

## INTERSECTION 157

### Western Avenue (SR-213)/Del Amo Boulevard Improvement(s)

#### Forecast Near-Term Conditions Intersection LOS Summary

	Weekday AM Peak Hour	Weekday Mid-Day Peak Hour	Weekday PM Peak Hour	Weekend Mid-Day Peak Hour
Without Improvement(s)	<b><i>273.7 – F</i></b>	<b><i>328.4 – F</i></b>	<b><i>332.1 – F</i></b>	<b><i>286.9 – F</i></b>
With Improvement(s)	24.5 – C	33.5 – C	33.1 – C	21.9 – C

**Note:** Delay shown in seconds per vehicle; Deficient intersection operation shown in ***bold italics***.

#### Recommended Improvements:

- Widen the eastbound Del Amo Boulevard approach from one left-turn lane, one shared left-turn/through lane, and one right-turn lane to consist of two left-turn lanes, two through lanes, and one right-turn lane.
- Widen the westbound Del Amo Boulevard approach from one shared left-turn/through/right-turn lane to consist of one left-turn lane, two through lanes, and one right-turn lane.
- Additionally, modify the Del Amo Boulevard traffic signal phasing from split-phase to protected left-turn phasing.
- Implementation of the recommended improvements identified at the Western Avenue (SR-213)/Del Amo Boulevard intersection will require City acquisition of approximately 24-feet of right-of-way on the eastbound Del Amo Boulevard approach to provide adequate alignment of eastbound Del Amo Boulevard through lanes and City acquisition of approximately 36-feet of right-of-way on the westbound Del Amo Boulevard approach and departure to provide adequate alignment of westbound Del Amo Boulevard through lanes.



**MITIGATIONS:**

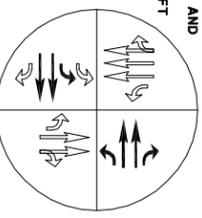
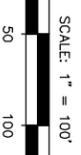
- EB - ADD LEFT TURN AND TWO THRU LANES
- WB - ADD LEFT TURN, TWO THRU LANES AND ONE RIGHT TURN, MODIFY SIGNAL PHASING FROM SPLIT PHASE TO LEFT TURN PHASING.

WESTERN AVE.

**LEGEND:**

- EXISTING LANE
- NEW IMPROVEMENT

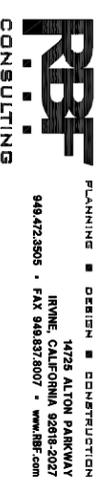
DEL AMO BLVD.



DEL AMO BLVD.

**INTERSECTION 157  
WESTERN AVE/DEL AMO BLVD**

CITYWIDE TRAFFIC ANALYSIS MITIGATION MEASURES



PLANNING ■ DESIGN ■ CONSTRUCTION  
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REV.	DATE	DESCRIPTION	BY	CHECKED

<p><b>CITY OF TORRANCE PUBLIC WORKS DEPARTMENT</b></p>		<p>DRAWN: D. CHANLEY</p>	<p>DATE</p>
		<p>DESIGNED: D. CHANLEY</p>	<p>APPROVED:</p>
<p>PROJECT ENGINEER:</p>		<p>SCALE: AS SHOWN</p>	<p>SHEET 1 OF 1</p>
<p>PLAN NO.</p>		<p>DATE</p>	

**CITY OF TORRANCE CITYWIDE TRAFFIC ANALYSIS MITIGATION MEASURES  
PRELIMINARY COST ESTIMATES**

**Location:** Intersection 157: Western Ave/Del Amo Blvd

**Date:** 2/22/2008

**Mitigation:** Widen the EB Del Amo Blvd approach to consist of two left-turn lanes, two through lanes, and one right-turn lane. Widen the WB Del Amo Blvd approach to consist of one left-turn lane, two through lanes, and one right-turn lane. Lastly, modify the traffic signal phasing on Del Amo Blvd to protected left-turn phasing.

**Estimated by:** D. Chanley

	DESCRIPTION OF WORK	UNIT PRICE	QUANTITY	COST
1	Mobilization	10.00% (\$2,000 Min)		\$172,000
2	Clear & Grub	\$10,000.00 / AC	0.20	\$2,000
3	Remove Striping	\$10.00 / LF	950	\$10,000
4	Remove Curb & Gutter	\$15.00 / LF	1,850	\$28,000
5	Remove Median Curb	\$30.00 / LF		\$0
6	Remove PCC Sidewalk	\$3.50 / SF	8,290	\$29,000
7	Remove Pavement	\$4.00 / SF	600	\$2,000
8	Remove Wall	\$50.00 / LF	220	\$11,000
9	Remove Channel	\$15.00 / LF		\$0
10	Remove/Replace Chain Link Fence	\$50.00 / LF	290	\$15,000
11	Remove/Replace Wrought Iron Fence	\$10.00 / LF	460	\$5,000
12	Remove/Replace Survey Monument	\$800.00 / EA		\$0
13	Reconstruct Metal Beam Guard Rail	\$70.00 / LF		\$0
14	Remove & Relocate Tree	\$3,000.00 / EA	13	\$39,000
15	Sawcut	\$1.00 / LF	1,850	\$1,850
16	Relocate Street Light	\$7,500.00 / EA	3	\$22,500
17	Relocate Traffic Signal System	\$300,000.00 / EA	1.0	\$300,000
18	Signal Phase Modification	\$10,000.00 / EA	2	\$20,000
19	Relocate Freeway Sign (2 post)	\$1,000.00 / EA		\$0
20	Relocate Sign (1 Post)	\$300.00 / EA	1	\$300
21	Reconstruct Overhead Sign	\$50,000.00 / EA		\$0
22	Relocate Call Box	\$2,000.00 / EA		\$0
23	Relocate Power Pole	\$25,000.00 / EA	7	\$175,000
24	Relocate Catch Basin	\$9,000.00 / EA		\$0
25	Relocate Fire Hydrant	\$2,500.00 / EA	1	\$2,500
26	Relocate Bus Shelter	\$2,000.00 / EA		\$0
27	Relocate Bus Bench	\$600.00 / EA		\$0
28	Relocate Monument Sign	\$5,000.00 / EA		\$0
29	Relocate Utility Boxes	\$500.00 / EA		\$0
30	Relocate Main Water Valve	\$10,000.00 / EA		\$0
31	Relocate Utility Vault	\$3,000.00 / EA		\$0
32	Adjust Manhole to Grade	\$1,000.00 / EA		\$0
33	Adjust Water Meter	\$2,000.00 / EA	11	\$22,000
34	Adjust Water Valve	\$500.00 / EA		\$0
35	Adjust Minor Above Ground Utilities	\$500.00 / EA	3	\$2,000
36	Modify Driveway	\$5,000.00 / EA	12	\$60,000
37	Earthwork	\$40.00 / CY	2,620	\$105,000
38	Construct PCC Pavement	\$15.00 / SF		\$0
39	Construct AC Pavement	\$14.00 / SF	14,110	\$198,000
40	Construct AC Overlay	\$3.00 / SF		\$0
41	Construct Slurry Seal	\$0.25 / SF		\$0
42	Construct Striping & Marking	\$4.00 / LF	950	\$4,000
43	Construct AC Dike	\$7.00 / LF		\$0
44	Construct Curb & Gutter	\$40.00 / LF	1,850	\$74,000
45	Construct Concrete Barrier	\$50.00 / LF		\$0
46	Construct Median Curb	\$20.00 / LF		\$0
47	Construct Median Concrete	\$10.00 / SF		\$0
48	Construct Median/Parkway Landscaping	\$10.00 / SF		\$0
49	Construct PCC Sidewalk	\$10.00 / SF	6,760	\$68,000
50	Construct Access Ramp	\$5,000.00 / EA	3	\$15,000
51	Construct Retaining Wall	\$50.00 / SF		\$0
52	Construct Storm Drain Main	\$100.00 / LF		\$0
53	Construct RCB	\$1,000.00 / LF		\$0
54	Construct Headwall	\$5,000.00 / EA		\$0
55	Construct Concrete V-Ditch	\$15.00 / LF		\$0
56	Construct Bridge Widening	\$500.00 / SF		\$0
57	Construct Wall	\$70.00 / LF	220	\$15,000
58	Building/Structure Demolition (1-Story Bldg)	\$10.00 / SF	210	\$2,000
59	Traffic Control (\$5,000 min)	8%	1	\$98,000
60	Drainage Items	10%	1	\$132,000
61	SWPPP Plan and Implementation	6%	1	\$87,000
	<b>CONSTRUCTION SUBTOTAL</b>			<b>\$1,717,150</b>
	Right-of-Way	100 / SF	11,120	\$1,112,000
	Right-of-Way Management	5 / %		\$56,000
	<b>RIGHT-OF-WAY SUBTOTAL</b>			<b>\$1,168,000</b>
	<b>TOTAL CONSTRUCTION &amp; RIGHT-OF-WAY COST</b>			<b>\$2,886,000</b>
	Preliminary Project Development (10% of total Construction/RW cost)			\$289,000
	Design Engineering/Administration Costs (15% of total Construction/RW cost) (\$10,000 min)			\$433,000
	Construction Engineering Costs/Administration (10% of total Construction/RW cost) (\$5,000 min)			\$289,000
	Contingency (20% of Total Construction/RW cost) (\$5,000 min)			\$578,000
	<b>TOTAL PROJECT COSTS</b>			<b>\$4,475,000</b>