J. TRANSPORTATION AND CIRCULATION

The Transportation and Circulation section analyzes impacts to the local and regional transportation system. It is based on the *Traffic Impact Report* prepared by Pinnacle Traffic Engineering, included as Appendix F. The analysis considers existing traffic and proposed new traffic generated by the proposed project. It also considers traffic safety issues associated with moving the entrance to the Landfill. Because the project would potentially affect state and local roads, the analysis included information provided by the County Department of Public Works and the California Department of Transportation (Caltrans).

1. Existing Conditions

a. Road Network

1) Highway 227

Highway 227 is a north-south State highway facility that extends between Highway 101 in the City of Arroyo Grande and Highway 1 in the City of San Luis Obispo. Highway 227 is signalized at Price Canyon Road. Corbett Canyon Road is stop sign controlled at Highway 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 streets between Corbett Canyon Road and Noyes Road. Adjacent to the existing Landfill, Highway 227 has a single 12 foot lane in each direction, with a southbound left turn lane at the existing driveway. The speed limit is 55 mph, except through the horizontal curve south of the existing driveway, which is posted with a 50 mph curve ahead "advisory" speed limit.

2) Price Canyon Road

Price Canyon Road is a two lane County arterial that extends between Highway 101 and Highway 227. West of Highway 227, Price Canyon Road has a posted speed limit of 55 mph. This arterial serves as an alternative link between Highway 101 and the southeastern portion of the City of San Luis Obispo.

b. Pedestrian and Bicycle Facilities

Highway 227 is not a designated bikeway, and there are no pedestrian facilities in the vicinity of the Landfill.

c. Transit Facilities

No transit facilities are located near the Landfill.

d. Existing Traffic Volumes and Intersection Configurations

Existing daily traffic volumes for Highway 227 were obtained from detailed count data provided by Caltrans staff and are shown in Figure V.J.-1. This included seven 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 Highway 227 / existing Landfill driveway intersection during the morning (7:00 a.m.-9:00 a.m.) and afternoon (4:00 p.m.-6:00 p.m.) peak travel periods (December 5, 2007). Based on a review of the data provided by Caltrans and the applicant, 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 V.J.-1. A summary of the Caltrans traffic data (2005-2007) is included in Appendix F. Copies of the new peak hour traffic count and 2006 Landfill traffic volume data are also provided in Appendix F.

e. Existing Levels of Service

1) Existing Roadway Operations

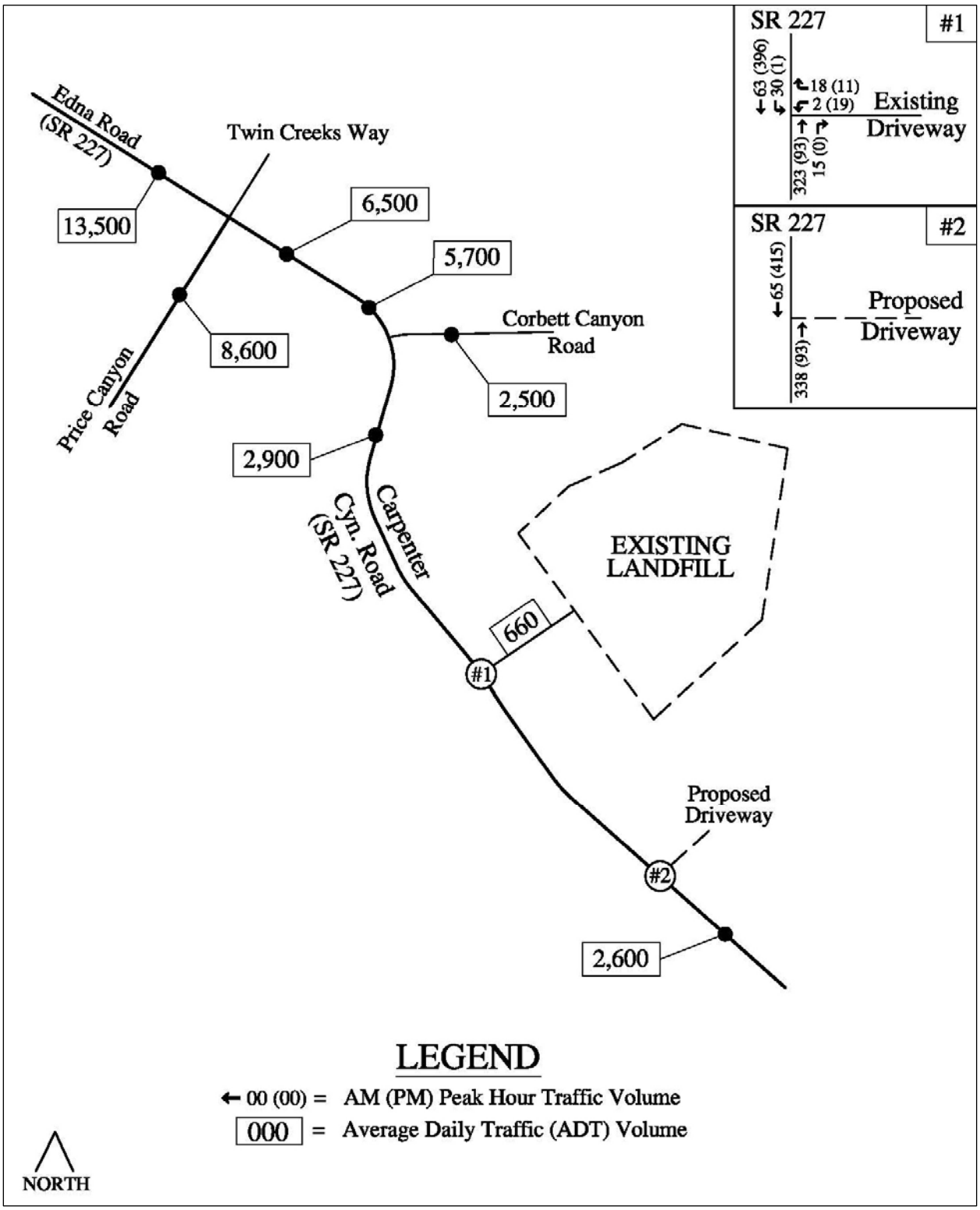
The data shown on Figure V.J.-2 indicates that existing weekday traffic volumes on Highway 227 adjacent to the Landfill are within the Level of Service (LOS) "A" range (less than 4,000 ADT). The detailed Caltrans traffic count data (2005-2007) demonstrates that daily traffic volumes on a typical Saturday are about 35 percent less than an average weekday, and traffic volumes on a Sunday are about 50 percent 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 Highway 227 south of Price Canyon Road is approximately 5.3 percent trucks.

All traffic associated with current operations uses the Landfill driveway on Highway 227. The Landfill traffic is comprised of employee trips, local contractor trucks and trailers, municipal garbage trucks, and vehicles transporting recycled commodities. The existing permit allows up to 542 vehicles per day (1,084 one way trips). Data provided by the applicant demonstrates that Landfill ADT was 300. in 2006. Monday through Friday the ADT was 330 vehicles. The ADT on Saturdays was 76 percent of the weekday ADT (250 vehicles), and on Sundays was 54 percent of the weekday ADT (178 vehicles). The busiest day of 2006 was in June. A total of 439 vehicles entered the Landfill. June was also the busiest month in 2006 (weekday average of 385). Peak month operations are about 15 to 20 percent higher than average month conditions.

TABLE V.J.-1
Existing Landfill Trip Generation

Project Site Components (Existing Average Weekday)	Number of Vehicle Trips				
	a.m. Peak Hour		p.m. Peak Hour		Daily
	In	Out	In	Out	
Small Vehicles[1]	21	2	1	29	-
Medium Vehicles[2]	7	3	0	0	-
Large Vehicles[3]	17	15	0	1	-
Total	45	20	1	30	660

[1] Passenger vehicles and pick-up trucks
[2] Trucks with trailers and/or small commercial trucks (2 or 3 axel)
[3] Municipal trucks and trucks with more than 3 axels



Source: Pinnacle Traffic Engineering

Existing Weekday Traffic Volumes
FIGURE V.J.-1

2) Existing Intersection Operations

To document conditions at the Landfill driveway intersection, a LOS analysis was conducted for the weekday a.m. and p.m. peak hour periods. The analysis of intersection operations was performed using the LOS methodologies outlined in the 2000HCM. The "Traffix" program was used to simulate peak hour operations at the intersection of Highway 227 and the 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 V.J.-2. Copies of the LOS worksheets are included in Appendix F.

TABLE V.J.-2
Existing Peak Hour LOS Analysis

Study Intersection	a.m. Peak Hour		p.m. Peak Hour	
	Vehicle Delay	LOS Value	Vehicle Delay	LOS Value
Highway 227/Existing Driveway[1]	1.1	A	0.7	A
Westbound Approach[2]	13.0	B	11.5	B

[1] Total average vehicle delay - LOS value
[2] Stop sign controlled, approach delay - LOS value

The data in Table V.J.-2 indicates that average vehicle delays at the Highway 227 and the existing driveway intersection are within the LOS A range during both the a.m. and p.m. 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 established by the County Public Works Department and Caltrans (LOS C or better). Traffic exiting the existing Landfill during peak hour periods is less than the minimum traffic signal warrant criteria (Warrant #3) defined in the California Manual on Uniform Traffic Control Devices (MUTCD) (September, 2006). The existing scale house is located approximately 400 feet from Highway 227. Information provided by the applicant indicates that during peak weekend periods, the queues can extend to Highway 227.

3) Accident Data

Traffic accident data for Highway 227 was obtained from the California Highway Patrol (CHP) for a 66-month period between April 2002 and December 2007 (Price Canyon Road to Noyes Road). During this 5.5 year period, there were ten reported accidents along the one mile section of Highway 227 adjacent to the Landfill property. A summary of the CHP accident data is presented in Appendix F. The accident location, date, day of the week, primary collision factor, type of accident, and direction of travel are provided for each accident. The data indicates that one accident occurred near the existing driveway over the past 5.5 years. This accident involved a vehicle performing a u-turn within a construction zone. One accident on eastbound Price Canyon Road, heading northbound on Highway 227, involved a large truck.

2. Regulatory Setting

Transportation system requirements for the unincorporated areas of the County are subject to the policies and plans of the County of San Luis Obispo. The County outlines policies and standards regarding use of public roads in the *San Luis Obispo Area Plan*, although there is nothing included regarding the Landfill, specifically. The County is responsible for review and approval of proposed projects and traffic study reports.

Caltrans has jurisdiction over all state-maintained facilities including Highway 227. Caltrans strives to maintain operations at the LOS C/D threshold on all of its facilities. Any modifications to facilities within Caltrans right-of-way must be approved by the State.

3. Thresholds of Significance

The determinations of significance of project impacts are based on applicable policies, regulations, goals, and guidelines defined by CEQA, Caltrans, and the County of San Luis Obispo.

a. CEQA Guidelines

The significance of potential transportation and circulation impacts are based on thresholds identified within Appendix G of the CEQA Guidelines and the County's Environmental Checklist. According to the Guidelines, transportation impacts are considered significant if the proposed project would:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);
- Exceed, either individually or cumulatively, a level of service standard for designated roads or highways;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity; or,
- Conflict with adopted polities, plans, or programs supporting alternative transportation (e.g., bus turnouts or bicycle racks).

b. County of San Luis Obispo Guidelines

In addition to the CEQA Guideline considerations, any adverse transportation and circulation impacts are considered to be significant if they would result in an inconsistency with the thresholds identified in policies of the *County of San Luis Obispo General Plan.* Refer to Section IV, Environmental Setting, for an evaluation of the proposed project's consistency with applicable General Plan policies.

1) Intersection and Roadway Segment Impacts

San Luis Obispo County has established LOS C as a goal for rural roadways, County roads, intersections, and Highway 101. Caltrans strives to maintain a target LOS on State highways including Highway 101 at the transition between LOS C and D.

The County and Caltrans consider transportation impacts at signalized intersections significant when:

- The addition of project traffic causes the intersection's level of service to degrade from LOS C or better to LOS D, E, or F.
- Project traffic is added to an intersection operating at LOS D, E, or F.

Both agencies consider transportation impacts at unsignalized intersections significant when:

- The addition of project traffic to an unsignalized intersection increases the level of service to an unacceptable level and satisfies the peak-hour signal warrant from the MUTCD.
- The project's access to a major street causes a potentially unsafe situation or requires a new traffic signal.

Caltrans LOS thresholds for a two-Lane Rural Highway are shown in Table V.J.-3.

TABLE V.J.-3
Highway 227 LOS Thresholds (Caltrans Two-Lane Rural Highway)

Level of Service				
A	B	C	D	E
4,000	8,000	12,000	17,000	25,000

2) Pedestrian and Bicycle Impacts

An impact to pedestrians and bicyclists would be considered significant if implementation of the proposed project would conflict with existing or planned bicycle facilities, or would generate pedestrian and bicycle demand without providing adequate and appropriate facilities for safe, non-motorized mobility.

3) Transit Impacts

Impacts to transit would be considered significant if the proposed project would conflict with existing or planned transit facilities, or would generate potential transit trips and would not provide adequate facilities for pedestrians and bicyclists to access transit routes and stops.

4. Impact Assessment and Methodology

The impact assessment is based on consultation with staff at the County Department of Public Works and Caltrans. The primary focus of the traffic analysis is to evaluate the potential safety impacts to operations on Highway 227 at the proposed Landfill 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 levels of service on Highway 227. New data was collected for the analysis. Detailed traffic volume data for the Landfill was also provided by the applicant for 2006. Historical traffic count data for Highway 227 was provided by Caltrans (2005, 2006, and 2007). Traffic accident data for Highway 227 was obtained from the 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 (October, 1991);
2. 2005 Regional Transportation Plan, San Luis Obispo Council of Governments (SLOCOG);
3. San Luis Obispo Area Plan, County of San Luis Obispo (January, 2007);
4. Route Concept Report for Route 227, Caltrans (July, 1999); and,
5. Route 227 Project Study Report (PSR), Caltrans.
6. Traffic County Data 2005, 2006, 2007, Caltrans.

5. Project-specific Impacts and Mitigation Measures

The proposed project would include increasing allowable tonnage limits at the disposal area, Compost Operation (CO), Resource Recovery Park (RRP), and the Materials Recovery Facility (MRF), and extending the hours of operation for most activities at the Landfill to 7:00 a.m. to 5:00 p.m. Processing at the MRF, would occur until 10:00 p.m., allowing for two shifts. At maximum capacity, the project would require 120 employees, an increase of 41 from current levels.

The proposed project also includes road improvements, including construction of a new entrance driveway located approximately 2,800 feet south of the existing driveway (refer to Figure III-8). The new driveway would be located about 175 feet north of Patchett Road. A new scale house with three scales would be constructed on the driveway, about 1,200 feet east of Highway 227. Once the new driveway is constructed, the existing driveway would be closed and all traffic (ingress and egress) would use the new driveway. The existing southbound left turn lane and appropriate sections of Highway 227 would be restriped to avoid any confusion or attempted use of the previous entrance. Off-site project improvements proposed by the applicant include a southbound left turn lane and northbound acceleration lane on Highway 227 at the new driveway. Off-site improvements would be constructed within the State right-of-way (R/W).

a. Level of Service - Roadways

The expansion of the disposal area would not necessarily increase traffic volumes because the permanent disposal daily tonnage limit would remain at 1,200 tons per day. However, traffic to and from the Landfill would increase as a result of the expanded processing limits for the CO, RRP, and MRF. The extended hours and additional employees (41) would also generate new

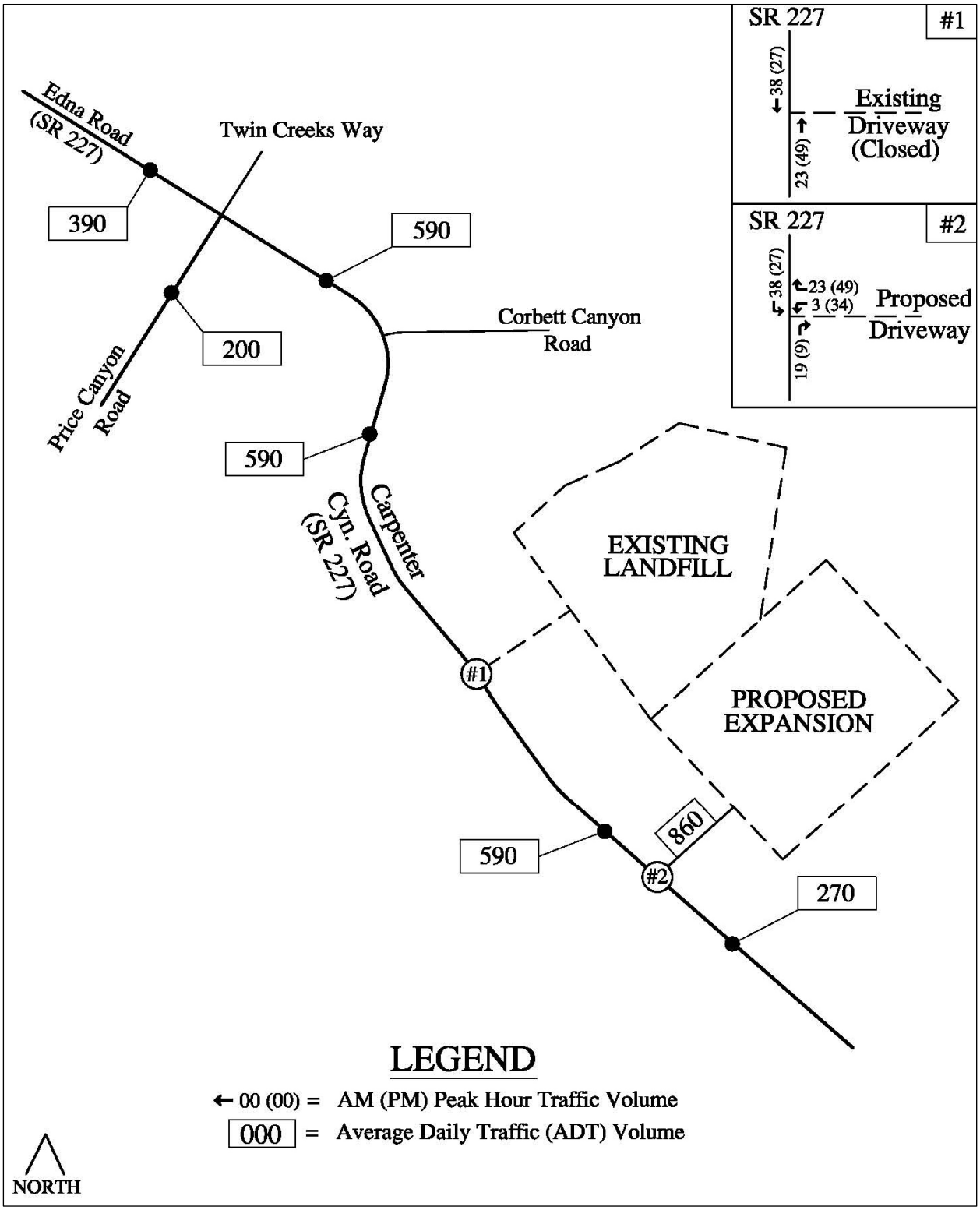
trips to and from the Landfill. Of the new employees, 21 would be assigned to the MRF, and 15 to 20 employees would work the second shift (3:00 p.m. to 10:00 p.m.). There would be approximately 100 day shift employees at the Landfill (7:00 a.m. to 5:00 p.m.). The employee increases are expected to occur incrementally over the life of the proposed project as the local demand for the Landfill services increase.

The expanded hours for the receipt of material and increased processing limits at the CO, RRP, and MRF would increase a.m. and p.m. peak hour demands on an average weekday. It was estimated that the expanded hours and increased processing limits would increase weekday a.m. peak hour demands at the facility by at least 25 percent (medium and large vehicles). It was estimated that the project trips during the p.m. peak hour trips would be at least 50 percent greater than the a.m. peak hour. Traffic associated with the expanded hours and increased processing limits would also increase daily demands by about 25 percent. The expanded trip generation estimates are presented in Table V.J.-4.

TABLE V.J.-4
Expanded Landfill Trip Generation (Average Weekday)

Project Site Components (Proposed Average Weekday)	Number of Vehicle Trips				
	a.m. Peak Hour		p.m. Peak Hour		Daily
	IN	OUT	IN	OUT	
Small Vehicles	27	3	2	38	180
Medium and Large Vehicles	30	23	34	45	680
Proposed Project Totals	57	26	36	83	860
Existing Facility Total	*45*	*20*	*1*	*30*	*660*
Net Project Increase	*+12*	*+6*	*+35*	*+53*	*+200*

The data indicates that the proposed project would generate about 860 daily trips, with 83 trips during the a.m. peak hour (57 inbound and 26 outbound) and 119 trips during the p.m. peak hour (36 inbound and 83 outbound). The proposed project would result in a net increase of approximately 200 daily trips, with 18 new trips during the a.m. peak hour and 88 new trips during the p.m. peak hour. The new project trips were assigned to Highway 227 using distribution percentages similar to those documented for existing conditions. Approximately 60 percent of the employee trips and 75 percent of the truck trips (medium and large vehicles) would be oriented to and from the north on Highway 227. Because it is unclear how many employees participate and how regularly, the trip generation quantities in Table V.J.-4 do not include any reduction for the recently established employee vanpool program.



Source: Pinnacle Traffic Engineering

Proposed Weekday Project Traffic Volumes
FIGURE V.J.-2

A review of the project traffic volumes demonstrates that the proposed project would increase traffic volumes by 140 ADT on Highway 227 north of the Landfill. Existing plus project daily traffic along this segment of Highway 227 would remain within acceptable limits (LOS C or better). Because these changes to the traffic volumes on Highway 227, as a result of the proposed project, do not reduce LOS below County or Caltrans thresholds, they are considered *less than significant* (Class III). No mitigation measures are required.

b. Level of Service – Intersection/Entrance

The peak hour LOS values were calculated for proposed driveway intersection on Highway 227. The results of the existing plus project LOS analysis are presented in Table V.J.-5. Copies of the LOS worksheets are included in Appendix F.

TABLE V.J.-5
Existing Plus Project Peak Hour LOS Analysis

Study Intersection	a.m. Peak Hour		p.m. Peak Hour	
	Vehicle Delay	LOS Value	Vehicle Delay	LOS Value
Highway 227/Proposed Driveway[1]	1.4	A	1.9	A
Westbound Approach[2]	13.2	B	11.7	B

[1] Total average delay - LOS value
[2] Stop sign controlled, approach delay - LOS value

The data in Table V.J.-5 demonstrates that total average delays at the Highway 227 / proposed driveway intersection would remain within the LOS A range during the a.m. and p.m. peak hour periods. Vehicle delays on the westbound approach (Landfill exit traffic) would be within the LOS B range. Existing plus project traffic at the proposed Landfill driveway would be below the minimum peak hour traffic signal warrant criteria defined in the California MUTCD (Warrant #3). A copy of the California MUTCD traffic signal warrant criteria is included in the Appendix F.

A review of right turn lane channelization criteria was performed using material referenced in the *A Policy on Geometric Design of Highways and Streets* published by the American Association of State Highway and Transportation Officials (AASHTO). The warrant graph for a two lane highway uses the total peak hour approach volume and number of right turns. The total cumulative peak hour traffic demands would not satisfy the minimum criteria requiring a separate northbound right turn lane on Highway 227. A copy of the right turn lane warrant graph is included in Appendix F.

Patchett Road is located approximately 175 feet south of the proposed Landfill entrance. That road serves approximately three or four residential units. Based on information in Appendix F, there were two accidents at the Patchett Road intersection with Highway 227 in the last five years; however, both occurred after 5:00 p.m. and, therefore, appear unrelated to activities at the Landfill. The analyses of the potential road improvements are based on preliminary plans

provided by the applicant and assume that the improvements would be constructed to Caltrans standards. Proposed improvements, if they do not consider Patchett Road, a local, County maintained road, would potentially conflict with turning movements on Patchett Road.

TC Impact 1 **Development of the proposed road improvements, if not done to Caltrans standards, would impact the level of service on Highway 227 at the facility entrance and may create an unsafe intersection at Highway 227 and Patchett Road.**

TC/mm-1 **Prior to issuance of construction permits for the new entrance**, the applicant shall provide verification to the Department of Public Works that the proposed improvements meet or exceed Caltrans standards for Highway 227. Specifically, the improvements shall include, but not be limited to the following:

a. The southbound left turn and northbound acceleration lanes on Highway 227 shall be designed to accommodate a high percentage of large vehicles.

b. The proposed driveway shall be designed to maximize the availability of sight distance for vehicles exiting the Landfill (minimize potential impact to vehicles on Highway 227).

c. The proposed off-site improvements shall be designed to minimize any potential conflict with vehicles at the intersection of Highway 227 and Patchett Road.

Residual Impact With implementation of this measure, the impact would be mitigated to a *level of insignificance (Class II)*. No additional mitigation is required.

Secondary Impact The proposed improvements along Highway 227 would impact wetlands and riparian vegetation associated with the existing drainage. Refer to section V.D.6.6)b, Biological Resources, for more information.

c. Project Access/Safety

Stopping sight distance is the minimum distance required by a driver to bring a vehicle to a complete stop after an object on the roadway becomes visible. Corner sight distance is the minimum time required for a "waiting vehicle to either cross all lanes of through traffic, cross the near lanes and turn left or right, without requiring through traffic to radically alter their speed" (Caltrans Highway Design Manual [HDM]).

The review of sight distance for this project was conducted using criteria in the Caltrans HDM (Chapters 200 and 400). The Caltrans HDM states that, at private road intersections and rural driveways, the minimum corner sight distance shall be equal to the stopping sight distance (Topic 405.1-2c). The stopping sight distance measurements were recorded by placing a

portable delineator on the shoulder stripe adjacent to each driveway. The sight distance measurements were then equated to vehicle speeds based on data in Tables 201.1 (HDM).

The existing Landfill entrance can be seen from at least 1,500 feet when traveling southbound on Highway 227. Traveling northbound, this driveway is visible from about 1,000 feet (crest of vertical curve). The line of sight looking south from the proposed driveway is relatively obstructed for at least 2,000 feet. Southbound vehicles can see the proposed driveway location from at least 860 feet. Passing in the southbound direction is allowed from the vertical curve crest located about 1,200 feet north of the proposed entrance (passing is prohibited for northbound vehicles). The average vehicle speed and distance parameters for the existing and proposed entrance are presented in Table V.J.-6. Copies of the Caltrans HDM sight distance material and the sight distance measurements are included in Appendix F.

TABLE V.J.-6
Vehicle Speed and Sight Distance Data

Study Intersection Along Highway 227	Average Speeds (mph)	Proposed Stopping Sight Distance (ft.)	Acceptable Speeds from HDM (mph)
Existing Driveway			
Northbound	51.4	1,050	75-80
Southbound	54.1	1,500	75-80
Proposed Driveway			
Northbound	59.6*	2,000	75-80
Southbound	58.5*	860	65-70
Southbound passing cars	N/A	1,200	75-80
** Based on current speeds at proposed driveway location*			

The data in Table V.J.-6 demonstrates that stopping distance on Highway 227 at the existing and proposed driveway locations is adequate for vehicles traveling at 75 to 80 mph. Stopping sight distance from the vertical curve located 860 feet north of the driveway is adequate for 65 to 70 mph. This vertical curve crest also limits the line of sight looking north from the proposed driveway location. Based on the Caltrans 7.5 second criterion (Table 405.1A), corner sight distance for vehicles exiting the proposed driveway and proceeding south would be acceptable for 65 to 70 mph. Because there would be adequate stopping sight distance at the proposed driveway location for vehicles traveling on Highway 227 entering and passing the Landfill, impacts are considered *less than significant, (Class III).* No mitigation measures are required.

6. Cumulative Impacts

Cumulative traffic conditions are typically comprised of existing volumes, plus traffic generated by other known approved and/or pending projects; however the Department of Planning and Building did not identify any specific projects that would significantly increase weekday traffic

volumes on Highway 227 adjacent to the Landfill. Data in the 2005 Regional Transportation Plan (RTP) shows that 20 year traffic projections could increase traffic volumes on Highway 227 by about 40 percent between Printz Road and Price Canyon Road (two percent per year).

To develop a cumulative development scenario for the Transportation and Circulation section, existing traffic on Highway 227 adjacent to the Landfill was increased by 40 percent to account for the growth over the next 20 years predicted by the RTP. The total cumulative traffic volumes were then estimated by combining this volume with the increase in project trips resulting from the proposed project. Cumulative weekday traffic volumes are shown on Figure V.J.-3.

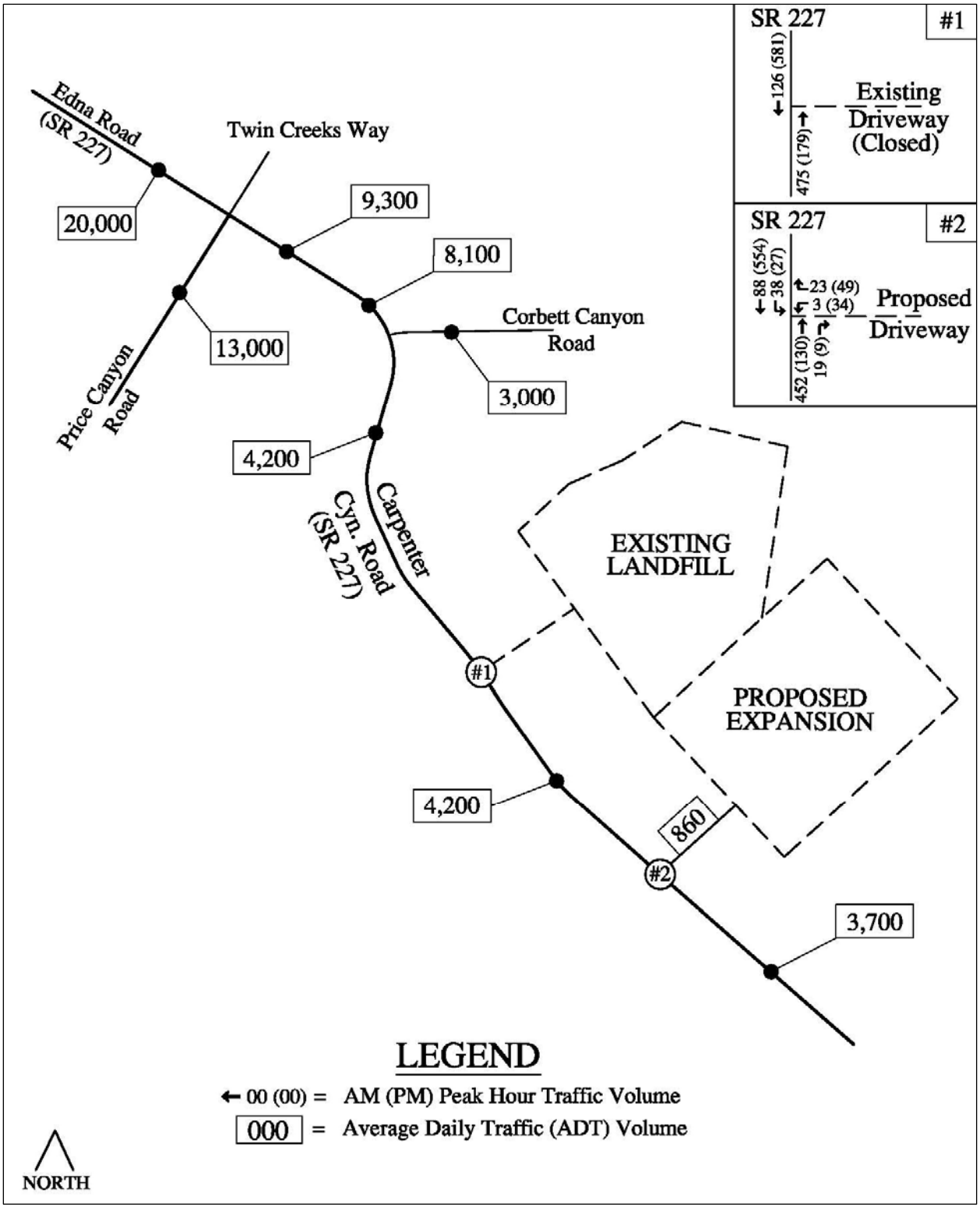
A review of these volumes demonstrates that total cumulative daily traffic volumes on Highway 227 adjacent to the Landfill would be within the LOS B range (4,000 to 8,000 ADT). The cumulative LOS values were calculated for the Highway 227 and the proposed new entrance intersection. The intersection LOS analysis was conducted with and without the new project trips. The results of the cumulative LOS analysis are presented in Table V.J.-7 and shown on Figure V.J.-3. The no project scenario is comprised of traffic volumes associated with the existing Landfill.

TABLE V.J.-7
Cumulative Peak Hour LOS Analysis

Study Intersection	No Project		With Project	
	Vehicle Delay	LOS Value	Vehicle Delay	LOS Value
Highway 227/Proposed Driveway[1]				
a.m. Peak Hour	1.0	A	1.2	A
p.m. Peak Hour	0.6	A	1.7	A
Westbound Approach[2]				
a.m. Peak Hour	15.3	C	15.8	C
p.m. Peak Hour	13.5	B	13.6	B

[1] Total average delay - LOS value
[2] Stop sign controlled, approach delay - LOS value

The project traffic volumes would not substantially increase traffic in relation to existing load and capacity, or exceed the established LOS standard (LOS C or better). Provided that TC/mm-1 is implemented, cumulative traffic safety and traffic volume impacts to Highway 227 would be considered *less than significant (Class III).* No additional mitigation measures are required.



Source: Pinnacle Traffic Engineering

Cumulative Weekday Traffic Volumes
FIGURE V.J.-3