

**CITY OF GILROY
TRAFFIC CIRCULATION MASTER PLAN**

GILROY, CALIFORNIA



Prepared For

City of Gilroy Community Development Department
Gilroy, California

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EXECUTIVE SUMMARY

The City of Gilroy General Plan was updated during 2001/2002. The General Plan update included an update of the Circulation Element, which was called the *Citywide Transportation Study, August 2001*.

This document is the City of Gilroy Traffic Circulation Master Plan and provides more detailed information with respect to concepts of the improvements required to the transportation system as defined in the Circulation Element. Quantities and cost estimates were also estimated as part of compiling the Gilroy Traffic Circulation Master Plan.

Recommended improvements to the road network include roadway system improvements, intersection system improvements and bridge improvements. The *Citywide Transportation Study, August 2001* provides basic transportation system information that served as input to the City of Gilroy Traffic Circulation Master Plan. The information includes roadway classification, road network development and traffic volumes.

The objective of the Traffic Circulation Master Plan is to provide conceptual design detail and cost estimates of the improvements required to the Gilroy transportation network. The improvements would be required to accommodate the projected demand for the transportation system to meet General Plan build-out conditions. The detailed objectives are as follows:

- ❑ Establish transportation system design and planning criteria
- ❑ Evaluate the existing transportation system
- ❑ Perform a system wide analysis of future General Plan Buildout needs
- ❑ Determine the necessary improvements to support General Plan Buildout
- ❑ Develop quantities and cost estimates in 2003 Dollars for identified improvements

The project study area land uses, street network and traffic volumes correspond with the "Proposed Plan" alternative described in the General Plan update.

Gilroy lies at the crossing of Highway 101 and State Highway 152, giving it access to the San Francisco Bay Area, San Benito, Monterey and Santa Cruz Counties. Monterey Road and Santa Teresa Boulevard serve as expressways and link the City of Gilroy to San Martin and Morgan Hill. Gilroy's current General Plan is to allow growth around the existing city with commercial and industrial developments in the east, and residential and mixed land-uses to the north, south and west. The population is expected to grow as indicated below.

<u>Planning Year</u>	<u>Estimated Population</u>
2010	56,407
2020	65,082
2030	73,606
2040	82,136



The development of the City will result in an increase in vehicular trips. Although many work trips are made out of the City, additional development will generate work, shopping, school and recreational trips on the network and the existing roadways and intersections would have to be upgraded to provide in the future transportation needs of Gilroy.

Build-out daily traffic volumes and peak hour turning movements at intersections are used as the basis for analyzing and designing required improvements for the roadways and intersections. Roadway improvements also include pedestrian and roadway bike facilities. The level of service criteria that was used in the analysis is Level of Service C for most facilities west of Highway 101 and Level of Service D for all facilities east of Highway 101. The following references were used in the analysis and evaluation of projected traffic conditions in the Master Plan.

Trip Generation:	Institute of Traffic Engineers Trip Generation Manual, 6 th Edition, 1997
Trip Distribution/Assignment:	TRAFFIX Software, Version 7.5
Level of Service Standard:	City of Gilroy General Plan, adopted June 2002
Geometrics:	Caltrans Standards, dated July 2002
Level of Service Evaluation:	Highway Capacity Manual, 2000

The proposed “660 Development” lies east of the outlets in the City of Gilroy and comprises an open space total of 663.79 acres and is zoned as Campus Industrial. This development is expected to generate approximately 40,000 daily trips, which would be significant and would require substantial roadway improvements. The impact of these trips on the Gilroy road network was analyzed separately from the TIF. Detail regarding the road network impacts of the “660” is included in this report.

Roadway Segment Improvements

As the City grows, the road network will need to be expanded as well. To accommodate land use development in a structured manner, it is important to develop the road network in a hierarchal manner. The hierarchy of roadways planned for the city includes Highway 101, widening and expansion and provision of new expressways, arterials, collectors and local streets. Improvements include the construction of new roadways and widening of existing roadways based on estimated buildout traffic volumes. Plan views and cross sections for the future roadways and intersections were determined based on the existing roadway classification and General Plan Buildout daily and peak hour traffic volumes.

Intersection Improvements

Roadways also transport goods and services which benefit the economy. Based on General Plan Buildout peak hour movements, intersections were designed to minimize delays. The



development of the City and expansion of the road network will require extensive intersection improvements. Intersection improvements include the construction of new intersections and upgrading existing intersections through signalization and lane geometry modifications. Pedestrian facilities, bike facilities and storm drain facilities are included in the improvements. Plan views for the future intersections were determined based on the existing roadway classification and General Plan Buildout peak hour traffic volumes.

Bridge and Culvert Improvements

Various existing and future bridges have been identified for widening or new construction in this study. This is due to new roadway or widenings that cross over water bodies and grade separations at roads and railroad tracks. The typical cross sections for the roadways were used to determine the bridge dimension in the direction of vehicular travel. Pedestrian and bike facilities have also been included as part of the bridge improvements. An allowance for traffic calming measures is included as part of the Camino Arroyo Bridge south of Sixth Street.

Quantities

As part of the Gilroy Traffic Circulation Master Plan, quantities were estimated for materials and services for the recommended improvements. These quantities were converted into costs to estimate the fiscal impacts on the City's budget.

Cost Estimates

Table I is a summary of the estimated City of Gilroy costs for the road network improvements. Tables II to IV show the cost breakdown of improvements for road network segments, intersections and bridges accordingly.

CIB Budget and Miscellaneous Transportation System Projects Cost Estimates

The projects listed within the CIB budget correspond to the same projects in the Master Plan except for certain miscellaneous. These transportation system projects within the City are currently being constructed, or are part of a Grant Program, or part of a future reimbursement program. However, the projects do form part of the Traffic Impact Fee Program and are included in the Master Plan as miscellaneous projects indicated in Table V. The CIB budget with the 660 projects and without the 660 projects follows Table V.



Table I: Traffic Circulation Master Plan Improvement Cost	
Item	Estimated Improvement Cost
Road Network Segments	\$98,899,861
Intersections	\$98,402,604
Bridges	\$62,562,302
Miscellaneous projects	\$17,137,809
TOTAL	\$277,002,576

Table II indicates the Segment Improvement Costs for the individual locations.

Table II: Segment Improvement Cost					
Drawing #	Segments		660 Improvement Cost	TIF Improvement Cost	Total Improvement Costs
1	Day Road	w/o Santa Teresa	\$0	\$0	\$0
2	Cohansey	Murray - Santa Teresa	\$0	\$0	\$0
3	Rancho Hills	Dovetail - Day	\$0	\$0	\$0
4	Las Animas	West of Murray and Monterey	\$0	\$0	\$0
5	Las Animas	East of San Ysidro and Marcella	\$0	\$0	\$0
6	First	Church - Monterey	\$0	\$0	\$0
7	First	Church - Santa Teresa	\$0	\$0	\$0
8	Fitzgerald	Santa Teresa - Monterey	\$0	\$1,833,011	\$1,833,011
9	Monterey 1	Fitzgerald - Ronan	\$0	\$14,982,568	\$14,982,568
10	Monterey 2	Luchessa - Highway 101	\$0	\$837,367	\$837,367
11	Masten	Monterey - Highway 101	\$0	\$3,211,937	\$3,211,937
12	Santa Teresa 1	Fitzgerald - Longmeadow	\$0	\$21,410,472	\$21,410,472
13	Santa Teresa 2	First - Highway 101	\$0	\$17,665,938	\$17,665,938
14	Buena Vista 1	Santa Teresa - Monterey	\$0	\$5,511,101	\$5,511,101
15	Buena Vista 2	Monterey - Highway 101	\$0	\$0	\$0
16	Farrell	Monterey - Wren	\$0	\$0	\$0
17	Wren	Farrell - Buena Vista	\$0	\$0	\$0
18	Luchessa 1	Santa Teresa - Greenfield	\$0	\$0	\$0
19	Luchessa 2	Thomas - Monterey	\$0	\$1,480,098	\$1,480,098
20	Luchessa 4	Monterey - Chestnut	\$0	\$0	\$0
21	Luchessa 5	Chestnut - Wellington	\$666,737	\$0	\$666,737
22	Tenth	Santa Teresa - Uvas Park	\$0	\$0	\$0
23	Thomas	Santa Teresa - Luchessa	\$0	\$0	\$0
24	Rucker	Santa Teresa - Murray	\$0	\$0	\$0



25	Leavesley	Arroyo Circle - New Road	\$0	\$2,111,346	\$2,111,346
26	Kern	North of Mantelli - Cohansey	\$0	\$0	\$0
27	San Ysidro	s/o Las Animas - No Name Uno	\$0	\$0	\$0
28	No Name Uno	Las Animas - Buena Vista	\$0	\$2,413,142	\$2,413,142
29	Camino Arroyo 1	Southside - Gilman	\$185,469	\$2,106,770	\$2,292,239
30	Pacheco Pass	Highway 101 - City limit	\$0	\$1,279,200	\$1,279,200
31	Hecker Pass	Santa Teresa - Bonfante Gardens	\$0	\$8,526,161	\$8,526,161
32	Wellington 1	Leavesley - Gilman	\$0	\$0	\$0
33	Wellington 2	Gilman - Luchessa	\$1,916,884	\$0	\$1,916,884
34	Wellington 3	Luchessa - Southside	\$0	\$0	\$0
35	Murray	Las Animas - Masten	\$0	\$0	\$0
36	Gilman	Arroyo Circle - Wellington	\$1,319,589	\$0	\$1,319,589
37	Church	Farrell - Buena Vista	\$0	\$0	\$0
38	Southside	Brem - Wellington	\$0	\$0	\$0
39	Day Road East	Santa Teresa - Monterey	\$0	\$0	\$0
40	Buena Vista	No Name Uno - Marcella	\$0	\$0	\$0
41	Marcella	Buena Vista - Leavesley	\$0	\$0	\$0
42	Marcella	Leavesley - Wellington	\$0	\$0	\$0
43	Uvas Park	Wren - Laurel	\$0	\$2,166,646	\$2,166,646
44	Tenth 2	Monterey - Alexander	\$0	\$343,845	\$343,845
45	Highway 101 SB Off	at Leavesley	\$1,497,508	\$0	\$1,497,508
46	Highway 101 NB On	at Leavesley	\$1,549,648	\$0	\$1,549,648
47	Highway 101 NB Off	at Tenth	\$1,873,248	\$0	\$1,873,248
48	Highway 101 NB Off	at Monterey	\$1,418,713	\$0	\$1,418,713
49	Highway 101 SB On	at Monterey	\$0	\$1,400,259	\$1,400,259
50	Camino Arroyo 2	Gilman - Arroyo Circle	\$0	\$1,192,206	\$1,192,206
		TOTAL	\$10,427,796	\$88,472,067	\$98,899,861



Table III indicates the Intersection Improvement Costs for the individual locations.

Table III: Intersection Improvement Cost				
No.	Intersection	660 Improvement Cost	TIF Improvement Cost	Total Improvement Cost
1	First/Church	\$0	\$260,791	\$260,791
2	First/Monterey	\$0	\$851,546	\$851,546
3	Church/Sixth	\$0	\$392,975	\$392,975
4	Luchessa/Princevalle	\$0	\$646,808	\$646,808
5	Wren/Welburn	\$0	\$449,569	\$449,569
6	Mantelli/Hirasaki	\$0	\$469,702	\$469,702
7	Mantelli/Kern	\$0	\$452,759	\$452,759
8	Mantelli/Wren	\$0	\$635,757	\$635,757
9	Mantelli/Church	\$0	\$417,812	\$417,812
10	Kern/Welburn	\$0	\$390,722	\$390,722
11	Kern/First	\$0	\$412,097	\$412,097
12	Santa Teresa/Thomas	\$0	\$836,720	\$836,720
13	Wren/Third	\$0	\$517,607	\$517,607
14	Santa Teresa/Fitz.	\$0	\$1,770,141	\$1,770,141
15	Monterey/Day	\$0	\$824,123	\$824,123
16	Farell/Church	\$0	\$389,739	\$389,739
17	Farell/Wren	\$0	\$395,637	\$395,637
18	Third/Church	\$0	\$391,501	\$391,501
19	Third/Miller	\$0	\$17,825	\$17,825
20	Third/Westwood	\$0	\$17,010	\$17,010
21	Monterey/Masten	\$0	\$1,949,055	\$1,949,055
22	Monterey/Luchessa	\$920,744	\$1,123,186	\$2,043,930
23	Sixth/Wren	\$0	\$274,965	\$274,965
24	Sixth/Miller	\$0	\$19,026	\$19,026
25	Sixth/Chestnut	\$0	\$344,099	\$344,099
26	Luchessa/Chestnut	\$0	\$364,027	\$364,027
26B-2	Luchessa/Thomas Signal	\$0	\$830,937	\$830,937
27	Masten/SB 101 Ramps	\$0	\$1,745,314	\$1,745,314
28	Masten/NB 101 Ramps	\$0	\$1,377,608	\$1,377,608



29	Uvas Park/Miller	\$0	\$12,597	\$12,597
30	Tenth/Uvas Park	\$0	\$624,580	\$624,580
31	Uvas Park/Wren	\$0	\$481,909	\$481,909
32	Cohansey/Monterey	\$0	\$860,272	\$860,272
33	Cohansey/Murray	\$0	\$0	\$0
34	Buena Vista/Monterey (with Bridge)	\$0	\$18,326,368	\$18,326,368
35	Buena Vista/SB Ramps (with Overpass)	\$598,751	\$12,271,721	\$12,870,472
35A	Highway 101 NB Ramps/No Name Uno	\$218,712	\$8,140,951	\$8,359,663
36	Tenth/Luchessa	\$0	\$404,894	\$404,894
37	Buena Vista/ Santa Teresa	\$154,301	\$1,825,294	\$1,979,594
38	Buena Vista/Wren	\$0	\$1,483,471	\$1,483,471
39	Buena Vista/Murray	\$0	\$1,312,126	\$1,312,126
40	Monterey/Sports Park	\$0	\$2,171,002	\$2,171,002
41	Wellington/Highway 152	\$597,702	\$2,018,530	\$2,616,232
42	Camino Arroyo/152	\$1,014,940	\$0	\$1,014,940
43	Santa Teresa/Sunrise	\$169,202	\$1,244,967	\$1,414,169
44	Santa Teresa/Club	\$0	\$1,689,929	\$1,689,929
45	Tenth/Santa Teresa	\$0	\$1,406,642	\$1,406,642
46	Gilman/Camino Arroyo	\$328,745	\$1,249,334	\$1,578,079
47	Ballybunion/Santa Teresa	\$0	\$1,365,627	\$1,365,627
48	Cohansey/Hirasaki	\$0	\$362,954	\$362,954
49	Cohansey/Wren	\$0	\$455,474	\$455,474
50	Cohansey/Church	\$0	\$379,684	\$379,684
51	Camino Arroyo/Holloway	\$0	\$457,083	\$457,083
52	Las Animas /Monterey	\$0	\$1,578,247	\$1,578,247
53	Santa Teresa/Third	\$0	\$1,345,416	\$1,345,416
54	Tenth St/Hwy 101	\$0	\$496,875	\$496,875
55	Wellington/Leavesley	\$884,800	\$405,600	\$1,290,400
56	Marcella/Leavesley	\$465,400	\$1,026,200	\$1,491,600
57	Wellington/Marcella	\$1,223,000	\$0	\$1,223,000
58	Wellington/Gilman	\$1,232,100	\$87,400	\$1,319,500
59	Camino Arroyo/Luchessa	\$0	\$1,413,600	\$1,413,600
60	Wellington/Luchessa	\$1,036,300	\$0	\$1,036,300
61	No Name Uno/Buena Vista	\$160,000	\$762,900	\$922,900
62	Las Animas/No Name Uno	\$505,300	\$1,449,400	\$1,954,700
63	Tenth St (Highway 152 East)/Hwy 101 NB	\$860,200	\$1,043,200	\$1,903,400
64	Tenth St (Highway 152 East)/Hwy 101 SB	\$0	\$388,300	\$388,300
65	Monterey/Hwy 101 SB	\$0	\$63,700	\$63,700
66	Santa Teresa/Highway 152 West (First St)	\$0	\$656,200	\$656,200



67	Wren/First	\$0	\$200,900	\$200,900
TOTAL		\$10,370,198	\$88,032,406	\$98,402,604

- Notes:
1. Intersection 33 requires no TIF related improvement
 2. No drawing was prepared for 52. City staff calculated quantities
 3. #54 includes sidewalk improvements only
 4. Intersection 34 includes the cost of constructing a bridge
 5. Intersection 35 includes the cost of constructing an overpass

Table IIIa: Alternate Analysis: Intersection Improvement Cost

No.	Intersection	660 Improvement Cost	TIF Improvement Cost	Total Improvement Cost
26B-1	Luchessa/Thomas Traffic Circle	\$0	\$824,114	\$824,114

- Notes:
1. This intersection was also analyzed with a traffic circle as control



Table IV indicates the Bridge Improvement Costs at the individual locations.

Table IV: Bridge Improvement Cost						
Drawing #No.	Bridge/Culvert on Segment	From	To	660 Improvement Cost	TIF Improvement Cost	Total Improvement Cost
1	Monterey	south of	Las Animas (Ronan Channel)	\$0	\$0	\$0
2	Santa Teresa	north of	Cohansey (Ronan Channel)	\$0	\$0	SEE NOTE
3	Santa Teresa	south of	Longmeadow	\$0	\$0	\$0
4	Santa Teresa	south of	Third	\$0	\$5,211,000	\$5,211,000
5	Santa Teresa	south of	Miller	\$0	\$0	\$0
6	Camino Arroyo	across	Ronan Channel	\$1,957,500	\$4,455,000	\$6,412,500
7	Cohansey	west of	Kern (Lions Creek)	\$0	\$1,425,600	\$1,425,600
8	Thomas	north of	Santa Teresa	\$0	\$0	\$0
9	Tenth	west of	Uvas Park	\$0	\$5,359,250	\$5,359,250
10	Farrell	west of	Church	\$0	\$1,417,500	\$1,417,500
11	Murray	south of	Las Animas (Ronan Channel)	\$0	\$0	\$0
12B2	Luchessa	east of	Thomas (Signal)	\$0	\$5,741,145	\$5,741,145
13	Masten	east of	Highway 101 to west of 101	\$0	\$4,830,000	\$4,830,000
14	Buena Vista	east of	Highway 101 to west of 101	\$0	\$3,123,750	\$3,123,750
15	Wellington	across	Ronan Channel	\$4,665,600	\$0	\$4,665,600
16	Hecker Pass	across	Uvas Creek	\$0	\$3,628,800	\$3,628,800
17	Buena Vista	at	Monterey Road	\$0	\$0	INCLUDED IN INTERSECTION #34
18	Southside	at	Rail road	\$0	\$9,213,027	\$9,213,027
19	Buena Vista SB On	at	Weigh station	\$0	\$0	INCLUDED IN INTERSECTION #35
20	Tenth	at	Highway 101	\$1,610,000	\$1,610,000	\$3,220,000
21	Cohansey	at	Llagas Creek	\$0	\$1,425,600	\$1,425,600
22	Chestnut	at	Lewis Street (Miller Slough)	\$0	\$1,073,405	\$1,073,405
23	Buena Vista	across	Llagas Creek west of Wren	\$0	\$1,231,200	\$1,231,200
24	Day Road East	across	Llagas Creek	\$0	\$899,100	\$899,100
25	Wren	across	Llagas Creek south of Fitzgerald	\$0	\$843,750	\$843,750
26	Day Road West	west of	Santa Teresa	\$0	\$421,875	\$421,875
27	Santa Teresa	north of	Mantelli	\$0	\$0	\$0
28	Kern	across	Ronan Channel	\$0	\$0	\$0
29	Wren	across	Ronan Channel	\$0	\$0	\$0
30	Wellington	across	Princevalle Channel	\$518,400	\$1,123,200	\$1,641,600
31	Camino Arroyo	across	Princevalle Channel	\$0	\$777,600	\$777,600
32	Church	across	Ronan Channel	\$0	\$0	\$0
TOTAL				\$8,751,500	\$53,810,802	\$62,562,302



*Note

- 1) Bridge 2 - shoulders will be narrowed to avoid bridge widening
- 2) Bridge 20 & 21 estimated by City staff
- 3) Bridge 12B-1 - based on using a traffic circle on Luchessa & Thomas. If signal is used (12B-2), will need to widen bridge and purchase more ROW

Table IVa: Alternate Analysis: Bridge Improvement Cost						
Drawing #No.	Bridge/Culvert on Segment	From	To	660 Improvement Cost	TIF Improvement Cost	Total Improvement Cost
12B1	Luchessa	east of	Thomas (Traffic Circle)	\$0	\$2,916,000	\$2,916,000

Notes: 1. This intersection was also analyzed with a traffic circle as control

Table V: Miscellaneous Transportation System Projects: Improvement Cost		
No.	Project	Improvement Cost
a	Intersection/Masten / Monterey Rd Improvements	\$50,000
b	Segment/Ph II, Murray to San Ysidro Credits	\$414,892
c	Sidewalk/Curb&Gutter	\$67,301
d	Bridge, Church at Miller Slough	\$414,264
e	Bridge, Welburn at Miller Slough	\$432,549
f	Segmt/Rdwy Widen, Santa Teresa I, 1st to Longmeadow (R1)	\$13,517,337
g	Segment/Roadway Ext., Mantelli	\$1,241,466
h	Segmt/Med Hardscp Imp, Monterey, Luchessa to Hwy 101	\$860,000
i	Segment/Roadway Widen, Mantelli (striping only)	\$20,000
j	TDA Bikeway Improvement	\$120,000
TOTAL		\$17,137,809

Notes: These projects were not analyzed or evaluated as part of the Master Plan because they are either under construction, part of a Grant Program, or part of a future reimbursement program. However they do form part of the TIF program and are thus indicated.



CAPITAL IMPROVEMENT BUDGET SUMMARY

2003 - 2038

WITHOUT 660 TRAFFIC IMPACT

FUND 433

P R O J E C T S	"BUILDOUT" TOTAL
EXPENDITURE	
Class 43 - Capital Outlay:	
4310 Land:	
Widen Welburn	
Widen Santa Teresa	258,402
Widen Welburn II	1,197,000
Total Land	1,455,402
4340 Improvements:	
Reimbursements	33,575,372
Bridge, Tenth @ Uvas Creek	5,359,250
Intersection, Ballybunion / Santa Teresa	1,365,627
Intersection, Cohansey/Church	379,684
Intersection, Cohansey/Hirosaki	362,954
Intersection, Cohansey/Wren	455,474
Intersection, Gilman / Arroyo Circle	1,249,334
Intersection, Santa Teresa / Club Drive	1,689,929
Intersection, Santa Teresa / Sunrise	1,244,967
Intersection, Tenth/Santa Teresa	1,406,642
Intersection, Third / Santa Teresa	1,345,416
Intersection, Wellington / 152	2,018,530
Intersection, Camino Arroyo / 152	449,124
Intersection/10th Street Interchange Sidewalk Only	496,875
Intersection/Masten / Monterey Rd Improvements	50,000
Intersection, Wren / Third (M11)	517,607
Intersection Wren & First	200,900
Segment/Ph II, Murray to San Ysidro Credits	414,892
Segment/Roadway Ext., Uvas Park from Wren to Laurel	2,166,646
Segment/Roadway Ext., Buena Vista from Santa Teresa to HWY 101	5,511,101
Segment/Roadway Ext., Camino Arroyo (152 South)	2,106,770
Segment/Roadway Ext., Camino Arroyo (Gilman-152)	1,192,206
Segment/Roadway Ext., East Luchessa from Chestnut to Wellington	
Segment/Roadway Widening, West Luchessa from Thomas to Monterey	1,480,098
Segment Leavesley from Arroyo Circle to New Road	2,111,346



Sidewalk/Curb&Gutter		67,301
Bridge, Camino Arroyo at Ronan Channel		4,455,000
Bridge, Tenth @ Uvas Creek		
Bridge, Church at Miller Slough		433,117
Bridge, Welburn at Miller Slough		413,695
Bridge, Santa Teresa @ Uvas		5,211,000
Bridge/Culvert NW Quad Cohansey @ Llagas		1,425,600
Bridge, Farrell at Llagas		1,417,500
Bridge, Luchessa at Uvas Creek		5,741,145
Bridge/Inter. @ Masten - fr E 101 to W 101		4,830,000
Bridge/US 101 Int.Ch., Buena Vista		3,123,750
Bridge @ Wellington acr. Ronan Channel		
Bridge Widen Hecker Pass at Uvas Creek		3,628,800
Bridge @ Southside & Railroad		9,213,027
Bridge/US 101 Interchange, Tenth		1,610,000
Bridge/Box Culvert NW Quad Cohansey @ Llagas Creek		1,425,600
Bridge, Chestnut at Miller Slough		1,073,405
Bridge, Buena Vista across Llagas Creek West of Wren		1,231,200
Bridge, Day Road East at Llagas Creek		899,100
Bridge, Wren at Llagas Creek South of Fitzgerald		843,750
Bridge, Day Road West - West of Santa Teresa		421,875
Bridge, Wellington at Princevalle Channel		1,123,200
Bridge, Camino Arroyo at Princevalle Channel		777,600
Intersection, Ballybunion / Santa Teresa		
Intersection, Cohansey/Church		
Intersection, Cohansey/Hirosaki		
Intersection, Cohansey/Wren		
Intersection, Gilman / Arroyo Circle		
Intersection, Santa Teresa / Club Drive		
Intersection, Santa Teresa / Sunrise		
Intersection, Tenth/Santa Teresa		
Intersection, Third / Santa Teresa		
Intersection, Wellington / 152		
Intersection, Camino Arroyo / 152		
Intersection/10th Street Inter. sidewalk only		
Intersection/Masten/Monterey Rd Imp		
Intersection/First / Church		260,791
Intersection, Luchessa / Princevalle (R7)		646,808
Intersection @ First & Monterey		851,546
Intersection, Church / Sixth (R5)		392,975
Intersection, Wren / Welburn (R9)		449,569
Intersection, Mantelli / Hirasaki		469,702
Intersection, Mantelli / Kern (M7)		452,759
Intersection, Mantelli / Wren (M6)		635,757



Intersection, Mantelli / Church (M5)	417,812
Intersection, Kern / Welburn (M8)	390,722
Intersection, Kern / First (M9)	412,097
Intersection, Santa Teresa /Thomas	836,720
Intersection, Wren / Third (M11)	
Intersection, Santa Teresa / Fitzgerald (R6)	1,770,141
Intersection, Monterey / Day Rd (R10)	824,123
Intersection, Farrell / Church	389,739
Intersection, Farrell / Wren	395,637
Intersection, Third / Church	391,501
Intersection, Third / Miller	17,825
Intersection, Third / Westwood	17,010
Intersection, Monterey / Masten	1,949,055
Intersection, Monterey /Luchessa	1,123,185
Intersection, Sixth / Wren	274,965
Intersection, Sixth / Miller	19,026
Intersection, Sixth / Chestnut	344,099
Intersection, Luchessa / Chestnut	364,027
Intersection, Luchessa / Thomas	830,937
Intersection, Masten / SB 101 Ramps	1,745,314
Intersection, Masten / NB 101 Ramps	1,377,608
Intersection, Uvas Park / Miller	12,597
Intersection, Tenth / Uvas Park	624,580
Intersection, Uvas Park / Wren	481,909
Intersection, Cohansey / Monterey	860,272
Intersection, Buena Vista/Monterey & Grade Sep.	18,326,368
Intersection, Buena Vista / SB 101 Ramps & Overpass	12,271,721
Intersection, Buena Vista/NB 101 Ramps (Inter. & bridge)	8,140,951
Intersection, Tenth / Luchessa	404,894
Intersection, Buena Vista / Santa Teresa	1,825,294
Intersection, Buena Vista / Wren	1,483,471
Intersection, Buena Vista / Murray	1,312,126
Intersection, Monterey /Thms Sports Cmplx	2,171,002
Intersection @ Camino Arroyo & Holloway	457,083
Intersection @ Las Animas & Monterey	1,578,247
Intersection Leavesley &	405,600
Intersection Leavesley &	1,026,200
Intersection Marcella &	
Intersection Gilman &	87,400
Intersection Camino Arroyo &	1,413,600
Intersection Wellington &	
Intersection Buena Vista &	762,900
Intersection No Name Uno &	1,449,400
Intersection 101 Northbound Terminal	1,043,200
Intersection 101 Southbound Terminal	388,300
Intersection 101 Southbound Terminal	63,700



Intersection Santa Teresa & 152/First St		656,200
Intersection Wren & First		
Segment/Ph II, Murray to San Ysidro Credits		
Segment/Roadway Ext., Uvas Pk fr Wren to Laurel		
Segmt/Rdwy Ext. Buena Vista fr Santa Teresa to Hwy 101		
Segment/Roadway Ext., Camino Arroyo (152 South)		
Segment/Roadway Ext., Camino Arroyo (Gilman-152)		
Segmt/Rdwy Ext., E.Luchessa fr Chestnut to Wellington		
Segmt/Rdwy Widen, W Luchessa fr Thomas to Monterey		
Segment Leavesley from Arroyo Circle to New Road		
Segmt/Rdwy Widen, Santa Teresa I, 1st to Longmeadow (R1)		13,517,337
Segment/Roadway Ext., Mantelli		1,241,466
Segmt/Med Hardscp Imp, Monterey, Luchessa to Hwy 101		860,000
Segment/Roadway Widen, Mantelli (striping only)		20,000
Segmt/Rdwy Widen, Monterey fr Fitzgerald to Ronan		14,982,568
Segmt/Rdwy Widen, Monterey fr Luchessa to Hwy 101		837,367
Segment/Santa Teresa - from Fitzgerald to First Street		21,410,472
Segment/Santa Teresa - from First to HWY 101		17,665,938
Segment Fitzgerald from Santa Teresa to Monterey		1,833,011
Segment Hecker Pass from Santa Teresa to Bonfante		8,526,161
Segmt/Rdwy Widen, Masten fr Monterey to HWY 101		3,211,937
Segment Gilman from Arroyo Circle to Wellington		
Segmt No Name Uno fr Las Animas to Buena Vista		2,413,142
Segment Pacheco Pass from 101 to City Limit		1,279,200
Segment Wellington from Gilman to Luchessa		
Segmt/Rdwy Widen, Tenth fr Monterey Rd to Alexander		343,845
Segment Hwy 101 from SB offramp to Leavesley		
Segment Hwy 101 from NB offramp to Leavesley		
Segment Hwy 101 from NB offramp to 10th		
Segment Hwy 101 from NB offramp to Monterey		
Segment Hwy 101 from SB offramp to Monterey		1,400,259
TDA Bikeway Improvement		120,000
Total Improvements		247,902,205
Total Class 43		249,357,607



CAPITAL IMPROVEMENT BUDGET SUMMARY

2003 - 2038

WITH 660 TRAFFIC IMPACT

FUND 433

P R O J E C T S	"BUILDOUT" TOTAL
EXPENDITURE	
Class 43 - Capital Outlay:	
4310 Land:	
Widen Welburn	
Widen Santa Teresa	258,402
Widen Welburn II	1,197,000
Total Land	1,455,402
4340 Improvements:	
Reimbursements	36,089,043
Intersection/Masten / Monterey Rd Improvements	50,000
Segment/Ph II, Murray to San Ysidro Credits	414,892
Sidewalk/Curb&Gutter	67,301
Bridge, Church at Miller Slough	414,264
Bridge, Welburn at Miller Slough	432,549
Segmt/Rdwy Widen, Santa Teresa I, 1st to Longmeadow (R1)	13,517,337
Segment/Roadway Ext., Mantelli	1,241,466
Segmt/Med Hardscp Imp, Monterey, Luchessa to Hwy 101	860,000
Segment/Roadway Widen, Mantelli (striping only)	20,000
TDA Bikeway Improvement	120,000
Total Improvements	277,002,574
Total Class 43	278,457,976



1. INTRODUCTION

The City of Gilroy General Plan was updated during 2001/2002. The General Plan update included an update of the Circulation Element, which was called the *Citywide Transportation Study, August 2001*.

This document is the City of Gilroy Traffic Circulation Master Plan and provides more detailed information with respect to concepts of the recommended improvements required to the transportation system as defined in the Circulation Element. Quantities and cost estimates were also estimated as part of compiling the Gilroy Traffic Circulation Master Plan.

1.1 Study Objective

The objective of the Traffic Circulation Master Plan is to provide conceptual design detail and cost estimates of the improvements required to the Gilroy transportation network. The improvements would be required to accommodate the projected demand for the transportation system to meet General Plan Buildout conditions. It includes roadways, intersections and bridges that are included in the Traffic Impact Fee program of the City. The details of the Master Plan are as follows:

- Establish transportation system design and planning criteria
- Evaluate the existing transportation system
- Perform a system wide analysis of future General Plan Buildout needs
- Determine the necessary improvements to support General Plan Buildout
- Develop quantities and cost estimates in 2003 Dollars for identified improvements

1.2 Study Area

The project study area that was used in the Traffic Circulation Master Plan includes the "Proposed Plan" alternative of the 2002 General Plan update. It includes as basis the buildout of the 20-year planning boundary for the City. Additional commercial, industrial and residential land uses were added and the future City Boundary expanded. **Figure 1** indicates the study area and road network for the City of Gilroy Traffic Circulation Master Plan.

In the east the City is expected to grow to Llagas Creek northwards to Marcella Avenue and Leavesley Road. This area is designated for commercial and industrial development. To the north the City is expected to expand to Fitzgerald and Masten Road. Land uses are expected to be primarily residential. The western parts and southern parts of the City are expected to consist of primarily residential land use development.

The proposed "660 Development" lies east of the outlets in the City of Gilroy and comprises an open space total of 663.79 acres and is zoned as Campus Industrial. This development is expected to generate approximately 40,000 daily trips, which would be significant and would



require substantial roadway improvements. The impact of these trips on the Gilroy road network was analyzed separately from the TIF. Detail regarding the road network impacts of the “660” is included in this report.

2. TRANSPORTATION SYSTEM OVERVIEW

Gilroy lies at the crossing of Highway 101 and State Highway 152, giving it access to the San Francisco Bay Area, San Benito, Monterey and Santa Cruz Counties in the Central Valley. Expressways, such as Monterey Road and Santa Teresa Boulevard link the City of Gilroy to San Martin and Morgan Hill. Gilroy’s current 2020 General Plan is to allow growth in all directions with commercial and industrial growth developing in the east, and primarily residential land-uses to the north, south and west. The population is expected to grow at approximately two percent per annum as indicated below.

<u>Planning Year</u>	<u>Estimated Population</u>
2010	56,407
2020	65,082
2030	73,606
2040	82,136

The development of the City will result in an increase in vehicular trips. Close to 70% of current work trips generated in Gilroy is made out of Gilroy, the majority to Silicon Valley. This trend is expected to continue in the future. It is also expected that the additional development of industrial and commercial land uses to the east of Highway 101 will result in an increase in local and regional traffic.

The most significant projected traffic increases are on roadway facilities that provide connections to job centers located along the Highway 101 corridor. These include Highway 152, Monterey Road, Santa Teresa Expressway and Buena Vista Avenue. Many roadway improvements have previously been identified in the *Citywide Transportation Study, August 2001* and these improvements have been incorporated in this document to establish the Gilroy Traffic Circulation Master Plan.

According to the *Citywide Transportation Study, August 2001* truck traffic in the area of Monterey Road will be minimized in the northern part of town, designated as Campus Industrial. The high technology industries to be located there tend to induce lower truck volumes than more general industrial land uses. In the area to the south, the increased truck volumes will be offset by the future construction of the Highway 152 by-pass, which will divert existing through truck traffic away from local roads and on to the state freeway system. The percentage of local traffic made up by trucks would likely remain relatively unchanged.

Buildout under the General Plan would result in an increase in traffic, pedestrian and bicycle activity throughout the Gilroy planning area. With increased traffic volumes and the proposed improvements, there would be an increase in bicyclists and pedestrians. The General Plan



includes a Bicycle Transportation Plan and general guidelines regarding the provision of a network of interconnected trails and bikeways linking parks, schools, commercial areas, work areas and scenic open space areas. The construction of these bikeway facilities are included in the Gilroy Traffic Circulation Master Plan where roadway facilities are shared.

Caltrain currently continues from Gilroy northwards to the Bay area and provides commuter services only. The Santa Clara Valley Transportation Authority bus service currently serves Gilroy. These public transport modes reduce the need for additional road space. The increase by one half of the city's current population to the buildout of the Gilroy General Plan could increase demand for public transit services.

Although public transit services may reduce private travel demand, significant roadway improvements would still be required for General Plan Buildout conditions.

3. TRANSPORTATION SYSTEM EVALUATION

The “Proposed Plan” alternative as defined in the *Citywide Transportation Study, August 2001* will significantly increase vehicle traffic at the interchanges and roads leading to the interchanges. New development within the City will be responsible for building the road network adjacent to their locations. The study also indicates that with the identified future improvements, the City’s road network will continue to operate at satisfactory levels of service and according to the adopted LOS C and D.

Public transportation and other alternative modes of transport do not form a significant part of the Gilroy Traffic Circulation Master Plan. In fact, these travel modes all share the same road space, including non-motorized transport and as a whole will benefit from the implementation of the Traffic Circulation Master Plan improvements. The city should, however, continue to invest and encourage alternative means of transport over and above private travel.

The City of Gilroy transportation system consists of several major components, which includes: the roadway network and its users i.e. vehicular traffic, and pedestrian traffic. An efficient transportation system ensures effective operations and safe travel on the road network.

The road network includes the right-of-way, bikeways, sidewalks, curb and gutter, travel lanes (pavement), medians, intersection control, street lights, road signs and markings and any related infrastructure that makes up part of the roadway network.

Users that benefit from the roadway network include private vehicles, goods and service vehicles, public transportation vehicles, bicycles and pedestrians. All these components form part of the transportation system and are integrated with existing and future land uses. There should be a balance between all these transportation system components and land use development within the City.



The level of service criteria that was used in the analysis is Level of Service C for most facilities west of Highway 101 and Level of Service D for all facilities east of Highway 101. The following references were used in the analysis and evaluation of projected traffic conditions in the Master Plan.

Trip Generation:	Institute of Traffic Engineers Trip Generation Manual, 6 th Edition, 1997
Trip Distribution/Assignment:	TRAFFIX Software, Version 7.5
Level of Service Standard:	City of Gilroy General Plan, adopted June 2002
Geometrics:	Caltrans Standards, dated July 2002, City of Gilroy Design Specifications
Level of Service Evaluation:	Highway Capacity Manual, 2000

The Highway Capacity Manual, *HCM 2000*, traffic and transportation engineering methodologies were used to evaluate the road network. The City of Gilroy design standards and Caltrans design specifications were used for roadway and intersection design. Together with the *Citywide Transportation Study, August 2001* the Traffic Circulation Master Plan was developed as indicated below.

Roadway Classification

Roadways within Gilroy are classified as follows:

- Freeways
- Expressways
- Arterials
- Collectors
- Local Streets

Highway 101 is the only freeway adjacent to Gilroy and traverses in a north-south direction. Since it is a state wide and regional service facility, it is not identified in the Traffic Circulation Plan with regards to required improvements. However, the City's network includes improvements of interchanges to Highway 101 which are coordinated with Caltrans and these are included. The traffic model for the City includes Highway 101.

Mobility is the primary function of Expressways and access is limited. The design speed of Expressways is 55 miles per hour and typically consist of four or six lanes with wide shoulders and a painted or raised median. Separate turning lanes are provided at intersections or major driveways, to accommodate high traffic volumes.

The above roadways serve inter-urban, statewide and interstate travel. In view of these functions, as well as the fact that planning of these facilities rests with agencies outside of the city (e.g., Caltrans), policies in the City's Circulation Element seek to prevent excessive dependence upon these limited access facilities for local trip making. Expressways are indicated in **Figure 1**.



Arterials primarily serve intra-urban or local travel, carrying traffic from Collector streets to and from other parts of the City and to limited access roadways. Access to properties bordering these streets is subordinate to the primary function of moving traffic. The typical design speed on an arterial is 45 miles per hour and it has two or four lanes. Parking is generally not provided on arterials. A network of two- and four-lane arterials has been identified in the city for buildout conditions as indicated in **Figure 1**.

The primary function of Collector streets is a combination of access and mobility. These streets provide links between Local Streets and Arterials. They are designed to serve neighborhood traffic rather than cross-town traffic, though they may include trips between adjacent neighborhoods. The design speed for collectors is 35 miles per hour. On-street parking is provided. Roads classified as Collectors under buildout conditions are indicated in **Figure 1**.

The primary function of Local Streets is access to adjacent land uses. Parking is provided along local streets and speed limits are typically 25 miles per hour. All Gilroy streets not classified in one of the above categories are designated as Local Streets. These roadways are not addressed further in the Traffic Circulation Master Plan since they are built and constructed through new developments.

Roadway and Intersections Standards

The City of Gilroy uses the Santa Clara Valley Transportation Authority Congestion Management Agency (VTA) requirements and methodologies for evaluating roadway and intersection analysis. Traffic operations at signalized and unsignalized intersections and roadways are evaluated using the TRAFFIX analysis tool, which is based on *Highway Capacity Manual 2000* analysis methodologies. Within the City, LOS C and D are the required operational standard. **Figure 9** indicates the areas where LOS D is the requirement standard. The remainder of the City is LOS C standard.

Intersection operations are based upon the average vehicular delay at intersection during the applicable peak hours. Peak hours analyzed are determined by the land use types and include morning peak hour, afternoon peak hour, midday and weekend peak hour analysis. For all-way stop control, the intersection delay is determined.

For two-way stop control, each side street movement LOS is based on the distribution of gaps in the major street traffic stream and gap acceptance by drivers. The standard for side street Level of Service is E or F, in conjunction with peak hour signal warrants described in the Caltrans Traffic Manual. Generally, LOS F operations on the minor street approach are considered the threshold warranting improvements for two-way / one-way stop controlled intersections. For signalized intersections, the overall intersection delay is used to determine LOS and includes acceleration, deceleration and stopped delay.



For segments, through vehicle travel speed is used as measure of effectiveness. Factors that affect travel speed include intersection spacing, on-street parking, intersection channelization design, type of control devices, pedestrian and bicycle traffic and driveway activities.

Gilroy's city limits is expected to expand extensively when fully built out. Significant intersection, roadway and road network improvements would be required to accommodate the growth. A TRAFFIX model was develop as part of the Circulation Element of the latest General Plan. The project study area that was used in the Circulation Element included several land use development scenarios. The "Proposed Plan" alternative (the alternative selected by the City Council) of the General Plan update was used for the Traffic Circulation Master Plan analysis. It includes as basis the buildout of the 20-year planning boundary for the City. Additional commercial, industrial and residential land uses were added and the future City Boundary expanded. Since the Circulation Element has been compiled, several traffic impact studies have been conducted within the City. These traffic studies are indicated in **Appendix A**. Based on updated traffic data in these traffic studies, and updates to the TRAFFIX software and VTA requirements, the model has been expanded to develop more representative traffic volumes on the buildout road network. **Figure 2** indicates the modeled traffic volumes on the major roads for the Circulation Element "Proposed Plan" buildout conditions as updated.

4. TRANSPORTATION SYSTEM IMPROVEMENTS

Levels of Service and signalization analysis of many of the street segments and intersections had been performed in the various traffic studies that was conducted in the last 4-5 years. These traffic studies were also used as a reference for compiling the Traffic Circulation Master Plan. Where no analysis had been done, TRAFFIX was used to perform the analysis and compute the lane geometry. Caltrans standards were used to determine signalization warrants, turning pocket lengths, merge distances, bay tapers and transition distances. Highway Capacity Manual planning level analysis was used to assess roadway improvements. Based on the analysis, roadway cross section detail, bridge cross section detail, intersection geometry, signalization detail and interconnect requirements were determined. Concept designs were prepared for the intersection layouts. The *City of Gilroy Standards* cross section detail is included in **Appendix B-1**.

4.1 Segment Improvements

Roadway improvements include the construction of new roadways and widening of existing roadways (where required) based on the estimated buildout traffic volumes. For the purpose of preparing the Gilroy Traffic Circulation Master Plan, the roadways analyzed include Expressways, Arterials and Collectors.

The Circulation Element buildout "Proposed Plan" alternative Annual Daily Traffic Volumes (ADT) and the *City of Gilroy Standards* served as basis for determining cross section detail.



The following road segment improvements are considered part of the Gilroy Traffic Circulation Master Plan. **Figure 4** indicates the roadway segments studied.

Expressways

Expressways form the main arteries of the road network systems. The expressways are either four lane or six-lane facilities with medians, shoulders and bikeways. The City will fund the improvements to these roadways. The Expressways are indicated on **Figure 1**.

Highway 152 to the east of Gilroy is currently being upgraded and further improvements are planned within and beyond the city limits to the west of Santa Teresa Boulevard. Santa Teresa Boulevard is proposed to be a four-lane Expressway up to the City Limits.

Monterey Road is the original Highway 101 and starts in the south of the City at Highway 101 and continues north beyond the City limits into Morgan Hill and San Jose. Within downtown Gilroy it changes significantly in character to accommodate the old town land uses and downtown character. North and south of downtown is proposed to be a four to six-lane expressway facility.

Santa Teresa Boulevard is proposed to be a four-lane expressway from the northern City limits at Fitzgerald Avenue to Highway 101 in the south.

Buena Vista Avenue is proposed to be an Expressway between Monterey Road and Highway 101 with new northbound and southbound interchanges. The northbound interchange ramps will be located on No Name Uno Avenue because of the close spacing of intersections that would otherwise be located along Buena Vista Avenue.

Masten Avenue is proposed to be upgraded to an Expressway between Monterey Boulevard and Highway 101.

Arterials, Collectors and Local Streets

Many Arterials, Collectors and Local Streets will be constructed/widened as the City expands. Arterials and Collectors are two-lane or four-lane facilities. On-street parking is usually not provided along Arterials and is provided along Collectors. The Arterials, Collectors and Local Streets complete the grid system of the road network between the Highway 101 and the Expressways. **Table 1** indicates the roadway segments that were studied as part of the Gilroy Traffic Circulation Master Plan. Cross section detail and aerial photographs for each the segments requiring improvements are included in **Appendix C**. **Figure 1** indicates the Arterials and Collectors for the General Plan Buildout road network.



Bike Ways

The existing Gilroy Bike Plan was used to identify and provide bike facilities along the roadways. The City has adopted the Caltrans description for bikeways. Types of bikeways as described by Caltrans in the *Highway Design Manual* are as follows:

Class I Bikeway - Referred to as a “bike path” or “multi-use trail”. Provides for bicycle travel on a paved ROW completely separated from any street or highway.

Class II Bikeway - Referred to as a “bike lane”. Provides striped lane for one-way travel on a street or highway.

Class III Bikeway – Referred to as a “bike route”. Provides for shared use with pedestrians or motor vehicle traffic and is identified only by signing.

Figure 3 indicates the Bike Plan of the City of Gilroy.

4.2 Intersection Improvements

Intersection improvements are based on the buildout traffic volumes, existing intersection layouts and the applicable state design standards. Improvements include geometric modifications, re-striping, widening, signalization and sidewalk construction and was based on the LOS analysis conducted as part of the 2001/2002 General Plan update and included in the TRAFFIX version 7.5 model that was established as part of the *Citywide Transportation Study, August 2001*, as well as in subsequent traffic impact studies conducted throughout the City, as indicated in **Appendix A. Figure 5** indicates the intersections studied.

Interconnect between the signalized intersections are also included in the design for major streets. The interconnect will provide the City with the ability to coordinate the signals along corridors and make use of Intelligent Transportation Systems to improve vehicle operations and safety aspects along the street network. The systems that would make use of the interconnect back bone could include a Closed Circuit Television (CCTV) system and the installation and operation of Dynamic Message Signs, which would be highly beneficial towards managing traffic during the Annual Gilroy Garlic Festival and many other events and incidents. The system would also be able to support vehicle detection systems on the major streets that would provide real time traffic data. The detection system could in turn also be used to establish a comprehensive traffic count database. The interconnect would enable the City to integrate roadway traffic operations management with the future Caltrans ITS along Highway 101, that would be beneficial for incident management. The provision of CCTV cameras along the roadways or at intersections is also highly valuable for incident confirmation and may decrease response times for emergency services. **Figure 6** indicates the anticipated interconnect installation along major corridors.



Within the established areas, right-of-way is limited by existing development, which includes residential, commercial and industrial land uses and right-of-way acquisition at intersections was avoided as far as possible. Some of the intersections identified would not need any improvements except for re-striping and others would require significant improvements once the City is built out.

The intersections analyzed as part of this study are included in **Table 2**. Conceptual designs were prepared for the identified improvements. These designs are included in **Appendix D**. Included on the conceptual designs are future traffic volumes, buildout improvements, lane configuration and general layout.

4.3 Bridge Improvements

Several existing bridge structures have been identified within the City limits for improvements as well as locations requiring new bridge structures. Uvas Creek, Lions Creek, Princevalle Channel, Llagas Creek and the Ronan Channel are the major waterways that traverse the City. For existing bridges all lengths and widths were measured comparing these dimensions with the applicable classification and cross section of the future segments to determine whether or not improvements would be required. While some improvements only require widening, some include the construction of new/additional bridge structures to accommodate additional travel lanes.

For new bridges, channel/riverbed crossing distances were determined using aerial photographs and the future roadway cross-section detail used to determine the bridge cross section details. Sidewalk and bike lanes (where specified in the Circulation Element) were also incorporated in the bridge cross-section detail. **Table 3** indicates the bridge locations that were include in the Gilroy Traffic Circulation Plan analysis. **Appendix E** indicates the location of the bridges on the Gilroy road network on aerial photographs. **Figure 7** indicates the bridge locations studied.

4.4 “660 Improvements”

The proposed “660 Development” to the east of the outlets in the City will add approximately 40,000 daily trips, 5,700 trips during the AM and 5,300 trips during the PM peak hour on the Gilroy street network and comprises open space of 663.79 acres. The land is designated as Campus Industrial. This development would be significant and would require substantial roadway improvements. The impact of these trips on the Gilroy road network was analyzed separately from the TIF. Detail of the 660 study is included in the draft *660 Traffic Circulation Master Plan, City of Gilroy, February 2004*.

The objective of the 660 Traffic Master Plan is to provide conceptual design detail, quantities and cost estimates of the improvements that would be generated by the 660 development and determine the net increase over and above the Master Plan Transportation Improvement Fund (TIF).



The impact of these trips on the Gilroy road network was analyzed separately from the TIF. Cost detail regarding the road network impacts of the 660 is included in this report. **Appendix F** indicates the extent of 660 improvements

5. TRANSPORTATION IMPROVEMENT FUND

Part of the Gilroy Traffic Circulation Master Plan study was to determine future fiscal requirements to implement the identified improvements.

As part of the scope, construction quantities were estimated for improvements that would be funded through the City of Gilroy Transportation Improvement Fund. These quantities were then used to estimate the actual cost of each improvement in year 2003 US Dollars. City staff performed the task of calculating the dollar values of the quantities estimated.

5.1 Roadway Segments Cost Estimates

As part of the Gilroy Traffic Circulation Master Plan construction quantities for the improvements were identified. For roadways it includes all Expressways, except for sections of Highway 152 (Pacheco Pass) as described earlier. Bike paths along the Expressways are not included in the TIF.

Existing ROW lines were obtained from the City and ROW acquisition estimates calculated. For new arterials, adjacent development would fund the roadway improvements up to and including the first travel lane in both directions. Collector streets are funded entirely by the adjacent development. The following graphic illustrates the principal of how the roadway network would be funded between the City and the developers.

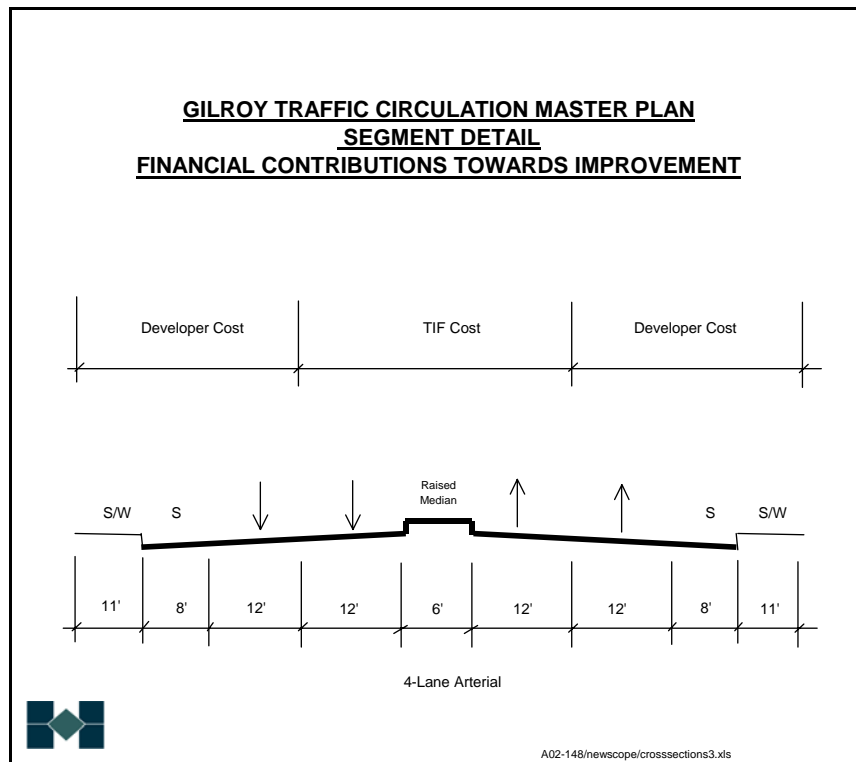


Table 1 indicates the segment cost estimates for the improvements that would be funded through the TIF. Cross section detail, cost estimates and aerial photographs for the TIF segments are included in **Appendix C**. TIF segments include segments that would be funded in full or part through the TIF. The total TIF cost for segment improvements to facilitate General Plan Buildout conditions is estimated at \$98,899,861.

5.2 Intersection Cost Estimates

As part of the Gilroy Traffic Circulation Master Plan, construction quantities for intersection improvements were identified. The City would fund implementation of the recommended intersection improvements as indicated below. For intersections TIF funding would include all recommended improvements within the curb return on the approaches. On the segment part of the approach, which includes the roadway between the curb return and the start of the transition, assuming a 4-lane road, the TIF would fund the middle lanes and median on 4-lane arterials only. All other costs would be borne by adjacent development. **Figure 8** indicates the typical funding principle for intersections. The total TIF cost for intersection improvements to facilitate General Plan Buildout conditions is estimated at \$98,402,604. The improvement costs for each intersection are indicated in **Table 2**. Concept design detail, cost estimates and aerial photographs for the TIF intersections are included in **Appendix D**.



5.3 Bridges/Culverts

Bridge and culvert cost estimates for improvements are indicated in **Table 3**. Quantities are by square feet of bridge/culvert deck. A unit cost per square feet of bridge deck was used to develop the cost estimate for the improvements. The total TIF cost for bridge improvements to facilitate General Plan Buildout conditions is estimated at \$62,562,302. Cross section detail, cost estimates and aerial photographs for the TIF bridges/culverts are included in **Appendix E**.

The following table is a summary of the various cost estimates for the TIF.

<u>Item</u>	<u>Estimated Improvement Cost</u>
Roadway Segments	\$ 98,899,861
Intersections	\$98,402,604
Bridges	\$62,562,302
Miscellaneous Projects	<u>\$17,137,809</u>
Total	\$277,002,576

5.4 TIF Reimbursements

In general a developer is responsible for all frontage improvements up to the first travel lane and the City is responsible for the remainder as indicated earlier in the report. Developer’s can be requested to build improvements e.g. construction of an intersection with a traffic signal that is adjacent to the development for which the developer would be reimbursed. The reimbursement would be the lesser of the Traffic Impact Fee or the contractor’s actual cost. **Appendix B-2** indicates the line items for which a developer may be reimbursed.

5.5 CIB Budget and Miscellaneous Transportation System Projects Cost Estimates

Several transportation system projects within the City are currently being constructed, or are part of a Grant Program, or part of a future reimbursement program. These projects have not been analyzed and evaluated in the Master Plan. However, the projects do form part of the Traffic Impact Fee Program and are included in the Master Plan as miscellaneous projects indicated in **Table 4**. A summary of the City’s Capital Improvement Budget for transportation projects is included in **Appendix G**.

6. CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are made from the study:

The City of Gilroy will grow extensively in all directions in the future. The City needs to provide roadway infrastructure to ensure that the high quality of life of its residents are maintained. The



provision of sufficient roadway infrastructure will benefit residents, visitors, commercial and industrial business.

It is recommended that:

- ❑ The City adopts the improvements as identified in the Traffic Circulation Master Plan.
- ❑ The City includes in its long-term financial plan the provision of funds to provide the required infrastructure.
- ❑ The City monitors the growth of the City and implements the recommended improvements.



Table 1: Segment Improvement Cost

Drawing #	Segments		660 Improvement Cost	TIF Improvement Cost	Total Improvement Costs
1	Day Road	w/o Santa Teresa	\$0	\$0	\$0
2	Cohansey	Murray - Santa Teresa	\$0	\$0	\$0
3	Rancho Hills	Dovetail - Day	\$0	\$0	\$0
4	Las Animas	West of Murray and Monterey	\$0	\$0	\$0
5	Las Animas	East of San Ysidro and Marcella	\$0	\$0	\$0
6	First	Church - Monterey	\$0	\$0	\$0
7	First	Church - Santa Teresa	\$0	\$0	\$0
8	Fitzgerald	Santa Teresa - Monterey	\$0	\$1,833,011	\$1,833,011
9	Monterey 1	Fitzgerald - Ronan	\$0	\$14,982,568	\$14,982,568
10	Monterey 2	Luchessa - Highway 101	\$0	\$837,367	\$837,367
11	Masten	Monterey - Highway 101	\$0	\$3,211,937	\$3,211,937
12	Santa Teresa 1	Fitzgerald - Longmeadow	\$0	\$21,410,472	\$21,410,472
13	Santa Teresa 2	First - Highway 101	\$0	\$17,665,938	\$17,665,938
14	Buena Vista 1	Santa Teresa - Monterey	\$0	\$5,511,101	\$5,511,101
15	Buena Vista 2	Monterey - Highway 101	\$0	\$0	\$0
16	Farrell	Monterey - Wren	\$0	\$0	\$0
17	Wren	Farrell - Buena Vista	\$0	\$0	\$0
18	Luchessa 1	Santa Teresa - Greenfield	\$0	\$0	\$0
19	Luchessa 2	Thomas - Monterey	\$0	\$1,480,098	\$1,480,098
20	Luchessa 4	Monterey - Chestnut	\$0	\$0	\$0
21	Luchessa 5	Chestnut - Wellington	\$666,737	\$0	\$666,737
22	Tenth	Santa Teresa - Uvas Park	\$0	\$0	\$0
23	Thomas	Santa Teresa - Luchessa	\$0	\$0	\$0
24	Rucker	Santa Teresa - Murray	\$0	\$0	\$0
25	Leavesley	Arroyo Circle - New Road	\$0	\$2,111,346	\$2,111,346
26	Kern	North of Mantelli - Cohansey	\$0	\$0	\$0
27	San Ysidro	s/o Las Animas - No Name Uno	\$0	\$0	\$0
28	No Name Uno	Las Animas - Buena Vista	\$0	\$2,413,142	\$2,413,142
29	Camino Arroyo 1	Southside - Gilman	\$185,469	\$2,106,770	\$2,292,239
30	Pacheco Pass	Highway 101 - City limit	\$0	\$1,279,200	\$1,279,200
31	Hecker Pass	Santa Teresa - Bonfante Gardens	\$0	\$8,526,161	\$8,526,161
32	Wellington 1	Leavesley - Gilman	\$0	\$0	\$0
33	Wellington 2	Gilman - Luchessa	\$1,916,884	\$0	\$1,916,884
34	Wellington 3	Luchessa - Southside	\$0	\$0	\$0
35	Murray	Las Animas - Masten	\$0	\$0	\$0
36	Gilman	Arroyo Circle - Wellington	\$1,319,589	\$0	\$1,319,589
37	Church	Farrell - Buena Vista	\$0	\$0	\$0



38	Southside	Brem - Wellington	\$0	\$0	\$0
39	Day Road East	Santa Teresa - Monterey	\$0	\$0	\$0
40	Buena Vista	No Name Uno - Marcella	\$0	\$0	\$0
41	Marcella	Buena Vista - Leavesley	\$0	\$0	\$0
42	Marcella	Leavesley - Wellington	\$0	\$0	\$0
43	Uvas Park	Wren - Laurel	\$0	\$2,166,646	\$2,166,646
44	Tenth 2	Monterey - Alexander	\$0	\$343,845	\$343,845
45	Highway 101 SB Off	at Leavesley	\$1,497,508	\$0	\$1,497,508
46	Highway 101 NB On	at Leavesley	\$1,549,648	\$0	\$1,549,648
47	Highway 101 NB Off	at Tenth	\$1,873,248	\$0	\$1,873,248
48	Highway 101 NB Off	at Monterey	\$1,418,713	\$0	\$1,418,713
49	Highway 101 SB On	at Monterey	\$0	\$1,400,259	\$1,400,259
50	Camino Arroyo 2	Gilman - Arroyo Circle	\$0	\$1,192,206	\$1,192,206
	TOTAL		\$10,427,796	\$88,472,067	\$98,899,861



Table 2: Intersection Improvement Cost

No.	Intersection	660 Improvement Cost	TIF Improvement Cost	Total Improvement Cost
1	First/Church	\$0	\$260,791	\$260,791
2	First/Monterey	\$0	\$851,546	\$851,546
3	Church/Sixth	\$0	\$392,975	\$392,975
4	Luchessa/Princevalle	\$0	\$646,808	\$646,808
5	Wren/Welburn	\$0	\$449,569	\$449,569
6	Mantelli/Hirasaki	\$0	\$469,702	\$469,702
7	Mantelli/Kern	\$0	\$452,759	\$452,759
8	Mantelli/Wren	\$0	\$635,757	\$635,757
9	Mantelli/Church	\$0	\$417,812	\$417,812
10	Kern/Welburn	\$0	\$390,722	\$390,722
11	Kern/First	\$0	\$412,097	\$412,097
12	Santa Teresa/Thomas	\$0	\$836,720	\$836,720
13	Wren/Third	\$0	\$517,607	\$517,607
14	Santa Teresa/Fitz.	\$0	\$1,770,141	\$1,770,141
15	Monterey/Day	\$0	\$824,123	\$824,123
16	Farell/Church	\$0	\$389,739	\$389,739
17	Farell/Wren	\$0	\$395,637	\$395,637
18	Third/Church	\$0	\$391,501	\$391,501
19	Third/Miller	\$0	\$17,825	\$17,825
20	Third/Westwood	\$0	\$17,010	\$17,010
21	Monterey/Masten	\$0	\$1,949,055	\$1,949,055
22	Monterey/Luchessa	\$920,744	\$1,123,186	\$2,043,930
23	Sixth/Wren	\$0	\$274,965	\$274,965
24	Sixth/Miller	\$0	\$19,026	\$19,026
25	Sixth/Chestnut	\$0	\$344,099	\$344,099
26	Luchessa/Chestnut	\$0	\$364,027	\$364,027
26B-2	Luchessa/Thomas Signal	\$0	\$830,937	\$830,937
27	Masten/SB 101 Ramps	\$0	\$1,745,314	\$1,745,314
28	Masten/NB 101 Ramps	\$0	\$1,377,608	\$1,377,608
29	Uvas Park/Miller	\$0	\$12,597	\$12,597



30	Tenth/Uvas Park	\$0	\$624,580	\$624,580
31	Uvas Park/Wren	\$0	\$481,909	\$481,909
32	Cohansey/Monterey	\$0	\$860,272	\$860,272
33	Cohansey/Murray	\$0	\$0	\$0
34	Buena Vista/Monterey (with Bridge)	\$0	\$18,326,368	\$18,326,368
35	Buena Vista/SB Ramps (with Overpass)	\$598,751	\$12,271,721	\$12,870,472
35A	Highway 101 NB Ramps/No Name Uno	\$218,712	\$8,140,951	\$8,359,663
36	Tenth/Luchessa	\$0	\$404,894	\$404,894
37	Buena Vista/ Santa Teresa	\$154,301	\$1,825,294	\$1,979,594
38	Buena Vista/Wren	\$0	\$1,483,471	\$1,483,471
39	Buena Vista/Murray	\$0	\$1,312,126	\$1,312,126
40	Monterey/Sports Park	\$0	\$2,171,002	\$2,171,002
41	Wellington/Highway 152	\$597,702	\$2,018,530	\$2,616,232
42	Camino Arroyo/152	\$1,014,940	\$0	\$1,014,940
43	Santa Teresa/Sunrise	\$169,202	\$1,244,967	\$1,414,169
44	Santa Teresa/Club	\$0	\$1,689,929	\$1,689,929
45	Tenth/Santa Teresa	\$0	\$1,406,642	\$1,406,642
46	Gilman/Camino Arroyo	\$328,745	\$1,249,334	\$1,578,079
47	Ballybunion/Santa Teresa	\$0	\$1,365,627	\$1,365,627
48	Cohansey/Hirasaki	\$0	\$362,954	\$362,954
49	Cohansey/Wren	\$0	\$455,474	\$455,474
50	Cohansey/Church	\$0	\$379,684	\$379,684
51	Camino Arroyo/Holloway	\$0	\$457,083	\$457,083
52	Las Animas /Monterey	\$0	\$1,578,247	\$1,578,247
53	Santa Teresa/Third	\$0	\$1,345,416	\$1,345,416
54	Tenth St/Hwy 101	\$0	\$496,875	\$496,875
55	Wellington/Leavesley	\$884,800	\$405,600	\$1,290,400
56	Marcella/Leavesley	\$465,400	\$1,026,200	\$1,491,600
57	Wellington/Marcella	\$1,223,000	\$0	\$1,223,000
58	Wellington/Gilman	\$1,232,100	\$87,400	\$1,319,500
59	Camino Arroyo/Luchessa	\$0	\$1,413,600	\$1,413,600
60	Wellington/Luchessa	\$1,036,300	\$0	\$1,036,300
61	No Name Uno/Buena Vista	\$160,000	\$762,900	\$922,900
62	Las Animas/No Name Uno	\$505,300	\$1,449,400	\$1,954,700
63	Tenth St (Highway 152 East)/Hwy 101 NB	\$860,200	\$1,043,200	\$1,903,400
64	Tenth St (Highway 152 East)/Hwy 101 SB	\$0	\$388,300	\$388,300
65	Monterey/Hwy 101 SB	\$0	\$63,700	\$63,700
66	Santa Teresa/Highway 152 West (First St)	\$0	\$656,200	\$656,200
67	Wren/First	\$0	\$200,900	\$200,900



	TOTAL	\$10,370,197	\$88,032,406	\$98,402,604
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- Notes:
1. Intersection 33 requires no TIF related improvement
 2. No drawing was prepared for 52. City staff calculated quantities
 3. #54 includes sidewalk improvements only
 4. Intersection 34 includes the cost of constructing a bridge
 5. Intersection 35 includes the cost of constructing an overpass

Table 2a: Alternate Analysis: Intersection Improvement Cost				
No.	Intersection	660 Improvement Cost	TIF Improvement Cost	Total Improvement Cost
26B-1	Luchessa/Thomas Traffic Circle	\$0	\$824,114	\$824,114

- Notes:
1. This intersection was also analyzed with a traffic circle as control



Table 3: Bridge Improvement Cost

Drawin g #No.	Bridge/Culvert on Segment	From	To	660 Improvement Cost	TIF Improvement Cost	Total Improvement Cost
1	Monterey	south of	Las Animas (Ronan Channel)	\$0	\$0	\$0
2	Santa Teresa	north of	Cohansey (Ronan Channel)	\$0	\$0	SEE NOTE
3	Santa Teresa	south of	Longmeadow	\$0	\$0	\$0
4	Santa Teresa	south of	Third	\$0	\$5,211,000	\$5,211,000
5	Santa Teresa	south of	Miller	\$0	\$0	\$0
6	Camino Arroyo	across	Ronan Channel	\$1,957,500	\$4,455,000	\$6,412,500
7	Cohansey	west of	Kern (Lions Creek)	\$0	\$1,425,600	\$1,425,600
8	Thomas	north of	Santa Teresa	\$0	\$0	\$0
9	Tenth	west of	Uvas Park	\$0	\$5,359,250	\$5,359,250
10	Farrell	west of	Church	\$0	\$1,417,500	\$1,417,500
11	Murray	south of	Las Animas (Ronan Channel)	\$0	\$0	\$0
12B2	Luchessa	east of	Thomas (Signal)	\$0	\$5,741,145	\$5,741,145
13	Masten	east of	Highway 101 to west of 101	\$0	\$4,830,000	\$4,830,000
14	Buena Vista	east of	Highway 101 to west of 101	\$0	\$3,123,750	\$3,123,750
15	Wellington	across	Ronan Channel	\$4,665,600	\$0	\$4,665,600
16	Hecker Pass	across	Uvas Creek	\$0	\$3,628,800	\$3,628,800
17	Buena Vista	at	Monterey Road	\$0	\$0	INCLUDED IN INTERSECTION #34
18	Southside	at	Rail road	\$0	\$9,213,027	\$9,213,027
19	Buena Vista SB On	at	Weigh station	\$0	\$0	INCLUDED IN INTERSECTION #35
20	Tenth	at	Highway 101	\$1,610,000	\$1,610,000	\$3,220,000
21	Cohansey	at	Llagas Creek	\$0	\$1,425,600	\$1,425,600
22	Chestnut	at	Lewis Street (Miller Slough)	\$0	\$1,073,405	\$1,073,405
23	Buena Vista	across	Llagas Creek west of Wren	\$0	\$1,231,200	\$1,231,200
24	Day Road East	across	Llagas Creek	\$0	\$899,100	\$899,100
25	Wren	across	Llagas Creek south of Fitzgerald	\$0	\$843,750	\$843,750
26	Day Road West	west of	Santa Teresa	\$0	\$421,875	\$421,875
27	Santa Teresa	north of	Mantelli	\$0	\$0	\$0
28	Kern	across	Ronan Channel	\$0	\$0	\$0
29	Wren	across	Ronan Channel	\$0	\$0	\$0
30	Wellington	across	Princevalle Channel	\$518,400	\$1,123,200	\$1,641,600
31	Camino Arroyo	across	Princevalle Channel	\$0	\$777,600	\$777,600
32	Church	across	Ronan Channel	\$0	\$0	\$0



	TOTAL	\$8,751,500	\$53,810,802	\$62,562,302
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*Note

- 1) Bridge 2 - shoulders will be narrowed to avoid bridge widening
- 2) Bridge 20 & 21 estimated by City staff
- 3) Bridge 12B-1 - based on using a traffic circle on Luchessa & Thomas. If signal is used (12B-2), will need to widen bridge and purchase more ROW

Table 3a: Alternate Analysis: Bridge Improvement Cost						
Drawing #No.	Bridge/Culvert on Segment	From	To	660 Improvement Cost	TIF Improvement Cost	Total Improvement Cost
12B1	Luchessa	east of	Thomas (Traffic Circle)	\$0	\$2,916,000	\$2,916,000

Notes: 1. This intersection was also analyzed with a traffic circle as control

Table 4: Miscellaneous Transportation System Projects: Improvement Cost		
No.	Project	Improvement Cost
a	Intersection/Masten / Monterey Rd Improvements	\$50,000
b	Segment/Ph II, Murray to San Ysidro Credits	\$414,892
c	Sidewalk/Curb&Gutter	\$67,301
d	Bridge, Church at Miller Slough	\$414,264
e	Bridge, Welburn at Miller Slough	\$432,549
f	Segmt/Rdwy Widen, Santa Teresa I, 1st to Longmeadow (R1)	\$13,517,337
g	Segment/Roadway Ext., Mantelli	\$1,241,466
h	Segmt/Med Hardscp Imp, Monterey, Luchessa to Hwy 101	\$860,000
i	Segment/Roadway Widen, Mantelli (striping only)	\$20,000
j	TDA Bikeway Improvement	\$120,000
TOTAL		\$17,137,809

Notes: These projects were not analyzed or evaluated as part of the Master Plan because they are either under construction, part of a Grant Program, or part of a future reimbursement program. However they do form part of the TIF program and are thus indicated.

APPENDIX A: TRAFFIC IMPACT STUDY REFERENCE LIST

	Title of Report	Date	Prepared by
1	Glen Loma Ranch Specific Plan Traffic Analysis Report	8/14/2003	Higgins Associates
2	Wellington Business Park TIA	11/2/1999	Hexagon Transportation Consultants
3	Urban Service Area Expansion-Kern and Wren Avenue Areas Traffic Analysis Report	12/20/2001	Higgins Associates
4	Gilroy Civic Center Traffic Analysis & Parking Assessment Report	4/2/2002	Higgins Associates
5	Emergency Housing Center Traffic Analysis Report	1/30/2002	Higgins Associates
6	Buena Vista/Highway 101 Interchange Master Plan	3/30/1999	Higgins Associates
7	Gilroy Revised Draft General Plan	9/1/2001	Higgins Associates
8	Gilroy Replacement School TIA	8/28/2003	Higgins Associates
9	Regency Traffic Study	-	Hexagon Transportation Consultants
10	Gilroy Sports Park	-	Fehr and Peers
11	Citywide Transportation Study	August,2001	Higgins Associates

APPENDIX B-1: CITY OF GILROY STANDARD CROSS SECTIONS

**APPENDIX B-2: CITY OF GILROY TRAFFIC IMPACT FEE
REIMBURSEMENT**

APPENDIX C: AERIAL IMAGES OF SEGMENTS STUDIED

APPENDIX D: AERIAL IMAGES OF INTERSECTION CONCEPT DESIGNS

APPENDIX E: AERIAL IMAGES OF BRIDGE LOCATIONS

APPENDIX F: FIGURES INDICATING 660 IMPROVEMENTS

APPENDIX G: CIB BUDGET