

4.14 CUMULATIVE EFFECTS

Cumulative impacts are defined in 40 C.F.R. Section 1508.7 as the impacts:

... on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The cumulative impacts are based on the assumption that surrounding areas will build to the extent allowed by the County General Plan and growth projections from the San Diego Association of Governments (SANDAG). San Diego County is currently updating its General Plan to accommodate growth through 2020. Future growth in the vicinity of the Sycuan Property according to planned zoning and land use designations would include primarily low-density residential uses.

Based on consultation with San Diego County and local service providers, there are two reasonably foreseeable future projects in the immediate vicinity of the Sycuan Property (Saipe, pers comm., 2007). The Crestlake project consists of 60 single-family residential lots, two lots for a water storage reservoir and pump station, and three open space lots, all on nine parcels totaling approximately 303.5 acres (San Diego County, 2008b). The Crestlake project is located south of the intersection of Interstate-8 and Dunbar Lane, located approximately five miles north of the Sycuan Property. The County has adopted an Environmental Impact Report (EIR) under the California Environmental Quality Act for the Crestlake project, which identifies significant impacts to biological and cultural resources, as well as cumulative impacts to biological and cultural resources, water quality, traffic circulation, air quality, and noise. Mitigation measures are included in the EIR that would reduce these impacts to less-than-significant levels (San Diego County, 2008b). The Crestlake project is currently in litigation over the status of approvals and conditions; however, it is anticipated that the project will eventually go forward.

OWD has recently released a Notice of Preparation (NOP) for an EIR to address the potential impacts of extending the district's water and wastewater service area boundary to include the original 640-acre Sycuan Reservation. The Reservation currently uses groundwater wells to supply residents, Tribal services, and the Sycuan Casino with potable water. If the OWD service area boundaries are expanded, the Reservation residents and services, as well as the Casino, would have the option to obtain potable water from OWD. Wastewater service is currently provided by a tertiary treatment plant that supplies recycled water for non-potable uses on the Reservation. The current plan is to continue using this facility for wastewater treatment and recycled water supply on the Reservation (OWD, 2009).

4.14.1 LAND RESOURCES

Potential project impacts to land resources (topography, seismicity, soils, and mineral resources) are related to measures required to ensure proper design for site conditions. Other foreseeable projects would include similar design measures. No potential cumulative impacts have been identified.

4.14.2 WATER RESOURCES

As discussed above, the Proposed Action would have no significant impacts on water resources. The NOP for the extension of the OWD service boundary states that the Tribe would be required to participate in the OWD's local water supply development program to completely offset any municipal, treated water made available to the Sycuan Reservation. This would ensure that impacts to the local water supply would be less than significant. The Crestlake project would obtain water from the PDMWD, and has proposed measures to mitigate any impacts to water quality. Given the limited demands on PDMWD water from the Proposed Action, there would be no adverse cumulative impacts on water resources. The proposed project and any other projects that may be constructed in the vicinity would be required to comply with the Clean Water Act as it relates to stormwater and point-source discharges. Compliance with EPA stormwater pollution prevention requirements will prevent off-site development, in combination with development associated with the Proposed Action, from causing cumulatively significant stormwater related impacts.

Impacts to the groundwater basin would not be cumulatively significant, as the Proposed Action would use a relatively small percentage of the available groundwater in the Middle Sweetwater Basin.

Wastewater conveyed to public service providers would be treated to meet local and federal water quality requirements. Wastewater effluent from the septic and leach field systems would be required to meet federal standards. As a part of the project design, any on-site wells would include 50 feet of sanitary seal for protection of water quality. Additional design and operation measures, listed in **Section 5.3**, include setbacks and sprayfield design characteristics that would reduce potential impacts. Impacts to water quality from the Proposed Action are further discussed under **Section 4.1.2**, Water Resources. With mitigation, impacts to groundwater quality would be less than significant. Presuming that the cumulative projects would also follow applicable regulations and guidelines regarding water quality and wastewater treatment and disposal, cumulative impacts would also be less than significant.

4.14.3 AIR QUALITY

AIR POLLUTANT TRENDS

Cumulative air quality effects are assessed by comparing the projects' emissions to *de minimis* levels and the incremental emissions associated with Alternative A compared to San Diego County-wide emissions forecast by the California Air Resources Board (CARB) for long-term cumulative conditions (2020, the furthest planning horizon for countywide emission forecasts). If project emissions of any nonattainment

criteria pollutant are 10 percent or greater than the basin, county or municipal districts emission inventory of that pollutant, then implementation of the project would result in a significant impact. The County's emissions trends from 1975 to 2020 are presented in **Table 4.14-1**.

TABLE 4.14-1
SAN DIEGO COUNTY EMISSIONS TRENDS

| San Diego County | 1975 | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
|------------------|--------------|--------|--------|--------|--------|--------|-------|-------|-------|-------|
| | tons per day | | | | | | | | | |
| ROG | 439.2 | 436.6 | 412.9 | 342.5 | 267.2 | 225.8 | 186.3 | 172.7 | 168.4 | 170.2 |
| NOx | 3298.9 | 3030.2 | 2923.8 | 2457.6 | 1719.2 | 1278.9 | 937.7 | 741.9 | 610.1 | 539.2 |

Source: CARB, 2007; AES, 2007.

San Diego County is in nonattainment for Ozone precursors (ROG and NOx), but emissions of both ROG and NOx are anticipated to decrease from today's levels. NOx and ROG emissions are governed under the State Implementation Plan (SIP) and therefore should continue to decrease beyond 2020.

CRITERIA AIR POLLUTANTS LONG-TERM CONDITIONS

Operation of Alternative A during long-term 2030 conditions would result in the generation of criteria air pollutants. **Table 4.14-2** shows operation and area source emissions of Alternative A in year 2030; criteria pollutant emissions are shown as a percentage of County total emissions. **Table 4.14-2** shows that emissions associated with Alternative A would represent less than 0.002 percent of the county-wide emissions for ROG and 0.0006 percent of the county-wide emissions for NOx. When considered as a portion of the County's overall emission profile, Alternative A's contribution to regional air quality is far less than ten percent. Furthermore, project emissions in the year 2030 are less than *de minimis* levels. Mitigation measures in **Section 5.4** would further reduce emission impacts associated with Alternative A. It is anticipated that the Crestlake project will include similar mitigation measures to reduce cumulative air quality impacts to less-than-significant levels. No impacts to air quality are reasonably foreseeable from the proposed extension of OWD's service area boundary to include the Sycuan Reservation.

TABLE 4.14-2
ALTERNATIVE A - LONG-TERM (CUMULATIVE) PROJECT EMISSIONS

| Sources | Criteria Pollutants | |
|---|---------------------|---------------|
| | ROG | NOx |
| | tons per year | |
| Area Emissions | 0.60 | 0.13 |
| Mobile Emissions | 0.95 | 1.01 |
| Project Total | 1.55 | 1.14 |
| <i>De minimis levels</i> | 100 | 100 |
| San Diego 2020 Emissions | 62,123 | 196,808 |
| Project's percentage of Countywide Total (%) | 0.002 | 0.0006 |
| Significant Impact | No | No |

Source: CARB, 2007; URBEMIS, 2007.

Climate Change

Climate change is a global phenomenon attributable to the sum of all human activities and natural processes. Although the Council on Environmental Quality (CEQ) has provided some guidance on analyzing climate change in environmental documents, the California Governor's Office of Planning and Research (OPR) and California Air Resource Board (CARB) has provided more up-to-date guidance on integrating analysis of climate change in environmental documents. Therefore, the OPR and CARB-recommended quantification of GHG emissions and consistency (through reduction measures) with a local or regional GHG reduction plan or strategy will provide the basis for this climate change analysis.

Table 4.14-3 shows the estimated GHG emissions using the USEPA and CARB-approved URBEMIS 2007 emissions modeling software and emission factors from the Climate Change Action Registry (CCAR, 2009). Emissions of all GHGs are measured in units of CO₂-equivalent, or CO₂e. The Proposed Project would emit a peak of approximately 2,983 tons per year (tpy) of CO₂ during construction. Once construction is completed, the project would emit 3,564 tpy of CO₂e. Based on emission factors from CCAR, the project would emit 131 tpy CO₂e, including CH₄ and N₂O from mobile sources. Indirect emissions would total 15 tpy CO₂e, including CO₂, CH₄, and N₂O. In total, during periods of simultaneous construction and operation the project would emit a maximum of 6,547 tpy of CO₂e. Annual project GHG emissions would be approximately 0.00066 percent of California's predicted GHG emissions in 2020. Project contributions to the annual global GHG emissions in 2020 would be approximately 0.00000042 percent.

The analysis presented in this EA provides a quantification of project-related GHG emissions (refer to **Table 4.17.3**) and provides reduction measures in **Section 5.4.2**, which are consistent with applicable Climate Action Team reduction strategies (CAT, 2006). Implementation of the mitigation measures provided in **Section 5.4.2** would result in a less-than-significant impact to global warming.

TABLE 4.14-3
PROJECT-RELATED GHG EMISSIONS

| CO₂ Emissions | | | | | |
|--|---|-------------------------------------|-------------------------------------|-------------------------------------|------------------------------|
| tons per year | | | | | |
| Mobile Sources¹ | | | Area Sources¹ | | |
| 3,264 | | | 154 | | |
| CH₄ and N₂O Emissions from Mobile Sources² | | | | | |
| Emission Factor (CO₂/CH₄/N₂O) | Miles Traveled | CH₄ Emissions | N₂O Emissions | Total CO₂e | |
| g/mile | miles/day | | tons per year | | |
| 552.08/0.05/0.05 | 19,697 | 8 | 123 | 131 | |
| Indirect GHG emissions² | | | | | |
| Emission Factor (CO₂/CH₄/N₂O) | Estimated kW-h Usage³ | CO₂ Emissions | CH₄ Emissions | N₂O Emissions | Total CO₂e |
| lb/MW-h | MW-hr/year | | | tons per year | |
| 878.71/0.0067/0.0037 | 75 | 15 | 0.00 | 0.00 | 15 |
| Alternative A - GHG Emissions | | | | | |
| 3,564 | | | | | |

Notes: ¹ Estimated from EPA and CARB approved URBEMIS 2007 air quality program (Appendix G)

² Emission factors from Climate Change Action Registry, April 2008

³ Estimated using an average 6250 kilowatts-hours/month of power used per facility.

Source: URBEMIS, 2007; Climate Change Action Registry, 2009.

4.14.4 BIOLOGICAL RESOURCES

Potential cumulative impacts to biological resources on the Sycuan Property will be reduced to a less-than-significant level through measures incorporated into project construction and design, as discussed in **Section 5.5**. Similarly, although the Crestlake project identified significant impacts and cumulative impacts to biological resources, it will be required to mitigate these impacts in accordance with applicable federal, state, and/or county laws. Significant impacts to biological resources are not anticipated from the proposed expansion of the OWD's service area boundary. Consequently, the project would not cause any cumulatively significant impacts.

4.14.5 CULTURAL RESOURCES

Protective measures to prevent the loss of cultural resources from the Proposed Action are listed in **Section 5.6**. Similar measures would reduce the identified impacts to cultural resources from the Crestlake project. No reasonably foreseeable, cumulatively significant impacts to cultural resources would occur.

4.14.6 SOCIOECONOMIC CONDITIONS / ENVIRONMENTAL JUSTICE

In combination with reasonably foreseeable developments, the project will not significantly impact socioeconomic conditions or raise issues of environmental justice. As discussed above in **Section 4.7**, the Proposed Action will contribute important socioeconomic benefits to the Tribe.

4.14.7 TRANSPORTATION AND CIRCULATION

METHODOLOGY

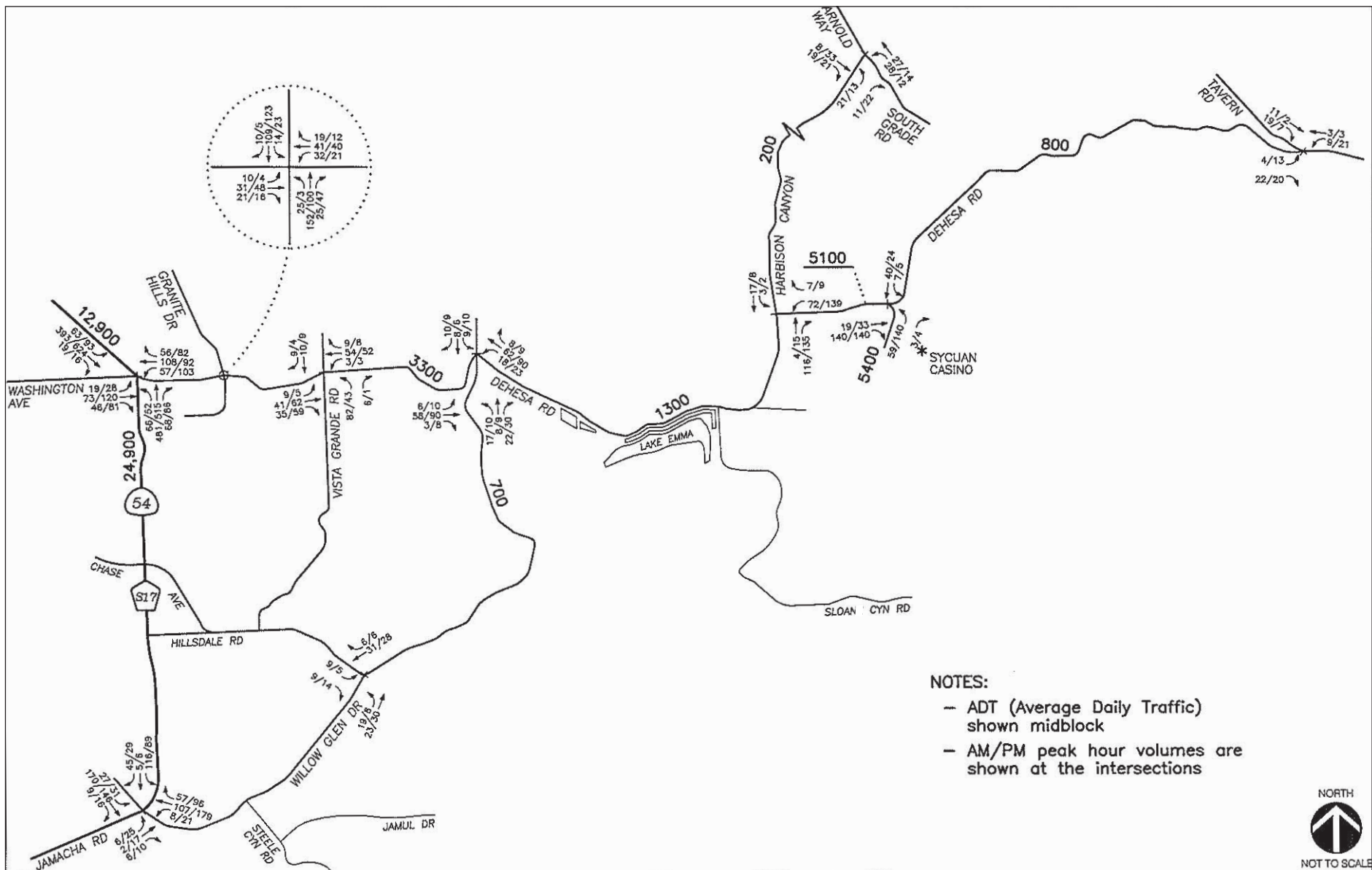
The trip generation rates, trip distribution, and level of service (LOS) standards for the cumulative analysis are the same as those discussed in **Section 4.8**. Although construction of the Crestlake project would add trips to local roadways, due to its proximity to Interstate 8, it is not anticipated that residents of Crestlake would significantly impact the roadways surrounding the Sycuan Property.

CUMULATIVE ROADWAY LEVELS OF SERVICE

Cumulative traffic volumes distributed on the local roadway are shown on **Figure 4.14-1**. Cumulative plus Alternative A traffic volumes are shown on **Figure 4.14-2**. **Table 4.14-4** summarizes the peak-hour LOS at each study roadway segment under cumulative conditions (with and without the project). As seen in this table all project roadways are projected to continue to operate at an acceptable LOS, with the exception of the following:

- Dehesa Road – Granite Hills Dr. to Willow Glen Dr.
- Dehesa Road – Willow Glen Dr. to Harbison Canyon Rd.
- Dehesa Road – Harbison Canyon Rd. to Sycuan Rd.
- Jamacha Road – North of Washington Ave.
- Jamacha Road – Washington Ave. to Willow Glen Dr.

The project would contribute to unacceptable LOS although it should be noted that the identified roadway segments would operate at the same unacceptable LOS without the project. Mitigation is included in **Section 5.8** to reduce cumulative impacts.



- NOTES:**
- ADT (Average Daily Traffic) shown midblock
 - AM/PM peak hour volumes are shown at the intersections



Figure 4.14-1
Cumulative Traffic Volumes

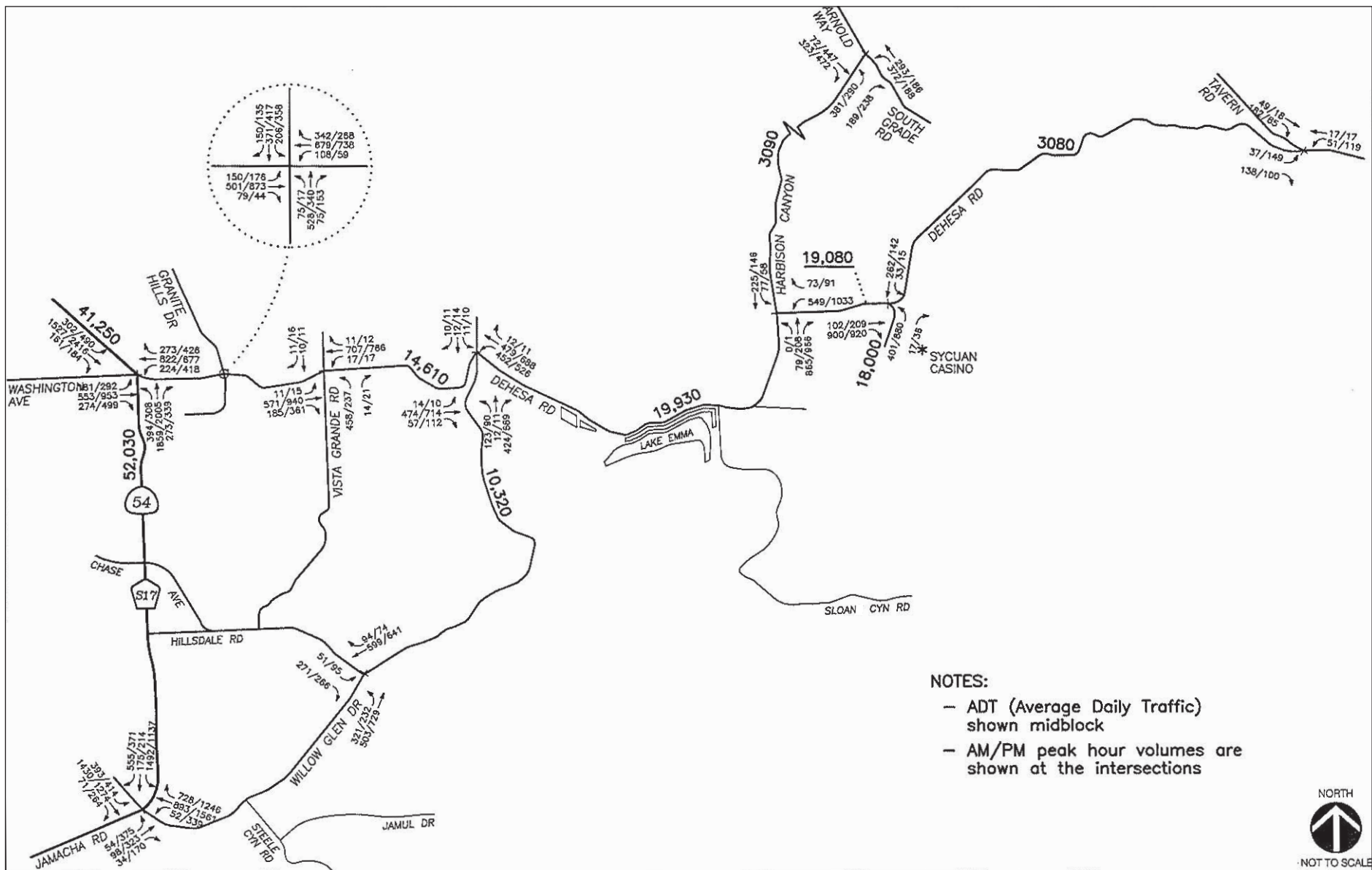


Figure 4.14-2
 Cumulative + Alternative A Traffic Volumes

TABLE 4.14-4
EXISTING PLUS PROJECT ROADWAY SEGMENT LOS

| Roadway Segment | Existing LOS E Capacity | Cumulative | | | Cumulative + Project | | |
|--------------------------------------|-------------------------------|------------|------|-----|----------------------|------|-----|
| | | Volume | V/C | LOS | Volume | V/C | LOS |
| Dehesa Rd | | | | | | | |
| Granite Hills Dr to Willow Glen Dr | 16,200 | 14,000 | 0.86 | E | 14,610 | 0.90 | E |
| Willow Glen Dr to Harbison Canyon Rd | 16,200 | 19,000 | 1.17 | F | 19,930 | 1.23 | F |
| Harbison Canyon Rd to Sycuan Rd | 16,200 | 19,000 | 1.17 | F | 19,080 | 1.18 | F |
| Sycuan Rd To Tavern Rd | 16,200 | 3,000 | 0.19 | B | 3,080 | 0.19 | B |
| Jamacha Rd | | | | | | | |
| North of Washington Ave | 37,000 | 41,000 | 1.11 | F | 41,250 | 1.11 | F |
| Washington Ave to Willow Glen Dr | 37,000 | 49,000 | 1.32 | F | 52,030 | 1.41 | F |
| Sycuan Rd | | | | | | | |
| South of Dehesa Rd | 34,200 | 18,000 | 0.53 | B | 18,000 | 0.53 | B |
| Willow Glen Dr | | | | | | | |
| South of Dehesa Rd | 16,200 | 10,000 | 0.62 | D | 10,320 | 0.64 | D |
| Harbison Canyon Rd | | | | | | | |
| Dehesa Rd to South Grade Road | 16,200 | 3,000 | 0.19 | B | 3,090 | 0.19 | B |

Source: Linscott, Law and Greenspan, 2007; AES, 2007.

CUMULATIVE INTERSECTION LEVELS OF SERVICE

Table 4.14-5 summarizes the AM and PM peak-hour level of service at each study intersection under cumulative conditions (with and without the project).

TABLE 4.14-5
CUMULATIVE AM AND PM PEAK-HOUR EXISTING AND PLUS PROJECT LOS

| Intersection | Traffic Control | Cumulative | | | | Cumulative + Project | | | |
|--------------------------------|--------------------|------------|-----|---------|-----|----------------------|-----|---------|-----|
| | | AM Peak | | PM Peak | | AM Peak | | PM Peak | |
| | | Delay | LOS | Delay | LOS | Delay | LOS | Delay | LOS |
| Harbison Canyon Rd/South Grade | A | 11.3 | B | 11.0 | B | 11.3 | B | 11.1 | B |
| Washington Ave/Jamacha Rd | S | 41.2 | D | >100 | F | 42.3 | D | >80.0 | F |
| Dehesa Rd/Granite Hills Dr | S | 41.3 | D | 46.7 | D | 41.7 | D | 51.3 | D |
| Dehesa Rd/Vista Grande Rd | S | 33.4 | C | 49.8 | D | 33.7 | C | 65.6 | E |
| Willow Glen Dr/Dehesa Rd | S | 30.8 | C | 39.8 | D | 31.4 | C | 48.9 | D |
| Dehesa Rd/Harbison Canyon Rd | A | 18.1 | C | 90.7 | F | 18.5 | C | >80.0 | F |
| Dehesa Rd/Sycuan Rd | OW | 12.6 | B | 21.9 | C | 12.7 | B | 22.5 | C |
| Dehesa Rd/Tavern Rd | OW | 8.6 | A | 7.4 | A | 8.6 | A | 7.4 | A |
| Jamacha Rd/Willow Glen Dr | S | 36.6 | D | 40.3 | D | 36.7 | D | 41.2 | D |
| Hillsdale Rd/Willow Glen Dr | OW | 10.3 | B | 9.9 | B | 10.4 | B | 10.0 | B |

A = All Way Stop Control, OW = One Way Stop Control, S = Signalized.

Source: Linscott, Law and Greenspan, 2007; AES, 2007.

As seen in this table all project intersections are projected to continue to operate at an acceptable LOS, with the exception of the following:

- Washington Ave./Jamacha Rd.
- Dehesa Rd./Vista Grande Rd.
- Dehesa Rd./Tavern Rd.

It should be noted that the Washington Ave./Jamacha Rd. and Dehesa Rd./Harbison Canyon Rd. intersections would operate at the same unacceptable LOS without the project. Mitigation is included in **Section 5.8** to reduce cumulative impacts.

4.14.8 LAND USE

The development of the Sycuan Property would not cause any significant impacts to land use on or in the area of the Sycuan Property or result in changes to local land use developments. The proposed extension of OWD's service area boundary would be conducted in compliance with that agency's regulations. Because the Crestlake project would need to comply with County land use policies, when combined with the Proposed Action and the OWD service area boundary extension, these projects would not create a cumulatively significant impact to land use.

4.14.9 PUBLIC SERVICES

As development of other areas continues, the combined need for public services may create a cumulative impact. However, all future land uses in the region will be subject to approval by local governments. OWD has stated that any new municipal water service to the Sycuan Reservation would be offset by the Tribe's participation in the local water supply development program. The Crestlake project would similarly be required to comply with PDMWD regulations to ensure that other water district customers would not be adversely affected. As a result, the Proposed Action will not result in substantial cumulative changes to public services.

4.14.10 NOISE

The Proposed Action would not generate a level of traffic that would cause an exceedance of outdoor noise standards, and mitigation measures to further reduce noise levels during operation are included in **Section 5.11**. No noise impacts are reasonably foreseeable from the proposed extension of OWD service area boundaries. Given the distance of the Crestlake project from the Sycuan Property, and the inclusion of appropriate mitigation measures to reduce construction and operational noise from that project, there would be no significant cumulative noise impacts.

4.14.11 HAZARDOUS MATERIALS

There is the potential for impacts regarding hazardous materials during construction and operation of the Proposed Action. Mitigation measures are recommended in **Section 5.12**. The Crestlake project and any other projects also would be required to adhere to federal, state and local laws governing the delivery, handling, and storage of hazardous materials, thereby reducing the risk of accidental release of those materials. Therefore, there would be no significant cumulative hazardous materials issues associated with the Proposed Action.

4.14.12 VISUAL RESOURCES

The Sycuan Property is currently used for commercial purposes and has formerly included residential uses. Large expanses of open space would remain on the southern portion of the property. Screening features would be integrated into the design of the project to ensure that views of the RV Park and outdoor events center are not disruptive or intrusive. Visually the proposed development is consistent with local residential and commercial development along Dehesa Road. Other developments would occur according to planned land use designations and would follow applicable design, landscaping, sign, and lighting ordinances. The cumulative effect would be less than significant.