

V. PROJECT ACCESS

As stated in the Introduction, the primary focus of the traffic analysis was to evaluate the potential safety impacts to operations on SR 227. The existing landfill driveway (PM=5.90) is located about 0.8 miles south of Corbett Canyon Road (PM=6.70). SR 227 heads north of the existing driveway on a downgrade slope with a relatively straight horizontal alignment and unobstructed line of sight. A vertical curve crest on SR 227 is located about 950' south of the existing driveway.

The proposed driveway will be located about 2,800' south of the existing entrance and 175' north of Patchett Road (estimated PM=5.35). Patchett Road is a private driveway that serves about 3-4 single family detached dwelling units (SFDU). The proposed location is about 100' south of a vertical curve "low point" (sag). SR 227 to the south continues with a slight upgrade slope and a relatively straight horizontal alignment. North of the proposed driveway there is a short relatively level section (400') followed by several vertical curves on an upward grade and a short horizontal curve to the east (beyond vertical curve crest). The first vertical curve is about 860' north of the driveway and changes the upgrade slope (3% grade change). The second vertical curve's crest is about 1,200' north of the proposed driveway location. The general alignment of SR 227 north of the proposed location is illustrated on Figure 6.

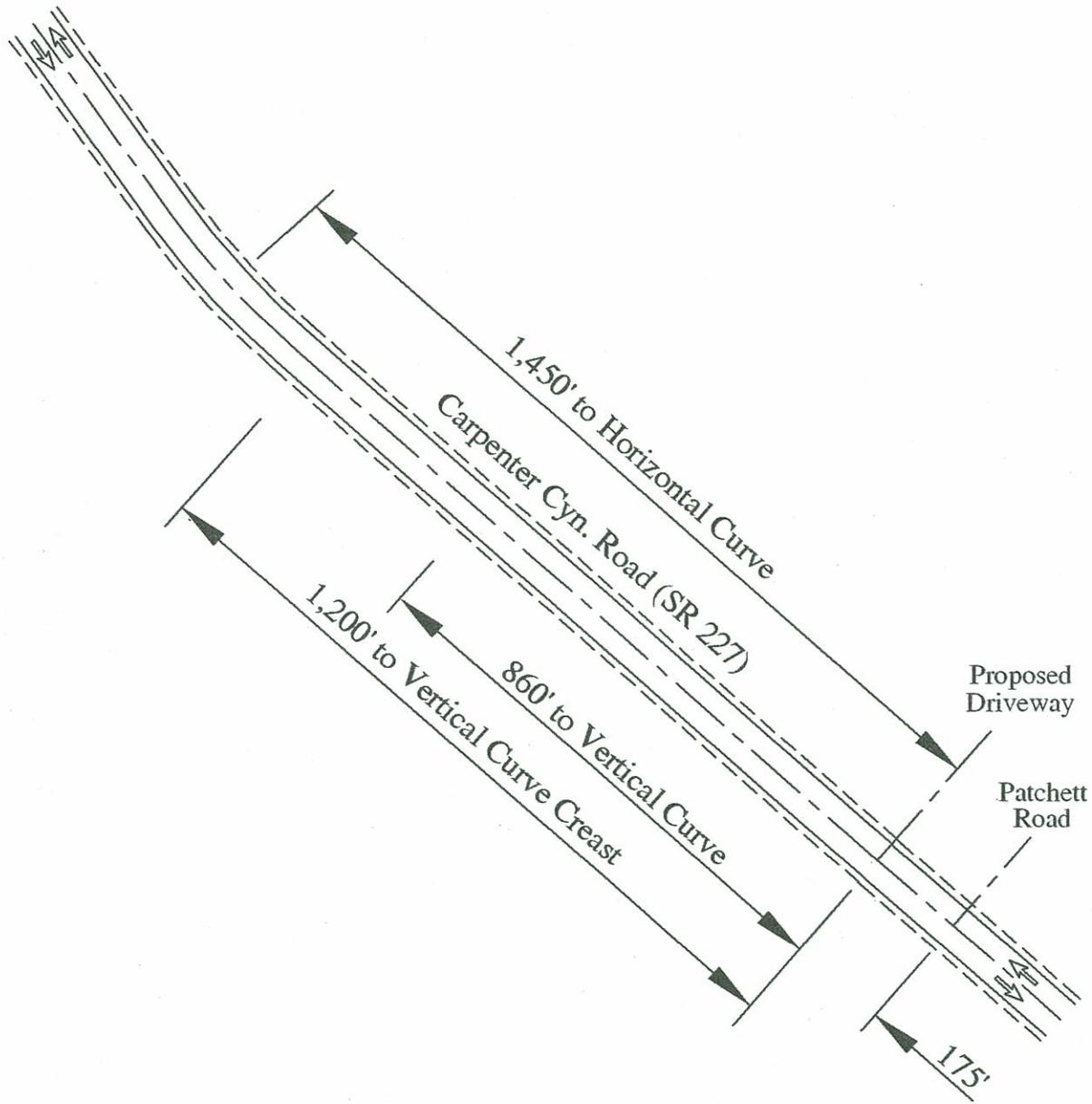
Proposed off-site road improvements include installing a southbound left turn lane and northbound acceleration lane on SR 227. No specific design for the off-site improvements has been proposed at the time of this analysis. The location of the new scale house is about 1,200' from SR 227. This would eliminate any potential for on-site queued vehicles to impact operations on SR 227. Area for an additional scale (inbound) will be provided at the new scale house for future use, if needed.

The evaluation of project access assumes the following:

- All off-site project improvements within the State R/W would be designed according to current State standards (ie: 12' lane and 8' shoulder widths, transition tapers, etc).
- The southbound left turn lane would include the appropriate deceleration and storage area for large vehicles. About 35-40% of the southbound left turns during the AM peak hour are comprised of large loaded trucks. Vehicle storage would be provided for a minimum of 100' with an additional 315' (minimum) for vehicle deceleration (40 mph). The appropriate bay taper (90' minimum) and transitions tapers would also be provided.
- The northbound acceleration lane for vehicles exiting the proposed driveway would provide adequate area for large vehicles to accelerate to at least 45-50 mph. 75-80% of exiting vehicles during the AM peak hour turn right and proceed north on SR 227. A minimum of approximately 1000' would be provided for vehicle acceleration.

Vehicle Speeds

A random sample of vehicle speeds was collected on SR 227 adjacent to the landfill during "free-flowing" conditions (December 5, 2007). The data at the existing driveway demonstrated that average vehicle speeds in both directions were about 50-55 mph. Speeds on SR 227 adjacent to the proposed driveway location were approximately 60 mph in both directions. The speed data for SR 227 is presented with the sight distance data (Table 6). Copies of the vehicle speed data are included with the Appendix Material.



Traffic Accident Data

Traffic accident data for SR 227 was obtained from the CHP for a 66 month period between April 2002 and December 2007 (Price Canyon Road to Noyes Road). During this period 5 ½ year period there were 10 reported accidents along the mile section of SR 227 adjacent to the landfill property. A summary of the CHP accident data is presented in Table 5. The accident location, date, day of the week, primary collision factor, type of accident and direction of travel are provided for each accident. A copy of the CHP accident data is provided with the Appendix Material.

Table 5 - Summary of CHP Traffic Accident Data (PM-6.20 to PM-5.10)

Post Mile Acc. No. (a)	Date (Day)	Time Of Day	Primary Factor	Type	Dir.
PM-6.00 (#9)	1/18/07 (Thurs)	2:15 PM	Imp. Pass	Sideswipe	SB/SB
Existing Landfill Driveway (PM-5.90)					
PM-5.88 (#6)	6/1/04 (Tuesday)	4:10 PM	Imp. Turn	Broadside	SB/SB (b)
PM-5.630 (#1)	6/21/02 (Friday)	8:40 AM	Unsafe Speed	Hit Object	NB
PM-5.59 (#4)	8/20/03 (Wed.)	11:55 AM	Wrong Side	Sideswipe	NB/SB
PM-5.49 (#5)	11/16/03 (Sunday)	8:30 PM	Imp. Turn	Sideswipe	NB/NB
Patchett Road (PM-5.32)					
N/A - (#10)	3/22/07	8:45 PM	N/A	N/A	N/A
PM-5.29 (#2)	7/22/02 (Monday)	8:00 PM	ROW	Broadside	NB/WB
PM-5.28 (#3)	7/5/03 (Saturday)	5:45 PM	Imp. Turn	Sideswipe	SB/SB
PM-5.16 (#8)	8/25/05 (Thurs.)	3:00 PM	Hazard	Hit Object	NB
PM-5.09 (#7)	3/9/05 (Wed.)	8:15 PM	Not Driver	Animal	-

(a) Accident identification number on CHP traffic accident records (Appendix).

(b) Involved vehicle performing u-turn, not using landfill entrance.

The data in Table 5 indicates that only 1 accident occurred near the existing driveway over the past 5 ½ years (#6). This accident involved a vehicle performing a u-turn within a construction zone. 3 accidents involved a vehicle passing (#3, #5 and #9) and 3 involved only 1 vehicle (#1, #7 and #8). There were 2 reported accidents that involved vehicles entering or exiting Patchett Road (#2 and #3). Both of these accidents occurred after 5:00 PM. No detailed data was provided for accident #10 (nearest cross street-Patchett Road). The data does not document any significant accident patterns at the existing or proposed driveway location. There were no fatality accidents on the section of SR 227 for which data was provided (Price Canyon Road to Noyes Road). Only 1 accident involved a large truck (Price Canyon Road, east-to-northbound).

Adequacy of Sight Distance

The review of project access includes an evaluation of sight distance on SR 227. 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 HDM). The review of sight distance was conducted using criteria in the Caltrans Highway Design Manual (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 existing landfill driveway can be seen from at least 1,500’ when traveling southbound on SR 227. Traveling northbound this driveway is visible from about 1,000’ (crest of vertical curve). The line of sight looking south from the proposed driveway is relatively obstructed for at least 2,000.’ Southbound vehicles can see the proposed driveway location from at least 860’. Passing in the southbound direction is allowed from the vertical curve crest located about 1,200’ north of the proposed driveway location (passing is prohibited for northbound vehicles). 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 average vehicle speed and distance parameters for each driveway are presented in Table 6. Copies of the Caltrans HDM sight distance material and the sight distance measurements are included with the Appendix Material.

Table 6 - Vehicle Speed and Sight Distance Data

Study Intersection Along SR 227	Average Speeds (mph)	Stopping Sight Distance
<u>Existing Driveway:</u>		
Northbound -	51.4	1,050’ (75-80 mph)
Southbound -	54.1	1,500’ (75-80 mph)
<u>Proposed Driveway:</u>		
Northbound -	59.6	2,000’ (75-80 mph)
Southbound -	58.5	860’ (65-70 mph) 1,200 (75-80 mph)

The data in Table 6 demonstrates that stopping distance on SR 227 at the existing and proposed driveway locations is adequate for vehicles traveling at 75-80 mph. Stopping sight distance from the vertical curve located 860’ north of the driveway is adequate for 65-70 mph. This vertical curve crest also limits the line of sight looking north from the proposed driveway location (driver position). Based on the Caltrans 7 ½ second criterion (Table 405.1A), corner sight distance for vehicles exiting the proposed driveway and proceeding south will be acceptable for 65-70 mph.

Again it should be mentioned that the evaluation of project access assumes:

- All proposed off-site improvements would be designed according to current State standards.
- The southbound left turn and northbound acceleration lanes on SR 227 would be designed to accommodate a high percentage of large vehicles.
- The proposed driveway would be designed to maximize the availability of sight distance for vehicles exiting landfill (minimize potential impact to vehicles on SR 227).
- The proposed off-site improvements would be designed to minimize any potential conflict with vehicles accessing Patchett Road (less 50 ADT).

Right Turn Channelization

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 2 lane highway uses the total peak hour approach volume and number of right turns. The total cumulative peak hour traffic demands will not satisfy the minimum criteria requiring a separate northbound right turn lane on SR 227. A copy of the right turn lane warrant graph is included with the Appendix Material.

Conclusions

Based on the material reviewed for the evaluation of access, it is concluded that the proposed landfill expansion and relocation of the entrance will not exacerbate any existing unsafe conditions or substantially increase hazards at the proposed driveway location. Therefore, the proposed project off-site improvements mitigate any potential impact to operations or safety on SR 227.

END

APPENDIX MATERIAL

Contents:

- 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

PINNACLE TRAFFIC ENGINEERING

930 San Benito Street • Hollister, CA 95023

(831) 638-9260 • FAX (831) 638-9268

PinnacleTE.com (PTE@sbcglobal.net)

Cold Canyon Landfill Expansion; San Luis Obispo County, CA - Summary of Caltrans Traffic Count Data (SR 227), North of Price Cyn Rd. -

Period	Direction	Daily Traffic Volumes		
		Ave. Wk.	Saturday	Sunday
2006-07	Total	13,506	8,604	6,646

Period	Dir.	Daily Traffic Volumes		
		Ave. Wk.	Saturday	Sunday
Feb. 2007 (02-08)	NB	6,491	4,490	3,011
	SB	<u>6,993</u>	<u>4,818</u>	<u>3,305</u>
		13,484	9,308	6,316
Feb. 2007 (09-16)	NB	6,388	3,558	3,058
	SB	<u>7,000</u>	<u>3,929</u>	<u>3,268</u>
		13,388	7,487	6,326
Feb. 2007 (17-24)	NB	6,385	4,034	3,272
	SB	<u>7,023</u>	<u>4,429</u>	<u>3,545</u>
		13,408	8,463	6,817
Feb. 2007 (25-28)	NB	6,241		2,894
	SB	<u>6,780</u>		<u>3,116</u>
		13,021		6,010
Average	Total	13,325	8,419	6,367

Period	Dir.	Daily Traffic Volumes		
		Ave. Wk.	Saturday	Sunday
March 2007 (01-08)	NB	6,451	4,238	3,218
	SB	<u>7,041</u>	<u>4,522</u>	<u>3,535</u>
		13,492	8,760	6,753
March 2007 (09-16)	NB	6,423	4,054	3,265
	SB	<u>7,057</u>	<u>4,398</u>	<u>3,541</u>
		13,480	8,452	6,806
March 2007 (17-24)	NB	6,408	4,032	3,364
	SB	<u>7,009</u>	<u>4,429</u>	<u>3,652</u>
		13,417	8,461	7,016
March 2007 (25-31)	NB	6,507	4,196	3,182
	SB	<u>7,110</u>	<u>4,712</u>	<u>3,580</u>
		13,617	8,908	6,762
Average	Total	13,502	8,645	6,834

Period	Dir.	Daily Traffic Volumes		
		Ave. Wk.	Saturday	Sunday
Apr. 2007 (01-08)	NB	6,664	3,931	3,105
	SB	<u>7,323</u>	<u>4,297</u>	<u>3,103</u>
		13,987	8,228	6,208
Apr. 2007 (09-16)	NB	6,250	3,918	3,243
	SB	<u>6,826</u>	<u>4,379</u>	<u>3,376</u>
		13,076	8,297	6,619
Apr. 2007 (17-24)	NB	6,470	4,197	2,931
	SB	<u>7,137</u>	<u>4,512</u>	<u>3,177</u>
		13,607	8,709	6,108
Apr. 2007 (25-30)	NB	6,418	4,267	3,267
	SB	<u>7,072</u>	<u>4,585</u>	<u>3,534</u>
		13,490	8,852	6,801
Average	Total	13,540	8,522	6,434

Period	Dir.	Daily Traffic Volumes		
		Ave. Wk.	Saturday	Sunday
May 2007 (01-08)	NB	6,448	4,275	3,352
	SB	<u>6,997</u>	<u>4,548</u>	<u>3,696</u>
		13,445	8,823	7,048
May 2007 (09-16)	NB	6,511	4,159	3,175
	SB	<u>7,156</u>	<u>4,518</u>	<u>3,422</u>
		13,667	8,677	6,597
May 2007 (17-24)	NB	6,504	4,205	3,383
	SB	<u>7,086</u>	<u>4,653</u>	<u>3,701</u>
		13,590	8,858	7,084
May 2007 (25-29)	NB	6,416	4,123	3,303
	SB	<u>7,031</u>	<u>4,421</u>	<u>3,538</u>
		13,447	8,544	6,841
Average	Total	13,537	8,726	6,893

Period	Dir.	Daily Traffic Volumes		
		Ave. Wk.	Saturday	Sunday
Oct. 2006 (01-08)	NB	6,603	4,097	3,251
	SB	<u>7,194</u>	<u>4,489</u>	<u>3,448</u>
		13,797	8,586	6,699
Oct. 2006 (09-16)	NB	6,714	3,952	3,236
	SB	<u>7,143</u>	<u>4,427</u>	<u>3,417</u>
		13,857	8,379	6,653
Oct. 2006 (17-24)	NB	6,551	4,424	3,304
	SB	<u>7,182</u>	<u>4,839</u>	<u>3,562</u>
		13,733	9,263	6,866
Oct. 2006 (25-31)	NB	6,520	4,389	3,328
	SB	<u>7,178</u>	<u>4,808</u>	<u>3,614</u>
		13,698	9,197	6,942
Average	Total	13,771	8,856	6,790

Period	Dir.	Daily Traffic Volumes		
		Ave. Wk.	Saturday	Sunday
Nov. 2006 (01-08)	NB	6,505	4,278	3,422
	SB	<u>7,253</u>	<u>4,798</u>	<u>3,598</u>
		13,758	9,076	7,020
Nov. 2006 (09-16)	NB	6,255	4,029	3,337
	SB	<u>7,067</u>	<u>4,353</u>	<u>3,567</u>
		13,322	8,382	6,904
Nov. 2006 (17-24)	NB	6,473	4,444	3,328
	SB	<u>7,356</u>	<u>4,921</u>	<u>3,563</u>
		13,829	9,365	6,891
Nov. 2006 (25-31)	NB	6,032	3,711	3,100
	SB	<u>6,977</u>	<u>4,145</u>	<u>3,337</u>
		13,009	7,856	6,437
Average	Total	13,480	8,670	6,813

PINNACLE TRAFFIC ENGINEERING

930 San Benito Street • Hollister, CA 95023
 (831) 638-9260 • FAX (831) 638-9268
 PinnacleTE.com (PTE@sbcglobal.net)

Cold Canyon Landfill Expansion; San Luis Obispo County, CA - Summary of Caltrans Traffic Count Data (SR 227), North of Price Cyn Rd. -

Period	Dir.	Daily Traffic Volumes		
		Ave. Wk.	Saturday	Sunday
Jan. 2007 (01-08)	NB SB			
Jan. 2007 (06-16)	NB SB	6,460 <u>7,025</u> 13,485	4,033 <u>4,505</u> 8,538	3,311 <u>3,540</u> 6,851
Jan. 2007 (17-24)	NB SB	6,389 <u>7,123</u> 13,512	4,123 <u>4,552</u> 8,675	3,042 <u>3,333</u> 6,375
Jan. 2007 (25-31)	NB SB	6,355 <u>6,814</u> 13,169	3,719 <u>4,244</u> 7,963	2,865 <u>3,083</u> 5,948
Average	Total	13,389	8,392	6,391

PINNACLE TRAFFIC ENGINEERING

930 San Benito Street • Hollister, CA 95023
 (831) 638-9260 • FAX (831) 638-9268
 PinnacleTE.com (PTE@sbcglobal.net)

Cold Canyon Landfill Expansion; San Luis Obispo County, CA - Summary of Caltrans Traffic Count Data (SR 227), South of Price Cyn Rd. -

Period	Direction	Daily Traffic Volumes		
		Ave. Wk.	Saturday	Sunday
2005	Total	6,488	4,253	3,230

Period	Dir.	Daily Traffic Volumes		
		Ave. Wk.	Saturday	Sunday
Oct. 2005 (01-08)	NB SB			
Oct. 2005 (09-13)	NB SB			
Oct. 2005 (24-31)	NB SB	3,198 <u>3,290</u> 6,488	2,025 <u>2,228</u> 4,253	1,557 <u>1,673</u> 3,230
Oct. 2005 (25-28)	NB SB			
Average	Total	6,488	4,253	3,230

Period	Dir.	Daily Traffic Volumes		
		Ave. Wk.	Saturday	Sunday
Dec. 2005 (01-07)	NB SB			
Dec. 2005 (08-15)	NB SB			
Dec. 2005 (16-23)	NB SB			
Dec. 2005 (25-31)	NB SB			
Average	Total			

PINNACLE TRAFFIC ENGINEERING

(Cold Canyon Landfill Expansion - Traffic Impact Report)

Intersection: Carpenter Canyon Road (SR227) and Existing Driveway

Weather: Dry & Clear

Date: 12/5/07 (Wed.)

Count Conducted By: Larry Hail

Beginning Time of Count	Intersection Turning Movement - Direction / Turning Movement (a)														15-Min. Totals	Hourly Totals		
	Northbound				Westbound Right				Southbound				Westbound Left					
	1 (S)	2 (M)	3 (L)	4 (L)	5 (S)	6 (M)	7 (L)	8 (L)	9 (S)	10 (M)	11 (L)	12 (S)	13 (M)	14 (L)				
Direction	NBRT	NBRT	NBRT	NB	WBRT	WBRT	WBRT	SB	SBLT	SBLT	SBLT	WBLT	WBLT	WBLT				
4:00-4:15PM	0	0	0	21	4	0	1	93	1	0	0	1	0	0				
4:15-4:30PM	0	0	0	22	2	0	0	88	0	0	0	0	0	0				
4:30-4:45PM	0	0	0	28	2	0	0	91	0	0	0	8	0	0				
4:45-5:00PM	0	0	0	25	5	0	1	95	1	0	0	3	0	0				
5:00-5:15PM	0	0	0	21	2	0	0	82	0	0	0	5	0	0				
5:15-5:30PM	0	0	0	19	0	0	0	128	0	0	0	1	0	0				
5:30-5:45PM	0	0	0	21	0	0	0	96	0	0	0	0	0	0				
5:45-6:00PM	0	0	0	22	0	0	0	75	0	0	0	0	0	0				
2 Hour Totals :	0	0	0	179	15	0	2	748	2	0	0	18	0	0				

Direction	Peak Period										Total				
	NBRT	NBRT	NBRT	NB	WBRT	WBRT	WBRT	SB	SBLT	SBLT		SBLT	WBLT	WBLT	WBLT
4:30-5:30PM	0	0	0	93	9	0	1	396	1	0	0	17	0	0	517
	0	0	0	0	10	0	1	0	0	0	0	0	0	0	17

PM PEAK HOUR FACTOR = 517 / 4 x 148 = 0.87