February 21, 2017

TO: Dirk Lovett, P.E., City Engineer
City of Hidden Hills

FROM: Jack Rydell, P.E., T.E.
Senior Traffic Engineer

LONG VALLEY ROAD WEST OF VALLEY CIRCLE BOULEVARD TRAFFIC EVALUATION

As requested, I have analyzed the portion of Long Valley Road west of Valley Circle Boulevard to evaluate the effects of adding a 3rd westbound travel lane on vehicle queuing and delay. The effects of adding a 3rd lane are illustrated in Attachment 1. The conceptual layout used for this analysis is included as Attachment 2. Traffic counts used for this analysis were taken on May 26, 2016 and the analysis was performed using Synchro 9. The pertinent Synchro summary reports are included as Attachment 3.

Under existing traffic conditions and geometry, the westbound direction of Long Valley Road experiences an average queue of approximately 791 feet measured from the existing stop control limit line during the AM peak hour. This backup extends through the intersection with Valley Circle Boulevard. Approach vehicle delay, as measured from the stop sign, is 70.6 seconds. Adding the 3rd westbound lane reduces the queue to approximately 84 feet from the stop control limit line and reduces the approach vehicle delay to 46.0 seconds. This action would be expected to eliminate the current vehicle backup that affects Valley Circle Boulevard.

Due to significantly lower PM peak hour volume entering the freeway onramp (1,239 vehicles per hour vs. 690 vehicles per hour), there is negligible benefit to PM peak hour operations by adding the 3rd lane.

JR: Long Valley Rd w-o Valley Circle Blvd Traffic Evaluation - 2-21-17

Attachment 1 – AM peak hour traffic analysis results
Attachment 2 – Conceptual 3rd lane layout
Attachment 3 – AM peak hour SYNCHRO summary reports

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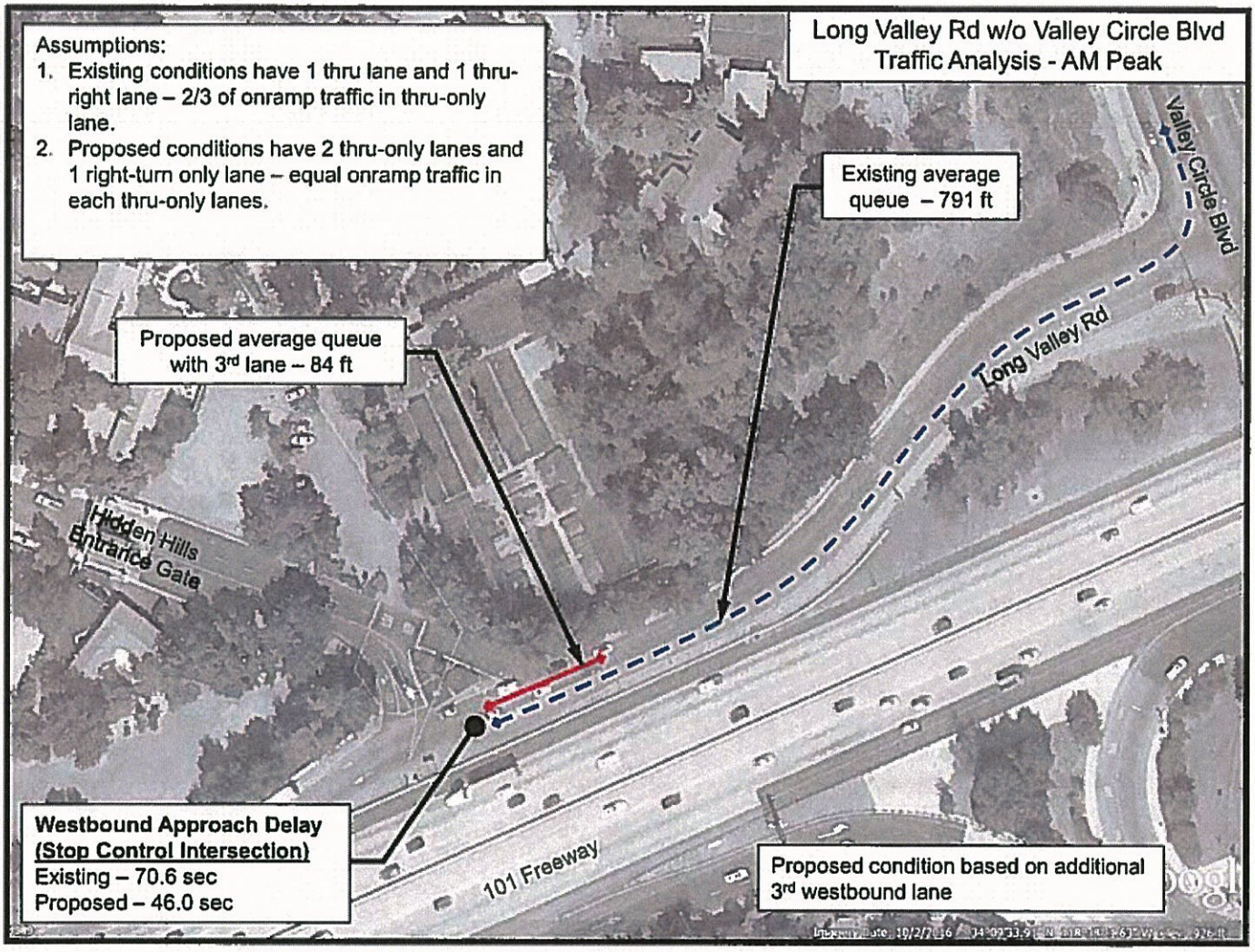
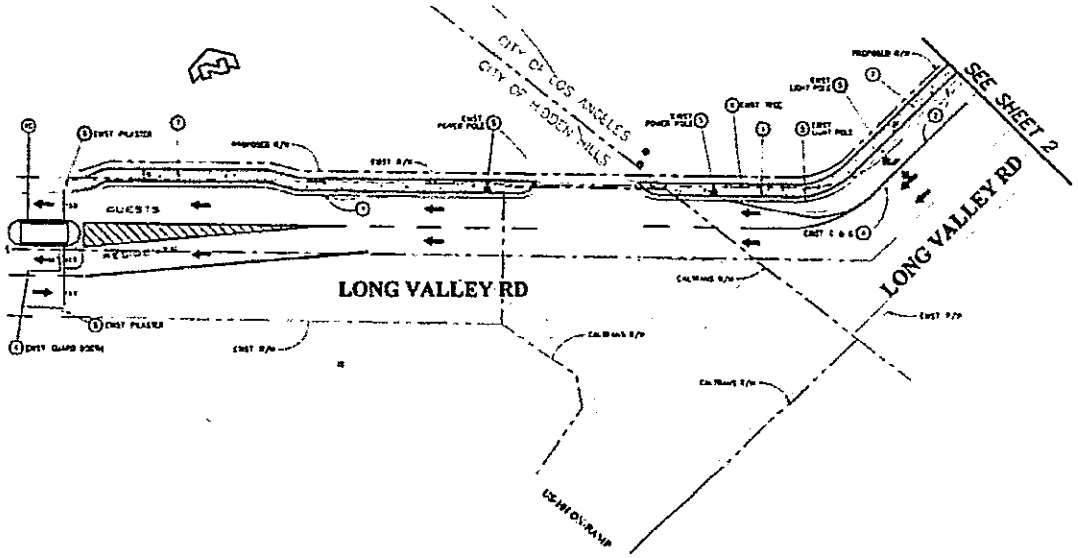
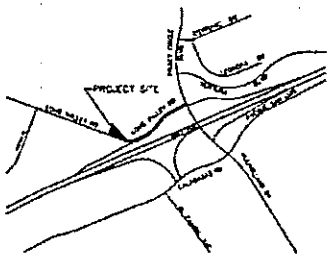

Assumptions:
1. Existing conditions have 1 thru lane and 1 thru-right lane – 2/3 of onramp traffic in thru-only lane.
2. Proposed conditions have 2 thru-only lanes and 1 right-turn only lane – equal onramp traffic in each thru-only lanes.
Long Valley Rd w/o Valley Circle Blvd
Traffic Analysis - AM Peak
Existing average queue – 791 ft
Proposed average queue with 3rd lane – 84 ft
Valley Circle Blvd
Long Valley Rd
Hidden Hills Entrance Gate
Westbound Approach Delay
(Stop Control Intersection)
Existing – 70.6 sec
Proposed – 46.0 sec
101 Freeway
Proposed condition based on additional 3rd westbound lane

CITY OF HIDDEN HILLS

LONG VALLEY RD/VALLEY CIRCLE/US-101 ON-RAMP IMPROVEMENTS PROJECT

CONCEPTUAL PLAN

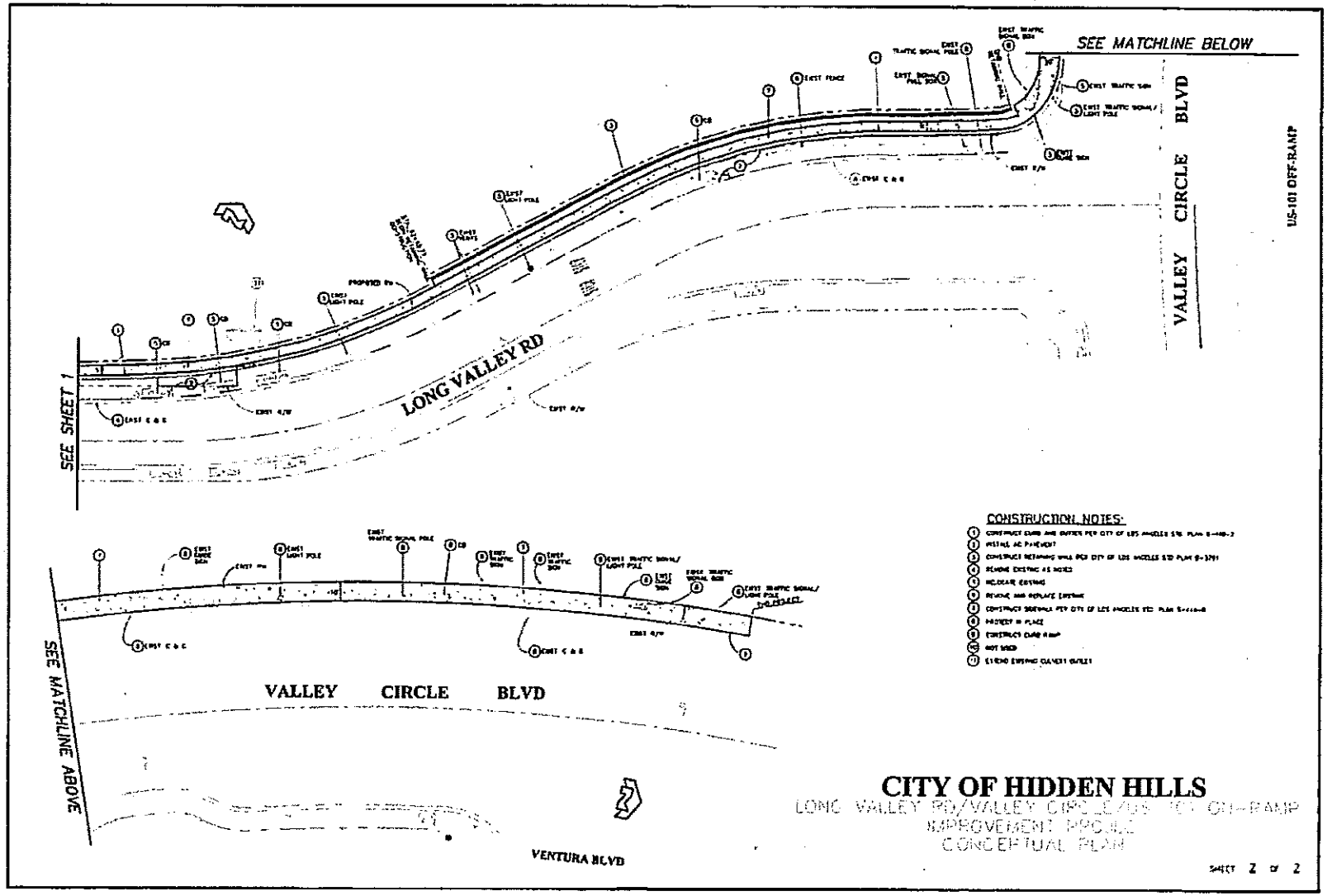




VICINITY MAP

CONSTRUCTION NOTES:

NOTE: CALTRANS R/W TO BE VERIFIED WITH CALTRANS R/W RECORD MAPS



CITY OF HIDDEN HILLS

LONG VALLEY RD/VALLEY CIRCLE/US 101 OFF-RAMP
IMPROVEMENT PROJECT
CONCEPTUAL PLAN

SHEET 2 OF 2

HCM Unsignalized Intersection Capacity Analysis
3: N 101 On Ramp & W Long Valley Rd

2/21/2017

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	0	0	826	524	72	28
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	949	602	83	32

Direction, Lane #	WB 1	WB 2	SB 1	SB 2
Volume Total (vph)	633	919	83	32
Volume Left (vph)	0	0	83	0
Volume Right (vph)	0	602	0	32
Hadj (s)	0.03	-0.42	0.53	-0.67
Departure Headway (s)	5.0	4.5	7.6	6.4
Degree Utilization, x	0.87	1.0	0.17	0.06
Capacity (veh/h)	716	807	462	546
Control Delay (s)	30.6	98.2	10.9	8.6
Approach Delay (s)	70.6		10.3	
Approach LOS	F		B	

Intersection Summary			
Delay	66.4		
Level of Service	F		
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 3: N 101 On Ramp & W Long Valley Rd

Movement	WB	WB	SB	SB
Directions Served	T	TR	L	R
Maximum Queue (ft)	1514	1495	32	45
Average Queue (ft)	791	847	26	22
95th Queue (ft)	1371	1432	41	46
Link Distance (ft)	1480	1480	32	32
Upstream Blk Time (%)	1	2	7	2
Queuing Penalty (veh)	0	0	3	1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

HCM Unsignalized Intersection Capacity Analysis
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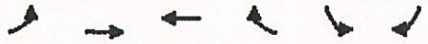

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	0	0	1239	111	72	28
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	0	0	1424	128	83	32

Direction, Lane #	WB 1	WB 2	WB 3	SB 1	SB 2
Volume Total (vph)	712	712	128	83	32
Volume Left (vph)	0	0	0	83	0
Volume Right (vph)	0	0	128	0	32
Hadj (s)	0.03	0.03	-0.67	0.53	-0.67
Departure Headway (s)	5.0	5.0	3.2	7.7	6.5
Degree Utilization, x	0.98	0.98	0.11	0.18	0.06
Capacity (veh/h)	717	722	1121	462	546
Control Delay (s)	49.6	49.6	5.4	11.1	8.7
Approach Delay (s)	46.0			10.4	
Approach LOS	E			B	

Intersection Summary				
Delay	43.5			
Level of Service	E			
Intersection Capacity Utilization	44.9%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection: 3: N 101 On Ramp & W Long Valley Rd

Movement	WB	WB	WB	SB	SB
Directions Served	T	T	R	L	R
Maximum Queue (ft)	137	140	80	52	51
Average Queue (ft)	84	83	9	27	18
95th Queue (ft)	118	119	39	44	47
Link Distance (ft)	1481	1481	1481	33	33
Upstream Blk Time (%)				7	2
Queuing Penalty (veh)				3	1
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					