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				
				4				8								
Vehicle Type																
Direction				NB				SB								
4:00-4:15PM				21				93							114	
4:15-4:30PM				22				88							110	
4:30-4:45PM				28				91							119	
4:45-5:00PM				25				95							120	463
5:00-5:15PM				21				82							103	452
5:15-5:30PM				19				128							147	489
5:30-5:45PM				21				96							117	487
5:45-6:00PM				22				75							97	464
2 Hour Totals :				179				748								

Peak Period															
Direction	NBRT	NBRT	NBRT	NB	WBRT	WBRT	WBRT	SB	SBLT	SBLT	SBLT	WBLT	WBLT	WBLT	Total
4:30-5:30PM	0	0	0	93	0	0	0	396	0	0	0	0	0	0	489
			0				0				0			0	

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Intersection: Carpenter Canyon Road (SR227) and Existing Driveway

Weather: Dry & Clear **Date:** 12/5/07 (Wed.)

Count Conducted By: Larry Hail **JUST DRIVEWAY**

Beginning Time of Count	Intersection Turning Movement - Direction / Turning Movement (a)														15-Min. Totals	Hourly Totals
	Northbound				Westbound Right			Southbound				Westbound Left				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Vehicle Type	(S)	(M)	(L)		(S)	(M)	(L)		(S)	(M)	(L)	(S)	(M)	(L)		
Direction	NBRT	NBRT	NBRT	NB	WBRT	WBRT	WBRT	SB	SBLT	SBLT	SBLT	WBLT	WBLT	WBLT		
4:00-4:15PM	0	0	0		4	0	1		1	0	0	1	0	0	7	
4:15-4:30PM	0	0	0		2	0	0		0	0	0	0	0	0	2	
4:30-4:45PM	0	0	0		2	0	0		0	0	0	8	0	0	10	
4:45-5:00PM	0	0	0		5	0	1		1	0	0	3	0	0	10	29
5:00-5:15PM	0	0	0		2	0	0		0	0	0	5	0	0	7	29
5:15-5:30PM	0	0	0		0	0	0		0	0	0	1	0	0	1	28
5:30-5:45PM	0	0	0		0	0	0		0	0	0	0	0	0	0	18
5:45-6:00PM	0	0	0		0	0	0		0	0	0	0	0	0	0	8
2 Hour Totals :	0	0	0		15	0	2		2	0	0	18	0	0		

Peak Period															
Direction	NBRT	NBRT	NBRT	NB	WBRT	WBRT	WBRT	SB	SBLT	SBLT	SBLT	WBLT	WBLT	WBLT	Total
4:30-5:30PM	0	0	0	0	9	0	1	0	1	0	0	17	0	0	28
			0				10				1			17	

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	2	3	4	5	6	7	8	9	10	11	12	13	14		
Vehicle Type	(S)	(M)	(L)		(S)	(M)	(L)		(S)	(M)	(L)	(S)	(M)	(L)		
Direction	NBRT	NBRT	NBRT	NB	WBRT	WBRT	WBRT	SB	SBLT	SBLT	SBLT	WBLT	WBLT	WBLT		
7:00-7:15AM	2	0	0	45	0	0	0	19	2	1	1	0	0	0	70	
7:15-7:30AM	3	0	0	58	0	0	1	13	3	0	4	0	0	0	82	
7:30-7:45AM	3	0	0	89	0	1	4	17	1	0	5	1	0	0	121	
7:45-8:00AM	5	1	0	101	0	0	5	21	3	0	5	0	0	1	142	415
8:00-8:15AM	1	1	0	75	1	1	3	12	0	4	2	0	0	0	100	445
8:15-8:30AM	0	0	4	48	2	3	3	10	2	2	4	0	2	0	80	443
8:30-8:45AM	2	1	1	41	1	0	4	22	3	1	3	0	0	1	80	402
8:45-9:00AM	0	0	1	48	5	2	4	23	1	3	4	1	1	1	94	354
2 Hour Totals :	16	3	6	505	9	7	24	137	15	11	28	2	3	3		

Peak Period															
Direction	NBRT	NBRT	NBRT	NB	WBRT	WBRT	WBRT	SB	SBLT	SBLT	SBLT	WBLT	WBLT	WBLT	Total
7:15-8:15AM	12	2	0	323	1	2	13	63	7	4	16	1	0	1	445
			14				16				27			2	

AM PEAK HOUR FACTOR = 445 / 4 x 142 = 0.78

PINNACLE TRAFFIC ENGINEERING

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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							Southbound								
				4				8								
Vehicle Type																
Direction				NB				SB								
7:00-7:15AM				45				19							64	
7:15-7:30AM				58				13							71	
7:30-7:45AM				89				17							106	
7:45-8:00AM				101				21							122	363
8:00-8:15AM				75				12							87	386
8:15-8:30AM				48				10							58	373
8:30-8:45AM				41				22							63	330
8:45-9:00AM				48				23							71	279
2 Hour Totals :				505				137								

Peak Period															
Direction	NBRT	NBRT	NBRT	NB	WBRT	WBRT	WBRT	SB	SBLT	SBLT	SBLT	WBLT	WBLT	WBLT	Total
7:15-8:15AM	0	0	0	323	0	0	0	63	0	0	0	0	0	0	386
			0				0				0			0	

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 **JUST DRIVEWAY**

Beginning Time of Count	Intersection Turning Movement - Direction / Turning Movement (a)														15-Min. Totals	Hourly Totals
	Northbound				Westbound Right			Southbound				Westbound Left				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Vehicle Type	(S)	(M)	(L)		(S)	(M)	(L)		(S)	(M)	(L)	(S)	(M)	(L)		
Direction	NBRT	NBRT	NBRT	NB	WBRT	WBRT	WBRT	SB	SBLT	SBLT	SBLT	WBLT	WBLT	WBLT		
7:00-7:15AM	2	0	0		0	0	0		2	1	1	0	0	0	6	
7:15-7:30AM	3	0	0		0	0	1		3	0	4	0	0	0	11	
7:30-7:45AM	3	0	0		0	1	4		1	0	5	1	0	0	15	
7:45-8:00AM	5	1	0		0	0	5		3	0	5	0	0	1	20	52
8:00-8:15AM	1	1	0		1	1	3		0	4	2	0	0	0	13	59
8:15-8:30AM	0	0	4		2	3	3		2	2	4	0	2	0	22	70
8:30-8:45AM	2	1	1		1	0	4		3	1	3	0	0	1	17	72
8:45-9:00AM	0	0	1		5	2	4		1	3	4	1	1	1	23	75
2 Hour Totals :	16	3	6		9	7	24		15	11	28	2	3	3		

Peak Period															
Direction	NBRT	NBRT	NBRT	NB	WBRT	WBRT	WBRT	SB	SBLT	SBLT	SBLT	WBLT	WBLT	WBLT	Total
7:15-8:15AM	12	2	0		1	2	13		7	4	16	1	0	1	59
			14				16				27			2	

The ability of a highway system to carry traffic is expressed in terms of its "service Level" at critical locations, usually intersections. Service levels are defined as follows:

"A" Conditions of free unobstructed flow, no delays and all signal phases sufficient in duration to clear all approaching vehicles.

"B" Conditions of stable flow, very little delay, a few phases are unable to handle all approaching vehicles.

"C" Conditions of stable flow, delays are low to moderate, full use of peak direction signal phase(s) is experienced.

"D" Conditions approaching unstable flow, delays are moderate to heavy, significant signal time deficiencies are experienced for short durations during the peak traffic period.

"E" Conditions of unstable flow, delays are significant, signal phase timing is generally insufficient, congestion exists for extended duration throughout the peak period.

"F" Conditions of forced flow, travel speeds are low and volumes are well above capacity. This condition is often caused when vehicles released by an upstream signal are unable to proceed because of back-ups from a downstream signal.

930 San Benito Street - Hollister, CA 95023
(831) 638-9260 / FAX (831) 638-9268

Roadway Type	LOS A	LOS B	LOS C	LOS D	LOS E
8 Lane Freeway	51,000	79,000	112,000	136,000	146,000
6 Lane Freeway	39,000	59,000	85,000	102,000	110,000
4 Lane Freeway	26,000	40,000	57,000	69,000	74,000
8 Lane Expressway	35,000	54,000	75,000	90,000	98,000
6 Lane Expressway	28,000	42,000	56,000	67,000	74,000
4 Lane Expressway	18,000	27,000	36,000	45,000	50,000
8 Lane Divided Arterial (with Left-Turn Lanes)	40,000	47,000	54,000	61,000	68,000
6 Lane Divided Arterial (with Left-Turn Lanes)	32,000	38,000	43,000	49,000	54,000
4 Lane Divided Arterial (with Left-Turn Lanes)	22,000	25,000	29,000	32,500	36,000
4 Lane Undivided Arterial (with Left-Turn Lanes)	19,000	22,000	25,500	28,000	31,500
4 Lane Undivided Arterial (without Left-Turn Lanes)	16,000	19,000	22,000	24,000	27,000
2 Lane Arterial (with Left-Turn Lanes)	11,000	12,500	14,500	16,000	18,000
2 Lane Arterial (without Left-Turn Lanes)	8,500	10,000	11,750	13,250	15,000
2 Lane Rural Highway	4,000	8,000	12,000	17,000	25,000
2 Lane Collector	6,000	7,500	9,000	10,500	12,000
2 Lane Local	1,200	1,400	1,600	1,800	2,000

Source data contained in the Highway Capacity Manual (2000HCM)

930 San Benito Street - Hollister, CA 95023
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TWO-WAY STOP SIGN CONTROLLED INTERSECTIONS

EXHIBIT 17-2. LEVEL-OF-SERVICE CRITERIA FOR TWSC INTERSECTIONS

Level of Service	Average Control Delay (s/veh)
A	0–10
B	> 10–15
C	> 15–25
D	> 25–35
E	> 35–50
F	> 50

ALL-WAY STOP SIGN CONTROLLED INTERSECTIONS

The level-of-service criteria are given in Exhibit 17-22. The criteria for AWSC intersections have different threshold values than do those for signalized intersections primarily because drivers expect different levels of performance from distinct types of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an AWSC intersection. Thus a higher level of control delay is acceptable at a signalized intersection for the same LOS.

EXHIBIT 17-22. LEVEL-OF-SERVICE CRITERIA FOR AWSC INTERSECTIONS

Level of Service	Control Delay (s/veh)
A	0–10
B	> 10–15
C	> 15–25
D	> 25–35
E	> 35–50
F	> 50

SIGNALIZED INTERSECTIONS

The average control delay per vehicle is estimated for each lane group and aggregated for each approach and for the intersection as a whole. LOS is directly related to the control delay value. The criteria are listed in Exhibit 16-2.

EXHIBIT 16-2. LOS CRITERIA FOR SIGNALIZED INTERSECTIONS

LOS	Control Delay per Vehicle (s/veh)
A	≤ 10
B	> 10–20
C	> 20–35
D	> 35–55
E	> 55–80
F	> 80

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 SR 227 / Existing Driveway

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: B[13.0]

Street Name:	SR 227									Ex. Driveway		
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	1	0	1 0	1	0	0 0 0	0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	323	15	30	63	0	0	0	0	2	0	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	323	15	30	63	0	0	0	0	2	0	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
PHF Volume:	0	414	19	38	81	0	0	0	0	3	0	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	414	19	38	81	0	0	0	0	3	0	23
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.2	7.3	7.0
FollowUpTim:	xxxxx	xxxx	xxxxx	2.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	4.7	4.0
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	433	xxxx	xxxxx	xxxx	xxxx	xxxxx	581	581	424
Potent Cap.:	xxxx	xxxx	xxxxx	1051	xxxx	xxxxx	xxxx	xxxx	xxxxx	370	337	496
Move Cap.:	xxxx	xxxx	xxxxx	1051	xxxx	xxxxx	xxxx	xxxx	xxxxx	360	325	496
Volume/Cap:	xxxx	xxxx	xxxx	0.04	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	0.00	0.05
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	478	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	13.0	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			13.0		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 SR 227 / Existing Driveway

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[11.5]

Street Name:	SR 227									Ex. Driveway		
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1 0 0			1 0 1 0 0			0 0 0 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	0	93	0	1	396	0	0	0	0	19	0	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	93	0	1	396	0	0	0	0	19	0	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
PHF Volume:	0	107	0	1	455	0	0	0	0	22	0	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	107	0	1	455	0	0	0	0	22	0	13
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	107	xxxx	xxxxx	xxxx	xxxx	xxxxx	564	564	107
Potent Cap.:	xxxx	xxxx	xxxxx	1465	xxxx	xxxxx	xxxx	xxxx	xxxxx	483	432	942
Move Cap.:	xxxx	xxxx	xxxxx	1465	xxxx	xxxxx	xxxx	xxxx	xxxxx	483	431	942
Volume/Cap:	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.05	0.00	0.01
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	588	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.5	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.5		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the number of cars per lane.