby reducing impacts to less than significant. Additionally, implementation of Mitigation Measure MM 4.3-7 would reduce potential indirect mining operational noise impacts to the coastal California gnatcatcher during the nesting season (between February 15 and August 30) to below a level of significant by ensuring an adequate distance is maintained if breeding coastal California gnatcatchers are present. Mitigation Measures MM 4.3-8 and MM 4.3-9 also would ensure that blasting activities and noise do not impact the coastal California gnatcatcher ~~nesting birds~~ during the breeding season, thereby reducing impacts to less-than-significant levels.

Threshold c: Less-than-Significant Impact with Mitigation. Implementation of Mitigation Measure MM 4.3-2 would ensure the Project impacts to 0.05 acre of Corps non-wetland WUS and 0.17 acre of CDFW streambed are mitigated at a minimum 1:1 ratio. Additionally, implementation of Mitigation Measure MM 4.3-1 would ensure that impacts to WUS and CDFW streambed are properly permitted by the Corps, CDFW, and RWQCB. With implementation of the required mitigation, impacts to jurisdictional areas would be reduced to less than significant.

Threshold d: Less-than-Significant Impact with Mitigation. Implementation of Mitigation Measure MM 4.3-5 would ensure that impacts to nesting birds or raptors, including birds protected by the MBTA, are protected during the nesting season (February 1~~5~~ to September 15), thereby reducing impacts to less than significant. Additionally, implementation of Mitigation Measure MM 4.3-3 ~~MM 4.3-2~~ would ensure that the Project's cumulatively considerable impacts to raptor foraging habitat are reduced to less-than-significant levels through the mitigation of habitat through payment of in-lieu fees and/or preservation of habitat. Moreover, Mitigation Measures MM 4.3-8 and MM 4.3-9 also would ensure that blasting activities and noise do not impact nesting coastal California gnatcatcher~~birds~~ during the breeding season. With implementation of the required mitigation, the Project's cumulatively considerable impacts to non-native grassland habitat that can support nesting birds and raptors would be less than significant.

Threshold e: Significant and Unavoidable Direct Impact. The Project is not subject to the requirements of the MSHCP, and would therefore not be subject to Ordinance 1124, which created a development mitigation fee in accordance with the MSHCP. Project impacts to habitat, sensitive species, and jurisdictional areas would be mitigated to below a level of significance through the implementation of the mitigation measures provided in EIR Subsection 4.3.7, which include a requirement for the Project Applicant to obtain appropriate permits directly through the Wildlife Agencies. Permits that likely would be required include a Section 404 Permit from the Corps, Section 1602 Streambed Alteration Agreement from the CDFW, a Section 401 Water Quality Certification from the RWQCB, and a Biological Opinion/Incidental Take Permit (BO/ITP) from the USFWS. Thus, the Project would

provide direct mitigation for impacts to biological resources on-site and would not rely on the take coverage granted by the MSHCP and Ordinance 1124; thus, payment of the fees pursuant to Ordinance 1124 is not required and would not serve to mitigate any of the Project's direct, indirect, or cumulatively considerable impacts to biological resources. CEQA Guidelines § 15126.4.4.B states that mitigation measures must be "roughly proportional" to the impacts of the project; thus, because the identified mitigation measures would reduce Project impacts to below a level of significance, payment of the Ordinance 1124 fees would constitute double mitigation and would not be proportional to the Project's impacts to sensitive biological resources. Nonetheless, and in an effort to provide a conservative analysis, the Project's non-compliance with Ordinance 1124 represent a significant direct impact of the proposed Project for which mitigation, other than payment of a fee that would bear no relation to the Project's impacts and associated mitigation, is not available. However, because the vast majority of properties within the City and surrounding areas are subject to Ordinance 1124 or other MSHCP implementing ordinances of other local jurisdictions and would not conflict with these ordinances, the Project's non-compliance with Ordinance 1124 would be less-than-cumulatively considerable.

Threshold f: Significant and Unavoidable Direct Impact. Implementation of Mitigation Measure MM 4.3-10 would ensure that the mandatory payment of fees pursuant to Chapter 19.04 of the City's Municipal Code would occur, and that fees would be contributed to the Core Reserve areas identified in the SKR HCP. With implementation of the required mitigation, the Project's significant direct impact due to a conflict with the SKR HCP would be less than significant.

Although the Project is not subject to the requirements of the MSHCP, the Project site is located within MSHCP Cell Group W. Pursuant to the MSHCP, conservation within Cell Group W is intended to encompass 80%-90% of the Cell Group focusing in the northwestern portion of the Cell Group. The Mine and the EDA occur in the eastern portion of Group W. Notwithstanding the fact that the mitigation identified in EIR Subsection 4.3.7 would reduce the Project's impacts to below a level of significance, the Project would nonetheless not comply with the MSHCP objectives for Cell Group W because strict compliance with the MSHCP would require the conservation of the EDA, which inherently conflicts with the Project's primary objective to increase the availability of aggregate reserves within the local area. Moreover, on-going mining operations at the site have fully disturbed the western portions of the Mine site that are intended for conservation under the MSHCP. Thus, even if the EDA were to be conserved, the site still would not meet the objectives for Cell Group W and any preserved habitat would be disconnected from the portions of Cell Group W located west of the Project site. The option of conserving the entire 23.5-acre EDA is considered as part of the No Project Alternative in EIR Subsection 6.3.1. Accordingly, the Project's direct impact due to non-compliance with the MSHCP conservation requirements for the site represents a significant and unavoidable direct impact of the proposed Project that cannot be mitigated to below a level of significance. However, because the vast majority of properties within the MSHCP area would be required to comply with the provisions of the MSHCP and all MSHCP-related requirements, and because the Project would be required to mitigate its biological impacts to a level below significance, the Project's non-compliance with the MSHCP would be less-than-cumulatively considerable.

4.4 CULTURAL RESOURCES

The analysis in this Subsection is based on ~~a~~ the site-specific paleontological resource and monitoring assessment titled, "Paleontological Resource and Monitoring Assessment, Nichols Road Quarry Expansion Project Area, City of Lake Elsinore, Riverside County, California," prepared by Brian F. Smith and Associates (BFSA) and dated May 5, 2015. The analysis and information has also been supplemented with additional information received by Native American tribes during the public comment period on the initial DEIR. The technical report is provided as *Technical Appendix E1* to this EIR. The analysis in this Subsection is also based on a site-specific archaeological assessment prepared by BFSA titled, "A Phase I and II Cultural Resources Assessment for the Nichols Road Quarry Expansion Project, City of Lake Elsinore, Riverside County, California," and dated July 9, 2015. This technical report is provided as *Technical Appendix E2* to this EIR. Information used to support the analysis in this ~~s~~Subsection also was obtained from Section 3.2, Cultural and Paleontological Resources, of the City of Lake Elsinore General Plan Update Final Recirculated Program Environmental Impact Report (State Clearinghouse No. 2005121019), certified December 13, 2011 (herein referred to as GPU EIR).

4.4.1 SCOPE OF REVIEW

The Nichols Canyon Mine, as discussed in Section 2.0, *Environmental Setting*, is an existing, ongoing surface mining operation operating pursuant to vested mining rights and an approved reclamation plan (RP 2006-01A1), which was analyzed in a prior MND. Although the City has chosen to prepare an EIR for the Project here, the scope of review addresses those impacts resulting from the Project as described in Section 3.0, *Project Description*, and not impacts related to existing, approved operations, which form the environmental baseline, as discussed in Subsection 2.7, *Existing Physical Site Conditions*. As disclosed in Section 3.0, *Project Description*, an asphalt batch plant is an existing approved use on-site pursuant to approved Conditional Use Permit (CUP 2014-07). Thus, the batch plant has already been approved by the City along with a CEQA environmental compliance document that was not challenged by any third party. During the public comment period on the DEIR, several third parties incorrectly asserted that the DEIR failed to adequately analyze the proposed Project's impacts. Several of these commentators also incorrectly claimed that the DEIR needed to re-analyze and include the batch plant's impacts as part of this EIR. While the City disagrees with these claims because the batch plant has already been approved under CUP 2014-07 and previously evaluated in an approved MND Addendum that was not challenged, in an effort to provide a conservative and overly-inclusive analysis of the Project's impacts on the environment (as opposed to potentially underestimating the Project's impacts), and to remove this issue from being a point of contention, this EIR includes analyses of the batch plant's impacts in all relevant CEQA Appendix G topics. However, the construction and operation of an asphalt batch plant on the site is not relevant to the issues of Cultural Resources because the asphalt batch plant site is located in an area previously subject to disturbance and mining activity, and operation of the batch plant would not impact any historical, archeological or paleontological resources, disturb human remains, or impact tribal cultural resources. As part of reclamation activities at the Mine, the asphalt batch plant would be removed from the Project site. ~~Accordingly, this Subsection analyzes cultural resources impacts related to the Project specifically.~~ Additionally, ~~T~~this Subsection does not analyze cultural resources impacts related to existing, approved mining operations, because the approved mining operations are a baseline condition and not part of the proposed Project.

4.4.2 EXISTING CONDITIONS

A. Cultural Setting

The Project site is located in the eastern portion of the City of Lake Elsinore, Riverside County, California. The Paleo Indian Period, Archaic Period, and the Late Prehistoric Period are the three general cultural periods represented in Riverside County, which were followed by the historic period, as summarized briefly below. Refer to *Appendix E2* for a more detailed discussion about the prehistoric cultural periods in western Riverside County. (BFSA, 2015b, pp. 2.0-5 through 2.0-11)

1. Paleontological Setting

A paleontological resources assessment was conducted by BFSA, the results of which are contained in *Technical Appendix E1* to this EIR. As mapped, the Project site is dominantly underlain by three major rock types, which bear a relationship to paleontological sensitivity: unnamed heterogeneous granitic rocks (Khg) in the north and northeast; an intermixed suite (Ksv) of Cretaceous Estelle Mountain volcanics and Cretaceous metasedimentary rocks in the northwest; and young Quaternary sandy alluvial fan sediments (Qyfa) along the southern part of the Project site. The geologic units within the bounds of the Project site are either assigned a Low Potential to yield fossiliferous materials, or are regarded as unlikely to yield fossiliferous materials on the basis of the geologic field investigation. (BFSA, 2015a, p. 2)

2. Prehistoric Period Setting

Paleo Indian, Archaic Period Milling Stone Horizon, and the Late Prehistoric Shoshonean groups are the three general cultural periods represented in Riverside County. The Paleo Indian Period is associated with the terminus of the late Pleistocene between 12,000 to 10,000 years before present (YBP). Paleo Indians were likely attracted to multiple habitat types, including mountains, marshlands, estuaries, and lakeshores. (BFSA, 2015b, page 2.0-5 to 2.0-6) During the Archaic Period Milling Stone Horizon (circa 9,000 to 1,300 YBP) the coastal lagoons in southern California supported large Milling Stone Horizon populations circa 6,000 YBP, as shown by numerous radiocarbon dates from the many sites adjacent to the lagoons (BFSA, 2015b, page 2.0-6). In approximately 1,350 YBP, a Shoshonean-speaking group from the Great Basin region moved into Riverside County, marking the transition to the Late Prehistoric Period. This period is characterized by higher population densities and elaborations in social, political, and technological systems. Economic systems diversified and intensified during this period with the continued elaboration of trade networks, the use of shell-bead currency, and the appearance of more labor-intensive, yet effective, technological innovations. (BFSA, 2015b, page 2.0-7). Ethnohistorical and ethnographic evidence indicates that three Shoshonean-speaking groups occupied portions of Riverside County during the Protohistoric Period, including the Cahuilla, the Gabrielino, and the Luiseño (BFSA, 2015b, page 2.0-8).

3. Historic Period

The historic background of the Project area began with the Spanish colonization of Alta California. The first Spanish colonizing expedition reached southern California in 1769 with the intention of converting and civilizing the indigenous populations, as well as expanding the knowledge of and access to new resources in the region. In the late eighteenth century, the San Gabriel (Los Angeles County), San Juan Capistrano (Orange County), and San Luis Rey (San Diego County) missions began colonizing southern California and gradually expanded their use of the interior valley (into

what is now western Riverside County) for raising grain and cattle to support the missions. While no missions were ever built in what would become Riverside County, many mission outposts were established in the early years of the nineteenth century to extend the missions' influence to the backcountry. Two outposts that were located in Riverside County include San Jacinto and Temecula. (BFSA, 2015b, page 2.0-8 to 2.0-9)

The region of Lake Elsinore started to develop in 1883 with the emergence of the railroad. The railroad brought a steady stream of settlers, miners, and prospectors into the area, thereby creating the community of Lake Elsinore. By 1884, the developing town had a school and post office established, and in 1893, the town officially became recognized as the City of Lake Elsinore. In the late nineteenth century, the town experienced a boom due to the mining of gold between the towns of Elsinore and nearby Perris. In addition to the mining of gold, Lake Elsinore is also known for the mining of tin ore, coal, clay, and asbestos. Following the mining boom, Lake Elsinore began to bring in many tourists due to boat and auto racing and the lakefront resorts. The Great Depression limited expansion, except for the completion of a new post office in 1932. (BFSA, 2015b, page 2.0-11)

B. Documented Prehistoric and Archaeological Resources

BFSA reviewed the records search conducted by the Eastern Information Center (EIC) at the University of California at Riverside (UCR) to determine the presence of any previously recorded sites. The EIC also provided the standard review of the National Register of Historic Places and the Office of Historic Preservation Historic Property Directory. Land patent records, held by the Bureau of Land Management (BLM) and accessible through the BLM General Land Office (GLO) website, were also reviewed for pertinent Project information. The results were that 32 cultural resource sites and 36 cultural resource studies have been recorded within a one-mile radius of the Project. The Mine was previously surveyed as part of two studies: Drover in 1987 as well as Lerch and Gray in 2006. The 2006 Lerch and Gray study (published by Statistical Research, Inc.) identified a single historic site within the current Project site, RIV-8116, which is characterized as a historic refuse scatter on the southeastern boundary of the Mine. (BFSA, 2015b, page 2.0-1).

C. Documented Paleontological Resources

BFSA reviewed the results of a literature review and collections and records search of areas in Temescal Valley north of the Project site conducted by the Geological Sciences Division of the San Bernardino County Museum in Redlands, California. The literature review identified a low potential for fossil-bearing geologic units in the Project area. Because of the unlikely possibility of finding fossils in the geologic formations exposed across the Project site, a museum collections and records search was not solicited for the proposed Project. (BFSA, 2015a, p. 2)

D. Applicable Regulatory Requirements

1. Senate Bill (SB) 18

California Senate Bill 18 requires that lead agencies consult with California Native American tribes during the local planning process for the purposes of protecting Traditional Tribal Cultural Places whenever a project proposes to amend or adopt any general plan or specific plan, or designate land as open space. The consultation process must be completed prior to project approval. Because the proposed Project does not include a General Plan or Specific Plan Amendment, the City of Lake Elsinore is not subject to the requirements associated with the SB 18 process for Native American

consultation. However, consistent with the public participation prerogatives of CEQA, during the public comment period on the revised and recirculated DEIR, the City did provide written notification to several tribes of the City's willingness to consult and meet with them should they so desire, notwithstanding the inapplicability of SB 18.

2. Assembly Bill 52 and Public Resources Code § 21074

The provisions of Public Resources Code § 21074 were established pursuant to California Assembly Bill 52 (AB 52), which was approved by the Governor on September 25, 2014. AB 52 requires "a lead agency to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the tribe requests consultation, prior to determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project." AB 52 applies to projects that have a notice of preparation or a notice of negative declaration filed or mitigated negative declaration on or after July 1, 2015. The bill also requires "the Office of Planning and Research to revise on or before July 1, 2016, the guidelines to separate the consideration of tribal cultural resources from that for paleontological resources and add consideration of tribal cultural resources." The proposed Project's NOP was filed on June 25, 2015, prior to the requirements of AB 52 taking effect. Thus the Project is not subject to the requirements of AB 52. However, consistent with the public participation prerogatives of CEQA, during the public comment period on the revised and recirculated DEIR, the City did provide written notification to several tribes of the City's willingness to consult and meet with them should they so desire, notwithstanding the inapplicability of AB 52.

3. California Code of Regulations § 15064.5

The California Code of Regulations, Title 14, Chapter 3, § 15064.5, establishes the procedure for determining the significance of impacts to archeological and historical resources, as well as classifying the type of resource. Cultural resources are aspects of the environment that require identification and assessment for potential significance. The evaluation of cultural resources under CEQA is based upon the definitions of resources provided in § 15064.5.

4. National Historic Preservation Act (1981)

The National Historic Preservation Act (NHPA) (16 U.S. Code § 470 et. seq.) created the National Register of Historic Places program under the Secretary of the Interior. In addition to enticing state and local municipalities with federal funding, the NHPA provides the legal framework for most state and local preservation laws. Significant historical or archaeological resources are listed in the National Register of Historic Places, which is a program maintained by the Keeper of the National Register. The National Register program also includes National Historic Landmarks, which is limited only to properties of significance to the nation.

The NHPA established the Section 106 review procedure to protect historic and archaeological resources listed in or eligible for listing in the National Register from the impact of projects by a federal agency or project funded or permitted by a federal agency. The National Register is an authoritative guide to be used by governments, private groups, and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from

destruction or impairment. Listing of private property on the National Register does not prohibit by law any actions which may otherwise be taken by the property owner with respect to the property.

5. California Register of Historic Places (1993)

As a recipient of federal funding, the California Office of Historic Preservation administers the California Register of Historical Resources (CA Pub. Res. Code § 5020 et. seq.). The purpose of the California Register is to develop and maintain an authoritative guide to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate which properties are to be protected, to the extent prudent and desirable, from substantial adverse change. The State Historic Preservation Officer enforces a designation and protection process, has a qualified historic preservation review commission, maintains a system for surveys and inventories, and provides for adequate public participation in its activities. Sites, places or objects that are eligible to the National Register, are automatically included in the California Register.

6. Traditional Tribal Cultural Places (2004)

The Traditional Tribal Cultural Places Bill of 2004 (CA Government Code § 65352 et. seq.) directs local governments to consult with Native American tribes early in the land use planning process. The intent of the consultation process is to allow for meaningful dialogue regarding potential means to preserve places of prehistoric, archaeological, cultural, spiritual, and ceremonial importance to Native American tribes.

7. Health and Safety Code Provisions for Human Remains

The California Health and Safety Code § 7050.5, as well as the Public Resources Code § 5097 et. seq., require that in the event of discovery or recognition of any human remains in any location other than a formal cemetery, no further excavation of disturbance of the site or site vicinity can occur until the County Coroner has examined the remains and makes a report. The Native American Heritage Commission is required to be notified within 24 hours if the Coroner determines or suspects the remains to be of Native American descent.

4.4.3 BASIS FOR DETERMINING SIGNIFICANCE

The proposed Project would result in a significant impact to cultural resources if the Project or any Project-related component would:

a. *Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?*

b. *Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?*

c. *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

d. *Disturb any human remains, including those interred outside of formal cemeteries?*

e. *Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code § 21074?*

Thresholds a through d are taken directly from Appendix G to the State CEQA Guidelines, and are intended to ensure that Project impacts to historic, archaeological and/or paleontological resources are fully evaluated and mitigated for, as impact to these resources could interfere with scientific research endeavors could compromise resources that are considered sensitive to prehistoric and/or historic cultures. Threshold e was selected to discuss the requirements of Public Resources Code § 21074.

4.4.4 IMPACT ANALYSIS

Threshold a. Would the Project cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

The Project proposes an approximately 24-acre expansion of an existing surface mining operation. As detailed in the City of Lake Elsinore General Plan Update EIR Figure 3.2-2, the Nichols Canyon Mine and surrounding areas have been determined to not contain historic resources as defined in § 15064.5 of the CEQA Guidelines (Lake Elsinore, 2011b, Figure 3.2-2). Although there are no known historical resources located within the Project area, it is possible for the proposed Project to uncover the presence of significant subsurface historical resources within the proposed Expanded Disturbance Area (EDA), which is the proposed approximately 24-acre increase in the approved disturbance limits for the Nichols Canyon Mine. A site-specific Phase I and Phase II Cultural Resources Assessment was prepared to evaluate the potential for the presence of historical resources within the EDA.

An archaeological records search for the Project and the surrounding area within a one mile radius was conducted by the EIC at UCR. The EIC reported that one cultural resource (RIV-8116) is located within the Project site. Site RIV-8116 is recorded as a historic refuse scatter. (BFSA, 2015b, page 4.01-1)

BFSA conducted an archaeological study to locate and record any cultural resources present within the Project. During the study, the previously recorded historic site (RIV-8116), was relocated. This site was recorded as a mid-twentieth century historical refuse scatter. The site was subjected to a testing program to evaluate site significance. Testing documented the site as a surface scatter of historic artifacts that represent a roadside dump. (BFSA, 2015b, page 1.0-1)

With the recordation of historic Site RIV-8116, the collection of historic surface artifacts, and the excavation of subsurface tests, the research potential for this site has been exhausted and the site is evaluated as not unique and not CEQA-significant (BFSA, 2015b, page 1.0-1). Thus, based on the conclusions in the Phase I and II Cultural Resources Assessment, the Project would not impact historic resources and as such, no mitigation is required.

Threshold b. Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

An archaeological records search for the Project and the surrounding area within a one-mile radius was conducted by the EIC at UCR. The EIC reported that one cultural resource (RIV-8116) is located within the Project site and an additional 31 cultural resources are located within a one-mile radius (BFSA, 2015b, page 4.0-1). The analysis of site components and artifacts did not indicate Native American religious, ritual, or other special activities. In addition, BFSA requested a review of

the Sacred Lands File (SLF) by the Native American Heritage Commission (NAHC) to determine if any recorded Native American sacred sites or locations of religious or ceremonial importance are present within one mile of the Project. The NAHC SLF search did not indicate the presence of a sacred site within the search radius. (BFSA, 2015b, page 3.0-4)

The Phase I and II Cultural Resources Assessment concludes that one previously recorded historic site, RIV-8116, was present within the Project. The RIV-8116 site was documented by BNSF and was relocated as noted above, and no further impacts would occur as a result of the Project. Mitigation measures would not be required as part of Project approval. (BFSA, 2015b, page 1.0-2) Accordingly, implementation of the proposed Project would not result in a substantial adverse change in the significance of any known archaeological resources, as defined in California Code of Regulations § 5064.5. Although unlikely, the potential nonetheless exists for resources to be unearthed during ground disturbing activities. Thus, the Project's potential to physically impact an archaeological resource that could be buried beneath the surface represents a significant impact for which mitigation is required. ~~Therefore, the Project would have no impact and no mitigation is required.~~

Threshold c. Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

According to GPU EIR Figure 3.2-3, the Nichols Canyon Mine has a "low" and "undetermined" potential for paleontological resources to be uncovered (Lake Elsinore, 2011b, Figure 3.2-3) A Paleontological Resource and Monitoring Assessment was prepared in May 2015 for the Nichols Canyon Mine expansion area.

As detailed in the Paleontological Resource and Monitoring Assessment for the proposed Project (*Technical Appendix E1*), the geologic units within the bounds of the Nichols Canyon Mine are either assigned a Low Potential to yield fossiliferous materials, or are regarded as unlikely to yield fossiliferous materials on the basis of the geologic field investigation. As such, implementation of a paleontological Mitigation Monitoring and Reporting Program (MMRP) would typically not be required for any earth-disturbing (quarrying) activities on-site. Because of the unlikely possibility of finding fossils in the geologic formations exposed across the Project site, a museum collections and records search was not solicited for the proposed Project. (BFSA, 2015a, p. 2)

Based on the published geologic map units within the bounds of the Nichols Canyon Mine, the lack of any known fossiliferous deposits in these units, the assignment of a Low Potential to contain significant nonrenewable paleontological resources (i.e. fossils) in the granitic and young alluvial fan sediments, and the results of the geologic field examination, the Paleontological Resource and Monitoring Assessment concludes that the likelihood of finding fossiliferous materials within the Project site during any further excavation (quarrying) and/or grading activities is low to nil. The report does not recommend a paleontological MMRP for the Project during the course of further mining activities at the Project site. (BFSA, 2015a, p. 3) Thus, based on the information provided in the Paleontological Resource and Monitoring Assessment, the Project would have a less-than-significant impact to paleontological resources and no mitigation measures are warranted.

Threshold d. Would the Project disturb any human remains, including those interred outside of formal cemeteries

The Project site does not contain a cemetery and no known formal cemeteries are located within the immediate site vicinity. Field surveys conducted on the Project site did not identify the presence of any human remains and no human remains are known to exist beneath the surface of the site (BFSA, 2015b). Nevertheless, the remote potential exists that human remains may be unearthed during grading and excavation activities associated with Project construction.

If human remains are unearthed during Project construction, the construction contractor would be required by law to comply with California Health and Safety Code, § 7050.5 "Disturbance of Human Remains." The term "human remains" encompasses more than human bones because some Native American traditions (including the Soboba Band of Luiseño Indians) periodically necessitated the ceremonial burning of human remains. Grave goods are defined as the artifacts associated with any human remains. These items, and other funerary remnants and their ashes are to be treated in the same manner as human bone fragments or bones that remain intact. According to § 7050.5(b) and (c), human remains must be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. If human remains are discovered, the County Coroner must be contacted and if the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, the Coroner is required to contact the NAHC by telephone within 24 hours. Pursuant to California Public Resources Code § 5097.98, whenever the NAHC receives notification of a discovery of Native American human remains from a county coroner, the NAHC is required to immediately notify those persons it believes to be most likely descended from the deceased Native American. The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American human remains and may recommend to the owner or the person responsible for the excavation work means for treatment or disposition, with appropriate dignity, of the human remains and any associated grave goods. The descendants shall complete their inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. According to Public Resources Code § 5097.94(k), the NAHC is authorized to mediate disputes arising between landowners and known descendants relating to the treatment and disposition of Native American human burials, skeletal remains, and items associated with Native American burials. It is to be understood by all parties that unless otherwise required by law, the site of any reburial of Native American human remains or cultural artifacts shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The Coroner, parties, and Lead Agencies, will be asked to withhold public disclosure information related to such reburial, pursuant to the specific exemption set forth in California Government Code § 6254 (r). With mandatory compliance to California Health and Safety Code § 7050.5 and Public Resources Code § 5097.98, any potential impacts to human remains, including human remains of Native American descent, would be less than significant and mitigation is not required. (BFSA, 2015b, p. 3.0-7)

Threshold e. Would the Project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code § 21074?

The provisions of Public Resources Code § 21074 were established pursuant to AB 52. Pursuant to § 11.(c) of AB 52, the provisions of AB 52 apply only to projects that have a notice of preparation (NOP) or a notice of negative declaration or mitigated negative declaration filed on or after July 1, 2015. The proposed Project's NOP was distributed for public review on June 25, 2015.

Accordingly, the Project is not subject to the provisions of AB 52, and no further analysis of this topic is necessary. However, consistent with the public participation prerogatives of CEQA, during the public comment period on the revised and recirculated DEIR, the City did provide written notification to several tribes of the City's willingness to consult and meet with them should they so desire, notwithstanding the inapplicability of AB 52. The results of meetings with the Tribes, if the Tribes request a meeting, will be documented in the Final EIR for the Project.

4.4.5 CUMULATIVE IMPACT ANALYSIS

This cumulative impact analysis considers development of the proposed Project in conjunction with other development projects in the vicinity of the Project site resulting from full buildout of the City of Lake Elsinore General Plan and buildout of nearby portions of unincorporated Riverside County in conformance with the Riverside County General Plan.

The Phase I and II Cultural Resources Assessment concluded that the one previously recorded historic site, RIV-8116, which has been relocated, is not CEQA-significant, and as such the impacts to RIV-8116 would not be adverse. Therefore, the Project has no potential to contribute towards a cumulatively considerable impact to historical or archaeological resources.

No paleontological resources have been identified on the Project site. The Paleontological Resource and Monitoring Assessment for the Project concludes that the likelihood of finding fossiliferous materials within the Project site during any further quarrying/grading activities is very low to nil. Therefore, the Project has no potential to contribute towards a cumulatively considerable impact to paleontological resources.

Due to mandatory compliance required of all ground-disturbing construction activities with the provisions of California Health and Safety Code § 7050.5 as well as Public Resources Code § 5097 et. seq., human remains would be assured proper treatment if encountered. Because all other development projects within the Cities of Lake Elsinore, Corona, Temecula, and elsewhere in the region similarly would be required to comply with state law, any cumulatively considerable impact associated with human remains discovery would be precluded.

As detailed in threshold e) above, the Project is not subject to the provisions of AB 52. Thus, the Project would have no cumulatively considerable impacts in this regard. However, consistent with the public participation prerogatives of CEQA, during the public comment period on the revised and recirculated DEIR, the City did provide written notification to several tribes of the City's willingness to consult and meet with them should they so desire, notwithstanding the inapplicability of AB 52. The results of meetings with the Tribes, if the Tribes request a meeting, will be documented in the Final EIR for the Project.

4.4.6 SIGNIFICANCE OF IMPACTS BEFORE MITIGATION

Threshold a~~1~~: No Impact. One previously recorded historic site, RIV-8116, was present within the Project site and it has since been relocated by BNSF. Surface artifacts were observed and collected during the relocation of RIV-8116. Additionally, because Site RIV-8116 does not contain any subsurface cultural deposits and lacks any further research potential, the site was evaluated as not unique and not significant under CEQA criteria. Thus, the Project would have no impacts to historical resources.

Threshold b2: Significant Direct~~No~~ Impact. The Project would not impact any known or suspected prehistoric archaeological resources. No prehistoric archaeological resources have been identified on the Project site or in the surrounding area. However, the potential nonetheless exists for resources to be unearthed during ground disturbing activities. Thus, the Project's potential to physically impact an archeological resource that could be buried beneath the surface represents a significant impact for which mitigation is required. ~~Thus, the Project would have no impacts to archaeological resources.~~

Threshold c3: Less-than-Significant Impact. There is a very low likelihood that the Project's construction activities could uncover paleontological resources that may be buried beneath the ground surface. As such the Project would have a less-than-significant impact to these resources because the likelihood of finding fossiliferous materials within the Project site during any further excavation/grading activities is very low to nil.

Threshold d4: Less-than-Significant Impact. In the unlikely event that human remains are discovered during Project grading or other ground disturbing activities, the Project would be required to comply with the applicable provisions of California Health and Safety Code § 7050.5 and California Public Resources Code § 5097 *et. seq*. Mandatory compliance with State law would ensure that human remains, if encountered, are appropriately treated and would preclude the potential for significant impacts to human remains.

Threshold e5: No Impact. As described under Threshold e) above, the Project's NOP was distributed for public review on June 25, 2015. Accordingly, the Project is not subject to the provisions of AB 52. Thus, there would be no impact in this regard. Moreover, consistent with the public participation prerogatives of CEQA, during the public comment period on the revised and recirculated DEIR, the City did provide written notification to several tribes of the City's willingness to consult and meet with them should they so desire, notwithstanding the inapplicability of AB 52. The results of meetings with the Tribes, if the Tribes request a meeting, will be documented in the Final EIR for the Project.

4.4.7 MITIGATION

~~Impacts would not occur or would be less than significant; accordingly, no mitigation is required.~~

MM 4.4-1 If during ground disturbing activities, unanticipated cultural resources are discovered, the following procedures shall be followed. Unanticipated cultural resources may include previously unknown sacred sites and items, midden deposits, artifacts, hearths, bedrock outcrops, human remains and other resources, etc. (a cultural resource site is defined as being a feature and/or three or more artifacts in close associated with each other, but may include fewer artifacts if the area of the find is determined to be of significance due to sacred or cultural importance):

1) All ground disturbance activities within 100 feet of the discovered cultural resource shall be halted until a meeting is convened between the Applicant, the Project archaeologist, the Native American tribal representative (or other appropriate ethnic/cultural group representative), and the City Archaeologist to discuss the significance of the find. If not already employed by the Project Applicant, a City-approved archaeologist shall be employed by the Project Applicant to assess the value/importance of the cultural resource, attend the

meeting described, and continue monitoring of all future site grading activities as necessary.

2) The Applicant shall call the City Archaeologist immediately upon discovery of the cultural resource to convene the meeting.

3) At the meeting with the aforementioned parties, the significance of the discoveries shall be discussed and a decision is to be made with the concurrence of the City Archaeologist, as to the appropriate mitigation (documentation, recovery, avoidance, etc.) for the cultural resource. Consistent with California Public Resources Code Section 21083.2(b) and Assembly Bill 52 (Chapter 532, Statutes of 2014), avoidance shall be the preferred method of preservation for tribal cultural resources, sacred sites, and archaeological resources, if feasible.

4) Further ground disturbance shall not resume within the area of discovery until a meeting has been convened with the aforementioned parties and a decision is made with the concurrence of the City Archaeologist, as to the appropriate mitigation measures.

5) If the Project Applicant, Project archaeologist, and Tribe cannot agree on the significance of, avoidance of, or mitigation for such resources, these issues shall be presented to the Planning Director for determination. The Planning Director shall make the determination based on the information submitted by the Tribe, the religious beliefs, customs, and practices of the Tribe, and the provisions of the California Environmental Quality Act regarding tribal cultural and archaeological resources. Notwithstanding any other rights available under law, the decision of the Planning Director shall be appealable to the Planning Commission and/or City Council.

6) The Project Applicant shall waive any and all claims to ownership of Native American ceremonial and cultural artifacts that may be found on the Project site. Upon completion of authorized and mandatory archeological analysis, the Applicant should return said artifacts to the Tribe within a reasonable time period agreed to by the Parties and not to exceed (30) days from the initial recovery of the items.

4.4.8 SIGNIFICANCE OF IMPACTS AFTER MITIGATION

Threshold b: Less-than-Significant Impact with Mitigation. Implementation of Mitigation Measure MM 4.4-1 would ensure that the Project's potential impacts to previously-unearthed cultural resources are mitigated to below a level of significance. Mitigation Measure MM 4.4-1 would ensure that any cultural resources unearthed during ground disturbing activities would be properly identified and mitigated in consultation with the Archeologist and Native American Tribes. With implementation of the required mitigation, the Project's impacts to unearthed cultural resources would be less than significant.

4.5 GEOLOGY AND SOILS

This Subsection assesses the existing surface and subsurface geologic conditions and features of the Project site and determines the potential for impacts associated with these features. The analysis is based in part on information contained in the report titled "Report of Slope Stability Investigation, Proposed Nichols Mine Expansion, Lake Elsinore, California (Project No. 15082-8)" prepared by CHJ Consultants and dated April 15, 2015 (CHJ, 2015). The slope stability report is provided as *Technical Appendix F* to this EIR. Information used to support the analysis in this ~~s~~Subsection also was obtained from the City of Lake Elsinore General Plan Update Final Recirculated Program Environmental Impact Report, Section 3.11, Geology and Soils (State Clearinghouse No. 2005121019), certified December 13, 2011.

4.5.1 SCOPE OF REVIEW

The Nichols Canyon Mine, as discussed in Section 2.0, *Environmental Setting*, is an existing, ongoing surface mining operation operating pursuant to vested mining rights and an approved reclamation plan (RP 2006-01A1), which was analyzed in a prior MND. Although the City has chosen to prepare an EIR for the Project here, the scope of review addresses those impacts resulting from the Project as described in Section 3.0, *Project Description*, and not impacts related to existing, approved operations, which form the environmental baseline, as discussed in Subsection 2.7, *Existing Physical Site Conditions.* As disclosed in Section 3.0, *Project Description*, an asphalt batch plant is an existing approved on-site use pursuant to Conditional Use Permit CUP 2014-07 approved by the City of Lake Elsinore in 2015. Thus, the batch plant has already been approved by the City along with a CEQA environmental compliance document that was not challenged by any third party. During the public comment period on the proposed Project's DEIR, several third parties incorrectly asserted that the DEIR failed to adequately analyze the proposed Project's impacts. Several of these commentators also incorrectly claimed that the batch plant's impacts needed to be re-analyzed as part of this EIR. While the City disagrees with these claims because the batch plant has already been approved under CUP 2014-07 and previously evaluated in an approved MND Addendum that was not challenged, in an effort to provide a conservative and overly-inclusive analysis of the Project's impacts on the environment (as opposed to potentially underestimating the Project's impacts), and to remove this issue from being a point of contention, this EIR includes analyses of the batch plant's impacts in all relevant and CEQA Appendix G topics. However, the construction and operation of an asphalt batch plant on the site is not relevant to the issues of Geology and Soils because the asphalt batch plant site is located in an area previously subject to disturbance and mining activity, would not expose people or structures to potential adverse impacts related to: earthquake faults, seismic ground shaking, liquefaction, or landsides; result in substantial soil erosion; or be located on unstable soils. As part of reclamation activities at the Mine, the asphalt batch plant would be removed from the Project site. ~~Accordingly, this Subsection analyzes geology and soils impacts related to the Project specifically.~~ Additionally, ~~T~~this Subsection does not analyze geology and soils impacts related to existing, approved mining operations because the approved mining operations are a baseline condition and not part of the proposed Project.~~, except as part of the cumulative impacts analysis, where required~~

4.5.2 EXISTING CONDITIONS

~~D.~~A. Regional Geology

The City of Lake Elsinore is located in the northern part of the Peninsular Ranges geomorphic province and includes parts of two structural subdivisions of the province. The northern extent of the Peninsular Ranges province is the Santa Monica Mountains and the southern extent is the tip of Baja California. The Peninsular Ranges include plutonic and metamorphic crystalline rocks of Cretaceous and older age. The crystalline basement rocks are locally mantled by colluvial soils and older sediments. The Project site is situated in an uplifted and dissected bedrock terrain and geologic units include metasedimentary and metavolcanic rocks coeval with the plutonic rocks of the Peninsular Ranges batholith, intrusive granitics, and older alluvial fan sediments mantling uplifted flats. (CHJ, 2015, p. 5)

~~E.~~B. Site Topography

The Nichols Canyon Mine property consists of a surface mine and undisturbed vacant property. Under existing conditions, areas that were previously subject to mining on the Nichols North site contain stockpiles, dirt roadways, and processing equipment, while the upper elevations of the hillsides are undisturbed. The northwestern portion of the Nichols North site also contains the location for the asphalt batch plant per CUP 2014-07. The Nichols South site consists of a mostly disturbed site where overburden has been removed and much of the area is subject to regular disking as part of on-going fire abatement activities, with a drainage (Stovepipe Creek) traversing the southeastern portion of the Nichols South site. The Project's proposed 24-acre expanded disturbance area (EDA) is generally undeveloped hillside land formed in bedrock terrain that includes surface rock outcrops. The EDA is dissected by a southwest-trending ravine and smaller drainages to the southeast. The topography rises in elevation from southwest to northeast and is formed in a crystalline bedrock unit of the Perris Structural Block. Natural slopes generally slope at angles less than 30 degrees; however, locally steeper slopes are present in drainages and within and near bedrock outcrops. (CHJ, 2015, p. 3)

~~F.~~C. Geotechnical Conditions of the Project Site

As discussed in EIR Subsection 2.5, *Aggregate Mining Context in the Temescal Valley Production Area*, the Nichols Canyon Mine extracts and exports material that is classified as Portland Cement Concrete (PCC) grade aggregate material. The geologic condition of the Project site supports use of the property as a surface mine. According to the California Department of Conservation, California Geologic Survey (CGS) report titled "Update of Mineral Land Classification for Portland Cement Concrete-Grade Aggregate in the Temescal Valley, dated 2014, from an aggregate materials supply and demand context, the Nichols Canyon Mine is located in the near center of the Temescal Valley Production Area, as shown previously on Figure 2-3, *General Location Map of the Temescal Valley Production Area*. (CGS, 2014) The Production Area supplies needed aggregate materials to a five-county region.

CHJ Consultants performed a field investigation, laboratory testing, and slope stability analysis of the Project site in March 2015. The geotechnical conditions at the time of subsurface exploration are described generally below and in more detail in *Technical Appendix F*. West-dipping joints of moderate continuity were observed by CHJ in the quarry and in native outcrop exposures. These features form daylighted faces in quarry cuts. The approximately 24-acre EDA in which expanded

mining activities are proposed is generally undeveloped hillside land formed in bedrock terrain that includes surface outcrops. (Lake Elsinore, 2011a, p. 3) The EDA is underlain by crystalline bedrock units including metavolcanics/ metasedimentary and intrusive tonalite. The bedrock is mantled by a soil residuum derived from weathering and alteration of bedrock material on flats, accumulation of colluvium on slopes, and deposition of alluvium in drainages. The geologic units reported in *Technical Appendix F* as a result of CHJ's field investigation are described below. (CHJ, 2015, pp. 5-6)

- **Fill (f).** Fill associated with the mine stockpiles and dirt roads is derived from local materials including surface soil and bedrock. Fill materials are considered undocumented and unsuitable for support of permanent engineered improvements.

- **Young Alluvial Fan Deposits (Qyf).** Young alluvial fan deposits consisting of sand, silt and gravel, including small boulders and cobbles, are present across the flat area in the southern portion of the Project site.

- **Hypabyssal Tonalite (Kgh).** Massive tonalite and lesser granodiorite comprise the resource rock of the quarry and form the majority of outcrops within the Project site. Hand samples collected by CHJ revealed euhedral quartz and white feldspar crysts. Soils formed on the tonalite are reddish brown.

- **Intermixed Estelle Mountain Volcanics and Sedimentary Rocks (Ksv).** Intermixed volcanic and sedimentary rocks that include foliated and folded quartzite, schist, argillite, and shale with colors varying from brown to black crop out in the northwest portion of the quarry area. This area lies outside the proposed EDA.

- **Metasedimentary Rocks (Jbc)** These rocks form poorly exposed outcrops in the southeastern portion of the proposed EDA. They are typically brown to dark gray in color with some whitish zones, exhibit foliation (repetitive layering), and erode to form a dark brown residual soil that contains abundant angular rock chips. The contact with the granitic Kgh unit is poorly exposed with most areas suggesting Kgh-derived, rounded terrace deposits resting on Jbc. It appears that some granitic Kgh outcrops on the lower slopes are boulders that have rolled down onto the Jbc surface, giving the appearance of original location.

~~G.~~D. Seismic Hazards - Faults

According to Riverside County GIS, the Nichols Canyon Mine site is not mapped in an Alquist-Priolo Fault Zone and no known fault zones underlie the property. (RCIT, 2015) Therefore, there is no potential for the Mine site to be ruptured by a fault. The San Andreas Fault forms the boundary between the Pacific and the North American tectonic plates, which slide past each other. As a result, southern California, including areas near the Project site, contains numerous regional and local faults and experiences substantial ground movement during frequent seismic events. (Lake Elsinore, 2011b, p. 3.11-1) The Working Group on California Earthquake Probabilities tentatively assigned a 28 percent probability to a major earthquake occurring on the San Bernardino Mountains segment of the San Andreas Fault between 1994 and 2024. The San Andreas Fault zone is the major surface expression of the tectonic boundary and accommodates most transform slip between the Pacific and North American Plates. Some slip is accommodated by other northwest-trending strike-slip faults

related to the San Andreas system, such as the San Jacinto and the Elsinore faults. (CHJ, 2015, p. 8) Each of the local fault zones and blind thrust faults are described briefly below.

- **Elsinore Fault Zone.** The Glen Ivy North segment of the Elsinore fault zone is the nearest major active fault to the Nichols Canyon Mine, located about 1.8 miles southwest. To the north, it splays into the Whittier and Chino faults. The Elsinore is primarily a strike-slip fault zone and most Elsinore fault traces are demonstrably active. The southern segment of the northwest-trending Chino-Central Avenue fault, a northern splay of the Elsinore fault zone, is approximately 22 miles northwest of the Project site. The west- to northwest-trending Whittier fault is approximately 23 miles northwest of the Project site. (CHJ, 2015, p. 9)

- **San Jacinto Fault Zone.** The San Jacinto fault zone is a system of northwest-trending, right-lateral, strike-slip faults. The San Jacinto Valley segment is approximately 18.5 miles northeast of the Nichols Canyon Mine. More large historic earthquakes have occurred on the San Jacinto fault than any other fault in Southern California. A portion of the San Jacinto fault may accommodate most of the slip between the Pacific and the North American Plates. Research suggests that this motion is transferred to the San Andreas Fault in the Cajon Pass region by "stepping over" to parallel fault strands that include the Glen Helen fault. (CHJ, 2015, p. 9)

- **San Andreas Fault Zone.** The San Andreas fault zone is located along the southwest margin of the San Bernardino Mountains, approximately 30 miles north-northeast of the Nichols Canyon Mine. The mountain front in the San Bernardino area approximately marks the active trace of the San Andreas Fault. (CHJ, 2015, p. 10)

- **Blind Thrust Faults.** A blind thrust earthquake occurs along a thrust fault that does not show signs on the Earth's surface. Such faults, being invisible at the surface, are not mapped by standard surface geological mapping, and are typically inferred to be present based on other evidence. The San Joaquin Hills Thrust fault is an inferred blind thrust beneath the San Joaquin Hills in coastal Orange County. The vertical surface projection of this thrust is approximately 26 miles west-southwest of the Project site. The Puente Hills Blind-Thrust is a system of buried thrust fault ramps that extend from beneath Los Angeles to the Puente Hills of eastern Los Angeles County and Orange County. Fault segments of this thrust are the Los Angeles, Santa Fe Springs, and Coyote Hills. (CHJ, 2015, p. 10)

~~H.~~E. Seismic Hazards – Ground Shaking

From a ground shaking standpoint, a seismic event on the Elsinore fault zone, located about 1.8 miles to the southwest of the Nichols Canyon Mine, would produce the most substantial effects to the Mine site. (CHJ, 2015, p. 11) Hazards from ground shaking at the Mine site were evaluated by CHJ from a deterministic standpoint for use as a guide to formulate an appropriate seismic coefficient for analyzing slope stability. A summary of the deterministic evaluation of seismic hazard is provided in Table 4.5-1, *Summary of Regional Seismic Sources*.

Table 4.5-1 Summary of Regional Seismic Sources

Fault (Segments)	Magnitude	Distance (km)	Peak Ground Acceleration (g)
Elsinore	7.3	2.9	0.48
San Jacinto	7.4	30	0.16
San Andreas	7.6	48	0.12
San Joaquin Hills	7.1	42	0.11
Puente Hills	7.1	53	0.09

Km= kilometers, W=Whittier, GI=Glen Ivy, SBV=San Bernardino Valley, SJV=San Jacinto Valley, SM=South Mojave, NSB=North San Bernardino, SSB=South San Bernardino
(CHJ, 2015, Table 1)

~~I.~~F. Seismic Hazards – Liquefaction

Liquefaction is a phenomenon in which loose, saturated, relatively cohesion-less soil deposits lose shear strength during strong ground motions, which causes the soil to behave as a viscous liquid. Liquefaction is generally limited to the upper 50 feet of subsurface soils. Research and historical data indicate that loose granular soils of Holocene to late Pleistocene age below a near-surface groundwater table are most susceptible to liquefaction, while the stability of most clayey material is not adversely affected by vibratory motion (SCEC, 1999, pp. 5-6). Therefore, in order for the potential effects of liquefaction to be manifested at the ground surface, soils generally must be of Holocene to late Pleistocene age, granular, loose to medium dense, relatively saturated near the ground surface and subjected to a sufficient magnitude and duration of ground shaking.

A preliminary report of rock slope stability evaluation was conducted on the Nichols Canyon Mine Site by Hilltop Geotechnical (Hilltop) for Chandler Aggregates in March 2014. Hilltop reported finding no surface water, shallow groundwater, or water-bearing sediments. (CHJ, 2015, p. 4) Similarly, CHJ Consultants did not observe any surface water on the Mine site during their field work in 2015. CHJ reported that the EDA is underlain at shallow depth by crystalline bedrock that does not form a groundwater table. No seepage, springs, or other evidence for a groundwater table was observed within the quarry boundary during CJH's geologic mapping. (CHJ, 2015, pp. 12-13)

Based on the presence of non-liquefiable bedrock, the potential for liquefaction and other shallow groundwater-related hazards within the EDA is very low.

~~J.~~G. Slope Stability

For the purposes of analysis of slope stability, the term "landslide" refers to deep-seated slope failures that involve mine pitscale features that have the potential to reduce the long-term stability of finished quarry reclamation slopes. Landslides in rock are typically related to structure in the parent material. No evidence for existing deep-seated landslides with the potential to affect the mine slopes was observed by CHJ during their field work or from their examination of aerial photographs. CHJ reported that although the Mine's quarry bottom may be exposed to periodic ponding of surface water after locally heavy precipitation, such ponding would be shallow and short-lived—lasting only as long as evaporation/infiltration occurs; therefore, this transient water is inconsequential to slope stability calculations. Because groundwater is not present at the Mine site, there is no potential for groundwater to affect slope stability. (CHJ, 2015, p. 13) (CHJ, 2015, p. 13)

~~K.~~H. Applicable Regulatory Requirements

1. Alquist-Priolo Earthquake Fault Zoning Act (CA Pub. Res. Code § 2621 et Seq.)

The Alquist-Priolo Special Studies Zone Act was signed into law in 1972 and renamed the Alquist-Priolo Earthquake Fault Zoning Act in 1994. The primary purpose of the Alquist-Priolo Act is to mitigate the hazard of fault rupture by prohibiting the location of structures for human occupancy across the trace of an active fault. The Nichols Canyon Mine Site is not located in a designated Alquist-Priolo Earthquake Fault Zone. (RCIT, 2015)

2. Seismic Hazards Mapping Act (CA Pub. Res. Code § 2690 et Seq.)

The Seismic Hazards Mapping Act of 1990 is a statewide seismic hazard mapping and technical advisory program in California to assist cities and counties in fulfilling their responsibilities for protecting the public health and safety from the effects of strong ground shaking, liquefaction, landslides, other ground failure, and other seismic hazards caused by earthquakes. The California Geologic Survey (CGS) is the principal State implementing agency which has mapped out seismic zones requiring the completion of site-specific geotechnical investigations prior to construction of a project.

3. California Building Standards Code, Title 24

The California Building Standards Code (CBSC) (California Code of Regulations, Title 24) is the standard from which California buildings derive appropriate building design standards related to building foundation support, protection from seismic ground motion, and soil and slope instability. The International Building Code (IBC) used by the International Code Council establishes design and construction standards for buildings and facilities. The California Building Code (CBC), California Code of Regulations, Title 24, Part 2 component of the CBSC incorporates the IBC as well as other uniform codes into its code standards.

4. South Coast Air Quality Management District, Rule 403

The South Coast Air Quality Management District (SCAQMD) is responsible for enforcing air pollution control measures in the South Coast Air Basin (SCAB), within which the Project site is located. Rule 403 addresses blowing dust and is applicable to the Project due to its potential to result in wind erosion during grading and/or mining activities.

5. Federal Water Pollution Control Act (Clean Water Act)

The Federal Water Pollution Control Act (also known as the Clean Water Act [CWA]) is the principal federal statute that addresses water resources. The provision of the CWA applicable to geology and soils is CWA Section 402, which applies to all construction sites of over one acre in size and, in part, serves to control the potential impacts of erosion. CWA Section 402 authorizes the National Pollutant Discharge Elimination System (NPDES) permit program that covers point sources of pollution discharging to a water body. The NPDES program requires operators of construction sites one acre or larger to prepare a Stormwater Pollution Prevention Plan (SWPPP) and obtain authorization to discharge stormwater under an NPDES construction stormwater permit. In addition, the NPDES program requires Municipal Separate Storm Sewer System (MS4) permits to regulate storm water discharges from municipal sewer systems.

6. California Surface Mining and Reclamation Act of 1975 (SMARA)

California's Surface Mining and Reclamation Act (SMARA) (Public Resources Code § 2710-2796) is a comprehensive surface mining and reclamation policy that regulates surface mining operations to ensure that adverse environmental impacts are minimized and that mined lands are reclaimed to a condition in which they can be re-used. In addition, SMARA encourages the production, conservation, and protection of the mineral resources in California. SMARA requires the State Mining and Geology Board to adopted State policy for the conservation of mineral resources and the reclamation of lands that have been mined (DOC, 2013)

7. State Mining and Geology Board Regulations for Surface Mining and Reclamation Practice

State Mining and Geology Board regulations for surface mining and reclamation practice are set forth in California Code of Regulations (CCR), Title 14, Division 2, Chapter 8, Subchapter 1, Section 3500 et seq. The purpose of regulating surface mining and reclamation practices is to establish state policy for the reclamation of mined lands and the conduct of surface mining operations in accord with the general provisions set forth in SMARA. (Westlaw, 2015)

8. Lake Elsinore Municipal Code § 14.04

Due to the nature of the proposed Project, Chapter 14.04, *Surface Mining and Reclamation*, of the City's Municipal Code would apply. The intent of this chapter is to ensure the continued availability of important mineral resources, while regulating surface mining operations as required by California's Surface Mining and Reclamation Act of 1975 and State Mining and Geology Board Regulations. This chapter of the City's Municipal Code is to ensure that: 1) adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative land uses; 2) the production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment; and 3) residual hazards to the public health and safety are eliminated. (Lake Elsinore, 2015)

4.5.3 BASIS FOR DETERMINING SIGNIFICANCE

The proposed Project would result in a significant impact to geology and soils if the Project or any Project-related component would:

a. *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*
    i. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42.*
    ii. *Strong seismic ground shaking.*
    iii. *Seismic-related ground failure, including liquefaction.*
    iv. *Landslides.*
b. *Result in substantial soil erosion or the loss of topsoil.*

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (since renamed as the California Building Code), creating substantial risks to life or property.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

The above-listed thresholds are derived directly from Section VI of Appendix G to the CEQA Guidelines and address typical adverse effects due to geologic conditions. (OPR, 2009).

[Note: Threshold d. is based on Appendix G of the CEQA Guidelines and references Table 18-1-B of the 1994 Uniform Building Code (UBC) which has been superseded by the current building code, the 2013 CBSC. The 2013 CBSC references ASTM D-4829, a standard procedure for testing and evaluating the expansion index (or expansion potential) of soils established by ASTM International, which was formerly known as the American Society for Testing and Materials (ASTM).]

4.5.4 IMPACT ANALYSIS

Threshold a: ***Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:***

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?; Refer to Division of Mines and Geology Special Publication 42.

ii. Strong seismic ground shaking?

iii. Seismic-related ground failure, including liquefaction?

iv. Landslides?

1. Potential for Earthquake Fault Rupture

There are no known active or potentially active faults on the Mine site, as determined by CHJ Consultants' review of published and unpublished literature and maps, stereoscopic aerial photographs, and field mapping. Accordingly, there is no potential for ground fault rupture to occur on the Project site or as a result of the proposed Project. (CHJ, 2015, p. 11) No impact would occur and mitigation is not required.

2. Potential for Strong Seismic Ground Shaking

The Project site is located in a seismically active area of southern California and is expected to experience moderate to severe ground shaking during the lifetime of the Mine's operation and reclamation. This risk is not considered substantially different than the risk to other properties in the southern California area. Ground shaking potential was considered by CHJ in their analyses and evaluation of slope stability, and CHJ determined that ground shaking at the Mine site would not result in mine slope failure and would therefore not expose people or structures to adverse effects involving injury or death. (CHJ, 2015, p. 21) For additional information, refer to *Technical Appendix F*. A less than significant impact would occur and mitigation is not required.

3. Potential for Seismic-Related Ground Failure

As detailed in the *Technical Appendix F,* the potential for liquefaction and other shallow groundwater hazards within the Mine site is low; therefore, ground failure impacts would be less than significant (CHJ, 2015, p. 21)). Based on the field investigation and slope stability analyses conducted by CHJ Consultants, the proposed slope excavations and reclamation are feasible from geotechnical engineering and engineering geologic standpoints, provided the recommendations contained in the *Report of Slope Stability Investigation* are implemented during mining. (CHJ, 2015, p. 20) Thus, this EIR recommends mitigation to ensure that the Project would be implemented in accordance with the recommendations included in the Project's April 15, 2015 *Report of Slope Stability Investigation* (refer to Mitigation Measure MM 4.5-1 in Subsection 4.5.7, below) to further reduce the potential low risk of seismic-related ground failure.

4. Landslide Potential

The Project proposes the approval of a surface mining permit (SMP) No. 2015-01 and the second amendment to an existing approved Reclamation Plan (Reclamation Plan No. 2006-01A1 [RP 2006-01A1]) which would, among other items, allow mining activities to expand by approximately 24 acres (the EDA). The EDA is located east of the currently permitted mining area and would entail creation of new southwest-facing reclaimed slopes of up to approximately 440 feet high. Slope benching is proposed at 25-foot-wide with 25-foot-high inter-bench verticals (faces), resulting in an overall slope ratio of 1 horizontal to 1 vertical (45 degrees). Inclusion of service benches in the taller slopes would result in overall slope angles flatter than 45 degrees. (CHJ, 2015, p. 2)

During field investigations, CHJ noted surficial failures, typically involving the soil mantle, in steeper canyon slopes as soil/debris flows. CHJ considered these surficial failures to be a slope management/maintenance issue that would be relieved with the Mine's proposed grading and drainage improvements. (CHJ, 2015, p. 13) The *Report of Slope Stability Investigation* (EIR *Technical Appendix F*) recommends that slopes should be protected with berms or drainage improvements as necessary to prevent slope erosion in the areas where natural slopes drain onto the reclaimed slopes. (CHJ, 2015, p. 22) Mitigation is included to ensure that this recommendation from the report is followed. Mitigation Measure 4.5-1 in Subsection 4.5.7, below, would ensure that the recommendations from the Project's *Report of Slope Stability Investigation* (including grading and drainage improvements) are incorporated into grading plans for the Project. With implementation of this mitigation measure, potential impacts regarding seismically induced landslides would be less than significant.

Threshold b. Would the Project result in substantial soil erosion or the loss of topsoil?

Earth moving associated with mining activities would expose underlying soils, which could increase erosion susceptibility. However, mining activities under the proposed Project would include use of water, soil-binding chemicals, and alternative stabilization measures for dust control and aggregate processing (refer to EIR Figure 3-5). The expansion of the mining area would result in an expansion of existing dust control efforts, including the use of water for dust control measures. The proposed SMP 2015-01 requires that a portion of the Mine's dust control measures include water-reducing chemicals, such as $Soil_2O$®, which aids in dust control by saturating into the ground, keeping the ground moist. The Project also would pave portions of the vehicle routes to aid with dust suppression. With incorporation of dust control measures, which are a part of the proposed Project, a less-than-significant impact would occur regarding soil erosion. Furthermore, all soil erosion that

would happen on-site during on-going mining would be detained within the on-site detention basin, thereby precluding sediments from impacting downstream water bodies.

Upon completion of mining activities and once the final grades pursuant to RP 2006-01A2 are achieved, runoff on the Nichols North site would be conveyed to a proposed sediment basin and brow ditch located in the southwestern portion of the Nichols North site, and eventually conveyed westerly beneath an existing culvert underneath I-15. Similarly, the Nichols South site also would achieve the final grades specified by RP 2006-01A2 upon completion of mining activities, and the majority of drainage from this portion of the site would be conveyed to a proposed sedimentation basin located in the ~~north~~southwestern portion of the Nichols South site and ultimately west beneath I-15. The slopes within the southern portion of the Nichols South site are shown at a 2:1 maximum slope ratio. All basin slopes would be a 3:1 maximum slope ratio. Where feasible, a paved slope interceptor drain with down drains would be provided along the top of cut slopes where the drainage path is greater than 40 feet towards the cut slope in accordance with County of Riverside Building and Safety requirements to prevent significant erosion of slopes. Runoff from the portions of the Nichols South and Nichols North sites that are not subject to mining activities would continue to be conveyed by Stove Pipe Creek, located in the southeast corner of the Nichols South site, and ultimately west beneath I-15. (J.E. B&A, 2015, Exhibit H) Thus, the Project is designed to handle sediments and would result in a less-than-significant impact regarding soil erosion or the loss of topsoil.

Following the completion of mining activities, the Project proposes to install a reclamation seed mix, which would aid in revegetation of the slopes on the mine. An erosion control grass mix would be utilized on the pads of both the Nichols North and Nichols South sites to ensure that revegetation of the site does not cause or contribute to increased erosion rates post-reclamation. Thus, implementation of the Project would result in less than significant impacts regarding long-term erosion and loss of topsoil.

Threshold c. Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Based on slope stability analyses conducted by CHJ Consultants, the whole rock strength in the proposed slope areas of the Mine is sufficient to accommodate the proposed overall slope angles. Based on the analyses, the proposed overall approximate 45-degree mine and cut-slopes up to approximately 480 feet in height are suitably stable against gross failure for the long-term conditions, including the effects of seismic shaking. (CHJ, 2015, p. 20) Thus, the proposed Project would have a less-than-significant impact regarding landslides, subsidence, or collapse. As noted above under the discussion of Threshold a., the potential for liquefaction within the reclamation area is also low. (CHJ, 2015, p. 21)

A. Geologic Structure-Slope Stability Evaluation

Geologic mapping of the Project site by CHJ included measurement of the orientation of bedrock structures (discontinuities) in outcrop exposures. Based on these observations and the results of the CHJ investigation, deep-seated landsliding would not occur in the proposed Mine slopes. (CHJ, 2015, p. 14)

The kinematic (geometrically feasible failure modes) and global slope stability of the proposed slopes was evaluated for representative material types. Rock strength properties for global stability calculations were modeled using Hoek Brown criteria and the ultimate mining depths (highest slopes) in the mine. Inclusion of service benches on portions of the taller slopes (not included in the slope profiles analyzed) were determined by CHJ to produce flatter (and more stable) overall slope angles. (CHJ, 2015, p. 14)

B. Kinematic Analysis

Kinematic analysis involves the evaluation of geometrically feasible failure modes in bedrock based on the orientation of structural discontinuities including joints, faults, shear zones, bedding (i.e. the presence of layers), and foliation (repetitive layering in metamorphic rocks). (CHJ, 2015, p. 15)

Stereonet analysis for selected representative slope aspects was performed by CHJ utilizing the data compiled from examination of geologic structures within the site. Refer to *Technical Appendix F* for details on the stereonet analysis (CHJ, 2015, p. 15). The stereonet evaluation provides results as a percentage of points in a data set. In general, the percentage value relates to probability of a particular failure mode for planar or wedge sliding. Probabilities below 5 percent suggest low failure potential, 5 percent to 20 percent a low to moderate potential, and values above 20 percent a moderate or higher potential.

The results of the kinematic evaluation for the proposed southwest-facing slopes suggest a low to moderate potential for planar failure and moderate to high potential for wedge failures to form in the maximum 70-degree slope faces. Flatter slope angles are expected to exhibit similar or lesser potential for sliding. Observations of existing quarry faces by CHJ indicate that scaling of loose blocks during excavation provides a suitable mitigation of potential rock fall from planar or wedge structures. Inclusion of safety benches can also help to mitigate rock fall hazards. Scaling and inclusion of safety benches can effectively mitigate planar and wedge related rock fall in the final reclaimed slope face. (CHJ, 2015, p. 17) Although the Project is designed to ensure slope stability and would have a less-than-significant impact, Mitigation Measure 4.5-1 is recommended by this EIR to ensure that then design approaches for scaling and benched slope faces occur per the recommendations of the *Report of Slope Stability Investigation*.

Native outcrops occur on the Mine site under existing conditions and field observations suggest a high potential for topple failure of columnar blocks in the native outcrops. Native outcrops exhibit an abundance of southwest-leaning columns within the proposed EDA formed by a system of steep, northeast dipping joints cut by low-angle, west- and southwest-dipping, planar joints. In existing quarry exposures, topple potential is removed/mitigated by scaling of loose blocks during excavation. Scaling and inclusion of safety benches would effectively mitigate topple-related rock fall in the final reclaimed slope face, and the Project is designed to address this topple potential. Thus, impacts would be less than significant. (CHJ, 2015, p. 17) Nonetheless, Mitigation Measure 4.5-1 is included in this EIR to ensure that the recommendations made in the *Report of Slope Stability Investigation*, are implemented.

C. Global Stability Calculations

The global stability of Mine slopes, as depicted on the proposed Revised Reclamation Plan (RP 2006-01A2), was analyzed by CHJ using Spencer's method under both static and seismic conditions

for rotational and composite failure surfaces using the SLIDE computer program, version 6.032. (CHJ, 2015, p. 17) Representative cross sections of the proposed rock slopes derived from proposed RP 2006-01A2 were modeled by CHJ as follows:

- 480-foot-high 1:1 cut slope in Kgh (Section A)
- 110-foot-high 1:1 cut slope in Jbc/Kgh (Section B)

Groundwater was not considered in the stability evaluation due to the lack of seepage or groundwater in the generally arid site environment. (CHJ, 2015, p. 18) The results of the global slope stability analyses are summarized in Table 4.5-2, *Summary of Slope Stability Results*. Details of stability calculations including material type boundaries, strength parameters utilized, and the minimum factor of safety and critical slip surface are included in *Technical Appendix F*.

Table 4.5-2 Summary of Slope Stability Results

Cross Section	Slope Configuration	Static F.S.	Seismic F.S. (Kh=0.20)
Section A	480-foot high 1:1 cut	2.51	1.86
Section B	110-foot high 1:1 cut	1.63	1.25

Note: F.S. = factors of safety
(CHJ, 2015, Table 4)

As indicated in the table above, sufficient static factors of safety (f.s.) in excess of 1.5 and seismic f.s. in excess of 1.1 were indicated for the modeled proposed rock slope configurations and satisfy Office of Mine Reclamation (OMR) criteria and slope construction standards for building code compliant developments. The global rock slope configurations appear suitably stable for excavation/reclamation of the proposed slopes according to regulatory and building code requirements. (CHJ, 2015, p. 20) Therefore, stability impacts would be less than significant.

Threshold d. ***Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (since renamed as the California Building Code), creating substantial risks to life or property?***

Note: Appendix G of the California Environmental Quality Act (CEQA) Guidelines references Table 18-1-B of the 1994 Uniform Building Code (UBC). This Table no longer exists. The adopted 2001 California Building Code included a "Classification of Expansive Soil" that correlated an expansion index with the potential for soil expansion. The subsequent updates to the California Building Code (2007 and 2010), contained information on expansive soils, but no longer included a reference to Table 18-1-B. The Building Code currently in effect, the 2013 CBC, references ASTM D-4829, a standard procedure for testing and evaluating the expansion index (or expansion potential) of soils established by ASTM International, which was formerly known as the American Society for Testing and Materials (ASTM).

Due to the nature of the proposed activity on site (a surface mine), a less-than-significant impact associated with expansive soil would occur because soils would be removed during mining activities. Any future use of the Project site for other land uses would require environmental review and a separate analysis regarding potential impacts from expansive soils. Thus, the Project would have a less than significant impact in this regard.

Threshold e. ***Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?***

The Project does not propose the use of septic tanks or alternative waste water disposal systems. The Project would utilize portable toilets, as is the case with the existing mining operation. Accordingly, no impact associated with septic tanks or alternative waste water systems would occur and mitigation is not required.

4.5.5 CUMULATIVE IMPACT ANALYSIS

As noted in the foregoing analysis of the Project's direct impacts, all potential Project-specific impacts related to geology and soils would be below the thresholds of significance identified in Subsection 4.5.3 through conformance with the recommendations contained within the Project's *Report of Slope Stability Investigation*, dated April 15, 2015 by CHJ Consultants (*Technical Appendix F*).

With exception of erosion hazards, potential geologic and soils effects are inherently restricted to the areas proposed for mining and would not contribute to cumulative impacts associated with other existing, planned, or proposed development. That is, issues including fault rupture, seismic ground shaking, liquefaction, landslides, and expansive soils would involve effects to (and not from) the proposed mining activities, and are specific to on-site conditions. Accordingly, addressing these potential hazards for the proposed mining on the Project site have no relationship to, or impact on, off-site areas. Due to the site-specific nature of these potential hazards and the measures to address them, there would be no connection to similar potential issues or cumulative effects to or from other properties.

As discussed under Threshold b., during both mining and after mining has completed, measures are incorporated into the Project's design (such as soil stabilization and detaining all water on-site during mining activities, and revegetation of the site and retaining the detention basin after mining) to ensure that substantial erosion hazards do not occur. Development projects within the cumulative study area would be required to comply with regulatory requirements, such as the need to obtain a National Pollutant Discharge Elimination System (NPDES) permit and mandatory compliance with Storm Water Pollution Prevention Plans (SWPPPs) and Water Quality Management Plans (WQMPs). All projects involving earth movement in the cumulative study area also would be required to comply with SCAQMD Rule 403 and grading requirements of the local governing body, which would preclude wind-related erosion hazards during construction. Development projects within the cumulative study area also would be required to comply with other applicable codes and regulations. Therefore, because the Project would result in less than significant erosion impacts, and because development projects within the cumulative study area would be subject to mandatory regulatory requirements to control erosion hazards during construction and long-term operation, cumulative impacts associated with wind and water erosion hazards would be less than significant and the Project's contribution would be less than cumulatively considerable.

4.5.6 SIGNIFICANCE OF IMPACTS BEFORE MITIGATION

Threshold a: Less-than-Significant Impact. The Project would not expose people or structures to substantial adverse seismic risks. No active faults are located on the Mine site so there is no potential

for fault surface rupture. As with all properties in southern California, the Project site is subject to seismic ground shaking associated with earthquakes. With implementation of the recommendations contained in the Project's *Report of Slope Stability Investigation*, potential seismically induced hazard impacts would be reduced to less than significant levels.

Threshold b: Less-than-Significant Impact. The Project would have a less-than-significant impact regarding soil erosion and the loss of topsoil. Dust control is proposed during mining, the site would be revegetated as mining activities conclude, and a sedimentation basin is proposed as part of the Mine's revised reclamation plan.

Threshold c: Less-than-Significant Impact. The potential for the Project to cause rock falls and soil instability during mining activities would be reduced to less-than-significant levels with design approaches for scaling and benched slope faces per the recommendations of the Project's *Report of Slope Stability Investigation*.

Threshold d: Less-than-Significant Impact. Soils would be removed during mining activities, and no structures are proposed as part of the Project that would require structural stabilization by soil material. Thus, a less than significant soil stability impact would occur.

Threshold e: No Impact. The Project would not install septic tanks or alternative wastewater disposal systems. Accordingly, no impact would occur associated with soil compatibility for wastewater disposal systems.

4.5.7 MITIGATION

Although potential impacts associated with slope stability and topple-related rock fall during mining operations would be less than significant with the required implementation of the recommendations contained in the Project's *Report of Slope Stability Investigation* (EIR *Technical Appendix F*), the following measures are included to ensure that the recommendations are implemented.

MM 4.5-1 Prior to mining activities in the +/- 24-acre EDA, the Director of the City of Lake Elsinore Engineering Division (or his/her designee) shall verify that all of the recommendations given in the Project's April 15, 2015 "*Report of Slope Stability Investigation Proposed Nichols Mine Expansion, Lake Elsinore, California*" (Job No. 15082-8) by CHJ Consultants are incorporated into the mining specifications for SMP 2015-01 and Reclamation Plan No. 2006-01A2.~~,~~ The recommendations shall include~~ing~~ but not be limited to the following:

- Conduct annual slope inspection during excavation of rock slopes, consistent with State requirements, and include the development plan in the slope inspection to address the potential for unknown or newly exposed discontinuities.

- Prepare the final benched slope faces to include scaling to ensure removal of loose or potentially unstable blocks. If raveling or instability is evident, the bench width should be increased to provide a suitable buffer to daylighted or unstable features and a sufficient surface area to mitigate rockfall. Based on the dip angle of the planar, and wedge and topple structures identified in kinematic evaluation, it is anticipated that these features can be mitigated by the proposed

benching scheme. Adjustments may be made to prevent daylighted slip planes or unstable wedges.

- Ensure overall final cut slopes in the rock materials are no steeper than design angles up to the maximum proposed height. Contacts between geologic units may influence the geometry of finished slopes.

- Remove or stabilize unstable, rounded boulders on slopes steeper than approximately 1-1/2(h) to 1(v), where accessible. Areas below loose rock, if left in place during mining, should be restricted from access and indicated by means of signage or fencing.

- Scale finished slopes above areas proposed for development with commercial or residential uses of all loose blocks during excavation and include sufficient benching to mitigate potential rockfall. A v-ditch, dry moat, or physical barrier (wall, fence) of sufficient strength/capacity to mitigate rockfall should be constructed along the base of slopes steeper than 1-1/2(h) to 1(v) in areas adjacent to commercial or residential development. Based on the proposed bench configuration for the slopes, a 25-foot wide fenced area at the base of the slope is expected to provide catchment for rockfall.

- Conduct periodic observation of mine benches for indicators of potential instability above working areas during mining operations. Monitoring of slope conditions for failure warning signs is the most important means for protecting mine workers (Girard & McHugh, 2000, p. 2) as it can prevent exposure of personnel to potentially hazardous conditions.

- Protect slopes with berms or drainage improvements as necessary to prevent slope erosion in the areas where natural slopes drain onto the reclaimed slopes.

~~MM 4.5-1 recommendation to have periodic observation of mine benches for indications of potential instability above working areas during mine operations.~~

4.5.8 SIGNIFICANCE OF IMPACTS AFTER MITIGATION

Thresholds a and c: Less-than-Significant Impact. Although potential impacts associated with slope stability and topple-related rock fall during mining operations would be less than significant with the required implementation of the recommendations contained in the Project's *Report of Slope Stability Investigation* (EIR *Technical Appendix F*), Mitigation Measure MM 4.5-1 would ensure that the Project would be implemented in accordance with the recommendations included in the report. Impacts would remain less than significant.

4.6 GREENHOUSE GAS EMISSIONS

The analysis in this Subsection is based on a report prepared by Urban Crossroads, Inc. titled "Amendment No. 2 to Reclamation Plan 2006-01 Greenhouse Gas Analysis City of Lake Elsinore," dated ~~October~~ July 14, 201~~5~~6, and included as *Technical Appendix G* to this EIR (Urban Crossroads, 2016c)~~(Urban Crossroads, 2015c)~~. The technical report and analysis in this Subsection assess the proposed Project's potential to generate greenhouse gas emissions that could contribute to global climate change and its associated environmental effects.

4.6.1 SCOPE OF REVIEW

The Nichols Canyon Mine, as discussed in Section 2.0, *Environmental Setting*, is an existing, ongoing surface mining operation operating pursuant to vested mining rights and an approved reclamation plan (RP 2006-01A1), which was analyzed in a prior MND. Although the City has chosen to prepare an EIR for the Project here, the scope of review addresses those impacts resulting from the Project as described in Section 3.0, *Project Description*, and not impacts related to existing, approved operations, which form the environmental baseline, as discussed in Subsection 2.7, *Existing Physical Site Conditions*. As disclosed in Section 3.0, *Project Description*, an asphalt batch plant is an existing, approved, on-site use pursuant to Conditional Use Permit No. CUP 2014-07 approved by the City of Lake Elsinore in 2015. Thus, the batch plant has already been approved by the City along with a CEQA environmental compliance document that was not challenged by any third party. During the public comment period on the DEIR, several third parties incorrectly asserted that the DEIR failed to adequately analyze the proposed Project's impacts. Several of these commentators also incorrectly claimed that the DEIR needed to re-analyze and include the batch plant's impacts as part of this EIR. While the City disagrees with these claims because the batch plant has already been approved under CUP 2014-07 and previously evaluated in an approved MND Addendum that was not challenged, in an effort to provide a conservative and overly-inclusive analysis of the Project's impacts on the environment (as opposed to potentially underestimating the Project's impacts), and to remove this issue from being a point of contention, this EIR includes analyses of the batch plant's impacts in all relevant CEQA Appendix G topics. Accordingly, this Subsection analyzes greenhouse gas emission impacts related to the currently-proposed Project, as well as the previously-approved asphalt batch plant. This Subsection does not analyze greenhouse gas impacts related to existing, approved mining operations (with the exception of the previously-approved asphalt batch plant) because the approved mining operations are a baseline condition and not a part of the proposed Project.

4.6.2 EXISTING CONDITIONS

A. Introduction to Global Climate Change

Global Climate Change (GCC) refers to change in average meteorological conditions on the Earth with respect to temperature, wind patterns, precipitation, and storms. Debate exists within the scientific community regarding the extent to which GCC is occurring naturally or as a result of human activity. Some data suggests that GCC has occurred naturally over the course of thousands or millions of years and that these historical changes to the Earth's climate have occurred naturally without human influence, as in the case of an ice age. However, many scientists believe that the climate shift taking place since approximately year 1900 is occurring at a faster rate and magnitude than in the past as a result of human activity and industrialization. (Urban Crossroads, 2016c, p. 6)~~(Urban Crossroads, 2015c, p. 5)~~

Global temperatures are regulated by naturally occurring atmospheric gases such as water vapor, carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. These particular gases are important due to their residence time (duration they stay) in the atmosphere, which ranges from 10 years to more than 100 years. These gases allow solar radiation into the Earth's atmosphere, but prevent radioactive heat from escaping, thus warming the Earth's atmosphere. These gases that trap heat in the atmosphere are referred to collectively in this EIR as greenhouse gases (GHGs), which are released into the atmosphere by both natural and anthropogenic (human) activity. Without the natural GHG effect, the Earth's average temperature would be approximately 61° Fahrenheit (F) cooler than current conditions. (Urban Crossroads, 2016c, pp. 6-7)~~(Urban Crossroads, 2015c, pp. 6-7)~~

It is not possible for an individual project like the proposed Project to generate enough GHG emissions to make a discernible change in global climate. However, the proposed Project may participate in the potential for GCC through its incremental contribution of GHG emissions when considered in combination with all other sources of GHGs. (Urban Crossroads, 2016c, p. 5)~~(Urban Crossroads, 2015c, p. 5)~~

B. Greenhouse Gases

Carbon dioxide (CO_2), methane (CH_4), and Nitrous Oxide (N_2O) emissions are the focus of evaluation in this Subsection because these gases are the primary contributors to GCC from development projects. Although other substances such as fluorinated gases also contribute to GCC, sources of fluorinated gases are not well defined and no accepted emissions factors or methodology exist to accurately calculate these gases. (Urban Crossroads, 2016c, p. 7)~~(Urban Crossroads, 2015c, p. 7)~~

Greenhouse gases have varying global warming potential (GWP) values; GWP values represent the potential of a gas to trap heat in the atmosphere. CO_2 is used as the reference gas for GWP, and thus has a GWP of 1. The atmospheric lifetime and GWP of selected GHGs are summarized in Table 4.6-1, *GWP and Atmospheric Life of Select GHGs*. As shown in Table 4.6-1, GWP ranges from 1 for CO_2 to 23,900 for sulfur hexafluoride (SF_6). (Urban Crossroads, 2016c, p. 7)~~(Urban Crossroads, 2015c, p. 7)~~

Provided below is a description of the various gases that contribute to GCC. This information is provided for context and background, not as a description of Project emissions. For more information about these gases and their associated human health effects, refer to Section 2.4 of *Technical Appendix G* and the reference sources cited therein.

- Water Vapor (H_2O) is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant in the atmosphere because it maintains a climate necessary for life. Changes in its concentration are primarily considered to be a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to 'hold' more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated

Table 4.6-1 GWP and Atmospheric Life of Select GHGs

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100 year time horizon)
Carbon Dioxide	50-200	1
Methane	12 ± 3	25
Nitrous Oxide	120	298
HFC-23	264	14,800
HFC-134a	14.6	1,430
HFC-152a	1.5	124
Sulfur Hexafluoride (SF6)	3,200	22,800

~~*Source: Urban Crossroads 2015c, Table 2-2.*~~ (Urban Crossroads, 2016c, Table 2-2)

from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there are also dynamics that hold the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation, thereby allowing less energy to reach the Earth's surface and heat it up. There are no human health effects from water vapor itself; however, when some pollutants come in contact with water vapor, they can dissolve and the water vapor can then act as a pollutant-carrying agent. (Urban Crossroads, 2016c, p. 8)~~(Urban Crossroads, 2015c, p. 8)~~

- Carbon Dioxide (CO_2) is an odorless and colorless GHG that is emitted from natural and manmade sources. Natural sources include: the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Manmade sources include: the burning of coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s, the sort of human activity that increases CO_2 emissions has increased dramatically. As an example, prior to the industrial revolution, CO_2 concentrations were fairly stable at 280 parts per million (ppm). Today, they are around 370 ppm, an increase of more than 30 percent. (Urban Crossroads, 2016c, p. 8)~~(Urban Crossroads, 2015c, p. 8)~~

- Methane (CH_4) is an extremely effective absorber of radiation, though its atmospheric concentration is less than CO_2 and its lifetime in the atmosphere is brief (10-12 years) compared to other GHGs. Methane has both natural and manmade sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other manmade sources include fossil-fuel combustion and biomass burning. No human health effects are known to occur from atmospheric exposure to methane. (Urban Crossroads, 2016c, p. 9)~~(Urban Crossroads, 2015c, pp. 8-9)~~

- Nitrous Oxide (N_2O) concentrations began to rise in the atmosphere at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb). Nitrous oxide is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. N_2O is used as an aerosol spray propellant, (e.g., in whipped cream bottles), in potato chip bags to keep chips fresh, and in rocket engines and race cars. N_2O can be transported into the stratosphere, be deposited on the Earth's surface, and be converted to other compounds by chemical reaction. Also known as laughing gas, N_2O is a colorless GHG that can cause dizziness, euphoria, and sometimes slight hallucinations. In small doses, it is considered harmless. However, in some cases, heavy and extended use can cause brain damage. (Urban Crossroads, 2016c, p. 9) ~~(Urban Crossroads, 2015c, p. 9)~~

- Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in CH_4 or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs were first synthesized in 1928 and have no natural source. CFCs were used for refrigerants, aerosol propellants and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and was extremely successful, so much so that levels of the major CFCs are now remaining steady or declining. However, due to their long atmospheric lifetime, some of the CFCs will remain in the atmosphere for over 100 years. (Urban Crossroads, 2016c, p. 9) ~~(Urban Crossroads, 2015c, p. 9)~~

- Hydrofluorocarbons (HFCs) are synthetic, anthropogenic (man-made) chemicals that are used as a substitute for CFCs. Out of all GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order largest to smallest), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23 emissions. HFC-134a emissions are increasing due to its use as a refrigerant. The United States Environmental Protection Agency (U.S. EPA) estimates that concentrations of HFC-23 and HFC-134a are now about 10 parts per trillion (ppt) each; and that concentrations of HFC-152a are about 1 ppt. No human health effects are known to result from exposure to HFCs, which are manmade and used for applications such as automobile air conditioners and refrigerants. (Urban Crossroads, 2016c, pp. 9-10) ~~(Urban Crossroads, 2015c, p. 9)~~

- Perfluorocarbons (PFCs) are primarily produced for aluminum production and semiconductor manufacture. PFCs have stable molecular structures and do not break down through chemical processes in the lower atmosphere. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). The U.S. EPA estimates that concentrations of CF_4 in the atmosphere are over 70 ppt. No human health effects are known to result from exposure to PFCs. (Urban Crossroads, 2016c, p. 10)~~(Urban Crossroads, 2015c, p. 10)~~

- Sulfur Hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest GWP of any gas evaluated (23,900). The U.S. Environmental

Protection Agency (EPA) indicates that concentrations in the 1990's were about 4 ppt. In high concentrations in confined areas, the gas presents the hazard of suffocation because it displaces the oxygen needed for breathing. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection. (Urban Crossroads, 2016c, p. 10)~~(Urban Crossroads, 2015c, p. 10)~~

C. Greenhouse Gas Emissions Inventories

1. Global

Worldwide man-made GHG emissions are tracked by the Intergovernmental Panel on Climate Change for industrialized nations (referred to as Annex I) and developing nations (referred to as Non-Annex I). Man-made GHG emissions data for Annex I nations is available through Year 2012. For the Year 2012, the sum of these emissions totaled approximately 28,865,994 gigagrams (Gg) of carbon dioxide equivalent (CO_2e), as shown in Table 4.6-2, *Top GHG Producer Countries and the European Union*. The GHG emissions in more recent years may differ from the inventories presented in Table 4.6-2; however, the data is representative of currently available inventory data. (Urban Crossroads, 2016c, p. 5)~~(Urban Crossroads, 2015c, p. 5)~~

Table 4.6-2 Top GHG Producer Countries and the European Union

Emitting Countries	GHG Emissions (Gg CO2e)
China	10,975,500
United States	6,665,700
European Union (28 member countries)	4,544,224
Russian Federation	2,322,220
India	3,013,770
Japan	1,344,580
Total	**28,865,994**

Gg = gigagram
(Urban Crossroads, 2016c, Table 2-1)~~*Urban Crossroads 2015c, Table 2-1*~~

2. United States

As noted in Table 4.6-2, the United States was the second-highest producer of GHG emissions in 2012. The primary GHGs emitted by human activities in the United States was CO_2, representing approximately 83-percent of the total United States' GHG emissions. Approximately 78-percent of the Unites States' CO_2 emissions result from fossil fuel combustion. (Urban Crossroads, 2016c, p. 6)~~(Urban Crossroads, 2015c, p. 6)~~

3. State of California

The California Air Resources Board (CARB) compiles GHG inventories for the State of California. Based upon the 2008 GHG inventory data (which is the most recent year for which data is available), California emitted 474 million metric tons (MMT) CO_2e including emissions resulting from imported electrical power. Based on the CARB inventory data and GHG inventories compiled by the World Resources Institute, California's total statewide GHG emissions rank second in the United States (Texas is ranked first). (Urban Crossroads, 2016c, p. 6)~~(Urban Crossroads, 2015c, p. 6)~~

~~*4. Project Site*~~

~~Table 4.6-3, *Operational Equipment*, summarizes the equipment utilized at the Mine on a daily basis for the baseline operating period, Project operating characteristics, and net new equipment activity. As shown, mining activities during the baseline period result in approximately 20,316 horsepower hours per day. However, during most of the baseline operating period, the Mine was under different ownership, and the equipment utilized during that period is not reflective of the equipment utilized on site since2014 (refer to EIR Table 3-2 and Table 3-3 for a summary of baseline operational equipment and equipment utilized on site as of 2014). At the time the Project's Notice of Preparation (NOP) was distributed for public review in June 2015, existing mining operations onsite were estimated to be approximately 25,158 horsepower hours per day (hh/d), representing an approximate 23.8 percent increase as compared to the horsepower hours per day that was were associated with mining operations under previous ownership. Although the Project would not increase the amount of hh/d as compared to the existing operational conditions that existed onsite at the time the Project's NOP was distributed for public review, in an effort to be conservative, the analysis herein compares the Project's hh/d to the hh/d that were in use under previous ownership. Thus, for purposes of analysis herein, it is assumed that equipment used under the proposed Project would require approximately 25,158 horsepower hours per day, reflecting an approximate 23.8 percent increase in horsepower as compared to the baseline condition. (Urban Crossroads, 2015c, pp. 28-29)~~

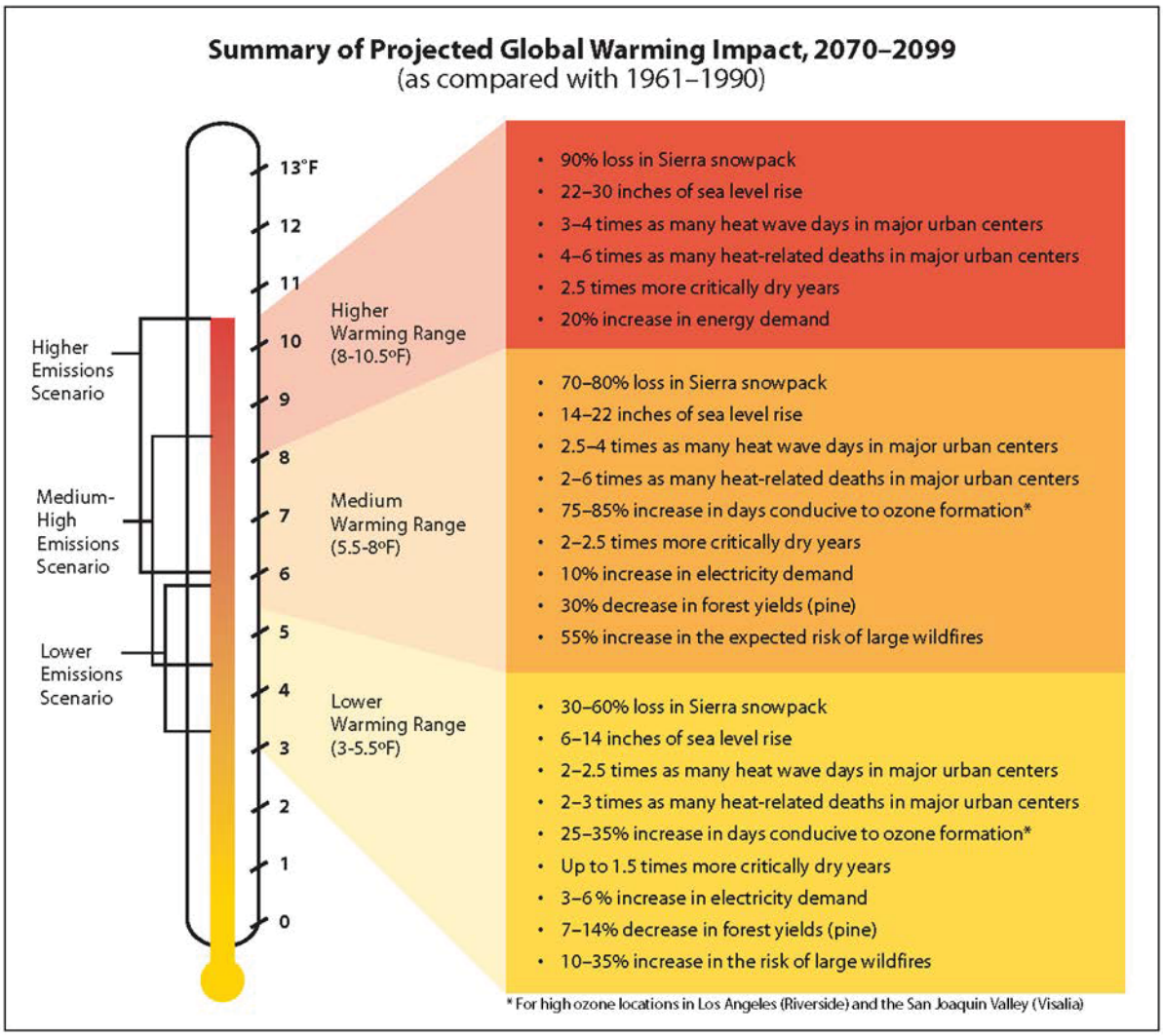
D. Potential Effects of Climate Change in California

The California Environmental Protection Agency (CalEPA) published a report titled "Scenarios of Climate Change in California: An Overview" (herein called the "Climate Scenarios report") in February 2006, that is generally instructive about effects of climate change in California. The Climate Scenarios report used a range of emissions scenarios developed by the Intergovernmental Panel on Climate Change (IPCC) to project a series of potential warming ranges (i.e., temperature increases) that may occur in California during the 21st century: lower warming range (3.0-5.5°F); medium warming range (5.5-8.0°F); and higher warming range (8.0-10.5°F). (CCCC, 2006)

In addition, the California Natural Resources Agency adopted a "California Climate Adaptation Strategy" in 2009. This report details many vulnerabilities arising from climate change with respect to matters such as temperature extremes, sea level rise, wildfires, floods and droughts and precipitation changes, and responds to the Governor's Executive Order S-13-2008 that called on state agencies to develop California's strategy to identify and prepare for expected climate impacts (Cal. NRA, 2009). (CNRA, 2009)

According to these reports, substantial temperature increases arising from increased GHG emissions worldwide could result in a variety of effects to the people, economy, and environment of California, with the severity of the effects depending upon actual future emissions of GHGs and associated degree of warming. Table 4.6-3, *Summary of Projected Global Warming Impact, 2070-2099 (as compared with 1961-1990)*, below presents potential impacts of global warming within California. Climate change impacts in California have the potential to include, but are not limited to, the areas discussed below. For more information, refer to Sections 2.5 and 2.6 of *Technical Appendix G*. (Urban Crossroads, 2016c, p. 12)

Table 4.6-3 Summary of Projected Global Warming Impact, 2070-2099 (as compared with 1961-1990)



(Urban Crossroads, 2016c, Exhibit 2-A)~~*Source: Urban Crossroads 2015c, Exhibit 2-A.*~~

- Human Health Effects. The potential human health effects related directly to GHG emissions (including CO_2, N_2O, and CH_4) from development projects are still being debated in the scientific community. The contribution that these GHGs make to GCC have the potential to cause adverse effects to human health in various ways. Increases in the Earth's ambient temperatures would result in more intense heat waves, causing more heat-related deaths. Scientists estimate that higher ambient temperatures would increase disease survival rates and result in more widespread disease. Climate change could cause shifts in weather patterns, potentially resulting in devastating droughts and food shortages in some areas. (Urban Crossroads, 2016c, p. 12)~~(Urban Crossroads, 2015c, p. 12)~~

- Water Resources. A vast network of man-made reservoirs and aqueducts captures and transports water throughout the state from northern California rivers, and the Colorado River.

The current distribution system relies on Sierra Nevada snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages. Additionally, if temperatures continue to increase, more precipitation could fall as rain instead of snow, and the snow that does fall could melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 percent to 90 percent. The loss of snowpack could pose challenges to water managers, hamper hydropower generation, and adversely affect winter tourism. The State's water supplies are also at risk from rising sea levels. An influx of salt water could degrade California's estuaries, wetlands, and groundwater aquifers and be a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta – a major fresh water supply. (Urban Crossroads, 2016c, p. 11)~~(Urban Crossroads, 2015c, pp. 10-11)~~.

- Agriculture Effects. Increased temperatures could cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. California farmers could face water shortages. Crop growth and development could change, as could the intensity and frequency of pest and disease outbreaks. Faster plant growth could worsen the quantity and quality of yield for some crops such as wine grapes, fruit, and nuts. Although higher CO_2 levels can stimulate plant production and increase plant water-use efficiency, there may still be a water shortage for the agricultural industry. In addition, continued GCC could shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. (Urban Crossroads, 2016c, p. 12)~~(Urban Crossroads, 2015c, p. 11)~~

- Forest and Landscape Effects. GCC has the potential to intensify the current threat to forests and landscapes by increasing the risk of wildfire and altering the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. Continued GCC also has the potential to alter natural ecosystems and biological diversity, including a decrease in forest productivity, as a result of increasing temperatures. (Urban Crossroads, 2016c, p. 12)~~(Urban Crossroads, 2015c, p. 12)~~

- Sea Level Effects. Rising sea levels, more intense coastal storms, and warmer water temperatures could increasingly threaten the state's coastal regions. Under the higher warming range scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate low-lying coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats. Under the lower warming range scenario, sea level could rise 12 to 14 inches by the year 2100. (Urban Crossroads, 2016c, p. 12)~~(Urban Crossroads, 2015c, p. 12)~~

E. Applicable Regulatory Requirements

Below is an account of the regulatory programs, policies, laws, and regulations that are applicable to GHG emissions and GCC in California. For more information, refer to Section 2.7 of *Technical Appendix G*.

1. International Regulation and the Kyoto Protocol

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail GCC. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling greenhouse gas emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The Plan currently consists of more than 50 voluntary programs for member nations to adopt. (Urban Crossroads, 2016c, p. 14)~~(Urban Crossroads, 2015c, p. 14)~~.

The Kyoto Protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. Some have estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions could be reduced an estimated 5 percent from 1990 levels during the first commitment period of 2008-2012. Notably, while the United States is a signatory to the Kyoto Protocol, Congress has not ratified the Protocol and the United States is not bound by the Protocol's commitments. In December 2009, international leaders from 192 nations met in Copenhagen to address the future of international climate change commitments post-Kyoto. (Urban Crossroads, 2016c, p. 15)~~(Urban Crossroads, 2015c, p. 15)~~.

2. Federal Regulation and the Clean Air Act

Coinciding with the 2009 meeting of international leaders in Copenhagen, on December 7, 2009, the EPA issued an Endangerment Finding under § 202(a) of the Clean Air Act (CAA), opening the door to federal regulation of GHGs. The Endangerment Finding notes that GHGs threaten public health and welfare and are subject to regulation under the CAA. To date, the EPA has not promulgated regulations on GHG emissions, but it has begun to develop them. (Urban Crossroads, 2016c, p. 15)~~(Urban Crossroads, 2015c, p. 15)~~

Previously the EPA had not regulated GHGs under the CAA because it asserted that the Act did not authorize it to issue mandatory regulations to address GCC and that such regulation would be unwise without an unequivocally established causal link between GHGs and the increase in global surface air temperatures. In *Massachusetts v. Environmental Protection Agency et al.* (127 S. Ct. 1438 [2007]), however, the U.S. Supreme Court held that GHGs are pollutants under the CAA and directed the EPA to decide whether the gases endangered public health or welfare. The EPA had also not moved aggressively to regulate GHGs because it expected Congress to make progress on GHG legislation, primarily from the standpoint of a cap-and-trade system. However, proposals circulated in both the House of Representative and Senate have been controversial and it may be some time before the U.S. Congress adopts major climate change legislation. The EPA's Endangerment Finding paves the way for federal regulation of GHGs with or without Congress. (Urban Crossroads, 2016c, p. 15)~~(Urban Crossroads, 2015c, p. 15)~~.

Although global climate change did not become an international concern until the 1980s, efforts to reduce energy consumption began in California in response to the oil crisis in the 1970s, resulting in the incidental reduction of greenhouse gas emissions. To manage the state's energy needs and promote energy efficiency, Assembly Bill (AB) 1575 created the California Energy Commission (CEC) in 1975. (Urban Crossroads, 2016c, p. 15)~~(Urban Crossroads, 2015c, p. 15)~~

3. Title 24 Energy Standards

The California Energy Commission (CEC) first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods. The latest revisions (2013 Building Energy Efficiency Standards) were adopted in 2012 and became effective on July 1, 2014. The 2013 Building Energy Efficiency Standards are 25 percent more efficient than the previous Building Energy Efficiency Standards for residential construction and 30 percent more efficient than the previous Standards for nonresidential construction. (Urban Crossroads, 2016c, pp. 15-16)~~(Urban Crossroads, 2015c, pp. 15-16)~~.

Part 11 of Title 24 is referred to as the California Green Building Standards Code (CALGreen Code). The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality." The CALGreen Code is not intended to substitute or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission (CBSC). Unless otherwise noted in the regulation, all newly constructed buildings in California are subject of the requirements of the CALGreen Code. (Urban Crossroads, 2016c, pp. 16-17)~~(Urban Crossroads, 2015c, p. 16)~~.

4. California Assembly Bill No. 1493 (AB 1493)

AB 1493 requires CARB to develop and adopt the nation's first greenhouse gas emission standards for automobiles. The Legislature declared in AB 1493 that global warming was a matter of increasing concern for public health and environment in California. Further, the legislature stated that technological solutions to reduce GHG emissions would stimulate the California economy and provide jobs. (Urban Crossroads, 2016c, p. 17)~~(Urban Crossroads, 2015c, p. 17)~~.

To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California's existing motor vehicle emission standards in 2004. Amendments to CCR Title 13 §§ 1900 and 1961 and adoption of § 1961.1 require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016. (Urban Crossroads, 2016c, p. 17)~~(Urban Crossroads, 2015c, p. 17)~~.

In December 2004 a group of car dealerships, automobile manufacturers, and trade groups representing automobile manufacturers filed suit against CARB to prevent enforcement of CCR Title 13 §§ 1900 and 1961 as amended by AB 1493 and CCR Title 13 § 1961.1 (*Central Valley Chrysler-Jeep et al. v. Catherine E. Witherspoon, in her official capacity as Executive Director of the California Air Resources Board, et al.*). The suit, heard in the U.S. District Court for the Eastern

District of California, contended that California's implementation of regulations that in effect regulate vehicle fuel economy violates various federal laws, regulations, and policies. In January 2007, the judge hearing the case accepted a request from the State Attorney General's office that the trial be postponed until a decision is reached by the U.S. Supreme Court on a separate case addressing GHGs. In the Supreme Court Case, *Massachusetts vs. EPA*, the primary issue in question is whether the federal CAA provides authority for U.S. EPA to regulate CO_2 emissions. In April 2007, the U.S. Supreme Court ruled in Massachusetts' favor, holding that GHGs are air pollutants under the CAA. On December 11, 2007, the judge in the Central Valley Chrysler-Jeep case rejected each plaintiff's arguments and ruled in California's favor. On December 19, 2007, the U.S. EPA denied California's waiver request. California filed a petition with the Ninth Circuit Court of Appeals challenging U.S. EPA's denial on January 2, 2008. (Urban Crossroads, 2016c, p. 17)~~(Urban Crossroads, 2015c, p. 17)~~.

The Obama administration subsequently directed the U.S. EPA to re-examine their decision. On May 19, 2009, challenging parties, automakers, the State of California, and the federal government reached an agreement on a series of actions that would resolve these current and potential future disputes over the standards through model year 2016. In summary, the U.S. EPA and the U.S. Department of Transportation agreed to adopt a federal program to reduce GHGs and improve fuel economy, respectively, from passenger vehicles in order to achieve equivalent or greater greenhouse gas benefits as the AB 1493 regulations for the 2012–2016 model years. Manufacturers agreed to ultimately drop current and forego similar future legal challenges, including challenging a waiver grant, which occurred on June 30, 2009. The State of California committed to (1) revise its standards to allow manufacturers to demonstrate compliance with the fleet-average GHG emission standard by "pooling" California and specified State vehicle sales; (2) revise its standards for 2012-2016 model year vehicles so that compliance with U.S. EPA-adopted GHG standards would also comply with California's standards; and (3) revise its standards, as necessary, to allow manufacturers to use emissions data from the federal Corporate Average Fuel Economy (CAFE) program to demonstrate compliance with the AB 1493 regulations. Both of these programs are aimed at light-duty auto and light-duty trucks. (Urban Crossroads, 2016c, pp. 17-18)~~(Urban Crossroads, 2015c, pp. 17-18)~~.

5. Executive Order S-3-05

Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snow pack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, Executive Order S-3-05 established total greenhouse gas emission targets. Specifically, emissions are to be reduced to the 1990 level by 2020, and to 80-percent below the 1990 level by 2050. The Executive Order directed the Secretary of the California Environmental Protection Agency to coordinate a multi-agency effort to reduce greenhouse gas emissions to the target levels. The Secretary also is required to submit biannual reports to the Governor and state Legislature describing: (1) progress made toward reaching the emission targets; (2) impacts of global warming on California's resources; and (3) mitigation and adaptation plans to combat these impacts. To comply with Executive Order S-3-05, the Secretary of the CalEPA created a Climate Action Team (CAT) made up of members from various state agencies and commission. CAT released its first report in March 2006. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs. (Urban Crossroads, 2016c, p. 18)~~(Urban Crossroads, 2015c, p. 18)~~

6. California Assembly Bill 32 (AB 32)

In September 2006, Governor Schwarzenegger signed AB 32, the California Climate Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. This reduction is to be accomplished through an enforceable statewide cap on GHG emissions that was phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32. (Urban Crossroads, 2016c, p. 18)~~(Urban Crossroads, 2015c, p. 18)~~.

AB 32 required that CARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also included guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions. (Urban Crossroads, 2016c, p. 19)~~(Urban Crossroads, 2015c, pp. 18-19)~~.

In November 2007, CARB completed its estimates of 1990 GHG levels. Net emission 1990 levels were estimated at 427 million metric tons (MMTs) (emission sources by sector were: transportation – 35 percent; electricity generation – 26 percent; industrial – 24 percent; residential – 7 percent; agriculture – 5 percent; and commercial – 3 percent). Accordingly, 427 MMTs of CO_2 equivalent was established as the emissions limit for 2020. For comparison, CARB's estimate for baseline GHG emissions was 473 MMT for 2000 and 532 MMT for 2010. "Business as usual" conditions (without the reductions to be implemented by CARB regulations) for 2020 were projected to be 596 MMTs. (Urban Crossroads, 2016c, p. 19)~~(Urban Crossroads, 2015c, p. 19)~~.

In December 2007, CARB approved a regulation for mandatory reporting and verification of GHG emissions for major sources. This regulation covered major stationary sources such as cement plants, oil refineries, electric generating facilities/providers, and co-generation facilities, which comprise 94 percent of the point source CO_2 emissions in the State. (Urban Crossroads, 2016c, p. 19)~~(Urban Crossroads, 2015c, p. 19)~~.

On December 11, 2008, CARB adopted a scoping plan to reduce GHG emissions to 1990 levels. Table 4.6-4, *Scoping Plan GHG Reduction Measures Towards 2020 Target*, shows the proposed reductions from regulations and programs outlined in the Scoping Plan. While local government operations were not accounted for in achieving the Year 2020 emissions reduction, local land use changes are estimated to result in a reduction of 5 million metric tons of carbon dioxide equivalent ($MMTCO_2e$), which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local governments will play in successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of 2006 levels by 2020 to ensure that municipal and community-wide emissions match the state's reduction target. According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting

Table 4.6-4 Scoping Plan GHG Reduction Measures Towards 2020 Target

Recommended Reduction Measures	Reductions Counted toward 2020 Target of 169 MMT CO_2e	Percentage of Statewide 2020 Target
Cap and Trade Program and Associated Measures		
California Light-Duty Vehicle GHG Standards	31.7	19%
Energy Efficiency	26.3	16%
Renewable Portfolio Standard (33 percent by 2020)	21.3	13%
Low Carbon Fuel Standard	15	9%
Regional Transportation-Related GHG Targets[1]	5	3%
Vehicle Efficiency Measures	4.5	3%
Goods Movement	3.7	2%
Million Solar Roofs	2.1	1%
Medium/Heavy Duty Vehicles	1.4	1%
High Speed Rail	1.0	1%
Industrial Measures	0.3	0%
Additional Reduction Necessary to Achieve Cap	34.4	20%
Total Cap and Trade Program Reductions	146.7	87%
Uncapped Sources/Sectors Measures		
High Global Warming Potential Gas Measures	20.2	12%
Sustainable Forests	5	3%
Industrial Measures (for sources not covered under cap and trade program)	1.1	1%
Recycling and Waste (landfill methane capture)	1	1%
Total Uncapped Sources/Sectors Reductions	27.3	16%
Total Reductions Counted toward 2020 Target	174	100%
Other Recommended Measures – Not Counted toward 2020 Target		
State Government Operations	1.0 to 2.0	1%
Local Government Operations	To Be Determined[2]	NA
Green Buildings	26	15%
Recycling and Waste	9	5%
Water Sector Measures	4.8	3%
Methane Capture at Large Dairies	1	1%
Total Other Recommended Measures – Not Counted toward 2020 Target	42.8	NA

MMTons CO_2e: million metric tons of CO_2e

1 Reductions represent an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target.

2 According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 million metric tons of CO_2e (or approximately 1.2 percent of the GHG reduction target). However, these reductions were not included in the Scoping Plan reductions to achieve the 2020 Target

Urban Crossroads 2015c, Table 2-3

in a potential GHG reduction of 2 $MMTCO_2e$ (or approximately 1.2 percent of the GHG reduction target). (Urban Crossroads, 2016c, p. 19)~~(Urban Crossroads, 2015c, p. 19)~~

On May 22, 2014, CARB approved the first update to the Scoping Plan. The update recalculates 1990 GHG emissions using new global warming potentials (GWPs) identified in the Intergovernmental Panel on Climate Change Fourth Assessment Report released in 2007. Using the new GWPs, the 1990 emissions level and 2020 GHG emissions limit identified in the 2008 Scoping Plan was adjusted to 431 metric tons of carbon dioxide equivalent ($MTCO_2e$). Based on the revised 2020 emissions, achieving the 1990 emissions level in 2020 would require a reduction of 78 MTCO2e. (SCAQMD, 2013b, p. 21)

7. California Senate Bill No. 1368 (SB 1368)

In 2006, the State Legislature adopted Senate Bill (SB) 1368 (SB 1368), which was subsequently signed into law by the Governor. SB 1368 directs the California Public Utilities Commission (CPUC) to adopt a greenhouse gas emission performance standard (EPS) for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than five years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Due to the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law will effectively prevent California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. (Urban Crossroads, 2016c, p. 21)~~(Urban Crossroads, 2015c, p. 21)~~. Thus, SB 1368 will lead to dramatically lower greenhouse gas emissions associated with California energy demand, as SB 1368 will effectively prohibit California utilities from purchasing power from out of state producers that cannot satisfy the EPS standard required by SB 1368. (Urban Crossroads, 2016c, p. 21)~~(Urban Crossroads, 2015c, p. 21)~~.

8. Senate Bill 97 (SB 97)

Pursuant to the direction of SB 97, the Governor's Office of Planning and Research released preliminary draft CEQA Guideline amendments for GHG emissions on January 8, 2009, and the Natural Resources Agency adopted the Guideline amendments and they became effective on March 18, 2010. Of note, the CEQA Guidelines state that a CEQA lead agency shall have discretion to determine whether to use a quantitative model or methodology, or in the alternative, rely on a qualitative analysis or performance based standards. (Urban Crossroads, 2016c, p. 22)~~(Urban Crossroads, 2015c, p. 22)~~.

CEQA emphasizes that the effects of GHG emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impacts analysis (See CEQA Guidelines § 15130[f]). Section 15064.4(b) of the CEQA Guidelines provides direction for lead agencies for assessing the significance of impacts of GHG emissions. The CEQA Guideline amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. Instead, they call for a "good-faith effort, based on available information, to describe, calculate, or estimate the amount of GHG emissions resulting from a project." The amendments encourage lead agencies to consider many factors in performing a CEQA analysis and preserve lead agencies' discretion to make their own determinations based upon substantial evidence. The amendments also encourage public agencies to make use of programmatic

mitigation plans and programs from which to tier when they perform individual project analyses. (Urban Crossroads, 2016c, pp. 22-23)~~(Urban Crossroads, 2015c, pp. 22-23)~~.

9. Executive Order S-01-07

On January 18, 2007, California Governor Schwarzenegger, through Executive Order S-01-07, mandated a statewide goal to reduce the carbon intensity of California's transportation fuel by at least 10 percent by 2020. The order also requires that a California specific Low Carbon Fuel Standard be established for transportation fuels. (Urban Crossroads, 2016c, p. 23)~~(Urban Crossroads, 2015c, p. 23)~~.

10. Senate Bills 1078 and 107 and Executive Order S-14-08

SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008 Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Energy Standard to 33 percent renewable power by 2020. (Urban Crossroads, 2016c, p. 23)~~(Urban Crossroads, 2015c, p. 23)~~.

11. Senate Bill 375 (SB 375)

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs did not meet the GHG reduction targets, transportation projects are not eligible for funding programmed after January 1, 2012. (Urban Crossroads, 2016c, pp. 23-24)~~(Urban Crossroads, 2015c, pp. 23-24)~~.

12. Executive Order B-30-15

On April 29, 2015, Governor Edmund G. Brown Jr. issued Executive Order B-30-15, which sets a goal to reduce GHG emissions in California to 40 percent below 1990 levels by 2030. The BEO sets an ambitious new Statewide GHG emissions reduction target of 40 percent below 1990 levels by 2030 as a "mid-term" benchmark needed to achieve the 80 percent below 1990 levels by 2020. It should be noted however that this target has not been formally enacted by the Legislature or even CARB. As such, the BEO does not appear to constitute a new regulation or requirement adopted to implement a statewide, regional, or local plan for the reduction of GHG emissions within the context of CEQA. Furthermore, the City of Lake Elsinore has an adopted CAP that governs specific GHG reduction targets for new development within the City. At this time, no further analysis is necessary or required by CEQA as it pertains to Executive Order B-30-15. (Urban Crossroads, 2016c, p. 24)~~(Urban Crossroads, 2015c, p. 24)~~.

13. South Coast Air Quality Management District Recommendations for Significance Thresholds

In April 2008, the South Coast Air Quality Management District (SCAQMD) convened a "GHG CEQA Significance Threshold Working Group," to provide guidance to local lead agencies on determining the significance of GHG emissions identified in CEQA documents. The goal of the working group is to develop and reach consensus on an acceptable CEQA significance threshold for GHG emissions that would be utilized on an interim basis until CARB (or some other state agency) develops statewide guidance on assessing the significance of GHG emissions under CEQA. (Urban Crossroads, 2016c, p. 25)~~(Urban Crossroads, 2015c, p. 25)~~

Initially, SCAQMD staff presented the working group with a significance threshold that could be applied to various types of projects—residential; non-residential; industrial; etc. In December 2008, staff presented the SCAQMD Governing Board with a significance threshold for industrial projects where it is the lead agency. This threshold uses a tiered approach to determine a project's significance, with 10,000 $MTCO_2e$ as a screening numerical threshold for industrial projects. (Urban Crossroads, 2016c, pp. 25-26)~~(Urban Crossroads, 2015c, p. 25)~~

14. City of Lake Elsinore General Plan Sustainable Element

The City of Lake Elsinore has created additional strategies within its General Plan to counter the adverse impacts of global warming and climate change. The following measures would reduce greenhouse gas emissions from all activities within the City boundaries to support the State's efforts under AB-32 and to mitigate the impacts of climate change. (Urban Crossroads, 2016c, pp. 24-25)~~(Urban Crossroads, 2015c, pp. 24-25)~~

- 14.1 By 2020, the City will reduce greenhouse gas emissions from within its boundaries to 1990 levels consistent with AB 32.

- 14.2 Measures shall be established that aim to reduce emissions generated from City uses, community uses (community actions) and new development (City discretionary actions).

- 14.3 The City shall strive to increase public awareness of climate change and climate protection challenges.

- 14.4 The City will participate in the Sustainable Communities Strategy/Regional Blueprint Planning effort to ensure that local plans are consistent with the Regional Plan.

Additionally, the City ~~has~~ prepared and adopted a Climate Action Plan in 2011 (discussed below) that provides a 2008 baseline greenhouse gas emissions inventory for municipal facilities and operations and community-wide activities and establishes measures to meet State-wide reduction goals. (Urban Crossroads, 2016c, p. 25)

15. City of Lake Elsinore Climate Action Plan

The City of Lake Elsinore Climate Action Plan (CAP) is a comprehensive document to ensure that the City reduces community-wide GHG emissions consistent with AB 32 and Executive Order S- 3-05. The CAP was prepared concurrently with the City's General Plan and EIR to serve as the City's primary information and policy document for GHG emissions reductions in order to analyze and

reduce potentially significant GHG emissions resulting from development under the City of Lake Elsinore General Plan. (Urban Crossroads, 2016c, p. 25)~~(Urban Crossroads, 2015c, p. 25)~~

The CAP includes a "Project-Level CAP Consistency Worksheet" to determine if further analysis is required. It should be noted that the "Project-Level CAP Consistency Worksheet" is generally applicable to traditional land use development projects and does not apply to projects such as mining projects. The CAP's implementation measures primarily relate to: pedestrian, bicycle, public transit, and fuel efficient vehicle infrastructure (Measures T-1.1 through T-2.1); mixed-use, high density, infill, and transit-oriented developments (Measures T-3.1 through T-3.4); vehicle trip reduction programs and alternative-fueled vehicle incentives (Measures T-4.1 through T-5.2); energy and water use reduction in buildings and for municipal facilities (Measures E-1.1 through E-5.1); recycling and solid waste reduction (Measures S-1.1 through S-2.1); and community education and outreach (Measures EO-1.1 through EO-1.4). These measures are not generally applicable to a mining project. As such, pursuant to the CAP documentation, further analysis of the Project is required to determine if ~~a less-than-significant impact would occur~~the Project would further the City's long-range plan to reduce City-wide GHG emissions or, for some reason, hinder the City's ability to implement its CAP. Additional analysis also is required using an analysis methodology other than CAP compliance to determine if the Project would have a significant or less-than-significant GHG emissions impact. To that end, ~~this~~ the analysis in Subsection 4.6.5 and in *EIR Technical Appendix G* to this EIR considers and makes use of available numeric significance thresholds adopted by other agencies (i.e. SCAQMD's threshold of 10,000 $MTCO_2e$ per year for industrial projects, as described below) in determining significance of the Project's GHG emissions. (Urban Crossroads, 2016c, p. 25)~~(Urban Crossroads, 2015c, p. 25)~~

4.6.3 METHODOLOGY FOR ESTIMATING GREENHOUSE GAS EMISSIONS

CEQA Guidelines §15064.4(b)(1) states that a CEQA lead agency may use a model or methodology to quantify GHG emissions associated with a project. On October 2, 2013, the SCAQMD, in conjunction with the California Air Pollution Control Officers Association (CAPCOA) released the latest version (v2013.2.2.) of the California Emissions Estimator Model (CalEEMod). The purpose of this model is to estimate air quality and GHG emissions from direct and indirect sources and quantify applicable air quality and GHG reductions achieved from mitigation measures. As such, the October 2013 (v2013.2.2.) CalEEMod was used to estimate Project-related emissions to determine construction and operational air quality impacts (Urban Crossroads, 2016c, p. 29)~~(Urban Crossroads, 2015c, pp. 27-28)~~. Output from the model runs for both Project-related construction and operational activity are provided in Appendix 3.1 of *Technical Appendix G*.

A full life-cycle analysis (LCA)~~ is not included in this analysis due to the lack of available guidance on LCA methodology at this time. Life-cycle analysis (i.e.,~~ involves assessing economy-wide GHG emissions from the processes in manufacturing and transporting all raw materials used in the Project development, infrastructure, and on-going operations and an LCA is not included in this analysis due to the lack of available guidance on LCA methodology. In December 2009, the Governor's Office of Planning and Research (OPR) adopted its "*Final Statement of Reason for Regulatory Action, Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97*," which notes the following:

> "*The amendments to Appendix F remove the term 'lifecycle.' No existing regulatory definition of 'lifecycle' exists. In fact, comments received during OPR's public workshop*

process indicate a wide variety of interpretations of that term. (Letter from Terry Rivasplata et al. to OPR, February 2, 2009, at pp. 5, 12 and Attachment; Letter from Center for Biological Diversity et al. to OPR, February 2, 2009, at pp. 17.) Thus, retention of the term 'lifecycle' in Appendix F could create confusion among lead agencies regarding what Appendix F requires.

Moreover, even if a standard definition of the term 'lifecycle' existed, requiring such an analysis may not be consistent with CEQA. As a general matter, the term could refer to emissions beyond those that could be considered 'indirect effects' of a project as that term is defined in section 15358 of the State CEQA Guidelines.

Depending on the circumstances of a particular project, an example of such emissions could be those resulting from the manufacture of building materials. (CAPCOA White Paper, at pp. 50-51.) CEQA only requires analysis of impacts that are directly or indirectly attributable to the project under consideration. (State CEQA Guidelines, § 15064(d).) In some instances, materials may be manufactured for many different projects as a result of general market demand, regardless of whether one particular project proceeds. Thus, such emissions may not be 'caused by' the project under consideration. Similarly, in this scenario, a lead agency may not be able to require mitigation for emissions that result from the manufacturing process. Mitigation can only be required for emissions that are actually caused by the project. (State CEQA Guidelines, § 15126.4(a)(4).) Conversely, other projects may spur the manufacture of certain materials, and in such cases, consideration of the indirect effects of a project resulting from the manufacture of its components may be appropriate. A lead agency must determine whether certain effects are indirect effects of a project, and where substantial evidence supports a fair argument that such effects are attributable to a project, that evidence must be considered. However, to avoid potential confusion regarding the scope of indirect effects that must be analyzed, the term 'lifecycle' has been removed from Appendix F." (OPR, 2009b, pp. 71-72)

Furthermore, and as noted by SCAQMD in its 2008 Interim GHG Significance Thresholds Staff Proposal: (Urban Crossroads, 2016c, p. 29)

"Performing a life cycle analysis may be difficult for a number of projects or processes because life cycle emission factors may not be well established for many activities or projects and the life cycle process itself may not be known or well-defined. SCAQMD staff, however, recommends that life cycle analyses be prepared for all projects undergoing a CEQA analysis, as this will produce a more defensible approach. If, however, any component of the life cycle analysis is unavailable, unknown, or not supported by scientific evidence, the lead agency should note such an analysis would be speculative pursuant to CEQA Guidelines § 15145 and terminate discussion of that impact." (Urban Crossroads, 2016c, p. 29)

)An LCA depends on emission factors or econometric factors that are not well established for all processes. In the case of the proposed Project, it is not possible to project the precise end uses of aggregate materials produced on-site, as the end uses for aggregate materials varies depending on economic circumstances, development projects that may be implemented that use aggregate materials, etc. Furthermore, the majority of end uses of aggregate and/or asphalt material produced on-site would occur as part of separate development proposals, many of which have been or would

be subject to review under CEQA. Accordingly, at this time a LCA would be extremely speculative and is not legally required by CEQA (CEQA Guidelines § 15145). ~~At this time a LCA would be extremely speculative and is not legally required by CEQA.~~ (Urban Crossroads, 2016c, p. 30)~~(Urban Crossroads, 2015c, p. 28)~~.

Operational activities associated with the proposed Project would result in emissions of CO_2, CH_4, and N_2O from the following primary sources: On-Site Equipment and Mobile Source (Passenger Cars and Truck Traffic) Emissions. The Project would not result in an increase in the amount of natural gas associated with aggregate usage because aggregate usage does not currently use any natural gas. For purposes of analysis, it is assumed that the Project would result in a 35.05% increase in electricity associated with the aggregate production on-site. It should be noted that natural gas is utilized in conjunction with the asphalt batch plant operations and 100% of the asphalt batch plant's demand for natural gas is reflected herein in the emissions summary for the asphalt batch plant. Other than the asphalt batch plant, which is conservatively evaluated at 100% of natural gas usage, and assumed increase of 35.05% in electrical usage, there are no components of the Project that would result in increased use of natural gas. ~~The Project would not result in an increase in the amount of natural gas or electricity usage on site. It should be noted that natural gas is utilized in conjunction with the asphalt batch plant operations; however, asphalt batch operations would not increase under the proposed Project on a daily or annual basis, as compared to existing conditions. Although under long-term operating conditions the Project would result in a net increase in the total duration of asphalt batch operations on site due to the increased amount of aggregate reserves that would be made available by the Project and the proposed expiration date of the Project's Reclamation Plan, there would be no net change in the daily or annual emissions from the site associated with natural gas or electricity usage.~~ (Urban Crossroads, 2016c, p. 30)~~(Urban Crossroads, 2015c, p. 28)~~

4.6.4 BASIS FOR DETERMINING SIGNIFICANCE

The CEQA Guidelines indicate that a Project would result in a significant impact on climate change if a Project were to:

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

b. *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

The above-listed thresholds are derived directly from Section VII of Appendix G to the CEQA Guidelines and address typical adverse effects associated with greenhouse gas emissions. (OPR, 2009a)~~(OPR, 2009)~~

Under CEQA, Lead Agencies, such as the City of Lake Elsinore, may adopt a CAP to identify measures to be undertaken within their jurisdiction to achieve the GHG reduction mandates set forth by AB 32. Projects that are consistent with the GHG reduction measures included in a CAP may be considered to have a less-than-significant impact due to GHG emissions. The City of Lake Elsinore adopted its CAP on December 13, 2011. Chapter 5.0 of the City's CAP identifies strategies and measures for achieving the required GHG reduction targets. However, with exception of GHG reduction measures enacted at the state and/or federal level to reduce mobile source-related GHG

emissions, none of the GHG reduction strategies identified in the CAP are applicable to projects involving the mining and processing of aggregate resources. The CAP also identifies an efficiency target of 6.6 MT CO2e/Service Population/year by 2020, where Service Population (SP) is considered to comprise the total number of residents plus the total number of employees. However, a Service Population-based analysis is not a viable approach for measuring whether the GHG emissions associated with an aggregate mining facility would be cumulatively considerable. In the case of the proposed Project, a total of ten employees (including eight existing and two new proposed employees) would work on-site. Under the Service Population approach, and in order to meet the City's target of 6.6 MT CO2e/SP by Year 2020, the Project's annual GHG emissions would be limited to 66 MT CO2e/year. Such a restriction on annual GHG emissions would render mining activities on-site entirely infeasible, and there would be no circumstances under which the Project could reasonably meet the City's 2020 SP efficiency target. (Urban Crossroads, 2016c, p. 27)

In lieu of an analysis of Project consistency with the CAP (which is applicable to traditional land uses and is not applicable to, or reasonable to use, for mining projects), the analysis herein instead relies upon guidance from SCAQMD. A numerical threshold for determining the significance of greenhouse gas emissions in the South Coast Air Basin (Basin) has not been established by the SCAQMD for projects where it is not the lead agency. As an interim threshold based on guidance provided in the CAPCOA CEQA and Climate Change handbook, the City has opted to use a non-zero threshold approach based on Approach 2 of the handbook. Threshold 2.5 (Unit-Based Thresholds Based on Market Capture) establishes a numerical threshold based on capture of approximately 90 percent of emissions from future development. The latest threshold developed by SCAQMD using this method is 10,000 $MTCO_2e$ per year for industrial projects (which is the development category that is most applicable to ~~Project~~ Mine operations) in order to capture 90 percent~~. This threshold is based on the review~~ of all new stationary source ~~711 CEQA~~ projects. As noted by SCAQMD in its December 5, 2008 Board Meeting (Agenda No. 31): (Urban Crossroads, 2016c, pp. 27-28)

> *"…the policy objective of staff's recommended interim GHG significance threshold proposal is to achieve an emission capture rate of 90 percent of all new or modified stationary source projects. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that staff estimates that these GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 MMT CO2e/yr). In addition, these small projects may be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory. Finally, these small sources are already subject to BACT for criteria pollutants and are more likely to be single-permit facilities, so they are more likely to have few opportunities readily available to reduce GHG emissions from other parts of their facility."* (SCAQMD, 2008)

The SCAQMD further notes:

> *"The 90 percent capture rate GHG significance screening level in Tier 3 for stationary sources was derived using the following methodology. Using AQMD's Annual Emission Reporting (AER) Program staff compiled reported annual natural gas consumption for 1,297 permitted facilities for 2006 through 2007 and rank-ordered the facilities to estimate the 90th percentile of the cumulative natural gas usage for all permitted facilities. Approximately 10 percent of facilities evaluated comprise more than 90 percent of the total natural gas consumption, which corresponds to 10,000 metric tons of CO2 equivalent emissions per year (MT CO_2e/yr) (the majority of combustions emissions is comprised of CO2). This value represents a boiler with a rating of approximately 27 million British thermal units per hour (mmBtu/hour) of heat input, operating at a 80 percent capacity factor. It should be noted that this analysis did not include other possible GHG pollutants such as methane, N2O; a life-cycle analysis; mobile sources; or indirect electricity consumption. Therefore, when implemented, staff's recommended interim proposal is expected to capture more than 90 percent of GHG emissions from stationary source projects."* (SCAQMD, 2008)

Accordingly, and based on guidance from SCAQMD, the analysis herein relies on a screening-level threshold of 10,000 MT CO_2e/yr to determine if emissions of greenhouse gases from this Project will be potentially significant. ~~This threshold has also been adopted by the SCAQMD for industrial projects where it is the lead agency. This threshold is utilized herein to determine if emissions of greenhouse gases from this project would be significant.~~ Use of the industrial threshold is most appropriate since the majority of emissions associated with the Project are a result of on-site stationary source equipment and operating activity, which is consistent with the intent in development of the SCAQMD's industrial threshold. If the Project's GHG emissions are below the threshold of 10,000 MT CO_2e/yr, then the Project's impacts due to GHG emissions would be less-than-cumulatively considerable. In the event the proposed Project exceeds this screening level threshold, additional analysis would be required to determine whether the Project's GHG emission impacts would be cumulatively considerable. (Urban Crossroads, 2016c, p. 27; CAPCOA, 2008, pp. 46-47)~~(Urban Crossroads, 2015c, p. 27; CAPCOA, 2008, pp. 46-47)~~

4.6.5 IMPACT ANALYSIS

Threshold a. Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Operational activities associated with the proposed Project would result in emissions of CO_2, CH_4, and N_2O from the following primary sources: On-Site Equipment (i.e., aggregate processing equipment and the asphalt batch plant) and Mobile Source (Passenger Cars and Truck Traffic) Emissions. The Project would not result in an increase in the amount of natural gas associated with aggregate usage (since aggregate usage does not currently use any natural gas), although the Project would result in a 35.05% increase in electricity associated with the aggregate production. Additionally, natural gas is utilized in conjunction with the asphalt batch plant operations and 100% of the asphalt batch plant's demand for natural gas is reflected in the emissions summary for the asphalt batch plant. Provided below is a discussion of the Project's emissions from on-site equipment and mobile source emissions. (Urban Crossroads, 2016c, p. 10)

A. *Mobile Source Emissions*

As shown in the Project's traffic study (*Technical Appendix J* to this EIR) the Project would generate 140 net new daily truck trips above the historical baseline and 4 net new employee trips above the historical baseline. (Urban Crossroads, 2016c, p. 32)~~(Urban Crossroads, 2015c, p. 30)~~

The CalEEMod default of a 20-mile one-way trip length for trucks was increased to 25 miles based on discussion with the Project Applicant and based on regional aggregate studies that have found that 25 miles is generally the maximum distance for aggregate to be hauled before the cost outweigh distance of travel (Urban Crossroads, 2016c, p. 32; SANDAG, 2011, p. 8-1; Berck, 2005).

The Project is anticipated to serve a regional need and likely would reduce vehicle miles traveled (VMT) in the long term by diverting trips that would otherwise travel to other aggregate facilities in the region. Notwithstanding, for purposes of this analysis, no "credit" has been taken and emissions associated with the Project are considered "new" as a conservative measure. (Urban Crossroads, 2016c, p. 31)

The fact is that aggregate will be consumed with or without the proposed Project. The Project would not have an effect on demand for aggregate but would have an effect on the distance that aggregates travel within the region in the long term. Project aggregate made available by the proposed expansion area would replace materials hauled from farther distances in the long term and fulfill new demand for aggregate that will occur in the Riverside County region. This rationale is supported by Dr. Peter Berk's "Working Paper No. 994 – A Note on the Environmental Costs of Aggregate" (Berck, 2005). Dr. Berck states that:

> *"The opening of a new quarry for aggregates will change the pattern of transportation of aggregates in the area served by the quarry. In this note, we will show that, so long as aggregate producers are cost minimizing, the new pattern of transportation requires less truck transport than the pattern of transportation that existed before the opening of the new quarry. Since the costs of providing aggregates falls, it is reasonable to assume that the price of delivered aggregates also will fall. This note also shows that the demand expansion effect is of very small magnitude. Since the demand increase from a new quarry is quite small, the dominant effect is that the quarries are on average closer to the users of aggregates and, as a result, the truck mileage for aggregate hauling decreases. To summarize the effects of a new quarry project:*
>
> *a) The project in itself will not significantly increase the demand for construction materials in the region through market forces, which include the downward pressure on pricing.*
> *b) Truck traffic (i.e. vehicle miles traveled) in the region will not increase and may decrease as a result of the project."* (Berck, 2005)

Furthermore, a study prepared by the San Diego Association of Governments (SANDAG) found that when aggregate is transported by truck to the point of use, the price of the material increases about 15 cents per ton for every mile hauled, and concluded that "…the point of diminishing marginal benefit – that is, where the largest number of projects can be served with the least additional distance – occurs at the 20- to 25-mile driveshed" (SANDAG, 2011, pp. ES-4 and 3-9).

In its guidance document CEQA and Climate Change the California Air Pollution Control Officers Association (CAPCOA) lists various mitigation measures that can be implemented to reduce Air Quality and GHG emissions for various projects. One particular mitigation measure for reducing Air Quality and GHG emissions during construction activity is Mitigation Measure C-5 "Use of Local Building Materials." The Project would provide local building materials to serve the demand for aggregate resources in the local area, thereby resulting in a reduction in emissions associated with transport of materials from sources of aggregate products located further away. However, no "credit" is taken for this measure in this analysis in an effort to be conservative. (Urban Crossroads, 2016c, pp. 32-33)

B. Operational Equipment Emissions

Table 4.6-5, *Operational Equipment*, summarizes the equipment utilized at the Mine on a daily basis for the baseline operating period, Project operating characteristics, and net new equipment activity. As shown, mining activities during most of the baseline period result in approximately 20,316 horsepower hours per day. However, during most of the baseline operating period, the Mine was under different ownership, and the equipment utilized during that period is not reflective of the equipment utilized on-site since 2014 (refer to Table 4.6-5 for a summary of baseline operational equipment and equipment utilized on-site as of 2014). At the time the Project's Notice of Preparation (NOP) was distributed for public review in June 2015, existing mining operations onsite were estimated to be approximately 25,158 horsepower hours per day (hh/d), representing an approximate 23.8 percent increase as compared to the horsepower hours per day that were associated with mining operations under previous ownership. Although the Project would not increase the amount of hh/d as compared to the operational conditions that existed onsite at the time the Project's NOP was distributed for public review, in an effort to be conservative, and consistent with the annual tonnage increase of 35.05%, the analysis herein assumes an increase in the Project's hh/d to approximately 35.05% above what was in use under previous ownership. Thus, for analytical purposes herein, it is assumed that equipment used under the proposed Project would require approximately 27,495 horsepower hours per day, reflecting an approximate 35.05 percent increase in horsepower as compared to the baseline condition. (Urban Crossroads, 2016c, pp. 28-29)

C. Asphalt Batch Plant Emissions

The Nichols North site also is subject to approved Conditional Use Permit (CUP 2014-07) which allows for the operation of a portable asphalt batch plant on approximately 1.76 acres of the Project site. Although the asphalt batch plant is previously approved and entitled, the analysis in this Subsection assumes 100% of the impacts from the previously-entitled asphalt batch plant in an effort to provide a conservative estimate of Project-related impacts due to GHG emissions. GHG emissions associated with the asphalt batch plant include emissions associated with on-site dryers, oil heaters/natural gas usage, and electricity usage. GHG emissions associated with asphalt batch plant activity were obtained from the report Comparison of Uncontrolled and Controlled Hot Mix Asphalt Plant Emissions prepared by Associates Environmental, which is included in its entirety in Appendix 3.2 to the Project's Greenhouse Gas Emissions Report (*EIR Technical Appendix G*). (Urban Crossroads, 2016c, p. 33)

D. Project-Related Net GHG Emissions Summary

To determine annual metric tons per year, the daily emissions calculated by CalEEMod were multiplied by 171 days which is the number of days at 5,000 ~~TPD~~ tons per day (tpd) processing that

Table 4.6-5 Operational Equipment

Baseline Operational Equipment Summary				
Hours/Day	Description	Quantity	Horsepower	Total Horsepower Hours Per Day
2	Skidsteer	1	51	102
6	769C Haul Truck	1	474	2,844
10	980K Wheel Loader	1	406	4,060
10	980H Wheel Loader	1	393	3,930
10	988G Wheel Loader	1	520	5,200
4	D8R Dozer	1	337	1,348
8	Water Truck 4000 Gal	1	354	2,832
Total Baseline Horsepower Hours				**20,316**
Proposed Project Equipment Summary				
Hours/Day	Description	Quantity	Horsepower	Total Horsepower Hours Per Day
4	Skidsteer	1	51	204
8	769C Haul Truck	2	474	7,584
10	980K Wheel Loader	1	406	4,060
10	980H Wheel Loader	1	393	3,930
10	988G Wheel Loader	1	520	5,200
4	D8R Dozer	1	337	1,348
8	Water Truck 4000 Gal	1	354	2,832
Subtotal Project Horsepower Hours				**25,158**
Additional Equipment Summary				
Hours/Day	Description	Quantity	Horsepower	Total Horsepower Hours Per Day
4	Skidsteer	1	51	204
4.4	769C Haul Truck	1	474	2,085
Subtotal Additional Equipment Horsepower Hours				**2,289**
Total Project Horsepower Hours				**27,447**
Net New Project Equipment Summary				
Hours/Day	Description	Quantity	Horsepower	Total Horsepower Hours Per Day
6	Skidsteer	1	51	306
2	769C Haul Truck	1	474	948
8	769C Haul Truck	1	474	3,792
4.4	769C Haul Truck	1	474	2,085
Total Net New Project Horsepower Hours				**7,131**

(Urban Crossroads, 2016c, Table 3-1)~~*Source: Urban Crossroads 2015c, Table 3-1*~~

it would take to hit the maximum proposed annual tonnage limit of 856,560. The total amount of net new Project related GHG emissions, which comprise approximately 35.05 percent of the total operational emissions that would be generated under the Project, would total ~~1,222.47~~9,836.53 $MMTCO_2e$ as shown on Table 4.6-6, *Net New Project Greenhouse Gas Emissions*. The net new Project-related GHG emissions would not exceed the SCAQMD's interim threshold of 10,000 $MTCO_2e$ per year. ~~It should be noted that even when the GHGs from baseline operations and proposed Project operations, the Mine would produce less than 10,000 $MTCO_2e$/yr.~~ Therefore, impacts associated with GHG emissions would be less than significant. (Urban Crossroads, 2016c, p. 33)~~(Urban Crossroads, 2016c, p. 31)(Urban Crossroads, 2015c, p. 31)~~

Table 4.6-6 Net New Project Greenhouse Gas Emissions

Emission Source	Emissions (metric tons per year)			
	CO_2	CH_4	N_2O	Total CO_2E
Operational Equipment	432.49	0.13	--	435.24
Electricity from Aggregate Process	92.4	--	--	92.4
Mobile Sources	1,844.56	0.01	--	1,844.84
Asphalt Batch Plant	7,464.05	--	--	7,464.05
Total CO_2E (All Sources)	9,836.53			
SCAQMD Threshold	**10,000**			
Threshold Exceeded?	**NO**			

(Urban Crossroads, 2016c, Table 3-2)~~*Urban Crossroads 2015c, Table 3-2*~~

In addition, and as shown in Table 4.6-6, GHG emissions associated with the Project are largely caused by operation of the asphalt batch plant. The asphalt batch plant is an approved use on-site pursuant to CUP 2014-07 and has already been subject to CEQA as part of Addendum No. 1 to MND 2006-01, which was adopted by the City concurrent with CUP 2014-07. During the public comment period on the DEIR, several third parties incorrectly asserted that the DEIR failed to adequately analyze the proposed Project's impacts. Several of these commentators also incorrectly claimed that the DEIR needed to re-analyze and include the batch plant's impacts as part of this EIR. While the City disagrees with these claims because the batch plant has already been approved under CUP 2014-07 and previously evaluated in an approved MND Addendum that was not challenged, in an effort to provide a conservative and overly-inclusive analysis of the Project's impacts on the environment (as opposed to potentially underestimating the Project's impacts), and to remove this issue from being a point of contention, the values shown in Table 4.6-6 account for 100% of asphalt batch plant emissions. If the asphalt batch plant emissions were to be excluded from the analysis, the Project's level of GHG emissions would be substantially reduced from 9,836.53 MT CO_2e/yr to 2,372.48 MT CO_2e/yr. Nonetheless, for purposes of analysis herein, and accounting for 100% of asphalt batch plant operations, the Project's GHG emissions still would be below the SCAQMD screening threshold and, therefore, impacts would be less-than-cumulatively considerable.

Threshold b. Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The City of Lake Elsinore's long-range plan to reduce City-wide GHG emissions from activities that occur within the City limits is its CAP, which the City adopted in 2011. As noted above in Subsection 4.6.1.E.15, however, the "Project-Level CAP Consistency Worksheet" included in the City's CAP is generally applicable to traditional land use development projects and ~~does not apply to projects such as~~its implementation measures have little to no applicability to mining projects. As such, pursuant to the CAP documentation, further analysis is required to determine if ~~a~~ the Project would conflict with or otherwise obstruct implementation of the City's CAP or achievement of the City's goal to meet the Statewide GHG reduction targets specified in Assembly Bill 32 and Executive Order S-3-05. ~~less than significant impact would occur.~~ Specifically, and as noted in Appendix D to the CAP regarding the requirements for additional analysis:

> "*If it is determined that a proposed project does not fall within the assumptions of the General Plan and/or is not consistent with the CAP, incorporating all applicable measures as binding and enforceable components of the project, further CEQA analysis would be required. The applicant must demonstrate to the City's satisfaction how the project will achieve its share of the established targets…The project would also be required to demonstrate that it would not substantially interfere with implementation of the CAP strategies or measures*." (Lake Elsinore, 2011, p. D-3)

As indicated above in Table 4.6-6, the Project's GHG emissions would net total 9,836.53~~1,222.47~~ $MMTCO_2e$. Of that total, 2,372.48 MT CO2e/yr would be from Project-related mining operations and 7,464.05 MT CO2e/yr would be from the previously approved batch plant. The net new Project-related GHG emissions (including the previously-approved batch plant) would not exceed the SCAQMD's interim threshold of 10,000 $MTCO_2e$ per year as analyzed above under Threshold a). Additionally, because none of the CAP's implementation strategies are directly applicable to the Project, except for those measures that have been and will be adopted at the regional, State, and/or federal levels and to which the Project would be directly or indirectly required to comply with (e.g., federal and State vehicle fuel efficiency standards, renewable energy standards, etc.), the proposed Project would not substantially interfere with implementation of the City of Lake Elsinore CAP. ~~Accordingly~~Additionally, because the Project's GHG emissions would not be significant based on SCAQMD guidelines (emission of less than~~,~~ 10,000 $MTCO_2e$ per year) and because a Project-specific analysis was conducted demonstrating that the Project would not interfere with CAP implementation (refer to *EIR Technical Appendix G*), the Project would not obstruct the City's ability to achieve its goal to meet the Statewide GHG reduction targets specified in Assembly Bill 32 and Executive Order S-3-05. ~~not result in any~~ As such, the Project would have less-than-significant impacts due to a conflict with the City's CAP.

~~Additionally,~~ Because the CAP's implementation measures are not directly applicable to the proposed Project, additional analysis was conducted to determine if the Project on an individual basis would be consistent with CARB's Scoping Plan, which ~~identifies~~ identifies strategies to reduce California's ~~greenhouse gas~~ GHG emissions in support of AB 32. Many of the strategies identified in the Scoping Plan are not applicable at the Project level, such as long-term technological improvements to reduce emissions from vehicles across the State of California. However, s~~S~~ome of the Scoping Plan measures are applicable and supported by the Project, such as energy efficiency. Finally, while some measures are not directly applicable, the Project would not conflict with their implementation.

CARB Scoping Plan GHG Reduction measures are grouped into 18 action categories, as follows (Urban Crossroads, 2016c, p. 34)~~(Urban Crossroads, 2015c, pp. 31-32)~~:

1) **California Cap-and-Trade Program Linked to Western Climate Initiative Partner Jurisdictions**. Implement a broad-based California cap-and-trade program to provide a firm limit on emissions. Link the California cap–and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California. Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms.

2) **California Light-Duty Vehicle Greenhouse Gas Standards.** Implement adopted Pavley standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.

3) **Energy Efficiency.** Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly owned utilities).

4) **Renewables Portfolio Standards.** Achieve 332 percent renewable energy mix statewide.

5) **Low Carbon Fuel Standard.** Develop and adopt the Low Carbon Fuel Standard.

6) **Regional Transportation-Related Greenhouse Gas Targets.** Develop regional greenhouse gas emissions reduction targets for passenger vehicles.

7) **Vehicle Efficiency Measures.** Implement light-duty vehicle efficiency measures.

8) **Goods Movement.** Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.

9) **Million Solar Roofs Program.** Install 3,000 megawatts of solar-electric capacity under California's existing solar programs.

10) **Medium- and Heavy-Duty Vehicles.** Adopt medium- (MD) and heavy-duty (HD) vehicle efficiencies. Aerodynamic efficiency measures for HD trucks pulling trailers 53-feet or longer that include improvements in trailer aerodynamics and use of rolling resistance tires were adopted in 2008 and went into effect in 2010.5 Future, yet to be determined improvements, includes hybridization of MD and HD trucks.

11) **Industrial Emissions.** Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries.

12) **High Speed Rail.** Support implementation of a high speed rail system.

13) **Green Building Strategy.** Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.

14) **High Global Warming Potential Gases.** Adopt measures to reduce high warming global potential gases.

15) **Recycling and Waste.** Reduce methane emissions at landfills. Increase waste diversion, composting and other beneficial uses of organic materials, and mandate commercial recycling. Move toward zero-waste.

16) **Sustainable Forests**. Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation. The 2020 target for carbon sequestration is 5 million MTCO2E/year.

17) **Water.** Continue efficiency programs and use cleaner energy sources to move and treat water.

18) **Agriculture**. In the near-term, encourage investment in manure digesters and at the five-year. Scoping Plan update determine if the program should be made mandatory by the year 2020.

Table 4.6-7, *Scoping Plan Conflict Summary~~Consistency Summary~~*, summarizes if the Project would conflict ~~the Project's consistency~~ with the State Scoping Plan or not. As shown in Table 4.6-7, the Project would not conflict with any of the provisions of the Scoping Plan ~~and in fact supports seven of the action categories through energy efficiency, water conservation, recycling, and landscaping~~. Thus, the Project would have a less-than-significant impact regarding conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

4.6.6 CUMULATIVE IMPACT ANALYSIS

GCC occurs as the result of global emissions of GHGs. An individual project such as the proposed Project does not have the potential to result in direct and significant GCC-related effects in the absence of cumulative sources of GHGs. The CEQA Guidelines also emphasize that the effects of GHG emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impacts analysis (See CEQA Guidelines §15130[f]).

The Project's net new greenhouse gas emissions of ~~1,222.47~~9,836.53 MMTCO$_2$e would not exceed the SCAQMD's threshold of 10,000 MTCO$_2$e per year. As discussed above under the analysis of Thresholds a. and b., the Project would not result in a cumulatively considerable emission of GHGs or a cumulatively considerable conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Accordingly, cumulatively-considerable impacts would not occur with implementation of the proposed Project.

Table 4.6-7 Scoping Plan ~~Consistency~~ Conflict Summary

Action	Supporting Measures[6]	Conflict
Cap-and-Trade Program	--	Not Applicable. These programs involve capping emissions from electricity generation, industrial facilities, and broad scoped fuels. Caps do not directly affect light industrial projects.
Light-Duty Vehicle Standards	T-1	Not Applicable. This is a statewide measure establishing vehicle emissions standards.
Energy Efficiency	E-1	Not Applicable. The project is not proposing the construction of any new building structures.
	E-2	
	CR-1	
	CR-2	
Renewables Portfolio Standard	E-3	Not Applicable. Establishes the minimum statewide renewable energy mix.
Low Carbon Fuel Standard	T-2	Not Applicable. Establishes reduced carbon intensity of transportation fuels.
Regional Transportation-Related Greenhouse Gas Targets	T-3	Not Applicable. This is a statewide measure and is not within the purview of this Project.
Vehicle Efficiency Measures	T-4	Not Applicable. Identifies measures such as minimum tire-fuel efficiency, lower friction oil, and reduction in air conditioning use.
Goods Movement	T-5	Not applicable. Identifies measures to improve goods movement efficiencies such as advanced combustion strategies, friction reduction, waste heat recovery, and electrification of accessories. While these measures are yet to be implemented and will be voluntary, the proposed Project would not interfere with their implementation.
	T-6	
Million Solar Roofs (MSR) Program	E-4	Not applicable. The Project is not changing any of the existing energy demand requirements and is not constructing any physical structures.

Table 4.6-7 Scoping Plan ~~Consistency~~ Conflict Summary (Continued)

Action	Supporting Measures[6]	Conflict
Medium- & Heavy-Duty Vehicles	T-7	The Project would not conflict with this measure. MD and HD trucks and trailers working from the proposed Project will be subject to aerodynamic and hybridization requirements as established by ARB; no feature of the project would interfere with implementation of these requirements and programs.
	T-8	
Industrial Emissions	I-1	Not Applicable. These measures are applicable to large industrial facilities (> 500,000 MTCOE2/YR) and other intensive uses such as refineries.
	I-2	
	I-3	
	I-4	
	I-5	
High Speed Rail	T-9	Not Applicable. Supports increased mobility choice.
Green Building Strategy	GB-1	Not Applicable. The project is not proposing the construction of any new building structures.
High Global Warming Potential Gases	H-1	Not Applicable. The proposed warehouses are not substantial sources of high GWP emissions and will comply with any future changes in air conditioning, fire protection suppressant, and other requirements.
	H-2	
	H-3	
	H-4	
	H-5	
	H-6	
	H-7	
Recycling and Waste	RW-1	Not Applicable. The project is not proposing the construction of any new building structures.
	RW-2	
	RW-3	
Sustainable Forests	F-1	Not Applicable. The project is not proposing the construction of any new building structures.
Water	W-1	Not Applicable. The project is not proposing the construction of any new building structures.
	W-2	
	W-3	
	W-4	
	W-5	
	W-6	
Agriculture	A-1	Not Applicable. The project is not an agricultural use.

(Urban Crossroads, 2016c, Table 3-3)~~*Source: Urban Crossroads 2015c, Table 3-3*~~

4.6.7 SIGNIFICANCE OF IMPACTS BEFORE MITIGATION

Threshold 1: Less-than-Significant Impact. As shown on Table 4.6-6, the Project would result in approximately ~~1,222.47~~9,836.53 $MTCO_2e$ per year (of which 7,464.05 MT CO_2e/yr would be from the previously-reviewed asphalt batch plant and 2,372.48 MT CO_2e/yr attributable to expanded Mine operations).~~;~~ Thus, the proposed Project would not exceed the SCAQMD's interim threshold of 10,000 $MTCO_2e$ per year~~. Therefore~~ and~~,~~ a less-than-significant impact would occur. (Urban Crossroads, 2016c, p. 31)~~(Urban Crossroads, 2015c, p. 31)~~

Threshold 2: Less-than-Significant Impact. Project GHG emissions would not result in or cause a potentially significant impact on the environment because Project emissions would be below SCAQMD's interim screening threshold for industrial uses of 10,000 MT CO_2e/yr. As noted by SCAQMD staff:

> *"…the policy objective of staff's recommended interim GHG significance threshold proposal is to achieve an emission capture rate of 90 percent of all new or modified stationary source projects. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that staff estimates that these GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 MMT CO2e/yr). In addition, these small projects may be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory. Finally, these small sources are already subject to BACT for criteria pollutants and are more likely to be single-permit facilities, so they are more likely to have few opportunities readily available to reduce GHG emissions from other parts of their facility."* (SCAQMD, 2008)

~~.~~

To this end, the analysis demonstrates that the Project is consistent with, or otherwise not in conflict with, recommended measures and actions in the CARB December 2008 Scoping Plan (CARB Scoping Plan). The CARB Scoping Plan establishes strategies and measures to implement in order to achieve the GHG reductions goals set forth in the Global Warming Solutions Act of 2006 (AB 32). (Urban Crossroads, 2016c, p. 1)~~(Urban Crossroads, 2015c, p. 1)~~

Moreover, and as noted in Appendix D to the CAP:

> *"If it is determined that a proposed project does not fall within the assumptions of the General Plan and/or is not consistent with the CAP, incorporating all applicable measures as binding and enforceable components of the project, further CEQA analysis would be required. The applicant must demonstrate to the City's satisfaction how the project will achieve its share of the established targets…The project would also be required to demonstrate that it would not substantially interfere with implementation of the CAP strategies or measures."* (Lake Elsinore, 2011, p. D-3)

Accordingly, because the Project's GHG emissions would not be significant based on SCAQMD guidelines, and because a Project-specific analysis was conducted demonstrating that the Project would not interfere with CAP implementation, the Project would not result in any impacts due to a conflict with the City's CAP.

4.6.8 MITIGATION

Impacts would be less than significant; therefore, no mitigation is required.

4.7 HYDROLOGY AND WATER QUALITY

4.7.1 SCOPE OF REVIEW

The Nichols Canyon Mine, as discussed in Section 2.0, *Environmental Setting*, is an existing, ongoing surface mining operation operating pursuant to vested mining rights and an approved reclamation plan (RP 2006-01A1), which was analyzed in a prior MND. Although the City has chosen to prepare an EIR for the Project evaluated herein, the scope of review addresses those impacts resulting from the Project as described in Section 3.0, *Project Description*, and not impacts related to existing, approved operations, which form the environmental baseline, as discussed in Section 2.7, *Existing Physical Site Conditions*. As disclosed in Section 3.0, *Project Description*, an asphalt batch plant is an existing approved on-site use pursuant to Conditional Use Permit CUP 2014-07 approved by the City of Lake Elsinore in 2015. Thus, the batch plant has already been approved by the City along with a CEQA environmental compliance document that was not challenged by any third party. During the public comment period on the proposed Project's DEIR, several third parties incorrectly asserted that the DEIR failed to adequately analyze the proposed Project's impacts because the batch plant was not part of the Project description. Several of these commentators also incorrectly claimed that the batch plant's impacts needed to be re-analyzed as part of this EIR. While the City disagrees with these claims because the batch plant has already been approved under CUP 2014-07 and previously evaluated in an approved MND Addendum that was not challenged, in an effort to provide a conservative and overly-inclusive analysis of the Project's impacts on the environment (as opposed to potentially underestimating the Project's impacts), and to remove this issue from being a point of contention, this EIR includes analyses of the batch plant's impacts in all relevant and CEQA Appendix G topics. However, the construction and operation of an asphalt batch plant on the site is not relevant to the issues of Hydrology and Water QualityAccordingly, this Subsection analyzes hydrology and water quality impacts related to the Project because the asphalt batch plant site is located in an area previously subject to disturbance and mining activity, would not alter the hydrologic flows, would not cause erosion on- or off-site, and would not result in any other impacts to hydrology and water quality. During mining operations, all runoff, including runoff from the asphalt batch plant site, would be detained on-site within a sedimentation basin, and would therefore have no potential to affect hydrology on- or off-site, and would not result in any adverse water quality effects to downstream properties. As part of reclamation activities at the Mine, the asphalt batch plant would be removed from the Project site. specifically. Additionally, tThis Subsection does not analyze hydrology and water quality impacts related to existing, approved mining operations because the approved mining operations are a baseline condition and not a part of the proposed Project.

4.7.2 EXISTING CONDITIONS

The Nichols Canyon Mine is located within the jurisdiction of the Santa Ana Regional Water Quality Control Board (RWQCB). Accordingly, the analysis contained in this Subsection is based in part on information obtained from the Santa Ana RWQCB's Santa Ana River Basin Water Quality Control Plan (updated June 2011) and the Integrated Regional Water Management Plan (IRWMP) for the Santa Ana River Watershed (also referred to as "One Water One Watershed," dated November 16, 2010), prepared by the Santa Ana Watershed Project Authority (SAWPA). The Nichols Canyon Mine is located within the service area of the Elsinore Valley Municipal Water District (EVMWD), so general information also was obtained from the 2010 EVMWD Urban Water Management Plan (UWMP).

With respect to site-specific hydrology, the analysis in this Subsection is based on a report by Joseph E. Bonadiman & Associates, Inc. titled, "Hydrology Study and Drainage Analysis," dated May 2016~~June 2015~~, included as *Technical Appendix H* appended to this EIR. A complete list of references are contained in EIR Section 7.0, *References*.

A. Regional Hydrology

The Nichols Canyon Mine is located in the Santa Ana River watershed, which drains a 2,650 square-mile area and is the principal surface flow water body within the region (SAWPA, 2014, Ch. 3). The Santa Ana River rises in Santa Ana Canyon in the southern San Bernardino Mountains and runs southwesterly across San Bernardino, Riverside, and Orange Counties, where it discharges into the Pacific Ocean at the City of Huntington Beach. The total length of the Santa Ana River and its major tributaries is approximately 700 miles (SAWPA, 2014, Ch. 3). The Project site's location within the Santa Ana River Watershed is depicted on Figure 4.7-1, *Santa Ana River Watershed Map*. The Project site is within the Lee Lake Hydrologic Subarea of the Lake Mathews Hydrologic Area of the Santa Ana River Hydrologic Unit (Bonadiman, 2016, p. 4)~~(Bonadiman, 2015, p. 4)~~.

B. Site Hydrology

Under existing conditions, the Nichols Canyon Mine property is located east of Interstate 15 (1-15) and north and south of Nichols Road. To the north and east is undeveloped land and to the south is residential development. The hilly topography located north and east of the Mine result in small tributaries of run-on to the Mine property. Stovepipe Creek bisects a portion of the Nichols South portion of the property. Stovepipe Creek enters the Mine site along the easterly property line via two 24" corrugate metal pipes and exits the property along the western property line via a 6'x14' concrete box culvert that crosses under I-15. (Bonadiman, 2016, p. 5)~~(Bonadamin, 2015, p. 5)~~

As illustrated on Figure 4.7-2, *Existing Hydrologic Conditions Map*, the Mine site is part of two drainage areas, herein referred to as Area A and Area B. Under existing conditions, runoff from the western disturbed portions of the Nichols North site is conveyed ~~flows in a southwesterly direction~~ into an on-site retention basin at the southwest corner of Nichols North. The Nichols North site is graded to capture and retain on-site all surface flows within the western portions of the site. The eastern and northern portions of the Nichols North site, as well as the southeastern portion ~~the majority~~ of the Nichols South site that is planned for open space by the Project, also flow in a southwestern direction via Stovepipe Creek and to the west beneath I-15 via the existing concrete box culvert. A small portion of the runoff from the northern portions of the Nichols South site are conveyed northerly into a swale located along the northern edge of Nichols Road. (Bonadiman, 2016, Exhibit G)~~(Bonadamin, 2015, Exhibit G)~~ ~~These conditions would not change under the Project.~~

Under historical conditions, the peak stormwater runoff calculations for the two drainage areas within which the Mine is located are shown on Table 4.7-1, *Hydrograph Method Calculations for Historical Conditions*.

For existing conditions, the values are identical to the historical conditions for Drainage Area B, but lower slightly for Drainage Area A, as shown on Table 4.7-2, *Hydrograph Method Calculations for Existing Conditions.*

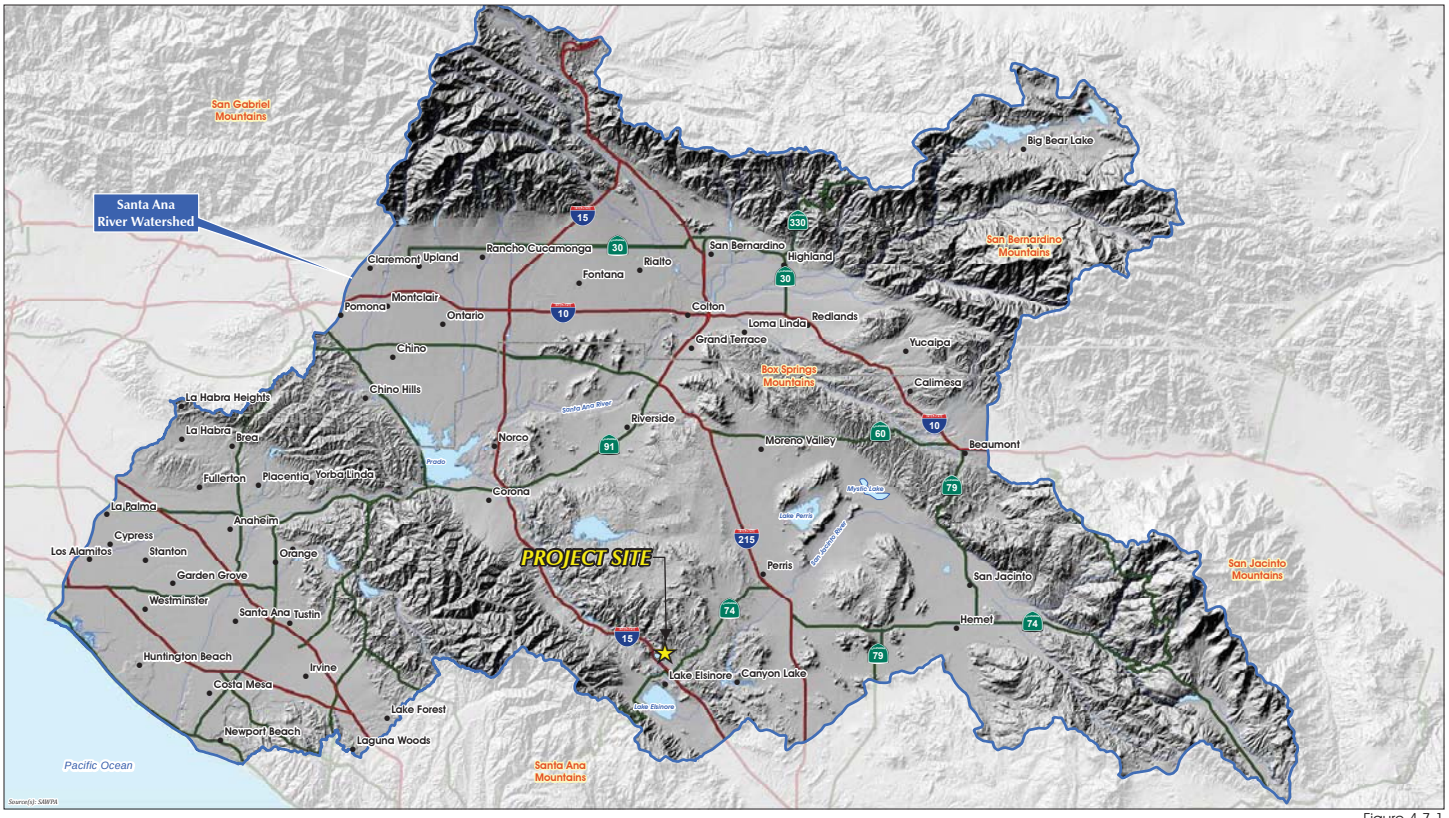
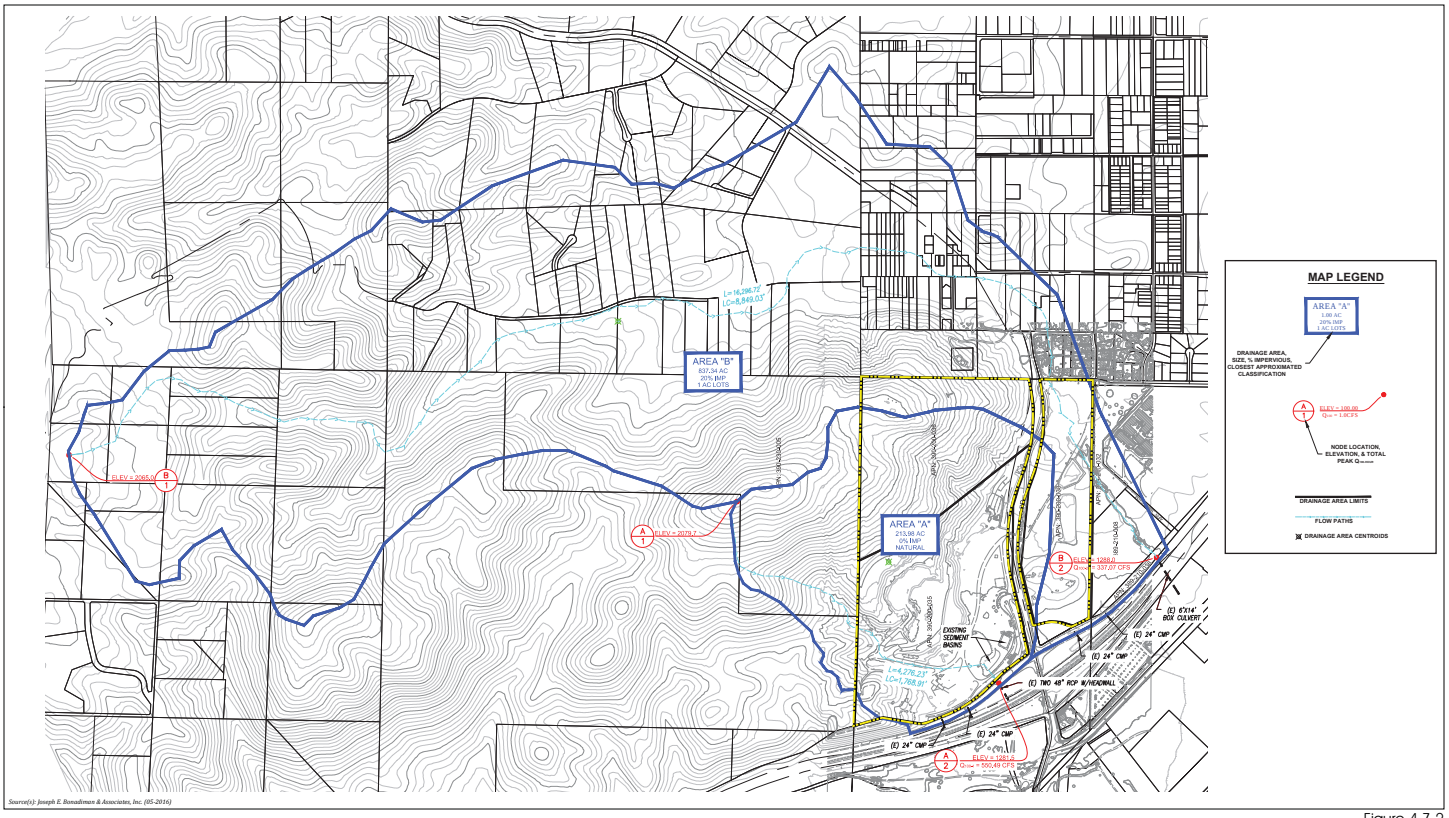


Figure 4.7-1

SANTA ANA RIVER WATERSHED MAP



Source(s): Joseph E. Bonadiman & Associates, Inc. (05-2016)

Figure 4.7-2

EXISTING HYDROLOGIC CONDITIONS MAP

Table 4.7-1 Hydrograph Method Calculations for Historical Conditions

20-YEAR

DRAINAGE AREA	1-HOUR		3-HOUR		6-HOUR		24-HOUR	
	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)
A	390.14	16.41	292.14	24.39	265.03	28.53	110.92	40.98
B	103.35	64.32	150.12	97.75	165.93	117.03	188.54	168.69

100-YEAR

DRAINAGE AREA	1-HOUR		3-HOUR		6-HOUR		24-HOUR	
	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)
A	**553.66**	24.72	418.06	40.38	383.55	53.89	176.59	86.49
B	153.82	95.73	240.36	157.85	285.67	212.15	**337.07**	347.82

(Bonadiman, 2016,Tables 4 and 5)~~(Bonadamin, 2015,Tables 4 and 5)~~

Table 4.7-2 Hydrograph Method Calculations for Existing Conditions

20-YEAR

DRAINAGE AREA	1-HOUR		3-HOUR		6-HOUR		24-HOUR	
	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)
A	387.86	16.42	291.54	24.42	264.72	28.58	110.20	41.05
B	SEE HISTORICAL CONDITION							

100-YEAR

DRAINAGE AREA	1-HOUR		3-HOUR		6-HOUR		24-HOUR	
	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)	Q (CFS)	VOLUME (AC-FT)
A	**550.49**	24.72	380.48	40.40	383.04	53.91	104.86	86.57
B	SEE HISTORICAL CONDITION							

(Bonadiman, 2016,Tables 7 and 8)~~(Bonadamin, 2015,Tables 7 and 8)~~

C. Water Quality

The California Porter-Cologne Water Quality Control Act (Section 13000 ("Water Quality") et seq., of the California Water Code), and the Federal Water Pollution Control Act Amendment of 1972 (also referred to as the Clean Water Act (CWA)) require that comprehensive water quality control plans be developed for all waters in the State of California. In order to accomplish this, the California State Water Resources Control Board divided the state into planning regions and the present system of nine Regional Water Quality Control Boards (RWQCBs). The Nichols Canyon Mine and vicinity are located in the Santa Ana River watershed, which is within the purview of the Santa Ana RWQCB. The Santa Ana RWQCB's Santa Ana River Basin Water Quality Control Plan

is the governing water quality plan for the region, which sets forth goals and objectives for protecting water quality within the region (SARWQCB, 2011). One Water One Watershed (OWOW) is an Integrated Regional Water Management Plan (IRWMP) planning process being developed within the Santa Ana River Watershed. The OWOW 2.0 Plan, adopted by the SAWPA on February 4, 2014, reflects a collaborative planning process that addresses all aspects of water resources in the Watershed over a 20-year time period. (SAWPA, 2014)

D. Groundwater

The Elsinore Valley is underlain by the Elsinore Groundwater Basin (Lake Elsinore, 2011b. p. 3.9-5). Almost all of the groundwater production that is used for potable use by the EVWMD occurs in the Elsinore Basin (EVMWD, 2011, p. 5). Inflows to Elsinore Basin include infiltration of local precipitation, runoff from the surrounding watershed, infiltration from the San Jacinto River prior to reaching Lake Elsinore, and return flows from either irrigation or domestic use. Natural groundwater inflow is almost equal to the average yield of the Basin because there are no natural outflows from the Basin. Groundwater pumping to meet water demands accounts for essentially the entire outflow from the Basin. (EVWMD, 2011, p. 4-11) In addition to the Elsinore Basin, EVWMD has access to groundwater from the Coldwater Basin, San Bernardino Bunker Hill Basin, Rialto-Colton and the Riverside-North Basin. See EIR Section 4.10, *Utilities and Service Systems*, for more detail on the groundwater resources utilized by EVMWD.

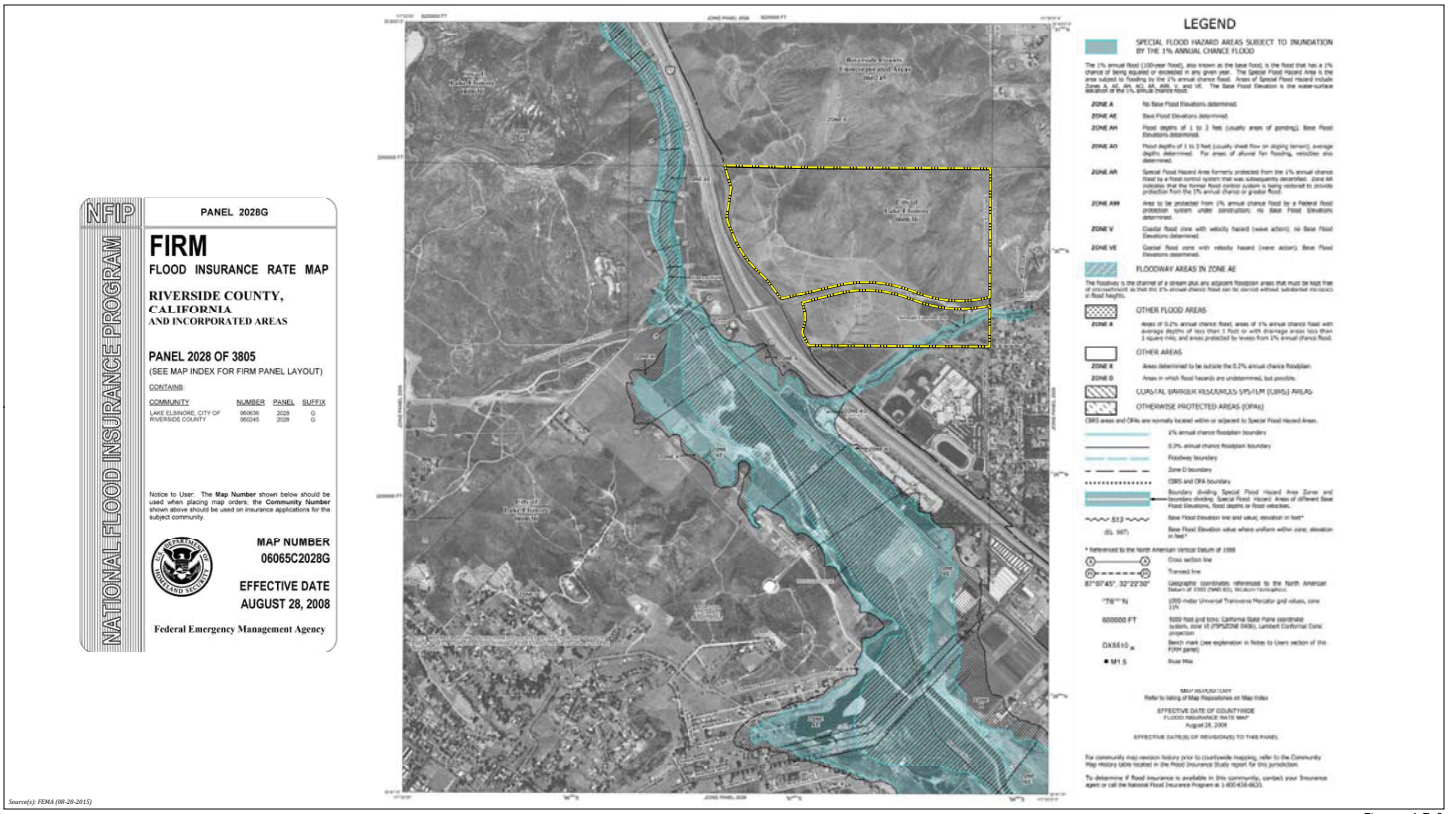
E. Flooding and Dam Inundation

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 06065C2028G (Effective Date – August 28, 2008), the majority of the Nichols Canyon Mine is located in an unshaded "Zone X", identified by FEMA as an area determined to be outside the 0.2% (500-year) annual chance of flood. A portion of the Nichols Canyon Mine located along Stovepipe Canyon Creek is located in a shaded "Zone A", identified by FEMA as an area determined to be within a "Special Flood Hazard Area subject to inundation by the 1% annual chance of flood." (Bonadiman, 2016, p. 8)~~(Bonadiman, 2015, p. 8)~~ The FEMA FIRM for the Nichols Canyon Mine is depicted on Figure 4.7-3, *FEMA FIRM No. 06065C2028G*.

According to the City of Lake Elsinore General Plan Update (GPU) EIR, a portion of the City of Lake Elsinore is located within the high inundation zone of the Railroad Canyon Dam, which is located northwesterly of the City and its sphere of influence (SOI), in the City of Canyon Lake. If a catastrophic failure were to occur at the dam, the water would flow into the San Jacinto River and Lake Elsinore, flooding the portion of the City located southwest of Lakeshore Drive, southeast of Riverside Drive (SR-74) northeast of Grand Avenue and northwest of Corydon Street. (Lake Elsinore, 2011b, p. 3.9-35). As depicted on Figure 3-2, *Vicinity Map*, the Nichols Canyon Mine is located north of these locations and approximately 5.0 miles north of the Railroad Canyon Dam. A levee is present at Lake Elsinore, which is located approximately 2.0 miles south of the Nichols Canyon Mine. According to Figure 10, *Flood Hazards*, of the Riverside County General Plan's Elsinore Area Plan, the Nichols Canyon Mine is not located within a dam hazard zone related to the Railroad Canyon Dam or any other dam hazard zone. (Riverside County, 2003a, Figure 10).

F. Applicable Regulatory Requirements

Local agencies that regulate water in the City of Lake Elsinore include the Lake Elsinore and San Jacinto Watersheds Authority (LESJWA), which is a joint powers authority (JPA) entrusted with



Source(s): FEMA (08-28-2015)

Figure 4.7-3

FEMA FIRM NO. 06065C2028G

state and local funds to improve water quality in the region and satisfy other water resource protection needs; the Riverside County Flood Control and Water Conservation District (RCFCWCD) which oversees development of stormwater drainage and water quality programs for participating jurisdictions; and the City of Lake Elsinore through its General Plan, City Zoning Ordinance and actions and programs of the Public Works Department. (Lake Elsinore, 2011b, p. 3.9-13)

- **Water Quality Regulations**

2. Federal Water Pollution Control Act (Clean Water Act)

The Federal Water Pollution Control Act (also known as the Clean Water Act (CWA)) is the principal federal statute that addresses water resources. The statute employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The broad goal is to restore and maintain the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

Section 402 of the CWA authorizes the National Pollutant Discharge Elimination System (NPDES) permit program that covers point sources of pollution discharging to a water body. The NPDES program also requires operators of construction sites one acre or larger to prepare a Storm Water Pollution Prevention Plan (SWPPP) for construction activities and obtain authorization to discharge storm water under an NPDES construction storm water permit. The NDPES program also requires certain land uses (e.g., industrial uses) to prepare a SWPPP for operational activities and to implement a long-term water quality sampling and monitoring program, unless an exemption has been granted.

3. Elsinore Valley Municipal Water District Urban Water Management Plan

EVMWD prepared an Urban Water Management Plan (UWMP) in year 2000 in compliance with the Urban Water Management Act which was adopted by EVMWD's Board of Directors on December 22, 1999. An update to the 2000 UWMP was prepared in 2005 and adopted on June 9, 2011. The EVMWD UWMP complies with the requirements of the Urban Water Management Planning Act. (EVMWD, 2011, p. 1)

4. Elsinore Valley Municipal Water District Best Management Practices

EVWMD became a signatory to the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (MOU) regarding urban water conservation on December 11, 2002. As part of the MOU, EVWMD is required to implement Best Management Practices (BMPs) as part of its water conservation program. The MOU was amended in June 2010 and full implementation of BMPs are required by 2018. EVMWD intends to achieve full coverage of each BMP no later than Fiscal Year 2018. (EVWMD, 2011, pp. 10-11)

5. Lake Elsinore Municipal Code (LEMC) –Title 19, Chapter 19.08

The City of Lake Elsinore Municipal Code (LEMC) Chapter 19.08 (Water Efficiency Landscaping Requirements) implements the requirements necessary to meet the State of California Efficiency in Landscaping Act and the California Code of Regulations Title 23, Division 2, Chapter 2.7. The purpose and intent of Chapter 2.7 is also to: 1) establish provisions for water management practices

and water waste prevention; 2) establish a structure for planning, designing, installing, maintaining, and managing water efficient landscapes in new construction and rehabilitated projects; 3) reduce the water demand from landscapes with a decline in landscape quality or quantity; 4) retain flexibility and encourage creativity through appropriate design; 5) assure the attainment of water efficient landscape goals by requiring that landscapes not exceed a maximum water demand of 70 percent of their reference evapotranspiration or any lower percentage as may be required by water purveyor policy or state legislation whichever is stricter; 6) eliminate water waste from overspray and/or runoff; and 7) achieve water conservation by raising the public awareness of the need to conserve water through education and motivation to embrace an effective water demand management program. (Lake Elsinore, 2011b, pp. 3.16-14 through 3.16-15)

4.7.3 BASIS FOR DETERMINING SIGNIFICANCE

The proposed Project would result in a significant impact to hydrology and water quality if the Project or any Project-related component would:

a. *Violate any water quality standards or waste discharge requirements;*

b. *Substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);*

c. *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;*

d. *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-or off-site;*

e. *Create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;*

f. *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;*

g. *Otherwise substantially degrade water quality;*

h. *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;*

i. *Place within a 100-year flood hazard area structures that would impede or redirect flood flows;*

j. *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 da; or.*

k. *Be subject to inundation by seiche, tsunami, or mudflow.*

The above-listed thresholds are derived from Section IX of Appendix G to the CEQA Guidelines and address typical adverse effects associated with hydrology and water quality. (OPR, 2009).

4.7.4 IMPACT ANALYSIS

Threshold a. Would the Project violate any water quality standards or waste discharge requirements?

A. EDA-Related Water Quality Impacts

The Project involves the physical expansion of an existing mining operation, a reduction in annual production level, and altered hours of operation. The expanded disturbance area (EDA) comprises +/- 24 acres on the Nichols North portion of the Mine site. As previously shown in Figure 4.7-2, during on-going mining operations, and in conformance with SMARA § 3503(b), drainage at the Nichols North site would occur as it does under existing conditions, wherein all runoff from areas subject to mining activities (including mining within the EDA) would continue to be conveyed to the on-site existing retention basin located in the southwest portion of the Nichols North site. Runoff from areas subject to mining operations within the Nichols South site would be conveyed into temporary sedimentation basins that would be constructed on the Nichols South site to prevent erosion once mining activities at Nichols South commence, with all runoff from the areas subject to mining activities being retained on-site. A small portion of the runoff from the northern portions of the Nichols South site would continue to be conveyed northerly into a swale located along the northern edge of Nichols Road, similar to existing conditions. Flow volumes would not change or increase as a result of the proposed Project. The eastern and northern portions of the Nichols North site, as well as the southeastern portion of the Nichols South site that is planned to be retained as open space by the Project, would continue to flow in a southwesterly direction via Stovepipe Creek and to the west beneath I-15 via an existing culvert beneath I-15. (Bonadiman, 2016, Exhibit G)

Mining operations at the site would continue to be regulated by an approved Stormwater Pollution Prevention Plan (SWPPP), which is included in the Project's administrative record on file with the City of Lake Elsinore and is cited as "(AE, 2015)," ~~which~~ incorporates Best Management Practices (BMPs) to preclude water quality impacts associated with the existing mining operations. The BMPs being implemented as part of the approved SWPPP are shown in Table 4.7-3, *BMPs Currently Implemented On-Site*. Each BMP requirement corresponds to a fact sheet from the California Stormwater Quality Association (CASQA) which details the objectives, targeted constituents, minimum BMPs covered, and approach for achieving the BMP. The CASQA fact sheets corresponding to each of the BMP areas ~~for~~on the Project are included in the Project's administrative record on file with the City of Lake Elsinore, and cited as "(CASQA, 2014)." Examples of BMPs currently implemented on the Project site include, but are not limited to, the following: minimizing the amount of soil area exposed; watering of roads to control dust; covering or vegetating exposed areas at the completion of mining activities; routine inspections by the Mine operator; employee training; and directing runoff to sediment basins (AE, 2015, pp. 30-32). Refer to Table 4.1 of the Industrial Activities SWPPP for Nichols Canyon Mine for a full list of BMPs currently imposed on the Project.

In accordance with RWQCB Order No., R8-2010-0033, t~~T~~he Project Applicant would be required to revise the SWPPP to include additional BMP measures, as necessary and appropriate, to address ~~the expanded~~ mining ~~limits~~activities within the EDA. The revised SWPPP would be required subsequent to certification of this EIR, but prior to the commencement of mining activities within the EDA. The BMPs specified in the revised SWPPP would be similar to the BMP measures presently implemented on-site and would be required to ensure that all potential pollutants of concern are prevented, minimized, and/or otherwise appropriately treated prior to being discharged from the

Table 4.7-3 BMPs Currently Implemented On-Site

CASQA Fact Sheet Number	CASQA BMP Fact Sheet Name	Addresses Minimum General Permit BMP Requirements					BMP to be Implemented?		
		Good Housekeeping	Preventative Maintenance	Spill and Leak Prevention and Response	Material Handling and Waste Management	Erosion and Sediment Control	YES	NO	Not Applicable
SC-10	Non-Stormwater Discharges	✔		✔					X
SC-11	Spill Prevention, Control, and Cleanup			✔			X		
SC-20	Vehicle and Equipment Fueling	✔	✔	✔	✔				X
SC-21	Vehicle and Equipment Cleaning	✔	✔	✔	✔				X
SC-22	Vehicle and Equipment Maintenance and Repair	✔	✔	✔	✔		X		
SC-30	Outdoor Loading and Unloading	✔		✔	✔		X		
SC-31	Outdoor Liquid Container Storage	✔	✔	✔	✔		X		
SC-32	Outdoor Equipment Operations	✔	✔	✔	✔		X		
SC-33	Outdoor Storage of Raw Materials	✔	✔	✔		✔	X		
SC-34	Waste Handling and Disposal	✔	✔	✔	✔		X		
SC-35	Safer Alternative Products								X
SC-40	Contaminated or Erodible Surfaces					✔	X		
SC-41	Building and Grounds Maintenance	✔		✔	✔				X
SC-42	Building Repair, Remodeling, and Construction	✔		✔	✔	✔			X
SC-43	Parking Area Maintenance	✔	✔	✔			X		
SC-44	Drainage System Maintenance	✔	✔	✔					X
Additional BMPs Implemented:									

(AE, 2015, Table 3.1)

subject property. Mandatory compliance with the SWPPP and the BMPs presently implemented on-site (described above) along with the additional BMPs identified in the Project's Industrial Activities SWPPP (AE, 2015), would ensure that the Project would not violate any water quality standards or waste discharge requirements during mining activities within the EDA ~~related activities~~.

In addition, pursuant to the requirements of the Santa Ana RWQCB and the City of Lake Elsinore, the Project would be required to comply with the NPDES General Permit to encompass the EDA, in addition to the existing mining limits that already are subject to a General Permit. An NPDES General Permit is required for all new and expanded mining facilities. An Amended Notice of Intent (NOI) will be filed certifying that the permit's eligibility conditions have been met, as there is an existing Waste Discharger Identification (WDID) number. In addition, the Project would be required to comply with the Santa Ana RWQCB's *Santa Ana River Basin Water Quality Control Program*. Compliance with the NPDES General Permit and the *Santa Ana RWQCB's Santa Ana River Basin Water Quality Control Program* involves the revision and implementation of the current SWPPP. Because the Project would comply with mandatory SWPPP requirements and all runoff from actively mined portions of the Mine would be retained in on-site sedimentation basins during ongoing mining activities and would not affect any downstream properties or facilities, impacts would be less than significant.

B. Post-EDA Water Quality Impacts

Upon completion of mining activities and once the final grades pursuant to RP 2006-01A2 have been achieved, runoff on the Nichols North site would be conveyed to a proposed sediment basin located in the southwestern portion of the Nichols North site (i.e., in approximately the same location as the existing retention basin), and the runoff eventually would be conveyed westerly to Stovepipe Creek beneath an existing culvert underneath I-15. ~~Similarly, t~~The Nichols South site also would achieve the final grades specified by RP 2006-01A2 upon completion of mining activities, and the majority of drainage from this portion of the site would be conveyed to a proposed sedimentation basin located in the ~~north~~southwestern portion of the Nichols South site. Following water quality treatment, runoff from the Nichols South site would be conveyed west beneath I-15 via an existing 24-inch corrugated metal pipe (CMP). The sedimentation basins for Nichols North and Nichols South are designed to be located at the lowest elevation possible for the purpose of attenuating storm flows for the largest tributary possible. The basins would only be used for the control of sedimentation and are not required to reduce peak flow rates; thus, additional volume for storm buffering would not be required. The slopes permitted for mining activities within the Nichols South site are shown on Exhibit H of *Technical Appendix H* at grade of 2:1 (horizontal:vertical) or less, and the side slopes of all basins would be at a grade of 3:1 or less. Where feasible, a paved slope interceptor drain with down drains would be provided along the top of cut slopes where the drainage path is greater than 40 linear feet towards the cut slope in accordance with the County of Riverside Department of Building and Safety requirements.~~and ultimately west beneath I-15.~~ Runoff from the portions of the Nichols South and Nichols North sites that are not subject to mining activities would continue to be conveyed by Stovepipe Creek, located in the southeast corner of the Nichols South site, and ultimately west beneath I-15 via an existing 6'x14' box culvert. (Bonadiman, 2016, Exhibit H)~~(Bonadiman, 2015, Exhibit H)~~

The maximum water depth in both proposed siltation basins would not exceed six feet and access to the basins would be gated and locked. If basin infiltration rates do not allow for percolation of the basin volume within 72 hours, an outflow pipe may be required and would be designed in accordance with California Stormwater Quality Association (CASQA) Sedimentation Basin requirements. Due to the rocky nature of the Mine, the potential for sedimentation is considered low, and the proposed sedimentation basins have been designed in accordance with Santa Ana RWQCB requirements to ensure runoff from the Mine does not result in any new violations or water quality objectives. (Bonadiman, 2016, p. 16)~~(Bonadiman, 2015, p. 16)~~ As such, impacts would be less than significant.

Threshold b.	***Would the Project substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?***

The Nichols Canyon Mine does not have any groundwater wells, nor would any groundwater wells directly service the Project. As discussed in Section 3.0, *Project Description*, ~~based on the reduced~~ the proposed Project would reduce the physical areas of the Mine site subject to watering by ~~as compared to existing conditions, it can reasonably be assumed that under the proposed Project water usage would drop by approximately~~ 53.0145.84% as compared to existing conditions across both the Nichols North and Nichols South sites. Based on information from the EVMWD regarding water use in 2015, the Mine site had a highest monthly demand of 46,066 gallons per day (gpd) (in the

month of September 2015). In 2015, the Mine's lowest monthly demand was 10,173 gpd (in the month of January 2015). Based on the Mine's water bills for 2015, the water usage on-site averaged 32,915 gpd. (EVMWD, 2015) In order to provide a conservative analysis for the proposed Project, the average month demand of 32,915 gpd is used herein as the baseline for average water usage on-site for every day of the year because it represents the average daily water usage that could reasonably occur under the proposed Project. Thus, using the baseline of 32,915 gpd, 53.01% of current water usage would result~~ing~~ in a total demand for 17,448~~34,660~~ gallons of water per day.

The~~is~~ Project's water demand would be ~~provided~~ supplied by the EVMWD. Water to the Nichols Canyon Mine is currently provided by the EVMWD via a construction water meter and fire hydrant. EVMWD prepared an UWMP dated July 2011, (herein incorporated by reference) that provides for the long-range planning efforts of water purveyance within its district. The UWMP includes an analysis of water supply sufficiency that concludes that sufficient supply exists to meet the demand for projected normal year, singly-dry year, and multiple-dry-year supply through 2035, with dry years assumed to result in an approximately nine percent increase in demand as compared to normal year demand. (EVMWD, 2011, p. 10)

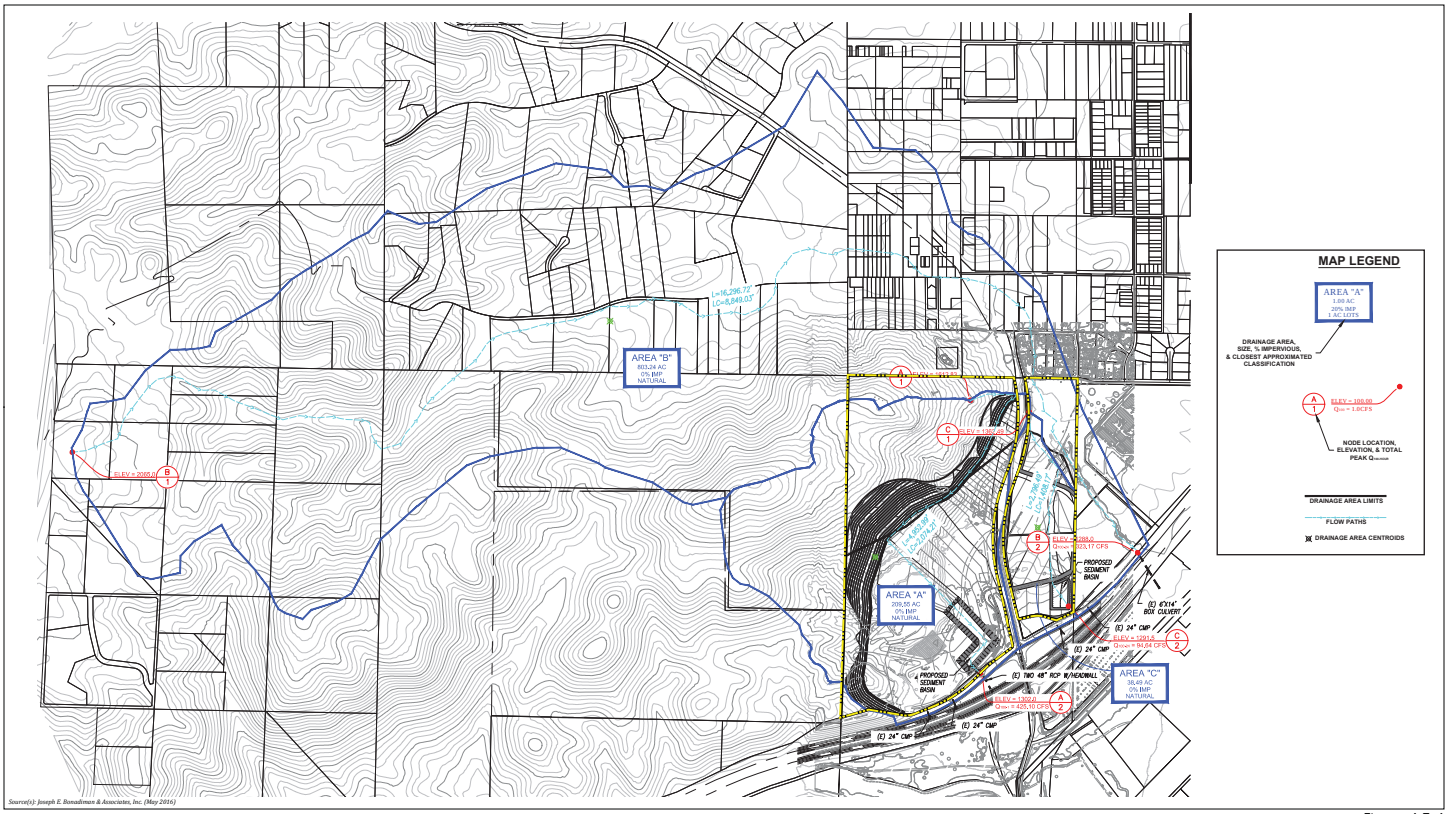
Under baseline conditions, the Nichols Canyon Mine utilizes on average, approximately 32,915~~64,000~~ gallons of water per day (EVMWD, 2015). SMP No. 2015-01 requires the use of soil binders in lieu of water trucks to meet a portion of the Mine's demands for dust suppression to off-set the incremental increase in areas subject to mining activities that would require expanded dust suppression efforts on-site; as such, there would be no net increase in water demand at the Mine generated by the proposed mine expansion as compared to existing and baseline conditions. Additionally, proposed conditions would result in water usage decreasing by 53.01% as compared to existing and baseline conditions. Therefore, because the UWMP demonstrates that the EVWMD has sufficient supplies to meet the demand for projected normal year, singly-dry year, and multiple-dry-year supply through 2035, and because the Project would not result in a net increase in water demand as compared to existing and baseline conditions, the Project would not substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Thus, impacts would be less than significant.

Threshold c.	***Would the Project 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?***

The Project proposes to add approximately 24 acres to the disturbance limits of the Nichols Canyon Mine. During on-going mining activities, all runoff within the areas subject to mining activities, including the asphalt batch plant site, would be retained on-site by ~~an on-site~~ retention basins. Runoff within the Nichols North mining area would be retained on-site in the southwestern corner of the Nichols North site, and runoff within the Nichols South mining area would be retained on-site within the Nichols South site in temporary sedimentation basins which would be strategically placed to ensure that all runoff from the disturbed portions of the site are conveyed to one or more of the sedimentation basins, as required by SMARA § 3503(b).~~, while a~~ Areas not subject to disturbance would continue to drain via Stovepipe Creek, located in the southeastern portion of the Nichols South site. As such, under ongoing mining operations, no impact due to siltation would occur.

The reclamation hydrologic conditions are illustrated on Figure 4.7-4, *Reclamation Hydrologic Conditions Map*. Upon final reclamation of the site, runoff ~~that had been previously detained on-site~~ would ~~instead~~ be conveyed to a proposed sediment basin located in the southwestern portion of the Nichols North site (i.e., in approximately the same location as the existing retention basin), and the runoff eventually would be conveyed westerly to an existing culvert underneath I-15. Following water quality treatment, runoff from Nichols North would be conveyed west beneath I-15 via two existing 48" reinforced concrete pipe (RCP) culverts. Upon completion of mining activities in the Nichols South site, the majority of drainage from this portion of the site would be conveyed to a proposed sedimentation basin located in the southwestern portion of the Nichols South site. Following water quality treatment, runoff from the Nichols South site would be conveyed west beneath I-15 via an existing 24-inch corrugated metal pipe (CMP). ~~one of the two sediment basins located in Nichols North and Nichols South.~~ The slopes for the Nichols South site are proposed to have a maximum incline of 2:1, and all basin slopes are proposed to have a maximum incline of 3:1 after the site is reclaimed. Where feasible, a paved slope interceptor drain with down drains would be provided along the top of cut slopes where the drainage path is greater than 40 linear feet towards the cut slope in accordance with the County of Riverside Department of Building and Safety requirements. ~~the flows would be conveyed via existing culverts beneath I-15 to the west.~~ As indicated by the analysis of unit hydrograph calculations in the site-specific hydrology study and drainage analysis (see Table 14 of *Technical Appendix H*), a decrease in runoff flows is expected as a result of reclamation. The decrease in flow rate is a result of the longer path lengths which in turn reduce peak flow rates, with the exception of a slight increase at Location B2 due to a shift in drainage area as a result of reclamation. (Bonadiman, 2016, Table 14 and p. 16)~~(Bonadiman, 2015, Table 14 and p. 16)~~. The two sedimentation basins would be designed to provide the minimum required capacities (see Tables 12 and 13 of *Technical Appendix H*) as the basins are not required to reduce peak flow rates but instead are proposed to provide sediment control.

The sedimentation basins are ~~As~~ required by the Project's approved Reclamation Plan, and are a part of the proposed amendment to Reclamation Plan (RP 2006-01A1). Because the sedimentation basins are required by the Project's approved Reclamation Plan (and would be required with the proposed amendment to the Reclamation Plan), and because the sediment basins are not designed to reduce peak flow rates, spillways capable of passing the 1,000-year flow rates would be incorporated in the outlet of each basin. If basin infiltration rates do not allow for percolation of the basin volume within 72 hours, an outflow pipe may be required that would be designed in accordance with California Stormwater Quality Association (CSQA) requirements. Where feasible, a~~A~~ paved slope interceptor drain would~~shall~~ be provided along the top of cut slopes where the drainage path is greater than 40 linear feet towards the cut slope in accordance with ~~local~~ the County of Riverside Department of Building and Safety requirements. Thus, the runoff flows from both the Nichols North and Nichols South sites would not cause substantial erosion or siltation with construction of the proposed sedimentation basins. With the above-mentioned design features, the proposed Project would not have an adverse impact on downstream properties (Bonadiman, 2016, p. 16)~~(Bonadamin, 2015, p. 16)~~. ~~Because t~~The Project would result in a decrease in runoff as compared to historic conditions, and because all runoff that ~~had been previously~~would be detained on-site during on-going mining operations would instead be conveyed to one of the two sediment basins located in Nichols North and Nichols South, and then conveyed via existing culverts beneath I-15 to the west.~~,~~ As a result, Project-related runoff would be adequately treated for sediments prior to being discharged to the west. ~~implementation of the Project would result in less erosion and siltation than under existing conditions.~~ Accordingly, the Project would not alter the existing drainage pattern of the site or area,.



Source(s): Joseph E. Bonadiman & Associates, Inc. (May 2016)

Figure 4.7-4

RECLAMATION HYDROLOGIC CONDITIONS MAP

through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion on-or-off-site. Thus, impacts would be less than significant

Threshold d. ***Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-or off-site?***

As discussed under Threshold ~~(~~c), the Project proposes to add approximately 24 acres to the disturbance limits of the Nichols Canyon Mine. During on-going mining activities, all runoff within the areas subject to mining activities, including the asphalt batch plant site, would be retained on-site within either the existing sedimentation basin located in Nichols North or the proposed temporary sedimentation basins within Nichols South, while areas not subject to disturbance would continue to drain via Stovepipe Creek, located in the southeastern portion of the Nichols South site. As such, under ongoing mining operations, no impact would occur. As also discussed under Threshold c), upon final reclamation of the site, runoff that had been detained on-site would instead be conveyed to one of the two sediment basins located in Nichols North and Nichols South. Following water quality treatment, the flows would be conveyed by Stovepipe Creek via existing culverts beneath I-15 to the west.

As indicated by the analysis of unit hydrograph calculations in the site-specific hydrology study and drainage analysis (see Table 14 of *Technical Appendix H)* a decrease in runoff flows would occur during the reclamation phase of the Project. The decrease in flow rate is a result of the longer path lengths which in turn reduce peak flow rates, with the exception of a slight increase at Location B2 due to a shift in drainage area as a result of reclamation. (Bonadiman, 2016, Table 14 and p. 16) ~~(Bonadamin, 2015, Table 14 and p. 16)~~. The two sedimentation basins proposed for when the Mine is reclaimed would be designed to provide the minimum required capacities (see Tables 12 and 13 of *Technical Appendix H*) as the basins are not required to reduce peak flow rates but instead are proposed to provide sediment control. As the sediment basins are not designed to reduce peak flow rates, spillways capable of passing the 1,000-year flow rates would be incorporated in the outlet of each basin. If basin infiltration rates do not allow for percolation of the basin volume within 72 hours, an outflow pipe may be required ~~designed~~ in accordance with California Stormwater Quality Association (CSQA) requirements. Basin side slopes are designed to have a slope of 3:1 or less. Where feasible, a p~~P~~aved slope interceptor drain would~~shall~~ be provided along the top of cut slopes where the drainage path is greater than 40 feet towards the cut slope in accordance with ~~local~~ the County of Riverside Department of Building and Safety requirements. Because the design features would ensure that runoff rates ~~would be~~are reduced compared to the existing condition, with the above-mentioned design features, the proposed Project would not have an adverse impact on downstream properties. (Bonadiman, 2016, p. 16)~~(Bonadiman, 2015, p. 16)~~ Accordingly, the Project would not substantially increase the rate of surface runoff in a manner which would result in flooding on-or off-site. Thus, impacts would be less than significant.

Threshold e. ***Would the Project create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?***

During on-going mining activities, all runoff within the areas subject to mining activities, including the asphalt batch plant site, would be retained on-site within the existing sedimentation basin within

Nichols North and the proposed temporary sedimentation basins within Nichols South, while areas not subject to disturbance would continue to drain via Stovepipe Creek, located in the southeastern portion of the Nichols South site. As discussed under Threshold c), upon final reclamation of the site, runoff that had been detained on-site in the sedimentation basins within Nichols North and Nichols South would instead be conveyed to one of the two sediment basins proposed under reclamation conditions ~~located~~ in both Nichols North and Nichols South. Where feasible, a paved slope interceptor drain with down drains would be provided along the top of cut slopes where the drainage path is greater than 40 linear feet towards the cut slope in accordance with the County of Riverside Department of Building and Safety requirements. Following water quality treatment, the flows would be conveyed by Stovepipe Creek via existing culverts beneath I-15 to the west. As discussed under Threshold (d), a decrease in runoff flows would occur during the reclamation phase of the Project. The decrease in flow rate is a result of the longer path lengths which in turn reduce peak flow rates, with the exception of a slight increase at Location B2 due to a shift in drainage area as a result of reclamation. (Bonadiman, 2016, Table 14 and p. 16)~~(Bonadiman, 2015, Table 14 and p. 16)~~. The two sedimentation basins would be designed to provide the minimum required capacities (see Tables 12 and 13 of T*echnical Appendix H*) as the basins are not required to reduce peak flow rates but instead are proposed to provide sediment control. As the sediment basins are not designed to reduce peak flow rates, spillways capable of passing the 1000-year flow rates would be incorporated in the outlet of each basin. Where feasible, a paved slope interceptor drain with down drains would be provided along the top of cut slopes where the drainage path is greater than 40 linear feet towards the cut slope in accordance with the County of Riverside Department of Building and Safety requirements. As mentioned above in Threshold (d), design features would ensure that runoff rates would be reduced compared to the existing condition.

Runoff within the Nichols Canyon Mine is subject to the existing SWPPP which provides BMP measures that ensures that runoff does not exceed the capacity of existing or planned storm water drainage systems, does not provide substantial, additional sources of polluted runoff, or otherwise degrade water quality. As indicated under the analysis of Threshold a), the Project would revise the SWPPP to include additional BMP measures, as necessary and appropriate, to address the expanded mining limits. As also discussed under the analysis of Threshold a), the proposed Project would be required to comply with the SWPPP, which identifies required BMPs to be incorporated into the Project to ensure that the proposed Project would not result in substantial amounts of polluted runoff. Thus, with mandatory compliance with the Project's SWPPP, the proposed Project would not create or contribute substantial additional sources of polluted runoff. Thus, impacts would be less than significant.

Threshold f. Would the Project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No new storm drainage facilities would be required in support of on-going mining activities, as the existing and proposed basins on-site are adequately sized to detain all runoff from the mined areas, including the asphalt batch plant site. However, as part of the Project's proposed Reclamation Plan Amendment, two sediment basins would be constructed (one each on Nichols North and Nichols South). Additionally, as discussed in Threshold a)~~.~~, a decrease in runoff flows is expected as a result of reclamation. The decrease in flow rate is a result of the longer path lengths which in turn reduce peak flow rates, with the exception of a slight increase at location B2 due to a shift in drainage area as a result of reclamation. (Bonadiman, 2016, Table 14 and p. 16) ~~(Bonadiman, 2015, Table 14 and~~

~~p. 16)~~. Accordingly, reclamation would result in an overall reduction of flow rates from the site, and the Project would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities. Thus, impacts would be less than significant.

Threshold g. Would the Project otherwise substantially degrade water quality?

There are no other components associated with the proposed Project that could result in the substantial degradation of water quality beyond what is described in the responses to Thresholds a), c), and/or e). Accordingly, no additional impacts would occur and mitigation is not required.

Threshold h. Would the Project 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?

As illustrated in Figure 4.7-3, the Nichols Canyon Mine's existing and proposed mining limits, which includes the EDA, is not located within a 100-year flood zone. A portion of the Nichols Canyon Mine located along Stovepipe Canyon Creek is located in a shaded "Zone A," identified by FEMA as an area determined to be within a "Special Flood Hazard Area subject to inundation by the 1% annual chance of flood." However, the area of the site within "Zone A" is located within the designated open space area within Nichols South. None of the areas subject to mining activities, including the EDA, are located within a 100-year flood zone. Furthermore, the Project would involve the continuation and expansion of an existing mining operation that does not include any housing. Accordingly, because the mining areas for Nichols Mine site, which includes the EDA and asphalt batch plant site, ~~is~~ are not located within a 100-year flood hazard area and the Project does not propose housing, there is no potential to place housing within a 100-year flood hazard. Thus, no impact would occur as a result of the Project.

Threshold i. Would the Project place within a 100-year flood hazard area structures that would impede or redirect flood flows?

As illustrated in Figure 4.7-3, ~~the Nichols Canyon Mine,~~ a portion of the Nichols Canyon Mine within the open space area of Nichols South, located along Stovepipe Canyon Creek is located in a shaded "Zone A," identified by FEMA as an area determined to be within a "Special Flood Hazard Area subject to inundation by the 1% annual chance of flood." The area of the Mine within "Zone A" is located within the designated open space area and is not within the limits of mining activities. The Project would involve the continuation and expansion of an existing mining operation that does not include the construction of structures. Additionally, none of the areas subject to mining activities are within a 100-year flood hazard area. Accordingly, because the Project does not propose the construction of any structures, there is no potential for the Project to place structures within a 100-year flood hazard area, structures that would impede or redirect flows. Thus, no impact would occur as a result of the Project.

Threshold j. Would the Project 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?

According to Figure 10, *Flood Hazards*, of the Riverside County General Plan's Elsinore Area Plan, the Nichols Canyon Mine is not located within a dam hazard zone related to the Railroad Canyon

Dam or any other dam hazard zone. As depicted on Figure 3-2, *Vicinity Map*, the Nichols Canyon Mine is located approximately 2.0 miles north of the levee that is present in association with Lake Elsinore. Thus, due to the location of the Nichols Canyon Mine approximately 5.0 miles north of the Railroad Canyon Dam and approximately 2.0 miles north of the levee at Lake Elsinore and the direction of sheet flow, the Project would not expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam. Impacts would be less than significant.

Threshold k. Would the Project be subject to inundation by seiche, tsunami, or mudflow?

The Nichols Canyon Mine, which includes the EDA and asphalt batch plant site, is located approximately 2.0 miles north of Lake Elsinore, which is the nearest body of water subject to seiches. Lake Elsinore incorporates USACE flood control devices including a berm fill at the southern end of the lake to lower the potential for a seiche to occur (Lake Elsinore, 2011b, 3.9-36). In addition, due to the site's distance from Lake Elsinore, and the elevation difference between Lake Elsinore and the Nichols Canyon Mine (i.e., the Project site occurs approximately 250 feet in elevation above Lake Elsinore), the Project would not be subject to seiches or mudflow. Furthermore, the Nichols Canyon Mine, which includes the EDA, is located approximately 25 miles from the Pacific Ocean, and has no potential to be affected by tsunamis. (Google Earth, 2015) Thus, the Project would not be subject to seiche, tsunami, or mudflow. No Impact would occur.

4.7.5 CUMULATIVE IMPACT ANALYSIS

The proposed Project and any other project under construction or land use that generates water quality pollutants within the 2,650 square-mile Santa Ana River watershed would have the potential to result in a cumulative water quality impact, including erosion and sedimentation. Pursuant to the requirements of the State Water Resources Control Board and the Santa Ana RWQCB, all construction projects that disturb one (1) or more acres of land area are required to obtain a NPDES permit and obtain coverage for construction activities. In order to obtain coverage, an effective site-specific SWPPP is required to be developed and implemented for all development projects. The SWPPP must identify potential on-site pollutants and identify and implement an effective combination of erosion control and sediment control measures to reduce or eliminate discharge of pollutants to surface water from stormwater and non-stormwater discharges. In addition, the Project and all cumulative developments would be required to comply with the Santa Ana RWQCB's Santa Ana River Basin Water Quality Control Program. With compliance to these mandatory regulatory requirements, the Project's contribution to water quality impairments during Project construction would be less than cumulatively considerable and mitigation is not required.

Other developments within the watershed would similarly be required to prepare site-specific WQMPs and to incorporate BMPs into site design as necessary to ensure that runoff does not substantially contribute to existing water quality violations. With implementation of the Project as designed and required adherence to the SWPPP, the Project's storm water runoff would not contribute to a violation of water quality standards or waste discharge requirements or exacerbate an existing violation. Accordingly, the Project's long-term operational impacts to water quality would be less than cumulatively considerable and no mitigation would be required.

Under interim mining conditions, the proposed Project would retain all runoff on-site by sedimentation basins. The sedimentation basins would be placed to ensure that all runoff from the

disturbed portions of the site are conveyed to one or more of the sedimentation basins, as required by SMARA § 3503(b). Areas not subject to disturbance would continue to drain via Stovepipe Creek. Upon final reclamation of the site, runoff would be conveyed to sedimentation basins on-site. Thus, the runoff flows from both the Nichols North and Nichols South sites would not cause substantial erosion or siltation with construction of the proposed sedimentation basins. With the above-mentioned design features, the Project would not have an adverse impact on drainage patterns or downstream properties. Thus, the Project would not contribute to a cumulatively considerable impact due to the alternation of drainage patterns or exceed the capacity of storm-water drainage systems and no mitigation would be required.

As illustrated in Figure 4.7-3, the Nichols Canyon Mine's existing and proposed mining limits, which includes the EDA, is not located within a 100-year flood zone. A portion of the Nichols Canyon Mine located along Stovepipe Canyon Creek is located in a shaded "Zone A," identified by FEMA as an area determined to be within a "Special Flood Hazard Area subject to inundation by the 1% annual chance of flood." However, the area of the site within "Zone A" is located within the designated open space area within Nichols South. None of the areas subject to mining activities, including the EDA, are located within a 100-year flood zone. Thus, the Project has not potential to result in cumulatively-considerable impacts related to placing housing or structures within a 100-year flood hazard area, or exposing people or structures to a risk involving flooding.

4.7.6 SIGNIFICANCE OF IMPACTS BEFORE MITIGATION

Threshold a): Less-than-Significant Impact. The Nichols Canyon Mine is required to comply with a Stormwater Pollution Prevention Plan (SWPPP) and obtain coverage under a National Pollutant Discharge Elimination Permit (NPDES). The currently approved and implemented SWPPP includes BMPs, which include, but are not limited to, the following: minimizing the amount of area exposed; watering of roads to control dust; covering or vegetating exposed areas at the completion of mining activities; routine inspections by the Mine operator; employee training; and directing runoff to sediment basins (AE, 2015, pp. 30-32). The currently approved BMPs along with any additional BMPs identified by the revised SWPPP that is a mandatory regulatory requirement pursuant to Section 402 of the Clean Water Act that authorizes the NPDES permit program would ensure the Project would not violate any water quality standards or waste discharge requirements. Thus, ~~T~~the Project would not violate any water quality standards or waste discharge requirements.

Threshold b): Less-than-Significant Impact. The Project does not propose the installation of any water wells on the Project site that would extract groundwater. Also, the proposed Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in an aquifer volume or lowering of the groundwater table.

Threshold c): Less-than-Significant Impact. The Project would not result in substantial erosion on-or-off-site.

Threshold d): Less-than-Significant. Alterations to the drainage characteristics (i.e., drainage pattern and flow rate) of the Project site would minimize the risk of on-and off-site flooding and would not substantially increase the rate of surface runoff.

Threshold e): Less-than-Significant. The proposed Project would not create or contribute runoff that would exceed the capacity of existing or planed stormwater drainage systems, nor would the Project provide additional sources of polluted runoff.

Threshold f): Less-than-Significant Impact. The proposed Project would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities.

Threshold g): No Impact. There are no other components of the proposed Project with a potential to substantially degrade water quality.

Threshold h): No Impact. The proposed Project does not involve the construction of housing and is not located within a 100-year flood hazard area.

Threshold i): No Impact. The proposed Project is not located within a 100-year flood hazard area, and would not result in the construction of new structures within a 100-year flood hazard area which could impede or redirect flows.

Threshold j): Less-than-Significant Impact. The proposed Project would not expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam.

Threshold k): No Impact. The proposed Project is not subject to inundation from seiche, tsunami, or mudflow.

4.7.7 MITIGATION

Although impacts would be less than significant and mitigation is not required, the following measures shall be incorporated into the Project's post-reclamation sedimentation basins to ensure compliance with regulatory requirements for stormwater runoff.

MM 4.7-1 Prior to final inspection for reclamation activities, the City of Lake Elsinore shall ensure that sedimentation basins are designed to include spillways capable of passing the 1000-year flow rates, and shall ensure that the sedimentation basins are designed to allow for percolation of the basin volume within 72 hours. If percolation rates exceed 72 hours, then an outflow pipe shall be installed to ensure the basins drain completely within 72 hours, in conformance with California Stormwater Quality Association requirements. Where physically feasible, a~~A~~ paved slope interceptor drain shall be provided along the top of cut slopes where the drainage path is greater than 40 linear feet towards the cut slope in accordance with the County of Riverside Department of Building and Safety ~~local~~ requirements. The City also shall ensure the sedimentation basins comply with all stormwater regulations in effect at the time of final inspection for reclamation activities.

4.8 NOISE

This Subsection addresses the environmental issue of noise. The information contained herein is based in part on information contained in a technical report prepared by Giroux & Associates, dated ~~October 6, 2015~~June 10, 2016, and titled "*Noise Impact Analysis Amendment No. 2 to RP2006-01, City of Lake Elsinore, California*" (Giroux, 2016a)~~(Giroux, 2015a)~~. The report is included as *Technical Appendix I* to this EIR. Refer to Section 7.0, *References*, for a complete list of reference sources.

4.8.1 SCOPE OF REVIEW

The Nichols Canyon Mine, as discussed in Section 2.0, *Environmental Setting*, is an existing, ongoing surface mining operation operating pursuant to vested mining rights and an approved reclamation plan (RP 2006-01A1), which was analyzed in a prior MND. Although the City has chosen to prepare an EIR for the Project here, the scope of review addresses those impacts resulting from the Project as described in Section 3.0, *Project Description*, and not impacts related to existing, approved operations, which form the environmental baseline, as discussed in Subsection 2.7, *Existing Physical Site Conditions*. As disclosed in Section 3.0, *Project Description*, an asphalt batch plant is an existing, approved, on-site use pursuant to Conditional Use Permit No. CUP 2014-07 approved by the City of Lake Elsinore in 2015. Thus, the batch plant has already been approved by the City along with a CEQA environmental compliance document that was not challenged by any third party. During the public comment period on the DEIR, several third parties incorrectly asserted that the DEIR failed to adequately analyze the proposed Project's impacts. Several of these commentators also incorrectly claimed that the DEIR needed to re-analyze and include the batch plant's impacts as part of this EIR. While the City disagrees with these claims because the batch plant has already been approved under CUP 2014-07 and previously evaluated in an approved MND Addendum that was not challenged, in an effort to provide a conservative and overly-inclusive analysis of the Project's impacts on the environment (as opposed to potentially underestimating the Project's impacts), and to remove this issue from being a point of contention, this EIR includes analyses of the batch plant's impacts in all relevant CEQA Appendix G topics. Accordingly, this Subsection analyzes noise impacts related to the currently proposed-Project, as well as the previously-approved asphalt batch plant~~ the Project specifically~~. This Subsection does not analyze noise impacts related to existing, approved mining operations~~,~~ (with the exception of the previously-approved asphalt batch plant) because the approved mining operations are a baseline condition and not a part of the proposed Project.~~except as part of the cumulative impacts analysis, where required~~

4.8.2 NOISE FUNDAMENTALS

A. Noise Definitions

Noise is generally defined as "unwanted sound." Sound is characterized by various parameters which describe the rate of oscillation of sound waves, the distance between successive troughs or crests, the speed of propagation, and the pressure level or energy content of a given sound wave. In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. The unit of sound pressure ratioed to the faintest sound detectable by a keen human ear is called a decibel (dB). Because the human ear is not equally sensitive to all sound frequencies within the entire spectrum, noise levels at maximum human sensitivity are factored more heavily into sound descriptions in a process called "A-weighting," written as dB(A). (Giroux, 2016a, p. 1)~~(Giroux, 2015a, p. 1)~~

Noise in the daily environment fluctuates over time. The noise descriptors Day-Night level (Ldn), Equivalent Sound Level (Leq), Community Noise Equivalent Level (CNEL), Maximum Noise Level (Leq (10 min)), and Percentile Noise Level (Lnn) describe time-varying noise levels. These are briefly described below:

- **Ldn (Day-Night Level):** Ldn is the energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p~~.~~m~~.~~ to 7:00 a~~.~~m~~.~~ Ldn and CNEL values rarely differ by more than 1 dB. (City of Lake Elsinore, 2011b, p. 3.5-2)

- **Community Noise Equivalent Level (CNEL):** CNEL is the sound level that occurs at a particular location when averaged over the course of a 24-hour day and with consideration for distance, single event duration, single event occurrence, frequency, and time of day. Humans are generally more sensitive to noise during nighttime and early morning hours than they are during regular morning and daytime hours. When estimating noise readings perceived by humans, CNEL accounts for this sensitivity by adding five dBA to sound levels in the evening from 7:00 PM to 10:00 PM, and 10 dBA to sound levels between 10:00 PM and 7:00 AM. Because CNEL accounts for human sensitivity to sound, the CNEL 24-hour figure is always a higher number than the actual recorded 24-hour average. For purposes of evaluating traffic-related noise impacts herein, CNEL is used to evaluate significance because it overestimates likely noise volumes from traffic, and because traffic tends to comprise more of a steady-source noise source rather than a variable noise source (e.g., traffic along I-15). (City of Lake Elsinore, 2011b, p. 3.5-2)

- **Community Noise Equivalent Level (CNEL):** CNEL is the sound level that occurs at a particular location when averaged over the course of a 24-hour day and with consideration for distance, single event duration, single event occurrence, frequency, and time of day. Humans are generally more sensitive to noise during nighttime and early morning hours than they are during regular morning and daytime hours. When estimating noise readings perceived by humans, CNEL accounts for this sensitivity by adding five dBA to sound levels in the evening from 7:00 PM to 10:00 PM, and 10 dBA to sound levels between 10:00 PM and 7:00 AM. Because CNEL accounts for human sensitivity to sound, the CNEL 24-hour figure is always a higher number than the actual recorded 24-hour average. (City of Lake Elsinore, 2011b, p. 3.5-2)

- **Equivalent Sound Level (Leq):** Leq is a statistical description of the sound pressure level that is exceeded over some fraction of a given observation period (Giroux, 2016a, p. 1)~~(Giroux, 2015a, p. 1)~~. The one-hour A-weighted equivalent sound level (Leq[h]) is the energy average of the A-weighted sound levels occurring during a one-hour period and is the basis for noise abatement criteria used by Caltrans and the Federal Highway Administration (FHWA). (City of Lake Elsinore, 2011b, p. 3.5-2)

- **Percentile Noise Level (Lnn):** When sound travels over a distance, it changes in level and frequency content. Noise from a stationary (point) source generally attenuates (lessens) at rate of six dBA for "hard sites" and 7.5 dBA for "soft sites" for each doubling of distance because of the geometric spreading behavior of sound waves. Hard sites are those with a reflective surface between the source and the receiver such as parking lots or smooth bodies

of water. No excess ground attenuation is assumed for these sites and the change in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. In addition to the geometric spreading, an excess ground attenuation value of 1.5 dBA is normally assumed for soft sites. (City of Lake Elsinore, 2011b, p. 3.5-2)

For highways, where the movement of the vehicles results in sound emanating from a linear source rather than a stationary source, each doubling of distance from the noise source results in a noise attenuation of three dBA for hard sites and 4.5 dBA for soft sites. Noise can also be shielded by natural or man-made features standing between the noise source and the noise receptor. (City of Lake Elsinore, 2011b, p. 3.5-2)

B. Vibration

Vibration is the periodic oscillation of a medium or object. Vibration can be described by both its amplitude and frequency. Amplitude may be characterized by displacement, velocity, and/or acceleration. Typically, particle velocity (measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to describe vibration. For purposes of discussion herein, vibration is described in units of peak particle velocity (PPV) which is measured in inches per second (in/sec). Vibration can be felt outdoors, but the perceived intensity of vibration impacts are much greater indoors due to the shaking of the structure. The most common sources of vibration in Lake Elsinore are transit vehicles, construction equipment, and large vehicles. Several land uses are especially sensitive to vibration and therefore have a lower vibration threshold. These uses include but are not limited to concert halls, hospitals, libraries, vibration-sensitive research operations, residential areas, schools, and offices. (City of Lake Elsinore, 2011a, p. 3.5-17)

4.8.3 EXISTING NOISE CONDITIONS

A. Study Area Description

The proposed Expanded Disturbance Area (EDA) is located northeast of Nichols Road and the northbound I-15 Freeway, within the portion of the Mine referred to throughout this EIR as "Nichols North." The existing mining and aggregate processing activities are ~~majority of the Nichols North site is~~ physically removed from off-site noise-sensitive human receptors and there is a substantial distance separation for the dissipation of any possible noise effects. Between the Mine site and off-site sensitive receptor locations is irregular terrain that further shields any off-site uses from mining-related noise under existing conditions. ~~When considering planned mining activity expansion into the EDA, and presuming that mining activities could extend to the very edge of the proposed disturbance limits, mining activity noise sources would occur 412 feet from the closest home to the southeast and 610 feet from the closest high school classroom to the south. The distribution of possible locations of noise impact from the closest point of new proposed on-site aggregate mining operations includes the following three receiving land uses and their respective distances from the Project site~~ The proposed eastward expansion of the mining area and the anticipated future mining of the "Nichols South" parcel in accordance with existing approvals would introduce noise generating activities closer to noise-sensitive land uses (homes and high school classrooms). The measured distance separation between all Project site noise sources (i.e., existing, entitled, and Project proposed conditions) and the closest receivers are as follows: (Giroux, 2016a, pp. 1-2)~~(Giroux, 2015a, pp. 1-2)~~:

Mining Operations

- Arco and AM/PM: 756~~2,600~~ feet southwest
- Temescal Canyon High School Classroom: 586~~610~~ feet south
- Wood Mesa Road Residence: 386~~414~~ feet southeast

Aggregate Processing Equipment

- Arco and AM/PM: 1,194 feet southwest
- Temescal Canyon High School Classroom: 3,093 feet southeast
- Baker Street Residence: 2,990 feet southwest

Asphalt Batch Plant

- Arco and AM/PM: 1,219 feet southwest
- Temescal Canyon High School Classroom: 2,912 feet southeast
- Baker Street Residence: 3,019 feet southwest

The distances shown above represent the closest point of possible mining-related activity to the closest receivers and assumes that there would be a noise-generating activity at that closest point. In reality, extraction activities are typically distributed over a wider geographic area rather than at a single concentrated point. The boundary to boundary minimum distance separation assumption is therefore a theoretical worst-case condition. (Giroux, 2016a, p. 2)

B. Existing Study Area Ambient Noise Conditions

Noise measurements were collected in two locations by Giroux & Associates on July 21, 2014, to document existing baseline noise levels in the Project area. The measurements were made at the far southwest and southeast corners of the fence line surrounding the existing aggregate operations at the Nichols North site. These locations were selected for existing conditions noise measurements because these locations are the nearest to sensitive receptors surrounding the Project site. Specifically, measurements taken in the southwest portion of the Nichols North site help to establish existing noise levels at the existing gas station located west of I-15, while noise levels at the southeastern corner of the Nichols North site help to characterize existing noise levels at the nearest residential structure and school structure. Due to on-going mining activities at the Nichols North site, the measured sound levels reflect noise from existing mining operations. Existing noise sources on-site include the aggregate processing plant, located in the western portion of the Nichols North site; noise from on-site mining and loading equipment; and haul truck activity between the eastern Project driveway and the I-15 on-ramps. Additionally, the site is periodically subject to noise associated with blasting activities up to ~~a~~ six ~~dozen~~ times per year. Other noise sources in the Project vicinity include traffic (including large truck traffic) along I-15; background traffic along Nichols Road; and existing mining and commercial activities to the west of I-15. Measured noise levels are depicted in Table 4.8-1, *Project Site Noise Measurements (dBA)*. (Giroux, 2016a, p. 2)~~(Giroux, 2015a, p. 2)~~

24-hour weighted CNELs are typically two to three dB higher than the mid-day Leq readings. Utilizing the values shown in Table 4.8-1, this would translate into CNEL's of over 70 dB near the freeway, but rapidly dropping off eastward along Nichols Road to the mid-50 dB CNEL range when distance from the freeway is increased and the direct line-of-sight view is obstructed by irregular terrain. (Giroux, 2016a, p. 3)~~(Giroux, 2015a, p. 2)~~

Table 4.8-1 Project Site Noise Measurements (dBA)

Site	Time	Leq	Lmax	Lmin	L_{01}	L_{08}	L_{25}	L_{50}
SW	11:20-11:35	68	74	58	72	70	68	67
SE	11:40-11:50	53	66	40	60	56	46	42

(Giroux, 2016a, p. 2)~~(Giroux, 2015a, p. 2)~~

The City of Lake Elsinore does not have a noise/land use compatibility standard for extractive industries such ~~that~~as the proposed mining activities at the Nichols Canyon Mine. Regardless, mining is not a noise-sensitive land use. (Giroux, 2016a, p. 1)~~(Giroux, 2015a, p. 2)~~

C. *Existing Groundborne Vibration*

On-going mining activities at the Project site (which includes mining, haul truck, and blasting activities) produce some sources of groundborne vibration, primarily associated with mining equipment and blasting activities. Other sources of groundborne vibration in the Project vicinity include other existing mining activities located west of I-15~~,~~ and truck traffic along I-15.

Blasting operations at the Mine occur on a regular basis five or six times per year under existing conditions, and are regulated by permits issued by the Lake Elsinore Director of Community Development. Pursuant to federal law, for a distance separation of "D" feet in the range of 300 to 5,000 feet from nearby structures, the following requirements apply to blasting activities: (Giroux, 2016a, p. 21; Project Applicant, 2016c)~~(Giroux, 2015a, p. 13)~~

- If blasting activities are monitored by an acoustical consultant, then seismic monitoring shall demonstrate that PPV does not exceed 1.00 in/sec; or
- If blasting activities are not monitored, then the allowable blasting charge weight must be less than $(D/55)^2$ pounds, where "D" equals distance in feet to the nearest sensitive receptor.

Mandatory compliance with these measures under existing blasting operations, as required by the City's blasting permits issued for blasting events, ensures that nearby structures, including nearby residences and school structures, are not exposed to a blasting-related PPV exceeding 0.01 in/sec.

Table 4.8-2, *Reference Vibration Noise Levels for Construction Equipment*, provides the reference vibration levels for typical construction equipment as measured at a distance of 25 feet from the source. Of the equipment listed in Table 4.8-2, only one large bulldozer and loaded trucks operate at the Mine. As shown, large bulldozers have a reference peak particle velocity (PPV) of 0.089 inches per second (in/sec) at a distance of 25 feet. Based on the methodology presented in Subsection 4.8.6 for calculating vibration over distance, and given that the nearest structure is approximately 386~~500~~ feet southeast of the existing disturbance limits associated with the Nichols South site (i.e., existing residence at 28454 Wood Mesa Court), worst-case groundborne vibration associated with existing mining operations would be approximately 0.0044~~3~~ in/sec at the residential structure.

D. *Airport Noise and Vibration*

The nearest public airport to the Project site is the March Air Reserve Base, located 11.8 miles northeast of the Project site. The nearest private airport to the Project site is the Skylark Field

Table 4.8-2 Reference Vibration Noise Levels for Construction Equipment

Equipment	Reference PPV at 25 ft. (in/sec)
Vibratory roller	0.210
Large bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003
Crack-and-seat operations	2.4

(Caltrans, 2013, Table 18)

Airport, a small private airport located approximately 5.7~~6.0~~ miles southwest of the Project site, and the nearest private airstrip to the Project site is the Mc-Conville Airstrip located approximately 6.~~5~~0 miles southwest of the Project site. (Google Earth, 2015) Due to the Project's distance from the nearest airport and airstrip, airport activities are not considered a source of substantial noise or vibration in the Project area.

4.8.4 APPLICABLE REGULATORY REQUIREMENTS

Following is a description of the existing noise regulatory setting for the Project's study area. The applicable noise standards, policies, and regulations of the City of Lake Elsinore are presented below.

A. City of Lake Elsinore General Plan Public Safety and Welfare Element

The City of Lake Elsinore Public Safety and Welfare Element provides goals and policies that are designed to locate new development in areas with compatible noise levels and minimize intrusive noise from existing and new development. As detailed in the City's General Plan, sensitive land uses are generally defined as locations where people reside or where the presence of noise could adversely affect the use of the land. These land uses include uses such as schools, hospitals, residences, libraries, and recreation areas. (City of Lake Elsinore, 2011a, p. 3-26) As shown in Table 4.8-3, *City of Lake Elsinore Land Use Compatibility Matrix*, the City of Lake Elsinore General Plan Noise Element includes noise/land use compatibility standards that help inform whether proposed land uses are compatible. On-road noise generation is exempted from local control except for enforcement of the vehicle code (mufflers, horns, etc.). Receiving land use exposure goals are presented in the Noise Element of the General Plan. Because of the varying noise sensitivity by time of day, a weighted 24-hour exposure is applied to on-road sources, trains, and aircraft. The City of Lake Elsinore uses a metric called the Community Noise Equivalent Level (CNEL). Daily CNEL is defined as a weighted 24-hour exposure. Because daily CNELs may vary by season, weather, etc., the California Division of Aeronautics has established the annual average CNEL as the defining threshold to account for such variability. The definition of a "noise impact boundary" for any California airports is as follows:

> "*… the locus of points around an airport for which the annual CNEL is equal to the airport noise standard established in Section 5102 of the California Code of Regulations.*" (21 CA ADC #5001). (Giroux, 2016a, p. 4)

For purposes of consistency, the California definition of an airport noise impact boundary will be applied to any Project-related on-road traffic noise impacts relative to the City of Lake Elsinore Noise Element standards. Peak daily noise levels during infrequent special 24-hour hauling events

Table 4.8-3 City of Lake Elsinore Land Use Compatibility Matrix

Land Use Categories		Day-Night Noise Level (LDN)						
Categories	Uses	≤55	60	65	70	75	80≥	
Residential	Single, Family, Duplex, Multiple Family	A	A	B	B	C	D	D
Residential	Mobile Homes	A	A	B	C	C	D	D
Commercial Regional District	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D
Commercial Regional Village, District Special	Commercial, Retail, Bank, Restaurant, Movie Theatre	A	A	A	A	B	B	C
Commercial Industrial Institutional	Office Building, Research and Development, Professional Offices, City Office Building	A	A	A	B	B	C	D
Commercial Regional Institutional Civic Center	Amphitheatre, Concert Hall Auditorium, Meeting Hall	B	B	C	C	D	D	D
Commercial Recreation	Children's Amusement Park, Miniature Golf Course, Go-cart Track, Equestrian Center, Sports Club	A	A	A	B	B	D	D
Commercial General, Special Industrial Institutional	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B
Institutional General	Hospital, Church, Library, Schools, Classroom	A	A	B	C	C	D	D
Open Space	Parks	A	A	A	B	C	D	D
Open Space	Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	A	A	A	A	B	C	C
Agriculture	Agriculture	A	A	A	A	A	A	A

Interpretation	
Zone A Clearly Compatible	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
Zone B Normally Compatible	New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed nose insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.
Zone C Normally Incompatible	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.
Zone D Clearly Incompatible	New construction or development should generally not be undertaken.

(Giroux, 2016a, Table 1)~~(Giroux, 2015a, Table 1)~~

are also presented as an informational item. Based upon the goals identified in Table 4.8-3, roadway source noise levels of 60 dB CNEL are considered "Clearly Acceptable" for residential uses without the need for consideration of any supplemental mitigation; this standard will be applied to existing residential uses located west of I-15 and within the City of Lake Elsinore. The Clearly Acceptable exposure to mobile-source noise impacts for commercial land uses is 70 dB CNEL; this standard will be applied to the existing gas station located west of I-15 and south of Nichols Road in the City of Lake Elsinore. (Giroux, 2016a, pp. 3-4)

B. *City of Lake Elsinore Municipal Code*

The City of Lake Elsinore Municipal Code Chapter 17.176, Noise Control sets forth noise measurement procedures, as well as exterior noise limits and interior noise standards for stationary noise sources. As set forth in the City of Lake Elsinore Municipal Code § 17.176.060, these standards are shown in Table 4.8-4, *City of Lake Elsinore Municipal Code Exterior Noise Limits*. (Giroux, 2016a, p. 3)~~(Giroux, 2015a, p. 3)~~ Based on existing operations at the Mine, the Mine is closest to the "Light Industrial" category, which is allowed up to 70 dBA L_{50}, regardless as to time of day.

The City's noise standards for stationary sources are expressed in terms of a mean noise level (Lnn), and identify~~ies~~ the average noise level allowed over an established period of time. The 50th percentile (30 min/hr) is the noise level allowed for up to 30 minutes (i.e., "L_{50}") per any single hour. As shown in Table 4.8-4, the stationary noise standard for residential uses within the City is 50 dBA L_{50} during the day (between 7:00 am and 10:00 pm) and 40 dBA L_{50} at night (between 10:00 pm and 7:00 am). ~~For school uses within the City, which are in session only during the daytime, the applicable standard is 60 dBA L_{50}, with no applicable standard at night.~~ For the existing gas station located west of I-15, the applicable stationary noise standard is 65 dBA L_{50} during daytime hours and 60 dBA L_{50} at night.

However, when ambient noise levels exceed the above noise levels, the ambient level becomes the standard, adjusted upward in five dB increments. The L_{50} measurement at the Southeast corner of the Mine was 42 dBA for a daytime reading and likely would be even lower at night. No adjustment of the ordinance standard would be indicated by these readings. At the nearest commercial property, however, freeway traffic noise already exceeded the L_{50} daytime noise ordinance standard (and likely at night as well) such that an adjustment of the compliance threshold would be justified based upon background freeway traffic noise conditions. An increase of +5 dB for the allowable stationary source noise exposure is recommended at the nearest commercial use (ARCO Station and AM/PM Market) consistent with the measured L_{50} readings near this receiver location. Thus, the applicable threshold for stationary sources affecting the nearby gas station would be 70 dBA L_{50} during daytime hours and 65 dBA L_{50} at night. (Giroux, 2016a, pp. 3-4)~~(Giroux, 2015a, p. 3)~~

The stationary source noise standards to be applied to various surrounding land uses within the City of Lake Elsinore are thus as follows (dBA L_{50}):

Receiving Land Use	7 am – 10 pm	10 pm – 7 am
Single Family Residential to the SW	50	40
Highway Commercial	70	65

(Giroux, 2016a, p. 4)

Table 4.8-4 City of Lake Elsinore Municipal Code Exterior Noise Limits

RECEIVING LAND USE	TIME	Noise level that may not be exceeded for more than a cumulative period of:				
		30 MIN/HR	15 MIN/HR	5 MIN/HR	1 MIN/HR	ANYTIME
Single-Family Residential	10:00 p.m. – 7:00 a.m.	40	45	50	55	60
	7:00 a.m. – 10:00 p.m.	50	55	60	65	70
Multiple Dwelling Residential	10:00 p.m. – 7:00 a.m.	45	50	65	70	65
	7:00 a.m. – 10:00 p.m.	50	55	60	65	70
Public Space Office	10:00 p.m. – 7:00 a.m.	55	60	65	70	75
	7:00 a.m. – 10:00 p.m.	60	65	70	75	80
General Commercial	10:00 p.m. – 7:00 a.m.	60	65	70	75	80
	7:00 a.m. – 10:00 p.m.	65	70	75	80	85
Light Industrial	Anytime	70	75	80	85	90
Heavy Industrial	Anytime	75	80	85	90	95

If the measured ambient level differs from that permissible within any of the noise limit categories above, the allowable noise exposure standard shall be adjusted upward in five dB increments for each category as appropriate to reflect said ambient noise level.

In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

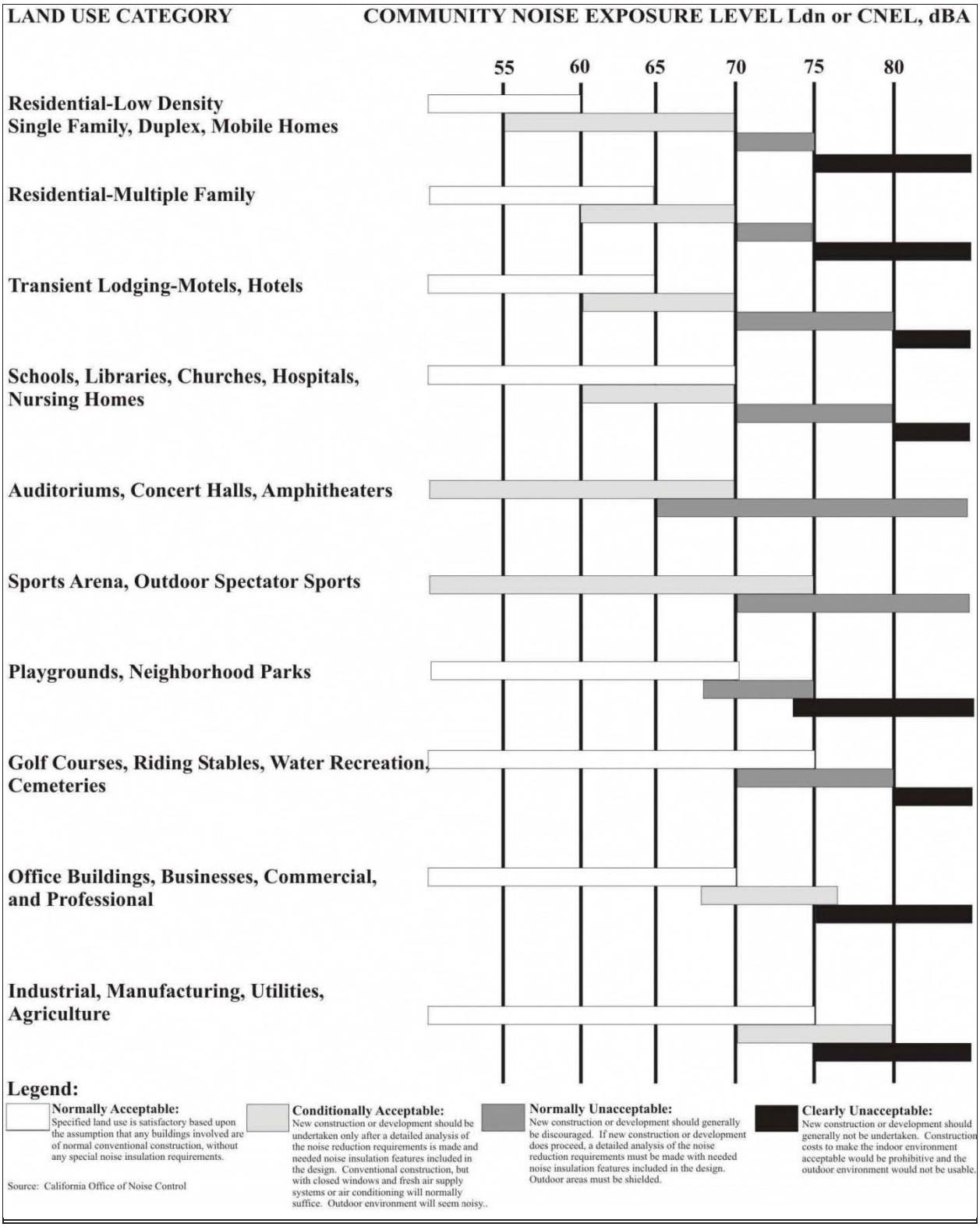
MIN/HR = Minutes per Hour

(Giroux, 2016a, Table 2)~~(Giroux, 2015a, Table 2)~~

C. Riverside County General Plan Noise Element

The Riverside County General Plan Noise Element also provides goals and policies that are designed to locate new development in areas with compatible noise levels and minimize intrusive noise from existing and new development. As detailed in the County General Plan, sensitive land uses include schools, hospitals, rest homes, long term care facilities, mental care facilities, residential uses, places of worship, libraries, and passive recreation areas. Table N-1 of the Noise Element, which is provided herein as Table 4.8-5, *Riverside County Land Use Compatibility for Community Noise Exposure*, provides noise compatibility standards. Because the Riverside County Noise Ordinance, as discussed below, addresses only stationary noise sources, the compatibility standards shown in Table 4.8-5 will be used to evaluate transportation-related noise increases affecting lands within the County of Riverside. As shown, low-density residential uses within the County, which occur to the east of the Mine, are considered "Normally Acceptable" with noise levels up to 60 dBA CNEL, and "Conditionally Acceptable" with noise levels up to 70 dBA CNEL. For school uses, noise levels up to 70 dBA CNEL are considered "Normally Acceptable," while noise levels between 60 and 70 dBA CNEL are considered "Conditionally Acceptable."

Table 4.8-5 Riverside County Land Use Compatibility for Community Noise Exposure



(Riverside County, 2003a)

~~C.~~D. Riverside County Noise Ordinance

Riverside County Ordinance No. 847 ("County Noise Ordinance") regulates stationary noise sources for lands within unincorporated Riverside County, which includes lands to the north, east, and south. The County Noise Ordinance requires prohibits the creation of any sound on any property that causes the exterior sound level on occupied property to exceed the values presented in Table 4.8-6, *Riverside County Noise Ordinance Sound Level Standards (dB Leq [10 min])*, based on the Riverside County General Plan land use designation for the Occupied Property, which are shown on Figure 4.8-1, *Riverside County General Plan Land Use Designations*. "Occupied Property" is defined by Ordinance No. 847 as "Property upon which is located a residence, business, or industrial or manufacturing use." Occupied Property located within Riverside County has the following General Plan land use designations and associated noise level limits:

- The Temescal Canyon High School, located south of Nichols South is designated by the Riverside County General Plan for "Public Facility (PF)" land uses, which are allowed to be affected by a maximum decibel level of 65 dB Leq (10 min) (daytime). ~~Although t~~The County also specifies a 45 dB Leq (10 min) nighttime standard for PF uses~~, no sensitive receptors occur at the high school during nighttime hours~~.
- Existing rural residences located east of El Toro Road and south of Nichols Road are designated by the Riverside County General Plan for "Very Low Density Residential (CD-VLDR)" land uses, which are allowed to be affected by a maximum decibel level of 55 dB Leq (10 min) (daytime) and 45 dB Leq (10 min) (nighttime). Existing rural residences located east of Nichols North and north of El Toro Road are designated by the Riverside County General Plan for "Rural Mountainous (RM)" land uses, which are allowed to be affected by a maximum decibel level of 45 dB Leq (10 min) (daytime and nighttime).

~~D.~~E. Construction Noise Standards

The City of Lake Elsinore Municipal Code Chapter 17.176, *Noise Control*, limits the hours during which construction activities may take place. Construction and demolition activities in the City of Lake Elsinore are prohibited between the hours of 7:00 pm and 7:00 am, or at any time on weekends or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by a variance issued by the City of Lake Elsinore. (City of Lake Elsinore, 2015)

Additionally, Riverside County Ordinance No. 847 limits noise from construction activity located within ¼-mile of an occupied residential structure to between the hours of 6:00am and 6:00pm during the months of June through September, and to between the hours of 7:00am and 6:00pm during the months of October through May. (Riverside County, 2007)

~~E.~~F. Vibration Standards

The City of Lake Elsinore Municipal Code Chapter 17.176, *Noise Control*, controls unnecessary, excessive, and annoying vibration in the City. As detailed in § 17.176.080 of the City's Municipal Code, the Project would have a significant impact if it resulted in "operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property or at 150 feet (46 meters) from the source if on a public space or public right-of-way." As defined in § 17.176.020

of the City's Municipal Code, "Vibration perception threshold" means the minimum ground- or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observation of moving objects. The perception threshold shall be presumed to be a motion velocity of 0.01 inches per second over the range of one to 100 Hz. (City of Lake Elsinore, 2015) The County of Riverside has not identified or adopted vibration standards.

~~Table 4.8-5~~Table 4.8-6 Riverside County Noise Ordinance Sound Level Standards (dB Leq [10 min])

GENERAL PLAN FOUNDATION COMPONENT	GENERAL PLAN LAND USE DESIGNATION	GENERAL PLAN LAND USE DESIGNATION NAME	DENSITY	MAXIMUM DECIBEL LEVEL	
				7am-10pm	10pm-7am
Community Development	EDR	Estate Density Residential	2 AC	55	45
	VLDR	Very Low density Residential	1 AC	55	45
	LDR	Low Density Residential	1/2 AC	55	45
	MDR	Medium Density Residential	2--5	55	45
	MHDR	Medium High Density Residential	5--8	55	45
	HDR	High Density Residential	8--14	55	45
	VHDR	Very High Density Residential	14-20	55	45
	H'TDR	Highest Density Residential	20+	55	45
	CR	Retail Commercial		65	55
	CO	Office Commercial		65	55
	CT	Tourist Commercial		65	55
	CC	Community Center		65	55
	LI	Light Industrial		75	55
	HI	Heavy Industrial		75	75
	BP	Business Park		65	45
	PF	Public Facility		65	45
	SP	Specific Plan-Residential		55	45
		Specific Plan-Commercial		65	55
		Specific Plan-Light Industrial		75	55
		Specific Plan-Heavy Industrial		75	75
Rural Community	EDR	Estate Density Residential	2 ac	55	45
	VLDR	Very Low Density Residential	1 ac	55	45
	LDR	Low Density Residential	1/2 ac	55	45
Rural	RR	Rural Residential	5 ac	45	45
	RM	Rural Mountainous	10 ac	45	45
	RD	Rural Desert	10 ac	45	45
Agriculture	AG	Agriculture	10 AC	45	45
Open Space	C	Conservation		45	45
	CH	Conservation Habitat		45	45
	REC	Recreation		45	45
	RUR	Rural	20 AC	45	45
	W	Watershed		45	45
	MR	Mineral Resources		75	45

(Riverside County, 2007)

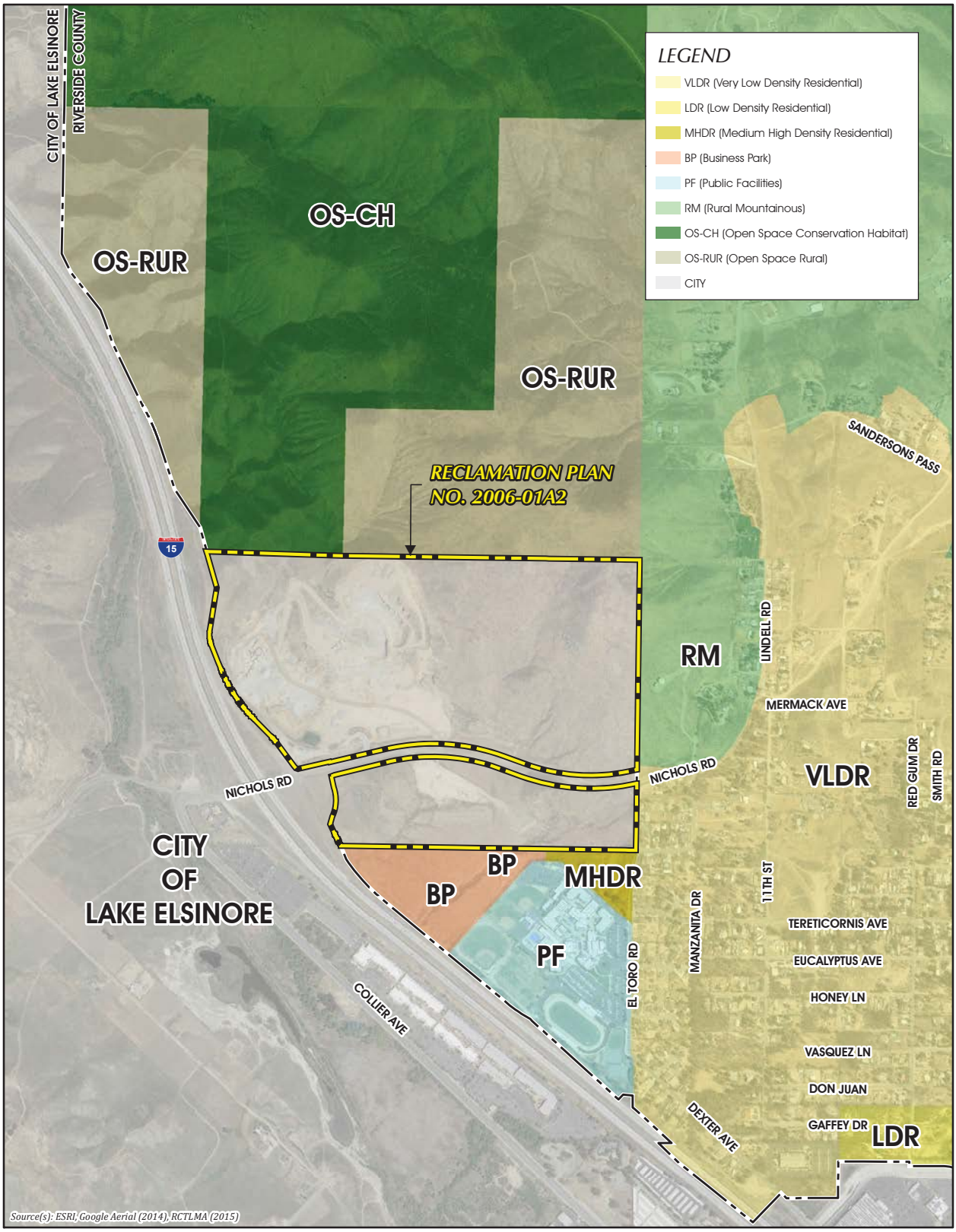


Figure 4.8-1

RIVERSIDE COUNTY GENERAL PLAN LAND USE DESIGNATIONS

4.8.5 BASIS FOR DETERMINING SIGNIFICANCE

The proposed Project would result in a significant noise impact if the Project or any Project-related component would:

a. *Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

b. *Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?*

c. *A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?*

d. *A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?*

e. *For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?*

f. *For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?*

The above-listed thresholds are derived directly from Section XII of Appendix G to the CEQA Guidelines and address typical adverse project effects due to noise. (OPR, 2009).

A. Operational Noise Thresholds (Threshold a.)

1. Stationary Noise Thresholds

For evaluation under Threshold a., stationary noise impacts from the proposed Project would be considered significant if ~~they~~ the Project were to result in the exposure of persons to or generation of noise levels in excess of standards established in the ~~local general plan or~~City's noise ordinance~~, or applicable standards of other agencies~~. Based on the City of Lake Elsinore Noise Ordinance standards, and based on the noise levels that occur under existing conditions (refer to Subsection 4.8.4.B), stationary impacts of the proposed Project would be considered significant if Project-related ~~traffic or equipment~~ operations were to expose the nearby gas station to noise levels exceeding 70 dBA L_{50} between the hours of 7:00 am and 10:00 pm, and 65 dBA L_{50} between the hours of 10:00 pm and 7:00 am. For the existing residential uses south of Nichols Road and west of I-15, stationary noise impacts would be considered significant if Project-related equipment were to expose the nearby residences to noise levels exceeding 50 dBA L_{50} between the hours of 7:00 am and 10:00 pm, and 40 dBA L_{50} between the hours of 10:00 pm and 7:00 am. There are no other uses within the City of Lake Elsinore that could be exposed to Project-related operational noise exceeding the City's standards.

Lands located north, east, and south of the Mine are located within Riverside County, and are therefore subject to the County's Noise Ordinance. The proposed Project would result in operational noise impacts to surrounding properties within unincorporated Riverside County if Project-related stationary noise would exceed the thresholds identified in Table 4.8-6. Specifically, the following thresholds apply to lands within unincorporated Riverside County:

- Stationary noise impacts affecting the Temescal Canyon High School would be considered significant if Project operations were to expose nearby classrooms to stationary noise levels exceeding 65 dB Leq (10 min) between 7:00 a.m. and 10:00 p.m., or to noise levels exceeding 45 dB Leq (10 min) between 10:00 p.m. and 7:00 a.m.
- Stationary noise impacts affecting the rural residences located east of the Mine and within unincorporated Riverside County would be considered significant if Project operations were to expose these nearby residences to operational noise levels exceeding 50 dBA L_{50} between 7:00 a.m. and 10:00 p.m. and 40 dBA L_{50} between 10:00 p.m. and 7:00 a.m.

2. Transportation-Related Noise

On-road noise generation is exempted from local control except for enforcement of the vehicle code (mufflers, horns, etc.). Receiving land use exposure goals are presented in the Noise Elements in the General Plans of both the City of Lake Elsinore and Riverside County. Based upon the goals identified in Table 4.8-3, roadway source noise levels of 60 dB CNEL are considered "Clearly Acceptable" for residential uses without the need for consideration of any supplemental mitigation; this standard will be applied to existing residential uses located west of I-15 and within the City of Lake Elsinore. The Clearly Acceptable exposure to mobile-source noise impacts for commercial land uses is 70 dB CNEL; this standard will be applied to the existing gas station located west of I-15 and south of Nichols Road in the City of Lake Elsinore. (Giroux, 2016a, pp. 3-4) For land uses within unincorporated Riverside County, the compatibility standards shown in Table 4.8-5 will be used to evaluate transportation-related noise increases. As shown, low-density residential uses within the County, which occur to the east of the Mine, are considered "Normally Acceptable" with noise levels up to 60 dBA CNEL, which is the noise level limit below which no special noise insulation requirements apply. For school uses, noise levels up to 70 dBA CNEL are considered "Normally Acceptable." For purposes of evaluating traffic noise impacts, impacts would be considered significant if Project traffic results in an increase of +3 dB at nearby sensitive receptors that creates or worsens an area of noise incompatibility "Clearly Acceptable" and "Normally Acceptable" standards identified above.

B. Vibration Noise Threshold (Threshold b.)

For evaluation of Threshold b), a significant impact would occur if groundborne vibration associated with Project operations were to expose nearby structures to greater than a peak particle velocity (PPV) of 0.01 inches per second over the range of one to 100 hertz (Hz). (City of Lake Elsinore, 2015, § 17.176.020) Because the County of Riverside does not have an adopted standard for groundborne vibration or groundborne noise, the analysis herein applies the City of Lake Elsinore standard to lands within unincorporated Riverside County.

C. Substantial Temporary or Permanent Increase in Noise (Thresholds c. and d.)

The Project's primary source of temporary and permanent noise increases in the Project vicinity would be from haul truck trips, on-site operational equipment, and blasting events. "Substantially" is not defined in any guidelines. The accuracy of sound level meters and of sound propagation computer models is no better than approximately 1 dB. This is below the human loudness difference discrimination level even under ideal laboratory conditions. Most people cannot distinguish a change in the noise environment that differs by less than 3 dB between the pre- and post-Project exposure if the change occurs under ambient conditions. For the purposes of this analysis, an increase of 3 dB

which creates or worsens an area of noise/land use incompatibility (based on the noise thresholds identified above under Threshold a.) would be considered a potentially significant degradation of noise quality due to truck traffic or operational mining equipment (including the asphalt batch plant). (Giroux, 2016a, pp. 7-8) ~~(Giroux, 2015a, pp. 6-7)~~

D. Airport-Related Noise (Thresholds e. and f.)

Given the distance to the nearest airport (Skylark Field Airport, located approximately 5.7~~6.0~~ miles southwest of the Project site), a detailed analysis of potential aircraft noise effects on the Project is not required. (Google Earth, 2015)

4.8.6 METHODOLOGY FOR ESTIMATING PROJECT-RELATED NOISE IMPACTS

A. Construction Noise

The proposed Project includes a physical expansion of the mining activities and an increase in the allowed hours of operation. The Project comprises an expansion of an existing mining operation and does not involve any construction activities as defined in City Municipal Code § 17.176.020. The construction-related provisions of Municipal Code Chapter 17.176 accordingly do not apply to the Project. (City of Lake Elsinore, 2015) Similarly, the proposed Project does not comprise a "private construction project" pursuant to Riverside County Ordinance No. 847, and thus the Project is not subject to the County's construction-related time restrictions. Any minor mining area improvements such as access paths to the mining face would be performed by the mining equipment in conjunction with normal day-to-day operations, and would not result in any generation of noise exceeding that which is discussed below under the analysis of the Project's operational noise. (Giroux, 2016a, pp. 8-9)~~(Giroux, 2015a, p. 8)~~

B. Operational Traffic Noise

The relationship between traffic and noise is logarithmic. It takes a large change in traffic volume to produce only a small change in noise decibels. The incremental noise impact from the increased quarry traffic would most likely be masked by the baseline condition, especially near the I-15, particularly because all Project site traffic travels toward I-15 with no trucks eastbound on Nichols Road. Noise impacts from truck intensive activities are very time sensitive. The noise produced by a single truck on a public street from 10:00 pm to 7:00 am (nighttime) is the noise equivalent of the noise from 10 trucks in a CNEL calculation. The perceived traffic noise impact could be substantially magnified by the artificial nighttime weighting penalty in a CNEL calculation if much of the "new" truck traffic from the proposed Project were to occur at night. (Giroux, 2016a, p. 7)~~(Giroux, 2015a, p. 6)~~

Long-term noise concerns from the projected increase of trucking from the Project site were addressed using the California specific vehicle noise curves (CALVENO) in the federal roadway noise model (the FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108). This model calculates the Leq noise level for a particular reference set of input conditions, and then makes a series of adjustments for site-specific traffic volumes, distances, speeds, or noise barriers. This analysis utilized data from the traffic report prepared for this Project. (Giroux, 2016a, p. 9)~~(Giroux, 2015a, p. 8)~~

C. Operational Noise (Mining)

The Nichols Canyon Mine is an existing mining operation. The Project includes expansion of mining activities into a 24-acre area north and east of the current mining area and a change in operating hours. The existing distance between on-site mining and off-site sensitive receptors would be reduced by the proposed Project. In addition, some noise generation would be shifted from daytime to nighttime periods because the Project would change the mining operational hours from 7:00 am and 12:00 am (Monday through Friday, excluding Federal Holidays) and between 7:00 am and 7:00 pm (Saturdays only) to between 4:00 am ~~to 7:00 am and from 10:00 pm to midnight~~12:00 am (Monday through Saturday, excluding Federal Holidays) for mining equipment and asphalt batch plant operation. As noted in Table 4.8-4, the City's noise standard is more stringent during ~~these~~nocturnal hours. Nighttime operations likely would not affect the Temescal Canyon High School because regular high school activities begin at 7:30 am Monday through Friday. Although it is unlikely campus ~~there are no classroom~~ activities would occur ~~from~~between ~~10:00 pm~~ 4:00 am to 7:00 am, pre-school activities such as sports practice or tutoring could possibly occur. Thus, noise from the mining operations could be audible to the high school use and could also be audible at the closest homes to the southeast or southwest. ~~but nighttime operations could be audible at the closest homes located to the southeast of the Project site.~~ (Giroux, 2016a, p. 7)~~(Giroux, 2015a, p. 6)~~

The FHWA Roadway Noise Construction Model (2006) is an excellent source of carefully documented heavy equipment noise. Table 1 of the model user's guide lists the reference noise level for 57 pieces of equipment and the usage factor (UF) associated with each type. The model equation for calculating the 50th percentile noise level is as follows: (Giroux, 2016a, p. 15)~~(Giroux, 2015a, pp. 10-11)~~

$$L_{50} \leq \text{Leq} = \text{Ref Lvl} + 10 \log (\text{UF}/100)$$

The listed usage factor for dozers, loaders, and trucks is 40%. The reference level and associated L_{50} for the primary mining equipment is as follows at 50 feet from the source: (Giroux, 2016a, p. 15)~~(Giroux, 2015a, p. 11)~~

Dozer = 82 dB – 4 dB (UF) = 78 dB
Loader = 79 dB – 4 dB (UF) = 75 dB
Truck = 76 dB – 4 dB (UF) = 72 dB
Combined three sources: = 80 dB

Note: The model calculates the Leq metric (not L_{50}) which is typically several dB higher than the L_{50}. The use of Leq is a worst-case assumption.

Similarly, asphalt production tends to have a time-varying noise signature relative to the 50th percentile standard. Rocks rolling in the drier are noisy, but once the load-out silos are full, the truck loading activities contribute little to the L_{50} noise level. Based upon measurements of asphalt production plant noise (All-American Asphalt in Irvine and Corona, CA), an L_{50} reference level of 80 dBA captures much of the variable noise generation of asphalt batching. (Giroux, 2016a, pp. 15-16)

The reference noise levels were allowed to decay during source to receiver propagation through spreading losses, atmospheric absorption, or possible terrain obstruction to perform an operational noise impact analysis from (Giroux, 2016a, p. 16)~~(Giroux, 2015a, p. 11)~~:

a. Physical expansion of the mining area to the north and east and future mining of the Nichols South site during the extended hours of operation; and

b. Pre-7 a.m. aggregate processing when noise limits are substantially more stringent within either Nichols North or Nichols South.

D. Blasting

The Project's potential vibration impacts from blasting activities were analyzed based on the separation distance from the Project site and the existing high school to the south and the closest homes to the southeast. Blasting noise is a single event phenomenon that can vary with the charge weight and any intervening physical terrain. The amount of charge weight is limited by federal regulations as a function of the distance between the blast site and the nearest protected structure unless seismic monitoring is conducted during the blast event to verify that excessive vibration has not been created. For a distance separation in the range of 300-5,000 feet, the following blasting standards apply: 1) With seismic monitoring 1.00 inch/sec peak particle velocity and 2) With no seismic monitoring, allowable charge weight (lbs) < $(D/55)^2$. (Giroux, 2016a, p. 21)~~(Giroux, 2015a, p. 13)~~

E. Operational Vibration Impacts

Vibration effects are discussed in terms of peak particle velocity (PPV). Based on guidance from Caltrans in their publication, *Transportation and Construction Vibration Guidance Manual*," dated September 2013, vibration noise can be estimated by using the following formula: (Caltrans, 2013, p. 37)

$$PPV_{Equipment} = PPV_{Ref}(25/D)^n \text{ (in/sec)}$$

Where:

PPV_{Ref} = reference vibration levels
D = distance from equipment to the receiver in feet
n = 1.1 (the value related to the attenuation rate through ground)

Table 4.8-2, presented previously, provides the reference vibration levels for typical construction equipment as measured at a distance of 25 feet from the source.

4.8.7 IMPACT ANALYSIS

Threshold a. Would the Project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Threshold c. Would the Project result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Threshold d. Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

A. Off-Site Noise Levels

Aggregate extraction and processing activities have highly variable noise levels. In particular, extraction is characterized by infrequent very loud noises during blasting with variable intermediate periods of bulldozing or loading or waiting for repositioning of equipment. Aggregate processing involving screening or crushing is a more steady state noise source. However, the creation of finished materials stockpiles that grow, shrink, or get relocated around the processing equipment again create problems in establishing one fixed reference noise value for the activity. Based upon noise measurements made at a variety of aggregate processing plants (Calmat Mission Valley, Owl Rock, Azusa, etc.), ~~-~~ t~~T~~he observed reference noise level for an aggregate processing plant based on studies conducted previously by Giroux & Associates is 85 dB (L_{50}) at 50 feet under semi-direct line of sight conditions. (Giroux, 2016a, p. 15)~~(Giroux, 2015a, p. 10)~~ Similarly, asphalt production tends to have a time-varying noise signature relative to the 50th percentile standard. Rocks rolling in the drier are noisy, but once the load-out silos are full, the truck loading activities contribute little to the L_{50} noise level. Based upon measurements of asphalt production plant noise (All-American Asphalt in Irvine and Corona, CA), an L_{50} reference level of 80 dBA captures much of the variable noise generation of asphalt batching. (Giroux, 2016a, pp. 15-16)

Mining is an intermittent noise generating activity such that its L_{50} level is lower than single-event noise occurrences (Leq [10 min]). Mining equipment is semi-mobile and operates under variable power settings. The primary rock mining mobile sources are a bulldozer, loaders and haul trucks. Noise dispersion calculations presume a "point source" of noise generation. Only a finite amount of equipment can operate in sufficient proximity to each other to constitute a point source. For purposes of analysis, one bulldozer, one loader, and one haul truck were assumed to constitute a single source of mining noise. (Giroux, 2016a, p. 15)~~(Giroux, 2015a, p. 10)~~

Table 4.8-7, *Operational Activity Noise Impacts*, and Table 4.8-8, *Operational Activity Noise Impact Summary*, summarize~~s~~ the noise effects of the Project and change in the hours of operation and associated easterly expansion of the areas subject to mining. As shown~~ in Table 4.8-6~~, the noise levels at the nearest commercial use would be below the City's standard of ~~65~~ 70 dBA L_{50} during the daytime and ~~60~~ 65 dBA L_{50} during nighttime. Likewise, the existing Temescal Canyon High School would be exposed to noise levels that are below the County's Noise Ordinance daytime standard of ~~65~~ 60 dBA Leq_{50} ~~(10 min)~~and also would be below the County's Noise Ordinance nighttime standard of 55 dBA Leq_{50}. Thus, operational noise impacts to the school and commercial uses would be less than significant.

However, Table 4.8-7 and Table 4.8-8 also show that the nearest VLDR home to the southeast would be exposed to combined noise levels of up to 58 dBA L_{50}. This noise level would exceed the

~~Table 4.8-6~~Table 4.8-7 Operational Activity Noise Impacts

Receiver Location	Ref Level	Distance	Terrain	Absorption	Residual
Commercial Use West					
Aggregate Plant	85	-34	0	0	51
Asphalt Production	80	-35	0	0	45
Mining Expansion	80	-29	0	0	51
Total					55
Residences ESE					
Aggregate Plant	85	-46	0	-4	35
Asphalt Production	80	-45	0	-3	32
Mining Expansion	80	-22	0	0	58
Total					58
School Classroom					
Aggregate Plant	85	-45	0	-3	36
Asphalt Production	80	-44	0	-3	33
Mining Expansion	80	-27	0	0	53
Total					53
Residence SW					
Aggregate Plant	85	-44	0	-3	38
Asphalt Plant	80	-45	0	-3	32
Mining Expansion	80	-41	0	-1	38
Total					41

Commercial Land Use Standards: Pre-7 a.m. = 60 dB; Post – 7 a.m. = 65 dB (unless background levels already exceed this threshold such as the ARCO station, then the standard is adjusted upward in 5 dB increments per Municipal Code)
Residential Land Use Standards: Pre-7 a.m. = 40 dB; Post – 7 a.m. = 50 dB
School Land Use Standards: Pre-7 a.m. = 55 dB; Post – 7 a.m. = 60 dB
(Giroux, 2016a, Table 7)~~(Giroux, 2015a, Table 5)~~

Table 4.8-8 Operational Activity Noise Impact Summary

Receiver Location	Total Noise	Daytime Noise Threshold (7 a.m. – 10 p.m.)	Nighttime Noise Threshold (10 p.m. – 7 a.m.)
Highway Commercial	55	70	65
Closest Residence ESE	58	50	40
Closest Residence SW	41	50	40
Nearest Classroom	53	60	55

Note: Noise levels shown are dBA L_{50}.
(Giroux, 2016a, Table 8)

County's Noise Ordinance daytime standard of 50 dBA L_{50} by up to 8 dB, and would exceed the County's Noise Ordinance nighttime standard of 40 dBA L_{50} by up to 18 dB. During daytime hours where a direct line of sight exists, the 50 dBA L_{50} daytime standard for residential uses would be exceeded at a distance of 794 feet from mining activities, although no homes would be impacted during the daytime where a minimum 10-foot headwall is maintained to fully obstruct the line of sight between the mining activities and the nearest residential unit. During nighttime hours, the 40

dBA L50 nighttime standard for residential uses would be exceeded at a distance of 1,820 feet where a direct line of sight exists, or 603 feet where a minimum 10-foot headwall is maintained to fully obstruct the line of sight. ~~the reduction in the distance separation between the Project site and the closest homes to the east may cause the Riverside County Noise Ordinance standards to be exceeded at the VLDR homes located south of Nichols Road if mining activities are conducted as close as approximately 500 feet to the nearest home under direct line of sight conditions, which would be exposed to up to 57 dB Leq (10 minute).~~ These findings are based upon a worst-case assumption that mining would occur directly up to the proposed disturbance limits ~~in the~~(inclusive of the EDA), with no intervening terrain blocking the line-of-sight between the mining activity and the receiver. ~~Any interruption in the direct line-of-sight between source and receiver would achieve the 2 dB of reduction needed to meet the daytime residential noise standard of 55 dB Leq (10 min).~~ Under worst-case operating conditions (i.e., when mining activities occur in the southeastern portion of the EDA), ~~a total of eight~~approximately ten homes located within ~~500~~ 794 feet of proposed mining activities could be exposed to noise levels exceeding 50 dBA L_{50}~~55 dB Leq (10 min)~~. Meeting the nocturnal residential standard of 40 dBA L_{50}~~45 dB Leq (10 min)~~ can only be achieved by maintaining a~~n adequate~~ distance separation of 1,820 feet where a direct line of sight exists or 603 feet where a minimum 10-foot headwall is maintained to fully obstruct the line of sight in order to achieve sufficient spreading losses to meet the more stringent nocturnal standard. Additionally, the nearest VLDR home to the southwest of the Mine would be exposed to noise levels exceeding the nocturnal residential standard of 40 dBA L_{50} at a distance of 3,200 feet from mining activities, assuming mining activities occur within 3,200 feet of the nearest home while the aggregate processing plant and asphalt batch plant are operational. Thus, without mitigation, the Project could have a potentially significant day and nighttime noise impact to nearby residences located south of Nichols Road. (Giroux, 2016a, p. 11)~~(Giroux, 2015a, p. 11; Giroux, 2015b)~~

Several existing residential homes also occur east of the Nichols North portion of the site and north of El Toro Road that are designated by the Riverside County General Plan for "Rural Mountainous (RM)" land uses~~, which are allowed to be affected by a maximum decibel level of 45 dB Leq (10 min) (daytime and nighttime)~~. The nearest home north of El Toro Road is approximately 995 feet from the EDA. Additionally, intervening topography between these existing residential uses obstructs the line-of-sight between mining activities and the nearest residential unit to areas proposed for mining within the EDA. (Google Earth, 2015) Accordingly, Project-related noise (both daytime and nighttime) would not expose these properties to noise levels exceeding ~~45 dB Leq (10 min)~~50 DBA L_{50} during daytime or 40 dBA $L5_0$ during the nighttime, and impacts to the homes north of Nichols Road/El Toro Road would be less than significant.

B. Transportation-Related Noise

To evaluate off-site noise increases that could result from Project-related traffic, noise levels were modeled for the traffic scenarios for Year 2016 and Year 2035. Background traffic noise was calculated for no-Project conditions, and noise from Project-related truck and passenger vehicle trips were then superimposed upon the background traffic noise. (Giroux, 2016a, p. 10)~~(Giroux, 2015a, p. 8)~~

Existing trucking to/from the Project site currently occurs mainly from 7:00 am to 5:00 pm. As a worst-case scenario, both existing truck traffic of 260 trips per day and the possible increase up to 42~~50~~0 trips per day were assumed to occur distributed evenly between 4:00 am and 12:00 am~~midnight~~ except for special aggregate demand situations. Because every truck from 4:00 am to

7:00 pm and 10:00 pm to 12:00 am~~midnight~~ is the noise equivalent of 10 trucks in the CNEL calculation, this worst-case assumption increases the Project traffic noise contribution by ±2 dB ~~as~~ compared to existing conditions in proximity to the plant entrance and nearby freeway ramps. (Giroux, 2016a, pp. 9-10)~~(Giroux, 2015a, p. 8)~~

The daily Project-related traffic noise increment is based upon an increase from 260 daily truck trips to a noise equivalent of 1,380 truck trips (106 nocturnal trips times 10 CNEL-equivalent trips plus 318 daytime trips). This assignment of 20 hours of truck traffic evenly spaced out likely far over-states the nocturnal travel fraction. Many receiving facilities (batch plants, job sites, etc.) are not open from 4:00 am – 7:00 am, or 10:00 pm – 12:00 am. The requested extension of operating hours would not necessarily be accompanied by a dramatic increase in nocturnal trucking activity except for a few specialized projects. (Giroux, 2016a, p. 10)

Traffic noise is measured using a CNEL metric. CNEL by California agency definition for airports where noise is a regulated siting decision is an annual average. On rare occasion during nocturnal hauling events, truck traffic noise may be higher than average. Conversely, the assumption of 5,000 tons per day of hauling would consume the allowed annual production tonnage in far less than 365 days per year of hauling. There would be many days when holidays, rainy weather, or other constraints would lead to minimal trucking – day or night. Any isolated noise "spike" during a rare nocturnal haul event would be more than balanced out by the many days of near-zero truck noise in the annual average CNEL calculation. (Giroux, 2016a, p. 10)~~(Giroux, 2015a, p. 8)~~

1. Transportation-Related Noise: Year 2016 Scenario

For purposes of evaluating traffic-related noise impacts, CNEL is used to evaluate significance because it overestimates likely noise volumes from traffic, and because traffic tends to comprise more of a steady-source noise source rather than a variable noise source (e.g., traffic along I-15). Refer to the discussion of CNEL in EIR Subsection 4.8.2.A.

Background traffic noise was calculated for no-Project conditions, and the truck noise increment was then superimposed upon the background. Table 4.8-9, *Traffic Noise Impact Analysis for 2016*, provides the noise impact resulting from Project implementation in 2016. The largest Project related noise impacts are on Nichols Road between the western driveway ~~one~~ and the freeway, and on the I-15 ramps. The worst-case impacts are a 2 dBA CNEL increase at 50 feet from the roadway centerline, and are less than the 3 dBA CNEL significance threshold. In addition there are no sensitive uses adjacent to the roads that would be affected by Project-related truck or passenger vehicle noise. These locations also have a substantial freeway background noise that would mask any Project-related truck noise increase. The Project's contribution to noise levels would not be considered substantial because a 2 dBA increase is below the significance threshold of 3 dBA. Accordingly, under Year 2016 conditions, the Project would not result in a substantial permanent increase in noise levels above ambient conditions, and impacts would be less than significant. (Giroux, 2016a, p. 10) ~~(Giroux, 2015a, pp. 8-9)~~

Although annual average CNEL would be minimally affected by a small number of potential nocturnal haul events, continually hauling materials throughout the night during infrequent special hauling events would increase the on-road CNEL for a 24-hour period. The volume of material likely to be hauled is speculative. The Project Applicant has indicated that one load every 5 minutes spread evenly over 24 hours is a reasonable worst-case assumption for special hauling events. A

special hauling event would introduce 576 truck trips over a 24-hour period (288 in / 288 out). It should be noted that export of asphalt materials already can occur 24 hours per day pursuant to CUP 2014-07. Nonetheless, 100% of asphalt export trips have been accounted for in the noise analysis in order to provide a conservative analysis, despite the fact that the asphalt batch plant is an approved use on site and would only be affected in terms of the hours during which asphalt production can occur (i.e., the Project would allow asphalt batch plant operations between 4:00 a.m. and 7:00 p.m.). Additionally, it is possible that on some days all of the export material may comprise aggregate materials and not asphalt materials. Based on these considerations, the single worst-day traffic noise impact is shown in Table 4.8-10, *Worst Single Day Traffic Noise Impact Analysis for 2016*, for 2016 build-out conditions. 2016 was selected as the build-out conditions because operations under SMP 2015-01 and RP 2006-01A2 are expected to commence in 2016. (Giroux, 2016a, p. 12)

~~Table 4.8-7~~Table 4.8-9 Traffic Noise Impact Analysis for 2016

Roadway Segment		Background Traffic	Project Only	Background with Project	Project Contribution
Nichols Rd/	E of I-15	69	66	71	+2
I-15/	N of Nichols NB On-Ramp	83	65	83	negligible
	NB On Ramp-SB Off Ramp	83	-	83	negligible
	S of Nichols Rd Off-Ramp	83	66	83	negligible
Nichols Rd Ramps/	I-15 NB On-Ramp	65	62	67	+2
	I-15 NB Off-Ramp	66	63	68	+2
	I-15 SB Off-Ramp	66	62	68	+2
	I-15 SB On-Ramp	67	63	68	+1
Nichols Rd/	W of I-15	69	57	69	negligible

Note: Numerical values in the table represent dBA CNEL at 50 feet from the roadway centerline (Giroux, 2016a, Table 3)~~(Giroux, 2015a, Table 3)~~

The traffic noise between the freeway and the western Mine driveway would measurably increase (by +4 dB CNEL) during a 24-hour haul event. Traffic noise adjacent to the on/off ramps would also increase by +4 dB if the masking effects of the freeway background noise are not taken into account. The significance threshold is an increase of +3 dB which creates or worsens an area of noise incompatibility with the City's Noise Element. In the absence of any sensitive receiver locations along the potentially impacted Nichols Road segment, and with the anticipated infrequency of 24-hour hauling events, the trucking noise impact associated with such events, in comparison to the annual average CNEL, is considered less than significant under Year 2016 conditions. (Giroux, 2016a, p. 12)

2. Transportation-Related Noise: Year 2035 Scenario

As shown in Table 4.8-11, *Traffic Noise Impact Analysis for Future Conditions Year 2035*, by 2035, with an increase in area-wide traffic, particularly on the on-and off-ramps, the Project's contribution to vehicular noise is reduced. In 2035 the largest impact is the Project's 2 dBA CNEL increase at 50 feet from centerline on Nichols Road adjacent to the Project site. All other Project-related noise

impacts are diluted to less than a 0.5 dBA CNEL increase at all segments analyzed. Project-related traffic noise increases are considered less than significant. As previously noted, a number of days with essentially zero truck noise would more than balance rare nocturnal haul events that would ~~be allowed~~occur from 12:00 am~~midnight~~ to 4:00 am in calculating the annual average CNEL. (Giroux, 2016a, p. 10)~~(Giroux, 2015a, p. 9)~~

Table 4.8-10 Worst Single Day Traffic Noise Impact Analysis for 2016

Roadway Segment		Background Traffic	Project Only	Background with Project	Project Contribution
Nichols Rd/	E of I-15	69	71	73	+4
I-15/	N of Nichols NB On-Ramp	83	68	83	negligible
	NB On Ramp-SB Off Ramp	83	-	83	negligible
	S of Nichols Rd Off- Ramp	83	69	83	negligible
Nichols Rd Ramps/	I-15 NB On-Ramp	65	67	69	+4
	I-15 NB Off-Ramp	66	68	70	+4
	I-15 SB Off-Ramp	66	67	70	+4
	I-15 SB On-Ramp	67	68	71	+4
Nichols Rd/	W of I-15	69	62	70	+1

(Giroux, 2016a, Table 5)

~~Table 4.8-8~~Table 4.8-11 Traffic Noise Impact Analysis for Future Conditions Year 2035

Roadway Segment		Background Traffic	Project Only	Background with Project	Project Contribution
Nichols Rd/	E of I-15	69	66	71	+2
I-15/	N of Nichols NB On-Ramp	85	65	85	negligible
	NB On Ramp-SB Off Ramp	85	-	85	negligible
	S of Nichols Rd Off-Ramp	85	66	85	negligible
Nichols Rd Ramps/	I-15 NB On-Ramp	74	62	74	negligible
	I-15 NB Off-Ramp	74	63	74	negligible
	I-15 SB Off-Ramp	75	62	75	negligible
	I-15 SB On-Ramp	74	63	74	negligible
Nichols Rd/	W of I-15	76	57	76	negligible

Note: dBA CNEL at 50 feet from centerline
(Giroux, 2016a, Table 4)~~(Giroux, 2015a, Table 4)~~

The Project's contribution to noise levels would not be considered substantial because a 2.0 dBA increase is below the significance threshold of 3.0 dBA. Accordingly, under Year 2035 conditions,

the Project would not result in a substantial permanent increase in noise levels above ambient conditions. Thus, the Project's traffic-related noise impacts would be less than significant under Year 2035 with Project conditions.

Although annual average CNEL would be minimally affected by a small number of potential nocturnal haul events, continually hauling materials throughout the night during infrequent special hauling events would increase the on-road CNEL for a 24-hour period. As noted above, a special hauling event would introduce 576 truck trips over a 24-hour period (288 in / 288 out). It should be noted that export of asphalt materials already can occur 24 hours per day pursuant to CUP 2014-07. Nonetheless, 100% of asphalt export trips have been accounted for in the noise analysis in order to provide a conservative analysis, despite the fact that the asphalt batch plant is an approved use on site and would only be affected in terms of the hours during which asphalt production can occur (i.e., the Project would allow asphalt batch plant operations between 4:00 a.m. and 7:00 p.m.). Additionally, it is possible that on some days all of the export material may comprise aggregate materials and not asphalt materials. Based on these considerations, the single worst-day traffic noise impact is shown in Table 4.8-12, *Worst Single Day Traffic Noise Impact Analysis for 2035*, for 2035 conditions. (Giroux, 2016a, p. 12)

Table 4.8-12 Worst Single Day Traffic Noise Impact Analysis for 2035

Roadway Segment		Background Traffic	Project Only	Background with Project	Project Contribution
Nichols Rd/	E of I-15	69	71	73	+4
I-15/	N of Nichols NB On-Ramp	85	68	85	negligible
	NB On Ramp-SB Off Ramp	85	-	85	negligible
	S of Nichols Rd Off-Ramp	85	69	85	negligible
Nichols Rd Ramps/	I-15 NB On-Ramp	74	68	75	+1
	I-15 NB Off-Ramp	74	67	75	+1
	I-15 SB Off-Ramp	75	67	76	+1
	I-15 SB On-Ramp	74	68	75	+1
Nichols Rd/	W of I-15	76	62	76	negligible

(Giroux, 2016a, Table 6)

The traffic noise between the freeway and the western Mine driveway would measurably increase (by +4 dB CNEL) during a 24-hour haul event. By Year 2035, the only perceptible noise increase would be along the short segment of Nichols Road up to the western driveway. Along the freeway mainline, the noise impact would be masked to imperceptible levels both north and south of Nichols Road. (Giroux, 2016a, p. 12)

The significance threshold is an increase of +3 dB which creates or worsens an area of noise incompatibility with the City's Noise Element. In the absence of any sensitive receiver locations along the potentially impacted Nichols Road segment, and with the anticipated infrequency of 24-hour hauling events, the trucking noise impact associated with such events, in comparison to the

annual average CNEL, is considered less than significant under Year 2035 build-out conditions. (Giroux, 2016a, p. 12)

Threshold b. Would the Project result in exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?

A. Mining Equipment Groundborne Noise and Groundborne Vibration Impacts

Table 4.8-2 presents the reference vibration noise levels for typical operational equipment. The proposed Project would not require any vibratory rollers, but may require large bulldozers (the second highest reference source for vibration). Utilizing the equation presented previously in Subsection 4.8.6.E, and based on the distance to the nearest sensitive receptor (i.e., residential use located approximately 386~~414~~ feet from the closest potion of the EDA), the following identifies the Project's worst-case impact for vibration-related noise at the nearest structure: (Caltrans, 2013, p. 37)

$$PPV_{Equipment} = 0.089(25/386~~414~~)^{1.1} \text{ (in/sec)}$$
$$PPV_{Equipment} = 0.089(0.064~~804~~)^{1.1} \text{ (in/sec)}$$
$$PPV_{Equipment} = 0.089(0.049~~356~~) \text{ (in/sec)}$$
$$PPV_{Equipment} = 0.0044~~1~~ \text{ in/sec}$$

As shown above, Project-related mining equipment would result in a maximum PPV value of 0.0044~~1~~ in/sec at the nearest residence. This value is below the 0.01 in/sec threshold established by the City of Lake Elsinore Municipal Code § 17.176.020. Based on these calculations, the Project would result in less-than-significant impacts associated with groundborne vibration or groundborne noise during on-going mining operations.

~~C.~~B. Blasting Activity Groundborne Noise and Groundborne Vibration Impacts

Blasting to loosen hard-rock deposits under the proposed Project would increase from approximately five to six blasts per year, to a maximum of eight blasts per year, with an expected average of between six to eight blasts per year. The relationship between tonnage production and number of blasts is not fixed; rather, it varies based on production needs, benching/pit development, and drilling equipment availability (Project Applicant, 2016c). ~~continue on the same frequency as occurs for current mining operations and operations that historically occurred over the baseline period.~~ Under the proposed Project, the location of blasting would move north or east-ward in the EDA. As the area of blasting moves into the EDA, the separation distance to the Temescal Canyon High School to the south and the closest homes to the southeast will decrease. Blasting noise is a single event phenomenon that can vary with the charge weight and any intervening physical terrain. The amount of charge weight is limited by federal regulations as a function of the distance between the blast site and the nearest protected structure unless seismic monitoring is conducted during the blast event to verify that excessive vibration has not been created. For a distance separation of "D" feet, in the range of 300 to 5,000 feet, the following federal blasting standards apply: (Giroux, 2016a, p. 21)~~(Giroux, 2015a, p. 13)~~

With seismic monitoring: 1.00 inch/sec PPV
With no seismic monitoring: allowable charge weight (pounds) must be less than $(D/55)^2$

Because charge weight may be variable as a function of separation distance, and aggregate mining blasting is commonly performed into a stair-stepped hillside partially blocking the air blast wave,

there is no way to generalize the sound intensity. Blasting is an existing condition and charge weights would decrease as activities move closer to existing homes for vibration protection (pursuant to the equation provided above). Blasting noise levels would not be substantially greater at off-site sensitive uses, particularly since the blasting frequency would only increase by up to 2-3 blasts per year~~remain unchanged on a daily or monthly basis~~, although the total duration that the site may be subject to blasting (i.e., years) would increase under the Project. (Giroux, 2016a, p. 21)~~(Giroux, 2015a, p. 13)~~ Furthermore, all blasting operations in the City require a permit from the Director of Community Development authorizing such activities and are subject to the standards established in Lake Elsinore Municipal Code § 17.144.080, requiring the attenuation of noise. All blasting also would be subject to the conditions of the blasting permit. Accordingly, the Project would have a less-than-significant impact regarding ground borne vibration associated with blasting, and no mitigation is warranted.

Threshold e. For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

The nearest public airport to the Project site is the March Air Reserve Base, located approximately 11.8 miles northeast of the Project site. The Project site is located outside of the Influence Area of this airport as shown in the Riverside County Airport Land Use Commission March Air Reserve Base Map, and is not subject to substantial noise levels associated with existing airport operations (RCALUC, 2014, Map MA-1). The nearest private airport to the Project site is the Skylark Field Airport, a small private airport located approximately 5.7~~6.0~~ miles southwest of the Project site (Google Earth, 2015). The Project site is located outside of the Influence Area of this airport as shown in the Riverside County Airport Land Use Commission Skylark Airport Map, and is not subject to substantial noise levels associated with existing airport operations (RCALUC, 2004). There are no conditions associated with the proposed Project that would contribute to airport noise or the exposure of additional people to unacceptable levels of airport noise. Thus, the Project would have a less than significant impact regarding exposure of people residing or working in the Project area to excessive noise levels.

Threshold f. For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?

The Project site is not located near any private airfields or airstrips. The nearest private airstrip to the Project site is the McConville Airstrip located approximately 6.~~5~~0 miles southwest of the Project site. The Project does not include construction, operation, or use of any private airstrips, and would not introduce any new sensitive receptors to the Project area. Therefore, the proposed Project has no potential to result in a safety hazard for people living or residing in the Project area. No impacts would occur as a result of implementation of the proposed Project.

4.8.8 CUMULATIVE IMPACT ANALYSIS

The cumulative impact analysis considers operation of the proposed Project in conjunction with other development projects in the vicinity of the Project site that have the potential to contribute to Project-related operational or haul truck trip noise. The analysis of potential cumulative impacts is divided into three general topics of discussion combining the Thresholds of Significance (listed in Subsection 4.8.5) into groupings of like topics.

A. Substantial Permanent or Temporary Noise Increase (Thresholds a, c, and d)

1. Short-Term Cumulative Construction-Related Noise Impacts

Because the Project does not propose to construct any new buildings, there would be no cumulative construction impacts as a result of the proposed Project (refer to the discussion under thresholds a, c, and d above).

2. Long-Term Cumulative Transportation-Related Noise Impacts

Truck traffic associated with the Project would generally not travel east on Nichols Road, due to the lack of market demand easterly of the Mine; thus, the Project would result in only nominal traffic-related noise increases along Nichols Road east of the existing eastern access driveway~~, which is located at a distance of more than 1,600 feet from the nearest structure at the Temescal Canyon High School and approximately 1,890 feet from the nearest residential structure.~~ As indicated in Table 4.8-9 ~~and~~ through Table 4.8-12, Project-related traffic noise has the greatest potential to impact the segment of Nichols Road located between the ~~eastern~~ western access into the Mine and I-15.

Given that noise levels at 50~~-~~ feet from the centerline of Nichols Road between the ~~eastern~~ western driveway access and I-15 would increase to ~~71~~ 73 dB with Project and background traffic under 2016 and Year 2035 conditions (as shown in Table 4.8-9 ~~and~~ through Table 4.8-12~~, respectively~~), and assuming a loss of 4.5 dBA for highway noise propagation over "soft" surfaces (which best characterizes the undeveloped nature of intervening lands), the cumulative noise levels at the nearest classroom building at Temescal Canyon High School would be approximately ~~48~~50.5 dBA, which is well below the 70 dBA CNEL noise level that is considered "Normally Acceptable" by Riverside County General Plan Table N-1 (Riverside County, 2003a). ~~daytime standard of 65 dB Leq (10-minute) for school uses.~~ The Project's contribution would be up to 4 dBA along the segment of Nichols Road located west of the Mine's western driveway access; however, given a distance of approximately 2,000 feet between the western driveway and the nearest classroom, the Project's contribution to noise levels at the nearest classroom would be less than 3.0 dBA, would not be readily perceptible, and would be less-than-cumulatively considerable.

Noise levels at the nearest residential structure ~~(which is designated by the County General Plan for VLDR land uses)~~ would be less than ~~48~~50.5 dBA, which is considered "Normally Acceptable" by Riverside County General Plan Table N-1~~which is below the Riverside County Noise Ordinance daytime noise standard of 55 dB Leq (10 min)~~. ~~However, it is possible that the nearest residential structure would be exposed to cumulative traffic-related noise levels exceeding the County Noise Ordinance nighttime standard of 45 dB Leq (10 min).~~ ~~Given that t~~The Project's contribution ~~is only 2~~would be up to 4 dBA along the segment of Nichols Road located west of the Mine's ~~eastern~~ western driveway access~~;~~, however, ~~and~~ given a distance of ~~1,890~~approximately 2,490 feet between the ~~eastern~~ western driveway and the nearest residential home, the Project's contribution to noise levels at the nearest existing residence would be less than 3.0 dBA, would not be readily perceptible, and would be less-than-cumulatively considerable.

Additionally, ~~although~~ cumulative traffic noise levels ~~would~~ may expose the nearby gas station to noise levels exceeding the 70 dBA Ldn ~~the City's daytime standards under Year 2035 conditions and nighttime standards~~ under both Year 2016 and Year 2035 scenarios. As shown in Table 4.8-3, 70 dBA Ldn is the noise limit which is considered "Clearly Acceptable." However, the data presented in Table 4.8-9 and Table 4.8-12 demonstrates that the Project's contribution to noise

affecting the gas station would be negligible (i.e., less than 3.0 dBA). As such, the Project's transportation-related noise impacts at the gas station would be less-than-cumulatively considerable.

3. Long-Term Cumulative Operational Noise Impacts

As previously shown in Table 4.8-7, Project operational activities would not expose the existing gas station or the nearest school building at the Temescal Canyon High School to noise levels in excess of the applicable daytime or nighttime standards for these uses. However, the nearest residential structures southeast of the Mine (which is designated by the County for VLDR) would be exposed to operational noise levels up to 58 ~~7~~ dB Leq (10 min). This level of noise would exceed the County's daytime noise standard of 50 ~~5~~ dB Leq (10 min) and nighttime noise standard of 40 ~~5~~ dB Leq (10 min). Additionally, the nearest residential structures southwest of the Mine would be exposed to operational noise levels up to 41 dB Leq (10 min) which would exceed the County's nighttime noise standard of 40 dB Leq (10 min). When the Project's operational noise is combined with background traffic as well as traffic increases associated with the Project, the Project's noise impact to the nearby residential uses represents a cumulatively considerable impact during daytime and nighttime hours.

B. Groundborne Vibration and Groundborne Noise (Threshold b)

The proposed Project's mining activities in the EDA would include blasting. Blasting is an existing condition at the Mine and charge weights would decrease as activities move closer to existing homes for vibration protection, per federal standards. Blasting noise levels would not be substantially greater at off-site sensitive uses than occurs under existing conditions, particularly since the blasting frequency would only increase incrementally ~~remain unchanged~~. (Giroux, 2016a, p. 21)~~(Giroux, 2015a, p. 13)~~ There are no other land uses within the Project's immediate vicinity that have the potential to contribute to the Project's blasting-related noise and vibration in a manner that could result in cumulatively considerable impacts. Accordingly, Project-related groundborne noise and vibration associated with blasting activities would be less-than-cumulatively considerable.

As indicated under the analysis of Threshold b., Project-related mining equipment would result in a maximum PPV value of 0.004 ~~1~~ in/sec at the nearest residence. This value is below the 0.01 in/sec threshold established by the City of Lake Elsinore Municipal Code § 17.176.020. There are no other sources of groundborne vibration or noise that could contribute to the Project's less-than-significant impacts due to operational equipment-related vibration effects. Accordingly, Project impacts due to groundborne vibration and noise would be less-than-cumulatively considerable.

C. Public and Private Airport-Related Noise Levels (Thresholds e and f)

The proposed Project does not involve the construction, operation, or use of any public airports or public use airports. There are no conditions associated with the Project that would contribute airport noise or exposure of additional people to unacceptable levels of airport noise. Only two new employees would be introduced to the Project site as a result of the Project, and mining employees are not considered sensitive receptors for noise. Accordingly, the Project would have no potential to cumulatively contribute to impacts associated with noise from a public airport, public use airport, or private airstrip. Accordingly, cumulatively considerable impacts would not occur.

4.8.9 SIGNIFICANCE OF IMPACTS BEFORE MITIGATION

Threshold a, c, and d: Significant Direct and Cumulatively Considerable Impact: Impacts associated with Project-related traffic would be less than significant on both a direct and cumulatively considerable basis. Operational (mining) related noise would be less than significant at the nearest Temescal Canyon High School building and at the nearby gas station. However, noise associated with the Project's mining operations could exceed the County's Noise Ordinance criteria for ~~eight~~ residential structures located east of El Toro Road and south of Nichols Road during both day and nighttime hours when mining activities occur within ~~500~~794 feet of the residential structures (daytime) where a direct line of sight exists, or within between 1,820~~250~~ or ~~500~~603 feet (nighttime) of the residential structures~~,~~ depending on whether line-of-sight exists. Additionally, residences to the southwest of the Mine and located within 3,200 feet of the Mine could be impacted during nighttime hours where a direct line of sight exists and when mining activities are occurring within 3,200 feet of the nearest home. These operational impacts also are cumulatively considerable because the Project's operational noise would combine with background noise levels, such as traffic-related noise.

Threshold b: Less-than-Significant Impact. The Project would not expose persons to or generate excessive groundborne vibration noise levels.

Thresholds e and f: Less-than-Significant Impact. The Project would have a less--than--significant impact regarding impacts to airstrips and airports, due to the Project's distance and location outside of the March Air Reserve Base influence policy area, location outside of the Skylark Field Airport influence policy area and distance from the McConville airstrip. As such, the Project would not expose people to excessive noise levels associated with a public airport or public use airport.

4.8.10 MITIGATION

The following measures are recommended to reduce the proposed Project's potential noise impact to nearby residential receivers during mining operations.

~~MM 4.8-1 All trucks accessing the Mine and all mining equipment operating on site shall be equipped with mufflers that comply with the California Vehicle Code. This requirement shall be enforced by the Mine Operator.~~

~~MM 4.8-2~~MM 4.8-1 A sign shall be placed at each of the Mine's egress driveways indicating that ~~loaded~~ truck trips are prohibited from turning onto eastbound Nichols Road except during deliveries to areas east of the Mine and/or during emergency conditions.

~~MM 4.8-3~~MM 4.8-2 Noise-generating mining activities in the Expanded Disturbance Area (EDA) shall be prohibited from occurring ~~during~~ within ~~1,250~~1,820 feet of any occupied residential structure located southeast of the EDA during the nocturnal hours of 10:00 pm and 7:00 am if a direct line-of-sight exists between the mining activity and the occupied structure(s). Noise generating mining equipment activities shall also be prohibited from occurring within 3,200 feet of any occupied structure located southwest of the Mine; however, aggregate processing and asphalt batch plant operations shall be permitted due to their noise generation being less than significant when no mining equipment is operating concurrently within the 3,200 feet of the nearest residence. If the line-of-site is blocked, noise-generating activities may

extend to within 603~~500~~ feet of occupied residential structures to the southeast between 10:00 p.m. and 7:00 a.m. No buffer is required to homes to the southwest. The line-of-sight is considered "blocked" if bench mining maintains a minimum 15-foot high headwall between the noise-generating mining activity and any occupied residential structure ~~to the east~~. Areas subject to nocturnal activity restrictions shall be identified by markers placed at the 1,820~~1,250~~-foot or 603~~500~~ foot-distance (depending on whether a line-of-sight exists) in the eastern portion of the Mine, and at the 3,200-foot distance in the western portion of the Mine, as measured from the nearest residential structure to the southeast or southwest.

~~MM 4.8-4~~MM 4.8-3 When mining operations during the daytime occur in the EDA within 794~~500~~ feet of ~~the nearest~~any residential structure, the Mining Operator shall provide and maintain a minimum 15-foot high headwall between noise-generating mining activities in the EDA and off-site residences to the east, whenever physically feasible.

4.8.11 SIGNIFICANCE OF IMPACTS AFTER MITIGATION

Threshold a, c, and d: Significant Direct and Cumulative Unavoidable Impact. Implementation of Mitigation Measures MM 4.8-1 ~~through~~and MM 4.8-2 would reduce the Project's operational-related noise impacts during the extended nocturnal hours (i.e., between 4:00 am and 7:00 am Monday through Friday, and between 7:00 pm and 12:00 am and between 4:00 am and 7:00 am on Saturdays, excluding Federal Holidays) to below a level of significance. However, during daytime operations, nearby residential structures located within 794 feet would be periodically exposed to noise levels up to 58~~7~~ dB Leq (10-min) when line of sight exists, which would exceed ~~the~~ Riverside County's daytime noise standard of ~~55~~50 dBA L_{50}~~eq (10 min)~~ for uses southeast of the Project site. Although Mitigation Measure MM 4.8-3 requires the Mining Operator to design mining activities in such a manner as to maintain a minimum 15-foot high headwall when feasible, which would attenuate noise levels at residential structures to below the ~~City's~~ County's daytime standard, during the course of mining operations it is likely that there will be periods of time where mining within 794~~500~~ feet of the nearest residential structure may not be fully shielded, because it is not physically feasible to maintain a 15-foot high headwall while achieving the final site elevations as proposed by RP 2006-01A2. Accordingly, the Project's daytime operational noise within the southeastern portions of the EDA represent a significant direct and cumulatively-considerable impact for which no additional feasible mitigation is available. (Giroux, 2016a, p. 23)~~(Giroux, 2015a; Giroux, 2015b)~~

4.9 TRANSPORTATION AND CIRCULATION

The following analysis is based on a technical traffic study prepared by Urban Crossroads, titled "Amendment No. 2 to Reclamation Plan 2006-01, Traffic Impact Analysis (Revised), City of Lake Elsinore" and dated June 24, 2015 (revised ~~July 15~~April 25, 201~~65~~). This Traffic Impact Analysis (TIA) report is included as *Technical Appendix J* to this EIR (Urban Crossroads, 2016d)~~(Urban Crossroads, 2015d)~~. The TIA evaluates the potential traffic impacts that may result from the development of the proposed Project. As directed by City of Lake Elsinore staff, the TIA was prepared in accordance with the County of Riverside's Traffic Impact Analysis Preparation Guide (August 2008), the California Department of Transportation (Caltrans) Guide for the Preparation of Traffic Impact Studies (December 2002), and direction provided to Urban Crossroads during their consultation with City of Lake Elsinore staff during the scoping process (Urban Crossroads, 2016d, p. 1)~~(Urban Crossroads, 2015d, p. 1)~~.

4.9.1 SCOPE OF REVIEW

The Nichols Canyon Mine, as discussed in Section 2.0, *Environmental Setting*, is an existing, ongoing surface mining operation operating pursuant to vested mining rights and an approved reclamation plan (RP 2006-01A1), which was analyzed in a prior MND. The Project proposes certain amendments to existing entitlements, as described in Section 3.0, *Project Description*. Although the City has chosen to prepare an EIR for the Project here, the scope of review addresses those impacts resulting from the Project as described in Section 3.0, *Project Description*, and not impacts related to existing, approved operations, which form the environmental baseline, as discussed in Subsection 2.7, *Existing Physical Site Condition*. As disclosed in Section 3.0, *Project Description*, an asphalt batch plant is an existing, approved, on-site use pursuant to Conditional Use Permit No. CUP 2014-07 approved by the City of Lake Elsinore in 2015. Thus, the batch plant has already been approved by the City along with a CEQA environmental compliance document that was not challenged by any third party. During the public comment period on the DEIR, several third parties incorrectly asserted that the DEIR failed to adequately analyze the proposed Project's impacts. Several of these commentators also incorrectly claimed that the DEIR needed to re-analyze and include the batch plant's impacts as part of this EIR. While the City disagrees with these claims because the batch plant has already been approved under CUP 2014-07 and previously evaluated in an approved MND Addendum that was not challenged, in an effort to provide a conservative and overly-inclusive analysis of the Project's impacts on the environment (as opposed to potentially underestimating the Project's impacts), and to remove this issue from being a point of contention, this EIR includes analyses of the batch plant's impacts in all relevant CEQA Appendix G topics. Accordingly, this Subsection analyzes traffic impacts related to the currently-proposed Project as well as the previously-approved asphalt batch plant~~specifically~~. This Subsection does not analyze traffic impacts related to existing, approved mining operations~~,~~ (with the exception of the previously approved asphalt batch plant) because the approved mining operations are a baseline condition and not a part of the proposed Project.~~except as part of the cumulative impacts analysis, where required.~~

4.9.2 PROJECT EXISTING BASELINE CONDITIONS

As noted previously in EIR Section 2.1, the environmental baseline for this analysis is the Mine's average production level between 2007 and 2014, which was 556,348 tons per year. The Project proposes to reduce the Mine's permitted production level from 4 million tons per year to 856,560 tons per year. This analysis, therefore, analyzes the incremental impacts resulting from a proposed maximum increase in production from 556,348 to 856,560 tons per year. Thus, on an annual basis,

the Project-related maximum annual tonnage increase over baseline conditions would be approximately 300,212 tons per year, or 35.05% of the total annual tonnage that would be allowed under the proposed Project. A mine, however, does not produce material uniformly throughout the year; production levels tend instead to vary with market demand on a daily basis. Based on operational history,~~The Project Applicant estimates that~~ a reasonable high-end estimate of daily tonnage at the site is approximately 5,000 tons per day (tpd), with approximately 3,248 tpd associated with the Mine's existing operations (i.e., baseline conditions) while the remaining 1,752 tpd are attributable to the proposed Project (refer also to EIR Subsection 3.3.2.B). For purposes of the analysis in this section, it is anticipated that the Project ~~will~~ would be fully operational by Year 2016. (Urban Crossroads, 2016d, p. 1)~~(Urban Crossroads, 2015d, p. 1)~~ Additionally, the Project proposes to increase the hours of operation of the Mine from 7:00 am and 12:00 am (Monday through Friday, excluding Federal Holidays) and between 7:00 am and 7:00 pm (Saturdays only) to between 4:00 am and 12:00 am (Monday through Saturday, excluding Federal Holidays) for mining equipment and asphalt batch plant operation and 24 hours per day (Monday through Saturdays, excluding Federal Holidays) for aggregate export activities. (Urban Crossroads, 2016d, p. 3)~~(Urban Crossroads, 2015d, p. 3)~~

4.9.3 EXISTING CONDITIONS

This ~~s~~Subsection describes existing conditions for roadways, traffic counts, truck trips, intersections, traffic signals, freeways, mass transit, and pedestrian/bicycle facilities, each of which is described below. The study area includes intersections where the Project was anticipated to contribute 50 or more peak hour trips (Urban Crossroads, 2016d, p. 5)~~(Urban Crossroads, 2015d, p. 5)~~. Intersections that receive less than 50 peak hour trips from a project are considered to be less than significantly impacted on direct and cumulatively considerable bases by the City of Lake Elsinore (using direction provided by the County of Riverside's Traffic Impact Analysis Preparation Guide), and therefore do not require detailed study.

A. Existing Roadways

Within the Project's study area are Project driveway intersections at Nichols Road and the I-15 northbound and southbound ramps at Nichols Road. Under existing conditions, Nichols Road east of I-15 is improved as a two-lane undivided roadway, but is ultimately is planned by the City of Lake Elsinore's General Plan Circulation Element as an Urban Arterial with six lanes and a right-of-way of 120 feet (Lake Elsinore, 2011a, Figure 2.3).

The following four study area intersections, which are depicted on Figure 4.9-1, *Intersection Analysis Locations*, are located in the Project's traffic impact study area.~~,~~ As shown later in this section on Figure 4.9-5, *Project Only Traffic Volumes (in PCE)*, and with exception of the intersection of I-15 Southbound Ramps at Nichols Road, ~~because~~ the~~y~~ intersections listed below would likely receive 50 or more peak hour trips from the proposed Project. Under existing conditions, the I-15 freeway operates at a Level of Service (LOS) B or C. Pursuant to Caltrans' Guidelines, for State highway facilities that are currently approaching unstable traffic flow conditions (LOS "C" or "D"), a traffic impact study is required when a Project will add between 50 to 100 peak hour trips to the affected facility (Caltrans, 2002, p. 2). Although the intersection of I-15 Southbound Ramps at Nichols Road would receive fewer than 50 peak hour trips from the Project, this intersection has nonetheless been considered in the analysis for the purposes of disclosure. (Urban Crossroads, 2016d, p. 19)~~(Urban Crossroads, 2015d, p. 19)~~:

1) I-15 Southbound Ramps/Nichols Road (Jurisdiction: Caltrans, Lake Elsinore)
2) I-15 Northbound Ramps/Nichols Road (Jurisdiction: Caltrans, Lake Elsinore)
3) Driveway 1/Nichols Road (Jurisdiction: Lake Elsinore)
4) Driveway 2/Nichols Road (Jurisdiction: Lake Elsinore)

B. Existing (2015) Traffic Counts

The intersection level of service (LOS) analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected by Urban Crossroads in May 2015. The following peak hours were selected for analysis (Urban Crossroads, 2016d, p. 27)~~(Urban Crossroads, 2015d, p. 27)~~:

- Weekday AM Peak Hour (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM Peak Hour (peak hour between 4:00 PM and 6:00 PM)

The weekday AM and weekday PM peak hour count data is representative of typical weekday peak hour traffic conditions in the study area. There were no observations made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes, and nearby schools were in session and operating on normal schedules. (Urban Crossroads, 2016d, p. 27)~~(Urban Crossroads, 2015d, p. 27)~~ The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1 of the Project's Traffic Impact Analysis (*EIR Technical Appendix J*). These raw turning volumes have been flow conserved between intersections with limited access, no access and where there are currently no uses generating traffic (e.g., between ramp-to-arterial intersections, etc.). The traffic counts collected in May 2015 include the following vehicle classifications (Urban Crossroads, 2016d, p. 27)~~(Urban Crossroads, 2015d, p. 27)~~:

- Passenger Cars
- 2-Axle Trucks
- 3-Axle Trucks
- 4 or More Axle Trucks

To represent the influence large trucks, buses and recreational vehicles have on traffic flow; all trucks were converted into Passenger Car Equivalents (PCEs). By their size alone, these larger vehicles occupy the same space as more than one passenger car. In addition, the time it takes for them to accelerate and slow-down is also much longer than for passenger cars, and varies depending on the type of vehicle and number of axles. For the purpose of this analysis, a PCE factor of 1.5 has been applied to 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for 4+-axle trucks to estimate each turning movement. These factors are consistent with the values recommended for use in the San Bernardino County Congestion Management Program (CMP) and exceed the 2.0 factor recommended for use in the County of Riverside Traffic Study Guidelines. (Urban Crossroads, 2016d, p. 27; RCTD, 2008, Exhibit C)~~(Urban Crossroads, 2015d, p. 27; RCTD, 2008, Exhibit C)~~

Existing weekday average daily traffic (ADT) volumes on arterial highways throughout the study area are shown on Figure 4.9-2, *Existing (2015) Traffic Volumes (in PCE)*. Existing weekday AM and weekday PM peak hour intersection volumes (in PCE) are also shown in this exhibit.

C. Existing Daily Truck Trips

Table 4.9-1, *Peak Hour Trips as a Percentage of ADT,* illustrates the number of daily truck trips per day for the existing Mine site. This data indicates the typical operational characteristics of mining

Table 4.9-1 Peak Hour Trips as a Percentage of ADT

	Dates												Average	Total	Hourly
Time	1/13/15	2/25/15	3/10/15	4/15/15	5/20/14	6/26/14	7/11/14	8/28/14	9/2/14	10/7/14	11/18/14	12/11/14	Hourly Trips	Trips	%
12:00 AM															
1:00 AM															
2:00 AM															
3:00 AM															
4:00 AM															
5:00 AM															
6:00 AM															
7:00 AM	6	12	11	6	4	5	6	14	12	7	3	6	8	92	11.8%
8:00 AM	6	15	9	10	5	4	8	9	10	4	11	8	8	99	12.7%
9:00 AM	8	14	13	9	10	7	5	8	8	6	6	9	9	103	13.2%
10:00 AM	8	11	13	9	15	3	7	11	11	8	12	11	10	119	15.3%
11:00 AM	7	12	15	9	12	3	4	11	11	5	3	6	8	98	12.6%
12:00 PM	7	10	12	7	9	9	5	13	6	8	6	5	8	97	12.4%
1:00 PM	8	3	11	10	8	2	7	5	2	6	14	3	7	79	10.1%
2:00 PM	6	0	13	10	6	1	7	3	4	4	5	4	5	63	8.1%
3:00 PM	1	1	8	0	4	1	2	1	0	3	0	2	2	23	2.9%
4:00 PM	1	2	1	2	1	0	0	0	0	0	0	0	1	7	0.9%
5:00 PM															
6:00 PM															
7:00 PM															
8:00 PM															
9:00 PM															
10:00 PM															
11:00 PM															
Total Tickets:	58	80	106	72	74	35	51	75	64	51	60	54	65	780	100.0%

*Data supplied by Project Applicant for the existing Nichols Mine site.
Source: (Urban Crossroads, 2016d, Table 4-4)~~(Urban Crossroads, 2015d, Table 4-4)~~

operation where truck activity is heaviest in the late morning hours (at 10 AM, after the typical morning peak hour of 7-9 AM), then remains relatively steady during the early afternoon hours, and finally tapers off the mid to late afternoon hours. (Urban Crossroads, 2016d, p. 40) ~~(Urban Crossroads, 2015d, p. 40)~~

1. Existing Intersection Operations Analysis

Existing peak hour traffic operations were evaluated at existing study area intersections based on the analysis methodologies presented in Section 2.2, *Intersection Capacity Analysis*, of the TIA (*EIR Technical Appendix J*). The Level of Service (LOS) for study area intersections during peak hours are summarized in Table 4.9-2, *Intersection Analysis for Existing (2015) Conditions*. This table also shows that the existing study area intersections currently operate at an acceptable LOS during the morning and evening peak hours (Urban Crossroads, 2016d, p. 29) ~~(Urban Crossroads, 2015d, p. 29)~~.

D. Existing Traffic Signal Warrants Analysis

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. No study area intersections currently warrant a traffic signal for existing traffic conditions. (Urban Crossroads, 2016d, p. 29)~~(Urban Crossroads, 2015d, p. 29)~~

Table 4.9-2 Intersection Analysis for Existing (2015) Conditions

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service		Acceptable LOS
			Northbound			Southbound			Eastbound			Westbound							
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM	
1	I-15 SB Ramps/ Nichols Rd.	AWS	0	0	0	0	1	0	0	1	1	1	1	0	11.7	12.9	B	B	D
2	I-15 NB Ramps / Nichols Rd.	CSS	0	1	0	0	0	0	1	1	0	0	1	0	18.5	21.4	C	C	D
3	Dwy. 1 / Nichols Rd.	CSS	0	0	0	0	0	1	0	1	0	0	1	0	10.1	8.9	B	A	C
4	Dwy. 2 / Nichols Rd.	CSS	0	0	0	0	0	0	1	1	0	0	1	0	7.9	7.5	A	A	C

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = Defacto Right Turn Lane
[2] Per the 2010 Highway Capacity Manual, overall average intersection delay, and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.
[3] CSS = Cross-street Stop; AWS = All-way Stop
Source: (Urban Crossroads, 2016d, Table 3-1)~~(Urban Crossroads, 2015d, Table 3-1)~~

E. Existing Freeway Conditions

1. Existing Freeway Traffic Volumes

I-15 mainline volume data were obtained from the Caltrans Performance Measurement System (PeMS) website for the segments of the I-15 Freeway interchange, north of Nichols Road. The data was obtained from May 2015. To conduct a conservative analysis, the maximum value observed within the three day period was utilized for the weekday morning (AM) and weekday evening (PM) peak hours. In addition, truck traffic, represented as a percentage of total traffic, is used for the purpose of this analysis to avoid overstating traffic volumes and peak hour deficiencies. As such, actual vehicles (as opposed to PCE volumes) are utilized for the purposes of the basic freeway segment analysis. (Urban Crossroads, 2016d, pp. 15-16)~~(Urban Crossroads, 2015d, pp. 15-16)~~

2. Existing Freeway Mainline Segment Levels of Service

Freeway mainline analysis locations were selected for study based on the Caltrans Guide for the Preparation of Traffic Impact Studies (2002) (Caltrans, 2002). Caltrans recommends that impacts on State highway system (SHS) facilities be studied when a project would add over 100 peak hour trips to a SHS facility, would add between 50 and 100 peak hour trips to a SHS facility experiencing noticeable delay (LOS C or D), or would add any number of peak hour trips to a SHS facility experiencing significant delay (LOS E or F) which Caltrans requests be studied. In the vicinity of the Project site, I-15 operates at LOS B and C (see Table 4.9-3, *Basic Freeway Segment Analysis for Existing (2015) Conditions*). Although the Project is calculated to contribute fewer than 50 peak hour trips to I-15, the northbound and southbound freeway segments north of Nichols Road and south of Nichols Road are evaluated in the Project's TIA for purposes of information disclosure, because these freeway segments would carry the highest volume of Project-related peak hour traffic (Urban Crossroads, 2016d, p. 6) ~~(Urban Crossroads, 2015d, p. 6)~~.

As shown in Table 4.9-3, the basic freeway segments analyzed for this study were found to operate at an acceptable LOS during the peak hours. (Urban Crossroads, 2016d, p. 34)~~(Urban Crossroads, 2015d, p. 34)~~

Table 4.9-3 Basic Freeway Segment Analysis for Existing (2015) Conditions

Freeway	Direction	Mainline Segment	Lanes[1]	Volume		Truck %	Truck %	Density[2]		LOS	
				AM	PM	AM	PM	AM	PM	AM	PM
I-15 Freeway	SB	North of Nichols Road	3	2,859	4,253	2%	1%	14.9	22.6	B	C
		South of Nichols Road	3	2,919	4,316	2%	1%	15.3	23.0	B	C
	NB	North of Nichols Road	3	3,476	3,261	1%	1%	18.1	17.0	C	B
		South of Nichols Road	3	3,513	3,425	2%	1%	18.4	17.8	C	B

[1] Number of lanes are in the specified direction and is based on existing conditions
[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).
Source: (Urban Crossroads, 2016d, Table 3-3)~~(Urban Crossroads, 2015d, Table 3-3)~~

3. Existing Freeway Merge/Diverge Levels of Service

The following freeway ramp junctions for each direction of flow as listed below were evaluated in the Project's TIA (Urban Crossroads, 2016d, p. 6)~~(Urban Crossroads, 2015d, p. 6)~~:

1. I-15 Freeway- Southbound, Off-Ramp at Nichols Road (Diverge)
2. I-15 Freeway- Southbound, On-Ramp at Nichols Road (Merge)
3. I-15 Freeway- Northbound, On-Ramp at Nichols Road (Merge)
4. I-15 Freeway- Northbound, Off-Ramp at Nichols Road (Diverge)

The Project is anticipated to contribute fewer than 50 peak hour trips to these freeway merge/diverge ramp junction locations (Urban Crossroads, 2016d, p. 6)~~(Urban Crossroads, 2015d, p. 6)~~. Nonetheless, an analysis of ramp merge and diverge operations in these locations are presented in Table 4.9-4, *Intersection Analysis for Existing (2015) Conditions*. As shown in Table 4.9-4, the freeway ramp merge and diverge areas currently operate at LOS D or better. (Urban Crossroads, 2016d, p. 34)~~(Urban Crossroads, 2015d, p. 34)~~

Table 4.9-4 Intersection Analysis for Existing (2015) Conditions

Freeway	Direction	Ramp or Segment	Lanes on Freeway[1]	AM Peak Hour		PM Peak Hour	
				Density[2]	LOS	Density[2]	LOS
I-15 Freeway	SB	Off-Ramp at Nichols Road	3	21.1	C	28.3	D
		On-Ramp at Nichols Road	3	19.5	B	26.3	C
	NB	On-Ramp at Nichols Road	3	18.7	B	17.6	B
		Off-Ramp at Nichols Road	3	24.5	C	24.2	C

[1] Number of lanes are in the specified direction and is based on existing conditions
[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).
Source: (Urban Crossroads, 2016d, Table 3-4)~~(Urban Crossroads, 2015d, Table 3-4)~~

4. Existing Freeway Off-Ramp Queuing Analysis

A queuing analysis was performed for the off-ramps at the I-15 Freeway and Nichols Road interchange to assess vehicle queues for the off ramps that may potentially result in deficient peak

hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-15 Freeway mainline. As shown in Table 4.9-5, *Peak Hour Freeway Off-Ramp Queuing Summary for Existing (2015) Conditions*, there are no movements that are currently experiencing queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. (Urban Crossroads, 2016d, p. 29)~~(Urban Crossroads, 2015d, p. 29)~~

Table 4.9-5 Peak Hour Freeway Off-Ramp Queuing Summary for Existing (2015) Conditions

Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet)[2]		Acceptable?[1]	
			AM Peak Hour	PM Peak Hour	AM	PM
I-15 SB Off-Ramp / Nichols Rd.	SBL/T/R	1,600	53	38	Yes	Yes
I-15 NB Off-Ramp / Nichols Rd.	NBL/T/R	1,530	78	110	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.
[2] Maximum queue length for the approach reported.
Source: (Urban Crossroads, 2016d, Table 3-2)~~(Urban Crossroads, 2015d, Table 3-2)~~

F. Existing Mass Transit

The study area is currently served by the Riverside Transit Authority (RTA), a public transit agency serving the unincorporated Riverside County region. There are currently no existing bus routes that serve the roadways within the study area in close proximity to the Project site. Transit service is reviewed and updated by RTA periodically to address ridership, budget, and community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate. (Urban Crossroads, 2016d, p. 27)~~(Urban Crossroads, 2015d, p. 27)~~

G. Existing Pedestrian and Bicycle Facilities

The trails and bikeway system, shown on Exhibits 3-6 and 3-7 of the Project's TIA (*Technical Appendix J*), depict proposed trails in the area. As shown, a regional trail along the east side of the I-15 Freeway and along Nichols Road is planned within the study area. Class II bike lanes also are proposed for Nichols Road within the study area. Field observations collected by Urban Crossroads in April 2015 indicate nominal pedestrian and bicycle activity within the study area. There are limited pedestrian and bicycle facilities within the study area. The only sidewalk provided is along Nichols Road to the west of the I-15 Freeway. (Urban Crossroads, 2016d, p. 19)~~(Urban Crossroads, 2015d, p. 19)~~ Refer to Subsection 3.4 of the Project's TIA (*Technical Appendix J*) for a detailed summary of the planned pedestrian and bicycle facilities in the Project site's vicinity.

H. Existing Airport Facilities

The nearest airport to the Project site is the Skylark Airport, which is a private facility utilized primarily for skydiving and is located approximately 5.5 miles southwest of the Project site. The nearest public airport is the March Air Reserve Base, located approximately ~~12.4~~11.8 miles northeast of the Project site. The Project site is not located within the Airport Influence Area for any public airport, and is located more than two miles from any private airstrips. Additionally, there are no

heliports in the vicinity of the Project site. (RCIT, 2015; Google Earth, 2015; RCALUC, 2014, Map MA-1)

4.9.4 APPLICABLE REGULATORY REQUIREMENTS

A. SCAG Regional Transportation Plan (RTP)

The Southern California Association of Governments (SCAG) is a regional agency established pursuant to California Government Code §6500, also referred to as the Joint Powers Authority law. SCAG is designated as a Council of Governments (COG), a Regional Transportation Planning Agency (RTPA), and a Metropolitan Planning Organization (MPO). The Project site is within SCAG's regional authority. On April 4, 2012, SCAG adopted a Regional Transportation Plan (RTP) with goals to: 1) maximize mobility and accessibility for all people and goods in the region; 2) ensure travel safety and reliability for all people and goods in the region; 3) preserve and ensure a sustainable transportation system; 4) maximize productivity of the transportation system; 5) protect the environment, improve air quality, and promote energy efficiency; 6) encourage land use and growth patterns that complement the transportation investments and improve the cost-effectiveness of expenditures; and 7) maximize the security of the transportation system (SCAG, 2012a, p. 13). Performance measures and funding strategies also are included to ensure that the adopted goals are achieved through implementation.

As an MPO and public agency, SCAG develops transportation policies that transcend local jurisdictional boundaries and that affect the quality of life for Southern California as a whole. SCAG's *2012-2035 Regional Transportation Plan / Sustainable Communities Strategy* (*RTP/SCS*) includes a chapter titled "Goods Movement" that is applicable to the proposed Project. It states that mining makes up one percent of the goods movement dependent industries, which collectively contribute to 34 percent of the region's gross domestic product of $253 billion in 2010 (SCAG, 2012b, p. 10 and Figure 2). To that end, the Goods Movement section of the RTP/SCS sets forth regional strategies to achieve an efficient movement of goods. It recognizes that the SCAG region will experience dramatic increases in truck traffic on east-west corridors that will cause increased congestion and longer delays to both trucks and general traffic on existing routes (SCAG, 2012b, p. 20). The Goods Movement section of the RTP/SCS suggests the construction of a regional freight corridor that would increase capacity to accommodate the projected growth in truck activity, but such a corridor is not yet in the planning stages (SCAG, 2012b, p. 13). Other strategies also are presented, such as highway strategies, bottleneck strategies, rail strategies, and capacity enhancements on the existing infrastructure system. (SCAG, 2012b)

B. Riverside County Congestion Management Program (CMP)

The Riverside County CMP was prepared by the Riverside County Transportation Commission (RCTC) in accordance with Proposition 111. Deficiencies along the Congestion Management Program (CMP) system are identified by RCTC when they occur so that improvement measures can be identified. Understanding the reason for these deficiencies and identifying ways to reduce the impact along a critical CMP corridor is intended to conserve scarce funding resources and help target those resources appropriately. In the Project study area I-15 is designated as a Riverside County CMP facility. (RCTC, 2011, p. 2-5)

C. Riverside County Integrated Project (RCIP)

The RCIP is Riverside County's comprehensive, three-part, integrated program to determine future habitat conservation, transportation, and housing and economic needs in Riverside County. The RCIP addresses traffic congestion by addressing future traffic and multi-model circulation issues through the Community & Environmental Transportation Acceptability Process (CETAP). This element of RCIP identifies the locations for new transportation facilities that will help benefit commuters and serve Riverside County's growing economy. Selection of new transportation corridors are intended to be integrated with decisions on land use and environmentally sensitive areas. (Riverside County, 2003b)

D. City of Lake Elsinore General Plan Community Form Element

The City of Lake Elsinore General Plan Community Form Element includes a section that addresses circulation in the City. The Circulation portion of this Element is designed to provide mobility for resents and to facilitate business. To help meet traffic demands and achieve balanced growth, the City has adopted specific goals and policies, which serve as the basis for their Circulation Element. Refer to Subsection 3.2 of *EIR Technical Appendix J* for a detailed summary of the General Plan's circulation policies and requirements. (City of Lake Elsinore, 2011a, p. 2-22)

E. Local and Regional Funding Mechanisms

Transportation improvements throughout the City of Lake Elsinore are funded through a combination of project-specific mitigation, fair-share contributions, and/or development impact fee programs, such as Western Riverside Council of Governments (WRCOG) Transportation Uniform Mitigation Fee Program (TUMF) program or the City's Traffic Infrastructure Fee (TIF) program. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors, including but not limited to need and available funding. (Urban Crossroads, 2016d, p. 8)~~(Urban Crossroads, 2015d, p. 8)~~

1. Transportation Uniform Mitigation Fee (TUMF) Program

The Western Riverside Council of Governments (WRCOG) established a consolidated Transportation Uniform Mitigation Fee (TUMF) program for all of western Riverside County, which commenced in 2003. The establishment of TUMF was based on the desire to establish a single, uniform fee program to mitigate the cumulative impacts of new development on the sub-region's arterial highway system rather than having multiple and potentially uncoordinated fee programs across the region. WRCOG is responsible for establishing and updating TUMF payment rates, based on a TUMF Program Nexus Study, which is periodically updated to consider the impact of future development on the subregion's system of highways and arterial roads. Between 2003 when TUMF commenced and June 2015~~4~~, WRCOG had received $6~~4~~2,647,520~~05 million~~ in revenues through the TUMF program (WRCOG, 2015, p. 13). The City of Lake Elsinore is located in the TUMF's Southwest Zone, along with the cities of Canyon Lake, Murrieta, Temecula, and Wildomar, and parts of unincorporated Riverside County. Between 2003 and June 2015 the Southwest Zone received $208 million in revenues through the TUMF program, of which projects in the City of Lake Elsinore are reported to have contributed $19,000,118~~17,190,568~~ (WRCOG, 2015, p. 13)~~(WRCOG, 2014, p. 13)~~. During this time, 84~~78~~ TUMF-funded improvements have been completed which demonstrates that TUMF is an effective program (WRCOG, 2015, p. 25). To-date, 10 TUMF-funded projects have been completed in the Southwest Zone and 11~~2~~ others are in the planning, engineering, or

construction phase, which represent $34.8 million in TUMF investment. (WRCOG, 2015, pp. 44, 55)

Payment of TUMF fees, as well as exemptions, credits, reimbursements, and local administration is deferred to local government agencies. WRCOG serves this function for the City of Lake Elsinore. Regarding credits, the County may grant to developers a credit against the specific components of fees for the dedication of land or the construction of facilities identified in the list of improvements funded by TUMF. Fees submitted to the County are passed on to the WRCOG as the ultimate program administrator. (Urban Crossroads, 2016d, p. 8)~~(Urban Crossroads, 2015d, p. 8)~~

Table 1-4 of the Project's TIA (*Technical Appendix J*), *Summary of Improvements by Analysis Scenario*, provides a summary of improvements that are programmed to be funded by TUMF within the Project's study area.

2. City of Lake Elsinore Traffic Infrastructure Fee Program

The City of Lake Elsinore created its own local TIF program to impose and collect fees from new residential, commercial, and industrial development for the purpose of funding roadways and intersections necessary to accommodate City growth as identified in the City's General Plan Circulation Element. The City of Lake Elsinore's TIF program includes facilities that are not part of, or which may exceed improvements identified and covered by, the TUMF program. As a result, the pairing of the regional and local fee programs provides a more comprehensive funding and implementation plan to ensure an adequate and interconnected transportation system. Under the City of Lake Elsinore's TIF program, the City of Lake Elsinore may grant to developers a credit against specific components of fees when those developers construct certain facilities and landscaped medians identified in the list of improvements funded by the TIF program. (Urban Crossroads, 2016d, p. 10)~~(Urban Crossroads, 2015d, p. 10)~~

The timing of the use of TIF fees is established through periodic capital improvement programs which are overseen by the City of Lake Elsinore's Public Works Department. Periodic traffic counts, review of traffic accidents, and a review of traffic trends throughout the City of Lake Elsinore are also periodically performed by City of Lake Elsinore staff and consultants. The City of Lake Elsinore uses this data to determine the timing of implementing the improvements listed in its TIF facilities list. (Urban Crossroads, 2016d, p. 10)~~(Urban Crossroads, 2015d, p. 10)~~

As shown in Table 1-4 of the Project's TIA (*Technical Appendix J*), a few of the facilities within the Project's study area are planned for improvements through the City of Lake Elsinore's TIF Program. Table 1-4 shows that the study area intersections of I-15 southbound and northbound ramps at Nichols Road are covered by the TIF. The Project would be subject to the City of Lake Elsinore's TIF fee program, and would pay the requisite City of Lake Elsinore TIF fees at the rates then in effect pursuant to the City of Lake Elsinore's ordinance. The TIF network improvement needs were last updated in 2002 with an expected completion date by 2025. Improvements are identified in the Nexus Study by location rather than with specific geometrics. Table E of the Nexus Study identifies TIF improvement locations and eligible program costs but does not provide discrete improvements. (Urban Crossroads, 2016d, p. 10)~~(Urban Crossroads, 2015d, p. 10)~~

4.9.5 METHODOLOGY FOR ESTIMATING PROJECT-RELATED TRAFFIC IMPACTS

A. Level of Service (LOS)

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flow conditions, to LOS F, representing breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow. (Urban Crossroads, 2016d, p. 11)~~(Urban Crossroads, 2015d, p. 11)~~ Table 4.9-6, *Signalized Intersection LOS Thresholds,* Table 4.9-7, *Unsignalized Intersection LOS Thresholds*, Table 4.9-8, *Description of Freeway Mainline LOS* and Table 4.9-9, *Description of Freeway Merge and Diverge LOS*, summarize typical operational conditions at signalized and unsignalized intersections; freeway mainlines; and freeway merge and diverge for each LOS classification, respectively.

LOS has been used as the basis for determining the significance of traffic impacts as standard practice in CEQA documents for decades. In 2013, California Senate Bill (SB) 743 was passed, which is intended to balance the need for LOS for traffic planning with the need to build infill housing and mixed use commercial developments within walking distance of mass transit facilities, downtowns, and town centers and to provide greater flexibility to local governments to balance these sometimes competing needs. At full implementation of SB 743, the California Governor's Office of Planning and Research is expected to replace LOS as the metric against which traffic impacts are

Table 4.9-6 Signalized Intersection LOS Thresholds

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A	F
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B	F
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C	F
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D	F
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E	F
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F	F

Source: (Urban Crossroads, 2016d, Table 2-1)~~(Urban Crossroads, 2015d, Table 2-1)~~

Table 4.9-7 Unsignalized Intersection LOS Thresholds

Description	Average Control Delay Per Vehicle (Seconds)	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Little or no delays.	0 to 10.00	A	F
Short traffic delays.	10.01 to 15.00	B	F
Average traffic delays.	15.01 to 25.00	C	F
Long traffic delays.	25.01 to 35.00	D	F
Very long traffic delays.	35.01 to 50.00	E	F
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F	F

Source: (Urban Crossroads, 2016d, Table 2-2)~~(Urban Crossroads, 2015d, Table 2-2)~~

Table 4.9-8 Description of Freeway Mainline LOS

Level of Service	Description	Density Range (pc/mi/ln)[1]
A	Free-flow operations in which vehicles are relatively unimpeded in their ability to maneuver within the traffic stream. Effects of incidents are easily absorbed.	0.0 – 11.0
B	Relative free-flow operations in which vehicle maneuvers within the traffic stream are slightly restricted. Effects of minor incidents are easily absorbed.	11.1 – 18.0
C	Travel is still at relative free-flow speeds, but freedom to maneuver within the traffic stream is noticeably restricted. Minor incidents may be absorbed, but local deterioration in service will be substantial. Queues begin to form behind significant blockages.	18.1 – 26.0
D	Speeds begin to decline slightly and flows and densities begin to increase more quickly. Freedom to maneuver is noticeably limited. Minor incidents can be expected to create queuing as the traffic stream has little space to absorb disruptions.	26.1 – 35.0
E	Operation at capacity. Vehicles are closely spaced with little room to maneuver. Any disruption in the traffic stream can establish a disruption wave that propagates throughout the upstream traffic flow. Any incident can be expected to produce a serious disruption in traffic flow and extensive queuing.	35.1 – 45.0
F	Breakdown in vehicle flow.	>45.0

[1] pc/mi/ln = passenger cars per mile per lane.
Source: (Urban Crossroads, 2016d, Table 2-4)~~(Urban Crossroads, 2015d, Table 2-4)~~

Table 4.9-9 Description of Freeway Merge and Diverge LOS

Level of Service	Density Range (pc/mi/ln)[1]
A	≤10.0
B	10.0 – 20.0
C	20.0 – 28.0
D	28.0 – 35.0
E	>35.0
F	Demand Exceeds Capacity

[1] pc/mi/ln = passenger cars per mile per lane.
Source: (Urban Crossroads, 2016d, Table 2-5)~~(Urban Crossroads, 2015d, Table 2-5)~~

evaluated, with a metric based on vehicle miles traveled (VMT). In the VMT CEQA Guidelines Proposal, published on January 20, 2016, OPR indicated "that analysis of vehicle miles traveled will be voluntary for two years following the adoption of the new Guidelines. . . This opt-in period will enable those agencies that are ready to make the switch from level of service to vehicle miles traveled to do so, but gives time to other agencies" (OPR, 2016, pp. 3,6). At the time the NOP for this EIR was released (June 25, 2015) and at the time this RDEIR was prepared, a VMT metric and final Guidelines ~~was~~were not published by OPR, and the City of Lake Elsinore in its capacity as Lead Agency, as well as surrounding local agencies in which the Project's traffic would circulate, continue to make use of LOS as the significance criteria for evaluating a Project's traffic impacts. For this reason, a LOS metric and not a VMT metric is appropriately used as the significance criterion in this EIR. It should also be noted that once Guidelines are updated to use VMT by the City of Lake Elsinore, it is likely that the proposed Project would be consistent with the provisions of SB 743 due to the Mine's location adjacent to the I-15 freeway. Additionally, the Project would increase the amount aggregate materials available in the Temescal Valley, thereby reducing the distance aggregate materials must be transported by displacing trips that otherwise would have originated from a mining site located further than the Project site.

2. Minimum Level of Service (LOS)

The Project's study area for traffic includes facilities that are under the jurisdiction of the City of Lake Elsinore and/or Caltrans. A discussion of the LOS standards utilized by these agencies is provided below.

❑ City of Lake Elsinore

The definition of an intersection deficiency in the City of Lake Elsinore is based on the City of Lake Elsinore General Plan Circulation Element. The City of Lake Elsinore General Plan states that target LOS D be maintained along City roads (including intersections) wherever possible. As an exception, the City's General Plan allows for LOS E operations in the Historic Area of the City within the Main Street overlay and the City's Ballpark District. However, the proposed Project is not located within the Main Street overlay or the City's Ballpark District. As such, LOS D is the minimum LOS at the Project's study area intersections under the City's jurisdiction. (Urban Crossroads, 2016d, p. 17)~~(Urban Crossroads, 2015d, p. 17)~~

❑ Caltrans

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State Highway System (SHS) facilities; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than this target LOS, the existing LOS should be maintained. In general, the region-wide goal for an acceptable LOS on all freeways, roadway segments, and intersections is LOS D. Consistent with the City of Lake Elsinore LOS threshold of LOS D and in excess of the Riverside County Congestion Management Program (CMP) stated LOS threshold of LOS E, LOS D is the target LOS for freeway ramps, freeway segments, and freeway merge/diverge ramp junctions. (Urban Crossroads, 2016d, pp. 17-18)~~(Urban Crossroads, 2015d, pp. 17-18)~~

B. Intersection Capacity Analysis

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The Highway Capacity Manual (HCM) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. The HCM uses different procedures depending on the type of intersection control. (Urban Crossroads, 2016d, p. 11)~~(Urban Crossroads, 2015d, p. 11)~~

For signalized intersections, the City of Lake Elsinore requires signalized intersection operations analysis based on the methodology described in the HCM. Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections LOS is directly related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 4.9-1. Per the *Caltrans Guide for the Preparation of Traffic Impact Studies*, the traffic modeling and signal timing optimization software package Synchro (Version 8 Build 806) was utilized to analyze signalized intersections under Caltrans' jurisdiction, which include interchange to arterial ramps (i.e. I-15 Freeway ramps at Nichols Road) (Urban Crossroads, 2016d, p. 12)~~(Urban Crossroads, 2015d, p. 12)~~.

For unsignalized intersections, the City of Lake Elsinore requires the operations of unsignalized intersections be evaluated using the methodology described the HCM. The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 4.9-7). (Urban Crossroads, 2016d, p. 13)~~(Urban Crossroads, 2015d, p. 13)~~

At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. For all-way stop controlled intersections, LOS is computed for the intersection as a whole. (Urban Crossroads, 2016d, p. 13)~~(Urban Crossroads, 2015d, p. 13)~~

C. Freeway Off-Ramp Queuing Analysis

The Project's study area includes the freeway-to-arterial interchange of the I-15 Freeway at Nichols Road off-ramps. Consistent with Caltrans requirements, the 95th percentile queuing of vehicles has been assessed at the off-ramps to determine potential queuing deficiencies at the freeway ramp intersections on Nichols Road. Specifically, the queuing analysis is utilized to identify any potential queuing and "spill back" onto the I-15 Freeway mainline from the off-ramps. (Urban Crossroads, 2016d, p. 13)~~(Urban Crossroads, 2015d, p. 13)~~

The traffic progression analysis tool and HCM intersection analysis program, Synchro, was used to assess the potential impacts/needs of the freeway ramps with traffic added from the proposed Project. Storage (turn-pocket) length recommendations at the ramps are based upon the 95th percentile queue resulting from the Synchro progression analysis. The 95th percentile queue is the maximum back of queue with 95th percentile traffic volumes. The queue length reported is for the lane with the highest queue in the lane group. (Urban Crossroads, 2016d, p. 13)~~(Urban Crossroads, 2015d, p. 13)~~ For more information on the freeway ramp queuing and freeway mainline segment analysis methodology, refer to *Technical Appendix J*.

D. Traffic Signal Warrant Analysis

The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or ascertain the potential need for installation of a traffic signal at an otherwise unsignalized intersection. The signal warrant criteria presented in the latest edition of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), as amended by the MUTCD 2014 California Supplement, is used for all study area intersections (Urban Crossroads, 2016d, p. 14)~~(Urban Crossroads, 2015d, p. 14)~~. For more information on signal warrant methodology, refer to Subsection 2.4 of *Technical Appendix J*.

Traffic signal warrant analyses were performed for the following unsignalized study area intersections during the peak weekday conditions wherein the Project is anticipated to contribute the highest trips (Urban Crossroads, 2016d, pp. 14-15)~~(Urban Crossroads, 2015d, pp. 14-15)~~:

1) I-15 Southbound Ramps/Nichols Road (Jurisdiction: Caltrans, Lake Elsinore)
2) I-15 Northbound Ramps/Nichols Road (Jurisdiction: Caltrans, Lake Elsinore)
3) Driveway 1/Nichols Road (Jurisdiction: Lake Elsinore)
4) Driveway 2/Nichols Road (Jurisdiction: Lake Elsinore)

A signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant (Urban Crossroads, 2016d, p. 15) ~~(Urban Crossroads, 2015d, p. 15)~~

E. Freeway Mainline Segment Analysis

Pursuant to the Caltrans Guide for the Preparation of Traffic Impact Studies (2002), Caltrans recommends that impacts on State highway system (SHS) facilities be studied when a project would add over 100 peak hour trips to a SHS facility, would add between 50 and 100 peak hour trips to a SHS facility experiencing noticeable delay (LOS C or D), or would add any number of peak hour trips to a SHS facility experiencing significant delay (LOS E or F) which Caltrans requests be studied. In the vicinity of the Project site, I-15 operates at LOS B and C (see Table 4.9-3)~~, so impacts only require study if the Project would add more than 50 peak hour trips, which it would not~~. Also, deficiencies to freeway segments caused by a project's traffic dissipate with distance from the point that the project's traffic enters the SHS, which for the proposed Project are the Nichols Road ramps at I-15. Even though the Project's impacts to the SHS would be less than significant on a direct basis (because the Project would contribute less than 50 peak hour trips), the Project's TIA evaluates the I-15 freeway segments on both sides of the Nichols Road ramps for information disclosure purposes in order to assess the potential for cumulatively considerable impacts to occur. (Urban Crossroads, 2016d, p. 15; Caltrans, 2002)~~(Urban Crossroads, 2015d, p. 15; Caltrans, 2002)~~

The freeway system in the study area has been broken into segments defined by the freeway-to-arterial interchange locations. The freeway segments evaluated in the Project's TIA (*EIR Technical Appendix J*) are based upon peak hour directional volumes, and the freeway segment analysis is based on the methodology described in the HCM and performed using HCS2010 software. The

performance measure preferred by Caltrans to calculate LOS is density. Density is expressed in terms of passenger cars per mile per lane. Table 4.9-8 summarizes the freeway segment LOS thresholds for each density range utilized for the analysis. (Urban Crossroads, 2016d, p. 15)~~(Urban Crossroads, 2015d, p. 15)~~ For a more detailed discussion of freeway mainline segment analysis methodology, refer to *EIR Technical Appendix J*.

F. Freeway Merge/Diverge Ramp Junction Analysis

For analysis purposes, the freeway system in the study area has been broken into segments defined by freeway-to-arterial interchange locations resulting in two existing on and off ramp locations. Although the HCM indicates the influence area for a merge/diverge junction is 1,500 feet, the Project's analysis has been performed at all ramp locations with respect to the nearest on- or off-ramp at each interchange in an effort to be consistent with Caltrans guidance/comments on other projects in the region. (Urban Crossroads, 2016d, p. 16)~~(Urban Crossroads, 2015d, p. 16)~~

The merge/diverge analysis is based on the HCM Ramps and Ramp Junctions analysis method and performed using HCS+ software. The results (reported in passenger car per mile per lane) are calculated based on the existing number of travel lanes, number of lanes at the on- and off-ramps both at the analysis junction and at upstream and downstream locations (if applicable), and acceleration/deceleration lengths at each merge/diverge point. (Urban Crossroads, 2016d, p. 16)~~(Urban Crossroads, 2015d, p. 16)~~ Table 4.9-9 summarizes the freeway merge/diverge ramp junction LOS thresholds utilized in the analysis. For more information on the freeway merge/diverge ramp junction analysis methodology, refer to Section 2.6 of *Technical Appendix J*.

G. Study Scenarios

Potential impacts to traffic and circulation are assessed herein and in *EIR Technical Appendix J* for each of the following conditions:

- Existing (2015): Existing information represents the baseline traffic conditions as they existed at the approximate time the NOP for this EIR was released for public review. Issuance of the NOP sets the baseline condition for purposes of analysis under CEQA.
- Existing plus Project (E+P): The Existing plus Project (E+P) analysis determines circulation system deficiencies that would occur on the existing roadway system in the scenario of the Project being placed upon Existing conditions.
- Existing plus Ambient Growth plus Project (EAP) (2016): The Existing plus Ambient Growth plus Project (EAP) (2016) conditions analysis determines the traffic impacts based on a comparison of the EAP traffic conditions to Existing conditions (i.e., baseline conditions). To account for background traffic growth, an ambient growth from Existing conditions of 2% is included for EAP traffic conditions.
- Existing plus Ambient Growth plus Project plus Cumulative (EAPC) (2016): The Existing plus Ambient Growth plus Project plus Cumulative (2016) (EAPC) conditions determines if improvements funded through local and regional transportation mitigation fee programs, such as the WRCOG TUMF Program and City of Lake Elsinore's TIF Program, or other approved funding mechanism can accommodate the near-term cumulative traffic at the target LOS identified in the City of Lake Elsinore General Plan.

- Horizon Year (2035), Without and With Project (2 scenarios): The Horizon Year Without and With Project traffic conditions analyses is utilized to determine if improvements funded through regional transportation mitigation fee programs, such as the TUMF or TIF programs, or other approved funding mechanism can accommodate the long-range cumulative traffic at the target LOS identified in the City of Lake Elsinore General Plan.

H. Projected Future Traffic

1. Project Trip Generation

Vehicle trip generation represents the amount of traffic that is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed by a given project. The traffic generating potential of the proposed Project has been estimated based on the increase in permitted annual production above the Project's historical baseline. (Urban Crossroads, 2016d, p. 39)~~(Urban Crossroads, 2015d, p. 39)~~ As discussed in EIR Section 2.1, under historic baseline conditions (i.e., between 2007 and 2014), the Mine produced an average of 556,348 tons per year (tpy) of aggregate materials. Under the Project, the maximum daily tonnage would theoretically increase to 856,560 tpy, or an increase of 300,212 tpy as compared to baseline conditions. Thus, increased tonnage associated with the Project represents 35.05% of the total annual tonnage that would be allowed under the revised Reclamation Plan. Based on ~~information provided by the Project Applicant, due to~~ the operational history ~~characteristics~~ of the Mine and customer demand, a high-end estimate of daily tonnage is 5,000 tons per day (tpd). Because the Project represents 35.05% of the total allowed annual tonnage, it can reasonably be assumed that the Project also would represent approximately 35.05% of the maximum daily tonnage, or approximately 1,752.5 tpd. (Urban Crossroads, 2016d, pp. 39-40)~~(Urban Crossroads, 2015d, pp. 39-40)~~ Table 4.9-10, *Total and Project Daily Truck Trips,* illustrates the breakdown of truck trips associated with the existing mining operations and the net increase proposed by the Project using a conservative estimate of 5,000 tpd (refer also to EIR Subsection 3.3.2.B). As indicated in Table 4.9-10, the proposed Project is estimated to generate 140 net new daily truck trips above the historical baseline (e.g., 400 truck trips x 35.05% = 140 new truck trips). (Urban Crossroads, 2016d, p. 40)~~(Urban Crossroads, 2015d, p. 40)~~

Table 4.9-10 Total and Project Daily Truck Trips

A. Proposed Daily Tonnage for Traffic Study (TPD):	5,000 TPD
B. Average Tons Per Truck:	25 Tons
C. One-Way Trucks Per Day (A. / B.):	200 Trucks
D. Total Two-Way Total Trucks Per Day Based on 5,000 TPD (C. X 2-trips)[1]:	400 Trucks[1]
E. Total New Project Trucks Trips Per Day (D. X D. from Table 4-1 or 35.05% of 400)[2]:	140 Trucks[2]

[1] Total trucks based on 5,000 tons per day. Total trucks per day multiplied by 2.0 to represent two-way trip ends (one inbound trip and one outbound trip).
[2] Truck trips associated with proposed Project, or net increase of 1,752 tons per day (e.g., 35.05% of 5,000 tons per day) from the existing 3,248 tons per day.
Source: (Urban Crossroads, 2016d, Table 4-3)~~(Urban Crossroads, 2015d, Table 4-3)~~

2. Project Trip Distribution

Trip distribution is the process of identifying the probable destinations, directions, or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and

surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. (Urban Crossroads, 2016d, p. 40)~~(Urban Crossroads, 2015d, p. 40)~~

Table 4.9-11, *Average Daily and Peak Hour Project Trip Generation Summary*, illustrates the daily and peak hour trip generation of the proposed Project. As noted previously (refer to Subsection 4.9.3.B), a PCE factor has been applied to the trip generation rates for heavy trucks. As shown in Table 4.9-11, the Project is anticipated to generate a net total of approximately 425 PCE trip-ends per day with 65 PCE AM peak hour and 53 PCE PM peak hour trips. (Urban Crossroads, 2016d, p. 40)~~(Urban Crossroads, 2015d, p. 40)~~

The Project trip distribution was developed based on anticipated travel patterns to and from the Project site for both passenger cars and truck traffic. The Project trip distribution patterns for both passenger cars and trucks were developed based on an understanding of existing travel patterns in the area, the geographical location of the site, market demand distribution, and the site's proximity to the regional arterial and state highway system. The Project passenger car trip distribution patterns is

Table 4.9-11 Average Daily and Peak Hour Project Trip Generation Summary

Baseline Traffic Summary									
			AM Peak Hour			PM Peak Hour			
Land Use	Quantity	Units[1]	In	Out	Total	In	Out	Total	Daily
Existing Mine	0.556	MTPY							
Passenger Cars			2	2	4	2	2	4	16
Truck Trips[2]			20	20	40	16	16	32	260
Baseline			**22**	**22**	**44**	**18**	**18**	**36**	**276**
Baseline (PCE)[3]			**62**	**62**	**124**	**51**	**51**	**101**	**795**

Proposed Project Trip Generation Summary									
			AM Peak Hour			PM Peak Hour			
Land Use	Quantity	Units[1]	In	Out	Total	In	Out	Total	Daily
Amendment No. 2 to Reclamation Plan 2006-01	0.857	MTPY							
Passenger Cars			3	2	5	2	3	5	20
Truck Trips[2]			31	30	61	25	25	50	400
Project Trips (PCE)[3]			96	92	188	77	78	155	1,220
Net New Project Trips (Passenger Cars)			**1**	**0**	**1**	**0**	**1**	**1**	**4**
Net New Project Trips (Trucks)			**11**	**10**	**21**	**9**	**9**	**17**	**140**
Net New Project Trips (PCE)[3]			**34**	**30**	**65**	**26**	**27**	**53**	**425**

[1] MTPY = Million Tons Per Year
[2] Total Project truck trips based on typical peak operating day of 5,000 tons per day.
[3] Based on passenger car equivalent (PCE) factor of 3.0 PCE per truck.
Source: (Urban Crossroads, 2016d, Table 4-5)~~(Urban Crossroads, 2015d, Table 4-5)~~

graphically depicted on *Figure 4.9-3, Project (Passenger Car) Trip Distribution*, and the Project truck trip distribution patterns is graphically depicted on Figure 4.9-4, *Project (Truck) Trip Distribution*. Project truck traffic would be restricted by the Project's proposed SMP No. 2015-01 from heading eastbound on Nichols Road except in rare circumstances requiring delivery of aggregate or asphalt material to customers located east of the Project site. It is anticipated that truck traffic would primarily access the I-15 Freeway to the west or head westbound on Nichols Road. (Urban Crossroads, 2016d, p. 46)~~(Urban Crossroads, 2015d, p. 46)~~

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of operations occur under the revised reclamation plan and SMP No. 2015-01. Based on the identified Project traffic generation and trip distribution patterns, Project ADT and peak hour intersection turning movement volumes are shown on Figure 4.9-5, *Project Only Traffic Volumes (in PCE).* (Urban Crossroads, 2016d, p. 46)~~*(Urban Crossroads, 2015d, p. 46)*~~

3. Background Traffic

Future year traffic forecasts are based upon background (ambient) growth at 2% per year for 2016 traffic conditions. The ambient growth factor is intended to approximate regional traffic growth. This ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects. Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies. (Urban Crossroads, 2016d, p. 46)~~(Urban Crossroads, 2015d, p. 46)~~

The currently adopted SCAG 2012 RTP (April 2012) growth forecasts for the unincorporated areas of the City of Lake Elsinore identifies projected growth in population of 50,200 in 2008 to 93,800 in 2035, or a 86.9 percent increase over the 27 year period. The change in population equates to roughly a 2.34 percent growth rate compounded annually. Similarly, growth over the same 27 year period in households is projected to increase by 96.6 percent, or 2.54 percent annual growth rate. Finally, growth in employment over the same 27 year period is projected to increase by 95.1 percent, or a 2.51 percent annual growth rate. (Urban Crossroads, 2016d, p. 46)~~(Urban Crossroads, 2015d, p. 46)~~

Based on a comparison of Existing traffic volumes to the Horizon Year (2035) forecasts, the average growth rate is estimated at approximately 10.22 percent compounded annually between Existing and Horizon Year (2035) traffic conditions. The annual growth rate at each individual intersection is not lower than 9.12 percent compounded annually to as high as 11.76 percent compounded annually over the same time period. Therefore, the annual growth rate utilized for the purposes of this analysis would appear to conservatively approximate the anticipated regional growth in traffic volumes in the City of Lake Elsinore for both EAPC and Horizon Year (2035) traffic conditions, especially when considered along with the addition of Project-related traffic. As such, the growth in traffic volumes assumed in this TIA would tend to overstate as opposed to understate the potential deficiencies to traffic and circulation. (Urban Crossroads, 2016d, p. 50)~~(Urban Crossroads, 2015d, p. 50)~~

4. Cumulative Impact Analysis

CEQA Guidelines § 15130 requires that an EIR disclose the impact from the Project along with the incremental impacts from closely related past, present, and reasonably foreseeable future projects (i.e., cumulative impact analysis). A cumulative project list was developed by the Project's traffic consultant (Urban Crossroads) through consultation with planning and engineering staff from the City of Lake Elsinore. The cumulative project list includes known and foreseeable projects that are anticipated to contribute traffic to the study area intersections. In addition, the County of Riverside was also contacted to obtain near-by cumulative projects that could potentially contribute traffic at the study area intersections. (Urban Crossroads, 2016d, p. 50)~~(Urban Crossroads, 2015d, p. 50)~~

The cumulative projects provided by the City of Lake Elsinore and County of Riverside are provided in Appendix 4.1 to the Project's TIA (*EIR Appendix J*). The list of cumulative development projects was reviewed by Urban Crossroads to determine which projects would likely contribute measurable traffic (i.e. 50 or more peak hour trips) through the study area intersections (e.g., those cumulative projects in close proximity to the proposed Project). For the purposes of this analysis, the cumulative projects that were determined to affect one or more of the study area intersections are shown on Figure 4.9-6, *Cumulative Development Projects Location Map*, and listed on Table 4.9-12, *Summary of Cumulative Development Projects.* (Urban Crossroads, 2016d, p. 50)~~(Urban Crossroads, 2015d, p. 50)~~

Any other cumulative projects that are not expected to contribute measurable traffic to study area intersections have not been considered in the analysis because the traffic from those projects would have dissipated in volume (due to the distance from the Project site and study area intersections) to the point that any nominal traffic would be captured by the 2% annual ambient growth rate applied in the analysis calculations. Similarly, any additional traffic generated by other projects not on the cumulative projects list is accounted for through background ambient growth factors that have been applied to the peak hour volumes at study area intersections. (Urban Crossroads, 2016d, p. 50)~~(Urban Crossroads, 2015d, p. 50)~~

5. Near-Term Traffic Forecasts

To provide a comprehensive assessment of potential transportation network deficiencies, two types of analyses, "buildup" and "buildout," were performed as part of the TIA. The "buildup" method was used to approximate the EAP traffic forecasts includes background traffic, and is intended to identify the peak hour LOS deficiencies on both the existing and planned near-term circulation system, described below in the following paragraph. The "buildup" method was also utilized to approximate the EAPC traffic forecasts, and is intended to identify the LOS deficiencies on both the existing and planned near-term circulation system. The EAPC traffic forecasts include background traffic, traffic generated by other cumulative development projects within the study area, and the traffic generated by the proposed Project. The "buildout" approach is used to forecast the Horizon Year Without and With Project conditions of the study area, as described in the following section. (Urban Crossroads, 2016d, pp. 50, 55)~~(Urban Crossroads, 2015d, pp. 50, 55)~~

The "buildup" approach combines existing traffic counts with a background ambient growth factor to forecast the near-term 2016 traffic conditions. An ambient growth factor of 2% (2016) accounts for background (area-wide) traffic increases that occur over time, up to the year 2016 from the year 2015 (two percent per year growth over a one year period). Traffic volumes generated by the Project are

Table 4.9-12 Summary of Cumulative Development Projects

No.	Project Name	Location	Land Use	Quantity[1]	
City of Lake Elsinore					
LE1	Greenwald[2]	Lake Elsinore	Shopping Center	104.450	TSF
LE2	Ramsgate	Lake Elsinore	Single Family Residential	1,012	DU
			Condo/Townhomes	120	DU
LE3	Trieste Residential (Tract 36624)	Lake Elsinore	Single Family Residential	75	DU
LE4					
LE5	1400 Minthorn Street[3]	Lake Elsinore	Single Family Residential	84	DU
LE6	Spyglass Ranch[4]	Lake Elsinore	Single Family Residential	523	DU
			Condo/Townhomes	171	DU
			Shopping Center	145.00	TSF
LE7	South Shore I (Tract 31593)[5]	Lake Elsinore	Single Family Residential	521	DU
	South Shore II (Tract 36567)[5]	Lake Elsinore	Single Family Residential	147	DU
LE8	La Strada (Tract 32077)	Lake Elsinore	Single Family Residential	134	DU
LE9	Tuscany West (Tract 25473)[5]	Lake Elsinore	Single Family Residential	164	DU
LE10	Marina Village Condos (Tract 33820)[6]	Lake Elsinore	Condo/Townhomes	94	DU
LE11	Watersedge[5]	Lake Elsinore	Single Family Residential	170	DU
			Condo/Townhomes	250	DU
			Apartments	110	DU
			Office	54.600	TSF
			Hotel	150	RM
			Boat/Watercraft Dealers & Service	50.000	TSF
			Mini-Warehouse (Boat & Watercraft Stora	76.000	TSF
			Shopping Center	86.600	TSF
	Cottages by the Lake	Lake Elsinore	Condo/Townhomes	169	DU
LE12	Tessera[5]	Lake Elsinore	Single Family Residential	90	DU
LE13	TAG Property[6]	Lake Elsinore	New Car Sales	50.000	TSF
LE14	City Center Condos[6]	Lake Elsinore	Condo/Townhomes	144	DU
LE15	Lake View Villas	Lake Elsinore	Condo/Townhomes	155	DU
LE16	Diamond Specific Plan[7]	Lake Elsinore	Condo/Townhomes	600	DU
			Hotel	150	RM
			General Office	425.000	TSF
			Shopping Center	472.000	TSF
LE17	The Colony[6]	Lake Elsinore	Apartments	211	DU
	Back Basin Specific Plan & East Lake Specific Plan	Lake Elsinore	Single Family Residential	2,407	DU
			Condo/Townhomes	324	DU
	John Laing Homes (Phase 2)	Lake Elsinore	Single Family Residential	506	DU
			Condo/Townhomes	1,141	DU
			Apartments	308	DU
			Shopping Center	117.000	TSF
LE18	Canyon Hills Estates (Tract 34249)	Lake Elsinore	Single Family Residential	302	DU
	Canyon Hills (Multiple Tracts)	Lake Elsinore	Single Family Residential	2,700	DU
			Apartments	1,575	DU
	Audie Murphy (Tract 36484)	Lake Elsinore	Single Family Residential	109	DU
	Audie Murphy (Tract 36485)	Lake Elsinore	Single Family Residential	1,003	DU

Source: (Urban Crossroads, 2016d, Table 4-6)~~(Urban Crossroads, 2015d, Table 4-6)~~

Table 4.9-12 Summary of Cumulative Development Projects (Continued)

No.	Project Name	Location	Land Use	Quantity[1]	
LE19	Gruneto Hills	Lake Elsinore	Single Family Residential	191	DU
LE20	Hotel at 17584 Lawrence Way	Lake Elsinore	Hotel	57	RM
LE21	Alberhill Ridge (Tract 35001)	Lake Elsinore	Single Family Residential	1,056	DU
			Apartments	345	DU
			Shopping Center	679.000	TSF
			General Office	679.000	TSF
LE22	Alberhill Ranch	Lake Elsinore	Single Family Residential	1,986	DU
LE23	Lake Elsinore Walmart	Lake Elsinore	Free-Standing Discount Superstore	154.487	TSF
			Specialty Retail	4.600	TSF
			Fast Food w/Drive Thru	6.800	TSF
			Fast Food w/o Drive Thru	4.600	TSF
LE24	Circle K	Lake Elsinore	Gas Station	4.500	TSF
LE25	Alberhill Villages	Lake Elsinore	Single Family Residential	9,536	DU
LE26	Terracina	Lake Elsinore	Single Family Residential	365	DU
LE27	Encore at Cambria Hills	Lake Elsinore	Single Family Residential	214	DU
LE28	Family Dollar Store	Lake Elsinore	Discount Store	8.320	TSF
LE29	Fisherman's Wharf	Lake Elsinore	Fisherman's Wharf	12.748	TSF
LE30	Wake Rider Beach Resort	Lake Elsinore	Beach Resort	11.350	TSF
LE31	Lakeshore Town Center	Lake Elsinore	Town Center	237.400	TSF
LE32	Ortega	Lake Elsinore	Single Family Residential	105	DU
LE33	Summerly	Lake Elsinore	Single Family Residential	142	DU
LE34	Beazer, KB Homes, McMillin Homes, Richmond American	Lake Elsinore	Single Family Residential	395	DU
LE35	Village at Lake Elsinore SPA #1	Lake Elsinore	Single Family Residential	163	DU
LE36	Lake Shore Pointe Phase I	Lake Elsinore	Single Family Residential	43	DU
			Apartments	161	DU
LE37	Golden Corral Restaurant	Lake Elsinore	Restaurant	7.798	TSF
County of Riverside					
RC1	Lennar (Tract 31792)	County of Riverside	Single Family Residential	191	DU
RC2	PM33840	County of Riverside	Single Family Residential	4	DU
RC3	PP20158R1	County of Riverside	Storage Facility	103.727	TSF
RC4	CUP03651	County of Riverside	Recycling Facility	0.504	TSF
City of Wildomar					
W1	Rancon Monte Vista Residential (TTM No. 31409, APN: 367-110-007, 367-110-008)	Wildomar	SFDR	126	DU
W2	Wildomar Walmart	Wildomar	Free-Standing Discount Superstore	200.000	TSF
			Specialty Retail	3.900	TSF
			Fast-food with Drive-Through	126.000	TSF
W3	Cornerstone Church Pre-School Expansion (PUP No. 778)[4]	Wildomar	Pre-School/Day Care	180	STU
W4	Sehremelis PAR (TTM 29426, APN:367-250-007)	Lake Elsinore	SFDR	80	DU
W5	Subway (Case No. 10-0222, APN:366-390-026, 366-390-027)	Wildomar	Specialty Retail	10.500	TSF

Source: (Urban Crossroads, 2016d, Table 4-6)~~(Urban Crossroads, 2015d, Table 4-6)~~

Table 4.9-12 Summary of Cumulative Development Projects (Continued)

No.	Project Name	Location	Land Use	Quantity[1]	
W6	Orange Bundy (TPM 30522, APN: 367-100-024, 367-100-026)	Wildomar	Retail	79.497	TSF
			Fast Food w/Drive Thru	1.500	TSF
			Gas Station w/ Market	6	VFP
W7	Bundy Canyon Plaza (Case No. 08-0179, TPM 32257, APN:367-100-019)	Wildomar	Retail	33.800	TSF
			Fast Food w/Drive Thru	6.200	TSF
			Gas Station w/ Market	12	VFP

[1] TSF = Thousand Square Feet; DU = Dwelling Unit; AC = Acres; STU = Students;
VFP = Vehicle Fueling Positions
[2] Source: Greenwald Avenue Commercial Center TIA, Urban Crossroads, Inc., May 2008.
[3] Source: 1400 Minthorn Street Traffic Study Report, ASM Consulting, August 2007.
[4] Source: Spyglass Ranch TIA (Revised), Kunzman Associates, February 2007.
[5] Source: Porto Romano SP TIA (Revised), Urban Crossroads, Inc., May 2007.
[6] Source: Lake Elsinore TAG Property TIA (Revised), Urban Crossroads, Inc., August 2008.
[7] Source: The Diamond Specific Plan TIA, Urban Crossroads, Inc., April 2009.
Source: (Urban Crossroads, 2016d, Table 4-6)~~(Urban Crossroads, 2015d, Table 4-6)~~

then added to assess the EAP and EAPC traffic conditions. The 2016 roadway network is consistent with ~~similar to~~ the existing conditions roadway network~~ with the exception of future roadways and intersections proposed to be developed by the Project~~.

6. Horizon Year (2035) Volume Development

The Horizon Year (2035) With Project traffic conditions were derived from the Riverside County Transportation Analysis Model (RivTAM) using accepted procedures for model forecast refinement and smoothing. The "buildout" approach was used to forecast the Horizon Year Without and With Project conditions of the study area. The "buildout" approach utilizes a cumulative impact network using RivTAM, which includes transportation networks and land uses expected to occur within the City of Lake Elsinore and surrounding areas within Riverside County with General Plan buildout. The traffic forecasts reflect the area-wide growth anticipated between Existing conditions and Horizon Year conditions and comprise the "buildout" approach. The "buildup" approach utilizes a 2% ambient growth factor to account for background traffic increases, while the "buildout" approach accounts for growth through the buildout of the General Plans for jurisdictions located within the Project's study area. In most instances the traffic model zone structure is not designed to provide accurate turning movements along arterial roadways unless refinement and reasonableness checking is performed. Therefore, the Horizon Year With Project peak hour forecasts were refined using the model derived long-range forecasts, along with existing peak hour traffic count data collected at each analysis location in May 2015. Future estimated peak hour traffic data was used for new intersections and intersections with an anticipated change in travel patterns to further refine the Horizon Year With Project peak hour forecasts. Refer Section 4.8 in *Technical Appendix J* for additional details regarding how horizon year calculations were conducted. (Urban Crossroads, 2016d, p. 55)~~(Urban Crossroads, 2015d, p. 55)~~

4.9.6 BASIS FOR DETERMINING SIGNIFICANCE

The proposed Project would result in a significant impact to the transportation and circulation system if the Project or any Project-related component would:

a. *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*

b. *Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?*

c. *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*

d. *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

e. *Result in inadequate emergency access?*

f. *Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities)?*

The above-listed thresholds are derived directly from Section XVI of Appendix G to the CEQA Guidelines and address typical adverse effects associated with transportation and traffic. (OPR, 2009).

A. Determining Significance of Impacts

This Subsection outlines the methodology used in this analysis related to identifying circulation system deficiencies.

Intersections

The following types of traffic deficiencies are considered to be significant under CEQA (Urban Crossroads, 2016d, p. 18)~~(Urban Crossroads, 2015d, p. 18)~~:

- A "Direct Impact" would occur if Project traffic, when added to existing traffic, deteriorates the LOS from LOS D or better to LOS E or F.
- A "Cumulatively Considerable Impact" would occur if cumulative traffic exceeds the target LOS D, and ~~the Project contributes~~the Project would contribute 50 or more peak hour trips to the affected intersection. However, in an effort to provide a conservative analysis of Project impacts to intersections, the analysis herein assumes that cumulatively-considerable impacts could occur if the Project were to contribute 25 or more peak hour trips to the affected intersection.

Caltrans Facilities

To determine whether the addition of Project traffic to the SHS freeway segments would result in a deficiency, the following is utilized (Urban Crossroads, 2016d, p. 18)~~(Urban Crossroads, 2015d, p. 18)~~:

- A "Direct Impact" would occur if Project-related traffic were to cause a freeway segment to degrade from LOS D or better to LOS E or F.

- A "Cumulatively Considerable Impact" also would occur if the Project would exacerbate an already deficient condition by contributing 50 or more peak hour trips ("Cumulatively Considerable Impact"). A segment that is currently or projected to operate at or near capacity is deemed to be deficient.

4.9.7 IMPACT ANALYSIS

Threshold a: Would the Project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

The proposed Project has the potential to result in or contribute to the degradation of roadway intersections and off-ramps to below the target LOS D. Provided below is an assessment of LOS within the study area under E+P, EAP (2016), EAPC (2016), and horizon year (2035) conditions.

A. Existing plus Project Traffic Impact Analysis (E+P)

This subsection presents an analysis of existing traffic volumes plus traffic generated by Project (Existing plus Project, or E+P). The E+P analysis includes an evaluation of the intersection operations, off-ramp queuing, traffic signal warrants, basic freeway segment analysis, and freeway merge/diverge analysis. Figure 4.9-7*, E+P Traffic Volumes (in PCE)*, shows the ADT and peak hour intersection turning movement volumes, which can be expected for E+P traffic conditions. (Urban Crossroads, 2016d, p. 57)~~(Urban Crossroads, 2015d, p. 57)~~

1. Intersection Operations Analysis

E+P peak hour traffic operations have been evaluated for the study area intersections. The intersection analysis results are summarized in Table 4.9-13, *Intersection Analysis for E+ P Conditions*, which indicates that the study area intersections are anticipated to continue to operate at acceptable LOS under E+P traffic conditions, consistent with Existing traffic conditions.

Table 4.9-13 Intersection Analysis for E+ P Conditions

#	Intersection	Traffic Control[2]	Existing (2015)				Existing Plus Project				Acceptable LOS	Significant Impact?
			Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service			
			AM	PM	AM	PM	AM	PM	AM	PM		
1	I-15 SB Ramps / Nichols Rd. I-15	AWS	11.7	12.9	B	B	12.2	13.2	B	B	D	No
2	NB Ramps / Nichols Rd.	CSS	18.5	21.4	C	C	20.5	23.4	C	C	D	No
3	Dwy. 1 / Nichols Rd.	CSS	10.1	8.9	B	A	10.5	9.0	B	A	C	No
4	Dwy. 2 / Nichols Rd.	CSS	7.9	7.5	A	A	8.1	7.5	A	A	C	No

[1] Per the 2010 Highway Capacity Manual, overall average intersection delay, and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay, and level of service for the worst individual movement (or movements sharing a single lane) are shown.
[2] CSS = Cross-street Stop; AWS = All-way Stop
Source: (Urban Crossroads, 2016d, Table 5-1)~~(Urban Crossroads, 2015d, Table 5-1)~~

A summary of the peak hour intersection LOS for E+P conditions are shown on Exhibit 5-2 of *EIR Technical Appendix J*. As such, the Project's impacts to study area intersections under E+P conditions would be less than significant. (Urban Crossroads, 2016d, p. 57)~~(Urban Crossroads, 2015d, p. 57)~~ A summary of the peak hour intersection LOS for E+P conditions are shown on Figure 4.9-8, *Summary of Peak Hour Intersection LOS for E+P Conditions.*

2. Basic Freeway Segment Analysis

As previously noted, the Project would generate fewer than 50 peak hour trips to nearby segments of I-15. Pursuant to the Caltrans Guide for the Preparation of Traffic Impact Studies (2002), Caltrans recommends that impacts on State highway system (SHS) facilities be studied when a project would add over 100 peak hour trips to a SHS facility, or when a project would add between 50 and 100 peak hour trips to a SHS facility experiencing noticeable delay (LOS C or D). The I-15 freeway north and south of Nichols Road currently operates at LOS B and C and as shown in Figure 4.9-5, the Project would contribute fewer than 50 peak hour trips to this freeway, thereby indicating the Project has no potential to result in direct impacts to the I-15. Nonetheless, and for the purposes of disclosure, a basic freeway segment operations analysis was conducted for E+P conditions and the results are presented in Table 4.9-14, *Basic Freeway Segment Analysis for E+P Conditions*, under E+P conditions the I-15 freeway segments immediately north and south of Nichols Road are anticipated to operate at an acceptable LOS during the peak hours with the addition of Project traffic. As such, the Project's impacts to freeway segments would be less than significant under E+P conditions. (Urban Crossroads, 2016d, p. 62)~~(Urban Crossroads, 2015d, p. 62)~~

Table 4.9-14 Basic Freeway Segment Analysis for E+P Conditions

Freeway	Direction	Mainline Segment	Lanes[1]	Existing (2015)				Existing plus Project				Significant Impact?
				Density[2]		LOS		Density[2]		LOS		
				AM	PM	AM	PM	AM	PM	AM	PM	
I-15 Freeway	SB	North of Nichols Road	3	14.9	22.6	B	C	15.0	22.6	B	C	No
		South of Nichols Road	3	15.3	23.0	B	C	15.3	23.0	B	C	No
	NB	North of Nichols Road	3	18.1	17.0	C	B	18.1	17.0	C	B	No
		South of Nichols Road	3	18.4	17.8	C	B	18.4	17.8	C	B	No

[1] Number of lanes are in the specified direction and is based on existing conditions.
[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).
(Urban Crossroads, 2016d, Table 5-3)~~(Urban Crossroads, 2015d, Table 5-3)~~

3. Off-Ramp Queuing

As shown in Figure 4.9-5, ~~T~~the Project would contribute fewer than 50 peak hour trips to the northbound and southbound segments of the I-15 freeway and the I-15 freeway currently operates at LOS B and C north and south of Nichols Road, indicating the Project has no potential to result in direct impacts to the I-15 Nonetheless, a~~A~~ queuing analysis was performed for the off-ramps at the I-15 Freeway and Nichols Road interchange to assess vehicle queues for the off ramps that may potentially result in deficient peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-15 Freeway mainline. Off-ramp lengths are consistent with the measured distance between the intersection and the freeway mainline. Queuing analysis findings are

presented in Table 4.9-15, *Peak Hour Freeway Off-Ramp Queuing Summary for E+P Conditions*, for E+P traffic conditions. As shown on Table 4.9-15, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for E+P traffic conditions. As such, the Project's impacts to the I-15 Freeway and Nichols Road interchange would be less than significant under E+P conditions. (Urban Crossroads, 2016d, p. 57)~~(Urban Crossroads, 2015d, p. 57)~~

Table 4.9-15 Peak Hour Freeway Off-Ramp Queuing Summary for E+P Conditions

Intersection	Movement	Available Stacking Distance (Feet)	Existing (2015)				Existing plus Project			
			95th Percentile Queue (Feet)[2]		Acceptable?[1]		95th Percentile Queue (Feet)[2]		Acceptable?[1]	
			AM Peak	PM Peak	AM	PM	AM Peak	PM Peak	AM	PM
I-15 SB Off-Ramp / Nichols Rd.	SBL/T/R	1,600	53	38	Yes	Yes	60	40	Yes	Yes
I-15 NB Off-Ramp / Nichols Rd.	NBL/T/R	1,530	78	110	Yes	Yes	93	125	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.
[2] Maximum queue length for the approach reported.
(Urban Crossroads, 2016d, Table 5-2)~~(Urban Crossroads, 2015d, Table 5-2)~~

4. Freeway Merge/Diverge Analysis

As shown in Figure 4.9-5, ~~T~~the Project would contribute fewer than 50 peak hour trips to the northbound and southbound segments of the I-15 freeway and the I-15 freeway currently operates at LOS B and C north and south of Nichols Road, indicating the Project has no potential to result in direct impacts to the I-15. Nonetheless, the ~~R~~ramp merge and diverge operations also were evaluated for E+P traffic conditions and the results of this analysis are presented in Table 4.9-16, *Freeway Ramp Junction Merge/Diverge Analysis for E+P Conditions*. As shown in Table 4.9-16, the freeway ramp merge and diverge areas are anticipated to operate at LOS D or better. As such, the Project's impacts due to merge and diverge operations under E+P conditions would be less than significant. (Urban Crossroads, 2016d, p. 62)~~(Urban Crossroads, 2015d, p. 62)~~

Table 4.9-16 Freeway Ramp Junction Merge/Diverge Analysis for E+P Conditions

Freeway	Direction	Ramp or Segment	Lanes on Freeway[1]	Existing (2015)				Existing Plus Project				Significant Impact?
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
				Density[2]	LOS	Density[2]	LOS	Density[2]	LOS	Density[2]	LOS	
I-15 Freeway	SB	Off-Ramp at Nichols Road	3	21.1	C	28.3	D	21.1	C	28.3	D	No
		On-Ramp at Nichols Road	3	19.5	B	26.3	C	19.6	B	26.4	C	No
	NB	On-Ramp at Nichols Road	3	18.7	B	17.6	B	18.7	B	17.7	B	No
		Off-Ramp at Nichols Road	3	24.5	C	24.2	C	24.6	C	24.2	C	No

[1] Number of lanes are in the specified direction and is based on existing conditions.
[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).
(Urban Crossroads, 2016d, Table 5-4)~~(Urban Crossroads, 2015d, Table 5-4)~~

5. Traffic Signal Warrant Analysis

There are no intersections anticipated to meet traffic signal warrants for E+P traffic conditions (Urban Crossroads, 2016d, p. 62)~~(Urban Crossroads, 2015d, p. 62)~~. As such, no impact associated with traffic signal warrants would occur under E+P conditions.

B. Existing Plus Ambient Growth plus Project (EAP) 2016 Traffic Conditions

This subsection discusses the methods used to develop Existing plus Ambient Growth plus Project (EAP) (2016) traffic forecasts, and the resulting intersection operations, off-ramp queuing, and traffic signal warrants.

To account for background traffic growth, an ambient growth from Existing conditions of 2% (2 percent per year over 1 year) is included for EAP traffic conditions. Cumulative development projects are not included as part of the EAP analysis. The weekday ADT and weekday AM and PM peak hour volumes which can be expected for EAP traffic conditions are shown on Figure 4.9-9, *EAP (2016) Traffic Volumes (in PCE)*. (Urban Crossroads, 2016d, p. 67)~~(Urban Crossroads, 2015d, p. 67)~~

1. Intersection Operations Analysis

LOS calculations were conducted for the study intersections to evaluate their operations under EAP conditions. As shown in Table 4.9-17, *Intersection Analysis for EAP (2016) Conditions*, the study area intersections are anticipated to operate at acceptable LOS under EAP traffic conditions, consistent with existing traffic conditions. As such, the Project's impacts to study area intersections under EAP conditions would be less than significant. (Urban Crossroads, 2016d, p. 67)~~(Urban Crossroads, 2015d, p. 67)~~ A summary of the peak hour intersection LOS for EAP traffic conditions are shown on Figure 4.9-10, *Summary of Peak Hour Intersection LOS for EAP (2016) Conditions*.

Table 4.9-17 Intersection Analysis for EAP (2016) Conditions

#	Intersection	Traffic Control[2]	Existing (2015) Delay[1] (secs.) AM	Existing (2015) Delay[1] (secs.) PM	Existing (2015) Level of Service AM	Existing (2015) Level of Service PM	EAP (2016) Delay[1] (secs.) AM	EAP (2016) Delay[1] (secs.) PM	EAP (2016) Level of Service AM	EAP (2016) Level of Service PM	Acceptable LOS	Significant Impact?
1	I-15 SB Ramps / Nichols Rd.	AWS	11.7	12.9	B	B	12.4	13.5	B	B	D	No
2	I-15 NB Ramps / Nichols Rd.	CSS	18.5	21.4	C	C	21.2	25.0	C	D	D	No
3	Dwy. 1 / Nichols Rd.	CSS	10.1	8.9	B	A	10.5	9.0	B	A	C	No
4	Dwy. 2 / Nichols Rd.	CSS	7.9	7.5	A	A	8.1	7.5	A	A	C	No

[1] Per the 2010 Highway Capacity Manual, overall average intersection delay, and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.
[2] CSS = Cross-street Stop; AWS = All-way Stop
(Urban Crossroads, 2016d, Table 6-1)~~(Urban Crossroads, 2015d, Table 6-1)~~

2. Basic Freeway Segment Analysis

As previously noted in Figure 4.9-5, the Project would generate fewer than 50 peak hour trips to nearby segments of I-15. The I-15 freeway currently operates at LOS B and C north and south of Nichols Road, indicating the Project has no potential to result in direct impacts to the I-15. Nonetheless, a basic freeway segment operations analysis was conducted for EAP (2016) conditions

and the results are presented in Table 4.9-18, *Basic Freeway Segment Analysis for EAP (2016) Conditions*. As shown, under EAP conditions the I-15 freeway segments immediately north and south of Nichols Road are anticipated to operate at an acceptable LOS during the peak hours with the addition of Project traffic. As such, the Project's impacts to freeway segments would be less than significant under EAP (2016) conditions. (Urban Crossroads, 2016d, p. 72)~~(Urban Crossroads, 2015d, p. 72)~~

Table 4.9-18 Basic Freeway Segment Analysis for EAP (2016) Conditions

Freeway	Direction	Mainline Segment	Lanes[1]	Existing (2015)				EAP (2016)				Significant Impact?
				Density[2]		LOS		Density[2]		LOS		
				AM	PM	AM	PM	AM	PM	AM	PM	
I-15 Freeway	SB	North of Nichols Road	3	14.9	22.6	B	C	15.3	23.1	B	C	No
		South of Nichols Road	3	15.3	23.0	B	C	15.6	23.6	B	C	No
	NB	North of Nichols Road	3	18.1	17.0	C	B	18.5	17.3	C	B	No
		South of Nichols Road	3	18.4	17.8	C	B	18.8	18.2	C	B	No

[1] Number of lanes are in the specified direction and is based on existing conditions.
[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).
(Urban Crossroads, 2016d, Table 6-3)~~(Urban Crossroads, 2015d, Table 6-3)~~

3. Off-Ramp Queuing

As shown in Figure 4.9-5, ~~T~~the Project would contribute fewer than 50 peak hour trips to the northbound and southbound segments of the I-15 freeway and the I-15 freeway currently operates at LOS B and C north and south of Nichols Road, indicating the Project has no potential to result in direct impacts to the I-15. Nonetheless, and for purposes of disclosure, a~~A~~ queuing analysis was performed for the off-ramps at the I-15 Freeway and Nichols Road interchange to assess vehicle queues for the off ramps that may potentially result in deficient peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-15 Freeway mainline. Queuing analysis findings are presented in Table 4.9-19, *Peak Hour Freeway Off-Ramp Queuing Summary for EAP (2016) Conditions*. Off-ramp lengths are consistent with the measured distance between the intersection and the freeway mainline.

Table 4.9-19 Peak Hour Freeway Off-Ramp Queuing Summary for EAP (2016) Conditions

Intersection	Movement	Available Stacking Distance (Feet)	Existing (2015)				EAP (2016)			
			95th Percentile Queue (Feet)[2]		Acceptable?[1]		95th Percentile Queue (Feet)[2]		Acceptable?[1]	
			AM Peak	PM Peak	AM	PM	AM Peak	PM Peak	AM	PM
I-15 SB Off-Ramp / Nichols Rd.	SBL/T/R	1,600	53	38	Yes	Yes	63	43	Yes	Yes
I-15 NB Off-Ramp / Nichols Rd.	NBL/T/R	1,530	78	110	Yes	Yes	98	135	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.
[2] Maximum queue length for the approach reported.
(Urban Crossroads, 2016d, Table 6-2)~~(Urban Crossroads, 2015d, Table 6-2)~~

As shown on Table 4.9-19, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for EAP traffic conditions. As such, the Project's impacts to the I-15 Freeway and Nichols Road interchange would be less than significant under EAP conditions. (Urban Crossroads, 2016d, p. 67)~~(Urban Crossroads, 2015d, p. 67)~~

4. Freeway Merge/Diverge Analysis

Although the Project would contribute fewer than 50 peak hour trips (as shown previously in Figure 4.9-5) to the northbound and southbound segments of the I-15 freeway and the I-15 freeway currently operates at LOS B and C north and south of Nichols Road, indicating the Project has no potential to result in direct impacts to the I-15, r~~R~~amp merge and diverge operations were also evaluated for EAP traffic conditions and the results of this analysis are presented in Table 4.9-20, *Freeway Ramp Junction Merge/Diverge Analysis for EAP (2016) Conditions*. As shown in Table 4.9-20, the freeway ramp merge and diverge areas are anticipated to operate at LOS D or better. As such, the Project's impacts due to merge and diverge operations under EAP conditions would be less than significant. (Urban Crossroads, 2016d, p. 72)~~(Urban Crossroads, 2015d, p. 72)~~

Table 4.9-20 Freeway Ramp Junction Merge/Diverge Analysis for EAP (2016) Conditions

Freeway	Direction	Ramp or Segment	Lanes on Freeway[1]	Existing (2015)				EAP (2016)				Significant Impact?
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
				Density[2]	LOS	Density[2]	LOS	Density[2]	LOS	Density[2]	LOS	
I-15 Freeway	SB	Off-Ramp at Nichols Road	3	21.1	C	28.3	D	21.5	C	28.7	D	No
		On-Ramp at Nichols Road	3	19.5	B	26.3	C	19.9	B	26.8	C	No
	NB	On-Ramp at Nichols Road	3	18.7	B	17.6	B	19.1	B	18.0	B	No
		Off-Ramp at Nichols Road	3	24.5	C	24.2	C	25.0	C	24.6	C	No

[1] Number of lanes are in the specified direction and is based on existing conditions.
[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).
(Urban Crossroads, 2016d, Table 6-4)~~(Urban Crossroads, 2015d, Table 6-4)~~

5. Traffic Signal Warrant Analysis

No study area intersections are calculated to meet traffic signal warrants for EAP traffic Conditions (Urban Crossroads, 2016d, p. 72)~~(Urban Crossroads, 2015d, p. 72)~~. As such, no impact associated with traffic signal warrants would occur under E+P conditions.

C. Existing plus Ambient Growth plus Project plus Cumulative (EAPC) 2016 Traffic Conditions

This Subsection discusses the methods used to develop Existing plus Ambient Growth plus Project plus Cumulative (EAPC) (2016) traffic forecasts, and the resulting intersection operations, off-ramp queuing, and traffic signal warrants.

To account for background traffic, other known cumulative development projects in the study area were included in addition to 2 percent of ambient growth for EAPC traffic conditions in conjunction with traffic associated with the proposed Project. The weekday ADT and weekday AM and PM peak hour volumes which can be expected for EAPC (2016) traffic conditions are shown on

Figure 4.9-11, EAPC (2016) Traffic Volumes (in PCE). (Urban Crossroads, 2016d, p. 77)~~(Urban Crossroads, 2015d, p. 77)~~

1. Intersection Operations Analysis

LOS calculations were conducted for the study intersections to evaluate their operations under EAPC conditions. As shown in Table 4.9-21, *Intersection Analysis for EAPC (2016) Conditions*, the study area intersections are anticipated to operate at acceptable levels of service, with the exception of the following locations (Urban Crossroads, 2016d, p. 77)~~(Urban Crossroads, 2015d, p. 77)~~:

- I-15 Southbound Ramps / Nichols Road – LOS F AM and PM peak hours
- I-15 Northbound Ramps / Nichols Road – LOS F AM and ~~peak hour; LOS E~~ PM peak hours

Table 4.9-21 Intersection Analysis for EAPC (2016) Conditions

#	Intersection	Traffic Control [2]	Existing (2015) Delay[1] (secs.) AM	Existing (2015) Delay[1] (secs.) PM	Existing (2015) Level of Service AM	Existing (2015) Level of Service PM	EAPC (2016) Delay[1] (secs.) AM	EAPC (2016) Delay[1] (secs.) PM	EAPC (2016) Level of Service AM	EAPC (2016) Level of Service PM	Acceptable LOS	Significant Impact?
1	I-15 SB Ramps / Nichols Rd.	AWS	11.7	12.9	B	B	**62.7**	**61.0**	**F**	**F**	D	~~No~~ Yes
2	I-15 NB Ramps / Nichols Rd.	CSS	18.5	21.4	C	C	**>100.0**	**>100.0**	**F**	**F**	D	**Yes**
3	Dwy. 1 / Nichols Rd.	CSS	10.1	8.9	B	A	15.3	10.0	C	B	C	No
4	Dwy. 2 / Nichols Rd.	CSS	7.9	7.5	A	A	9.5	7.9	A	A	C	No

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).
[1] Per the 2010 Highway Capacity Manual, overall average intersection delay, and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.
[2] CSS = Cross-street Stop; AWS = All-way Stop
Source: (Urban Crossroads, 2016d, Table 7-1)~~(Urban Crossroads, 2015d, Table 7-1)~~

A summary of the peak hour intersection LOS for EAPC conditions are shown on *Figure 4.9-12, Summary of Peak Hour Intersection LOS for EAPC (2016) Conditions*. Project traffic would contribute more than 50 peak hour trips to the I-15 Northbound Ramps at Nichols Road during both the AM and PM peak hour. Additionally, the Project would contribute 29 peak hour trips to the I-15 Southbound Ramps at Nichols Road during the AM peak hour and 36 peak hour trips during the PM peak hour. Pursuant to Caltrans' Guidelines, for State facilities that operate at LOS C or D, Caltrans normally requires a traffic study when a project contributes more than 50 peak hour trips. Because the Project would contribute more than 50 peak hour trips the intersection of the I-15 Northbound Ramps at Nichols Road, which operates at LOS C under existing conditions, Project impacts to this intersection would be significant. Additionally, for State facilities that currently operate at LOS A or B, a traffic study normally is not required by Caltrans unless a project contributes more than 100 peak hour trips to the facility. The intersection of I-15 Southbound Ramps at Nichols Road currently operates at LOS B during both peak hours. (Caltrans, 2002) Although the Project contributes fewer than 100 peak hour trips to the intersection of I-15 Southbound Ramps at Nichols Road, which normally would not require study per Caltrans' Guidelines, Project impacts to this intersection are nonetheless identified as significant. Because Project-related traffic would contribute to, but would not cause, the projected deficiencies~~y~~ at the intersection of I-15 Northbound and Southbound Ramps at Nichols Road, Project-related impacts under EAPC (2016) conditions at both intersections would be cumulatively considerable. ~~The Project would contribute fewer than 50 peak hour trips to the~~

~~intersections of I-15 Southbound Ramps at Nichols Road; accordingly, the Project's impacts to the intersection of I-15 Southbound Ramps at Nichols Road would be less than cumulatively considerable.~~ (Urban Crossroads, 2016d, p. 77, and Exhibit 4-3)~~(Urban Crossroads, 2015d, p. 77, and Exhibit 4-3)~~

2. Basic Freeway Segment Analysis

As previously noted and as shown in Figure 4.9-5, the Project would generate fewer than 50 peak hour trips to nearby segments of I-15 which operates at LOS B and C under existing conditions. The Project would contribute fewer than 50 peak hour trips to nearby segments of the I-15 freeway, which is below the threshold used by Caltrans for determining when a traffic impact study is required (Caltrans, 2002). Nonetheless, a basic freeway segment operations analysis was conducted for EAPC (2016) conditions for the purposes of disclosure, and the results are presented in Table 4.9-22, *Basic Freeway Segment Analysis for EAPC (2016) Conditions*. As shown, under EAPC (2016) conditions the I-15 freeway segments immediately north and south of Nichols Road are anticipated to operate at an acceptable LOS during the peak hours with the addition of Project traffic. As such, the Project's impacts to freeway segments would be less than significant under EAPC (2016) conditions. (Urban Crossroads, 2016d, p. 82)~~(Urban Crossroads, 2015d, p. 82)~~

Table 4.9-22 Basic Freeway Segment Analysis for EAPC (2016) Conditions

Freeway	Direction	Mainline Segment	Lanes[1]	Existing (2015)				EAPC (2016)				Significant Impact?
				Density[2]		LOS		Density[2]		LOS		
				AM	PM	AM	PM	AM	PM	AM	PM	
I-15 Freeway	SB	North of Nichols Road	3	14.9	22.6	B	C	16.6	25.3	B	C	No
		South of Nichols Road	3	15.3	23.0	B	C	17.2	26.3	B	D	No
	NB	North of Nichols Road	3	18.1	17.0	C	B	27.5	28.8	D	D	No
		South of Nichols Road	3	18.4	17.8	C	B	28.5	30.8	D	D	No

[1] Number of lanes are in the specified direction and is based on existing conditions.
[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).
(Urban Crossroads, 2016d, Table 7-3)~~(Urban Crossroads, 2015d, Table 7-3)~~

3. Off-Ramp Queuing

As shown in Figure 4.9-5, ~~T~~the Project would contribute fewer than 50 peak hour trips to the northbound and southbound segments of the I-15 freeway. The I-15 freeway currently operates at LOS B and C north and south of Nichols Road, and Caltrans' Guidelines require traffic studies for such facilities only when a project contributes 50 or more peak hour trips. Project-related traffic affecting the I-15 freeway off-ramps is below the threshold at which Caltrans would normally require a traffic impact study (Caltrans, 2002). Nonetheless, and for purposes of disclosure, a~~A~~ queuing analysis was performed for the off-ramps at the I-15 Freeway and Nichols Road interchange to assess vehicle queues for the off ramps that may potentially result in deficient peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-15 Freeway mainline. Queuing analysis findings are presented in Table 4.9-23, *Peak Hour Freeway Off-Ramp Queuing Summary for EAPC (2016) Conditions*. Off-ramp lengths are consistent with the measured distance between the intersection and the freeway mainline. As shown on Table 4.9-23, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for EAPC traffic conditions. As such, the Project would have a

less-than-significant impact on study area freeway off-ramps under EAPC (2016) conditions. (Urban Crossroads, 2016d, p. 77)~~(Urban Crossroads, 2015d, p. 77)~~

Table 4.9-23 Peak Hour Freeway Off-Ramp Queuing Summary for EAPC (2016) Conditions

Intersection	Movement	Available Stacking Distance (Feet)	Existing (2015)				EAPC (2016)			
			95th Percentile Queue (Feet)[2]		Acceptable?[1]		95th Percentile Queue (Feet)[2]		Acceptable?[1]	
			AM Peak	PM Peak	AM	PM	AM Peak	PM Peak	AM	PM
I-15 SB Off-Ramp / Nichols Rd.	SBL/T/R	1,600	53	38	Yes	Yes	350	268	Yes	Yes
I-15 NB Off-Ramp / Nichols Rd.	NBL/T/R	1,530	78	110	Yes	Yes	1,028	1,173	Yes	Yes

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.
[2] Maximum queue length for the approach reported.
[3] 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
Source: (Urban Crossroads, 2016d, Table 7-2)~~(Urban Crossroads, 2015d, Table 7-2)~~

4. Freeway Merge/Diverge Analysis

As shown in Figure 4.9-5, the Project would contribute fewer than 50 peak hour trips to the northbound and southbound segments of the I-15 freeway. The I-15 freeway currently operates at LOS B and C north and south of Nichols Road, and Caltrans' Guidelines require traffic studies for such facilities only when a project contributes 50 or more peak hour trips. Project-related traffic affecting the I-15 freeway off-ramps is below the threshold at which Caltrans would normally require a traffic impact study (Caltrans, 2002). Nonetheless, and for purposes of disclosure, r~~R~~amp merge and diverge operations ~~also~~ were evaluated for EAPC traffic conditions and the results of this analysis are presented in Table 4.9-24, *Freeway Ramp Junction Merge/Diverge Analysis for EAPC (2016) Conditions*. As shown in Table 4.9-24, the freeway ramp merge and diverge areas are anticipated to operate at LOS D or better. As such, the Project's impacts due to merge and diverge operations under EAP conditions would be less than significant. (Urban Crossroads, 2016d, p. 82)~~(Urban Crossroads, 2015d, p. 82)~~

Table 4.9-24 Freeway Ramp Junction Merge/Diverge Analysis for EAPC (2016) Conditions

Freeway	Direction	Ramp or Segment	Lanes on Freeway[1]	Existing (2015)				EAPC (2016)				Significant Impact?
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
				Density[2]	LOS	Density[2]	LOS	Density[2]	LOS	Density[2]	LOS	
I-15 Freeway	SB	Off-Ramp at Nichols Road	3	21.1	C	28.3	D	23.4	C	30.7	D	No
		On-Ramp at Nichols Road	3	19.5	B	26.3	C	22.4	C	29.8	D	No
	NB	On-Ramp at Nichols Road	3	18.7	B	17.6	B	26.9	C	27.8	C	No
		Off-Ramp at Nichols Road	3	24.5	C	24.2	C	32.7	D	34.1	D	No

[1] Number of lanes are in the specified direction and is based on existing conditions.
[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).
Source: (Urban Crossroads, 2016d, Table 7-4)~~(Urban Crossroads, 2015d, Table 7-4)~~

5. Traffic Signal Warrant Analysis

The following study area intersections are anticipated to warrant a traffic signal for EAPC traffic Conditions (Urban Crossroads, 2016d, p. 82)~~(Urban Crossroads, 2015d, p. 82)~~:

- I-15 Southbound Ramps/Nichols Road
- I-15 Northbound Ramps/Nichols Road

Under existing conditions, the intersection of Nichols Road at the I-15 Southbound Ramps operates at LOS B during both peak hours, while the intersection of Nichols Road at the I-15 Northbound Ramp operates at LOS C during both peak hours.

The Project ~~traffic~~ would contribute more than 50 peak hour trips to the intersection of I-15 Northbound Ramps at Nichols Road during both the AM and PM peak hour. Additionally, the Project would contribute 29 peak hour trips to the I-15 Southbound Ramps at Nichols Road during the AM peak hour and 36 peak hour trips during the PM peak hour. Pursuant to Caltrans' Guidelines, for State facilities that operate at LOS C or D, Caltrans normally requires a traffic study when a project contributes more than 50 peak hour trips. Because the Project would contribute more than 50 peak hour trips the intersection of the I-15 Northbound Ramps at Nichols Road, Project impacts to this intersection would be significant. Additionally, for State facilities that currently operate at LOS A or B, a traffic study normally is not required by Caltrans unless a project contributes more than 100 peak hour trips to the facility. (Caltrans, 2002). Although the Project contributes fewer than 100 peak hour trips to the intersection of I-15 Southbound Ramps at Nichols Road, and normally would not require study per Caltrans' Guidelines, Project impacts to this intersection are nonetheless identified as significant. Because Project-related traffic would contribute to, but would not cause, the need for signalization of the I-15 Northbound and Southbound Ramps at Nichols Road, Project-related impacts under EAPC (2016) conditions would be cumulatively considerable. ~~The Project would contribute fewer than 50 peak hour trips to the intersections of I-15 Southbound Ramps at Nichols Road; accordingly, the Project's impacts to the need for signalization of the intersection of I-15 Southbound Ramps at Nichols Road would be less than cumulatively considerable under EAPC (2016) conditions.~~ (Urban Crossroads, 2016d, Exhibit 4-3)~~(Urban Crossroads, 2015d, Exhibit 4-3)~~

D. Horizon Year (2035) Traffic Conditions

This Subsection discusses the methods used to develop Horizon Year (2035) Without and With Project traffic forecasts, and the resulting intersection operations, off-ramp queuing, and traffic signal warrants. (Urban Crossroads, 2016d, p. 87)~~(Urban Crossroads, 2015d, p. 87)~~

1. Intersection Operations Analysis

❑ Horizon Year Without Project Traffic Conditions

LOS calculations were conducted for the study intersections to evaluate their operations under Horizon Year Without Project conditions. As shown in Table 4.9-25, *Intersection Analysis for Horizon Year (2035) Conditions*, the intersections of I-15 Southbound and Northbound at Nichols Road would continue to operate at a deficient LOS F during both AM and PM peak hours without the addition of Project-related traffic. (Urban Crossroads, 2016d, p. 87) ~~(Urban Crossroads, 2015d, p. 87)~~

Table 4.9-25 Intersection Analysis for Horizon Year (2035) Conditions

#	Inter`section	Traffic Control[2]	2035 Without Project				2035 With Project				Acceptable LOS	Significant Impact?
			Delay[1] (secs.)		Level of Service		Delay[1] (secs.)		Level of Service			
			AM	PM	AM	PM	AM	PM	AM	PM		
1	I-15 SB Ramps / Nichols Rd.	AWS	**68.5**	**68.6**	**F**	**F**	**68.5**	**68.6**	**F**	**F**	D	~~**No**~~**Yes**
2	I-15 NB Ramps / Nichols Rd.	CSS	**>100.0**	**>100.0**	**F**	**F**	**>100.0**	**>100.0**	**F**	**F**	D	**Yes**
3	Dwy. 1 / Nichols Rd.	CSS	20.7	16.9	C	C	24.4	18.2	C	C	C	No
4	Dwy. 2 / Nichols Rd.	CSS	15.6	17.5	C	C	17.4	19.5	C	C	C	No

Notes: **BOLD** = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).
[1] Per the 2010 Highway Capacity Manual, overall average intersection delay, and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.
[2] CSS = Cross-street Stop; AWS = All-way Stop
Source: (Urban Crossroads, 2016d, Table 8-1)~~(Urban Crossroads, 2015d, Table 8-1)~~

❑ Horizon Year With Project Traffic Conditions

Project traffic would contribute more than 50 peak hour trips to the intersection of I-15 Northbound Ramps at Nichols Road during both the AM and PM peak hour. Additionally, the Project would contribute 29 peak hour trips to the I-15 Southbound Ramps at Nichols Road during the AM peak hour and 36 peak hour trips during the PM peak hour. Pursuant to Caltrans' Guidelines, for State facilities that operate at LOS C or D, Caltrans normally requires a traffic study when a project contributes more than 50 peak hour trips. Because the Project would contribute more than 50 peak hour trips the intersection of the I-15 Northbound Ramps at Nichols Road, Project impacts to this intersection would be significant. Additionally, for State facilities that currently operate at LOS A or B, a traffic study normally is not required by Caltrans unless a project contributes more than 100 peak hour trips to the facility. (Caltrans, 2002). Although the Project contributes fewer than 100 peak hour trips to the intersection of I-15 Southbound Ramps at Nichols Road, and normally would not require study per Caltrans' Guidelines, Project impacts to this intersection are nonetheless identified as significant. As shown in Table 4.9-25, and as with EAPC (2016) conditions, the Project would contribute to, but would not directly cause, the deficient LOS at the intersections of I-15 Southbound and Northbound Ramps at Nichols Road (a deficient LOS F during both AM and PM peak hours with or without the addition of Project-related traffic). Because Project-related traffic would contribute to, but would not cause, the projected deficiencies~~y~~, Project impacts at the intersections of I-15 Northbound Ramps and Southbound at Nichols Road~~, Project-related impacts~~ under Horizon (Year 2035) conditions would be cumulatively considerable. ~~The Project would contribute fewer than 50 peak hour trips to the intersections of I-15 Southbound Ramps at Nichols Road; accordingly, the Project's impacts to the intersection of I-15 Southbound Ramps at Nichols Road would be less than cumulatively considerable.~~ (Urban Crossroads, 2016d, p. 92, and Exhibit 4-3)~~(Urban Crossroads, 2015d, p. 92, and Exhibit 4-3)~~ The weekday ADT and weekday AM and PM peak hour volumes which can be expected for Horizon Year With Project traffic conditions are shown on Figure 4.9-13, *Horizon Year (2035) With Project Traffic Volumes (in PCE).* As illustrated on Figure 4.9-14, *Summary of Peak Hour Intersection LOS for Horizon Year (2035) With Project Conditions*, there are no additional study area intersections anticipated to experience unacceptable LOS (LOS E or worse) with the addition of Project traffic during one or more peak hours in addition to those previously identified under Horizon Year Without Project conditions.

2. Basic Freeway Segment Analysis

❑ Horizon Year Without Project Traffic Conditions

Horizon Year Without Project mainline directional volumes for the weekday AM and PM peak hours are shown in Table 4.9-26, *Basic Freeway Segment Analysis for Horizon Year (2035) Conditions*. As shown on Table 4.9-26, both the northbound and southbound freeway segments immediately north and south of Nichols Road are anticipated to operate at an unacceptable LOS (i.e., LOS E or worse) during the peak hours. (Urban Crossroads, 2015d, p. 95)

Table 4.9-26 Basic Freeway Segment Analysis for Horizon Year (2035) Conditions

Freeway	Direction	Mainline Segment	Lanes[1]	2035 Without Project				2035 With Project				Significant Impact?
				Density[2]		LOS		Density[2]		LOS		
				AM	PM	AM	PM	AM	PM	AM	PM	
I-15 Freeway	SB	Off-Ramp at Nichols Road	3	24.3	**49.6**	C	**F**	24.3	**49.7**	C	**F**	Yes~~No~~
		On-Ramp at Nichols Road	3	23.7	**46.5**	C	**F**	23.8	**46.6**	C	**F**	Yes~~No~~
	NB	On-Ramp at Nichols Road	3	**45.3**	**38.1**	**F**	**E**	**45.4**	**38.2**	**F**	**E**	Yes~~No~~
		Off-Ramp at Nichols Road	3	**47.2**	**36.6**	**F**	**E**	**47.3**	**36.6**	**F**	**E**	Yes~~No~~

Notes: **BOLD** = Unacceptable Level of Service
[1] Number of lanes are in the specified direction and is based on existing conditions.
[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).
Source: (Urban Crossroads, 2016d, Table 8-3)~~(Urban Crossroads, 2015d, Table 8-3)~~

❑ Horizon Year With Project Traffic Conditions

As previously noted and as shown in Figure 4.9-5, the Project would generate fewer than 50 peak hour trips to nearby segments of I-15, which operates at LOS B and C under existing conditions. The Project's contribution of traffic to the I-15 mainline is below the threshold used by Caltrans for determining when a traffic impact study is required (Caltrans, 2002). ~~the Project would generate fewer than 50 peak hour trips to nearby segments of I-15.~~ Nonetheless, for purposes of disclosure a basic freeway segment operations analysis was conducted for Horizon Year With Project conditions for mainline directional volumes for the weekday AM and PM peak hours for the I-15 freeway segments located immediately north and south of Nichols Road. As shown in Table 4.9-26, both the northbound and southbound freeway segments immediately north and south of Nichols Road would continue to operate at an unacceptable LOS (i.e., LOS E or worse) during the peak hours. As shown in Table 4.9-26, the Project would contribute to, but would not directly cause, the projected LOS deficiencies on these segments of I-15. Accordingly, the Project's impacts to these freeway mainline segments would be cumulatively considerable.~~Although the Project would contribute traffic to these freeway segments, the Project would only contribute 12 trips in the AM peak hour and 11 trips in the PM peak hour to the northbound segment of I-15 south of Nichols Road, and only 15 trips in the AM peak hour and 13 trips in the PM peak hour to the southbound segment of I-15. The Project's contribution of traffic is well below the 50 peak hour trip threshold utilized by Caltrans for impacts to its facilities. Accordingly, the Project's impacts to freeway mainline segments under Horizon Year With Project conditions would be less than cumulatively considerable.~~ (Urban Crossroads, 2016d, p. 95)~~(Urban Crossroads, 2015d, p. 95)~~

3. Off-Ramp Queuing

❑ Horizon Year Without Project Traffic Conditions

A queuing analysis was performed for the off-ramps at the I-15 Freeway and Nichols Road interchange to assess vehicle queues for the off ramps that may potentially result in deficient peak hour operations at the ramp-to-arterial intersections and may potentially "spill back" onto the I-15 Freeway mainline. Queuing analysis findings are presented in Table 4.9-27, *Peak Hour Freeway Off-Ramp Queuing Summary for Horizon Year (2035) Conditions*. As shown on Table 4.9-27, the I-15 Freeway off-ramps at Nichols Road would experience queuing issues during the weekday peak 95th percentile traffic flows for Horizon Year (2035) Without Project traffic conditions. (Urban Crossroads, 2016d, p. 92)~~(Urban Crossroads, 2015d, p. 92)~~

Table 4.9-27 Peak Hour Freeway Off-Ramp Queuing Summary for Horizon Year (2035) Conditions

Intersection	Movement	Available Stacking Distance (Feet)	2035 Without Project				2035 With Project			
			95th Percentile Queue (Feet)[2]		Acceptable?[1]		95th Percentile Queue (Feet)[2]		Acceptable?[1]	
			AM Peak	PM Peak	AM	PM	AM Peak	PM Peak	AM	PM
I-15 SB Off-Ramp / Nichols Rd.	SBL/T/R	1,600	355	353	Yes	Yes	355	353	Yes	Yes
I-15 NB Off-Ramp / Nichols Rd.	NBL/T/R	1,530	**2,755**	**3,475**	**No**	**No**	**2,838**	**3,520**	**No**	**No**

[1] Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.
[2] Maximum queue length for the approach reported.
Source: (Urban Crossroads, 2016d, Table 8-2)~~(Urban Crossroads, 2015d, Table 8-2)~~

❑ Horizon Year With Project Traffic Conditions

As shown in Figure 4.9-5, the Project would contribute fewer than 50 peak hour trips to the northbound and southbound segments of the I-15 freeway. The I-15 freeway currently operates at LOS B and C north and south of Nichols Road, and Caltrans' Guidelines require traffic studies for such facilities only when a project contributes 50 or more peak hour trips. Project-related traffic affecting the I-15 freeway off-ramps is below the threshold at which Caltrans would normally require a traffic impact study (Caltrans, 2002). Nonetheless, for purposes of disclosure, a freeway queuing analysis was conducted for the proposed Project. As shown on Table 4.9-27, there are no additional movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for Horizon Year With Project traffic conditions beyond those that would already occur in the absence of the proposed Project. The data presented in Table 4.9-27 demonstrates that the Project would contribute to, but would not directly cause, the deficient LOS at the I-15 Northbound off-ramp to Nichols Road; thus, ~~Nonethelesshe Project's contribution to the projected off-ramp queueing issue at the I-15 northbound off-ramp to Nichols Road~~ the Project's contribution of peak hour trips to the I-15 Northbound off-ramp to Nichols Road represents a cumulatively considerable impact under Horizon Year With Project traffic conditions~~ because the Project would contribute .more than 50 AM and PM peak hour trips to this intersection~~. (Urban Crossroads, 2016d, p. 92)~~(Urban Crossroads, 2015d, p. 92)~~

4. Freeway Merge/Diverge Analysis

❑ Horizon Year Without Project Traffic Conditions

Ramp merge and diverge operations were also evaluated for Horizon Year Without Project conditions and the results of this analysis are presented in Table 4.9-28, *Freeway Ramp Junction Merge/Diverge Analysis for Horizon Year (2035) Conditions*. As shown in Table 4.9-28, both of the study area freeway merge and diverge ramp junctions are anticipated to operate at deficient LOS (i.e., LOS E or worse) under Horizon Year conditions. (Urban Crossroads, 2016d, p. 95)~~(Urban Crossroads, 2015d, p. 95)~~

Table 4.9-28 Freeway Ramp Junction Merge/Diverge Analysis for Horizon Year (2035) Conditions

Freeway	Direction	Ramp or Segment	Lanes on Freeway[1]	2035 Without Project				2035 With Project				Significant Impact?
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
				Density[2]	LOS	Density[2]	LOS	Density[2]	LOS	Density[2]	LOS	
I-15 Freeway	SB	Off-Ramp at Nichols Road	3	31.6	D	**43.5**	**F**	31.6	D	**43.6**	**F**	Yes~~No~~
		On-Ramp at Nichols Road	3	29.5	D	**41.5**	**F**	29.5	D	**41.5**	**F**	Yes~~No~~
	NB	On-Ramp at Nichols Road	3	**37.6**	**F**	**35.3**	**E**	**37.7**	**F**	**35.4**	**E**	**Yes**
		Off-Ramp at Nichols Road	3	**42.2**	**F**	**37.4**	**E**	**42.2**	**F**	**37.5**	**E**	**Yes**

Notes: **BOLD** = Unacceptable Level of Service
[1] Number of lanes are in the specified direction and is based on existing conditions.
[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).
Source: (Urban Crossroads, 2016d, Table 8-4)~~(Urban Crossroads, 2015d, Table 8-4)~~

❑ Horizon Year With Project Traffic Conditions

As shown in Figure 4.9-5, ~~T~~the Project would contribute fewer than 50 peak hour trips to the northbound and southbound segments of the I-15 freeway and the I-15 freeway currently operates at LOS B and C north and south of Nichols Road; thus, pursuant to Caltrans' Guidelines, a traffic impact study normally would not be required (Caltrans, 2002). Nonetheless, a freeway merge/diverge analysis was conducted for the proposed Project for the purposes of disclosure. As shown in Table 4.9-28, under Horizon Year With Project traffic conditions, both of the study area freeway merge/diverge junctions would continue to operate at a deficient LOS (i.e., LOS E or worse). Because Project-related traffic would contribute to, but would not cause, the projected deficiency at the freeway merge/diverge junctions of I-15 Northbound and Southbound Ramps at Nichols Road,- Project-related impacts under Horizon Year (2035) conditions would be cumulatively considerable. ~~The Project would contribute fewer than 50 peak hour trips to the freeway merge/diverge junctions of I-15 Southbound Ramps at Nichols Road; accordingly, the Project's impacts to the freeway merge/diverge junctions of I-15 Southbound Ramps at Nichols Road would be less than cumulatively considerable.~~ (Urban Crossroads, 2016d, p. 95)~~(Urban Crossroads, 2015d, p. 95)~~

5. Traffic Signal Warrant Analysis

No additional study area intersections are anticipated to meet traffic signal warrants for Horizon Year Without or With Project traffic conditions beyond those that were previously warranted under EAPC

traffic conditions. Under existing conditions, the intersection of Nichols Road at the I-15 Southbound Ramps operates at LOS B during both peak hours, while the intersection of Nichols Road at the I-15 Northbound Ramp operates at LOS C during both peak hours. The Project would contribute more than 50 peak hour trips to the intersection of Nichols Road at the I-15 Northbound Ramps, which is above Caltrans' threshold for when a traffic study is required. Accordingly, Project impacts due to the need to signalize the intersection of I-15 Northbound Ramps at Nichols Road would be significant. The Project would contribute 29 peak hour trips to the I-15 Southbound Ramps at Nichols Road during the AM peak hour and 36 peak hour trips during the PM peak hour. For State facilities that currently operate at LOS A or B, a traffic study normally is not required by Caltrans unless a project contributes more than 100 peak hour trips to the facility. (Caltrans, 2002). Nonetheless, in order to provide a conservative analysis of Project-related impacts, the Project's contribution towards the need for signalization of the intersection of Nichols Road at I-15 Southbound Ramps is determined to be significant. Because Project-related traffic would contribute to, but would not cause, the need for signalization of the I-15 Northbound and Southbound Ramps at Nichols Road, Project-related impacts under Horizon Year (2035) conditions would be cumulatively considerable. ~~The Project would contribute fewer than 50 peak hour trips to the intersections of I-15 Southbound Ramps at Nichols Road; accordingly, the Project's impacts to the need for signalization of the intersection of I-15 Southbound Ramps at Nichols Road would be less than cumulatively considerable under Horizon Year (2035) conditions.~~ (Urban Crossroads, 2016d, p. 92)~~(Urban Crossroads, 2015d, p. 92)~~.

Threshold b: Would the Project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Consistent with the City of Lake Elsinore LOS threshold of LOS D and in excess of the Riverside County Congestion Management Program (CMP) stated LOS threshold of LOS E, LOS D is used as the target LOS for freeway ramps, freeway segments, and freeway merge/diverge ramp junctions (Urban Crossroads, 2016d, p. 18)~~(Urban Crossroads, 2015d, p. 18)~~. In the Project's study area, Interstate I5 (I-15) is the only designated Riverside County CMP facility (RCTC, 2011, p. 2-5). As shown in Figure 4.9-5, the Project would contribute more than 50 peak hour trips to the intersection of Nichols Road at the I-15 Northbound Ramps, which operates at LOS C during both peak hours. Pursuant to Caltrans' Guidelines, a traffic study normally would be required for this intersection.

The Project would contribute 29 peak hour trips to the I-15 Southbound Ramps at Nichols Road during the AM peak hour and 36 peak hour trips during the PM peak hour. This intersection operates at LOS B during both peak hours. For State facilities that currently operate at LOS A or B, a traffic study normally is not required by Caltrans unless a project contributes more than 100 peak hour trips to the facility. (Caltrans, 2002) Nonetheless, in an effort to provide a conservative analysis of Project impacts, Project impacts to this intersection have been considered.

Under existing conditions, nearby segments of I-15 operate at LOS B and C during peak hours. As shown in Figure 4.9-5, the Project would contribute fewer than 50 peak hour trips to nearby segments of I-15. For State facilities that currently operate at LOS C or D, a traffic study normally is not required by Caltrans unless a project contributes more than 50 peak hour trips to the facility. (Caltrans, 2002) Nonetheless, in an effort to provide a conservative analysis of Project impacts, Project impacts to nearby I-15 facilities has been considered.

As described under Threshold 4.9.a), above, the Project would result in the following cumulatively considerable impacts to ~~nearby freeway ramps and freeway merge/diverge ramp junctions~~the following facilities:

- EAPC (2016) Conditions:
  - Cumulatively considerable impact to the I-15 Northbound Ramps/Nichols Road intersection (LOS F AM and PM peak hours~~; LOS E PM peak hour~~); ~~and~~
  - Cumulatively considerable impact to the I-15 Southbound Ramps/Nichols Road intersection (LOS F AM and PM peak hours);
  - Cumulatively considerable impact due to the need to signalize the I-15 Northbound Ramps/Nichols Road intersection; and~~.~~
  - Cumulatively considerable impact due to the need to signalize the I-15 Southbound Ramps/Nichols Road intersection.

- Horizon Year (2035) Conditions:
  - Cumulatively considerable impact to the I-15 Northbound Ramp/Nichols Road intersection (LOS F during both AM and PM peak hours);
  - Cumulatively considerable impact to the I-15 Southbound Ramps/Nichols Road intersection (LOS F for both AM and PM peak hours);
  - Cumulatively considerable impact to the I-15 Southbound Freeway Segments (LOS F during the PM peak hour);
  - Cumulatively considerable impact to the I-15 Northbound Freeway Segments (LOS F during the AM peak hour and LOS E during the PM peak hour);
  - Cumulatively considerable freeway off-ramp queuing impact to the I-15 Northbound Off-Ramp at Nichols Road (2,838 ft. queue during the AM peak hour and 3,520 ft. queue during the PM peak hour);
  - Cumulatively considerable impact to the I-15 Southbound Off-Ramp/Nichols Road Freeway Ramp Junction Merge/Diverge (LOS F during the PM peak hour);
  - Cumulatively considerable impact to the I-15 Northbound On-Ramp/Nichols Road Freeway Ramp Junction Merge/Diverge (LOS F during the AM peak hour and LOS E during the PM peak hour);
  - Cumulatively considerable impact due to the need to signalize the I-15 Northbound Ramps/Nichols Road intersection; and
  - Cumulatively considerable impact due to the need to signalize the I-15 Southbound Ramps/Nichols Road intersection.
  - ~~Cumulatively considerable impact due to the projected off-ramp queueing issue at the I-15 northbound off-ramps to Nichols Road; and~~
  - ~~Cumulatively considerable impact due to deficiencies at the I-15 Northbound Ramps/Nichols Road merge/diverge junction (LOS F AM Peak Hour; LOS E PM Peak Hour).~~

The Project's contribution to the above-listed CMP roadway deficiencies are all cumulatively considerable impacts of the proposed Project.

Threshold c: Would the Project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The nearest airport to the Project site is the Skylark Airport, which is a private facility utilized primarily for skydiving and is located approximately 5.7~~5~~ miles southwest of the Project site. The nearest public airport is the March Air Reserve Base, located approximately ~~12.4~~11.8 miles northeast of the Project site. The proposed Project does not contain an air travel component (e.g., runways, helipads); thus, air traffic volumes would not be changed as a result of the Project. The proposed on-site mining and reclamation activities would not include any component that would obstruct the flight path or change air traffic patterns at Skylark Airport, particularly given the distance between the Project site and this airport (i.e., 5.7~~5~~ miles). The Project also is not located in the AIA of the March Air Reserve Base (RCALUC, 2014, Map MA-1), and the proposed Project does not include any components that would extend into Federal Aviation Administration (FAA) protected air space. Accordingly, the Project would not have the potential to affect air traffic patterns, including an increase in traffic levels or a change in flight path location that results in substantial safety risks. No impact would occur.

Threshold d: Would the Project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The Project site is an existing mining site. The proposed Project would expand the area permitted to be mined by 24 acres; reduce the Mine's permitted annual tonnage of exported materials from 4,000,000 tons per year (tpy) to 856,560 tpy (inclusive of aggregate and asphalt batch plant materials); and lengthen the hours of operation for mining, processing, and export activities from between 7:00 am and 12:00 am (Monday through Friday, excluding Federal Holidays) and between 7:00 am and 7:00 pm (Saturdays only) to between 4:00 am and 12:00 am (Monday through Saturday, excluding Federal Holidays) for mining equipment and asphalt batch plant operation and 24 hours per day (Monday through Saturdays, excluding Federal Holidays) for aggregate export activities. (Urban Crossroads, 2016d, p. 3)~~(Urban Crossroads, 2015d, p. 3)~~ The Project's proposed expanded hours for aggregate and asphalt batch plant export activities would have the effect of reducing the potential for conflict with traffic compared to existing baseline conditions because export activities would ~~be~~ occur over an extended period of time, including during the late evening/early morning hours when there is little traffic on nearby roadways. Nonetheless, it should be noted that the Project's TIA evaluates the existing hourly restrictions at the Mine, and not the proposed hourly restrictions; as such, the analysis in the Project's TIA reflects a "worst case" analysis of Project impacts because it assumes reduced working hours, thereby inflating the amount of Project-related traffic that would occur during the AM and PM peak hours. As indicated under the discussion of Threshold 4.9.a), although implementation of the proposed Project would contribute to several deficiencies under 2016 cumulative (i.e., EAPC) and Horizon Year (2035) conditions, these deficiencies would occur even in the absence of Project-related traffic. Thus, the Project would not substantially contribute to the projected deficiencies and would have a less-than-significant impact due to design hazards. Moreover, the proposed Project would be compatible with existing mining activities on site, and given the relatively short distance between the Project's driveways and nearby on- and off-ramps at the I-15/Nichols Road interchange, Project-related truck traffic would not represent a safety hazard for passenger cars, pedestrians, or bicyclists. The Project does not propose, nor does it require as mitigation for direct Project impacts, any new circulation improvements. The City of Lake Elsinore Public Works Department reviewed the Project's application materials and determined that no hazardous transportation design features would be introduced by the Project.

Accordingly, the proposed Project would not create or substantially increase safety hazards due to a design feature or incompatible use. Therefore, the Project would result in less-than-significant impacts.

Threshold e: Would the Project result in inadequate emergency access?

No changes are being proposed to the Project site's access, and the existing driveway access points provide for adequate emergency access; thus, emergency access would continue to be provided as it is under existing conditions. There are no components of the proposed Project that would substantially interfere with traffic along Nichols Road, including traffic that may occur during emergency conditions. Thus, the Project would result in no impacts related to inadequate emergency access.

Threshold f: Would the Project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities)?

The Project involves mining and reclamation and as such, is not likely to attract large volumes of pedestrian, bicycle, or transit traffic. Under the proposed Project, two new workers would be employed on-site. Due to the nature of the proposed Project and the limited number of new workers on-site, the Project would not result in the need for any new or expanded public transit service, bicycle paths, or pedestrian facilities.

According to bus route maps available from the Riverside Transit Agency (RTA), there are currently no existing bus routes in the vicinity of the proposed Project. The RTA periodically evaluates its bus routes and may make changes based on need. However, due to the rural nature of areas east of the Project site, and the fact that the Project's increase of two new employees at the Project site would not result in a substantial increase in demand bus transit services, no accommodations for bus stops appear necessary along the Project's frontage with Nichols Road. (Urban Crossroads, 2016d, p. 27)~~(Urban Crossroads, 2015d, p. 27)~~ Furthermore, there are no policies within the Lake Elsinore General Plan related to bus service (Lake Elsinore, 2011a, Chapter 2.0). Accordingly, the Project has no potential to conflict with any planned local public transit service routes or policies related to bus service.

According to the City of Lake Elsinore General Plan Figure 2.6, a regional trail is planned along Nichols Road, east of the I-15 Freeway and north along Collier Avenue. Class II bike lanes also are proposed for Nichols Road. (Lake Elsinore, 2011a, Figures 2.5 and 2.6) However, the Project would not result in or require any improvements along Nichols Road, as the Project comprises the continuation and expansion of an existing mining operation that is adequately served by the existing Nichols Road configuration. Ultimate development of the site following reclamation would require improvements to Nichols Road along the Project's frontage, although no such future development is proposed as part of the Project. The General Plan includes one policy related to bicycle and pedestrian facilities; this policy is provided below, followed by a discussion of how the Project would comply with, or otherwise not conflict with, the applicable General Plan Policies:

- *Policy 6.4: Maintain the system of bike lanes and multi-use trails throughout the City. Encourage the implementation of the network of Class I, II, and III bike lanes on all*

development projects through construction of the facility as described in the Bike Lane Master Plan and/or the Trails Master Plan. (Lake Elsinore, 2011a, p. 2-40)

Project Consistency: The proposed Project would have no impact on existing or planned bike lanes or multi use trails throughout the City. Accordingly, the Project would not conflict with Policy 6.4.

There are no additional General Plan policies related to public transit, bicycle, or pedestrian facilities. Accordingly, the proposed Project would not conflict with any General Plan policies related to pedestrian or bicycle mobility. Additionally there are no applicable policies in the Alberhill District portion of the City's General Plan that relate to public transit, bicycle, or pedestrian facilities (Lake Elsinore, 2011a, pp. AH-12 to AH-13). As such, the Project would not conflict with any General Plan policies or standards related to public transit, bicycle, or pedestrian facilities.

Additionally, the proposed Project would not conflict with the policies of the SCAG RTP, Riverside County CMP, or the Riverside County Integrated Project. There are no other adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities that are applicable in the Project area. Based on the foregoing analysis, the proposed Project would not conflict with adopted policies, plans, or programs related to alternative transportation, nor would the Project otherwise substantially decrease the performance or safety of such facilities. Therefore, a less-than-significant impact would occur.

4.9.8 CUMULATIVE IMPACT ANALYSIS

The analysis under Thresholds a. and b. discloses the Project's potential to affect the transportation network on a direct and cumulatively considerable basis. The addition of Project traffic to the existing and planned circulation network would contribute to cumulatively considerable impacts at the following intersections during the listed traffic scenarios:

Existing plus Ambient Growth plus Project plus Cumulative (EAPC) 2016 Conditions

The following study area intersections are anticipated to operate at unacceptable LOS during the peak hours under EAPC (2016) traffic conditions (Urban Crossroads, 2016d, p. 7) ~~(Urban Crossroads, 2015d, p. 7)~~:

- I-15 Southbound Ramps /Nichols Road– LOS F AM and PM peak hours
- I-15 Northbound Ramps/Nichols Road– LOS F AM and PM peak hours~~; LOS E PM peak hour~~

Pursuant to Caltrans' Guidelines, for State facilities that operate at LOS C or D, Caltrans normally requires a traffic study when a project contributes more than 50 peak hour trips. Because the Project would contribute more than 50 peak hour trips the intersection of the I-15 Northbound Ramps at Nichols Road, which operates at LOS C under existing conditions, Project impacts to this intersection would be significant. Additionally, for State facilities that currently operate at LOS A or B, a traffic study normally is not required by Caltrans unless a project contributes more than 100 peak hour trips to the facility. The intersection of I-15 Southbound Ramps at Nichols Road currently operates at LOS B during both peak hours. (Caltrans, 2002) Although the Project contributes fewer than 100 peak hour trips to the intersection of I-15

Southbound Ramps at Nichols Road, which normally would not require study per Caltrans' Guidelines, Project impacts to this intersection are nonetheless identified as significant. ~~The Project would contribute fewer than 50 AM and PM peak hour trips to the I-15 Southbound Raps/Nichols Road intersection; accordingly, Project impacts to this intersection would be less-than-cumulatively considerable. The Project would, however, contribute more than 50 AM and PM trips at the I-15 Northbound Ramps/Nichols Road intersection.~~ Because Project-related traffic would contribute to, but would not cause, the projected deficienc~~y~~ies at the intersections of I-15 Northbound and Southbound Ramps~~/~~ at Nichols Road ~~intersection~~, Project-related impacts under EAPC (2016) conditions would be cumulatively considerable.

The following study area intersections are anticipated to warrant a traffic signal for EAPC traffic Conditions (Urban Crossroads, 2016d, p. 82)~~(Urban Crossroads, 2015d, p. 82)~~:

- I-15 Southbound Ramps/Nichols Road
- I-15 Northbound Ramps/Nichols Road

Project traffic would contribute more than 50 peak hour trips to the intersection of I-15 Northbound Ramps at Nichols Road during both the AM and PM peak hour, representing a significant impact. Additionally, the Project would contribute 29 peak hour trips to the I-15 Southbound Ramps at Nichols Road during the AM peak hour and 36 peak hour trips during the PM peak hour. The Project's contribution to the I-15 Southbound Ramps at Nichols Road would be fewer than 100 peak hour trips during both the AM and PM peak hours and is less than the amount of peak hour trips that would require a traffic impact study based on Caltrans' Guidelines (Caltrans, 2002). Nonetheless, in order to provide a conservative analysis of Project-related impacts, the Project's contribution of traffic to this intersection also is determined to be significant. ~~The Project would contribute fewer than 50 AM and PM peak hour trips to the I-15 Southbound Raps/Nichols Road intersection; accordingly, Project impacts due to the need to signalize this intersection would be less than cumulatively considerable. The Project would, however, contribute more than 50 AM and PM trips at the I-15 Northbound Ramps/Nichols Road intersection.~~ Because Project-related traffic would contribute to, but would not directly cause, the need for signalization of the intersections of the I-15 Northbound and Southbound off-ramps at Nichols Road, the Project's impacts under EAPC (2016) conditions would be cumulatively considerable.

Horizon Year (2035) Conditions

The weekday ADT and weekday AM and PM peak hour volumes which can be expected for Horizon Year With Project traffic conditions are shown on Figure 4.9-13, *Horizon Year (2035) With Project Traffic Volumes (in PCE)*. As illustrated on Figure 4.9-14, *Summary of Peak Hour Intersection LOS for Horizon Year (2035) With Project Conditions*, there are no additional study area intersections anticipated to experience unacceptable LOS (LOS E or worse) with the addition of Project traffic during one or more peak hours in addition to those previously identified under Horizon Year Without Project and EAPC (2016) with Project conditions. ~~Based on the assessment of Horizon Year Without and With Project traffic conditions, there were no additional intersections found to operate at a deficient LOS, beyond those previously identified under EAPC traffic conditions~~ (Urban Crossroads, 2016d, p. 7)~~(Urban Crossroads, 2015d, p. 7)~~.

As shown in Figure 4.9-5, the Project would contribute more than 50 peak hour trips to the intersection of Nichols Road at the I-15 Northbound Ramps, which operates at LOS C during both peak hours. Pursuant to Caltrans' Guidelines, a traffic study normally would be required for this intersection. (Caltrans, 2002) Because the Project would contribute more than 50 peak hour trips the intersection of the I-15 Northbound Ramps at Nichols Road, Project impacts to this intersection, including the need for signalization of the intersection, would be cumulatively considerable under Horizon Year (2035) conditions.

The Project would contribute 29 peak hour trips to the I-15 Southbound Ramps at Nichols Road during the AM peak hour and 36 peak hour trips during the PM peak hour. This intersection operates at LOS B during both peak hours under existing conditions. For State facilities that currently operate at LOS A or B, a traffic study normally is not required by Caltrans unless a project contributes more than 100 peak hour trips to the facility. (Caltrans, 2002) Nonetheless, in an effort to provide a conservative analysis of Project impacts, Project impacts to this intersection, including the need for signalization of the intersection, are considered cumulatively considerable under Horizon Year (2035) conditions.

Under existing conditions, nearby segments of I-15 operate at LOS B and C during peak hours. As shown in Figure 4.9-5, the Project would contribute fewer than 50 peak hour trips to nearby segments of I-15. For State facilities that currently operate at LOS C or D, a traffic study normally is not required by Caltrans unless a project contributes more than 50 peak hour trips to the facility. (Caltrans, 2002) Nonetheless, in an effort to provide a conservative analysis of Project impacts, Project impacts to nearby I-15 facilities has been considered. The I-15 Freeway mainline segments immediately north and south of Nichols Road and the merge/diverge ramp junctions at Nichols Road are anticipated to operate at unacceptable LOS under Horizon Year Without and With Project traffic conditions. Planned improvements (i.e., long-range plans for 2 tolled Express Lanes) for the I-15 Freeway, to be funded by Caltrans, are anticipated to improve the peak hour LOS; however, the following I-15 Freeway mainline segments and ramp junctions are anticipated to continue to operate at unacceptable LOS even with planned improvements (Urban Crossroads, 2016d, p. 7)~~(Urban Crossroads, 2015d, p. 7)~~:

- I-15 Freeway Mainline Segment – Southbound, North of Nichols Road – LOS "E" PM peak hour only;
- I-15 Freeway Mainline Segment – Northbound, South of Nichols Road – LOS "E" AM peak hour only;
- I-15 Freeway Southbound Off-Ramp at Nichols Road – LOS "E" PM peak hour only;
- I-15 Freeway Southbound ~~Off-Ramp~~ On-Ramp at Nichols Road – LOS "E" PM peak hour only; and
- I-15 Freeway Northbound Off-Ramp at Nichols Road – LOS "E" AM peak hour only.

There are no additional improvements planned along the I-15 Freeway in addition to the Express Lanes discussed above. Because t~~T~~he Project would contribute to, but would not directly cause, the deficient LOS at the ~~I-15 segments north and south of Nichols Road~~above-listed facilities~~., Additionally, the Project would contribute fewer than 50 peak hour trips to these freeway segments, which is the threshold utilized by Caltrans for impacts to its facilities. Accordingly,~~ the Project's impacts to the above-listed facilities~~freeway mainline segments~~ would be ~~less than~~ cumulatively considerable under Horizon Year (2035) conditions.

~~The Project would contribute fewer than 50 peak hour trips at the merge/diverge ramp junction of I-15 Southbound at Nichols Road under Horizon Year (2035) conditions; accordingly, the Project's impacts to this ramp junction would be less than cumulatively considerable. The Project would contribute more than 50 peak hour trips to the merge/diverge ramp junction of I-15 Northbound at Nichols Road under Horizon Year (2035) conditions. Project related traffic would contribute to, but would not directly cause, the deficient LOS at the merge/diverge ramp junction of I-15 Northbound at Nichols Road under Horizon Year (2035); accordingly, the Project's impacts to this merge/diverge ramp junction under Horizon Year (2035) conditions would be cumulatively considerable.~~
~~Under Horizon Year (2035) conditions, the Project would contribute to, but would not directly cause queuing issues during the weekday peak 95th percentile traffic flows at the I-15 Freeway Northbound Off-Ramp. The Project's contribution to this projected deficiency is a cumulatively considerable impact. Impacts to the I-15 Freeway Southbound Off-Ramp would be less than cumulatively considerable because the Project would contribute fewer than 50 AM and PM peak hour trips at this off-ramp.~~

The proposed Project has no potential to contribute to a significant cumulative impact under the topics discussed under Thresholds c) and e), because the Project has no potential to result in significant changes to air traffic patterns or to adversely affect emergency access on a direct or cumulative basis. Thus, the Project would have no cumulatively considerable impacts for thresholds c) and e). Additionally, the Project would have less-than-significant impacts due to inadequate emergency access; however, there are no cumulative developments in the Project area, the impacts of which, when combined with those of the Project, would result in cumulatively considerable effects due to inadequate emergency access.~~,~~ T~~t~~herefore, the Project's impacts due to inadequate emergency access would be less than significant on a cumulative basis.

As presented under Threshold f), the proposed Project would not conflict with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities and thus has no potential to contribute to a cumulative impact. The Project would have a less-than-significant cumulatively considerable impact to adopted policies and programs regarding public transit, bicycle, and pedestrian facilities, as well as a less-than-significant cumulatively considerable impact to the performance of such facilities.

4.9.9 SIGNIFICANCE OF IMPACTS BEFORE MITIGATION

Threshold a: Significant Cumulatively Considerable Impact. As discussed under Threshold a), the addition of Project-related traffic under EAPC (2016) conditions and Horizon Year (2035) conditions would contribute to intersection operational LOS deficiencies~~y~~ at the intersections of Nichols Road and the I-15 Northbound and Southbound Ramps~~,~~ and also would contribute to a need to signalize these intersections. Although Project traffic at the intersection of Nichols Road at the I-15 Southbound Ramps would be below the threshold at which Caltrans would normally require a traffic impact study, impacts to this intersection are nonetheless considered to be cumulatively considerable. The Project would contribute more than 50 peak hour trips to the I-15 Northbound Ramps at Nichols Road during both the AM and PM peak hours, representing a cumulatively-considerable impact. Because the projected LOS deficiencies~~y~~ would occur both with and without the addition of Project traffic, the Project's contributions to the projected LOS deficiencies~~y~~ and need for signalization at the Nichols Road and I-15 Northbound and Southbound Ramps represent ~~is a~~ cumulatively considerable impacts under both EAPC (2016) and Horizon Year (2035) conditions. ~~Impacts to the intersection of~~

~~Nichols Road and the I-15 Southbound Ramp would be less-than-cumulatively considerable because the Project would contribute fewer than 50 AM and PM peak hour trips to this intersection.~~

As previously noted and as shown in Figure 4.9-5, the Project would generate fewer than 50 peak hour trips to nearby segments of I-15, which operates at LOS B and C under existing conditions. The Project's contribution of traffic to the I-15 mainline is below the threshold used by Caltrans for determining when a traffic impact study is required (Caltrans, 2002). Nonetheless, and in an effort to provide a conservative estimate of the Project's potential impacts to traffic, the Project would result in cumulatively-considerable impacts to the following I-15 facilities under Horizon Year (2035) conditions:

- Cumulatively considerable impact to the I-15 Southbound Freeway Segments (LOS F during the PM peak hour);
- Cumulatively considerable impact to the I-15 Northbound Freeway Segments (LOS F during the AM peak hour and LOS E during the PM peak hour);
- Cumulatively considerable freeway off-ramp queuing impact to the I-15 Northbound Off-Ramp at Nichols Road (2,838 ft. queue during the AM peak hour and 3,520 ft. queue during the PM peak hour);
- Cumulatively considerable impact to the I-15 Southbound Off-Ramp/Nichols Road Freeway Ramp Junction Merge/Diverge (LOS F during the PM peak hour);
- Cumulatively considerable impact to the I-15 Northbound On-Ramp/Nichols Road Freeway Ramp Junction Merge/Diverge (LOS F during the AM peak hour and LOS E during the PM peak hour);

~~Under Horizon Year (2035) conditions, the Project would contribute to, but would not directly cause queuing issues during the weekday peak 95th percentile traffic flows at the I-15 Freeway Northbound Off-Ramp. The Project's contribution to this projected deficiency is a cumulatively considerable impact. Impacts to the I-15 Freeway Southbound Off-Ramp would be less-than-cumulatively considerable because the Project would contribute fewer than 50 AM and PM peak hour trips at this off-ramp.~~

~~Under Horizon Year With Project traffic conditions, he freeway merge/diverge junctions of I-15 Northbound Ramps at Nichols Road would continue to operate at a deficient LOS (i.e., LOS E or worse) Because Project-related traffic would contribute to, but would not cause, the projected deficiency at the freeway merge/diverge junctions of I-15 Northbound Ramps at Nichols Road, Project-related impacts under Horizon Year (2035) conditions would be cumulatively considerable. The Project would contribute fewer than 50 peak hour trips to the freeway merge/diverge junctions of I-15 Southbound Ramps at Nichols Road; accordingly, the Project's impacts to the freeway merge/diverge junctions of I-15 Southbound Ramps at Nichols Road would be less-than-cumulatively considerable.~~

~~Project-related traffic would contribute to the need to signalize the intersection of I-15 Northbound Ramp at Nichols Road under both EAPC (2016) and Horizon Year (2035) conditions. Because the need for this traffic signal would occur both with and without the addition of Project traffic, Project-related impacts are cumulatively considerable. Although the intersection of I-15 Southbound Ramp at Nichols Road also would warrant signalization under both EAPC (2016) and Horizon Year (2035) conditions, the Project contributes fewer than 50 peak hour trips to this intersection; thus, impacts would be less-than-cumulatively considerable.~~

~~Project-related traffic would contribute to, but would not directly cause, LOS deficiencies at nearby segments of the I-15. Because these deficiencies would occur either with or without Project traffic,~~

~~and because the Project would contribute less than 50 AM and PM peak hour trips to these mainline segments, impacts are considered to be less than cumulatively considerable under Horizon Year (2035) conditions.~~

~~Project related traffic would contribute to, but would not directly cause, deficient LOS (i.e., LOS E or worse) at the Nichols Road northbound on- and off ramps for the I-15 under Horizon Year (2035) With Project Conditions. Because the projected deficiency would occur either with or without the proposed Project, impacts would be cumulatively considerable. Although the on- and off ramps for the I-15 under Horizon Year conditions also would be impacted, the Project would contribute fewer than 50 AM and PM peak hour trips to these ramps; accordingly, Project related impacts would be less-than-cumulatively considerable.~~

Threshold b: Significant Cumulatively Considerable Impact. I-15 is the only CMP designated facility in the Project area. It should be noted, and as shown in Figure 4.9-5, the Project would not contribute more than 50 peak hour trips to any SHS facilities, with exception of the intersection of I-15 Northbound Ramps at Nichols Road. Because both directions of the I-15 freeway operate at LOS B or C under existing conditions and because the Project would contribute fewer than 50 peak hour trips to the I-15, a traffic study for these facilities normally would not be required based on guidance from Caltrans' Guidelines (Caltrans, 2002). Nonetheless, and in order to provide a conservative analysis of Project-related impacts, the Project's contribution to impacts to I-15-related facilities is considered cumulatively considerable. As described above under Threshold 4.9.a), the Project would contribute to, but would not directly cause, a deficient LOS at the following ~~I-15 freeway ramps, freeway segments, and freeway merge/diverge ramp junctions~~SHS facilities:

- EAPC (2016) Conditions:
  - Cumulatively considerable impact to the I-15 Northbound Ramp/Nichols Road intersection (LOS F AM and PM peak hours~~; LOS E PM peak hour~~);
  - Cumulatively considerable impact to the I-15 Southbound Ramp/Nichols Road intersection (LOS F AM and PM peak hours); ~~and~~
  - Cumulatively considerable impact due to the need to signalize the I-15 Northbound Ramps/Nichols Road intersection; and~~.~~
  - Cumulatively considerable impact due to the need to signalize the I-15 Southbound Ramps/Nichols Road intersection.

- Horizon Year (2035) Conditions:
  - Cumulatively considerable impact to the I-15 Northbound Ramp/Nichols Road intersection (LOS F during both AM and PM peak hours);
  - Cumulatively considerable impact to the I-15 Southbound Ramp/Nichols Road intersection (LOS F AM and PM peak hours);
  - Cumulatively considerable impact to the I-15 Southbound Freeway Segments (LOS F during the PM peak hour);
  - Cumulatively considerable impact to the I-15 Northbound Freeway Segments (LOS F during the AM peak hour and LOS E during the PM peak hour);
  - Cumulatively considerable freeway off-ramp queuing impact to the I-15 Northbound Off-Ramp at Nichols Road (2,838 ft. queue during the AM peak hour and 3,520 ft. queue during the PM peak hour);
  - Cumulatively considerable impact to the I-15 Southbound Off-Ramp/Nichols Road Freeway Ramp Junction Merge/Diverge (LOS F during the PM peak hour);

- Cumulatively considerable impact to the I-15 Northbound On-Ramp/Nichols Road Freeway Ramp Junction Merge/Diverge (LOS F during the AM peak hour and LOS E during the PM peak hour);
- Cumulatively considerable impact due to the need to signalize the I-15 Northbound Ramps/Nichols Road intersection; and
- Cumulatively considerable impact due to the need to signalize the I-15 Southbound Ramps/Nichols Road intersection.
- ~~Cumulatively considerable impact due to the projected off ramp queueing issue at the I-15 northbound off-ramps to Nichols Road; and~~
- ~~Cumulatively considerable impact due to deficiencies at the I-15 Northbound Ramps/Nichols Road merge/diverge junction (LOS F AM Peak Hour; LOS E PM Peak Hour).~~

Because the above-listed LOS deficiencies would occur both with and without Project-related traffic, ~~and because the Project would contribute more than 50 AM and PM peak hour trips to the affected facilities,~~ the Project's contribution to the above-listed CMP roadway deficiencies represents cumulatively considerable impacts of the proposed Project.

Threshold c: No Impact. There is no potential for the Project to change air traffic patterns or create substantial air traffic safety risks.

Threshold d: Less-than-Significant Impact. No significant transportation safety hazards would be introduced as a result of the proposed Project.

Threshold e: Less-than-Significant Impact. Adequate emergency access is currently and will continue to be provided at the Project site. The Project would not result in inadequate emergency access to the site or surrounding properties.

Threshold f: Less-than-Significant Impact. Potential impacts to the performance or safety of transit, bicycle, and pedestrian systems would be less than significant.

4.9.10 MITIGATION

MM TR-1 Within 60 days of approval of SMP 2015-01 and the revised Reclamation Plan No. 2006-01A2, the Project Applicant shall pay appropriate Development Impact Fees/Traffic Impact Fees at the rates then in effect pursuant to Chapter 16.74.040 of the City of Lake Elsinore Municipal Code.

MM TR-2 Within 60 days of approval of SMP 2015-01 and the revised Reclamation Plan No. 2006-01A2, the Project Applicant shall pay applicable Transportation Uniform Mitigation Fee (TUMF) fees at the rates then in effect in accordance with Chapter 16.83 of the City of Lake Elsinore Municipal Code.

4.9.11 SIGNIFICANCE OF IMPACTS AFTER MITIGATION

Threshold a: Cumulatively Significant and Unavoidable Impact. Table 4.9-29, *Summary of Improvements by Analysis Scenario*, lists the physical improvements necessary to reduce the

Table 4.9-29 Summary of Improvements by Analysis Scenario

#	Intersection Location	Jurisdiction	E+P Recommended Improvements	EAP (2016) Recommended Improvements	EAPC (2016) Recommended Improvements	2035 Without Project Recommended Improvements	2035 With Project Recommended Improvements	Improvements in TUMF or TIF?[1]	Fair Share %[2]
1	I-15 SB Ramps / Nichols Rd.	Caltrans, Lake Elsinore	None	None	Install a traffic signal	Same	Same	TIF Interchange	N/A
						2 SB left turn lanes	Same		
						SB right turn lane	Same		
						2nd and 3rd EB through lanes	Same		
						2nd WB left turn lane	Same		
						2nd and 3rd WB through lanes	Same		
2	I-15 NB Ramps / Nichols Rd.	Caltrans, Lake Elsinore	None	None	Install a traffic signal	Same	Same	TIF Interchange	N/A
						NB left turn lane	Same		
						2 NB right turn lanes	Same		
						2nd EB left turn lane	Same		
						2nd and 3rd EB through lanes	Same		
						2nd and 3rd WB through lanes	Same		
						WB right turn lane	Same		

[1] Improvements are included wholly or partially in one or more of the following: County of Riverside TUMF or City of Lake Elsinore TIF for local, regional, and specific plan components. Final determination on extent of the improvements included and covered by these fee programs is to be established by the governing lead agency.
[2] Fair share percentage is not shown as the recommended improvements at this location are included in a pre-existing fee program.
Source: (Urban Crossroads, 2016d, Table 1-4)~~(Urban Crossroads, 2015d, Table 1-4)~~

identified intersection LOS deficiencies by study scenario. All recommended improvements, including the projected warrant for traffic signals, are included as part of the TUMF and/or TIF programs. Fees from these programs are collected as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected vehicle trip increases. The TUMF 2009 Nexus Study (WRCOG, 2009), which is herein incorporated by reference and available for public review at the location indicated in EIR Section 7.0, *References*, establishes a nexus or reasonable relationship between the TUMF fee's use and the type of project for which the fee is required. CEQA allows for the assessment of a fee as an appropriate form of mitigation when it is linked to a specific mitigation program. In this case, the TUMF is an established mitigation program. As shown in Table 4.9-30, *Intersection Analysis for EAPC (2016) Conditions with Improvements*, with implementation of the improvements programmed as part of TUMF and/or TIF, the intersections of I-15 Northbound Ramps at Nichols Road and I-15 Southbound Ramps at Nichols Road would improve to LOS D under both AM and PM peak hours under EAPC (2016) conditions; accordingly, implementation of Mitigation Measures MM TR-1 and MM TR-2 would reduce the Project's cumulatively considerable impacts to the intersection of I-15 Northbound Ramps at Nichols Road and the I-15 Southbound Ramps at Nichols Road to a level below significant under EAPC (2016) conditions. However, no schedule is prescribed by the TUMF or TIF programs for these improvements, and it is not practical to assume that the improvements would be installed by 2016. Improvement schedules for these improvements are partially dependent on the pace of new development and associated pace of fee collection that occurs under the TUMF and the TIF. Under CEQA, a fair share monetary contribution to a mitigation fund is adequate mitigation if the funds are part of a reasonable plan that the relevant agency (in this case WRCOG and the City of Lake Elsinore) is committed to implementing. As such, the proposed Project can mitigate its cumulatively considerable contribution to these impacts. Regardless, because the improvements would likely not be in place at their time of need (before the deficiency occurs), this EIR recognizes ~~a~~ short-term and unavoidable cumulatively considerable impacts at the I-15 Northbound Ramp/Nichols Road intersection and at the I-15 Southbound Ramp/Nichols Road intersection.

As detailed in Table 4.9-31, *Intersection Analysis for Horizon Year (2035) Conditions With Improvements*, with implementation of Mitigation Measures MM TR-1 and MM TR-2 and installation of traffic signals, the I-15 Northbound ramps at Nichols Road would remain LOS D under with Project conditions, and the I-15 Southbound ramps at Nichols Road would remain LOS C in the AM peak hour and LOS D in the PM peak hour under with Project conditions. ~~.~~ Thus, with improvements, the Project's cumulatively considerable impacts to the intersection of the I-15 Northbound On- and Off-Ramps at Nichols Road and I-15 Southbound On- and Off-Ramps at Nichols Road would be reduced to less-than-significant levels. However, no schedule is prescribed by the TUMF or TIF program for these improvements, and it is not practical to assume that the improvements would be installed by ~~2016~~2035. Improvement schedules for these improvements are partially dependent on the pace of new development and associated pace of fee collection that occurs under the TUMF and the TIF. Under CEQA, a fair share monetary contribution to a mitigation fund is adequate mitigation if the funds are part of a reasonable plan that the relevant agency (in this case WRCOG and the City of Lake Elsinore) is committed to implementing. As such, the proposed Project can mitigate its cumulatively considerable contribution to these impacts. Regardless, because the improvements ~~would likely~~may not be in place at their time of need (before the deficiency occurs), this EIR recognizes a short-term and unavoidable cumulatively considerable impact at the I-15 Northbound Ramp/Nichols Road intersection and at the I-15 Southbound Ramp/Nichols Road intersection.

Table 4.9-30 Intersection Analysis for EAPC (2016) Conditions with Improvements

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	I-15 SB Ramps / Nichols Rd.																	
	- Without Improvements	AWS	0	0	0	0	1	0	0	1	1	1	1	0	62.7	61.0	F	F
	- With Improvements	TS	0	0	0	0	1	0	0	1	1	1	1	0	38.4	38.3	D	D
2	I-15 NB Ramps / Nichols Rd.																	
	- Without Improvements	CSS	0	1	0	0	0	0	1	1	0	0	1	0	>100.0	>100.0	F	F
	- With Improvements	TS	0	1	0	0	0	0	1	1	0	0	1	0	52.9	54.9	D	D

Notes: **BOLD**=LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).
[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
[2] Per the 2010 Highway Capacity Manual, overall average intersection delay, and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.
[3] AWS = All Way Stop; TS = Traffic Signal
Source: (Urban Crossroads, 2016d, Table 7-5)~~(Urban Crossroads, 2015d, Table 7-5)~~

Table 4.9-31 Intersection Analysis for Horizon Year (2035) Conditions With Improvements

#	Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Delay[2] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	I-15 SB Ramps / Nichols Rd.																	
	- Without Project	TS	0	0	0	**2**	1	**1**	0	**3**	1	**2**	**3**	0	33.3	49.4	C	D
	- With Project	TS	0	0	0	**2**	1	**1**	0	**3**	1	**2**	**3**	0	33.5	50.9	C	D
2	I-15 NB Ramps / Nichols Rd.																	
	- Without Project	TS	**1**	1	**2**	0	0	0	**2**	**3**	0	0	**3**	**1**	44.7	39.7	D	D
	- With Project	TS	**1**	1	**2**	0	0	0	**2**	**3**	0	0	**3**	**1**	46.9	40.9	D	D

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d= Defacto Right Turn Lane; **1** = Improvement
[2] Per the 2010 Highway Capacity Manual, overall average intersection delay, and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.
[3] AWS = All Way Stop; TS = Traffic Signal
Source: (Urban Crossroads, 2016d, Table 8-5)~~(Urban Crossroads, 2015d, Table 8-5)~~

As shown in Table 4.9-26, the proposed Project would contribute to, but would not cause, impacts to the I-15 Northbound freeway segments (LOS F in AM peak hour and LOS E during the PM peak hour) and the I-15 Southbound freeway segments (LOS F in PM peak hour) under Horizon Year (2035) conditions. Long-range plans by Caltrans for the I-15 Freeway include the construction of two tolled Express Lanes from Cajalco Road to Central Avenue (SR-74), which are improvements that are subject to available funding (Urban Crossroads, 2015d, p. 102). As shown in Table 4.9-32, *Basic Freeway Segment Analysis for Horizon Year (2035) Conditions with Improvements*, planned improvements to the I-15 Northbound and Southbound mainlines would improve the LOS along these freeway segments. With improvements, the I-15 Southbound freeway segments would improve to LOS C in the AM peak hour and LOS E during the PM peak hour. Additionally, the Northbound freeway segments would improve to LOS E during the AM peak hour and LOS D

during the PM peak hour. Thus, while planned Caltrans improvements to these freeway segments would improve the LOS, both the Northbound and Southbound freeway segments would continue to operate at a deficient LOS during at least one peak hour. There is no additional feasible mitigation to reduce these cumulatively-considerable impacts to below a level of significance. Moreover, the timing of Caltrans' improvements is not currently known. Therefore, the Project's cumulatively-considerable impacts to the I-15 Northbound and Southbound freeway segments would be cumulatively-considerable and unavoidable impacts of the proposed Project.

Table 4.9-32 Basic Freeway Segment Analysis for Horizon Year (2035) Conditions with Improvements

Freeway	Direction	Mainline Segment	Lanes[1]	2035 Without Project				2035 With Project			
				Density[2]		LOS		Density[2]		LOS	
				AM	PM	AM	PM	AM	PM	AM	PM
I-15 Freeway	SB	Off-Ramp at Nichols Road	3	20.6	**36.4**	C	**E**	20.6	**36.5**	C	**E**
		On-Ramp at Nichols Road	3	20.0	34.5	C	D	20.0	34.8	C	D
	NB	On-Ramp at Nichols Road	3	34.3	29.8	D	D	34.4	30.1	D	D
		Off-Ramp at Nichols Road	3	**35.2**	28.9	**E**	D	**35.3**	29.0	**E**	D

Notes: **BOLD** = Unacceptable Level of Service
[1] Number of mixed-flow lanes are in the specified direction and is based on existing conditions, plus two tolled Express Lanes.
[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).
Source: (Urban Crossroads, 2015d, Table 8-7)

As shown on Table 4.9-27, the proposed Project also would contribute to, but would not cause, queuing issues during the weekday peak 95th percentile traffic flows at the I-15 Northbound and Southbound Freeway off-ramps under Horizon Year (2035) With and Without Project traffic conditions. Long-range plans by Caltrans for the I-15 Freeway include the construction of two tolled Express Lanes from Cajalco Road to Central Avenue (SR-74), which are improvements that are subject to available funding (Urban Crossroads, 2015d, p. 102). As shown in Table 4.9-33, *Peak Hour Freeway Off-Ramp Queuing Summary for Horizon Year (2035) Conditions With Improvements*~~Table 4.9-31~~, with construction of the planned improvements, the queuing issues at the I-15 Northbound and Southbound Off-Ramps at Nichols Road would be reduced to acceptable levels. However, it is possible that queuing deficiencies may still be experienced in the interim period prior to the completion of the improvements to I-15. As such, the Project's impacts to the I-15 Freeway ~~n~~Northbound and Southbound off-ramps under Horizon Year (2035) represent~~s a~~ near-term cumulative significant and unavoidable impacts of the proposed Project for which no feasible mitigation is available.

Table 4.9-33 Peak Hour Freeway Off-Ramp Queuing Summary for Horizon Year (2035) Conditions With Improvements

Intersection	Movement	Available Stacking Distance (Feet)	2035 Without Project				2035 With Project			
			95th Percentile Queue (Feet)[2]		Acceptable?[1]		95th Percentile Queue (Feet)[2]		Acceptable?[1]	
			AM Peak	PM Peak	AM	PM	AM Peak	PM Peak	AM	PM
I-15 SB Off-Ramp / Nichols Rd.	SBL	500	194	395	Yes	Yes	200	400	Yes	Yes
	SBT	1,600	337 [2]	317	Yes	Yes	338 [2]	317	Yes	Yes
	SBR	500	337 [2]	316	Yes	Yes	338 [2]	316	Yes	Yes
I-15 NB Off-Ramp / Nichols Rd.	NBL	500	132	261	Yes	Yes	132	261	Yes	Yes
	NBT	1,530	132	261	Yes	Yes	132	261	Yes	Yes
	NBR	500	399 [2]	407 [2]	Yes	Yes	411 [2]	419 [2]	Yes	Yes

1 Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.
2 Maximum queue length for the approach reported.
(Urban Crossroads, 2016d, Table 8-6)

~~Signalization of the intersection of the I-15 Northbound on- and off-ramps at Nichols Road is planned as part of the City's TIF. Therefore, with implementation of Mitigation Measure MM TR-1, requiring the payment of TIF fees, the Project's cumulatively considerable contribution to the need for signalization of this intersection would be reduced to less than significant levels. However, no schedule is prescribed by the TUMF or TIF program for this improvement, and it is not practical to assume that the improvements would be installed by 2016. Improvement schedules for this improvement are partially dependent on the pace of new development and associated pace of fee collection that occurs under the TUMF and the TIF.~~

~~As noted above, long-range plans by Caltrans for the I-15 Freeway include the construction of two tolled Express Lanes from Cajalco Road to Central Avenue (SR-74), which are improvements that are subject to available funding (Urban Crossroads, 2015d, p. 102). As shown in Table 4.9-32, *Basic Freeway Segment Analysis for Horizon Year (2035) Conditions with Improvements*, even with the planned Express Lanes, the I-15 northbound segment at the off-ramp with Nichols Road would experience a deficient LOS E during the AM peak hour, and the southbound freeway off-ramp at Nichols Road would experience a deficient LOS E during the PM peak hour. There are no additional improvements planned along these segments of the I-15, nor are there any funding mechanisms identified by Caltrans for such cumulatively considerable impacts. However, and as noted previously, the Project would contribute fewer than 50 peak hour trips to these freeway mainline segments. As such, the Project's contribution to the projected freeway mainline deficiencies under Horizon Year (2035) conditions represents a less-than-cumulatively considerable impact of the proposed Project.~~

As shown in Table 4.9-34, *Freeway Ramp Junction Merge/Diverge Analysis for Horizon Year (2035) Conditions with Improvements,* even with the construction of planned improvements to the I-15 and the intersections of the I-15 on- and off-ramps at Nichols Road, the northbound off-ramp at Nichols Road would experience a deficient LOS E in the AM peak hour and the Southbound on- and off-ramps at Nichols Road would experience a deficient LOS in the PM peak hour. Although the Project is required to contribute TIF and TUMF fees pursuant to Mitigation Measures MM TR-1 and MM TR-2, the identified mitigation is not adequate to fully reduce th~~is~~ese cumulatively-considerable impacts to a level below significant. There are no additional improvements planned at ~~this~~ these off-

ramp locations, nor are there any funding mechanisms identified by Caltrans for such cumulatively considerable impacts. Accordingly, the Project's contribution to the deficient northbound junction merge/diverge LOS under Horizon Year (2035) conditions represents a cumulatively significant and unavoidable impact of the proposed Project.

~~Table 4.9-33~~Table 4.9-34 Freeway Ramp Junction Merge/Diverge Analysis for Horizon Year (2035) Conditions with Improvements

Freeway	Direction	Ramp or Segment	Lanes on Freeway[1]	2035 Without Project				2035 With Project			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Density[2]	LOS	Density[2]	LOS	Density[2]	LOS	Density[2]	LOS
I-15 Freeway	SB	Off-Ramp at Nichols Road	3	28.8	D	**38.2**	E	28.8	D	**38.3**	E
		On-Ramp at Nichols Road	3	26.5	C	**36.9**	E	26.6	C	**36.9**	E
	NB	On-Ramp at Nichols Road	3	33.2	D	31.2	D	33.3	D	31.3	D
		Off-Ramp at Nichols Road	3	**37.1**	E	34.2	D	**37.1**	E	34.2	D

Notes: **BOLD** = Unacceptable Level of Service
[1] Number of mixed-flow lanes are in the specified direction and is based on existing conditions, plus two tolled Express Lanes.
[2] Density is measured by passenger cars per mile per lane (pc/mi/ln).
Source: (Urban Crossroads, 2016d, Table 8-8)~~(Urban Crossroads, 2015d, Table 8-8)~~

Threshold b: Cumulatively Significant and Unavoidable Impact. As discussed above, the Project's contribution to the following facilities represents cumulatively considerable impacts for which additional mitigation is not available:

- EAPC (2016) Conditions:
  - Cumulatively considerable impact to the I-15 Northbound Ramps/Nichols Road intersection (LOS F AM and PM peak hours~~; LOS E PM peak hour~~);
  - Cumulatively considerable impact to the I-15 Southbound Ramps/Nichols Road intersection (LOS F in the AM and PM peak hours);
  - Cumulatively considerable impact due to the need to signalize the I-15 Northbound Ramps/Nichols Road intersection; and
  - Cumulatively considerable impact due to the need to signalize the I-15 Southbound Ramps/Nichols Road intersection.~~.~~

- Horizon Year (2035) Conditions:
  - Cumulatively considerable impact to the I-15 Northbound Ramp/Nichols Road intersection (LOS F during both AM and PM peak hours);
  - Cumulatively considerable impact to the I-15 Northbound Ramp/Nichols Road intersection (LOS F during both AM and PM peak hours);
  - Cumulatively considerable impact to the I-15 Southbound Ramps/Nichols Road intersection (LOS F for both AM and PM peak hours);
  - Cumulatively considerable impact to the I-15 Southbound Freeway Segments (LOS F during the PM peak hour);
  - Cumulatively considerable impact to the I-15 Northbound Freeway Segments (LOS F during the AM peak hour and LOS E during the PM peak hour);

- Cumulatively considerable freeway off-ramp queuing impact to the I-15 Northbound Off-Ramp at Nichols Road (2,838 ft. queue during the AM peak hour and 3,520 ft. queue during the PM peak hour);
- Cumulatively considerable impact to the I-15 Southbound Off-Ramp/Nichols Road Freeway Ramp Junction Merge/Diverge (LOS F during the PM peak hour);
- Cumulatively considerable impact to the I-15 Northbound On-Ramp/Nichols Road Freeway Ramp Junction Merge/Diverge (LOS F during the AM peak hour and LOS E during the PM peak hour);
- Cumulatively considerable impact due to the need to signalize the I-15 Northbound Ramps/Nichols Road intersection~~.~~; and
- Cumulatively considerable impact due to the need to signalize the I-15 Southbound Ramps/Nichols Road intersection.
- ~~Cumulatively considerable impact due to the projected off-ramp queueing issue at the I-15 northbound off-ramps to Nichols Road; and~~
- ~~Cumulatively considerable impact due to deficiencies at the I-15 Northbound Ramps/Nichols Road merge/diverge junction.~~

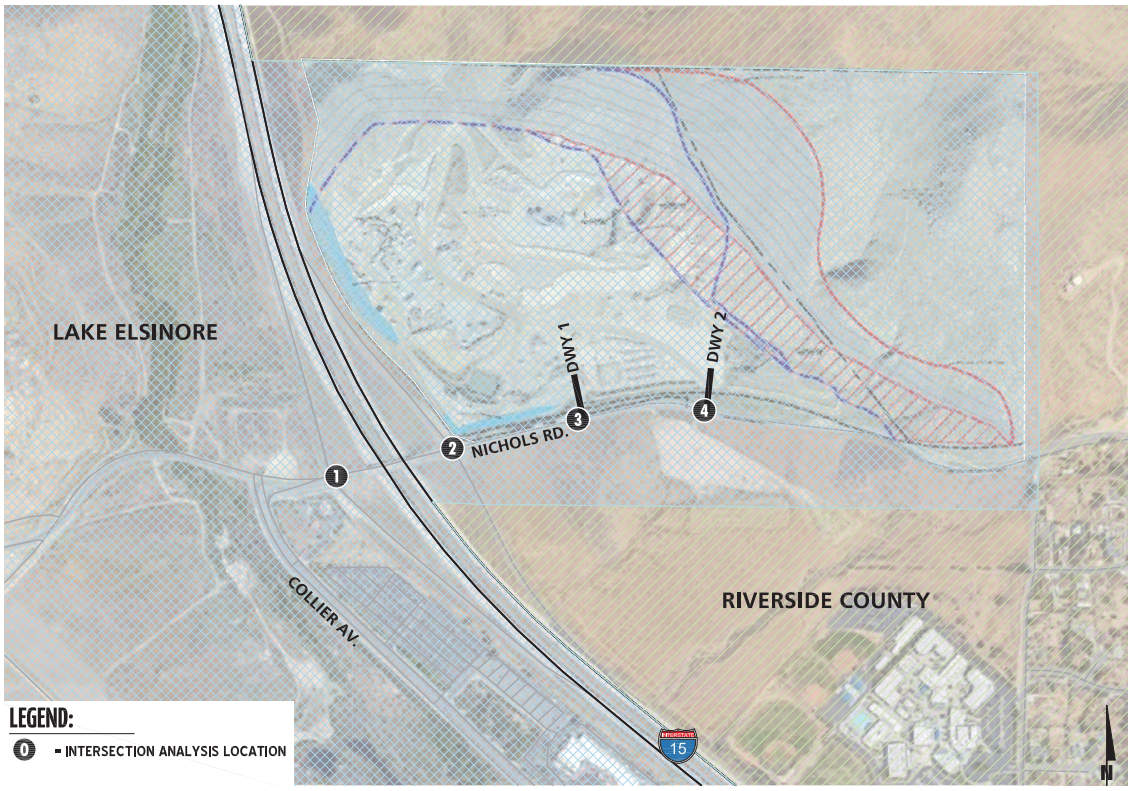
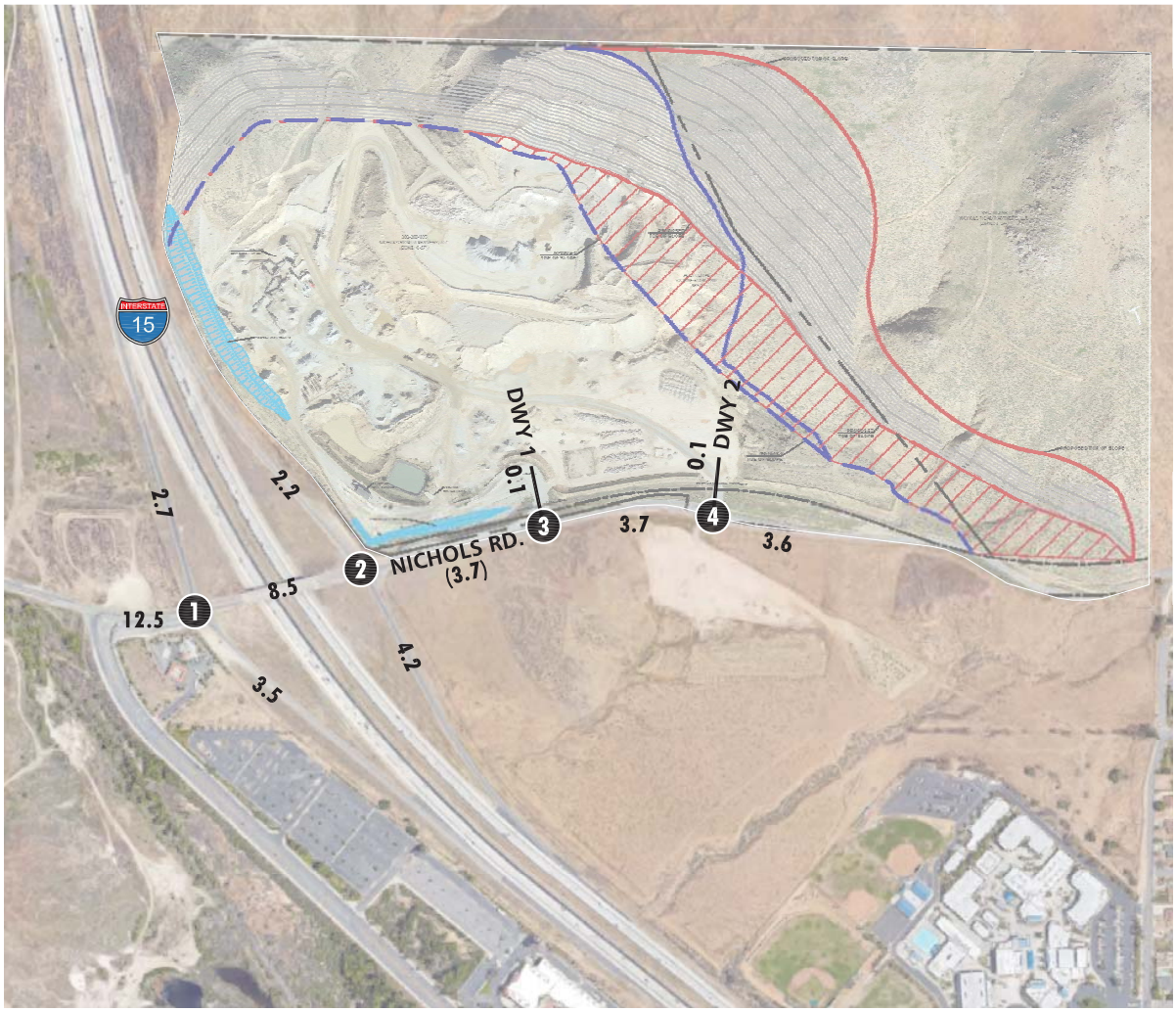


Figure 4.9-1

INTERSECTION ANALYSIS LOCATIONS



1 I-15 SB Ramps & Nichols Rd.	2 I-15 NB Ramps & Nichols Rd.	3 Driveway 1 & Nichols Rd.	4 Driveway 2 & Nichols Rd.
68(139) 8(3) 165(65) ← 165(357) ← 68(16)	→ 92(28) ← 138(84)	→ 42(5) ← 187(107)	→ 0(0) 0(0) ← 0(0) ← 187(107)
228(213) → 247(249) →	65(135) → 328(142) →	455(175) →	47(4) → 408(171) →
	95(288) ← 1(3) ← 127(33) ←		

LEGEND:

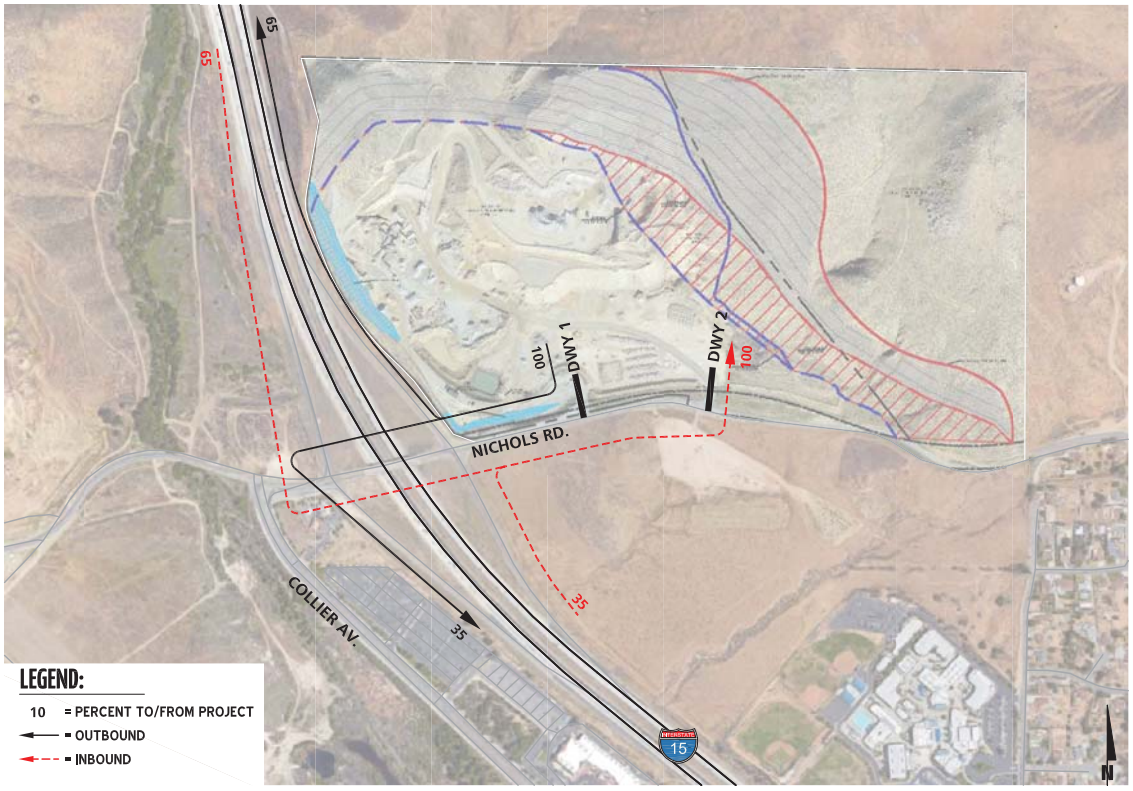
10(10) = AM(PM) PEAK HOUR INTERSECTION VOLUMES
10.0 = ESTIMATED VEHICLES PER DAY (1000'S)
(10.0) = COUNT-BASED VEHICLES PER DAY (1000'S)

Source(s): Urban Crossroads (08-17-2015)

Figure 4.9-2

NOT TO SCALE

EXISTING (2015) TRAFFIC VOLUMES (IN PCE)



Source(s): Urban Crossroads (08-17-2015)

Figure 4.9-3

PROJECT (PASSENGER CAR) TRIP DISTRIBUTION

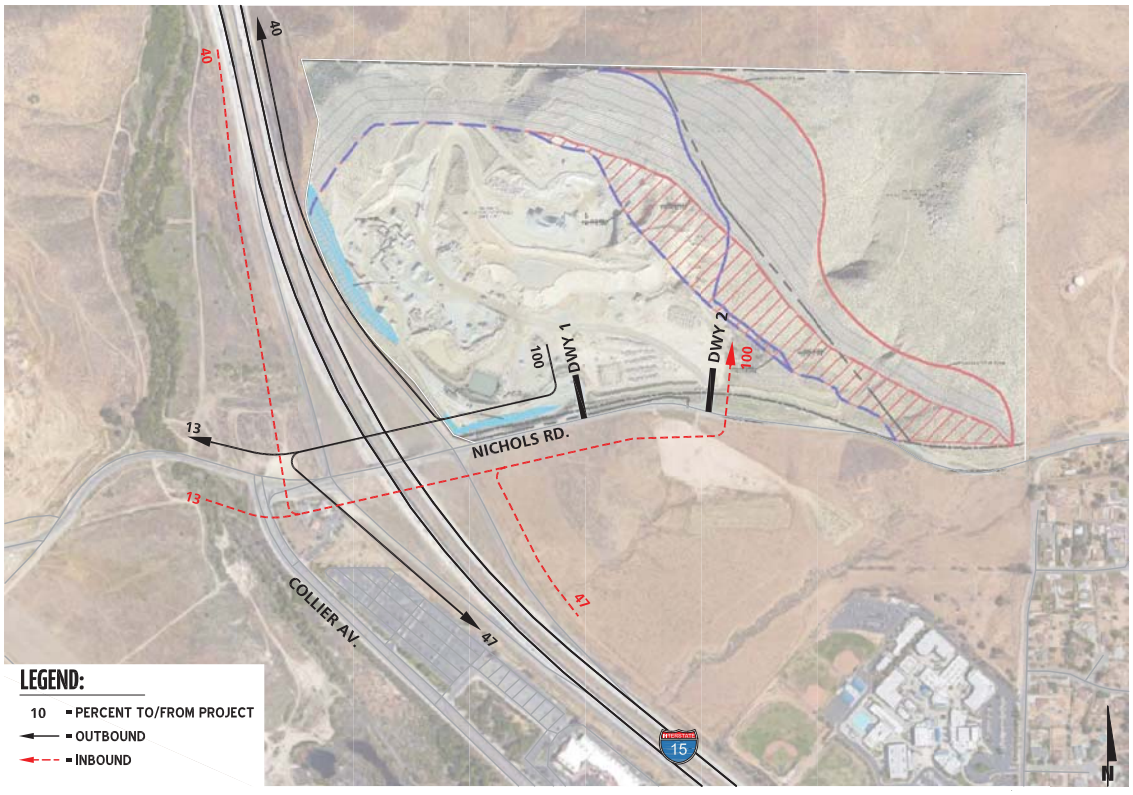
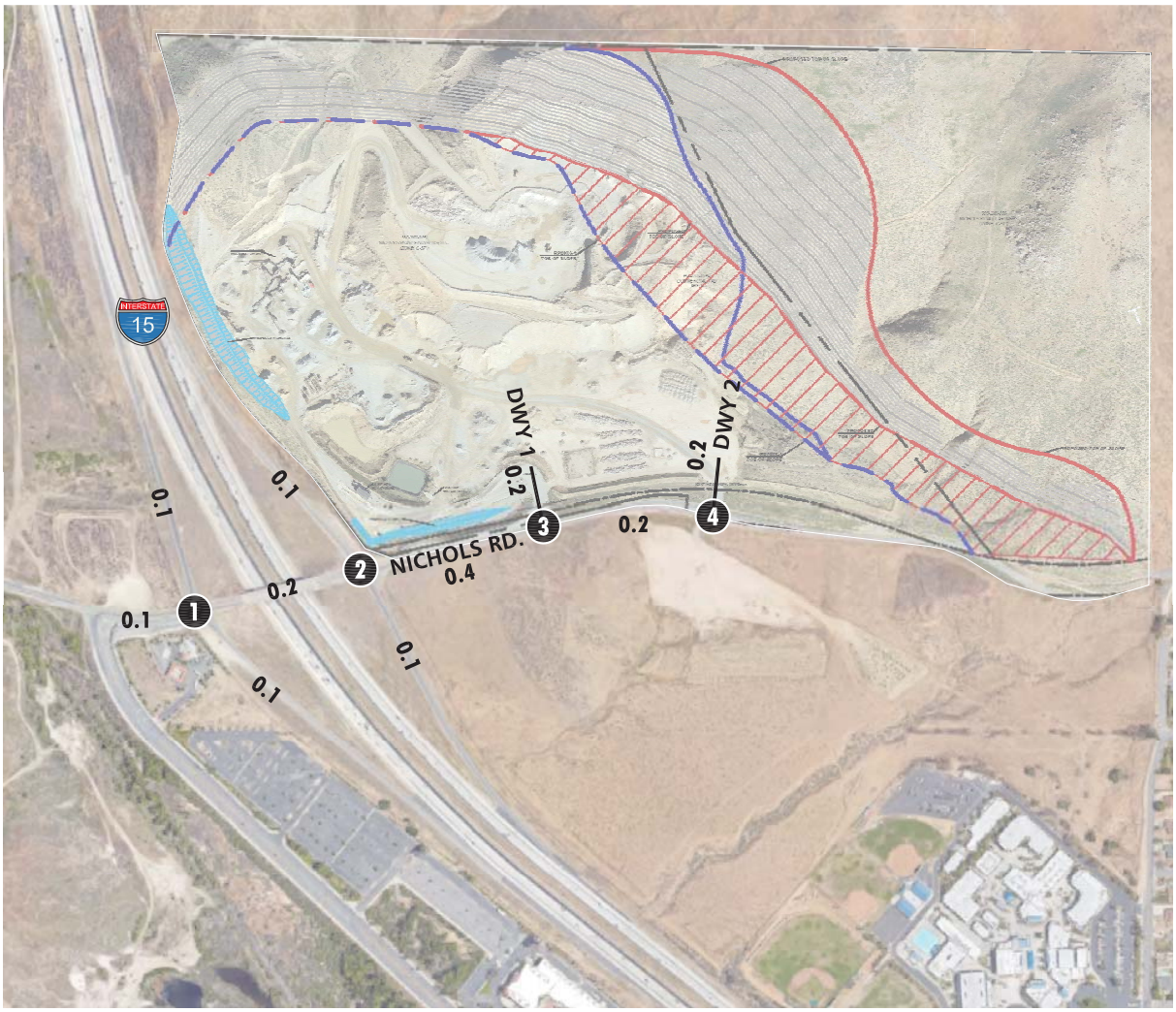


Figure 4.9-4

PROJECT (TRUCK) TRIP DISTRIBUTION



1 I-15 SB Ramps & Nichols Rd.	2 I-15 NB Ramps & Nichols Rd.	3 Driveway 1 & Nichols Rd.	4 Driveway 2 & Nichols Rd.
0(0) 0(0) 14(10) ←4(3) ←14(13)	→12(11) →18(16)	30(27) ←0(0)	0(0) 0(0) ←0(0) ←0(0)
4(3)→ 0(0)→	0(0)→ 18(14)→	34(26)→	34(26)→ 0(0)→
	0(0) 0(0) 16(12)→		

LEGEND:

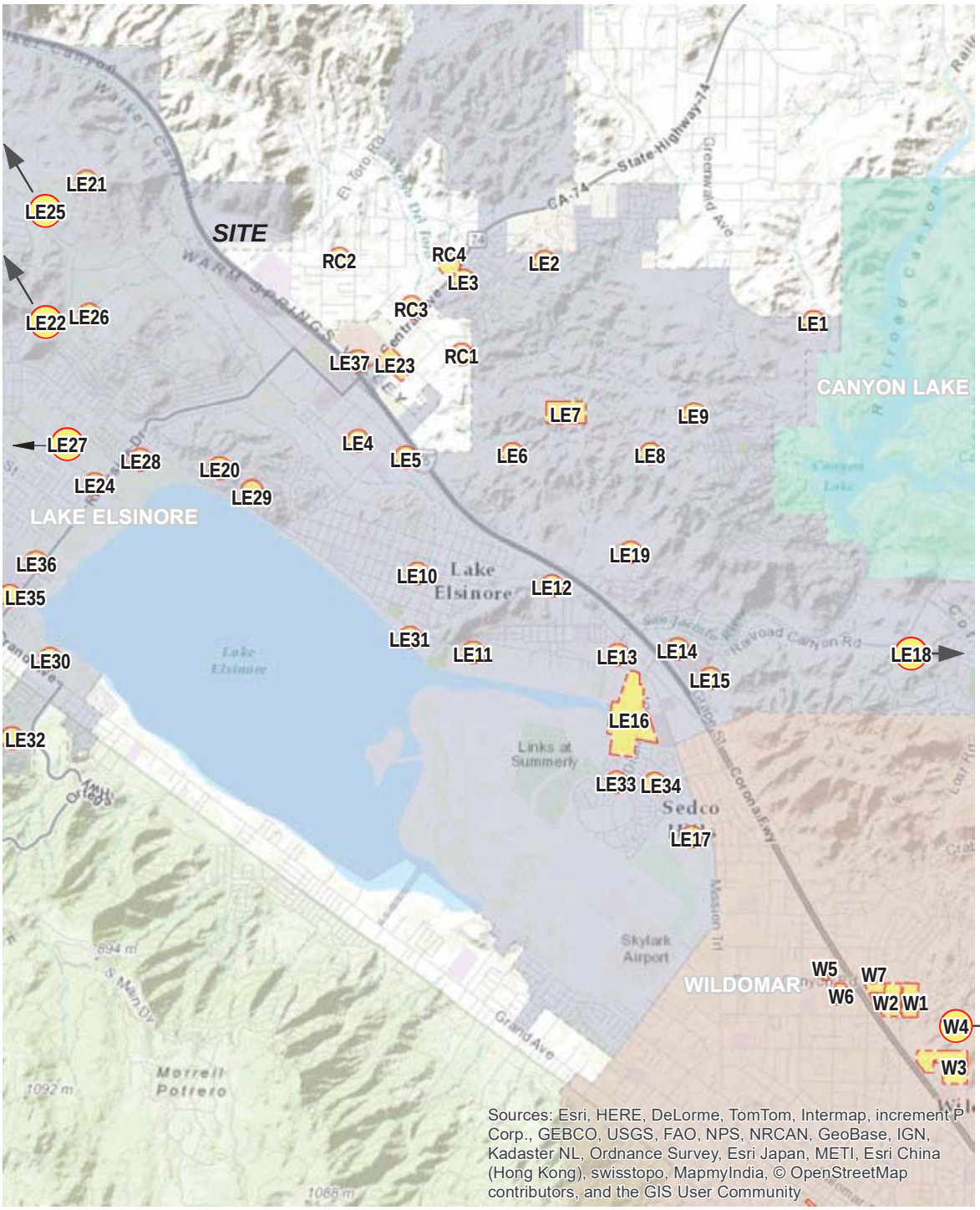
10(10) = AM(PM) PEAK HOUR INTERSECTION VOLUMES
10.0 = VEHICLES PER DAY (1000'S)

Source(s): Urban Crossroads (08-17-2015)

Figure 4.9-5

NOT TO SCALE

PROJECT ONLY TRAFFIC VOLUMES (IN PCE)

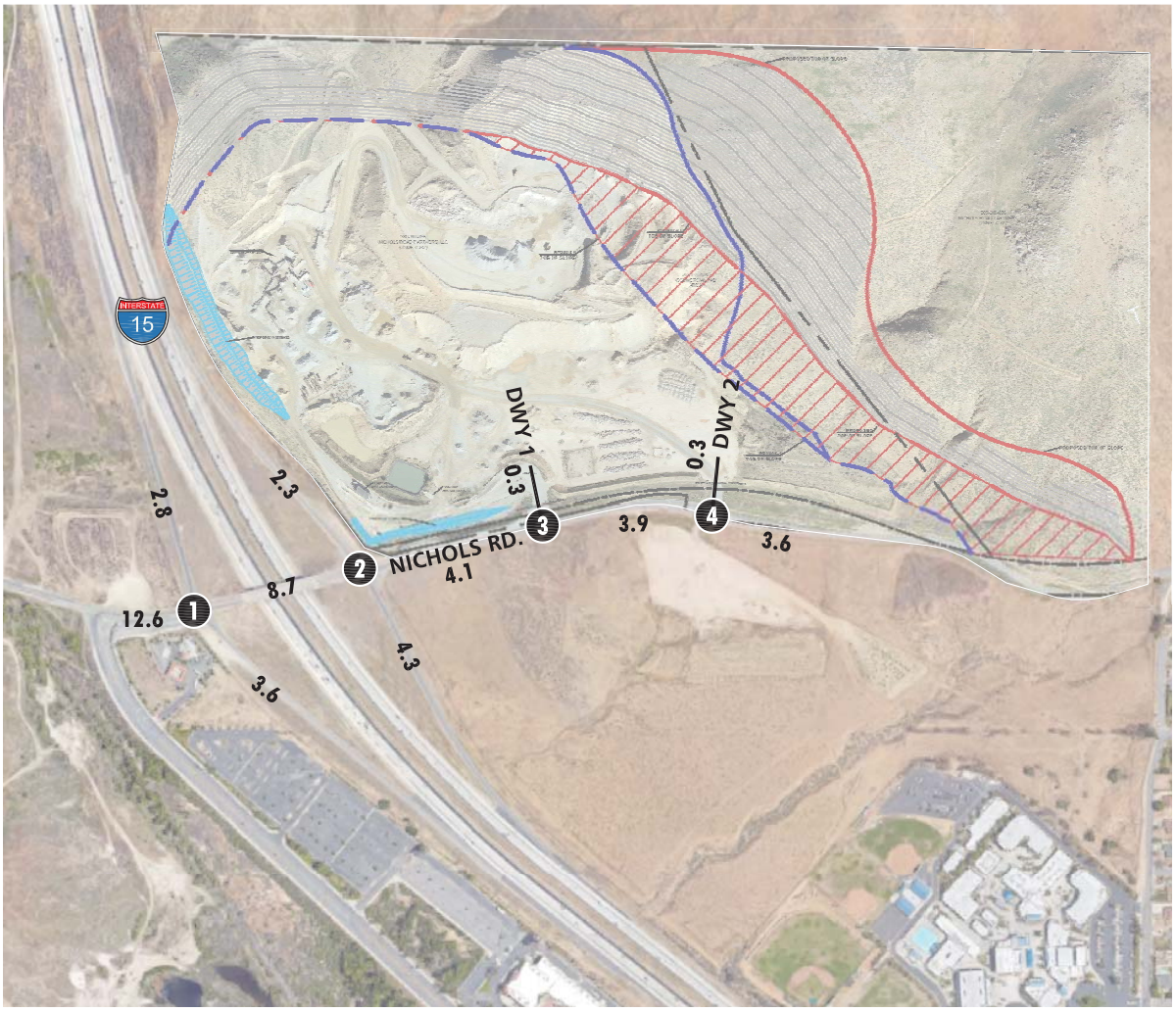


Source(s): Urban Crossroads (08-17-2015)

Figure 4.9-6

NOT TO SCALE

CUMULATIVE DEVELOPMENT PROJECTS LOCATION MAP



1 I-15 SB Ramps & Nichols Rd.	2 I-15 NB Ramps & Nichols Rd.	3 Driveway 1 & Nichols Rd.	4 Driveway 2 & Nichols Rd.
68(139) ← 8(3) ← 179(75) ← 169(360) ← 82(29)	→ 104(39) → 156(100)	→ 72(32) → 187(107)	→ 0(0) → 0(0) → 0(0) → 187(107)
232(216) → 247(249) →	65(135) → 346(156) → 95(288) ↑ 1(3) ↑ 143(45) ↑	489(201) →	81(30) → 408(171) →

LEGEND:

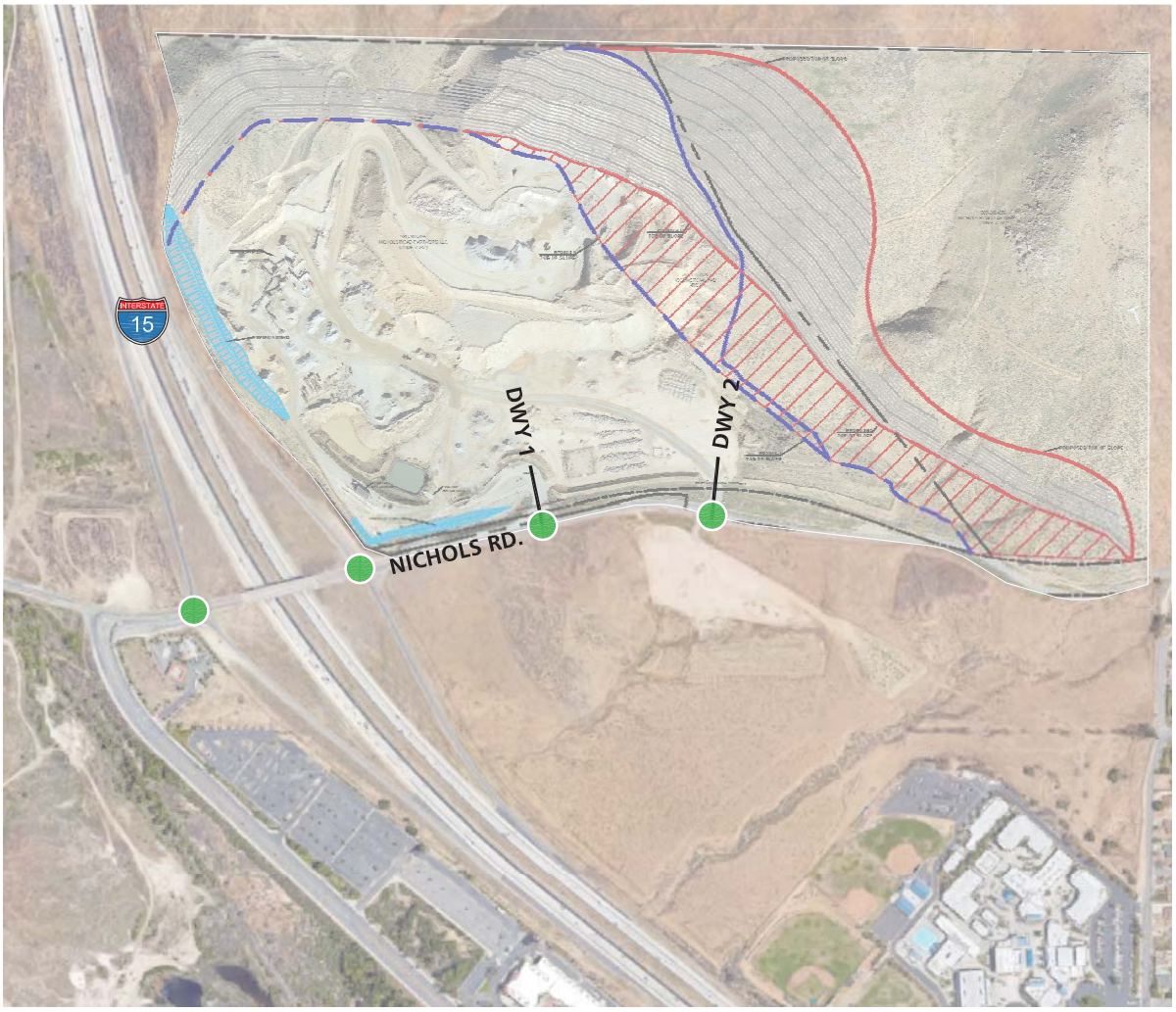
10(10) = AM(PM) PEAK HOUR INTERSECTION VOLUMES
10.0 = VEHICLES PER DAY (1000'S)

Source(s): Urban Crossroads (08-17-2015)

Figure 4.9-7

NOT TO SCALE

E+P TRAFFIC VOLUMES (IN PCE)



LEGEND:

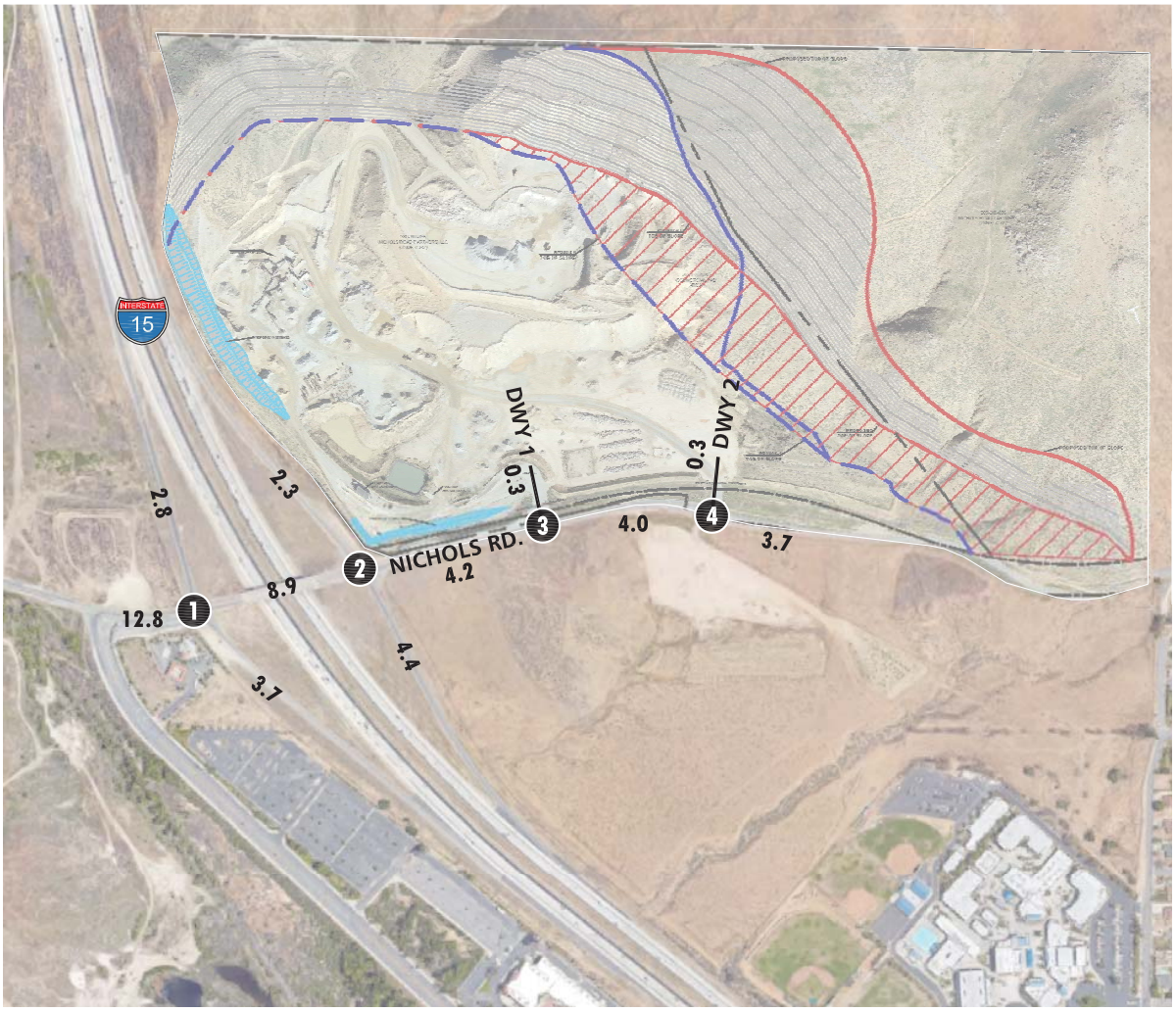
- = AM PEAK HOUR ACCEPTABLE LOS
- = AM PEAK HOUR DEFICIENT LOS
- = PM PEAK HOUR ACCEPTABLE LOS
- = PM PEAK HOUR DEFICIENT LOS

Source(s): Urban Crossroads (08-17-2015)

Figure 4.9-8

NOT TO SCALE

SUMMARY OF PEAK HOUR INTERSECTION LOS FOR E+P CONDITIONS



1 I-15 SB Ramps & Nichols Rd.	2 I-15 NB Ramps & Nichols Rd.	3 Driveway 1 & Nichols Rd.	4 Driveway 2 & Nichols Rd.
69(141) 8(3) 182(76) ← 172(367) ← 83(29)	→ 105(40) → 158(102)	73(32) → ← 191(109)	0(0) 0(0) → 0(0) ← 191(109)
236(220) → 252(253) →	66(138) → 352(159) → 96(294) 1(3) 146(45)	498(204) →	82(30) → 416(174) →

LEGEND:

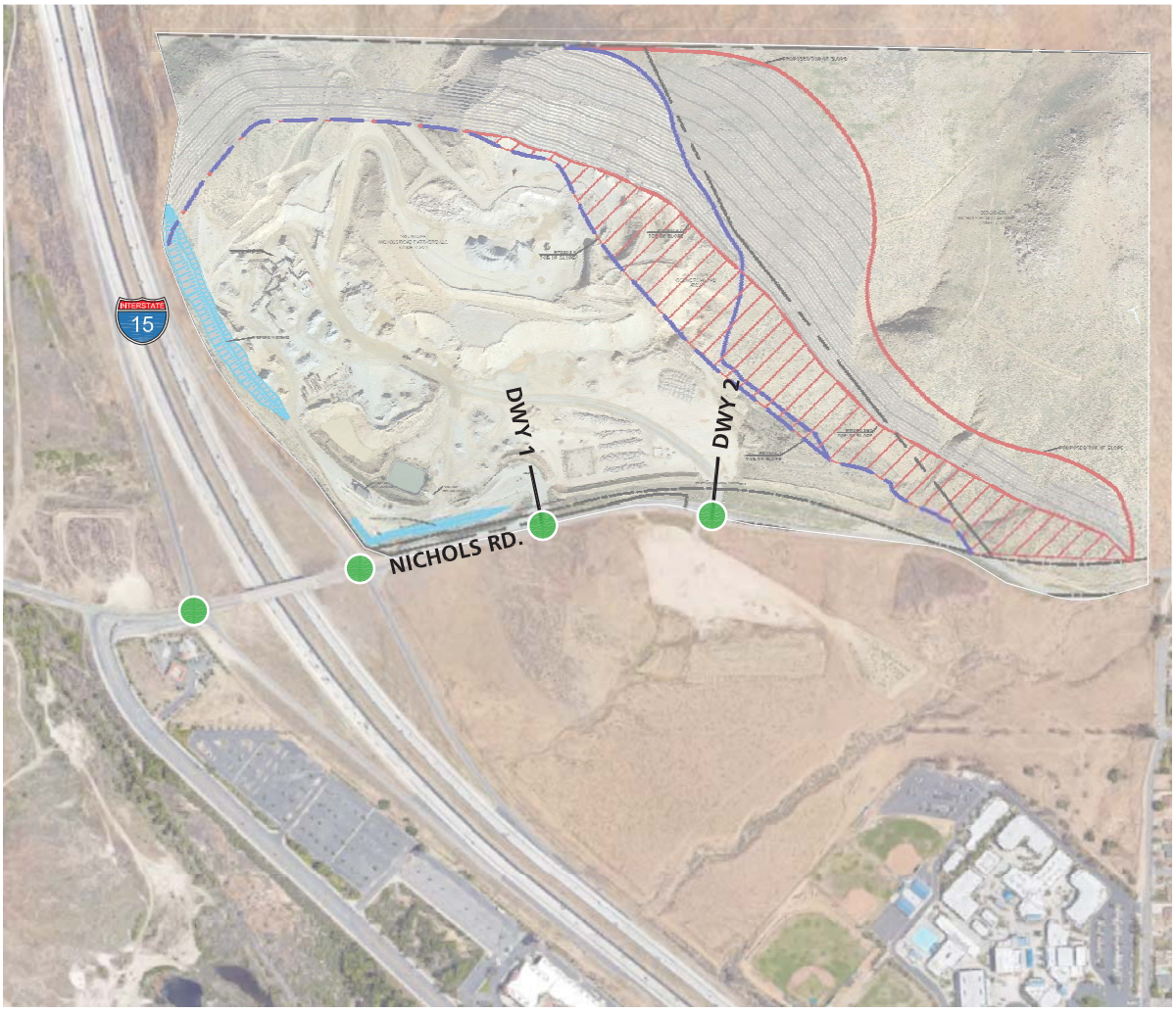
10(10) = AM(PM) PEAK HOUR INTERSECTION VOLUMES
10.0 = VEHICLES PER DAY (1000'S)

Source(s): Urban Crossroads (08-17-2015)

Figure 4.9-9

NOT TO SCALE

EAP (2016) TRAFFIC VOLUMES (IN PCE)



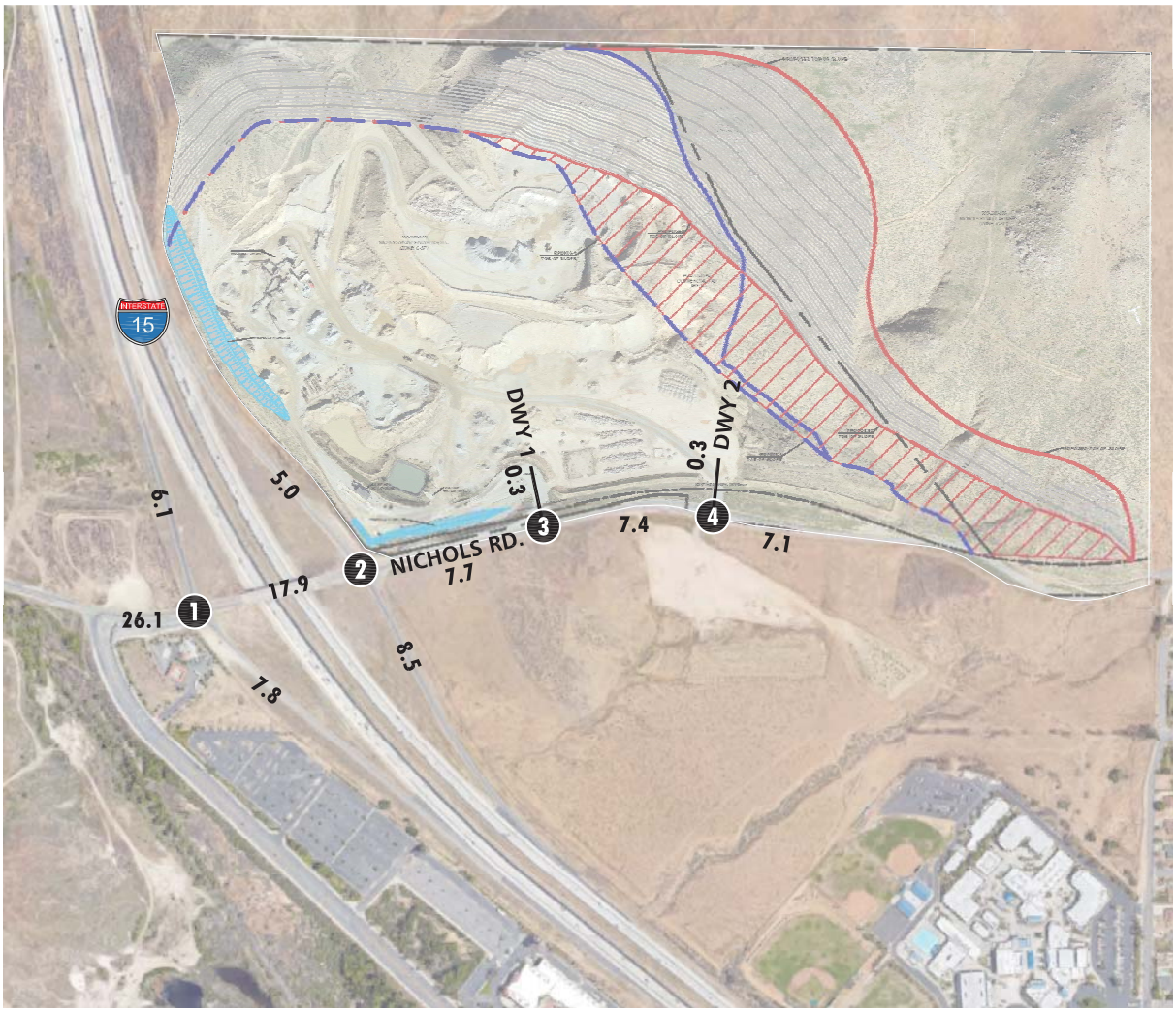
LEGEND:

- = AM PEAK HOUR ACCEPTABLE LOS
- = AM PEAK HOUR DEFICIENT LOS
- = PM PEAK HOUR ACCEPTABLE LOS
- = PM PEAK HOUR DEFICIENT LOS

Source(s): Urban Crossroads (08-17-2015)

NOT TO SCALE

Figure 4.9-10
SUMMARY OF PEAK HOUR INTERSECTION LOS FOR EAP (2016) CONDITIONS



1 I-15 SB Ramps & Nichols Rd.		2 I-15 NB Ramps & Nichols Rd.		3 Driveway 1 & Nichols Rd.	4 Driveway 2 & Nichols Rd.	
173(343) 8(3) 339(124) →	← 402(720) ← 127(66)		→ 214(65) ← 309(225)	→ 73(32)	← 450(259)	0(0) 0(0) → ← 0(0) ← 450(259)
546(499) → 479(534) ←		165(324) → 721(301) ←	220(561) ↓ 1(3) ↑ 282(79) ↓	1003(380) →		82(30) → 921(349) →

LEGEND:

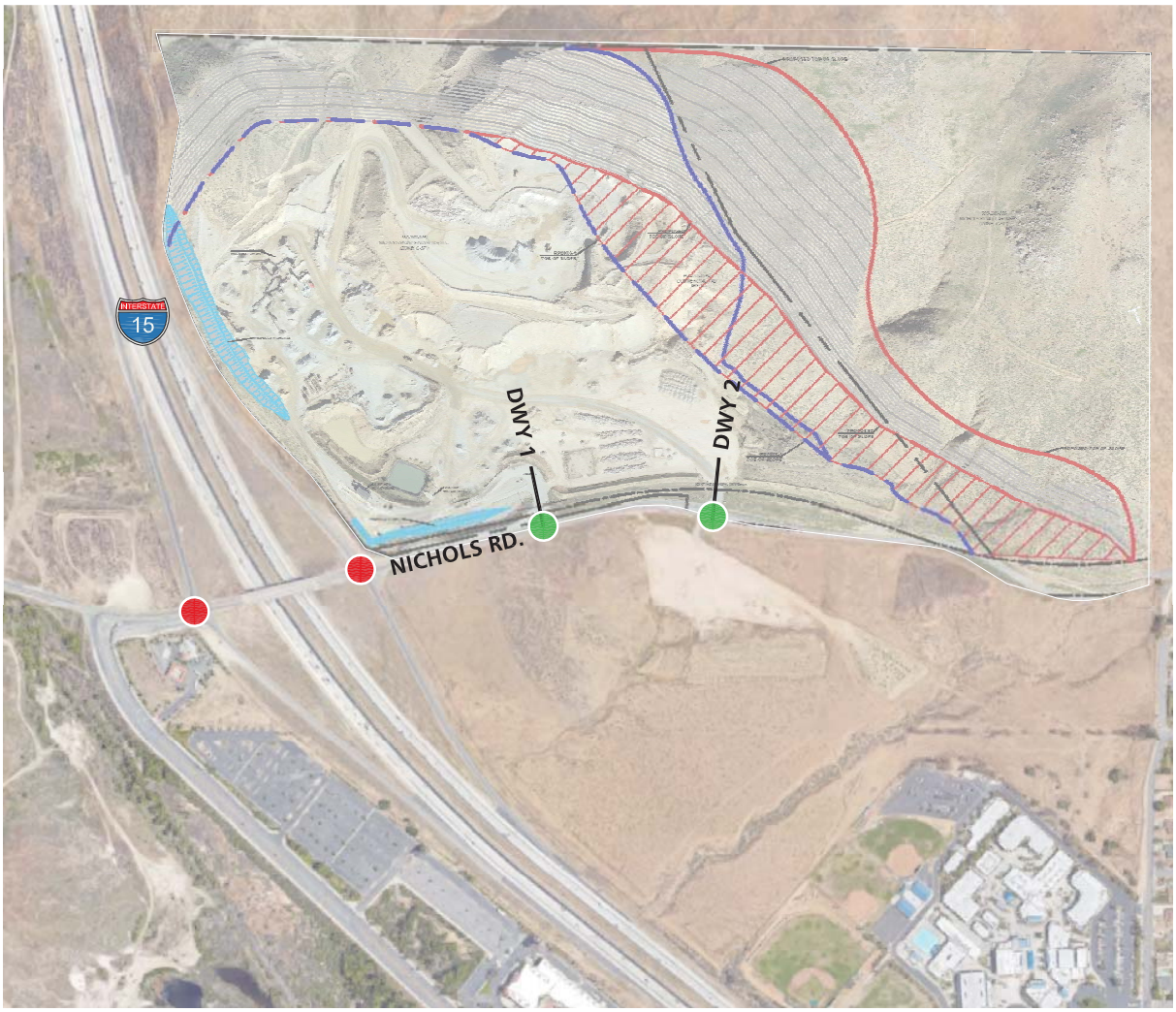
10(10) = AM(PM) PEAK HOUR INTERSECTION VOLUMES
10.0 = VEHICLES PER DAY (1000'S)

Source(s): Urban Crossroads (08-17-2015)

NOT TO SCALE

Figure 4.9-11

EAPC (2016) TRAFFIC VOLUMES (IN PCE)



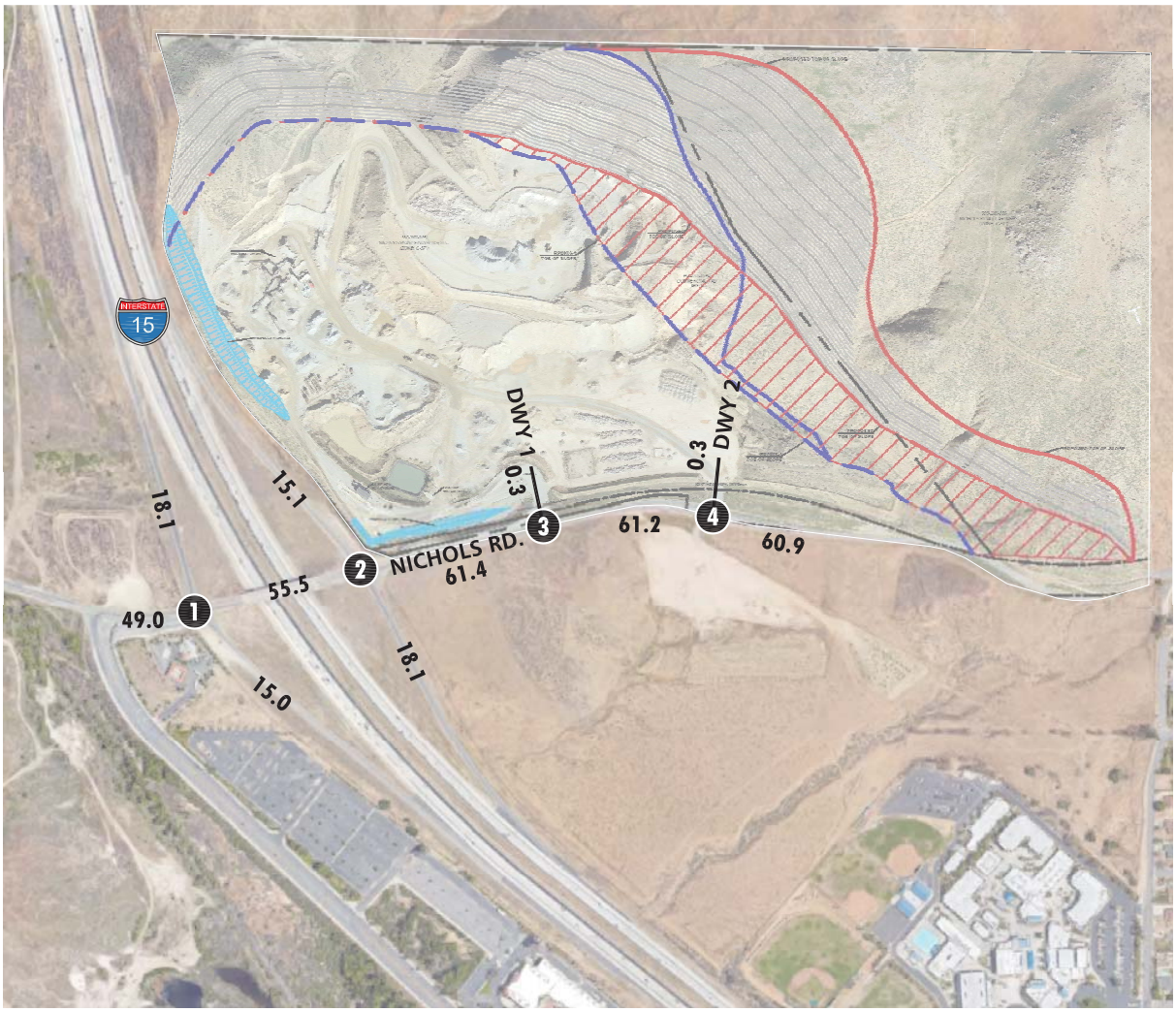
LEGEND:

- AM PEAK HOUR ACCEPTABLE LOS
- AM PEAK HOUR DEFICIENT LOS
- PM PEAK HOUR ACCEPTABLE LOS
- PM PEAK HOUR DEFICIENT LOS

Source(s): Urban Crossroads (08-17-2015)

NOT TO SCALE

Figure 4.9-12
SUMMARY OF PEAK HOUR INTERSECTION LOS FOR EAPC (2016) CONDITIONS



1 I-15 SB Ramps & Nichols Rd.	2 I-15 NB Ramps & Nichols Rd.	3 Driveway 1 & Nichols Rd.	4 Driveway 2 & Nichols Rd.
748(710) 0(0) 480(849) ← 1143(1632) ← 639(780)	→ 566(562) ← 1489(1963)	→ 72(32) ← 1983(2493)	→ 0(0) 0(0) ← 0(0) ← 1983(2493)
1608(1899) → 489(608) ←	607(770) → 1481(1979) → 293(449) ← 0(0) ← 966(757) ←	2447(2736) →	81(30) ← 2366(2706) →

LEGEND:

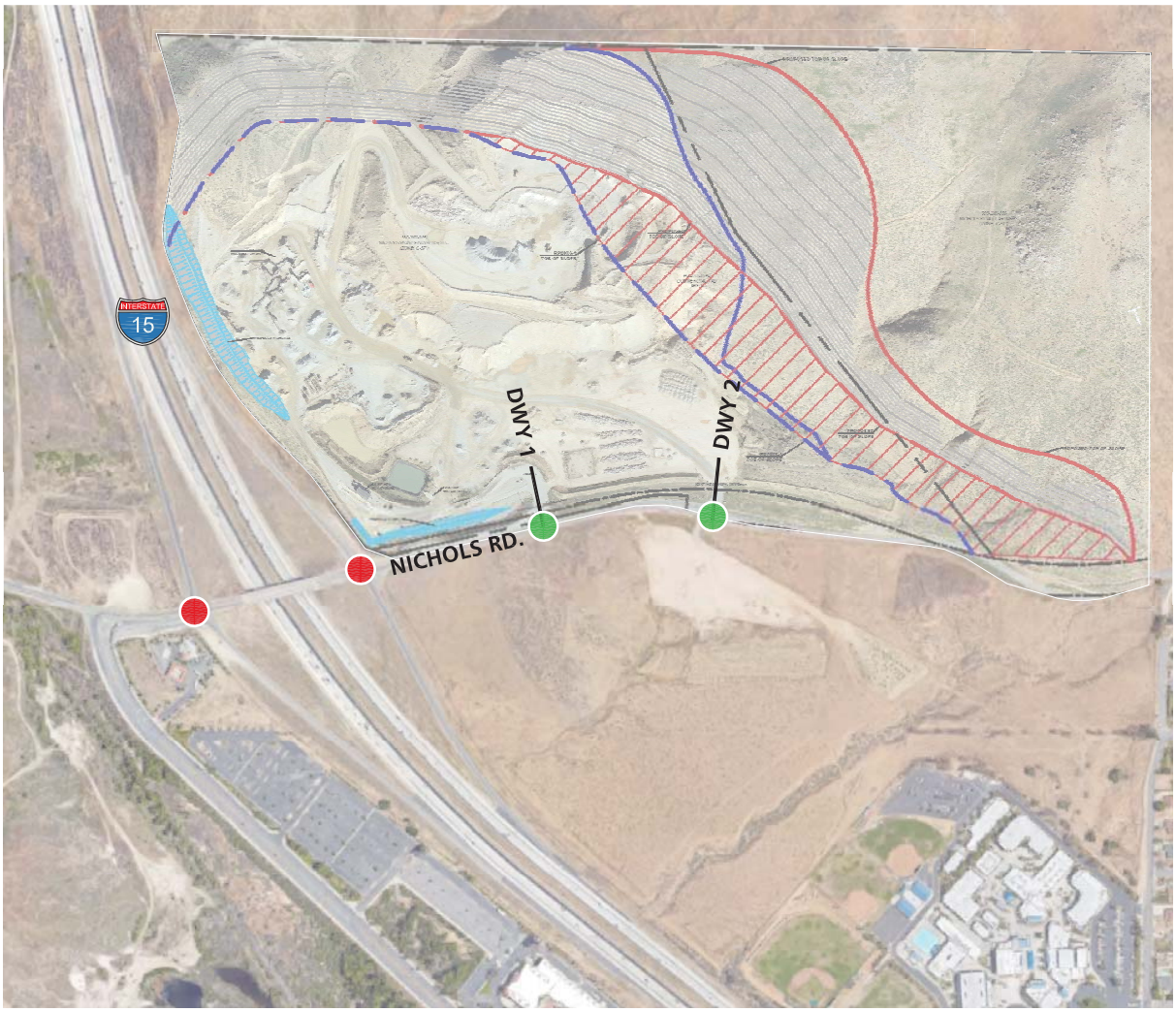
10(10) = AM(PM) PEAK HOUR INTERSECTION VOLUMES
10.0 = VEHICLES PER DAY (1000'S)

Source(s): Urban Crossroads (08-17-2015)

NOT TO SCALE

Figure 4.9-13

HORIZON YEAR (2035) WITH PROJECT TRAFFIC VOLUMES (IN PCE)



LEGEND:

- AM PEAK HOUR ACCEPTABLE LOS
- AM PEAK HOUR DEFICIENT LOS
- PM PEAK HOUR ACCEPTABLE LOS
- PM PEAK HOUR DEFICIENT LOS

Source(s): Urban Crossroads (08-17-2015)

NOT TO SCALE

Figure 4.9-14
SUMMARY OF PEAK HOUR INTERSECTION LOS FOR HORIZON YEAR (2035) WITH PROJECT CONDITIONS

4.10 UTILITIES AND SERVICE SYSTEMS

This Subsection addresses the topics of water service and supply; wastewater collection and treatment; stormwater drainage management; solid waste collection and disposal; and utilities. The analysis contained in this Subsection is based in part on information obtained from the 2010 Elsinore Valley Municipal Water District (EVWMD) Urban Water Management Plan (UWMP) (EVMWD, 2011a). A complete list of references can be found in EIR Section 7.0, *References*.

4.10.1 SCOPE OF REVIEW

The Nichols Canyon Mine, as discussed in Section 2.0, *Environmental Setting*, is an existing, ongoing surface mining operation operating pursuant to vested mining rights and an approved reclamation plan (RP 2006-01A1), which was analyzed in a prior MND. Although the City has chosen to prepare an EIR for the Project here, the scope of review addresses those impacts resulting from the Project as described in Section 3.0, *Project Description*, and not impacts related to existing, approved operations, which form the environmental baseline, as discussed in Section 2.7, *Existing Physical Site Conditions*. As disclosed in Section 3.0, *Project Description*, an asphalt batch plant is an existing approved on-site use pursuant to Conditional Use Permit CUP 2014-07 approved by the City of Lake Elsinore in 2015. Thus, the batch plant has already been approved by the City along with a CEQA environmental compliance document that was not challenged by any third party. During the public comment period on the proposed Project's DEIR, several third parties incorrectly asserted that the DEIR failed to adequately analyze the proposed Project's impacts because the batch plant was not part of the Project description. Several of these commentators also incorrectly claimed that the batch plant's impacts needed to be re-analyzed as part of this EIR. While the City disagrees with these claims because the batch plant has already been approved under CUP 2014-07 and previously evaluated in an approved MND Addendum that was not challenged, in an effort to provide a conservative and overly-inclusive analysis of the Project's impacts on the environment (as opposed to potentially underestimating the Project's impacts), and to remove this issue from being a point of contention, this EIR includes analyses of the batch plant's impacts in all relevant and CEQA Appendix G topics. However, the construction and operation of an asphalt batch plant on the site is not relevant to the issues of Utilities and Service Systems because the asphalt batch plant site is located in an area previously subject to disturbance and mining activity, would not require any additional water or wastewater services, would not impact the capacity for water or wastewater facilities, and operations would not impact landfill capacity. During mining operations, all runoff, including runoff from the asphalt batch plant site, would be detained on-site within a sedimentation basin, and would therefore have no potential to affect wastewater facilities. As part of reclamation activities at the Mine, the asphalt batch plant would be removed from the Project site. ~~Accordingly, this Subsection analyzes utilities and service systems impacts related to the Project specifically.~~ Additionally, ~~T~~this Subsection does not analyze utilities and service systems impacts related to existing, approved mining operations, because the approved mining operations are a baseline condition and not a part of the proposed Project.

4.10.2 EXISTING CONDITIONS

A. Water Service and Supply

❑ Existing Site and Area Conditions

The Nichols Canyon Mine is located within the service area of the EVMWD. At the time the EVMWD's UWMP was prepared in 2010, the EVMWD estimated that there were approximately

123,375 people within its 96 square mile service area (EVMWD, 2011a, p. 1 and Table ES-1). The EVMWD owns and maintains approximately 37,250 potable water connections, and projects that potable water demands will double by year 2035 (EVMWD, 2011a, pp. 3-4).

Based on historical data for the Project site as provided by the EVMWD, in 2015~~between 2007 and 2014,~~ the water usage on-site for dust control during the highest demand month was ~~averaged~~ approximately 46,066~~64,000~~ gallons per day, 10,173 during the lowest demand month, with an average of 32,915 gpd on average for all of 2015~~ for dust control., which~~ This corresponds to approximately 51.63~~71.7~~ acre-feet of water per year during the highest demand month, 11.4 acre-feet of water per year during the lowest demand month, and 36.09 acre-feet of water per year on average. (EVMWD, 2015)~~(Project Applicant, 2015b)~~.

❑ Elsinore Valley Municipal Water District Urban Water Management Plan

UWMP Overview and Water Shortage Contingency Planning

Water Code Section 1062(a) of the California Urban Water Management Planning Act requires every urban water supplier to prepare and adopt an urban water management plan and conduct updates every five years. In addition to meeting the requirements of this Act, urban water management plans are to be used to support water supply assessments and verifications required by Senate Bills 610 and 221 of 2001. These bills require that water supply information be provided to counties and cities for projects of a certain size prior to their approval.

EVMWD has prepared a UWMP dated July 2011 that provides for the long-range planning efforts of water purveyance within its district. The EVMWD UWMP is herein incorporated by reference and is available for review at the EVMWD offices at 31315 Chaney Street, Lake Elsinore, CA 92531. The UWMP includes a water system analysis, identifies improvements to correct existing deficiencies and serve projected future growth, and identifies contingency measures to ensure the EVMWD's continued ability to provide potable water service during multiple-year drought conditions. As concluded by the UWMP, the EVWMD anticipates that it will be able to meet projected demand for water within its service boundaries until at least the year 2035 in all types of climate situations, including normal, dry, and multiple consecutive dry weather years. (EVMWD, 2011a, Tables 5-14 through 5-16)

A Water Shortage Contingency Plan is included in the UWMP, which would be implemented by the EVMWD in cases of future water deficiencies caused by limitations on supply or the EVMWD's delivery system. The key elements of the EVMWD's Water Shortage Contingency Plan are ordinances with phased water use restrictions and a drought rate structure. EVMWD has two water shortage ordinances: Ordinance Nos. 78 and 81, which are presented in Appendix D to the UWMP. The drought plan stages and reduction goals (applied to the base years specified in the ordinances) are presented in UWMP Table 5-4, and establish five "stages" of drought conditions. Determination of a Stage I, II, III, IV, or V condition is at the discretion of EVMWD's General Manager in consultation with the Board of Directors. EVMWD does not have a Stage V reduction for its retail customers. For its wholesale customers, a Stage V reduction would result in a mandatory reduction of 20 percent. (EVMWD, 2011a, pp. 5-5 and 5-6)

Water Supply Sources

As disclosed in the UWMP (and shown in Table 4.10-1, *Existing EVMWD Potable Water Sources*, below), EVMWD obtains its potable water supplies from imported water from Metropolitan Water District of Southern California (MWD) (via the Temescal Valley Pipeline and Auld Valley Pipeline), local surface water from Canyon Lake, and local groundwater from Elsinore Basin. As disclosed by the UWMP, during an average year, the EVWMD has 43,800 acre-feet per year (acre-ft/yr) of potable water supplies, with a total capacity of 66,500 acre-ft/year. In average years, the EVWMD obtains approximately 80.4% of its potable water supply from MWD, approximately 8.5% from groundwater extraction, and 11.2% from Canyon Lake. (EVMWD, 2011a, p. 4-1 and Table 4-1)

Table 4.10-1 Existing EVMWD Potable Water Sources

Water Supply Source	Capacity (acre-ft/yr)	Average Year (acre-ft/yr)
Canyon Lake(1)	7,900	4,900
Groundwater Extraction	17,300	3,700
Groundwater Injection (2)	-7,600	-4,600
TVP	14,200	12,700(3)
AVP	27,000	22,500(3)
Total Potable Supplies	66,500	43,800

(1) Natural inflow volumes for Canyon Lake are developed using hydrology data from 1993-2009
(2) Assumes that surplus water is available for injection only during average and wet year hydrologies. Injection volumes are obtained from EVMWD's Water Supply Optimization Plan (WSOP).
(3) Assumes that only 83 percent of capacity at TVP and AVP is available during average years.
(EVMWD, 2011a, Table 4-1)

❑ ***Treated Import Water***

As a member agency of Western Municipal Water District (WMWD), EVMWD purchases treated imported Metropolitan water from Western MWD through the Auld Valley Pipeline (AVP) and the Temescal Valley Pipeline (TVP). The AVP and the TVP are located on the southeastern and northwestern end of EVMWD's distribution system, respectively. Table 4.10-2, *UVWMD Existing and Planned Sources of Water (Wholesale)*, presents the projected imported water supplies that will be obtained via the TVP and the AVP during average year hydrologies. The AVP and TVP are discussed below. (EVMWD, 2011a, p. 4-4)

- Auld Valley Pipeline (AVP): Based on a Water Facility Capacity Agreement between the EVMWD and the Eastern Municipal Water District (EMWD), EVMWD has the rights to purchase or acquire a maximum flow rate of 37.5 cubic feet per second (cfs) (24.2 million gallons per day (mgd) or approximately 27,100 acre-ft/yr if used continuously) from EMWD through the Metropolitan Connection EM-17. EMWD sells imported water for the AVP to WMWD, which in turn sells the water to EVMWD through an Interagency Water Sales Agreement. This imported water is a blend of State Water Project (SWP) and Colorado River Aqueduct water. Prior to conveyance to the AVP, the water is treated at Metropolitan's R. A. Skinner Filtration Plant. (EVWMD, 2011, p. 4-4)

Table 4.10-2 UVWMD Existing and Planned Sources of Water (Wholesale)

Wholesale sources	Maximum Capacity (acre-ft/yr)	2015 (acre-ft/yr)	2020 (acre-ft/yr)	2025 (acre-ft/yr)	2030 (acre-ft/yr)	2035 (acre-ft/yr)
Western Municipal Water District (Temescal Valley Pipeline)(1)	14,200	12,700	12,700	12,700	12,700	12,700
Eastern Municipal Water District (Auld Valley Pipeline)(1)	27,000	22,500	22,500	22,500	22,500	22,500
WR 31	50,000	7,900	7,900	7,900	7,900	7,900

(1) Assumes that only 83 percent of capacity at TVP and AVP is available during average years (EVMWD, 2011a, Table 4-2)

- Temescal Valley Pipeline (TVP): In addition to the AVP, EVMWD obtains imported water from the TVP through WMWD. The source of this water is State Water Project water that originates from Metropolitan's Mills Filtration Plant in Riverside. According to the Water Distribution System Master Plan (WDSMP) the EVMWD connection to the Mills Gravity Pipeline (also known as the Woodcrest Pipeline) has a design capacity of 41 cfs (26.5 mgd or approximately 29,700 acre-ft/yr). The current hydraulic capacity of the TVP is 19.6 cfs (12.7 mgd or 14,190 acre-ft/yr) based on gravity flow from the Woodcrest Pipeline. The TVP was designed to convey up to 41 cfs (26.5 mgd or 29,700 acre-ft/yr) with the construction of a booster pumping station. The TVP project was developed to provide additional water supplies from sources located north of the EVMWD service area. It includes an 8 million gallon (MG) terminal storage reservoir, transmission mains, and appurtenances. On August 23, 2001, EVMWD entered into a reciprocal use agreement with WMWD that provided EVMWD with a conditional right to use 9 cfs of capacity in the Mills Gravity Pipeline. In return for the imported water capacity, EVMWD granted WMWD entitlement to water acquired from the Meeks and Daley rights. A separate lease agreement between EVMWD and WMWD provides EVMWD with the ability to use up to 5 cfs (3.2 mgd or 3,620 acre-ft/yr) of additional capacity from the Mills Gravity Pipeline on a temporary basis. On August 8, 2002, the EVMWD Board of Directors approved an amendment to the lease agreement to lease an additional 7 cfs (4.5 mgd or 5,068 acre-ft/yr) from the Mills Pipeline, increasing the total lease capacity to 12 cfs (7.8 mgd or 8,688 acre-ft/yr). In addition to the lease capacity from the Mills Pipeline, EVMWD also has an "exchange of assets" with its Temescal Water Division to supply a capacity of 9 cfs (5.8 mgd or 6,516 acre-ft/yr) (EVMWD, 2002c). Thus, EVMWD can currently obtain up to 21 cfs (13.6 mgd or approximately 15,200 acre-ft/yr) of water from the TVP. However, it would require additional pumping capacity for supply greater than 14,200 acre-ft/yr. (EVMWD, 2011a, pp. 4-4 to 4-5)

❑ ***Local Surface Water***

The second water supply source for EVMWD is surface water obtained from Canyon Lake, also referred to as the Railroad Canyon Reservoir. Canyon Lake was constructed in 1928 by the Temescal Water Company (TWC) to store water for agricultural use in the area, and impounds water from the San Jacinto River, Salt Creek, and local surface runoff. Siltation has decreased the capacity of the lake as compared to historic conditions. Based on information in EVMWD's Water Distribution System Master Plan (WDSMP), Canyon Lake's current storage capacity is approximately 4,600 acre-feet (1,500 MG). The lake is being dredged to restore a portion of the lost

capacity. The Railroad Canyon Storage Agreement between EVMWD and TWC that was approved in October 1955 allowed EVMWD to store approximately 3,000 acre-feet of water in Canyon Lake and treat that water at the Canyon Lake Water Treatment Plant (CLWTP) before distribution. In August 1989, EVMWD acquired the assets and water rights of the TWC including Canyon Lake. The Canyon Lake Property Owners Association (POA) leases the surface rights to the lake and fringe land around the lake for recreational purposes under an agreement dating from 1968. The lease agreement between EVMWD and the Canyon Lake POA requires that the minimum lake elevation be kept at 1372 ft. above mean sea level (amsl) at any time of the year. EVMWD typically discontinues operation of its WTP if the lake level is expected to drop below 1,372 ft. If the level falls below 1,372 feet, EVMWD is required to purchase Metropolitan water to maintain the minimum lake elevation. (EVMWD, 2011a, pp. 4-5 to 4-6)

During periods of high runoff, Canyon Lake fills and spills into the San Jacinto River where it flows into Lake Elsinore. Through the acquisition of the TWC, EVMWD has the rights to divert up to 12,000 acre-ft/yr of natural drainage from the San Jacinto River from about December 1 to about June 1 of each season and store that water in the Railroad Canyon Reservoir pursuant to Water Rights License 1533. A subsequent license allows the diversion 2.4 cfs of San Jacinto River water from about April 1 to about May 31 of each season pursuant to Water Rights License 6327. In settlement of litigation regarding the release of water into Lake Elsinore, EVMWD and the City of Lake Elsinore agreed that EVMWD would not treat more than 8,000 acre-ft/yr (about 7.1 mgd continuous flow) of San Jacinto River flows in any water year at EVMWD's Canyon Lake Water Treatment Plant. This 8,000 acre-ft/yr limit applies only to San Jacinto River runoff and excludes any imported water conveyed in the river channel. (EVMWD, 2011a, p. 4-6)

Other sources of water for Canyon Lake include untreated imported water from Metropolitan connections WR-18A (Colorado River water) and WR-31 (SWP water). Each of these two imported water connections has a capacity of 69 cfs (44.6 mgd). EVMWD could purchase the imported water from Metropolitan through Western MWD, which would be discharged into the San Jacinto River near Nuevo and flow downstream to Canyon Lake. EVMWD has not purchased water from the Metropolitan connection WR-18A since 1989 because the high total dissolved solids (TDS) in Colorado River supply adversely affects wastewater effluent quality. In recent years, EVMWD has purchased imported raw water via the WR-31 connection for treatment at the Canyon Lake water treatment plant (WTP). (EVMWD, 2011a, p. 4-6)

Some percentage of the water released into the San Jacinto River percolates into the intervening groundwater basins before it reaches Canyon Lake. It is estimated that approximately 89 percent of any water purchased from these connections reaches the lake. Consequently, such releases are typically made in the wet season when the river has natural flows to minimize losses. In spite of the lack of recent use, EVMWD currently has the ability to supplement its Canyon Lake supply with raw imported water in the event of a water shortage. (EVMWD, 2011a, pp. 4-6 to 4-7)

The Canyon Lake WTP has a design capacity of 9 mgd (13.9 cfs). However, running the plant at capacity greater than 7 mgd (10.9 cfs) adversely affects the treated water quality and quality can be maintained as long as plant is operated at a maximum flow of 7 mgd (10.9 cfs). Water from Canyon Lake is pumped to the treatment plant through the intake pumping station. The plant normally operates between April and October to provide additional water for summer demands. The UWMP

estimates that between 2015 and 2035, an average of 4,900 acre-ft/yr would be supplied to EVMWD via the Canyon Lake WTP. (EVMWD, 2011a, pp. 4-7 to 4-8)

❑ ***Groundwater***

EVMWD has access to groundwater from Elsinore Basin, Coldwater Basin, San Bernardino Bunker Hill Basin, Rialto-Colton and Riverside-North Basin. Table 4.10-3, *EVWMD Groundwater – Volume Projected to be Pumped*, summarizes the amount of groundwater pumped from these basins. As shown, almost all of the groundwater production that is used for potable water use occurs in the Elsinore Basin. Groundwater resources utilized by the EVMWD are discussed below.

Table 4.10-3 EVWMD Groundwater – Volume Projected to be Pumped

Basin name(s)	2015	2020	2025	2030	2035
Elsinore Groundwater Basin(1)	5,500	5,500	5,500	5,500	5,500
San Bernardino Bunker Hill Basin(2)	0	0	0	0	0
Rialto-Colton and Riverside North Basins(2)	0	0	0	0	0
Coldwater Basin(3)	1,250	1,250	1,250	1,250	1,250
Total groundwater pumped	**6,750**	**6,750**	**6,750**	**6,750**	**6,750**
Percent of total water supply	**9.8%**	**9.64%**	**9.56%**	**9.56%**	**9.56%**

(1) `The estimated safe yield of the Elsinore Basin is 5,500 acre-ft/yr.
(2) `EVMWD does not have conveyance facilities to transfer water from these basins to EVMWD's service area.
(3) `The value here is based on the upper limit of the estimated safe yield and historical share of total withdrawal by EVMWD.
(EVMWD, 2011a, Table 4-7)

- Elsinore Basin: The Elsinore Basin is the major source of potable groundwater supply for EVMWD, Elsinore Water District (EWD), and other private groundwater producers. The groundwater basin encompasses approximately 25 square miles of valley fill including Lake Elsinore, which covers about 3,600 acres of the basin. The surface water drainage area tributary to the basin consists of 42 square miles of mountain and valley area. Major streams include McVicker Canyon, Leach Canyon, Dickey Canyon, and the San Jacinto River, which drain into Lake Elsinore and provide a portion of the basin recharge. (EVMWD, 2011a, pp. 4-8 to 4-9)

  Historically, groundwater accounts for approximately 30 percent to 40 percent of EVMWD's total supplies. In the Elsinore Basin, EVMWD has seven operating potable groundwater wells with a total production capacity of 17,140 acre-ft/yr (15.4 mgd). Summerly and Diamond are the most recently equipped production wells and began production in 2008. In the recent past, three groundwater wells went out of service due to water quality and operational issues. (EVMWD, 2011a, p. 4-10)

  Water rights for the Elsinore Basin are not adjudicated. According to EVMWD's Elsinore Basin Groundwater Management Plan (GWMP), approximately 94 percent of groundwater produced by the basin is pumped by EVMWD, which serves a 96 mile square area in western Riverside County. Other groundwater producers include Elsinore Water District (EWD) and private well owners. Historically, EWD, which supplies water to customers in two detached service areas one located north of the lake with the City of Lake Elsinore and the Lakeland Village community,

pumped approximately five percent of total groundwater production from the basin. However, due to low water levels, EWD purchases all of its water requirements from EVMWD. Local pumpers with private wells only account for less than one percent of basin production. (EVMWD, 2011a, p. 4-11)

The GWMP also summarizes inflows to the Elsinore Basin which include infiltration of local precipitation, runoff from the surrounding watershed, infiltration from the San Jacinto River prior to reaching Lake Elsinore, and return flows from either irrigation or domestic use. Groundwater inflows are estimated to average 5,500 acre-ft/yr based on a 41-year (1961-2001) hydrologic analysis conducted for the GWMP. This natural inflow is roughly equal to the average yield of the basin because there are no natural outflows from the basin. Groundwater pumping to meet water demands accounts for essentially the entire outflow from the basin. (EVMWD, 2011a, pp. 4-11 to 4-12)

EVMWD adopted a Groundwater Management Plan (GWMP) in 2005 which identified conjunctive use projects as an important element of basin management. Direct recharge projects that utilize the groundwater basin as a storage facility and allow for the extraction of stored water for use during drought and high demand periods were identified, designed, and constructed. These direct recharge projects were funded by the Metropolitan as part of a groundwater storage program. During any fiscal year (beginning on July 1st and ending on June 30th) Metropolitan may deliver up to 3,000 acre-ft of water for storage in the Elsinore Basin. EVMWD's dual-purpose wells are used to inject these deliveries in the Elsinore Basin. Metropolitan may also extract up to 4,000 acre-ft of water stored in the Elsinore Basin as part of the Groundwater Storage Program. During a fiscal year when stored Metropolitan deliveries are extracted, supply from the EVMWD's imported water sources is reduced by an equal amount. (EVMWD, 2011a, p. 4-12)

- Coldwater Basin: EVMWD pumps groundwater from wells located in the Temescal Valley to serve users in its Temescal Division. The wells draw from the Coldwater Basin, Lee Lake Basin, and the Bedford Basin. Only three wells, all in Coldwater Basin, are used for potable supply. The rest of the wells are used for non-potable purposes. The Coldwater Basin is an unadjudicated basin located within the Temescal Valley southwest of Interstate 15. The basin covers about 1,680 acres. Major surface water drainages include Coldwater, Anderson, Bixby, Mayhew, and Brown Canyons, which surround the western and southern boundaries of the groundwater basin. (EVMWD, 2011a, p. 4-13)

  The Coldwater Basin lies within a down-dropped block between the North Glen Ivy and South Glen Ivy faults, which are associated with the right lateral strike-slip-dominated Elsinore Fault Zone (EFZ). The EFZ extends approximately 200 km from Baja California north to the Corona area. The Coldwater Basin is surrounded by the metamorphic, volcanic, and granitic basement rocks of the Santa Ana Mountains to the south and west, and the Bedford groundwater basin, which is located to the north and east and is separated from the Coldwater Basin by the North Glen Ivy fault. (EVMWD, 2011a, p. 4-13)

  Currently, water levels are generally declining throughout the basin. However, historical records indicate that the basin is very responsive to changes in operational and climatic conditions. Recharge to the alluvium, which contains potable groundwater, occurs along the margins of the

basin through Mayhew, Coldwater, Anderson, Bixby, and Brown Canyons. Faults within the basin appear to be complete barriers to subsurface flow except where gravel pits cross the faults. (EVMWD, 2011a, p. 4-13)

The total basin storage volume is estimated to be approximately 74,800 acre-ft based upon a specific yield ranging from 7 to 9 percent. The estimated groundwater in storage as of September 2000 was 41,600 acre-ft (about 55 percent full). The estimated cumulative loss in storage in the Coldwater Basin between 1977 and 2000 was approximately 10,000 acre-ft. For the period between 1991 and 2000, an average of 6,300 acre-ft/yr of groundwater was produced from the basin. The principal groundwater producers in the basin are the EVMWD and the City of Corona, which account for all but about 200 acre-ft/yr of the total average groundwater production in the basin. Other pumpers in the basin are agricultural users and the gravel pit owners. Approximately one-third of the total basin groundwater extraction from 1991 to 2000 was produced from EVMWD's wells, while two-thirds of the total groundwater production was produced from the City of Corona's wells. District wells serve agricultural and municipal users in the Coldwater Basin area. (EVMWD, 2011a, pp. 4-13 to 4-14)

Since 1998, groundwater levels within the Coldwater Basin have been declining at a rate of about 50 feet per year throughout the basin. Groundwater levels in many wells are at or below the previous historic low levels of the mid-1970s. Most shallow groundwater wells, particularly in the center of the basin, are currently dry. This water level decline is the result of both an extended period of low rainfall and increased groundwater production in the basin. More groundwater is being extracted each year than is being replenished naturally causing groundwater to be taken from storage. Previous estimates of the basin yield have ranged from 3,100 acre-ft/yr to 5,300 acre-ft/yr. Groundwater extraction over the past several years has exceeded these estimates. Because the groundwater basin is only 800 feet deep, this supply, if not augmented, will not be available in the future at current extraction rates. (EVMWD, 2011a, p. 4-14)

EVMWD has withdrawn about 25 percent of the total volume pumped from the Coldwater Basin. Assuming the total basin yield is about 5,200 acre-ft/tr, EVMWD could expect to have about 1,250 acre-ft/year available. Since the EVMWD's combined well capacity supplying potable water is below safe yield estimates of the Coldwater Basin, the total pumping capacity is assumed as the projected supply availability for the Temescal Domestic Service Area (TDSA), defined as the portion of Temescal Division using potable supply. (EVMWD, 2011a, p. 4-14)

- Other Groundwater Supplies: EVMWD's acquisition of the Temescal Water Company (TWC) in August 1989 resulted in its ownership of 51.9 percent of the stock in three mutual water companies – Meeks and Daley Water Company, Agua Mansa Water Company and Alta Mesa Water Company. This stock provides water rights and production/conveyance capacity from these three mutual water companies' to use its facilities and water supply sources. The TWC acquisition also provided EVMWD entitlements to "canal carrying rights" in the Gage Canal and the Riverside Canal, including rights to the Palm Avenue Well that is located in Grand Terrace, Riverside County. The mutual water companies also have rights to pump 7,833 acre-ft/yr of water from the San Bernardino Bunker Hill Basin of which 7,515 acre-ft/yr may be exported to Riverside County. Through its shareholder ownership, EVMWD's annual allotment from the Bunker Hill Basin is approximately 3,900 acre-feet. In addition, EVMWD's stock ownership entitles it to groundwater in the unadjudicated Rialto-Colton and Riverside-North Basins.

EVMWD's Water Resources Development Plan (WRDP) estimated the total water available to EVMWD from these basins to be 7,152 acre-ft/yr. Presently, EVMWD does not have the infrastructure available to deliver water available from these groundwater basins to its service area in the Elsinore Division. (EVMWD, 2011a, pp. 4-14 to 4-15)

- ***Drought Conditions***

At the present time, California is experiencing severe drought conditions. In response, the State Water Resources Control Board adopted emergency statewide urban water conservation regulations that became effective in July 2014 and remained in place until April 2015. Subsequently, the California Governor issued a State of Emergency and Continued State of Emergency in 2014 in response to the persistent state-wide drought. On April 1, 2015, California Governor Jerry Brown issued Executive Order B-29-15 which orders the State Water Resources Control Board (SWRCB) to impose mandatory water use restrictions to achieve a 25 percent reduction in potable urban water usage through February 18, 2016. It addresses facilitating funding for projects designed to increase local water supplies and improve water supply reliability. It also orders more frequent reporting and modifications to the State's Model Water Efficient Landscape Ordinance; mandates Agricultural water suppliers to prepare their Agricultural Water Management Plans by specific dates; and orders the State to coordinate their water conservation related goals with other State departments like the California Department of Fish and Wildlife, Forestry and Fire Protection, and the Energy Commission. In addition, Executive Order B-29-15 requires that the SWRCB impose restrictions that require commercial, industrial, and institutional properties to implement water efficiency measures to reduce potable water usage to meet this mandated water usage reduction target.

B. Wastewater Service and Treatment

The EVMWD Sewer District provides service to the City of Lake Elsinore. The "backbone" of the system consists of trunk sewers, generally 10 inches in diameter and larger, that convey the collected wastewater to EVMWD's WRFs. EVMWD's existing wastewater collection systems consist of approximately 358 miles of sewer mains up to 54 inches in diameter, 33 lift stations, and three WRFs. EVMWD's current service area is delineated into four separate collection systems. These are the Regional, Canyon Lake, Horsethief, and Southern collection systems. The flows conveyed in the Regional, Canyon Lake, and Horsethief collection systems are treated by EVMWD's Regional, Railroad Canyon, and Horsethief WRFs, respectively. The EVMWD Wastewater Management Plan makes recommendations for improvements, such as gravity sewer mains, force mains, lift stations, and wastewater treatment facilities. (Lake Elsinore, 2011b, 3.16-1)

Under existing conditions, wastewater treatment at the Nichols Canyon Mine is handled by portable toilets, which are regularly emptied by a rental service company. Waste from these portable toilets is disposed of in accordance with all applicable regulatory requirements.

C. Solid Waste Collection and Disposal

Project-generated solid waste would be conveyed to one of several landfills operated or managed by the Riverside County Waste Management Department (RCWMD). The landfills typically used by the City of Lake Elsinore are the El Sobrante, Badlands, and Lamb Canyon Landfills. (Lake Elsinore, 2011b, p. 3.16-5) These existing landfills are required to comply with federal, state, and local statutes and regulations related to solid waste. Landfills within RCWCMD's jurisdiction

adhere to state guidelines which specify that a minimum of 15 years of system-wide landfill capacity shall be provided. (Lake Elsinore, 2011b, p. 3-16-5)

D. Stormwater Drainage Facilities

Under existing conditions, all runoff from the disturbed portions of the portion of the Mine located north of Nichols Road (Nichols North) is conveyed to an on-site retention basin. In its current condition there is not significant run-off from the disturbed portions of the Nichols North site. Runoff from the undisturbed portions of Nichols North is currently conveyed in two different directions. A portion of the runoff is conveyed through the disturbed areas and ultimately discharges through two existing 48" reinforced concrete pipes (RCP) with a headwall and discharges into existing drainage channels located west of I-15. The remaining runoff from the undisturbed portions Nichols North ~~would~~ discharge into Stovep~~-P~~ipe Creek.

Disturbed areas south of Nichol Road (Nichols South) currently drain in two different directions. A small portion of runoff from the Nichols South combines with runoff from Nichols North and is currently conveyed to the two 48" RCP pipes with headwall, discharging into existing drainage facilities located west of I-15. The majority of the Nichols South site conveys flows to Stovepipe Creek. Stovepipe Creek is conveyed southwesterly across the Nichols South site and beneath the I-15 via an existing 6'x14' box culvert, ultimately discharging into existing drainage facilities located west of I-15. (Bonadiman, 2016, p. 6)~~(Bonadiman, 2015, p. 6)~~

E. Utilities

Southern California Edison (SCE) provides electricity to the City of Lake Elsinore and Southern California Gas Company (The Gas Company) provides gas to the City of Lake Elsinore. Both SCE and The Gas Company anticipate the ability to accommodate future growth within the City. Verizon provides local landline telephone service and long distance service is available from a number of other providers. In addition, Time Warner Cable provides cable television as well as high-speed internet. (Lake Elsinore, 2011b, pp. 3.16-6 through 3.16-7).

Under existing conditions, electricity is provided to the site via private power poles from a connection near the Mine's southern boundary. The site is not provided with cable television, internet service, telephone service, or natural gas under existing conditions.

F. Applicable Regulatory Requirements

❑ Water Supply and Water Quality Regulations

1. California Senate Bill 610

The California Water Code (Water Code) §§ 10910 through 10915 were amended by the enactment of Senate Bill 610 (SB 610) in 2002. SB 610 requires an assessment of whether available water supplies are sufficient to serve the demand generated by a proposed project, as well as the reasonably foreseeable cumulative demand in the region over the next 20 years under average normal year, single dry year and multiple dry year conditions. Under SB 610, water supply assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in Water Code 10912 [a]) subject to CEQA. For the purposes of SB 610, "project" means any of the following:

1. A proposed residential development of more than 500 dwelling units.
2. A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 sf of floor space.
3. A proposed commercial office building employing more than 1,000 persons or having more than 250,000 sf of floor space.
4. A proposed hotel or motel, or both, having more than 500 rooms.
5. A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 sf of floor area.
6. A mixed-use project that includes one or more of the projects specified in this subdivision.
7. A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

The proposed Project does not meet the definition of a project that is subject to the Water Supply Assessment requirements set forth by SB 610. Moreover, the site's water usage would decrease under the Project as compared to baseline conditions.

2. California Senate Bill 221

Signed into law on October 8, 2001, Senate Bill 221 (SB 221) established a process whereby sufficient water supply must be identified and available for new development for any residential development of 500 homes or more, or, in the case wherein a water supplier has fewer than 5,000 service connections or the proposed development would increase the number of connections by at least 10 percent, unless there is proof of adequate water over at least the next 20 years, including long periods of drought. The proposed Project is not subject to the provisions of (SB 221) because it does not involve the development of 500 or more homes, the EVWMD has more than 5,000 service connections, and the Project would result in a net decrease of water usage at the Mine.

3. California Assembly Bill 1881 (Water Conservation in Landscaping Act)

The Water Conservation in Landscaping Act was established to ensure adequate water supplies are available for future uses. To promote the conservation and efficient use of water, the Act requires local agencies to adopt a water efficient landscape ordinance. When such an ordinance had not been adopted, a finding as to why (based on the climatic, geologic, or topographical conditions) such an ordinance is not necessary, must be adopted. In the absence of such an ordinance or findings, the policies and requirements contained in the "model" ordinance drafted by the State of California shall apply within the affected jurisdiction.

4. California Senate Bill 2095 (Water Recycling in Landscaping Act)

This Act requires that a water producer capable of providing recycled water that meets all of the conditions described in the State Water Code, § 13550 et. seq. to notify local agencies of the area(s) eligible to receive the recycled water, and the necessary infrastructure that the recycled water producer or retail water supplier will provide to support the delivery of recycled water. Within 180 days of receipt of such a notification from a recycled water producer, a local agency shall adopt and enforce a recycled water ordinance pursuant to this Act. Additionally, it requires local, regional, or State agencies to not use water from any source of quality for non-potable uses if suitable recycled water is available as provided in Water Code § 13550.

5. *Urban Water Management Planning Act*

Since 1984, the Urban Water Management Planning Act, has required "urban water suppliers" to develop written "urban water management plans." While generally aimed at encouraging water suppliers to implement water conservation measures, it also created long-term planning obligations. In preparing urban water management plans, urban water suppliers must describe the following:

- Existing and planned water supply and demand;
- Water conservation measures and a schedule for implementing and evaluating such measures; and
- Water shortage contingency measures.

The Urban Water Management Planning Act requires urban water suppliers to use a 20-year planning horizon and to update the data in the urban water plans every 5 years. Urban Water Management Plans are exempt from CEQA, and thus do not generate any EIRs of use for future land use or water planning. In preparing their 20-year management plans, water suppliers must directly address the subject of future population growth. The suppliers must also identify sources of supply to meet demand. The plan must "identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier."

6. *California Senate Bill 901*

Signed into law on October 16, 1995, Senate Bill 901 (SB 901) required every urban water supplier to identify as part of its urban water management plan, the existing and planned sources of water available to the supplier over a prescribed 5-year period. The code requires the water service purveyor to assess the projected water demand associated with a proposed project under environmental review. Later provisions of SB 901 required compliance in the event that the proposed Project involved the adoption of a specific plan, amendment to, or revision of the land use element of a general plan or specific plan that would result in a net increase in the state population density. Upon completion of the water assessment, cities and counties may agree or disagree with the conclusions of the water service purveyors, but cannot approve projects in the face of documented water shortfalls without first making certain findings.

7. *Safe Drinking Water Act of 1974*

The Safe Drinking Water Act (SDWA) authorizes the United States Environmental Protection Agency (EPA) to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water. The EPA, states, and water systems work in collaboration to ensure the standards are met.

8. *California Water Code § 10910*

This portion of the California Water Code applies to any project proposing more than 500 residential dwelling units, 500 hotel rooms, 500,000 s.f. of commercial space, 650,000 s.f. of industrial or manufacturing space, or any project employing more than 1,000 persons or having a mix of uses equivalent in water usage to more than 500 residential dwelling units. If the project is subject to CEQA, the Lead Agency is required to request that the water agency determine whether the projected water demand associated with the proposed project was included as part of the most recently adopted urban water management plan (UWMP) of the water agency. If the projected water demand was not

accounted for in the most recently adopted UWMP, or the public water system has no UWMP, a water supply assessment is required to be prepared to determine if the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses. California Water Code § 10910 does not apply to the proposed Project because the proposed Project does not involve any of the project types described above.

9. California Water Conservation Act of 2009

The Water Conservation Act of 2009 (SB X7-7 2009) requires all California urban water agencies to set and meet certain demand reduction targets in order to assist the State in reducing urban water use by 20 percent by 2020. The Act also requires each agency to monitor its progress toward its targets. This was implemented for the purpose of meeting the mandate to reduce per capita urban water consumption by 20 percent statewide.

10. Executive Order B-29-15

On April 1, 2015, California Governor Jerry Brown issued Executive Order B-29-15 which orders the State Water Resources Control Board (SWRCB) to impose mandatory water use restrictions to achieve a 25 percent reduction in potable urban water usage through February 18, 2016. It addresses facilitating funding for projects designed to increase local water supplies and improve water supply reliability. It also orders more frequent reporting and modifications to the State's Model Water Efficient Landscape Ordinance; mandates Agricultural water suppliers to prepare their Agricultural Water Management Plans by specific dates; and orders the State to coordinate their water conservation related goals with other State departments like the California Department of Fish and Wildlife, Forestry and Fire Protection, and the Energy Commission. In addition, Executive Order B-29-15 requires that the SWRCB impose restrictions that require commercial, industrial, and institutional properties to implement water efficiency measures to reduce potable water usage to meet this mandated water usage reduction target.

11. Federal Water Pollution Control Act (Clean Water Act)

The Federal Water Pollution Control Act (also known as the Clean Water Act [CWA]) is the principal federal statute that addresses water resources. The statute employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The broad goal is to restore and maintain the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

Section 402 of the CWA authorizes the National Pollutant Discharge Elimination System (NPDES) permit program that covers point sources of pollution discharging to a water body. The NPDES program also requires operators of construction sites one acre or larger to prepare a Storm Water Pollution Prevention Plan (SWPPP) for construction activities and obtain authorization to discharge storm water under an NPDES construction storm water permit. The NDPES program also requires certain land uses (e.g., industrial uses) to prepare a SWPPP for operational activities and to implement a long-term water quality sampling and monitoring program, unless an exemption has been granted.

12. Elsinore Valley Municipal Water District Urban Water Management Plan

EVMWD prepared an Urban Water Management Plan (UWMP) in year 2000 in compliance with the Urban Water Management Act which was adopted by EVMWD's Board of Directors on December 22, 1999. An update to the 2000 UWMP was prepared in 2005 and adopted on June 9, 2011. The EVMWD UWMP complies with the requirements of the Urban Water Management Planning Act. (EVMWD, 2011a, p. 1)

13. Elsinore Valley Municipal Water District Best Management Practices

EVWMD became a signatory to the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (MOU) regarding urban water conservation on December 11, 2002. As part of the MOU, EVWMD is required to implement Best Management Practices (BMPs) as part of its water conservation program. The MOU was amended in June 2010 and full implementation of BMPs are required by 2018. EVMWD intends to achieve full coverage of each BMP no later than Fiscal Year 2018. (EVMWD, 2011a, pp. 10-11)

14. Lake Elsinore Municipal Code (LEMC) – Title 19, Chapter 19.08

Lake Elsinore Municipal Code (LEMC) Chapter 19.08 (Water Efficiency Landscaping Requirements) implements the requirements necessary to meet the State of California Efficiency in Landscaping Act and the California Code of Regulations Title 23, Division 2, Chapter 2.7. The purpose and intent of Chapter 2.7 is also to: 1) establish provisions for water management practices and water waste prevention; 2) establish a structure for planning, designing, installing, maintaining, and managing water efficient landscapes in new construction and rehabilitated projects; 3) reduce the water demand from landscapes with a decline in landscape quality or quantity; 4) retain flexibility and encourage creativity through appropriate design; 5) assure the attainment of water efficient landscape goals by requiring that landscapes not exceed a maximum water demand of 70 percent of their reference evapotranspiration or any lower percentage as may be required by water purveyor policy or state legislation whichever is stricter; 6) eliminate water waste from overspray and/or runoff; and 7) achieve water conservation by raising the public awareness of the need to conserve water through education and motivation to embrace an effective water demand management program. (Lake Elsinore, 2011b, pp. 3.16-14 through 3.16-15)

❑ Solid Waste Regulations

1. California Solid Waste Integrated Waste Management Act (AB 939)

Signed into law in 1989, the California Integrated Waste Management Act (Assembly Bill 939 [AB 939]) established an integrated waste management system that focused on source reduction, recycling, composting, and land disposal of waste. In addition, the bill established a 50% waste reduction requirement for cities and counties by the year 2000, along with a process to ensure environmentally safe disposal of waste that could not be diverted.

2. California Solid Waste Reuse and Recycling Act (AB 1327)

Signed into law in 1991, the California Solid Waste Reuse and Recycling Access Act (Assembly Bill 1327 [AB 1327]) added Chapter 18 to Part 3 of Division 30 of the Public Resources Code. Chapter 18 required the California Integrated Waste Management Board (CIWMB) to develop a model ordinance for adoption of recyclable materials in development projects (it should be noted that the

CIWMB no longer exists and its duties have been assumed by CalRecycle). Local agencies were then required to adopt the model, or an ordinance of their own, in order to govern adequate areas for collection and loading of recyclable materials in development projects. This Act requires all development projects that are commercial, industrial, institutional, or marina in nature, and where solid waste is collected and loaded, to provide an adequate area for collecting and loading recyclable materials over the lifetime of the project.

3. Mandatory Commercial Recycling Program

Signed into law in 2011, Assembly Bill 341 (AB 341) sets forth the requirements of the statewide mandatory commercial recycling program. The purpose of the law is to reduce greenhouse gas emissions in California diverting commercial solid waste to recycling efforts and to expand the opportunity for additional recycling services and recycling manufacturing facilities in California. Any business that generates four (4) cubic yards or more of commercial solid waste per week is required to arrange for recycling services.

4. Riverside Countywide Integrated Waste Management Plan

The Riverside Countywide Integrated Waste Management Plan (CIWMP) outline the goals, policies, and programs the County and its cities will implement to create an integrated and cost effective waste management system that complies with the provisions of AB 939 and its diversion mandates. (Lake Elsinore, 2011b, 3.16-15)

5. Household Hazardous Waste Program

The Household Hazardous Waste Program is administered by the Riverside County Waste Management Department. The Waste Management Department educates businesses and residents on how to reduce the amount of hazardous waste. (Lake Elsinore, 2011b, 3.16-15)

4.10.3 BASIS FOR DETERMINING SIGNIFICANCE

The proposed Project would result in a significant impact to the utilities and service systems if the Project or any Project-related component would:

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

b. Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

c. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

d. Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

e. Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

f. Not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

g. Fails to comply with federal, state, and local statutes and regulations related to solid waste.

h. Require or result in the construction of new electrical, natural gas or telecommunication facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

The above-listed thresholds are derived directly from Section XVII of Appendix G to the CEQA Guidelines and address typical adverse project effects due to the need for new or expanded utilities and service systems. (OPR, 2009).

4.10.4 IMPACT ANALYSIS

Threshold a. Would the Project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

The proposed Project would not result in a substantial increase in wastewater generated from the site because there would be only a net increase of two employees with implementation of the Project. Also, under existing conditions, wastewater treatment at the Nichols Canyon Mine is handled by portable toilets, which are regularly emptied by a rental service company. Waste from these portable toilets is disposed of in accordance with all applicable regulatory requirements. Portable toilets would continue to be operated on-site for the duration of mining and reclamation activities. There are no other potential sources of wastewater associated with the proposed Project. Therefore, implementation of the proposed Project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. Thus, impacts would be less than significant.

Threshold b. Would the Project require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The proposed Project would result in a net increase of two employees as compared to baseline conditions. Such an increase would have no effect on existing wastewater treatment facilities, as wastewater treatment at the Nichols Canyon Mine is handled by portable toilets, which are regularly emptied by a rental service company. In the unlikely event a wastewater treatment provider is at or above capacity, the rental service company would identify an alternative treatment facility to handle Project-related wastewater. Because the Project does not propose any wastewater facilities, would not utilize EVMWD's sewer system, and would have no potential to exceed the capacity of any wastewater treatment facilities, no impact would occur.

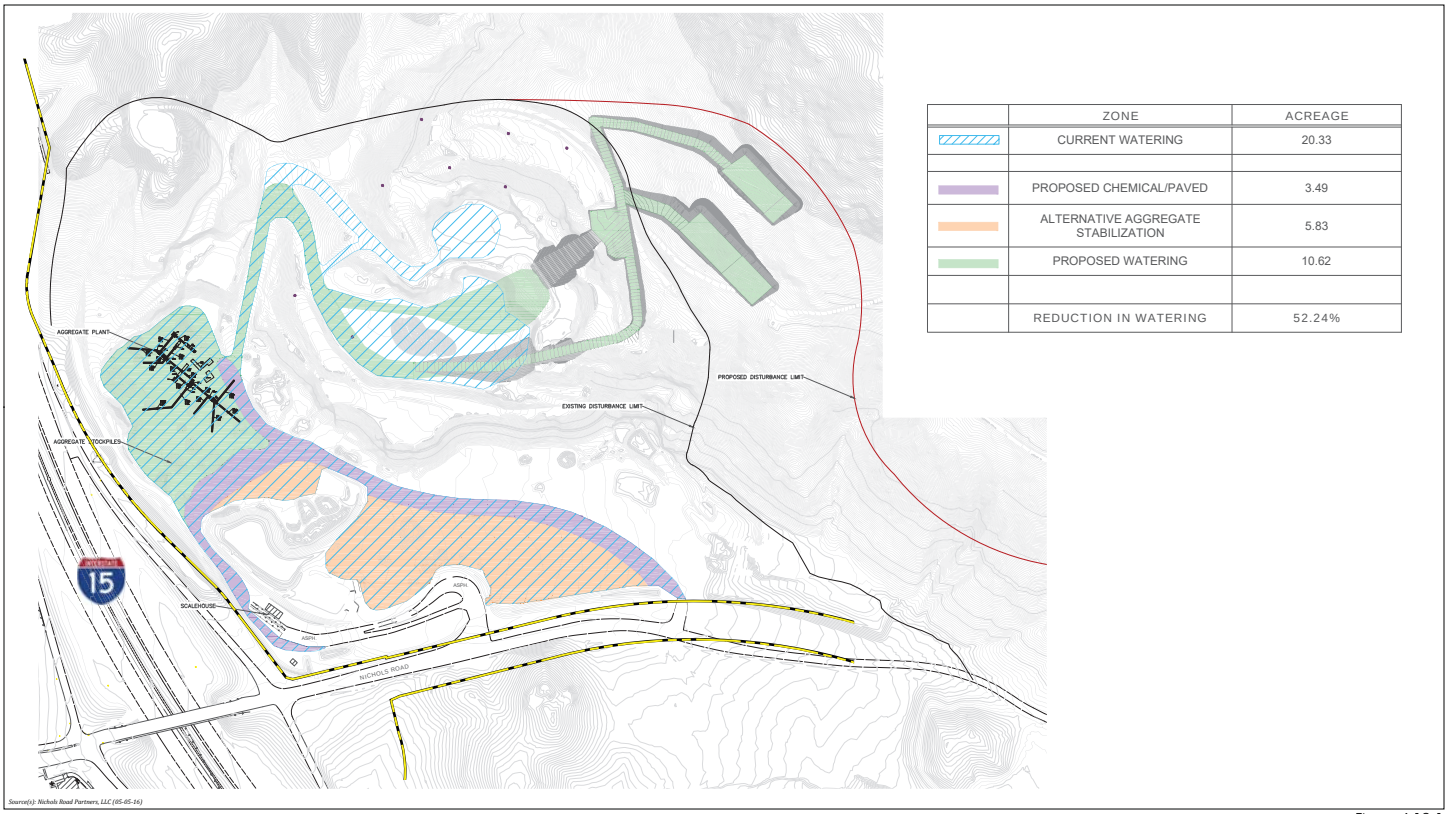
Threshold c. Would the Project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Water to the Nichols Canyon Mine is provided by the EVMWD via an existing fire hydrant. EVMWD has prepared an UWMP dated July 2011, that provides for the long-range planning efforts of water purveyance within its district. The UWMP includes an analysis of water supply sufficiency that concludes that sufficient supply exists to meet the demand for projected normal year, singly-dry year, and multiple-dry-year supply through 2035, with dry years assumed to result in an approximately nine percent increase in demands as compared to normal year demands. (EVMWD, 2011a, p. 10)

~~Under baseline conditions~~Based on billing data from the EVMWD, in 2015 the Nichols Canyon Mine utilized approximately 46,066~~64,000~~ gallons per day (gpd) during the highest demand month, 10,173 gpd during the lowest demand month, and an average of 32,915 gpd (EVMWD, 2015). SMP No. 2015-01 includes new watering restrictions for soil stabilization, as shown on Figure 4.10-1, *SMP No. 2015-01 Proposed Dust Control Measures - Nichols North*, for the Nichols North site, and on Figure 4.10-2, *SMP 2015-01 Proposed Dust Control Measures* - Nichols South, for the Nichols South site. ~~I~~Implementation of the proposed Project would result in a net decrease in areas subject to watering from 24.90~~20.33~~ acres across both the Nichols North and Nichols South sites under existing conditions to 13.20~~11.01~~ acres under the proposed Project. The reduction in water usage on-site would occur because SMP No. 2015-01 requires the use of soil binding chemicals, pavement, and other stabilization techniques to provide for adequate dust control while resulting in a net decrease in water used at the site. In total, ~~it can be assumed that because~~ areas on-site that require water for dust control would be reduced by approximately 46.99~~45.8~~% as compared to baseline conditions; therefore, it also can be assumed that total water use at the mine would decrease proportionately under the proposed Project. Using the highest demand month from 2015, this would result in a decrease in water usage at the site from approximately 46,066~~64,000~~ gpd to approximately 24,420~~34,660~~ gpd. Although approval of the Project would extend the duration of mining activities on-site as necessary to mine and reclaim the proposed Expanded Disturbance Area (EDA), the EVWMD has determined that it has sufficient supplies to meet the demand for projected normal year, singly-dry year, and multiple-dry-year supply through 2035. This determination was made by the EVWMD based on future population and employment estimates within the EVMWD service area, ~~and~~ which accounts for on-going mining activities at the Nichols Canyon Mine. (EVWMD, 2011, Tables ES-9, ES-10, and ES-11) The EVMWD confirmed in a February 19, 2016 comment letter on the proposed Project that the 2010 UWMP's water demand projections include the proposed Project's demand requirements (EVMWD, 2016). Therefore, because total water usage on-site would decrease under the proposed Project as compared to baseline conditions, and because the EVMWD has sufficient supplies through 2035, including during dry and multiple-dry years, the Project has no potential to result in a determination by the EVWMD that it does not have sufficient water supplies to serve the Project from existing entitlements and resources; therefore, no impact would occur.

Threshold d.	***Would the Project require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?***

Refer to the response for Threshold 4.10.c). As indicated, implementation of the proposed Project would result in a net decrease of ~~29,340~~21,646 gpd as compared to baseline conditions. Also, the UWMP concludes that sufficient supply exists to meet the demand for projected normal year, singly-dry year, and multiple-dry-year supply through 2035. (EVWMD, 2011, p. 10; EVMWD, 2015; EVMWD, 2016) (EVWMD, 2011, p. 10) Because water treatment facilities have adequate water supplies to serve the Mine under existing conditions, and because total water used at the Mine would decrease under the proposed Project by 21,646~~29,340~~ gpd as compared to baseline conditions, the proposed Project has no potential to result in the construction of new or expanded water treatment facilities, and no impact would occur.

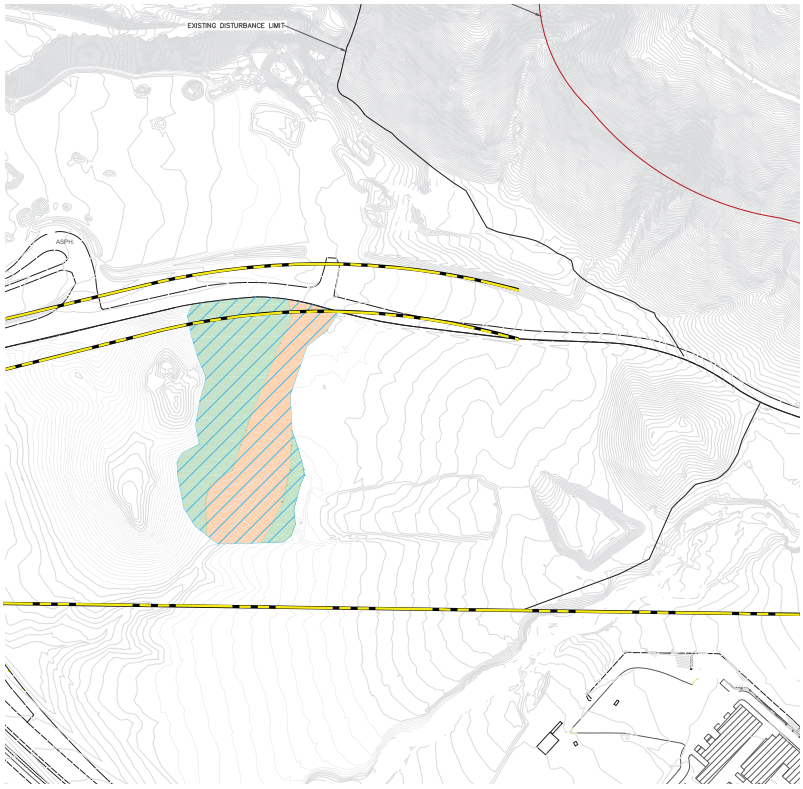


	ZONE	ACREAGE
	CURRENT WATERING	20.33
	PROPOSED CHEMICAL/PAVED	3.49
	ALTERNATIVE AGGREGATE STABILIZATION	5.83
	PROPOSED WATERING	10.62
	REDUCTION IN WATERING	52.24%

Source(s): Nichols Road Partners, LLC (05-05-16)

Figure 4.10-1

SMP 2015-01 PROPOSED DUST CONTROL MEASURES-NICHOLS NORTH



	ZONE	ACREAGE
	CURRENT WATERING	4.57
	PROPOSED CHEMICAL/PAVED	0.00
	ALTERNATIVE AGGREGATE STABILIZATION	1.99
	PROPOSED WATERING	2.58
	REDUCTION IN WATERING	56.46%

Source(s): Nichols Road Partners, LLC (05-05-16)

Figure 4.10-2

SMP 2015-01 PROPOSED DUST CONTROL MEASURES-NICHOLS SOUTH

Threshold e. ***Would the Project result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?***

Implementation of the proposed Project would result in the net increase of two employees as compared to baseline conditions, and the Project is not expected to result in a substantial increase in the amount of wastewater generated at the site. Furthermore, wastewater generated at the site under existing conditions is handled via portable toilets, and there would be no need for additional portable toilets as a result of the Project, nor would there be a discernible change in the number of times the service provider would need to service the Mine. The wastewater haul company would dispose of all wastewater generated by the Project at permitted facilities with sufficient capacity to handle Project-generated wastewater. The Project does not directly utilize EVMWD's sewer system and there are no components of the Project that would cause or contribute to deficient wastewater treatment capacity; therefore, no impact would occur.

Threshold f. ***Would the Project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?***

Nichols Canyon Mine generates nominal amounts of solid waste under baseline conditions. The proposed Project would generate an incremental increase in solid waste volumes requiring off-site disposal due to the increased number of workers onsite (i.e., the addition of two employees). Project-generated solid waste would be conveyed to one of several landfills (El Sobrante, Badlands, or Lamb Canyon Landfills) operated or managed by the RCWMD. These existing landfills are required to comply with federal, state, and local statutes and regulations related to solid waste. Landfills within RCWMD's jurisdiction adhere to state guidelines which specify that a minimum of 15 years of system-wide landfill capacity shall be provided. (Lake Elsinore, 2011b, p. 3-16-5). Therefore, because the Project would be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste, and because the Project's incremental increase in solid waste generation would be negligible, impacts would be less than significant.

Threshold g. ***Would the Project comply with federal, state, and local statutes and regulations related to solid waste?***

The Project would be required to comply with City and County waste reduction programs pursuant to the State's Integrated Waste Management Act and Chapter 14.12 of the City of Lake Elsinore Municipal Code. Project-generated solid waste would be conveyed to one of several landfills operated or managed by RCWMD. These existing landfills are required to comply with federal, state, and local statutes and regulations related to solid waste. Compliance with federal, state, and local statutes would reduce the amount of solid waste generated by the proposed Project and diverted to landfills which in turn will aid in the extension of the life of affected disposal sites. The Project would comply with all applicable solid waste statutes and regulations; as such, impacts would be less than significant.

Threshold h. Would the Project require or result in the construction of new electrical, natural gas or telecommunication facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?

The proposed Project would involve the continuation and expansion of an existing mining operation, and would not result in a substantial increase in daily operational characteristics at the site. All utilities needed to serve the Nichols Canyon Mine are currently in place. Specifically, electricity is provided to the site via private power poles from a connection near the Mine's southern boundary, and these existing power poles would not require expansion as a result of the Project. There are no other utilities needed in support of mining operations that would have the potential to cause significant environmental effects. Accordingly, no impact would occur.

4.10.5 CUMULATIVE IMPACT ANALYSIS

The analysis of potential cumulative impacts to utilities and service systems is divided into four general topics of discussion by combining the Thresholds of Significance (listed above in Subsection 4.10.4) into groupings of like topics, as follows: 1) wastewater treatment; 2) water supplies and water treatment; 3) solid waste collection and disposal; and 4) utilities. For purposes of analysis herein, the Project's cumulative study area comprises all portions of the EVWMD's service area for water and wastewater services; western Riverside County for solid waste service and electrical service; and the Project's watershed for impacts due to stormwater runoff.

❑ Wastewater Treatment (Thresholds a, b and e)

The proposed Project would not result in a substantial increase in wastewater generated from the site because there would be only a net increase of two employees with implementation of the Project. Also, under existing conditions, wastewater treatment at the Nichols Canyon Mine is handled by portable toilets, which are regularly emptied by a rental service company. Waste from these portable toilets is disposed of in accordance with all applicable regulatory requirements. Because the Project does not utilize EVMWD's sewer system and because the Project would not result in a substantial increase in demand for wastewater treatment facilities, cumulatively considerable impacts due to inadequate wastewater treatment capacity would be less than significant.

❑ Water Supplies and Water Treatment (Thresholds c and d)

As discussed above, during the baseline period the Nichols Canyon Mine utilized approximately 46,066~~64,000~~ gallons per day (gpd) ~~on average~~during the highest demand month in 2015.~~, while~~ SMP No. 2015-01 requires a net reduction in areas subject to watering for dust control purposes by approximately 46.99~~45.84~~% as compared to baseline conditions; therefore, it can reasonably be assumed that the peak total daily water usage at the Mine would decrease from 46,099~~64,000~~ gpd to approximately 24,420~~34,660~~ gpd (EVMWD, 2015). Additionally, the UWMP concludes that sufficient supply exists to meet the demand for projected normal year, singly-dry year, and multiple-dry-year supply through 2035. (EVMWD, 2011a, p. 10; EVMWD, 2016). Therefore, the Project's impacts to water supply and treatment capacity would be less than cumulatively considerable.

❑ Solid Waste Collection and Disposal (Thresholds f and g)

As discussed above, Project-generated solid waste would be conveyed to one of several landfills (El Sobrante, Badlands, and Lamb Canyon Landfills) operated or managed by RCWMD. With implementation of the proposed Project, there would be a nominal increase in the amount of solid

waste generated on-site associated with the anticipated two new employees, but such an incremental increase would not result in inadequate capacity at any of the RCWMD landfills. Landfills within RCWMD's jurisdiction adhere to state guidelines which specify that a minimum of 15 years of system-wide landfill capacity shall be provided. Additionally, the RCWMD landfills are required to comply with federal, state, and local statutes and regulations related to solid waste. (Lake Elsinore, 2011b, p. 3-16-5). As such, impacts due to solid waste collection and disposal would be less-than-cumulatively considerable.

- ❑ **Utilities (Threshold h)**

The proposed Project would involve the continuation and expansion of an existing mining operation and would not result or require any new utility connections at the Mine. All utilities needed to serve the Nichols Canyon Mine are currently in place. As such, the proposed Project has no potential to result in a cumulatively considerable impact associated with the construction or expansion of any utilities.

4.10.6 SIGNIFICANCE OF IMPACTS BEFORE MITIGATION

Threshold a): Less-than-Significant Impact. The Project would result in only a nominal increase in demand for wastewater treatment capacity due to the addition of two new employees. Additionally, all wastewater generated on-site would be collected by a wastewater haul company that would dispose of the wastewater at a treatment plant that meets the wastewater treatment requirements of the Santa Ana RWQCB.

Threshold b): No Impact. The Project would not require the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Threshold c): No Impact. The Project would result in a net decrease in demand for water resources, as SMP No. 2015-01 requires the use of soil binders in lieu of water trucks to meet a portion of the Mine's demands for dust suppression. Specifically, areas subject to water usage for dust control would decrease from approximately 24.90~~20.33~~ acres to approximately 13.20~~11.01~~ acres. Accordingly, the Project would therefore have no potential to result in or require new or expanded entitlements.

Threshold d): No Impact. The Project would result in a net decrease in demand for water on-site, and would therefore not require or result in the construction of new or expanded water treatment facilities.

Threshold e): No impact. The wastewater haul company would dispose of all wastewater generated by the Project at permitted facilities with sufficient capacity to handle Project-generated wastewater, and the Project would not result in or require expanded wastewater treatment capacity.

Threshold f): Less-than-Significant Impact. The Project would generate a nominal increase in the amount of solid waste produced on-site due to the addition of two new employees. This nominal increase in solid waste generation would not cause or substantially contribute to diminished landfill capacity.

Threshold g): Less-than-Significant Impact. The Project would comply with all applicable federal, state, and local statutes and regulations related to solid waste disposal, reduction, and recycling.

Threshold h): No Impact. The Project would not result in the construction of new electrical, natural gas or telecommunication facilities or expansion existing facilities, the construction of which would cause significant environmental effects.

4.10.7 MITIGATION

Significant impacts would not occur; therefore, mitigation is not required.