

# TRAFFIC IMPACT REPORT

## Cold Canyon Landfill Expansion

Corral De Piedra Land Company

(DRC2005-00170, ED06-126)

San Luis Obispo County, California

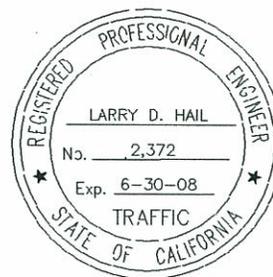
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## EXECUTIVE SUMMARY

The following report presents an evaluation of the potential traffic impacts associated with the Cold Canyon Landfill Expansion project in San Luis Obispo County. The Cold Canyon Landfill is located at 2268 Carpenter Canyon Road (State Route 227). Access is provided via a driveway about 0.80 miles south of Corbett Canyon Road. Proposed improvements include the expansion of the landfill disposal area and daily operational capacity. The project includes an expansion of disposal and processing areas, and extends the hours of operation for a majority of the existing activities. The expansion will require 41 new employees (increase from 79 to 120). Project on-site improvements include a new entrance located about 2,800' south of the existing entrance (existing driveway will be closed). A new scale house with 3 scales will also be constructed about 1,200' east of SR 227. Off-site project improvements on State Route 227 include the installation of a southbound left turn lane and northbound acceleration lane at the proposed driveway.

Traffic at the existing landfill is comprised of employee trips, local contractor trucks and trailers, municipal garbage trucks and vehicles transporting recycled commodities. To document current weekday conditions new traffic count data was collected at the existing driveway during the morning (7-9 AM) and afternoon (4-6 PM) peak commuter time periods. Traffic volume data provided by the landfill operators was also referenced. The data demonstrated that the existing landfill facility generates about 330 vehicles on an average weekday (660 daily trips ends, 10% during AM peak and 5% during the PM peak). On Saturdays the trip generation is 76% of the weekday average (Sunday, 54% of the average). The trip generation estimates indicate that the expansion project will generate approximately 200 new daily vehicle trips (net increase), with 18 new trips during the AM peak hour and 88 new trips during the PM peak hour. The data reviewed for the traffic analysis demonstrated that about 60% of the employee trips and 75% of medium and large vehicles (trucks) are oriented to and from the north on State Route 227.

The primary focus of the traffic analysis was to evaluate the potential safety impacts to operations on State Route 227 at the proposed landfill access entrance. To document current conditions at the existing driveway new traffic count and vehicle classification data was collected. Sight distance measurements were recorded at both driveway locations (existing and proposed), with a sampling of vehicle speeds on State Route 227. Information contained in numerous public documents and records provided by the California Highway Patrol were also reviewed. State Route 227 adjacent to the existing landfill has a single 12' travel lane in each direction, with a southbound left turn lane at the existing landfill driveway (55 mph speed limit). There is a horizontal curve and a series of vertical curves between the existing and proposed landfill driveway locations. The horizontal curve is posted with a 50 mph curve ahead "advisory" speed limit. Detailed traffic count data for State Route 227 was provided by Caltrans (2005, 2006 and 2007). The evaluation of existing operations indicated that average daily traffic volumes on State Route 227 are within acceptable limits (level of service C or better). Average vehicle delays at the State Route 227 / existing driveway intersection are also within acceptable limits during the AM and PM peak hour periods.

The evaluation of potential impacts was performed using “level of service” (LOS) standards established by San Luis Obispo County and Caltrans, and “level of significance” guidelines defined in the California Environmental Quality Act (CEQA). The evaluation of existing plus project and cumulative traffic conditions demonstrated that the landfill expansion project will not significantly impact current daily or peak hour operations on State Route 227. The project traffic volumes will not substantially increase traffic in relation to existing load and capacity, or exceed the established LOS standard (LOS C or better).

An evaluation of project access on State Route 227 included a review of roadway conditions, vehicle speeds, traffic accident data and the adequacy of sight distance. The proposed driveway will be located about 2,800’ south of the existing entrance (175’ north of Patchett Road). The new scale house location will eliminate any potential for on-site queued vehicles to impact operations on State Route 227. State Route 227 north the proposed driveway is relatively level for about 400-500’ followed by a series of vertical curves on an upward grade alignment. There are vertical curve crest located about 860’ and 1,200’ north of the proposed driveway. South of the driveway location State Route 227 continues on a slight upgrade slope with a relatively straight horizontal alignment. Data collected at the proposed driveway location demonstrated that vehicle speeds on State Route 227 were approximately 60 mph in both directions. Traffic accident data was provided by the California Highway Patrol for a 5 ½ year period (2002-2007). This data indicated that there were 10 reported accidents along the mile section of State Route 227 adjacent to the landfill property. The data did not document any significant accident patterns at either the existing or proposed driveway locations. The review of project access also concluded that stopping sight distance on State Route 227 is adequate for at least 65-70 mph (proposed driveway location). Total cumulative peak hour traffic demands at the project driveway will not warrant a separate northbound right turn lane on State Route 227.

The design of improvements along State Route 227 shall comply with current State standards. The southbound left turn and northbound acceleration lanes shall be designed to accommodate the appropriate percentage of large vehicles. Passing in both directions on State Route 227 shall be prohibited adjacent to the left turn and acceleration lane improvements. The proposed driveway should be designed to maximize the availability of corner sight distance for exiting vehicles (minimize potential impact to through traffic). The design of improvements should also minimize potential conflict with vehicles accessing Patchett Road. The proposed project improvements will mitigate any potential impact to safety on State Route 227. Therefore, the project traffic will not substantially increase hazards at the proposed driveway location.

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### **APPENDIX MATERIAL**

- Summary of Caltrans Detailed Traffic Count Data for SR 227
- New Turning Movement Traffic Count Data (December 5, 2007)
  - SR 227 / Existing Landfill Driveway
- Level of Service (LOS) Descriptions
- Level of Service 24-Hour ADT Volume Threshold Criteria
- Level of Service (LOS) Value - Vehicle Delay Relationship Data
- Level of Service (LOS) Worksheets
- 2006 and 2007 Traffic Volume Data for existing Cold Canyon Landfill
- California MUTCD Traffic Signal Warrant Graph (Warrant #3)
- Vehicle Speed Data on SR 227 (both Existing and Proposed Driveway Location)
- California Highway Patrol (CHP) Traffic Accident Data (April 2002 to Dec. 2007)
- Caltrans Highway Design Manual (HDM) Sight Distance Criteria
- SR 227 Sight Distance Data (both Existing and Proposed Driveway Location)
- Right Turn Lane Warrant Graph

## I. INTRODUCTION

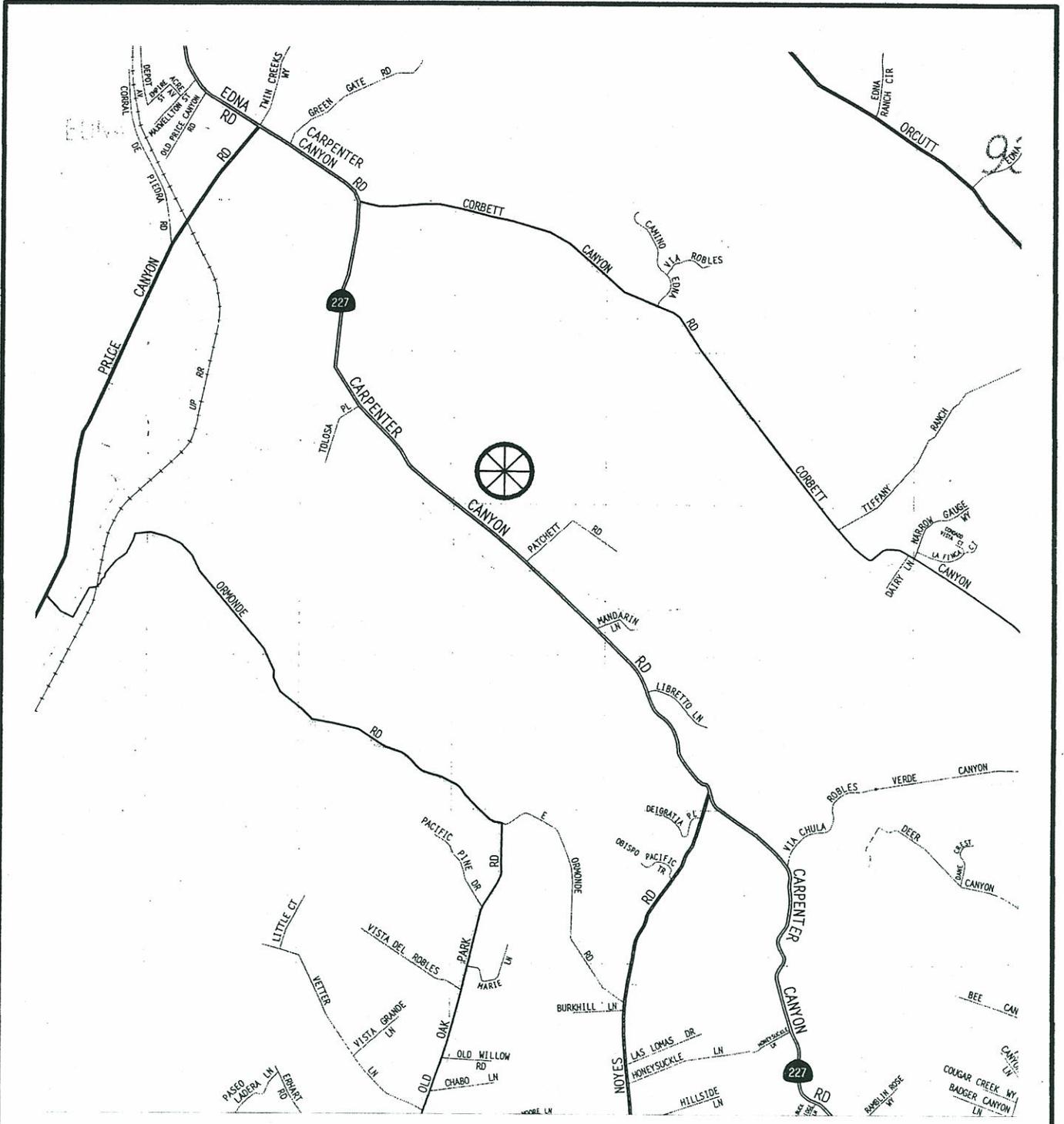
The following report presents an evaluation of the potential traffic impacts associated with the Cold Canyon Landfill Expansion project in San Luis Obispo County. Cold Canyon Landfill is located at 2268 Carpenter Canyon Road (State Route 227). The facility encompasses a total of approximately 121 acres on the east side of State Route (SR) 227, with access provided via a driveway located about 1.25 miles south of Price Canyon Road. Current landfill hours are 8:00 AM to 3:00 PM (7 days per week), with 79 employees. Operations at the existing facility include (1) typical landfill operations, (2) a resource recovery park, (3) composting operations, (4) a material recovery facility and (5) various support activities. The general location of the existing Cold Canyon Landfill is illustrated on Figure 1.

The proposed project will increase the landfill facility to a total of approximately 206 acres. The proposed hours of operation for most facility activities will be extended to 7:00 AM-5:00 PM, except processing at the material recovery facility which will operate until 10:00 PM (2 shifts). Proposed project improvements to the existing facility include:

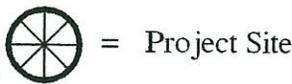
- Expand Landfill Footprint
- Increase Allowable Tonnage Limit
- Expand and Relocate Resource Recovery Park
- Expand and Modify Composting Operations
- Expand and Enhance Material Recovery Facility
- Construct New Entrance and Scale House
- Construct New Maintenance Building
- Increase Total Number of Employees to 120

The scope of the analysis was based on information contained in the Initial Study Environmental Checklist (DRC2005-00170), and consultation with staff at the San Luis Obispo County Public Works Department (Richard Marshall) and Caltrans (James Kilmer). The primary focus of the traffic analysis was to evaluate the potential safety impacts to operations on SR 227 at the landfill access entrance (roadway and intersection geometrics, vehicle speeds, accident history, adequacy of sight distance, traffic control device warrants, etc). The analysis also evaluates the potential impact to operations on SR 227 (ie: level of service). New data was collected for the analysis (ie: peak hour traffic counts, observation of existing operations, measurement of sight distance parameters and a sampling of vehicle speeds). Detailed traffic volume data for the existing landfill facility was provided for 2006. Historical traffic count data for SR 227 was also provided by Caltrans (2005, 2006 and 2007). Traffic accident data for SR 227 was obtained from the California Highway Patrol (CHP). Information contained in the following public documents was also reviewed and referenced in the traffic analysis:

1. Final Environmental Impact Report Cold Canyon Landfill Expansion (Oct. 1991)
2. 2005 Regional Transportation Plan, San Luis Obispo Council of Governments (SLOCOG)
3. San Luis Obispo Area Plan, County of San Luis Obispo (Jan. 2007)
4. Route Concept Report for Route 227, Caltrans (July 1999)
5. Route 227 Project Study Report (PSR), Caltrans
6. Final Environmental Impact Report (EIR) Cold Canyon Landfill Expansion (October 1991)



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**FIGURE 1  
PROJECT  
LOCATION MAP**

## II. EXISTING CONDITIONS

The street system serving the project site includes SR 227 (Carpenter Canyon Road) and Price Canyon Road. The following is a description of the street system, an overview of existing traffic conditions and an analysis of existing operations.

### Network Description

SR 227 is a north-south State highway facility that extends between US101 in the City of Arroyo Grande and SR 1 in the City of San Luis Obispo. SR 227 is signalized at Price Canyon Road. Corbett Canyon Road is stop sign controlled at SR 227 and located about 0.8 miles north of the existing landfill entrance. Noyes Road is located about 1.5 miles south of the existing facility. Tolosa Place, Patchett Road and Mandarin Lane are local residential collector streets between Corbett Canyon Road and Noyes Road. Adjacent to the existing landfill SR 227 has a single 12' lane in each direction, with a southbound left turn lane at the existing driveway. The speed limit is 55 mph, except the through the horizontal curve south of the existing driveway (0.3 miles) which is posted with a 50 mph curve ahead "advisory" speed limit.

Price Canyon Road is a 2 lane County arterial that extends between US101 and SR 227 (opposite Twin Creeks Way). West of SR 227, Price Canyon Road has a posted speed limit of 55 mph. This arterial serves as an alternative link between US101 and the southeastern portion of the City of San Luis Obispo.

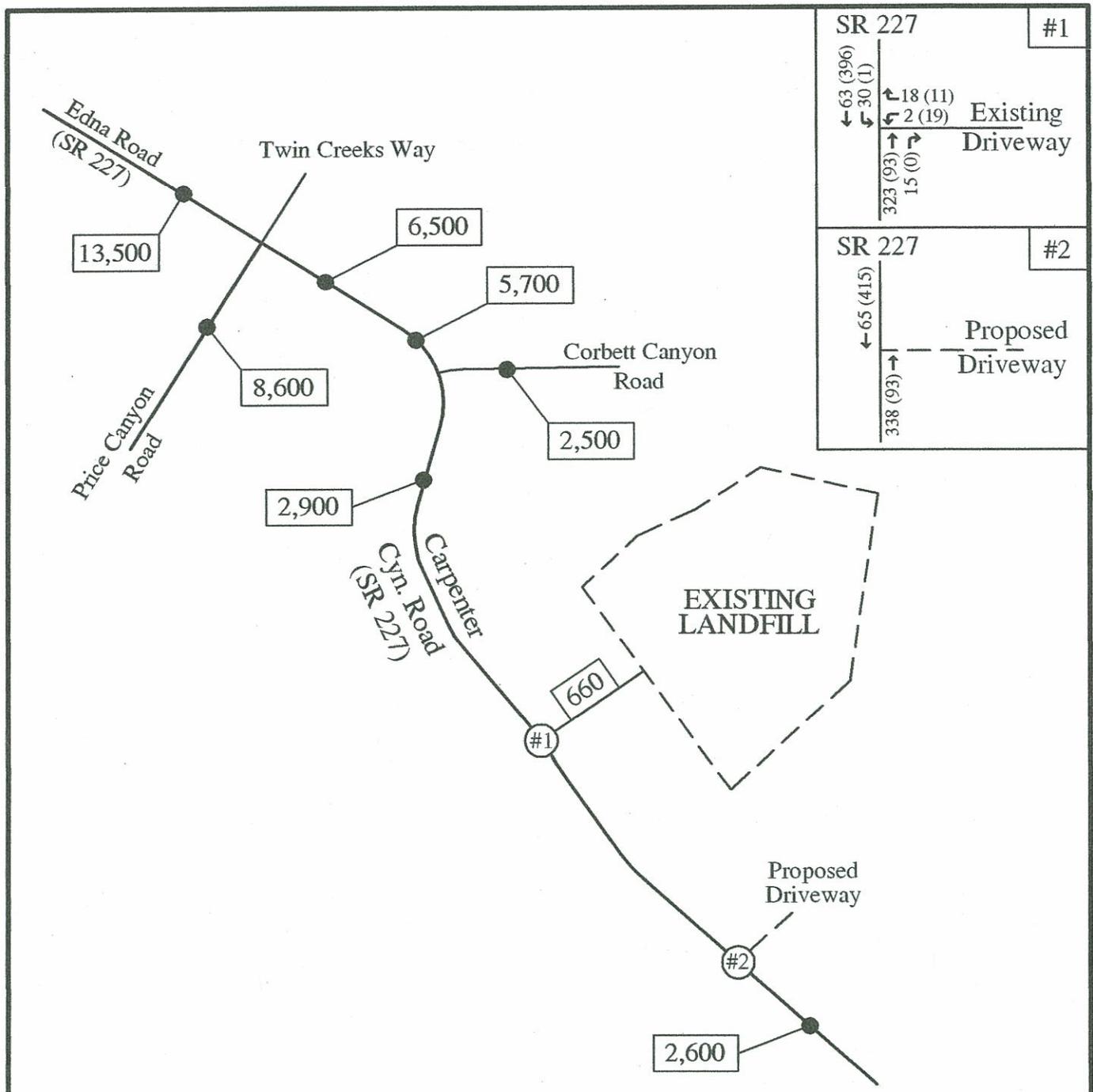
### Traffic Volumes

Existing daily traffic volumes for SR 227 were obtained from detailed count data provided by Caltrans staff. This included 7-day data for 2005, 2006 and 2007 (January, February, March, April, May, October, November and December). Existing daily traffic volume data for Price Canyon Road and Corbett Canyon Road was referenced from the County's current "Traffic Volumes" publication (November 2007). New turning movement traffic count data was collected at the SR 227 / existing landfill driveway intersection during the morning (7:00-9:00 AM) and afternoon (4:00-6:00 PM) peak travel periods (December 5, 2007). Based on a review of the data provided by Caltrans and the landfill operators, the peak hour data for the landfill driveway was increased slightly to represent annual average weekday conditions at the existing facility. The existing average weekday traffic volumes are illustrated on Figure 2. A summary of the Caltrans traffic data (2005-2007) is included with the Appendix Material. Copies of the new peak hour traffic count and 2006 landfill traffic volume data are also provided with the Appendix Material.

### Level of Service (LOS) Analysis

#### LOS Methodology

Various LOS methodologies are used to evaluate traffic operations. Operations range from LOS "A" (free-flowing conditions) to LOS "F" (forced-flow conditions). LOS values for roadway segments can be estimated by comparing average daily traffic volume (ADT) data with "24 Hour ADT Threshold Criteria" developed from data in the Highway Capacity Manual (HCM2000). LOS values for intersection operations are based on estimated vehicle delays (ie: number of delay



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- ← 00 (00) = AM (PM) Peak Hour Traffic Volume
- 000 = Average Daily Traffic (ADT) Volume



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**FIGURE 2  
EXISTING  
WEEKDAY  
TRAFFIC VOLUMES**

seconds per vehicle). Delays are reported for the overall intersection operations as an average and for each critical movement (ie: stop sign controlled approaches, main line left-turn lanes, etc). During peak commuter travel periods traffic operations can be constrained at local intersections. Therefore, an analysis of intersection peak hour operations can be a good method for measuring the potential impacts associated with a specific project. A brief description of the LOS values, the 24 Hour ADT Threshold Criteria and the LOS-vehicle delay relationship data are included with the Appendix Material.

#### LOS Criteria

San Luis Obispo County has established the LOS "C" threshold as the lower limit for acceptable traffic operations in rural areas (LOS D is acceptable in urban areas). The Caltrans traffic impact study guidelines state that Caltrans endeavors to maintain a target LOS at the transition between LOS C and D on State highway facilities. The minimum acceptable LOS used in the evaluation of potential project impacts in this report is LOS C. Therefore, mitigation measures would be required if the proposed project reduces operations to LOS D or below.

#### Level of Significance Criteria

The California Environmental Quality Act (CEQA) guidelines state that an impact will be considered significant if the project will:

- Create an increase in traffic which is substantial in relation to the existing load and capacity,
- Exceed, either individually or cumulatively, the established LOS standard,
- Substantially increase hazards due to design or incompatible uses, or
- Result in inadequate emergency access or parking

Any identified project specific or cumulative impact will require the appropriate mitigation measure to offset the impact to "less than significant."

#### Existing Conditions Analysis

The data on Figure 2 indicates that existing weekday traffic volumes on SR 227 adjacent to the Cold Canyon Landfill are within the LOS A range (less than 4,000 ADT). The detailed Caltrans traffic count data (2005-2007) demonstrates that daily traffic volumes on a typical Saturday are about 35% less than an average weekday. Traffic volumes on a Sunday are about 50% less than an average weekday. Data published by Caltrans (2006 Annual Average Daily Truck Traffic on the California State Highway System) indicates that the annual average daily traffic on SR 227 south of Price Canyon Road is comprised of approximately 5.3% truck traffic.

To document conditions at the landfill driveway intersection a LOS analysis was conducted for the AM and PM peak hour periods (average weekday). The analysis of intersection operations was performed using the LOS methodologies outlined in the 2000HCM. The "Trafix" program was used to simulate peak hour operations at the SR 227 / existing driveway intersection. To accurately model existing operations the appropriate peak hour factor (PHF) and percent truck traffic adjustment factors were applied. The results of the existing peak hour LOS analysis are presented in Table 1. Copies of the LOS worksheets are included with the Appendix Material.

**Table 1 - Existing Peak Hour LOS Analysis**

Study Intersection	Vehicle Delay - LOS Value	
	AM Peak Hour	PM Peak Hour
<u>SR 227 / Existing Driveway (a)</u> Westbound Approach (b)	<u>1.1 - A</u> (13.0 - B)	<u>0.7 - A</u> (11.5 - B)

(a) Total average vehicle delay - LOS value

(b) Stop sign controlled, approach delay - LOS value

The data in Table 1 indicates that average vehicle delays at the SR 227 / existing driveway intersection are within the LOS A range during both the AM and PM peak hour periods. A review of the LOS worksheets also demonstrates that delays on the westbound approach (landfill exit traffic) are within the LOS B range. Observations of actual peak period conditions confirmed that peak hour traffic operations are within acceptable limits (LOS C or better). Traffic exiting the existing landfill during peak hour periods is less than the minimum (Warrant #3) traffic signal warrant criteria defined in the California Manual on Uniform Traffic Control Devices (MUTCD, September 2006). It should be noted that the existing scale house is located about 400' from SR 227. Information provided by the landfill operators indicates that during peak weekends periods the queues can extend to SR 227. Discussions regarding vehicle speeds, traffic accident data and the adequacy of sight distance on SR 227 are presented under project access.