

## 5. HORIZON YEAR TRANSPORTATION MASTER PLAN-COST ESTIMATES

### 5.1 INTRODUCTION

This chapter of the TMP presents an opinion of probable cost estimates for the proposed Horizon Year roadway network improvements as recommended in the previous sections. These cost estimates are based upon initial planning and should be further refined at a later date when additional studies and design of the improvements commence. Cost estimates were provided for the following facilities:

- Overpasses/Underpasses/Bridges/Culverts
- Intersections
- Roadway Segments
- Intelligent Transportation System
- Railroad Crossings

The total cost for all of these improvements is estimated at approximately \$860 million as indicated in **Table 5.1**. The assumptions and methodology used to prepare these costs estimates for each individual category are discussed below.

**Table 5.1: Total Preliminary Cost Estimates for Horizon Year TMP Infrastructure**

Description	Preliminary Cost Estimate
Overpasses/Underpasses/Bridges/Culverts	\$188,536,000
Intersections	\$216,815,397
Roadway Segments (Program Costs)	\$436,290,219
Intelligent Transportation System	\$19,226,275
<b>Total<sup>2</sup></b>	<b>\$860,867,891</b>
<p><sup>1</sup>Program costs refer to the portion of roadway segment improvements that will be funded by the city.</p> <p><sup>2</sup>Total includes funding from Capital Improvement Program (CIP) or other funding sources.</p>	

### 5.2 OVERPASS/UNDERPASS/BRIDGE/CULVERT

**Section 4.6** identified the overpasses, underpasses, bridges, and culverts that needed to be widened to accommodate Horizon Year growth. These locations

are identified in **Tables 4.4 through 4.6**.

The cost estimates in **Table 5.2** assume that either the existing facility will be widened or a new replacement facility will be provided. The estimate takes into account the following factors:

- Length of structure including tapers and transitions
- Future width of facility based upon:
  - Horizon Year roadway classification
  - Future roadway cross sections
- Provision of pedestrian and bicycle facilities
- Other required design elements (K-rail and separation barriers)
- Right-of-way acquisition cost of \$150,000 per acre
- Construction easement cost of \$50,000 per acre
- Fees (20% contingency, 10% engineering and design, 15% construction management and administration)

A unit cost was applied to the area of the proposed widening or entire bridge replacement to determine the projected cost.

The average unit cost for constructing a new bridge ranges between \$250 to 400 per square foot (s.f.) which includes both the superstructure and substructure. The lower end of the price range is for low structure height, no environmental constraints or aesthetic issues, dry conditions, no bridge skews, spread footings, and no stage construction. The higher end of price range is for long spans, high structure height, environmental constraints, aesthetic issues, wet conditions, skewed bridges, pile footings, and stage construction. For this analysis, an average unit cost of \$300 per s.f. was used for a new bridge and a unit cost of \$350 was used for widening of an existing bridge.

As indicated in **Table 5.2**, the resulting grand total to improve the overpasses, underpasses, bridges, and culverts is estimated at approximately \$188.5 million which includes costs for contingencies, design and engineering, construction management, and right-of-way acquisition (see **Appendix I** for additional information regarding the cost estimates). This total includes CIP funding (funds from existing fee programs) for two projects at approximately \$20 million.

Table 5.2: Preliminary Cost Estimates for Overpass/Underpass/Bridge/Culvert

Type/Location	Replace or Widen	Length (ft)	Existing Width (ft)	Water Channel/ Freeway Length (ft)	Future (BUILDOUT)						BO/Horizontal Year	Future Area (ft <sup>2</sup> )	Structure and Earthwork Cost	ROW Area (ft <sup>2</sup> )	ROW/Easement Cost	CIP Funding		Total Cost	CIP Funding	
					Travel Width # Lanes	Sidewalk	Bike Facility	Bike Width	K rail & Sep	Total Width						Project #	Amount (c)		Project #	Amount (c)
<b>Overpass/Underpass</b>																				
I-580/Corral Hollow Road	Replace Bridge	350	34	155	52	4	5	lanes	10	4	80	28,000	\$ 12,600,000	8,970	\$ 31,000			\$ 12,631,000		
I-580/Lammers Road	New Overcrossing	350	0	0	66	6	5	path	10	6	107	37,450	\$ 16,853,000	37,450	\$ 129,000			\$ 16,982,000		
I-205/Pavilion Parkway overcrossing	New Overcrossing	350	0	155	52	4	5	path	10	6	80	28,000	\$ 12,600,000	15,600	\$ 54,000			\$ 12,654,000		
I-580/Mountain House overcrossing	New Overcrossing	350	0	155	52	4	5	path	10	6	80	28,000	\$ 12,600,000	15,600	\$ 54,000			\$ 12,654,000		
I-205/Rivercreek Road	Replace Bridge	290	34	155	52	4	5	path	10	6	80	23,200	\$ 10,440,000	6,210	\$ 21,000			\$ 10,461,000		
<b>Railroad Crossings</b>																				
Lammers Road Railroad Crossing #2	New Bridge	100	0	100	86	6	5	path	10	6	107	10,700	\$ 6,420,000	10,700	\$ 37,000			\$ 6,457,000		
11th Street/MacArthur Drive #9	New Bridge																	\$ 29,000,000		\$ 20,000,000
Chisman Road Railroad Crossing at #32	New Bridge	100	0	100	86	6	5	path	10	6	107	10,700	\$ 6,420,000	10,700	\$ 37,000			\$ 6,457,000		
Hansen Road Railroad Crossing #23	New Bridge	100	0	100	86	6	5	path	10	6	107	10,700	\$ 6,420,000	10,700	\$ 37,000			\$ 6,457,000		
Lammers Road at Valpico Road #1	Widen from 2-4 lanes																	\$ 300,000		
Corral Hollow Road north of Linné Road # 5	Widen from 2-4 lanes																	\$ 300,000		
Tracy Boulevard north of Linné Road #8	Widen from 2-4 lanes																	\$ 200,000		
MacArthur Drive south of 6th Street #15	Close loop bike path																	\$ 150,000		
Chisman Road at Schulte Road #11a	Widen from 2-4 lanes																	\$ 300,000		
MacArthur Drive Extension #21	New 4 lane crossing																	\$ 500,000		
Lammers Road at Byron Road #26 relocate Grant LR	Relocate 2 Lane Crossing																	\$ 300,000		
<b>Bridges</b>																				
Delta Mendota Canal/Mountain House Parkway	Widen	335	36	115	64	4	0	path	10	4	78	14,070	\$ 4,925,000	14,070	\$ 16,000			\$ 4,941,000		
California Aqueduct/Mountain House Parkway	Widen	350	72	115	66	6	0	path	10	4	100	9,800	\$ 2,940,000	6,580	\$ 23,000			\$ 2,963,000		
Delta Mendota Canal/Ole Schulte Road	Widen	325	49	110	71	4	0	path	10	4	85	11,700	\$ 4,095,000	11,700	\$ 13,000			\$ 4,108,000		
Delta Mendota Aqueduct/Lammers Road	Replace	130	26	105	86	6	0	path	10	4	100	13,000	\$ 3,900,000	9,620	\$ 11,000			\$ 3,911,000		
California Aqueduct/Lammers Road	Replace	170	24	130	88	6	0	path	10	4	100	17,000	\$ 5,100,000	12,920	\$ 13,000			\$ 5,113,000		
Delta Mendota Canal/Corral Hollow Road	Replace	130	29	105	52	4	0	path	10	4	66	8,580	\$ 2,574,000	4,810	\$ 6,000			\$ 2,580,000	73PP-054	\$ 446,000
California Aqueduct/Corral Hollow Road	Replace	320	35	150	52	4	0	path	10	4	66	14,520	\$ 4,356,000	6,820	\$ 8,000			\$ 4,364,000		
<b>Culvert</b>																				
Upper Main Canal/Lammers Road	Widen	65	93	30	86	4	0	path	10	4	100	455	\$ 239,000	455	\$ 1,000			\$ 240,000		
Upper Main Canal/Corral Hollow Road	none	60	0	0	4	0	0	path	0	0	0	-	\$ -	0	\$ -			\$ -		
<b>Subtotal</b>												<b>\$ 112,482,000</b>	<b>\$ 493,000</b>	<b>\$ 114,125,000</b>	<b>\$ 20,446,000</b>					
Contingencies (20%)												\$ 28,825,000								
Engineering Design and Planning (10% )												\$ 14,413,000								
Construction Management (10%)												\$ 14,413,000								
Program Administration (5% )												\$ 7,206,000								
<b>Grand Total</b>												<b>\$ 208,921,000</b>								
<b>Grand Total (With CIP Funding)</b>														<b>\$ 188,536,000</b>						
Notes:																				
RR Bridge crossing include 100% of bridge cost for earthwork estimate.																				
RR Crossing #24, Pavilion Parkway east of Lammers cost included in intersection improvements.																				
RR Crossing #9, MacArthur Drive at 11th RR crossing included in Overpass.																				
Freeway overpasses and Lammers canal widening include 50% cost for earthwork/approaches																				
Length includes tapers/transition to main roadway																				
ROW cost of \$130,000/acre assumed for overpass/underpass. Construction easement cost of \$50,000/acre assumed for bridges and culverts.																				
New structure cost of \$300/s.f. includes both the superstructure and substructure and assumes low structure height, no environmental constraints or aesthetic issues, dry conditions, no bridge skew, spread footings, and no stage construction.																				
Widening structure cost of \$350/s.f.																				



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## 5.3 INTERSECTIONS

**Figures 4.4a** and **4.4b** identify the recommended Horizon Year lane geometry at the 65 study intersections plus intersections not analyzed that are required to accommodate the future demand and to maintain the level of service threshold per the City of Tracy and Caltrans level of service standards.

A per lane unit cost was derived to estimate the cost of widening an intersection leg to accommodate a through, left- or right-turn lane assuming a 250-foot lane or pocket. The unit cost included the following cost factors:

- Right-of-way (ROW) acquisition of 12 feet at \$150,000 per acre
- Construction easement
- Structural section (concrete pavement, asphalt base, curb)
- Signing and striping
- Traffic signal installation or modification
- Fees (20% contingency, 10% engineering and design, 15% construction management and administration)

The per lane unit cost was multiplied by the number of additional lanes required under Horizon Year conditions. A more detailed cost estimate was prepared for the following key intersections due to unusual site constraints or because substantial earthwork/construction is required:

- #24 Byron Extension/Lammers Extension
- #44 Corral Hollow Road/Linne Road
- #45 Tracy Boulevard/Linne Road
- #56 Pavillion Parkway Extension/Grant Line Road Extension
- #67 Pavillion Parkway/Lammers Road

**Appendix H** contains concept plans for the above five intersections.

Unit costs were also developed for the following improvements:

- Traffic signal installation
- Roundabout
- Right-turn islands

The cost estimate for the I-205/Lammers Extension ramp intersections were obtained from the *I-205/Lammers Road Project Study Report* (Rajappan & Meyer Consulting Engineers, Inc., January 2006).



**Table 5.3** summarizes the proposed intersection cost estimates. The grand total for the intersection improvements is estimated at approximately \$216 million (see **Appendix I** for additional information regarding the cost estimates). This total includes CIP funding in the total amount of approximately \$19 million.

**Table 5.3: Preliminary Cost Estimates for Intersections**

Number	Intersection	Preliminary Cost Estimate	CIP #	CIP Funding	Amount Funded by TIF
1	I-205 WB Ramps/Lammers Extension	See Int #2			
2	I-205 EB Ramps/Lammers Extension	\$ 58,340,000			\$ 58,340,000
3	I-205 WB Ramps/Naglee Road	\$ 45,000			\$ 45,000
4	I-205 EB Ramps/Grant Line Road	\$ 20,000,000			\$ 20,000,000
5	I-205 WB Ramps/Tracy Boulevard	\$ 369,000	72PP-064	\$ 303,171	\$ 65,499
6	I-205 EB Ramps/Tracy Boulevard	\$ 327,000			\$ 326,802
7	I-205 WB Ramps/MacArthur Drive	\$ 14,441,000		\$ 14,441,311	\$ -
8	I-205 EB Ramps/MacArthur Drive	See Int #7			
9	Naglee Road (I-205 WB Ramps) /Grant Line Road	\$ 426,000			\$ 425,799
10	I-205 WB Ramps/Chrisman	\$ 24,000,000			\$ 24,000,000
11	I-205 EB Ramps/Chrisman	See Int #10			
12	I-580 WB Ramps/Mountain House Parkway	\$ 515,000			\$ 515,000
13	I-580 EB Ramps/Patterson Pass Road	\$ 595,000			\$ 595,000
14	I-580 WB Ramps/Lammers Road	\$ 2,977,000			\$ 2,977,004
15	I-580 EB Ramps/Lammers Road	\$ 2,734,000			\$ 2,733,603
16	I-580 WB Ramps/Corral Hollow Road	\$ 327,000	72PP-030	\$ 479,862	\$ (153,060)
17	I-580 EB Ramps/Corral Hollow Road	\$ 490,000			\$ 490,203
18	Naglee Road/Middle Road	N/A			\$ -
19	Larch Road/Tracy Boulevard	\$ 792,000			\$ 792,203
20	MacArthur Drive/Arbor Avenue	N/A			\$ -
21	Paradise Road / Arbor Avenue	\$ 1,119,000			\$ 1,119,207
22	Lammers Road/Byron Road	\$ 786,000			\$ 785,603
23	Lammers Road/Grant Line Road	\$ 900,000			\$ 900,405
24	Byron Extension/Lammers Extension	\$ 5,451,000			\$ 5,451,000
25	Corral Hollow Road/Grant Line Road	\$ 45,000	72PP-017	\$ 319,200	\$ (274,200)
26	Tracy Boulevard/Grant Line Road	\$ 327,000	72018		\$ 326,802
27	MacArthur Drive/Grant Line Road	N/A			\$ -
28	Chrisman Avenue/Grant Line Road	\$ 1,317,000	72PP-040	\$ 385,400	\$ 932,010
29	Lammers Road/Eleventh Street	\$ 253,000	72024/7205	\$ 200,000	\$ 53,401
30	Corral Hollow Road/Eleventh Street	\$ 45,000		\$ 122,750	\$ (77,750)
31	Tracy Boulevard/Eleventh Street	N/A			\$ -
32	MacArthur Drive/Eleventh Street (North)	See Table 5.2			\$ -
33	Chrisman Avenue/Eleventh Street (South)	\$ 577,000			\$ 577,004
34	Mountain House Parkway/ Schulte Road	\$ 334,000			\$ 333,603
35	Pavillion Extension/Schulte Road	\$ 1,401,000			\$ 1,400,810
36	Lammers Road/Schulte Road	\$ 2,548,000	72068	\$ 361,800	\$ 2,186,217
37	Corral Hollow Road/Schulte Road	\$ 417,000	72016	\$ 167,053	\$ 249,749
38	Tracy Boulevard/Schulte Road	\$ 163,000			\$ 163,401
39	MacArthur Drive/Schulte Road	\$ 817,000			\$ 817,004
40	Lammers Road/Valpico Road	\$ 1,818,000			\$ 1,817,815
41	Corral Hollow Road/Valpico Road	\$ 1,234,000	72PP-053	\$ 1,230,721	\$ 3,283
42	Tracy Boulevard/Valpico Road	N/A	72038		\$ -
43	MacArthur Drive/Valpico Road	\$ 163,000	72037		\$ 163,401
44	Corral Hollow Road/Linne Road	\$ 8,945,000		\$ 422,132	\$ 8,522,863
45	Tracy Boulevard/Linne Road	\$ 3,544,000		\$ 178,291	\$ 3,365,709
46	Naglee Road/Park and Ride	N/A			\$ -
48	Lammers Extension/Van Sostem	\$ 2,485,000			\$ 2,485,022

**Table 5.3 (Cont.): Preliminary Cost Estimates for Intersections**

Number	Intersection	Preliminary Cost Estimate	CIP #	CIP Funding	Amount Funded by TIF
51	Hansen Road/Old Schulte Road	\$ 900,000			\$ 900,405
52	Mountain House Parkway/Schulte Road	N/A			\$ -
53	Mountain House Parkway/Capital Parks Drive	\$ 786,000			\$ 785,603
54	Hansen Road/Capital Parks Drive	\$ 1,421,000			\$ 1,421,410
55	Pavillion Extension/Capital Parks Drive	\$ 2,370,000			\$ 2,370,220
56	Pavillion Extension/Grant Line Extension	\$ 19,865,000			\$ 19,865,000
57	Lammers Road/Crossroads Drive	\$ 1,317,000			\$ 1,317,410
58	Lammers Road/Schulte Road	\$ 1,536,000			\$ 1,536,211
59	Lammers Road/Ellis Drive	\$ 1,818,000			\$ 1,817,815
60	Lammers Road/Linne Road	\$ 2,151,000			\$ 2,151,418
61	Lammers Road/South Aqueduct Road	\$ 2,151,000			\$ 2,151,418
62	Crossroads Drive/Eleventh Street	N/A			\$ -
63	Crossroads Drive/Schulte Road	\$ 1,818,000			\$ 1,817,815
64	Paradise Road/Grant Line Road	\$ 1,151,000			\$ 1,150,608
65	Lammers Road/Capital Parks Drive	\$ 1,755,000			\$ 1,755,013
66	Lammers Road/Commerce Way	\$ 3,308,000			\$ 3,308,229
67	Pavillion Parkway/Lammers Extension	\$ 18,172,000			\$ 18,172,000
68	Pavillion Parkway/Lammers Road	\$ 1,568,000			\$ 1,567,612
a	Hansen Road/Schulte Road	\$ 483,000			\$ 483,401
b	Pavillion Parkway/Grant Line Road	\$ 567,000			\$ 566,802
c	Pavillion Parkway/Von Sosten Road	\$ 734,000			\$ 733,603
d	Pavillion Parkway/Old Schulte Road	\$ 650,000			\$ 650,203
e	Pavillion Parkway/Hansen Road	\$ 650,000			\$ 650,203
f	Commerce Way (West)/Capital Parks Drive	\$ 817,000			\$ 817,004
g	Commerce Way (East)/Capital Parks Drive	\$ 734,000			\$ 733,603
h	Hansen Road/Valpico Road	\$ 734,000			\$ 733,603
i	Lammers Road/Connector Road(South Valpico)	\$ 984,000			\$ 983,806
j	Linne Road/Delta Mendota Link Road	\$ 984,000			\$ 983,806
k	Corral Hollow Road/Delta Mendota Link Road	\$ 817,000			\$ 817,004
l	MacArthur Drive/MacArthur Drive (North)	\$ 734,000			\$ 733,603
m	Chrisman Road/Valpico Road	\$ 167,000		\$ 241,071	\$ (74,269)
n	Chrisman Road/Schulte Road	\$ 900,000			\$ 900,405
o	Chrisman Road/Paradise Road	\$ 584,000			\$ 583,806
p	Corral Hollow Road/Larch Road	\$ 734,000			\$ 733,603
q	Corral Hollow Road/Auto Plaza Drive	\$ 984,000			\$ 983,806
r	Naglee Road/Auto Plaza Drive	\$ 567,000		\$ 309,008	\$ 257,794
<b>Total</b>		<b>\$ 235,978,000</b>		<b>\$ 19,161,770</b>	<b>\$ 216,815,397</b>

Notes: Ints 1 & 2 costs obtained for Alternative 6 from I-205/Lammers Road PSR (January 2006)



## 5.4 ROADWAY SEGMENTS

Similar to the process undertaken to estimate the intersection costs, a unit cost was developed for the various roadway types. The cost factors used for the intersections were also used in the roadway segments. In addition, costs to provide streetlights and to coordinate with utility companies were included.

**Table 5.4** presents the list of new roadways that will be constructed or existing roadways that will be widened under Horizon Year and for certain roadways, SOI Buildout Conditions. Program costs were calculated based upon right-of-way acquisition and roadway improvements costs. Right-of-way acquisition costs were based upon SOI buildout conditions. ROW and Improvement costs were based upon SOI Buildout conditions for Mountain House Parkway and Lammers Road. Horizon year costs were calculated based on the frontage policy described below.

Included in the roadway segment cost estimates are costs to construct temporary sidewalks or bike paths. Temporary sidewalks or paths would be constructed to provide a continuous connection between adjacent developed and undeveloped parcels. The cost of temporary sidewalks and paths were estimated at 1/3 of the total cost to construct all sidewalks and bike paths in the TMP.

### 5.4.1 FRONTAGE POLICY

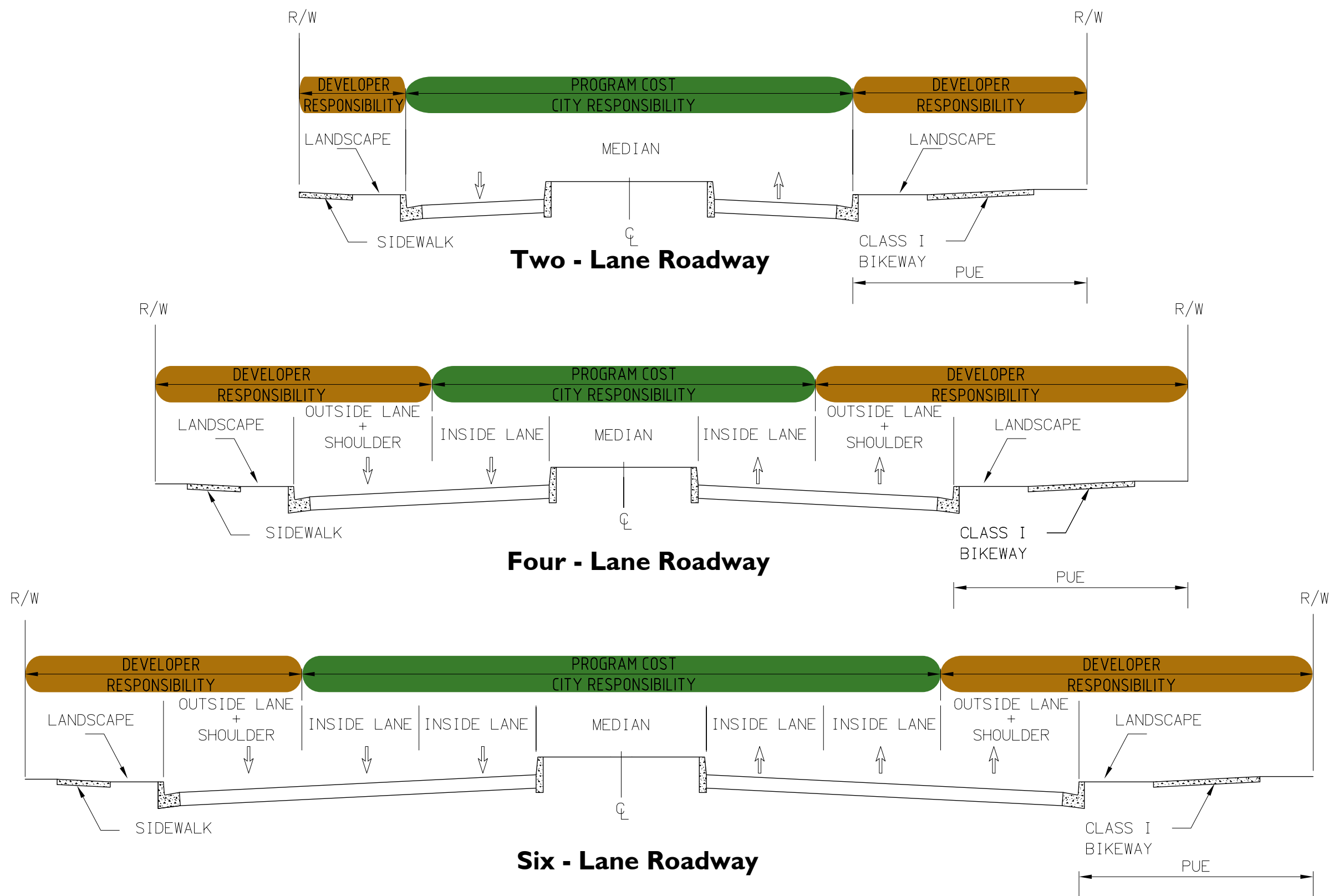
A frontage policy was developed as part of this TMP to identify the basic roles and responsibilities of the City and the Developers with respect to future roadway cross-sections within the City of Tracy.

**Figure 5.1** illustrates responsibility of the City and the Developer based on roadway type, 2-lane, 4-lane and 6-lane facilities. The interim roadway section may include a 2-lane design segment or a 4-lane design segment depending on the type of roadway. In general, the City shall be responsible for construction of inside lanes including median and streetlights (roadway with four or more lanes). The developer shall be responsible for completing the remaining improvements for the cross-section, including outside lanes (roadway with four or more lanes), shoulders, landscaping, sidewalks, bike lanes /bikeways, and streetlights (roadway with two lanes). The City's responsibility is referred to as "Program Costs." It is recognized that construction of these roadways may occur in phases based upon available funding and development demands. Under the scenario where a roadway would be constructed prior to development in the area, responsibilities of the City and the Developer are illustrated in **Figure 5.1**. However, the roadway corridor should be preserved to accommodate the ultimate cross-section, including shoulders, sidewalks, landscaped, curb and gutter, a raised median, and storm

sewer per the Horizon Year Roadway Network. Paved trails /bike lanes may be included on one or both sides.

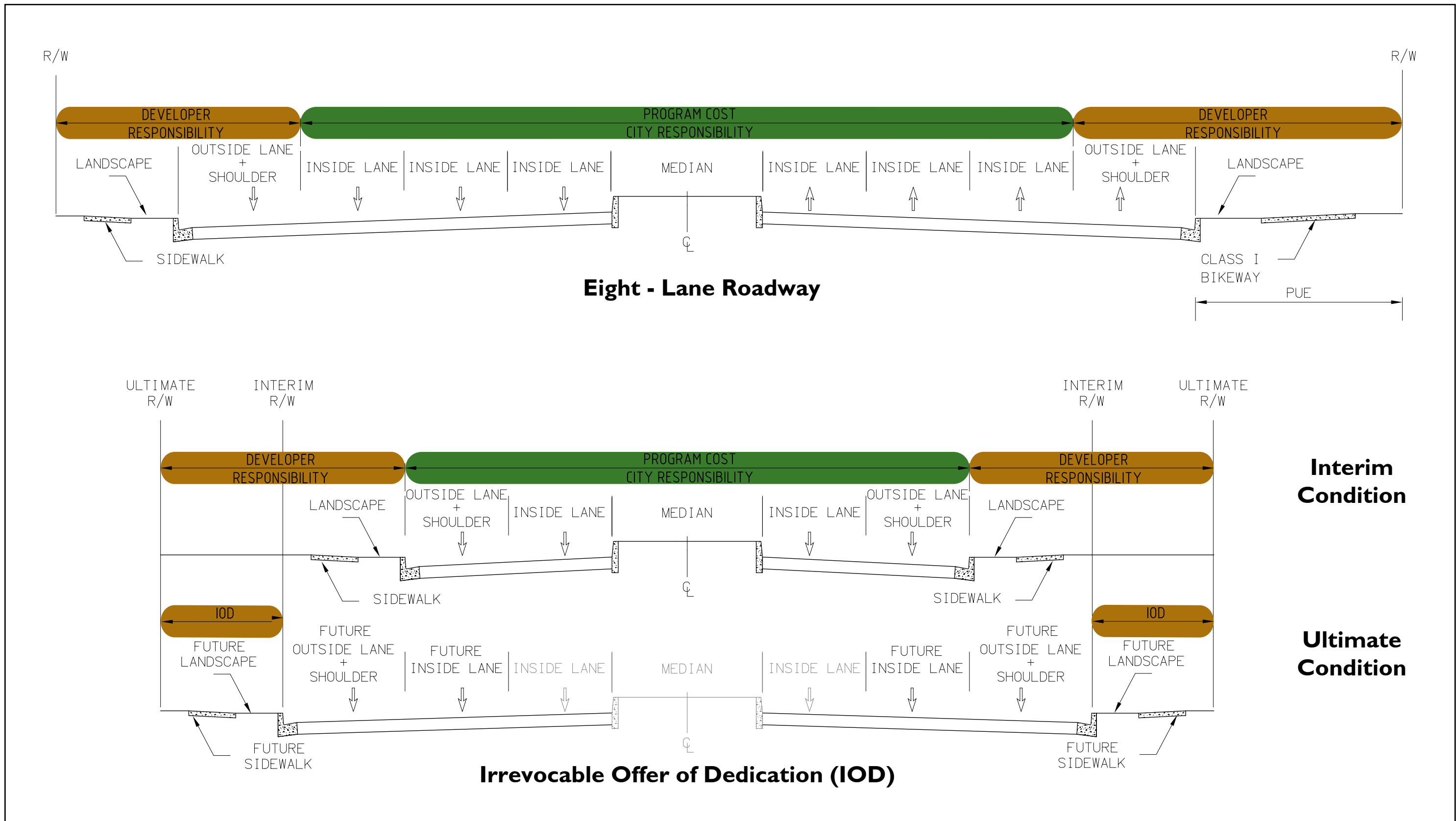
The TMP indicates ROW requirements for Horizon Year and SOI Buildout. However, due to the uncertainty of long term future development, these ROW requirements may change. To accommodate a change in potential future ROW, the following requirements are established for all future development.

1. If a Specific Plan or Development Project requires additional roadway travel lanes than indicated in this TMP for SOI Buildout conditions, the project shall mitigate its impact through implementation sustainable development policies by: (1) improving transit usage by employees, and (2) implementing TDM measures, as prescribed by the City and the SJCOG. If the project cannot demonstrate adequate mitigation, additional ROW and roadway improvements would be provided and funded solely by the applicant.
2. If a Specific Plan and Development Project require less ROW than indicated in the Traffic Analysis Study for the project for SOI Buildout conditions, the applicant shall provide an Irrevocable Offer of Dedication (IOD) to the City for the future ROW needs beyond the project ROW requirements. This ROW will remain under ownership and be maintained by the project applicant and only relinquished at the City request. The applicant will then be reimbursed for the subject property. The applicant shall not develop any improvements on the subject property described in the IOD, without prior approval from the City. Any improvements by the applicant will be constructed at the applicant's risk without reimbursement. The City may also relinquish the IOD, in which case ROW costs may be reimbursed to the applicant.



**Note:** For the following streets, the full curb-to-curb cost is included in the Traffic Impact Fee Program: Old Schulte Road, New Schulte Road, Lammers Road, Chrisman Road, Linne, Corral Hollow Road





**Note:** For the following streets, the full curb-to-curb cost is included in the Traffic Impact Fee Program: Old Schulte Road, New Schulte Road, Lammers Road, Chrisman Road, Linne, Corral Hollow Road



#### 5.4.2 PROGRAM COSTS

The cost estimates in **Table 5.4** were based upon the City's responsibility as outlined in the Frontage policy section discussed above. As indicated in **Table 5.4**, the Program Costs for the roadway segments costs is estimated at approximately \$435 million (see **Appendix I** for additional information regarding the cost estimates). This total includes CIP funding in the total amount of approximately \$35 million.



Table 5.4: Preliminary Cost Estimates for Roadway Segments

Segment	From	To	Roadway Type	Program Cost	CIP	
					Project #	Funding
<b>Construction of New Roadways</b>						
Capital Parks Dr	Mountain House Pkwy	New Street	new 4L undiv Arterial	\$ 2,710,000		
Capital Parks Dr	New Street	Hansen Rd	new 4L undiv Arterial	\$ 2,650,000		
Capital Parks Dr	Hansen Rd	Pavillion Ext	new 4L undiv Arterial	\$ 4,040,000		
Capital Parks Dr	Pavillion Ext	New Street	new 4L undiv Arterial	\$ 1,900,000		
Capital Parks Dr	New Street	New Street	new 4L undiv Arterial	\$ 2,370,000		
Capital Parks Dr	New Street	New Street	new 4L undiv Arterial	\$ 1,920,000		
Capital Parks Dr	New Street	Lammers Rd	new 6L Arterial	\$ 1,750,000		
Schulte Rd	Mountain House Pkwy	New Street	new 2L Arterial	\$ 7,550,000		
Schulte Rd	New Street	Hansen Rd	new 2L Arterial	\$ 3,390,000		
Schulte Rd	Hansen Rd	Pavillion Ext	new 4L undiv Arterial	\$ 8,850,000		
Schulte Rd	Pavillion Ext	New Street	new 4L undiv Arterial	\$ 5,240,000		
Schulte Rd	New Street	New Street	new 4L undiv Arterial	\$ 2,440,000		
Schulte Rd	Lammers Rd	Crossroads Dr	new 4L undiv Arterial	\$ 6,870,000	73PP-049	\$ 283,427
Schulte Rd	Crossroads Dr	Edge of Development	new 4L undiv Arterial	\$ 2,360,000		
New E-W Street (south of Valpico)	Wilkinson Wy	Corral Hollow Rd	new 2L Collector	\$ 1,370,000		
Linne Rd	Lammers Rd	Light Industrial Rd	new 4L Parkway	\$ 1,600,000		
Linne Rd	Light Industrial Rd	Corral Hollow Rd	new 4L Parkway	\$ 15,680,000		
Light Industrial Rd	Linne Rd	Corral Hollow Rd	new 4L undiv Arterial	\$ 7,240,000		
Pavillion Pkwy	Grant Line Rd	Byron Rd/11th St	new 4L Arterial	\$ 620,000		
Pavillion Pkwy	Grant Line Rd/RR	Lammers Rd	new 6L Arterial	\$ 7,320,000		
Pavillion Pkwy	Lammers Rd	Power Rd	new 4L Arterial	\$ 5,100,000		
Byron Rd	Pavillion Ext	Byron Rd/11th St	new 2L Arterial	\$ 1,130,000		
Byron Rd	Byron Rd/11th St	Byron Rd	new 2L Arterial	\$ 3,130,000		
New Street	Property Line	Larch Rd	new 4L undiv Arterial	\$ 1,080,000		
Power Rd	Pavillion Pkwy	Grant Line Rd	new 6L Arterial	\$ 4,550,000		
Chrisman Rd	Grant Line Rd	Paradise Rd	new 6L Parkway	\$ 8,030,000		
Auto Plaza Ext	Power Rd	Naglee Rd	new 4L undiv Arterial	\$ 2,350,000		
Auto Plaza Ext	Naglee Rd	Corral Hollow Rd	new 4L undiv Arterial	\$ 3,000,000		
Lammers Ext	Byron Rd	Pavillion Pkwy		\$ -		
Lammers Ext	Pavillion Pkwy	Byron Rd	new 6L Parkway	\$ 3,540,000		
Lammers Ext	Byron Rd	Von Sosten Rd	new 6L Parkway	\$ 2,570,000		
Lammers Ext	Von Sosten Rd	I-205 On/Off Ramps	new 6L Parkway	\$ 3,520,000		
Lammers Ext	I-205 On/Off Ramps	I-205 On/Off Ramps		\$ -		
Lammers Ext	I-205 On/Off Ramps	Commerce Wy	new 6L Parkway	\$ 650,000		
Lammers Ext	Commerce Wy	11th St	new 6L Parkway	\$ 3,510,000	Ellis	\$ 506,190
Pavillion Ext	Grant Line Rd	Byron Rd	new 4L Arterial	\$ 2,270,000		
Pavillion Ext	Byron Rd	Von Sosten Rd	new 4L Arterial	\$ 2,450,000		
Pavillion Ext	Rancho Ramon Dr	I-205	new 4L Arterial	\$ 2,850,000		
Pavillion Ext	I-205	Capital Parks Dr	new 4L Arterial	\$ 3,640,000		
Pavillion Ext	Capital Parks Dr	Schulte Rd	new 4L Arterial	\$ 3,860,000		
Pavillion Ext	Schulte Rd	Old Schulte Rd	new 4L Arterial	\$ 5,250,000		
Pavillion Ext	Property Line	Hansen Rd	new 4L Arterial	\$ 2,790,000		
Commerce Wy	Byron Rd/11th St	New Street	new 6L Parkway	\$ 3,120,000		
Commerce Wy	New Street	Capital Parks Dr	new 4L undiv Arterial	\$ 590,000		
New Street	Commerce Wy	Capital Parks Dr	new 4L undiv Arterial	\$ 1,800,000		
Crossroads Dr	Lammers Rd	Curve	new 2L Arterial	\$ 5,610,000		
Crossroads Dr	Curve	Schulte Rd	new 2L Arterial	\$ 1,630,000		
Crossroads Dr	Schulte Rd	Property Line	new 4L Arterial	\$ 2,000,000		
MacArthur Dr	11th St	Curve	new 4L undiv Arterial	\$ 2,530,000		
MacArthur Dr	Curve	MacArthur Dr	new 4L undiv Arterial	\$ 2,380,000		
Lammers Rd	I-580 EB Ramp	Old Schulte Road	new 4L Parkway	\$ 33,770,000		\$ 3,632,177
Larch Rd	Corral Hollow Rd	Tracy Blvd	new 4L undiv Arterial	\$ 5,730,000		
Larch Rd	Tracy Blvd	east terminus	new 4L undiv Arterial	\$ 4,660,000		
Mountain House Parkway	I-205	Capital Parks Dr	new 8L Parkway	\$ 2,940,000		
Mountain House Parkway	Capital Parks Dr	Schulte Rd	new 6L Parkway	\$ 2,560,000		
Mountain House Parkway	Schulte Rd	Old Schulte Rd	widen to 4L Parkway	\$ 2,970,000		



**Table 5.4 (Cont.): Preliminary Cost Estimates for Roadway Segments**

Segment	From	To	Roadway Type	Program Cost	CIP	
					Project #	Funding
<b>Widening of Existing Roadways</b>						
Hansen Rd	I-205 Overpass	Old Schulte Road	widen 2L to 4L undiv Arterial	\$ 9,990,000		
Lammers Rd	s/o Middle school	Grant Line Rd	widen 2L to 4L undiv Arterial	\$ 6,930,000		
Lammers Rd	I-205	Old Schulte Rd	widen 2L to 6L Parkway	\$ 9,310,000	73PP-047	\$ 1,641,613
Corral Hollow Rd	I-205	Grant Line Rd	widen 2L to 6L Arterial	\$ 2,800,000		
Corral Hollow Rd	Grant Line Rd	I 11th St	widen 4L to 6L Arterial	\$ 12,990,000		
Corral Hollow Rd	I 11th St	Schulte Rd	widen 4L to 6L Arterial	\$ 8,780,000	73103	\$ 2,323,100
Corral Hollow Rd	Schulte Rd	RR	widen 2L to 6L Parkway	\$ 4,800,000		
Corral Hollow Rd	RR	Valpico Rd	widen 2L to 4L Arterial	\$ 9,250,000	73PP-046	\$ 4,652,275
Corral Hollow Rd	Valpico Rd	Linne	widen 2L to 4L Arterial	\$ 10,120,000		
Corral Hollow Rd	Linne Rd	I-580 WB Ramp	widen 2L to 4L Arterial	\$ 15,750,000		
Corral Hollow Rd	I-580 EB Ramp	Southern City Limit	widen 2L to 4L Arterial	\$ 4,170,000		
Holly Dr	I 11th St	First St	restripe only	\$ 640,000		
Chrisman	Grant Line Rd	I 11th St	widen 2L to 6L Parkway	\$ 10,050,000		
Chrisman	I 11th St	Schulte Rd	widen 2L to 4L Parkway	\$ 11,710,000		
Chrisman	Schulte Rd	Valpico	widen 2L to 4L Parkway	\$ 11,910,000		
Grant Line	Byron Rd	Lammers Rd	widen 2L to 4L Arterial	\$ 2,810,000		
Grant Line	Lammers Rd	Naglee Rd	widen 4L to 6L Arterial	\$ 3,440,000		\$ 633,620
Grant Line	Parker Dr	Holly St	widen 2L to 4L undiv Arterial	\$ -	73052	
Grant Line	w/o Chrisman Rd	Chrisman Rd	widen 2L to 4L undiv Arterial	\$ 2,910,000		
Grant Line	Chrisman Rd	Paradise Rd	widen 2L to 4L undiv Arterial	\$ 2,150,000	73048	\$ 14,995,020
Grant Line	Paradise Rd	Banta Rd	widen 2L to 6L Arterial	\$ 4,340,000		
Lowell Dr	w/o Orchard	Corral Hollow Rd	widen 2L to 4L undiv Arterial	\$ 2,550,000		
Schulte Rd	MacArthur Dr	Chrisman Rd	widen 2L to 4L undiv Arterial	\$ 7,110,000		
Valpico Rd	east of Wilkinson Wy	Corral Hollow Rd	widen 2L to 4L Arterial	\$ 3,760,000	73PP-051	\$ 545,175
Valpico Rd	Corral Hollow Rd	w/o Sycamore Parkway	widen 2L to 4L Arterial	\$ 4,640,000		\$ 81,211
Valpico Rd	Tracy Blvd	Glenbriar Dr	widen 2L to 4L Arterial	\$ 4,580,000	73061 & 73095	\$ 4,709,785
MacArthur Dr	New Street	Schulte Rd	widen 2L to 4L Arterial	\$ 2,130,000		
Linne Rd	Corral Hollow Rd	Tracy Blvd	widen 2L to 6L Parkway	\$ 13,800,000	73PP-097	
Linne Rd	Tracy Blvd	w/o MacArthur Dr	widen 2L to 4L Parkway	\$ 8,270,000		\$ 744,671
Old Schulte Rd	Mountain House Pkwy	Hansen Rd	construct new 2L parkway	\$ 2,240,000		
Old Schulte Rd	Hansen Rd	Pavillion Ext	Reconstruct 2L Parkway	\$ 12,030,000		
<b>Segments Outside SOI Limits</b>						
Schulte Rd	New Street	Lammers Rd	new 4L undiv Arterial	\$ 4,100,000		
Valpico Rd	New Street	Lammers Rd	new 2L Arterial	\$ 6,770,000		
Valpico Rd	Lammers	east of Wilkinson Wy	widen 2L to 4L Arterial	\$ 7,380,000		
New East-West Street (south of Valpico)	Lammers Rd	Wilkinson Wy	new 2L Collector	\$ 390,000		
Hansen Rd	Pavillion Ext	Valpico Rd	new 2L Arterial	\$ 4,530,000		
Hansen Rd	Valpico Rd	Lammers Rd	new 2L Arterial	\$ 7,950,000		
New North-South Rd	Schulte	Old Schulte	new 2L Collector	\$ 20,000		
New North-South Rd	north of Schulte	Old Schulte	new 4L undiv Arterial	\$ 590,000		
Commerce Wy	north of Valpico Rd	Valpico Rd	new 2L Collector	\$ 400,000		
<b>Subtotal New and Widening (Including Segments Outside SOI)</b>				<b>\$ 463,520,000</b>		<b>\$ 34,748,264</b>
<b>Temporary Sidewalks/Bike Paths</b>				<b>\$ 9,891,680</b>		
<b>Other Funding Contribution (Gateway development)</b>				<b>\$ (2,373,197)</b>		
<b>CIP Funding</b>				<b>\$ (34,748,264)</b>		
<b>Total To Be Funded by TIF</b>				<b>\$ 436,290,219</b>		
Note: Structural costs (e.g. retaining walls) are not included. Traffic control systems and traffic signals are included in intersection or ITS costs. Costs include streetlight costs (\$16,000 per 250 ft) and utility coordination costs (\$20,000 for segments less than 2,500' or \$40,000 for segments > 2,500').						



## 5.5 Intelligent Transportation System

**Section 4.9** identified the future Horizon Year Intelligent Transportation System (ITS) infrastructure improvements. **Table 5.5** presents an estimate of the costs to implement these improvements. The projected ITS costs are estimated at approximately \$19 million.

**Table 5.5: Preliminary Cost Estimates for Intelligent Transportation System Infrastructure**

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
<b>FIBER OPTIC COMMUNICATION SYSTEM INSTALLATION (TRAFFIC MANAGEMENT IMPROVEMENTS ONLY)</b>					
1	Furnish and Install 3" Conduit (Including Pull Boxes)	LF	212,500	\$35	\$7,437,500
2	Furnish and Install 144 Strand Singlemode Fiber Optic Cable	LF	413,000	\$4	\$1,652,000
3	Signalized Intersection Upgrades (Includes Splice Vault/Enclosure/Communication Equipment/Controller & Cabinet Modifications)	EA	109	\$20,000	\$2,180,000
4	Furnish and Install CCTV Camera System (includes CCTV Camera, Cables, Mounting and Video Encoder)	EA	53	\$15,000	\$795,000
5	Furnish and Install DMS System (Including Display/Sign Structure/Pole/Foundation/Splice Vault/Cabinet/Communication Equipment). This TMP includes the use of DMS signs on trailers on an "as needed" basis. Future updates may reassess the use of standard DMS signs.	EA	0	\$130,000	\$0
6	Furnish and Install Field Communication Hub (Including Splice Vault/Enclosure/Communication Equipment/Cabinet)	EA	4	\$30,000	\$120,000
<b>SUBTOTAL</b>					<b>\$12,184,500</b>
<b>FIBER OPTIC COMMUNICATION SYSTEM INSTALLATION (PUBLIC WORKS DEPARTMENT)</b>					
7	PUBLIC WORKS DEPARTMENT Furnish and Install Two (2) Workstations (Including Fiber Optic Cable/Conduit/Splice Vault-Enclosure and Communication Equipment/Equipment Rack/Ethernet Switch/Fiber Distribution Unit/Miscellaneous)	LS	1	\$50,000	\$50,000
<b>SUBTOTAL</b>					<b>\$50,000</b>
<b>FIBER OPTIC COMMUNICATION SYSTEM INSTALLATION (WATER DEPARTMENT)</b>					
8	WATER TREATMENT PLANT Furnish and Install One (1) Workstation (Including Fiber Optic Cable/Conduit/Splice Vault-Enclosure and Communication Equipment/Equipment Rack/Ethernet Switch/Fiber Distribution Unit/Miscellaneous)	LS	1	\$45,000	\$45,000
<b>SUBTOTAL</b>					<b>\$45,000</b>
<b>FIBER OPTIC COMMUNICATION SYSTEM INSTALLATION (PARKS/LIBRARY)</b>					
8	TRACY SPORTS COMPLEX Furnish and Install One (1) Workstation (Including Fiber Optic Cable/Conduit/Splice Vault-Enclosure and Communication Equipment/Equipment Rack/Ethernet Switch/Fiber Distribution Unit/Miscellaneous)	LS	1	\$50,000	\$50,000
9	EL PESCADERO PARK Furnish and Install One (1) Workstation (Including Fiber Optic Cable/Conduit/Splice Vault-Enclosure and Communication Equipment/Equipment Rack/Ethernet Switch/Fiber Distribution Unit/Miscellaneous)	LS	1	\$50,000	\$50,000
10	TRACY BALL PARK Furnish and Install One (1) Workstation (Including Fiber Optic Cable/Conduit/Splice Vault-Enclosure and Communication Equipment/Equipment Rack/Ethernet Switch/Fiber Distribution Unit/Miscellaneous)	LS	1	\$50,000	\$50,000
11	POWERS PARK Furnish and Install One (1) Workstation (Including Fiber Optic Cable/Conduit/Splice Vault-Enclosure and Communication Equipment/Equipment Rack/Ethernet Switch/Fiber Distribution Unit/Miscellaneous)	LS	1	\$50,000	\$50,000

**Table 5.5 (Cont.): Preliminary Cost Estimates for Intelligent Transportation System Infrastructure**

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST	COST
12	LINCOLN PARK Furnish and Install One (1) Workstation (Including Fiber Optic Cable/Conduit/Splice Vault-Enclosure and Communication Equipment/Equipment Rack/Ethernet Switch/Fiber Distribution Unit/Miscellaneous)	LS	1	\$50,000	\$50,000
13	TRACY PUBLIC LIBRARY Furnish and Install One (1) Workstation (Including Fiber Optic Cable/Conduit/Splice Vault-Enclosure and Communication Equipment/Equipment Rack/Ethernet Switch/Fiber Distribution Unit/Miscellaneous)	LS	1	\$50,000	\$50,000
<b>SUBTOTAL</b>					<b>\$300,000</b>
<b>FIBER OPTIC COMMUNICATION SYSTEM INSTALLATION (FIRE DEPARTMENT/STATIONS)</b>					
14	TRACY FIRE DEPARTMENT BUILDING Furnish and Install One (1) Workstation (Including Fiber Optic Cable/Conduit/Splice Vault-Enclosure and Communication Equipment/Equipment Rack/Ethernet Switch/Fiber Distribution Unit/Miscellaneous)	LS	1	\$40,000	\$40,000
15	TRACY FIRE STATION NO. 1 Furnish and Install One (1) Workstation (Including Fiber Optic Cable/Conduit/Splice Vault-Enclosure and Communication Equipment/Equipment Rack/Ethernet Switch/Fiber Distribution Unit/Miscellaneous)	LS	1	\$40,000	\$40,000
16	TRACY FIRE STATION NO. 6 Furnish and Install One (1) Workstation (Including Fiber Optic Cable/Conduit/Splice Vault-Enclosure and Communication Equipment/Equipment Rack/Ethernet Switch/Fiber Distribution Unit/Miscellaneous)	LS	1	\$40,000	\$40,000
17	TRACY FIRE STATION NO. 7 Furnish and Install One (1) Workstation (Including Fiber Optic Cable/Conduit/Splice Vault-Enclosure and Communication Equipment/Equipment Rack/Ethernet Switch/Fiber Distribution Unit/Miscellaneous)	LS	1	\$40,000	\$40,000
<b>SUBTOTAL</b>					<b>\$160,000</b>
<b>CITY HALL - TRAFFIC MANAGEMENT CENTER</b>					
18	TRAFFIC MANAGEMENT CENTER (TMC) Furnish and Install TMC (Including Fiber Optic Cable/Conduit/Splice Vault-Enclosure and Video Wall/Communication Equipment & Software/Furniture)	LS	1	\$400,000	\$400,000
<b>SUBTOTAL</b>					<b>\$400,000</b>
<b>OTHER COSTS ASSOCIATED WITH INTELLIGENT TRANSPORTATION SYSTEM</b>					
19	Testing	LS	1	\$50,000	\$50,000
20	Training	LS	1	\$20,000	\$20,000
21	System Integration	LS	1	\$50,000	\$50,000
<b>SUBTOTAL</b>					<b>\$120,000</b>
<b>TOTAL - (ALL SUBTOTALS)</b>					<b>\$11,259,500</b>
<b>45% CONTINGENCIES</b>					<b>\$5,966,775</b>
<b>TOTAL - (ALL SUBTOTALS WITH CONTINGENCIES)</b>					<b>\$17,226,275</b>

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