APPENDIX C
TRAFFIC STUDY

South Gate General Plan EIR

Traffic Study

March 10, 2009

Prepared by

The **Mobility** Group

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1. Introduction

This report documents the traffic study conducted for the EIR on the South Gate General Plan. It addresses the Mobility Element of the General Plan. Chapter 2 describes Existing Conditions. Chapter 3 provides a brief overview description of the Mobility Element in the updated General Plan. Chapter 4 describes the future traffic forecasts for the Year 2035, and discusses future traffic conditions with the proposed General Plan.

2. Existing Conditions

2.1 The Current Roadway System

Figure 1 illustrates the existing roadway system in the City, and the regional freeway system serving the City.

2.1.1 Regional Context

The City of South Gate is located in central Los Angeles County in a highly developed urban area. It is bordered on all sides by other cities or unincorporated county areas. Many of the principal roadways in the City are part of an areawide roadway system in Los Angeles County and thus provide access not only to adjacent cities but to many parts of the county.

The principal regional freeway access to the City is provided by the I-710 (Long Beach) Freeway that runs north-south through the City. This facility generally has four general purpose lanes in each direction within the City. There are two full access interchanges (all directions) on I-710 within the City at Firestone Boulevard and Imperial Highway.

The I-105 Freeway runs in an east-west direction to the south of the City through the City of Lynwood. Interchanges are located at Long Beach Boulevard (in the City of Lynwood), Garfield Avenue (in the City of Paramount) and Paramount Boulevard (in the City of South Gate).

2.1.2 City Roadways and Roadway Classifications

The existing (old) General Plan classifies the roadway system in the City according to the type of transportation role that any particular street is intended to provide in serving traffic flow through the network. The existing General Plan classifies streets into the following categories: Primary Arterial, Minor Arterial, Collector Street, and Local Street.

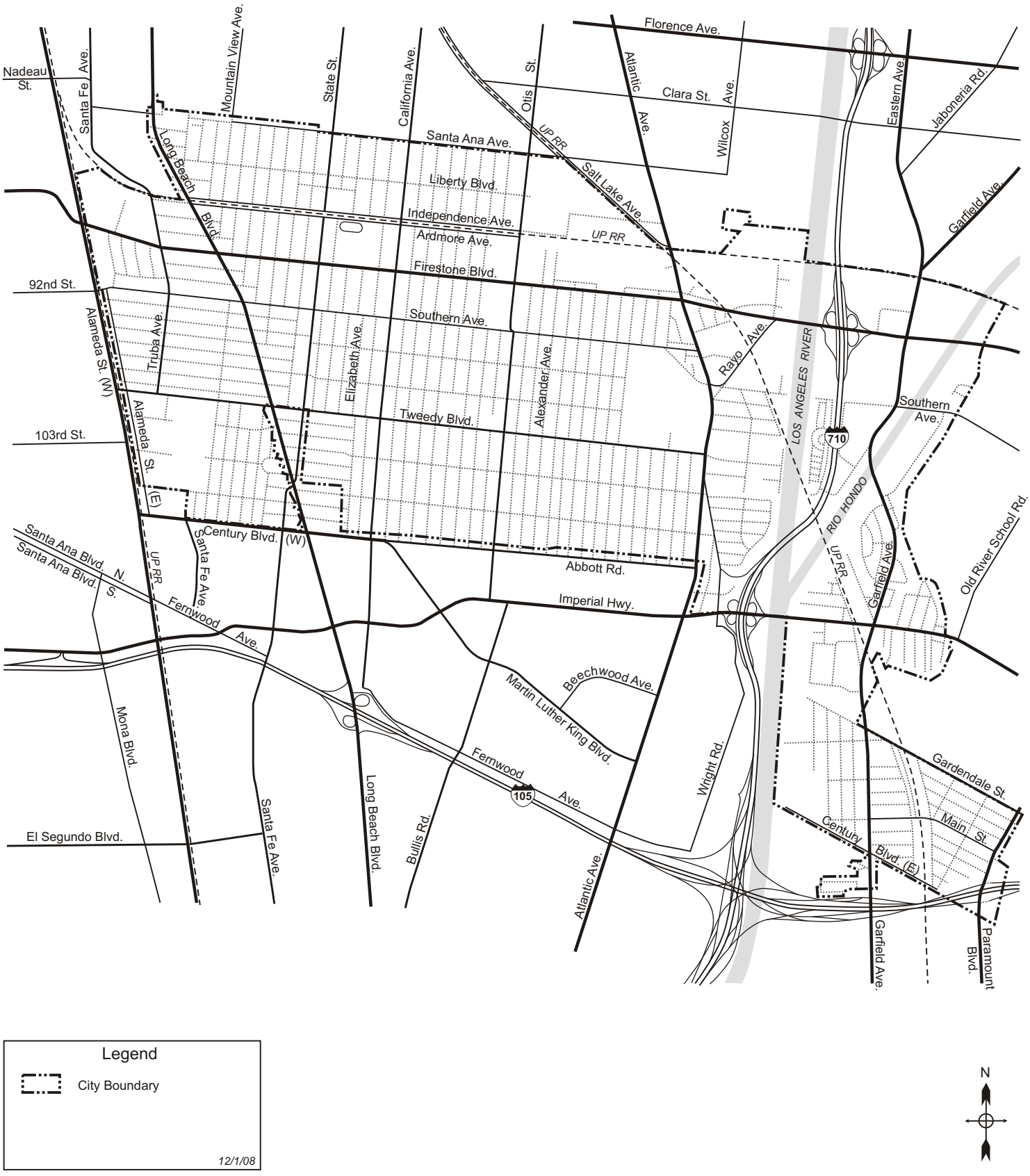

Figure 1
City Roadway System

City of South Gate General Plan EIR

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The classification of roadways in the City of South Gate according to the existing General Plan is shown in Figure 2, along with the current number of travel lanes for each segment.

While the City generally has an adequate street grid system in the west and the central portions, the grid is not as prominent in the east part of the City, due to the I-710 Freeway and the Los Angeles River. Certain east-west streets, such as Southern Avenue and Tweedy Boulevard are discontinuous in the eastern part of the City and do not cross the Los Angeles Rivers or the I-710 Freeway. Firestone Boulevard is the only east-west street that spans the entire City in an east-west direction, and is also the only street within the City that connects to other cities in an east-west directions.

The closely spaced streets in the street network across much of the City are a key benefit to local circulation in the City. Traffic is able to use many of the local roadways and so is less concentrated on any particular roadway.

Primary Arterials

As shown in Figure 2, Primary Arterial roadways running east-west in the City are Firestone Boulevard, Century Boulevard, and Imperial Highway. Firestone Boulevard is the only Primary Arterial that runs through the entire City. Primary Arterials running north-south in the City are Long Beach Boulevard, Atlantic Avenue, Garfield Avenue, and Paramount Boulevard (at the southeast corner of the City).

Primary Arterial roadways in the City are currently mostly four-lane roadways, except for the following sections which are six-lanes: Firestone Boulevard between Atlantic Avenue and the I-710 Ramps; Imperial Highway between Atlantic Avenue and Old School River Road; and Garfield Avenue between Firestone Boulevard and Eastern Avenue.

Minor Arterials

There is only one Minor Arterial roadway running east-west in the City - which is Tweedy Boulevard. Minor Arterials running north-south are Santa Fe Avenue (north of Firestone Boulevard), State Street, California Avenue, and Otis Street.

All Minor Arterial roadways in the City are currently four-lane roadways.

Collector Streets

Collector Streets running east-west in the City are Santa Ana Street, Liberty Boulevard, Southern Avenue, Gardendale Avenue, and Main Street. Collector Streets running north-

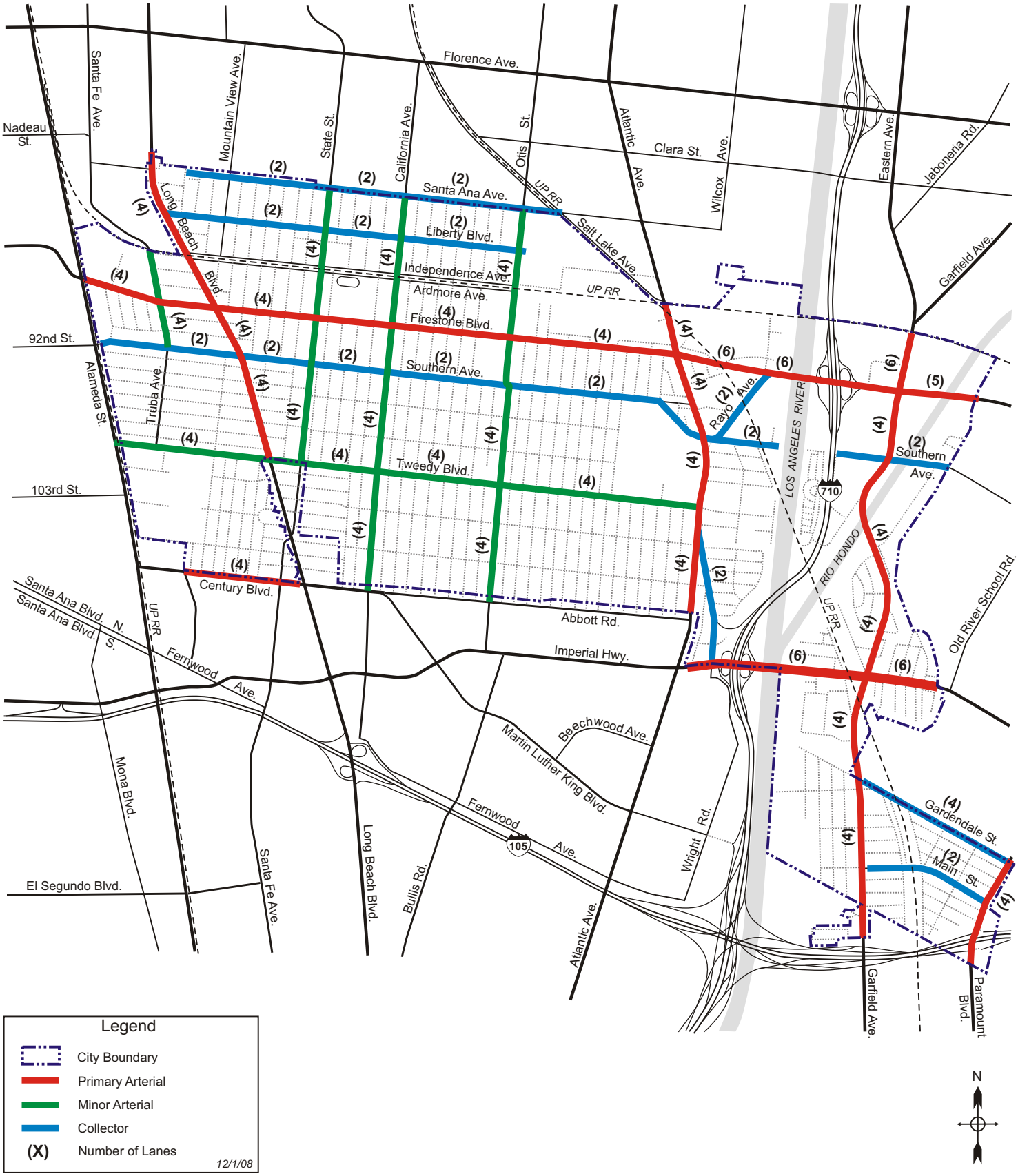

Figure 2
Existing Roadway Classifications

City of South Gate General Plan EIR

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south in the City are Rayo Avenue (between Firestone Boulevard and Atlantic Avenue) and Wright Road (between Imperial Highway and Atlantic Avenue).

Collector Streets in the City are currently mostly two-lane roadways except for Gardendale Avenue between Garfield Avenue and Paramount Boulevard which has four lanes.

2.2 Current Traffic Conditions

2.2.1 Daily Traffic Volumes

Traffic Volumes

Existing daily traffic volumes on key City roadways are shown in Figure 3. These were obtained from data collected in May, 2006 at thirty-nine locations throughout the City. They have been adjusted to 2008 conditions by applying a growth factor of 1% per year. The most heavily traveled roadways are as follows:

- Firestone Boulevard carries 57,600 to 76,600 vehicles a day, between Atlantic Avenue and the I-710 Ramps.
- Firestone Boulevard carries between 31,000 and 39,500 vehicles a day along most of its length between Long Beach Boulevard and Atlantic Avenue.
- Imperial Highway carries in the range of 40,600 to 53,500 vehicles a day, between I-710 and Old River School Road.
- Atlantic Avenue carries in the range of 20,800 to 39,700 vehicles a day, between Firestone Boulevard and Tweedy Boulevard.
- Garfield Avenue carries in the range of 30,400 to 35,300 vehicles a day, between Eastern Avenue and Southern Avenue.
- Paramount Boulevard carries about 30,200 vehicles a day, between Gardendale Avenue and Main Street.
- Tweedy Boulevard carries about 14,600 vehicles a day west of Long Beach Boulevard, and carries in the range of 24,800 to 26,100 vehicles a day east of Long Beach Boulevard.

Figure 3
Existing Daily Traffic Volumes (2008)

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- Long Beach Boulevard carries in the range of 27,200 to 28,400 vehicles a day along its length through the City.

Other streets in the City (such as Santa Ana Avenue, Southern Avenue, State Street, California Avenue, and Otis Street), all carry less than 15,000 vehicles a day, and generally carry between 11,000 and 14,000 vehicles a day.

Through the City of South Gate, the I-710 Freeway carries between 212,000 and 215,000 daily vehicles. North of Firestone Boulevard I-710 carries 215,000 daily vehicles, south of Firestone Boulevard (between Imperial Highway and Firestone Boulevard) it carries 212,000 daily vehicles, and south of Imperial Highway it carries 235,000 daily vehicles. The I-105 Freeway carries 235,000 daily vehicles west of the I-710 Freeway and 200,000 daily vehicles east of the I-710 Freeway.

2.2.2 Roadway Conditions

Level of Service Definitions and Standards

Level of Service (LOS) is a measure of the efficiency of a section of roadway. LOS is expressed by a letter designation (A through F) that represents the traffic flow characteristics on a roadway. LOS A represents the best conditions and LOS F the worst conditions. Generally urban areas use a standard of performance goal of LOS D, or LOS E in certain areas such as in/near downtowns, major commercial centers, and near/at freeway interchanges. The LOS is defined by comparing the volume of traffic on a segment of roadway to the vehicle capacity of that roadway, to obtain a volume to capacity (V/C) ratio. Table 1 defines and describes the levels of service, and the corresponding volume to capacity ranges representing each level of service.

Roadway Capacities

Table 2 shows the roadway capacities used in the assessment of existing conditions in the City of South Gate. These are based on the number of traffic lanes, the typical proportion of green time at key intersections, the effects of any side friction such as parking and turn lanes, and are similar to practices in other jurisdictions. Capacities are higher for major roadways as more traffic signal green time is allocated to those roadways. These capacities are used in the evaluation of the adequacy of the roadway system.

The level of service for each key roadway segment in the City was calculated by comparing the peak hour traffic volume to the roadway capacity to obtain a volume/capacity ratio, and corresponding level of service.

Table 1. Level of Service Definitions for Roadways

Level of Service	Description	Volume to Capacity Ratio
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	< 0.600
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	0.601-.700
C	Good operation. Occasionally drivers may have to wait for more than 60 seconds, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted.	0.701-.800
D	Fair operation. Cars are sometimes required to wait for more than 60 seconds during short peaks. There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.	0.801-.900
E	Poor operation. Some long-standing vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes.	0.901-1.00
F	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop-and-go type traffic flow.	Over 1.001

Source: *Highway Capacity Manual*, Special Report 209, Transportation Research Board, Washington, D.C., 1985 and Interim Materials on Highway Capacity, MCHRP Circular 212, 1982.

Table 2. Roadway Capacities by Type

Roadway Type	No. of Lanes	Daily Capacity (Vehicles)	Peak Hour Capacity per Lane (Vehs/Hour)
Primary Arterial	6	60,000	800
Primary Arterial	4	40,000	800
Secondary Arterial	4	35,000	700
Collector Street	2	15,000	600

Roadway Segment Conditions – A.M. Peak Hour

The level of service calculations for the A.M. peak hour are shown in Table 3. The results are summarized in Figure 4, showing those roadway segments with an A.M. peak hour level of service of LOS D, LOS E, or LOS F.

The majority of roadway segments in the City are currently operating at LOS D or better. This indicates that in general City roadways are adequately sized to serve the current levels of traffic in the City in the morning peak hour. There are exceptions in certain areas, for certain segments of east-west streets, as follows:

A number of roadway segments are currently operating at LOS E in the A.M. peak hour. These are as follows:

- Eastbound Firestone Boulevard between Otis St. and Atlantic Ave.
- Westbound Southern Avenue between State St. and Long Beach Blvd.
- Westbound Imperial Highway between Garfield Ave. and I-710 Freeway.

Two roadway segments are currently operating at LOS F in the A.M. peak hour, as follows:

- Eastbound Firestone Boulevard between Rayo Ave. and I-710 Freeway.
- Westbound Firestone Boulevard between east City Limit and Garfield Ave.

Table 3 Existing Roadway Segments Level Of Service Analysis - AM and PM Peak Hour

3/10/2009

	Street	Between	And	Existing Roadway Classification	Peak Period	Capacity Per Lane	No. of Lanes		Existing Volume		Existing Capacity		V/C Ratio		Level of Service	
							NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
1	Santa Ana Ave.	Mountain View Ave.	State St.	Collector Street	A.M	600	1	1	373	373	600	600	0.622	0.622	B	B
					P.M	600	1	1	511	417	600	600	0.852	0.695	D	B
2	Independence Ave.	Mountain View Ave.	State St.	Local Street	A.M	600	1	1	231	173	600	600	0.384	0.289	A	A
					P.M	600	1	1	234	165	600	600	0.389	0.275	A	A
3	Independence Ave.	California Ave.	Otis St.	Local Street	A.M	600	1	1	190	204	600	600	0.316	0.340	A	A
					P.M	600	1	1	217	157	600	600	0.362	0.262	A	A
4	Firestone Blvd.	Alameda St.	Long Beach Blvd.	Primary Arterial	A.M	800	2	2	843	1,152	1,600	1,600	0.527	0.720	A	C
					P.M	800	2	2	1,223	952	1,600	1,600	0.764	0.595	C	A
5	Firestone Blvd.	Long Beach Blvd.	State St.	Primary Arterial	A.M	800	2	2	1,163	791	1,600	1,600	0.727	0.494	C	A
					P.M	800	2	2	979	1,175	1,600	1,600	0.612	0.734	B	C
6	Firestone Blvd.	California Ave.	Otis St.	Primary Arterial	A.M	800	2	2	1,262	1,237	1,600	1,600	0.789	0.773	C	C
					P.M	800	2	2	1,306	1,126	1,600	1,600	0.816	0.704	D	C
7	Firestone Blvd.	Otis St.	Atlantic Ave.	Primary Arterial	A.M	800	2	2	1,485	1,029	1,600	1,600	0.928	0.643	E [1]	B
					P.M	800	2	2	1,405	1,090	1,600	1,600	0.878	0.681	D	B
8	Firestone Blvd.	Atlantic Ave.	Rayo Ave.	Primary Arterial	A.M	800	3	3	1,968	1,584	2,400	2,400	0.820	0.660	D	B
					P.M	800	3	3	1,876	1,716	2,400	2,400	0.782	0.715	C	C
9	Firestone Blvd.	Rayo Ave.	I-710 Ramps	Primary Arterial	A.M	800	3	3	2,730	1,983	2,400	2,400	1.137	0.826	F	D
					P.M	800	3	3	2,674	2,293	2,400	2,400	1.114	0.955	F	E [1]

Table 3 Existing Roadway Segments Level Of Service Analysis - AM and PM Peak Hour

3/10/2009

	Street	Between	And	Existing Roadway Classification	Peak Period	Capacity Per Lane	No. of Lanes		Existing Volume		Existing Capacity		V/C Ratio		Level of Service	
							NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
10	Firestone Blvd.	Garfield Ave.	East City Limits	Primary Arterial	A.M	800	3	2	1,325	1,607	2,400	1,600	0.552	1.004	A	F
					P.M	800	3	2	1,880	1,567	2,400	1,600	0.783	0.979	C	E [1]
11	Southern Ave.	Truba Ave.	Long Beach Blvd.	Collector Street	A.M	600	1	1	519	387	600	600	0.865	0.644	D	B
					P.M	600	1	1	419	563	600	600	0.699	0.938	B	E
12	Southern Ave.	Long Beach Blvd.	State St.	Collector Street	A.M	600	1	1	431	575	600	600	0.719	0.959	C	E
					P.M	600	1	1	509	595	600	600	0.848	0.991	D	E
13	Southern Ave.	California Ave.	Otis St.	Collector Street	A.M	600	1	1	516	537	600	600	0.860	0.894	D	D
					P.M	600	1	1	543	576	600	600	0.904	0.961	E	E
14	Southern Ave.	Otis St.	Atlantic Ave.	Collector Street	A.M	600	1	1	296	389	600	600	0.493	0.648	A	B
					P.M	600	1	1	570	482	600	600	0.950	0.804	E	D
15	Tweedy Blvd.	Truba Ave.	Long Beach Blvd.	Minor Arterial	A.M	700	2	2	759	830	1,400	1,400	0.542	0.593	A	A
					P.M	700	2	2	692	565	1,400	1,400	0.494	0.404	A	A
16	Tweedy Blvd.	California Ave.	Otis St.	Minor Arterial	A.M	700	2	2	1,032	741	1,400	1,400	0.737	0.529	C	A
					P.M	700	2	2	1,035	839	1,400	1,400	0.740	0.600	C	A
17	Tweedy Blvd.	Otis St.	Atlantic Ave.	Minor Arterial	A.M	700	2	2	948	884	1,400	1,400	0.677	0.632	B	B
					P.M	700	2	2	929	966	1,400	1,400	0.664	0.690	B	B
18	Imperial Hwy.	I-710 Fwy	Garfield Ave.	Primary Arterial	A.M	800	3	3	1,780	2,337	2,400	2,400	0.742	0.974	C	E [1]
					P.M	800	3	3	2,260	2,199	2,400	2,400	0.942	0.916	E [1]	E [1]

Table 3 Existing Roadway Segments Level Of Service Analysis - AM and PM Peak Hour

3/10/2009

	Street	Between	And	Existing Roadway Classification	Peak Period	Capacity Per Lane	No. of Lanes		Existing Volume		Existing Capacity		V/C Ratio		Level of Service	
							NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
19	Imperial Hwy.	Garfield Ave.	Old River School Road	Primary Arterial	A.M	800	3	3	1,437	1,669	2,400	2,400	0.599	0.695	A	B
					P.M	800	3	3	1,915	1,538	2,400	2,400	0.798	0.641	C	B
20	Gardendale St.	Garfield Ave.	Paramount Blvd.	Collector Street	A.M	600	2	2	420	681	1,200	1,200	0.350	0.568	A	A
					P.M	600	2	2	497	490	1,200	1,200	0.414	0.408	A	A
21	Main St.	Garfield Ave.	Paramount Blvd.	Collector Street	A.M	600	1	1	207	205	600	600	0.345	0.342	A	A
					P.M	600	1	1	185	191	600	600	0.308	0.318	A	A
22	Long Beach Blvd.	Liberty Blvd.	Independence Ave.	Primary Arterial	A.M	800	2	2	1,055	647	1,600	1,600	0.659	0.404	B	A
					P.M	800	2	2	1,070	956	1,600	1,600	0.669	0.597	B	A
23	Long Beach Blvd.	Firestone Blvd.	Southern Ave.	Primary Arterial	A.M	800	2	2	863	988	1,600	1,600	0.539	0.618	A	B
					P.M	800	2	2	1,119	884	1,600	1,600	0.699	0.553	B	A
24	Long Beach Blvd.	Southern Ave.	Tweedy Blvd.	Primary Arterial	A.M	800	2	2	948	990	1,600	1,600	0.592	0.619	A	B
					P.M	800	2	2	1,195	941	1,600	1,600	0.747	0.588	C	A
25	State St.	Liberty Blvd.	Independence Ave.	Minor Arterial	A.M	700	2	2	675	812	1,400	1,400	0.482	0.580	A	A
					P.M	700	2	2	824	666	1,400	1,400	0.589	0.476	A	A
26	State St.	Southern Ave.	Tweedy Blvd.	Minor Arterial	A.M	700	2	2	542	489	1,400	1,400	0.387	0.349	A	A
					P.M	700	2	2	566	507	1,400	1,400	0.404	0.362	A	A
27	California Ave.	Liberty Blvd.	Independence Ave.	Minor Arterial	A.M	700	2	2	516	536	1,400	1,400	0.369	0.383	A	A
					P.M	700	2	2	578	539	1,400	1,400	0.413	0.385	A	A

Table 3 Existing Roadway Segments Level Of Service Analysis - AM and PM Peak Hour

3/10/2009

	Street	Between	And	Existing Roadway Classification	Peak Period	Capacity Per Lane	No. of Lanes		Existing Volume		Existing Capacity		V/C Ratio		Level of Service	
							NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
28	California Ave.	Southern Ave.	Tweedy Blvd.	Minor Arterial	A.M	700	2	2	494	596	1,400	1,400	0.353	0.425	A	A
					P.M	700	2	2	598	618	1,400	1,400	0.427	0.442	A	A
29	California Ave.	Tweedy Blvd.	Abbott Road	Minor Arterial	A.M	700	2	2	496	505	1,400	1,400	0.354	0.361	A	A
					P.M	700	2	2	561	612	1,400	1,400	0.401	0.437	A	A
30	Otis St.	Liberty Blvd.	Independence Ave.	Minor Arterial	A.M	700	2	2	498	411	1,400	1,400	0.356	0.294	A	A
					P.M	700	2	2	549	470	1,400	1,400	0.392	0.336	A	A
31	Otis St.	Southern Ave.	Tweedy Blvd.	Minor Arterial	A.M	700	2	2	500	513	1,400	1,400	0.357	0.366	A	A
					P.M	700	2	2	575	458	1,400	1,400	0.411	0.327	A	A
32	Otis St.	Tweedy Blvd.	Abbott Raod.	Minor Arterial	A.M	700	2	2	294	311	1,400	1,400	0.210	0.222	A	A
					P.M	700	2	2	344	403	1,400	1,400	0.246	0.288	A	A
33	Atlantic Ave.	Rail Road Tracks	Firestone Blvd.	Primary Arterial	A.M	800	2	2	1,308	1,331	1,600	1,600	0.817	0.832	D	D
					P.M	800	2	2	1,343	1,575	1,600	1,600	0.840	0.984	D	E
34	Atlantic Ave.	Firestone Blvd.	Southern Ave.	Primary Arterial	A.M	800	2	2	870	590	1,600	1,600	0.544	0.368	A	A
					P.M	800	2	2	829	854	1,600	1,600	0.518	0.534	A	A
35	Atlantic Ave.	Rayo Ave.	Tweedy Blvd.	Primary Arterial	A.M	800	2	2	855	1,214	1,600	1,600	0.534	0.759	A	C
					P.M	800	2	2	1,059	1,523	1,600	1,600	0.662	0.952	B	E [1]
36	Atlantic Ave.	Tweedy Blvd.	Abbott Road	Primary Arterial	A.M	800	2	2	592	515	1,600	1,600	0.370	0.322	A	A
					P.M	800	2	2	704	706	1,600	1,600	0.440	0.441	A	A

Table 3 Existing Roadway Segments Level Of Service Analysis - AM and PM Peak Hour

3/10/2009

	Street	Between	And	Existing Roadway Classification	Peak Period	Capacity Per Lane	No. of Lanes		Existing Volume		Existing Capacity		V/C Ratio		Level of Service	
							NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
37	Garfield Ave.	Eastern Ave.	Firestone Blvd.	Primary Arterial	A.M	800	3	3	948	1,475	2,400	2,400	0.395	0.615	A	B
					P.M	800	3	3	1,304	1,228	2,400	2,400	0.543	0.512	A	A
38	Garfield Ave.	Firestone Blvd.	Southern Ave.	Primary Arterial	A.M	800	2	2	1,245	879	1,600	1,600	0.778	0.550	C	A
					P.M	800	2	2	940	1,235	1,600	1,600	0.588	0.772	A	C
39	Garfield Ave.	Southern Ave.	Imperial Hwy	Primary Arterial	A.M	800	2	2	851	505	1,600	1,600	0.532	0.316	A	A
					P.M	800	2	2	611	689	1,600	1,600	0.382	0.430	A	A
40	Garfield Ave.	Gardendale Ave.	Main St.	Primary Arterial	A.M	800	2	2	1,050	497	1,600	1,600	0.656	0.310	B	A
					P.M	800	2	2	825	691	1,600	1,600	0.516	0.432	A	A
41	Paramount Blvd.	Gardendale Ave.	Main St.	Primary Arterial	A.M	800	2	2	1,103	935	1,600	1,600	0.689	0.585	B	A
					P.M	800	2	2	1,119	1,226	1,600	1,600	0.699	0.766	B	C

1. Level of Service E acceptable per General Plan Standards (See Section 4.4 of this report).

Roadway Segment Conditions – P.M. Peak Hour

The level of service for each key roadway segment in the City was calculated by comparing the P.M. peak hour traffic volume to the roadway capacity to obtain a volume/capacity ratio, and corresponding level of service. The level of service calculations are shown in Table 3. The results are summarized in Figure 5, showing those roadway segments with a P.M. peak hour level of service of LOS D, LOS E, or LOS F.

In general, traffic volumes are slightly higher in the P.M. peak hour, with rather more segments operating at LOS D or worse than in the A.M. peak hour.

The majority of roadway segments in the City particularly in the north-south directions, are currently operating at LOS D or better. This indicates that in general these City roadways are adequately sized to serve the current levels of traffic in the City. The exceptions are a number of east-west street segments where traffic volumes are much closer to roadway capacities.

A number of roadway segments are currently operating at LOS E in the P.M. peak hour. These are as follows:

- Westbound Firestone Boulevard between east City Limit and Garfield Ave.
- Westbound Firestone Boulevard between I-710 Ramps and Rayo Ave.
- Westbound Southern Avenue between Long Beach Blvd. and Truba Ave.
- Westbound Southern Avenue between State St. and Long Beach Blvd.
- Westbound Southern Avenue between Otis St. and California Ave.
- Eastbound Southern Avenue between California Ave. and Otis St.
- Eastbound Southern Avenue between Otis St. and Atlantic Ave.
- Eastbound Imperial Highway between I-710 Freeway and Garfield Ave.
- Westbound Imperial Highway between Garfield Avenue and I-710 Freeway.
- Southbound Atlantic Avenue between Rail Road Tracks and Firestone Blvd.
- Southbound Atlantic Avenue between Rayo Ave. and Tweedy Boulevard.

One roadway segment is currently operating at LOS F in the P.M. peak hour, as follows:

- Eastbound Firestone Boulevard between Rayo Ave. and I-710 Freeway.

Overall Conclusion on Roadway Conditions

Table 4 provides a summary of the number of roadway segments in the City by current levels of service, for both the A.M. and the P.M. peak hours. It can be seen that the vast majority operate at LOS D or better. Only 6% of all roadway segments analyzed

Figure 4
Existing Roadway Segments Operating at LOS D, E and F - AM Peak Hour

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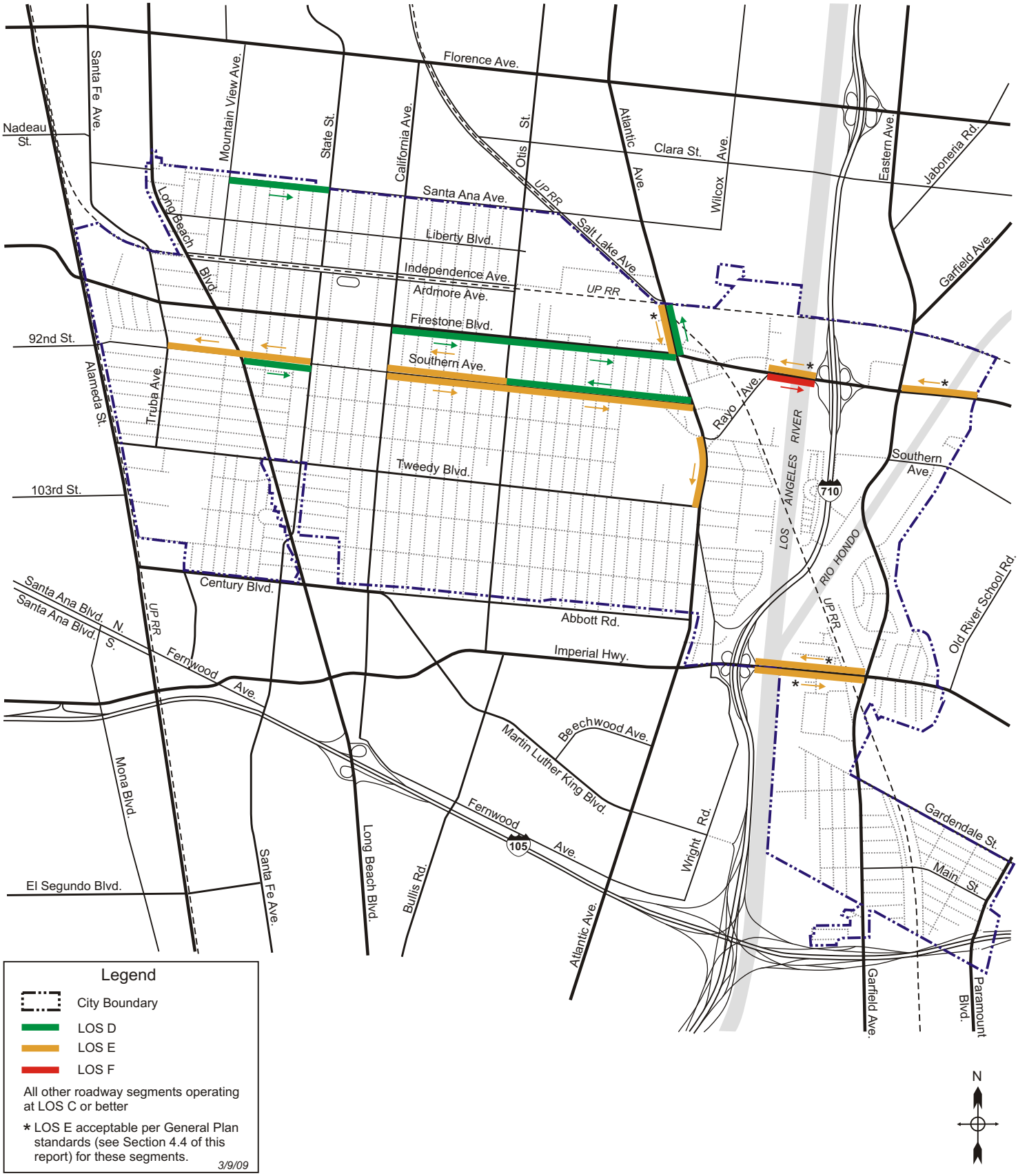

Figure 5
Existing Roadway Segments Operating at LOS D, E and F - PM Peak Hour

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(Primary Arterials, Minor Arterials, and Collector Streets) are currently operating at LOS E or LOS F in the A.M peak hours and only 15% in the PM peak hours.

Table 4. Roadway Segments Level of Service Summary

Level of Service	No. of Roadway Segments	
	AM Peak Hour	PM Peak Hour
A	46	42
B	15	11
C	9	11
D	7	6
E	3	11
F	2	1
Total	82	82

However, for certain of the east-west streets, including parts of Firestone Boulevard, Southern Avenue, and Imperial Highway, levels of service of LOS D, LOS E and even LOS F are occurring, particularly in the eastern part of the City.

3. The General Plan Mobility Element

3.1 Key Concepts of The Mobility Element

The Mobility Element is designed to provide a forward-looking vision for the future of transportation in South Gate, based on the inputs from the community and a consideration of the future needs of the city. The Mobility Element is based numerous key concepts that reflect these inputs. These concepts are listed and explained in Table 5.

In summary, The Mobility Element foresees a balanced transportation system in the City such that South Gate will be a walkable and livable City; that the street grid is completed in the north-east part of the City; that certain streets are widened: that street design is context sensitive to adjacent land uses and districts; that effective traffic management techniques should be employed by the City; that transit service should be increased; and that bicycle and pedestrian facilities be provided and their use encouraged.

3.2 Key Circulation Components

The key provisions of the Mobility Element with respect to street classifications and functions, are summarized in this section.

3.2.1 Street Types

The Mobility Element identifies four key types of streets in the City.

Boulevard (Primary Arterial)
Boulevards are major streets in the city that carry both local and through traffic and are expected to carry the highest volumes of traffic in the city. They provide limited access to adjacent land uses. Boulevards are multi-modal streets that serve as key transit corridors, emergency response routes, and may also serve as truck routes. Boulevards are functionally equivalent to a Primary Arterial.

Avenue (Secondary Arterial)
Avenues are secondary streets in the city. They carry primarily local traffic and also some through traffic. They serve shorter trips and provide access to adjacent land uses. They are local transit corridors, and are the primary bicycle routes and pedestrian routes in the city. Avenues are functionally equivalent to a Secondary Arterial.

Table 5. Key Concepts of the Mobility Element

Concept	Explanation
Mobility in a Livable and Walkable Community	The Mobility Element promotes a balanced transportation system in the City, which encourages the use of all transportation modes as alternatives to the automobile. This fundamental concept supports other General Plan goals that South Gate should be a livable and walkable City.
A Complete Street Grid in the City	The fundamental basis of mobility within the City is the roadway system which provides the basis for many modes of travel including autos, buses, bicycles, and pedestrians. To this extent, the deficiencies in the geographic coverage of the existing street grid in the northeast part of the City should be remedied. Key streets should be extended and/or added, to provide for improved street circulation and improved access to the I-710 Freeway. Some key streets should also be widened.
Streets that are Context Sensitive	The design and operation of streets should relate not only to their transportation function, but should also be sensitive to the desired nature and scale of adjacent land uses and the districts they pass through.
Improve Certain Key Streets	The key traffic corridors in South Gate are Firestone Boulevard, Imperial Highway, Garfield Avenue, Atlantic Avenue, and Long Beach Boulevard. These streets carry the highest volumes of local traffic, and also serve traffic passing through the City. The Mobility Element anticipates widening and improving certain sections of these corridors to accommodate future travel demand. It also defines street characteristics to allow these roadways to conveniently serve all modes of travel while being pedestrian-friendly and sensitive to the context of adjacent land uses.
Manage Traffic on City Streets	Because most streets cannot be widened, it will be increasingly important to effectively manage traffic operations on key City streets with a focus to

Concept	Explanation
	maximize the effective capacity and utilization of the existing street system. This could entail the implementation of traffic operations procedures such as traffic monitoring, signal coordination, traffic signal synchronization, bus priority schemes, dynamic electronic signage, and smart pedestrian crossings. Vehicular capacity improvements and reductions in traffic delay could also be realized by providing bus pull-outs at major boarding points on arterial roadways. The City needs to make every effort to use the latest available technologies in traffic detection and operational management. Traffic management should also ensure that the needs of transit, bicycles, and pedestrians are also accommodated.
Improve Transit Service	Transit provides an alternative to use of the automobile. In addition to recommending improvements to regional transit (including additional bus routes and increased service frequencies) a key component of the Mobility Element is the introduction and operation of a local bus transit service in the City with convenient bus transfer points that would circulate around the city connecting residential neighborhoods to key commercial, institutional, and recreational destinations in the City.
Improve Bicycle and Pedestrian Facilities and Encourage the Use of these Travel Modes	Providing alternatives to the automobile requires enhanced bicycle and pedestrian facilities and to encourage use of these modes. The Mobility Element identifies measures to implement bicycle and pedestrian networks in the City which will allow residents to travel from neighborhoods to key destinations by bicycle or by walking.
Protect Residential Neighborhoods from Traffic Intrusion	The first and key strategy for keeping through traffic out of residential neighborhoods is to effectively manage traffic on the arterial roadway system, and to limit incentives for traffic to divert through neighborhoods. However, it is also important that programs are developed to manage traffic volumes and speeds to appropriate levels in the neighborhoods, including

Concept	Explanation
	the use of appropriate traffic calming techniques. Solutions for these problems should involve techniques that reflect specific local neighborhood circumstances, not generic solutions. The Mobility Element therefore identifies actions for developing a process and procedures for neighborhood traffic management programs where appropriate.
Manage Parking Demand and Supply	Parking is an integral component of travel, and as such needs to be fully integrated into the City's transportation policies in this Mobility Element. Parking policies should be supportive of the overall multi-modal goals of the Mobility Element. While it is important that sufficient parking is provided for land uses, it is equally important that there is not an oversupply of parking which would discourage use of alternate modes to the automobile.
Coordinate Land Use Development and the Transportation System	The transportation system does not function in isolation and travel in the City is generated by land uses. It is therefore important that mobility policies and land use policies are consistent and synchronized. Development policies and procedures and building design requirements should be transit-friendly and pedestrian-friendly, and include elements to support transit, bicycles, and pedestrians. Development densities should be focused along major transportation and transit corridors and around transit station/nodes.

Street (Collector)
Streets connect neighborhoods to each other and to commercial and other districts. They also connect arterials to local roads. Streets are functionally equivalent to Collector Streets.

Local Road
Local roads are exactly that – they serve local land uses, typically residential but can also serve industrial and/or commercial uses. They carry low traffic volumes that are exclusively locally oriented traffic.

3.2.2 Street Classifications/Designations

The street classifications in the Mobility Element according to the street types identified above are shown in Figure 6.

The following streets are designated as Boulevards (Primary Arterials), with the specified maximum number of lanes (excluding turn lanes):

Firestone Boulevard	(six lanes) (eight lanes between Atlantic Avenue and Garfield Avenue)
Imperial Highway	(six lanes) (eight lanes between Atlantic Avenue and Garfield Avenue)
Long Beach Boulevard	(six lanes) – south of Firestone Boulevard (four lanes) – north of Firestone Boulevard
Atlantic Avenue	(six lanes) – north of Tweedy Boulevard (four lanes) – south of Tweedy Boulevard
Garfield Avenue	(six lanes) – north of Rio Hondo Channel (four lanes) – south of Rio Hondo Channel
Paramount Boulevard	(four lanes)

The following streets are designated as Avenues (Secondary Arterials) with the specified maximum number of lanes (excluding turn lanes):

Tweedy Boulevard	(four lanes)
Southern Avenue Extension	(four lanes)
California Avenue	(four lanes)
State Street	(four lanes)
Century Boulevard (West)	(four lanes)

Figure 6
Mobility Element Roadway Classifications

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The following roadways are designated as Streets (Collector Streets) with the specified maximum number of lanes (excluding turn lanes):

Santa Ana Avenue	(two lanes)
Independence/Ardmore	(two lanes each)
Southern Avenue	(two lanes)
Gardendale Street	(four lanes)
Main Street	(two lanes)
Truba Avenue	(two lanes)
Otis Street	(four lanes)
Alexander Street	(two lanes)
Wilcox Avenue New Extension	(two lanes) – from Patata Street to Southern Avenue
Rayo Avenue	(two lanes)
Borwick Avenue	(two lanes) – east of Garfield Avenue.

3.2.3 Truck Routes

A network of truck routes in the City will keep trucks on designated key arterial streets and minimize the negative impacts of truck traffic on the remaining City Streets. The designated truck route streets are shown in Figure 7. These streets have been selected because of their proximity to the key industrial areas in the City, proximity to the I-710 Freeway, and their connection to truck routes in adjacent cities. These are the only streets in the City that should be used for truck traffic, except for local deliveries. To the extent possible they are designed to keep trucks away from high intensity commercial areas and high density residential areas.

3.2.4 Transit Routes

The City's street system provides the circulation system for automobiles and for other transportation modes providing alternatives for residents to travel without using their car. One of these key alternative modes of transportation is transit.

A key goal of the Mobility Element is that existing transit services operating in the City should be expanded and enhanced to be more accessible and convenient to residents. This should include expanded route coverage, increased service frequencies, extended operating hours, and the provision of transit-related amenities, as the availability of funding allows.

The Mobility Element also anticipates that many arterial and collector streets within the City will also function as transit corridors which would be served by either local or

regional transit service, as shown in Figure 8. These should include increased regional transit service as well as the initiation of local transit service within the City.

A Primary Transit Street is a street which is expected to carry the highest levels of transit service, particularly regional service, with the most bus routes and the highest frequency of service. A Secondary Transit Street is a street that is expected to carry lower but still significant levels of transit service, and probably with a greater orientation to local rather regional bus routes. In both cases the design and operation of the streets need to reflect and accommodate transit vehicles.

3.2.5 Bicycle Facilities

The Mobility Element defines a city-wide network of bicycle facilities that connects residential neighborhoods to schools, parks, and activity centers.

Three different classes of bicycle routes are identified in the Mobility Element. These are:

Class I - Bike Path or Bike Trail
This is a separate right-of-way designated for the exclusive use of bicycles and pedestrians. Cross-flows with motorized vehicles are minimized. While a bikepath/trail may be located adjacent to a City street, it will typically be located away from City streets in a separate right-of-way. A bike path is paved while a bike trail is usually an unpaved surface.

Class II - Bike Lane
This is a restricted area at the edge of a street designated for the exclusive or semi-exclusive use of bicycles with through travel by motorized vehicles prohibited. Cross-flows by motorized vehicles and pedestrians are permitted.

Class III – Bike Street
This is a signed street providing for shared use of a street by motor vehicles and bicyclists. While bicyclists have no exclusive use or priority, the signage (both by the side of the street and stenciled on the roadway surface) warns motorists of bicyclists sharing the roadway space. These streets are called “Bike Streets.”

The Mobility Element Bicycle Network is shown in Figure 9, which identifies the locations of each class of bicycle facility.

Figure 7
Mobility Element Truck Routes

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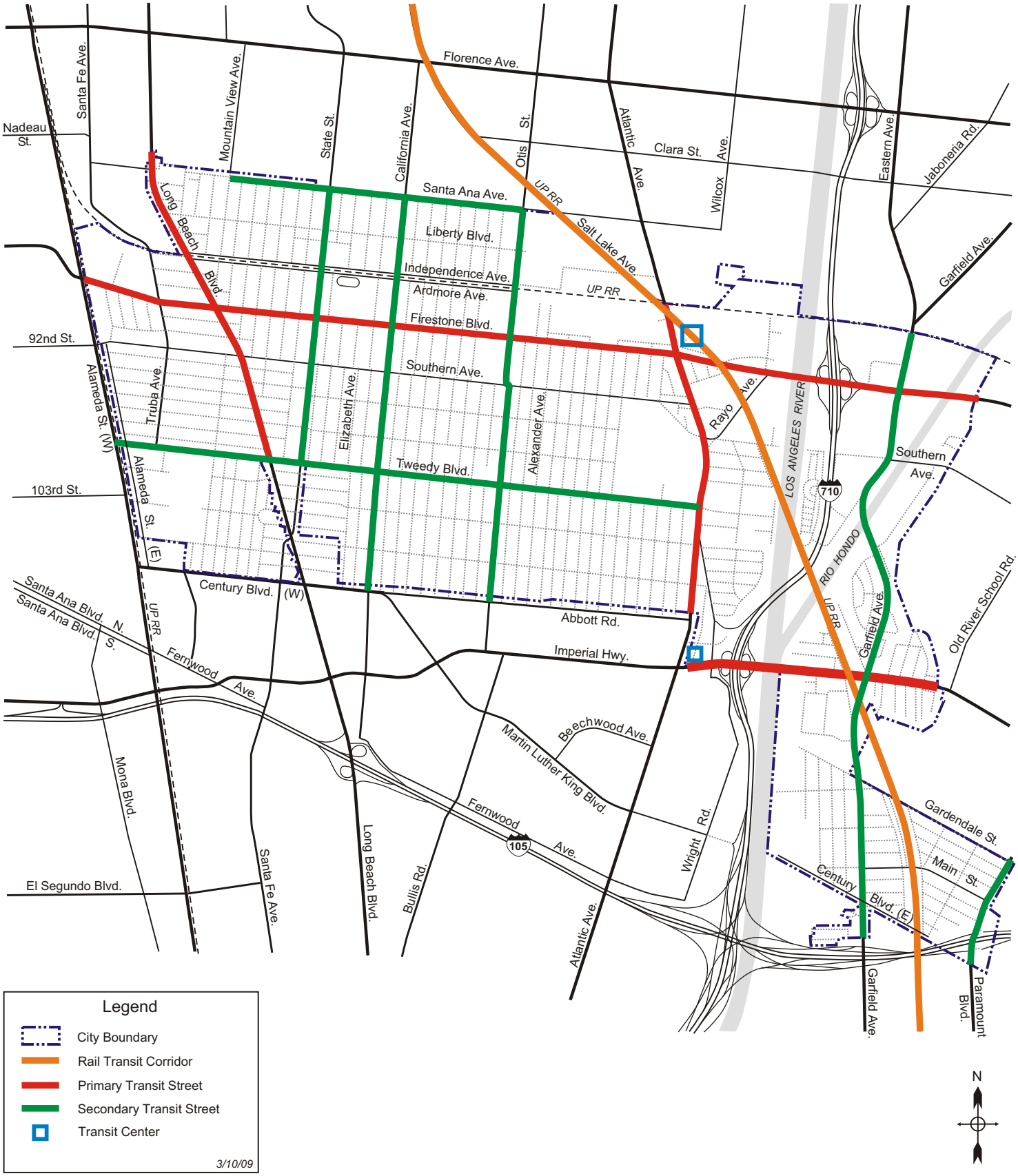

Figure 8
Mobility Element Transit Corridors

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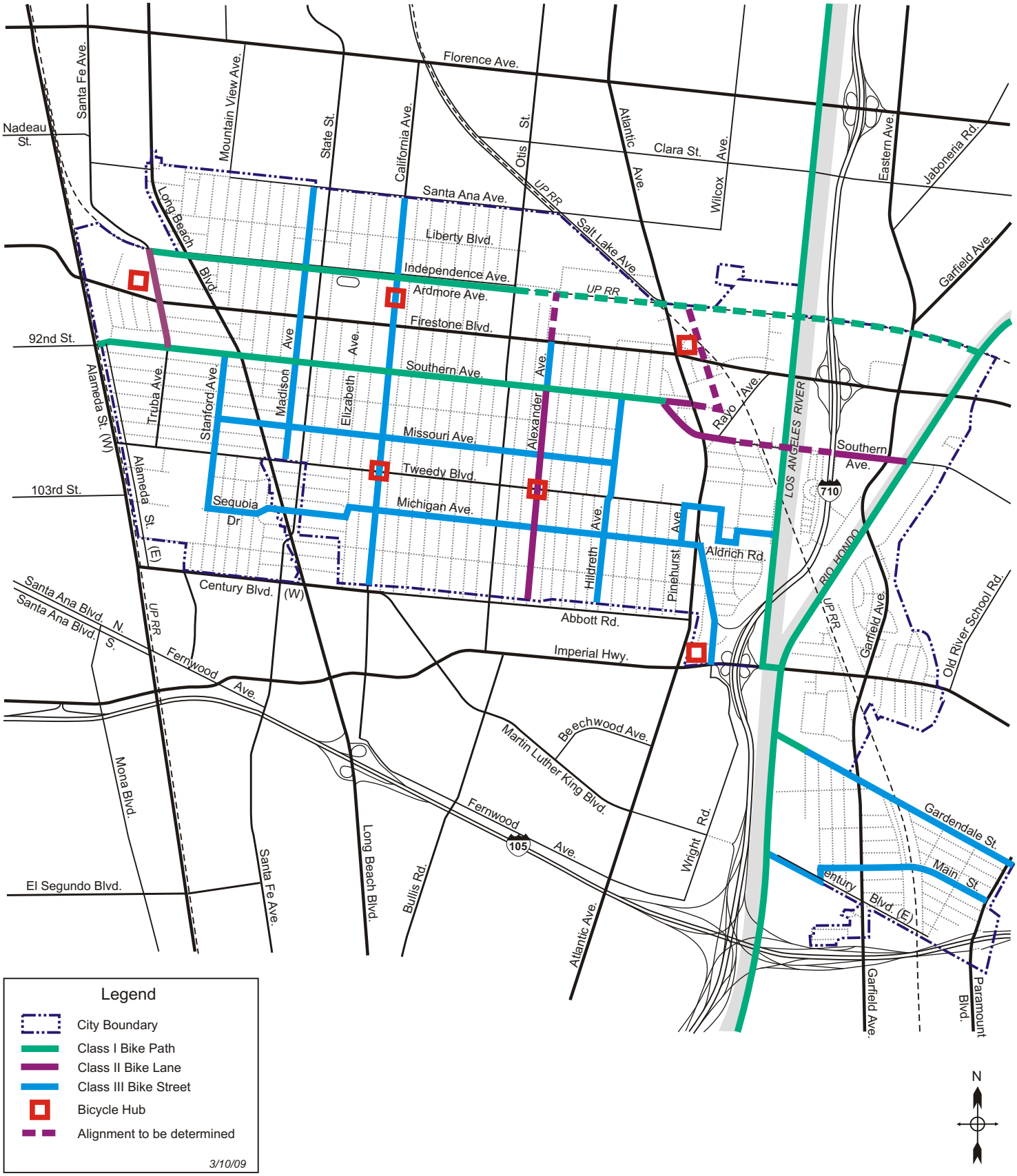

Figure 9
Mobility Element Bicycle Plan

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3.2.6 Street Standards

Street Standards - Background

The City of South Gate is an older City that is completely built out. The application of "new" roadway standards is therefore often not feasible, as there is no room for roadway widening without taking property or accepting right-of-way dedication for roadway right-of-way.

In addition, the "past" philosophy of requiring wider traffic lanes and roadway widenings is beginning to give way to a more comprehensive approach to roadways that is "context sensitive". Instead of focusing the design features of roadways purely on accommodating the automobile, cities are increasingly considering the operational needs of other travel modes (transit, bicycles, and pedestrians) in roadway design, and are also considering the types and functions of adjacent land uses. Roadway design and standards thus become a balancing act of considering all these needs, and ensuring that the roadway design and operation is consistent not only with the function of the street but with the function of the adjacent land uses.

While there is a desire to widen certain key streets in South Gate, there are also many instances where streets cannot or should not be widened, and the existing street widths will remain. The Mobility Element street standards are therefore flexible in that they accommodate existing street widths and also allow for roadway widenings in very limited areas and only where feasible.

Street Standards - Details

The street standards for each street type are detailed in the Mobility Element in the General Plan (shown in the Mobility Element in Table 2 which details the operating and physical characteristics, and in Figures 6, 7b, 8, and 9, which illustrate the typical cross section standards for the different street types).

Standard Intersection
Roadway cross sections at a standard intersection configuration are shown in the Mobility Element in the General Plan (shown in the Mobility Element in Figures 6a, 6c, 7b, 8a, and 8b), and fit within the standard street sections shown. This allows for a single left turn lane, but does not allow for exclusive right turn lanes unless accommodated within the standard roadway cross section (i.e. in lieu of a through lane).

Enhanced Intersection
An enhanced intersection is one where the roadway width may exceed the regular standards. Typically this would allow for dual left-turn lanes. The dual left turn lanes may be installed on any approach, but it is not necessary to install on all approaches. If

dual left turn lanes are not installed on both approaches on the same street, then a suitable transition will be necessary on the approach where they are not installed. The enhanced intersection does not necessarily include additional exclusive right turn lanes. Enhanced intersection locations are shown in Figure 6 (Roadway Classifications) in this chapter, and are located as follows:

- Firestone Boulevard and Long Beach Boulevard
- Firestone Boulevard and California Avenue
- Firestone Boulevard and Atlantic Avenue
- Firestone Boulevard and Rayo Avenue
- Firestone Boulevard and I-710 Southbound Ramps
- Firestone Boulevard and I-710 Northbound Ramps
- Firestone Boulevard and Garfield Avenue
- Atlantic Avenue and Southern Avenue
- Atlantic Avenue and Tweedy Boulevard
- Garfield Avenue and Southern Avenue
- Garfield Avenue and Imperial Highway

3.3 Mobility Element Goals and Objectives

The goals, objectives, and policies of the Mobility Element are described below. They were developed to address the overall vision for transportation and mobility in the City and to respond to the key transportation issues and challenges facing the city.

Goal ME 1: Provide and maintain an efficient roadway system serving all parts of the city and support multimodal transportation.

Objective ME 1-1: Balance the roadway system with the planned land uses in the city

Objective ME 1-2: Fully develop the street system, and maximize its operational efficiency

Objective ME 1-3: Maintain the City's transportation infrastructure

Goal ME 2: Provide a multi-modal transportation environment in the City that provides transportation choices.

Objective ME 2-1: Provide a connected, balanced, and integrated transportation system of bicycle and pedestrian networks that enable residents to walk and bike, as alternatives to use of the car.

Objective ME 2-2: Improve local and regional transit service in the city

Objective ME 2-3: Encourage walking, biking, and use of transit, through a variety of supportive land use development and urban design measures

Goal ME 3: Minimize the adverse effects of traffic in the city

Objective ME 3-1: Minimize and/or reduce adverse impacts on city streets from regional through traffic.

Objective ME-3-2: Reduce adverse impacts from truck traffic

Objective ME 3-3: Calm traffic in the city and protect residential neighborhoods from traffic intrusion

Goal ME 4: Effectively manage parking in the city

Objective ME 4-1: Manage parking demand and supply in the city

The Mobility Element also identifies specific policies to support each of these goals and objectives. These policies are listed in the Mobility Element.

3.4 Actions for Street Improvements

A number of street improvements are identified for implementation in the Mobility Element in order to improve connections, fill in some gaps in the existing grid, improve access to the I-710 Freeway, improve circulation across the barriers of the Los Angeles River and the I-710 Freeway, improve traffic circulation, and keep traffic on arterial roadways and out of residential neighborhoods. The following is a partial list of the key street improvements listed in the Mobility Element (the numbers are the reference numbers used in the Mobility Element):

Action ME 1: Implement the following street improvements for general circulation (including transit and other modes):

Action ME 1.1: Garfield Avenue: Widen from four lanes to six lanes between just south of the Rio Hondo Channel and Firestone Boulevard.

Action ME 1.2: Garfield Avenue: Work with the I-710 Improvement Project to add truck ramps to I-710 Truck Lanes within the City limits where feasible without adversely impacting key streets or residential neighborhoods.

Action ME 1.4: Area Bounded by I-710, Tweedy Boulevard, Atlantic Avenue, UP Railroad Corridor (east-west): Conduct studies to explore/implement improvements to the currently lacking street grid in this area in order to relieve pressure on the intersection of Firestone Boulevard and Atlantic Avenue. Roadway improvements could include:

- Extend Independence Avenue or Ardmore Avenue east from Otis Street, over the Los Angeles River and the I-710 Freeway to Garfield Avenue. This should be a Collector Street.

- Add a new north-south Collector Street (Wilcox Avenue) to connect the extended Independence/Ardmore (Patata Street), south to Firestone Boulevard just east of the railroad tracks and then southerly (adjacent to and east of the railroad) to connect to Southern Avenue. (see Figure 2).

Action ME 1.5: Atlantic Avenue: Widen from four lanes to six lanes throughout the City, as discussed in the Corridor Characteristics Section in Table ME 4 and Figure ME 12.

Action ME 1.6: Alexander Avenue: Extend north from Firestone Boulevard to Ardmore Avenue in conjunction with private property development.

Action ME 1.7: Long Beach Boulevard: Widen to six lanes between the South City Limit and Firestone Boulevard. Accommodate on-street parking and wider sidewalks on described under Corridor Characteristics in Table ME 5 and shown in Figure 13a.

Action ME 1.8: Santa Fe Avenue: Work with the County of Los Angeles to extend/connect Santa Fe Avenue (in unincorporated County) easterly along the alignment of Independence Avenue or the railroad right-of-way to Long Beach Boulevard, to connect with Independence Avenue or Ardmore Avenue.

Action ME 1.9: Independence Avenue/Ardmore Avenue: Extend eastwards as a Collector Street to Atlantic Avenue, then easterly across the Los Angeles River and I-710 Freeway (with possible ramp connection) to Garfield Avenue. The cross-section should include bike lanes.

Action ME 1.10: Firestone Boulevard: Widen to a six lane boulevard, as discussed in Corridor Characteristics Section and shown in Table ME 3 and Figures ME 11a and ME 11b. West of Evergreen Avenue, and east of Hildreth Avenue, Firestone Boulevard may need to accommodate an enhanced cross section with additional (right and left) turn

lanes. Between Atlantic Avenue and Garfield Avenue, widen to eight lanes, with lane configuration to be determined by design studies at time of widening.

Action ME 1.11: Southern Avenue: Extend east, as a Secondary Arterial (four lanes), across the Los Angeles River and the I-710 Freeway to connect to Garfield Avenue.

Action ME 1.13: Imperial Highway: Widen to a full standard six lane arterial with appropriate turn and auxiliary lanes between west and east City limits. Between Atlantic Avenue and Garfield Avenue, widen to eight lanes, with lane configuration to be determined by design studies at time of widening.

Action ME 1.16: Truba Avenue: Widen Truba Avenue between Southern Avenue and Tweedy Boulevard to a 2-lane Collector Street standard.

3.5 Actions for Traffic Management and Operations Improvements

A number of implementation actions are identified for implementation in the Mobility Element that are focused on enhancing the efficiency, capacity, and safety of the street system. These include the following key actions:

Action ME 2.1: Upgrade the city's traffic signals and signal timing.
Modernize traffic signal equipment as necessary, and improve traffic signal coordination and timing along the key arterial corridors, taking into account the needs of transit, bicyclists, and pedestrians as well as autos.

Action ME 2.2: Conduct a system planning and design feasibility study for an advance traffic control system.
This would include all traffic signals in the City (preferably including Caltrans signals) as well as vehicle detectors, camera surveillance, and adaptive signal timing control software, and changeable message signs as appropriate.

Action ME 2.3: Install an advanced traffic signal control system.
Install an advanced traffic control system based on the system planning and design feasibility study. This might be local to the City of South Gate, or could be shared with adjacent jurisdictions.

4. Future 2035 Forecasts and Traffic Conditions

This chapter provides an overview of the process used to develop traffic forecasts for the General Plan to the year 2035, describes the traffic forecasts, and also describes the forecast traffic conditions with the General Plan/Mobility Element.

4.1 Overview of Forecasting Process

South Gate is one of many cities in the highly developed Los Angeles area, and is surrounded by many other cities that share a sub-regional and regional transportation network. The volume of traffic on South Gate streets is therefore dependent not only on land uses in the City of South Gate but also land uses and transportation network characteristics in neighboring cities and in the region.

The traffic forecasts were therefore based on the SCAG 2008 RTP Regional Travel Model. This model was used by SCAG to prepare the travel forecasts for the recently adopted 2008 Regional Transportation Plan (RTP).

This model was used for a number of reasons:

- because it accounts for adopted regional socioeconomic growth projections (population, households and employment) it is best suited for reflecting the implications of these growth projections on the local transportation network;

- similarly, because it includes all planned regional transportation improvements it is also best suited for reflecting the implications of those improvements on regional travel patterns and the City's street system;

- by using the adopted SCAG projections, the South Gate General Plan forecasting process is consistent with the SCAG regional transportation planning process.

The travel forecasting process is described in Appendix A. An overview is provided is here.

The General Plan traffic forecasts are link based – i.e. are prepared for roadway segments. This is the most appropriate type of traffic forecast for a General Plan, as land use quantities and distributions in the Land Use Plan are forecast only at a very general level. Traffic forecasts at the intersection turning movement level are therefore less reliable and less accurate for the long time horizon (to 2035) than for roadway link forecasts. The General Plan identifies the overall level of roadway infrastructure necessary – as identified in the Mobility Element and summarized in Chapter 3 of this

report. Specific intersection configurations will be determined in the future as specific development occurs and are analyzed on an ongoing basis.

The SCAG Model was therefore used to obtain estimates of traffic growth between 2003 (the SCAG Model base year) and 2035 (the SCAG forecast year) for numerous roadway segments (total of about forty locations) throughout the City. These locations were represented by a series of fourteen screenlines or cutlines, running north-south and east-west across the City, and representing total travel on each screenline. The forecast growths were then adjusted to represent growth from 2008 to 2035 and applied to 2008 existing traffic volumes to obtain forecasts of 2035 conditions.

The SCAG Model was used to obtain the initial forecasts of traffic flows on roadway links/segments in the City of South Gate. However, because it is a regional model, certain adjustments were necessary to adequately reflect the specific local forecasts and components of the South Gate General Plan. A series of checks and adjustments were therefore made in order to ensure that the final traffic forecasts adequately reflect not only regional conditions but also the local conditions represented in the City's General Plan. These checks and adjustments included the following.

The socioeconomic growth projections assumed in the SCAG Model were compared to the projections in the South Gate General Plan at the Citywide level. Any differences were accounted for by adjusting the traffic growths from the SCAG model accordingly.

The SCAG socioeconomic projections were also compared to the South Gate General Plan projections at the Transportation Analysis Zone (TAZ) level. There are nineteen TAZ's used in the SCAG Model in the City of South Gate. Any differences in localized growths within the City were adjusted for accordingly.

Finally, certain local roadway transportation improvements are identified in the General Plan that were not incorporated in the SCAG Model. The SCAG forecasts were thus adjusted to reflect such local improvements.

These adjustments are all detailed further in Appendix A. A discussion of the key elements is provided below.

4.2 SCAG and South Gate Growth Projections

Overall Citywide Land Use

The South Gate General Plan forecasts a 22% increase in households and a 19% increase in employment between 2003 and 2035.

The adopted SCAG forecasts for South Gate show a 15% increase in households and a 7% increase in employment for the same period.

The travel forecasts were therefore adjusted to reflect the greater growths anticipated in the General Plan.

This was accomplished by determining the additional vehicle trips that would be generated by the additional growth and assigning the additional trips to the roadway network and adding to the forecast obtained from the SCAG Model.

Localized Land Use

The General Plan anticipates that the majority of growth in the City will be focused in certain key areas, namely:

- In the north-west of the City along Firestone Boulevard between Long Beach Boulevard and Alameda Street.
- In the Civic Center area along California Avenue north of Firestone Boulevard.
- Generally along Firestone Boulevard and along Atlantic Avenue.
- The area around the intersection of Firestone Boulevard and Atlantic Avenue, including the areas to the northwest (Gateway Project), the northeast (Transit Village District), and the southeast (redevelopment of the industrial area) of that intersection.
- Along the Garfield Avenue corridor north of the Rio Hondo Channel.

The overall general traffic growths identified in the SCAG model were therefore adjusted to reflect the higher growths in land uses in these specific areas, as well as to reflect lower growths in those parts of the City where below average or very little growth is expected.

4.3 Transportation Improvements

Regional Level Improvements

The SCAG 2035 Network includes the following planned regional transportation improvements in the vicinity of South Gate:

I-5	Add HOV Lanes - between SR-91 and I-710

	Add mixed flow lanes – between SR-91 and I-605
I-710	Add general purpose lanes and dedicated truck lanes - between Long Beach and Commerce/Vernon
Alameda Corridor	HST Freight Corridor – between ports and Hobart Yard
Bus Rapid Transit	Add routes on Atlantic and Firestone
California HST	Downtown Los Angeles to Anaheim (generally I-5 corridor)

Local South Gate Improvements

The SCAG 2035 Network does not include any of the local roadway improvements (new roadways or roadway widenings) identified in the General Plan Mobility Element for the in the City of South Gate (see earlier discussion in Chapter 3 of this report). The traffic forecasts were therefore adjusted to reflect these improvements.

4.4 Future Forecasts and Future Conditions

The future forecasts of daily traffic volumes are shown in Figure 10. The peak hour forecasts and level of service projections are shown in Table 6.

Level of Service Standards

The Mobility Element defines level of service standards in Policy P.1-1-3 as:

"The City desires to maintain a maximum Level of Service D throughout the City, except that Level of Service E may be permitted in the following circumstances:

- *at, or adjacent to, freeway ramps*
- *intersections of Boulevards (Primary Arterials) with other Boulevards*
- *on Truck Routes*
- *at or adjacent to designated Major Commercial Districts (Community College, Civic Center, Gateway, El Paseo, Rayo Industrial, El Portal, South Gate Triangle).*

These performance standards may require, but are not intended to mandate, roadway and/or intersection widenings. They are a policy goal and shall be used to monitor traffic conditions in the City and to assess the impacts of new development. Because level of service standards apply only to vehicular mobility and do not account for

Legend

City Boundary

X,XXX Daily Traffic Volume

Location of Daily Traffic Count

12/1/08

Note:
Counts conducted in May/June 2006

Daily traffic volumes on freeways taken from '2005 Traffic Volumes on California State Highways' (extrapolated to represent 2006 conditions)

N

Figure 10
Daily Traffic Volumes - Future 2035

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Table 6 Future 2035 - Roadway Segments Level Of Service Analysis - AM and PM Peak Hour

3/10/2009

	Street	Between	And	Roadway Classification	Peak Period	Capacity Per Lane	No. of Lanes		2035 Volume		2035 Capacity		V/C Ratio		Level of Service	
							NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
1	Santa Ana Ave.	Mountain View Ave.	State St.	Collector Street	A.M	600	1	1	405	386	600	600	0.675	0.643	B	B
					P.M	600	1	1	545	452	600	600	0.908	0.753	E	C
2	Independence Ave.	Mountain View Ave.	State St.	Local Street	A.M	600	1	1	345	289	600	600	0.575	0.482	A	A
					P.M	600	1	1	356	324	600	600	0.593	0.540	A	A
3	Independence Ave.	California Ave.	Otis St.	Local Street	A.M	600	1	1	355	364	600	600	0.592	0.607	A	B
					P.M	600	1	1	393	361	600	600	0.655	0.602	B	B
3a	Independence Ave.	Otis St.	Atlantic Ave.	Collector Street	A.M	600	1	1	230	190	600	600	0.383	0.317	A	A
					P.M	600	1	1	220	239	600	600	0.367	0.398	A	A
3b	Independence Ave.	Atlantic Ave.	Garfield Ave.	Collector Street	A.M	600	1	1	246	233	600	600	0.410	0.388	A	A
					P.M	600	1	1	254	274	600	600	0.423	0.457	A	A
4	Firestone Blvd.	Alameda St.	Long Beach Blvd.	Primary Arterial	A.M	800	3	3	1,373	2,248	2,400	2,400	0.572	0.937	A	E [1]
					P.M	800	3	3	2,094	2,158	2,400	2,400	0.873	0.899	D	D
5	Firestone Blvd.	Long Beach Blvd.	State St.	Primary Arterial	A.M	800	3	3	1,558	1,573	2,400	2,400	0.649	0.655	B	B
					P.M	800	3	3	1,594	2,101	2,400	2,400	0.664	0.875	B	D
6	Firestone Blvd.	California Ave.	Otis St.	Primary Arterial	A.M	800	3	3	1,827	1,954	2,400	2,400	0.761	0.814	C	D
					P.M	800	3	3	1,889	2,204	2,400	2,400	0.787	0.918	C	E [1]
7	Firestone Blvd.	Otis St.	Atlantic Ave.	Primary Arterial	A.M	800	3	3	2,067	1,707	2,400	2,400	0.861	0.711	D	C
					P.M	800	3	3	1,980	2,149	2,400	2,400	0.825	0.895	D	D

Table 6 Future 2035 - Roadway Segments Level Of Service Analysis - AM and PM Peak Hour

3/10/2009

	Street	Between	And	Roadway Classification	Peak Period	Capacity Per Lane	No. of Lanes		2035 Volume		2035 Capacity		V/C Ratio		Level of Service	
							NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
8	Firestone Blvd.	Atlantic Ave.	Rayo Ave.	Primary Arterial	A.M	800	4	4	2,214	2,097	3,200	3,200	0.692	0.655	B	B
					P.M	800	4	4	2,285	2,466	3,200	3,200	0.714	0.771	C	C
9	Firestone Blvd.	Rayo Ave.	I-710 Ramps	Primary Arterial	A.M	800	4	4	2,592	2,249	3,200	3,200	0.810	0.703	D	C
					P.M	800	4	4	2,635	2,791	3,200	3,200	0.823	0.872	D	D
10	Firestone Blvd.	Garfield Ave.	East City Limits	Primary Arterial	A.M	800	3	3	1,600	1,952	2,400	2,400	0.667	0.813	B	D
					P.M	800	3	3	2,241	2,002	2,400	2,400	0.934	0.834	E [1]	D
11	Southern Ave.	Truba Ave.	Long Beach Blvd.	Collector Street	A.M	600	1	1	563	383	600	600	0.938	0.638	E	B
					P.M	600	1	1	412	538	600	600	0.687	0.897	B	D
12	Southern Ave.	Long Beach Blvd.	State St.	Collector Street	A.M	600	1	1	457	570	600	600	0.762	0.950	C	E
					P.M	600	1	1	503	565	600	600	0.838	0.942	D	E
13	Southern Ave.	California Ave.	Otis St.	Collector Street	A.M	600	1	1	570	532	600	600	0.950	0.887	E	D
					P.M	600	1	1	541	570	600	600	0.902	0.950	E	E
14	Southern Ave.	Otis St.	Atlantic Ave.	Collector Street	A.M	600	1	1	322	406	600	600	0.537	0.677	A	B
					P.M	600	1	1	570	465	600	600	0.950	0.775	E	C
14a	Southern Ave.	Atlantic Ave.	Garfield Ave.	Minor Arterial	A.M	700	2	2	902	512	1,400	1,400	0.644	0.366	B	A
					P.M	700	2	2	808	792	1,400	1,400	0.577	0.566	A	A
15	Tweedy Blvd.	Truba Ave.	Long Beach Blvd.	Minor Arterial	A.M	700	2	2	822	858	1,400	1,400	0.587	0.613	A	B
					P.M	700	2	2	738	612	1,400	1,400	0.527	0.437	A	A

Table 6 Future 2035 - Roadway Segments Level Of Service Analysis - AM and PM Peak Hour

3/10/2009

	Street	Between	And	Roadway Classification	Peak Period	Capacity Per Lane	No. of Lanes		2035 Volume		2035 Capacity		V/C Ratio		Level of Service	
							NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
16	Tweedy Blvd.	California Ave.	Otis St.	Minor Arterial	A.M	700	2	2	1,238	814	1,400	1,400	0.884	0.581	D	A
					P.M	700	2	2	1,124	965	1,400	1,400	0.803	0.689	D	B
17	Tweedy Blvd.	Otis St.	Atlantic Ave.	Minor Arterial	A.M	700	2	2	1,172	1,007	1,400	1,400	0.837	0.719	D	C
					P.M	700	2	2	1,029	1,125	1,400	1,400	0.735	0.804	C	D
18	Imperial Hwy.	I-710 Fwy	Garfield Ave.	Primary Arterial	A.M	800	4	4	2,098	2,720	3,200	3,200	0.656	0.850	B	D
					P.M	800	4	4	2,644	2,632	3,200	3,200	0.826	0.823	D	D
19	Imperial Hwy.	Garfield Ave.	Old River School Road	Primary Arterial	A.M	800	3	3	1,693	1,932	2,400	2,400	0.705	0.805	C	D
					P.M	800	3	3	2,213	1,879	2,400	2,400	0.922	0.783	E [1]	C
20	Gardendale St.	Garfield Ave.	Paramount Blvd.	Collector Street	A.M	600	2	2	452	710	1,200	1,200	0.377	0.592	A	A
					P.M	600	2	2	526	539	1,200	1,200	0.438	0.449	A	A
21	Main St.	Garfield Ave.	Paramount Blvd.	Collector Street	A.M	600	1	1	223	214	600	600	0.372	0.357	A	A
					P.M	600	1	1	195	210	600	600	0.325	0.350	A	A
22	Long Beach Blvd.	Liberty Blvd.	Independence Ave.	Primary Arterial	A.M	800	3	3	1,145	774	2,400	2,400	0.477	0.323	A	A
					P.M	800	3	3	1,193	1,107	2,400	2,400	0.497	0.461	A	A
23	Long Beach Blvd.	Firestone Blvd.	Southern Ave.	Primary Arterial	A.M	800	3	3	1,402	1,194	2,400	2,400	0.584	0.498	A	A
					P.M	800	3	3	1,641	1,214	2,400	2,400	0.684	0.506	B	A
24	Long Beach Blvd.	Southern Ave.	Tweedy Blvd.	Primary Arterial	A.M	800	3	3	1,477	1,190	2,400	2,400	0.615	0.496	B	A
					P.M	800	3	3	1,723	1,268	2,400	2,400	0.718	0.528	C	A

Table 6 Future 2035 - Roadway Segments Level Of Service Analysis - AM and PM Peak Hour

3/10/2009

	Street	Between	And	Roadway Classification	Peak Period	Capacity Per Lane	No. of Lanes		2035 Volume		2035 Capacity		V/C Ratio		Level of Service	
							NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
25	State St.	Liberty Blvd.	Independence Ave.	Minor Arterial	A.M	700	2	2	714	1,215	1,400	1,400	0.510	0.868	A	D
					P.M	700	2	2	874	721	1,400	1,400	0.624	0.515	B	A
26	State St.	Southern Ave.	Tweedy Blvd.	Minor Arterial	A.M	700	2	2	556	502	1,400	1,400	0.397	0.359	A	A
					P.M	700	2	2	582	522	1,400	1,400	0.416	0.373	A	A
27	California Ave.	Liberty Blvd.	Independence Ave.	Minor Arterial	A.M	700	2	2	529	549	1,400	1,400	0.378	0.392	A	A
					P.M	700	2	2	593	552	1,400	1,400	0.424	0.394	A	A
28	California Ave.	Southern Ave.	Tweedy Blvd.	Minor Arterial	A.M	700	2	2	540	650	1,400	1,400	0.386	0.464	A	A
					P.M	700	2	2	681	707	1,400	1,400	0.486	0.505	A	A
29	California Ave.	Tweedy Blvd.	Abbott Road	Minor Arterial	A.M	700	2	2	542	557	1,400	1,400	0.387	0.398	A	A
					P.M	700	2	2	643	697	1,400	1,400	0.459	0.498	A	A
30	Otis St.	Liberty Blvd.	Independence Ave.	Minor Arterial	A.M	700	2	2	540	466	1,400	1,400	0.386	0.333	A	A
					P.M	700	2	2	579	496	1,400	1,400	0.414	0.354	A	A
31	Otis St.	Southern Ave.	Tweedy Blvd.	Minor Arterial	A.M	700	2	2	544	566	1,400	1,400	0.389	0.404	A	A
					P.M	700	2	2	614	499	1,400	1,400	0.439	0.356	A	A
32	Otis St.	Tweedy Blvd.	Abbott Raod.	Minor Arterial	A.M	700	2	2	345	346	1,400	1,400	0.246	0.247	A	A
					P.M	700	2	2	376	442	1,400	1,400	0.269	0.316	A	A
33	Atlantic Ave.	Rail Road Tracks	Firestone Blvd.	Primary Arterial	A.M	800	3	3	1,382	1,415	2,400	2,400	0.576	0.590	A	A
					P.M	800	3	3	1,417	1,656	2,400	2,400	0.590	0.690	A	B

Table 6 Future 2035 - Roadway Segments Level Of Service Analysis - AM and PM Peak Hour

3/10/2009

	Street	Between	And	Roadway Classification	Peak Period	Capacity Per Lane	No. of Lanes		2035 Volume		2035 Capacity		V/C Ratio		Level of Service	
							NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
34	Atlantic Ave.	Firestone Blvd.	Southern Ave.	Primary Arterial	A.M	800	3	3	1,196	929	2,400	2,400	0.498	0.387	A	A
					P.M	800	3	3	1,197	1,209	2,400	2,400	0.499	0.504	A	A
35	Atlantic Ave.	Rayo Ave.	Tweedy Blvd.	Primary Arterial	A.M	800	3	3	1,014	1,453	2,400	2,400	0.423	0.605	A	B
					P.M	800	3	3	1,177	1,656	2,400	2,400	0.490	0.690	A	B
36	Atlantic Ave.	Tweedy Blvd.	Abbott Road	Primary Arterial	A.M	800	3	3	655	569	2,400	2,400	0.273	0.237	A	A
					P.M	800	3	3	754	753	2,400	2,400	0.314	0.314	A	A
37	Garfield Ave.	Eastern Ave.	Firestone Blvd.	Primary Arterial	A.M	800	3	3	1,153	1,828	2,400	2,400	0.480	0.762	A	C
					P.M	800	3	3	1,556	1,536	2,400	2,400	0.648	0.640	B	B
38	Garfield Ave.	Firestone Blvd.	Southern Ave.	Primary Arterial	A.M	800	3	3	1,873	1,322	2,400	2,400	0.780	0.551	C	A
					P.M	800	3	3	1,496	1,757	2,400	2,400	0.623	0.732	B	C
39	Garfield Ave.	Southern Ave.	Imperial Hwy	Primary Arterial	A.M	800	2	2	838	534	1,600	1,600	0.524	0.334	A	A
					P.M	800	2	2	646	738	1,600	1,600	0.404	0.461	A	A
40	Garfield Ave.	Gardendale Ave.	Main St.	Primary Arterial	A.M	800	2	2	1,131	544	1,600	1,600	0.707	0.340	C	A
					P.M	800	2	2	875	742	1,600	1,600	0.547	0.464	A	A
41	Paramount Blvd.	Gardendale Ave.	Main St.	Primary Arterial	A.M	800	2	2	1,130	959	1,600	1,600	0.706	0.599	C	A
					P.M	800	2	2	1,147	1,257	1,600	1,600	0.717	0.786	C	C

1. Level of Service E acceptable per General Plan Standards (See Section 4.4 of this report).

walkability or other modes, they shall not be the sole criteria for judging transportation system performance. Pedestrian walkability and convenience, livability, transit access and operability, and urban aesthetics, shall be also be used".

Roadway Segment Conditions – A.M. Peak Hour

The level of service calculations for the A.M. peak hour are shown in Table 6. The results are summarized in Figure 11, showing those roadway segments with an A.M. peak hour level of service of LOS D, LOS E, or LOS F.

The majority of roadway segments in the City are forecast to operate at LOS D or better. There are exceptions in certain areas, for certain segments of east-west streets, as follows. There will be a few roadway segments that are forecast to operate at LOS E. These are as follows:

- Westbound Firestone Boulevard between Long Beach Blvd. and Alameda St.
- Westbound Southern Avenue between State St. and Long Beach Blvd.
- Eastbound Southern Avenue between Truba Ave. and Long Beach Blvd.
- Eastbound Southern Avenue between California Ave. and Otis St.

The segment of Firestone Boulevard between Long Beach Blvd. and Alameda Street that is at LOS E is located between other Primary Arterials and is also adjacent to a major commercial district (Community College), and so LOS E is acceptable per the General Plan standards. The segments of Southern Avenue that are at LOS E, between Truba Avenue and State Street, and between California Ave. and Otis Street, will exceed the General Plan standard of LOS D. However, there are no opportunities to widen this roadway because of the Department of Water and Power right of way immediately to the north, so no direct solutions are available to mitigate this level of service. It is possible however, that some traffic may divert to Firestone Boulevard where more roadway capacity would be available, or that greater use of transit, bicycling and walking may reduce travel volumes along this corridor, to the point where LOS D might be achieved.

No roadway segments are forecast to operate at LOS F in the A.M. peak hour.

This indicates that City roadways will be adequately sized to serve the future levels of traffic in the City in the A.M. peak hour. All City roadways will meet the General Plan service standards, with the exception only of certain segments of Southern Avenue, which will operate at LOS E.

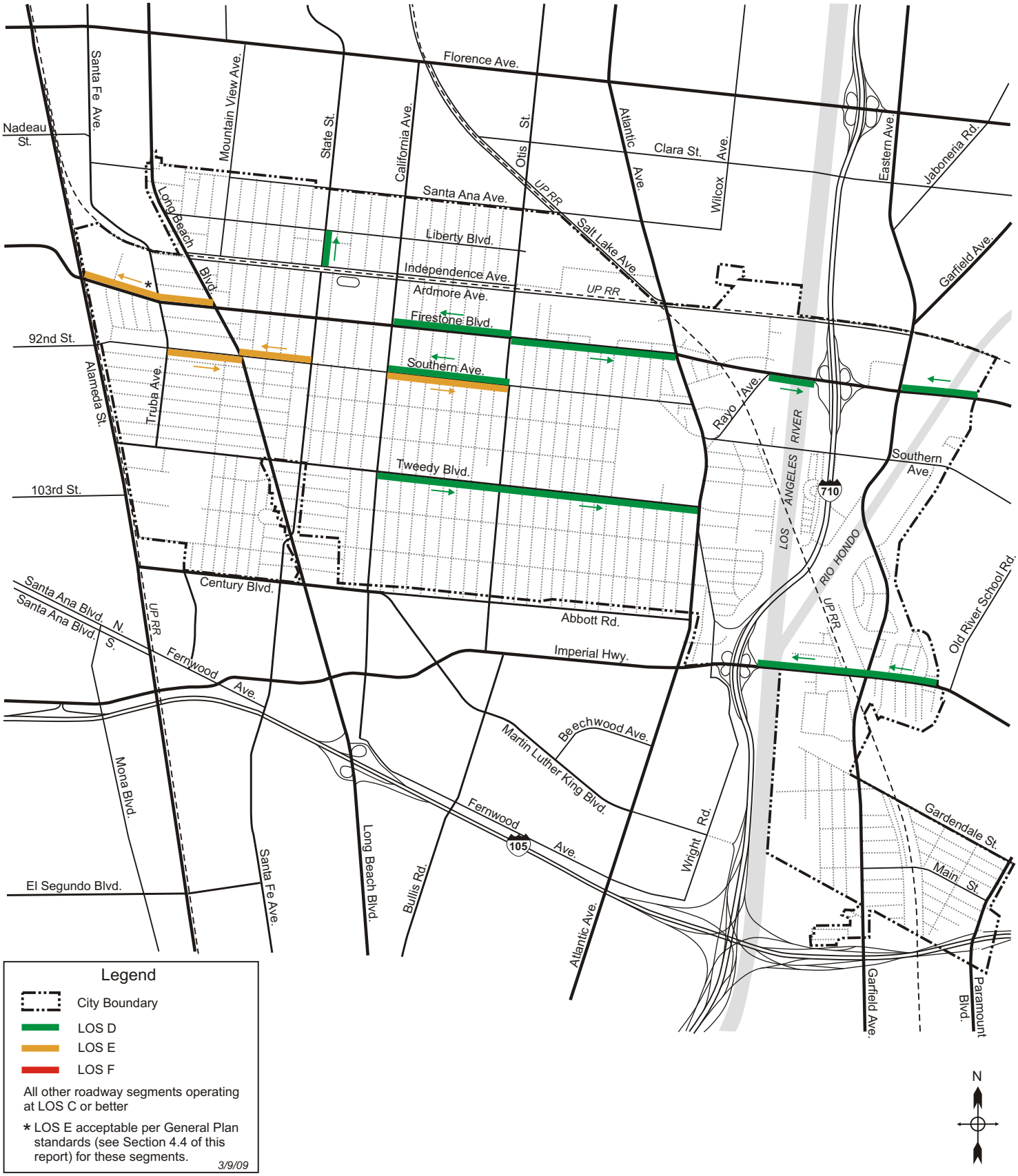

Figure 11
Year 2035 - Roadway Segments Operating at LOS D, E and F - AM Peak Hour

City of South Gate General Plan EIR

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Roadway Segment Conditions – P.M. Peak Hour

The level of service calculations for the P.M peak hour are also shown in Table 6. The results are summarized in Figure 12 showing those roadway segments with a P.M. peak hour level of service of LOS D, LOS E, or LOS F.

The majority of roadway segments in the City are forecast to operate at LOS D or better. There are exceptions in certain areas, for certain segments of east-west streets, as follows. There will be a few roadway segments that are forecast to operate at LOS E. These are as follows:

- Eastbound Santa Ana Ave. between Mountain View Ave. and State St.
- Westbound Firestone Blvd. between Otis St. and California Ave.
- Eastbound Firestone Blvd. between Garfield Ave. and E. City Limit
- Westbound Southern Avenue between State St. and Long Beach Blvd.
- Westbound Southern Avenue between Otis St. and California Ave.
- Eastbound Southern Avenue between California Ave. and Otis St.
- Eastbound Southern Avenue between Otis St. and Atlantic Ave.
- Eastbound Imperial Highway between Garfield Ave. and E. City Limit

Most of these roadway segments are located at/between other Primary Arterials and/or also adjacent to a major commercial district (Civic Center and El Portal) and so LOS E is acceptable per the General Plan standards.

The segments of Southern Avenue that are at LOS E, between State Street, and Long Beach Boulevard, and between California Ave. and Atlantic Avenue will exceed the General Plan standard of LOS D. The segment of Santa Ana Avenue between Mountain View Avenue and State Street will also exceed the LOS D standard. However, there are no opportunities to widen these roadways so no direct solutions are available to mitigate this level of service. It is possible however, that some traffic may divert to Firestone Boulevard where more roadway capacity would be available, or that greater use of transit, bicycling and walking may reduce travel volumes along this corridor, to the point where LOS D might be achieved.

No roadway segments are forecast to operate at LOS F in the P.M. peak hour.

This indicates that City roadways will be adequately sized to serve the future levels of traffic in the City in the P.M. peak hour. All roadway segments will meet the General Plan level of service standards, with the exception only of certain segments of Southern Avenue and one segment of Santa Ana Avenue which will operate at LOS E.

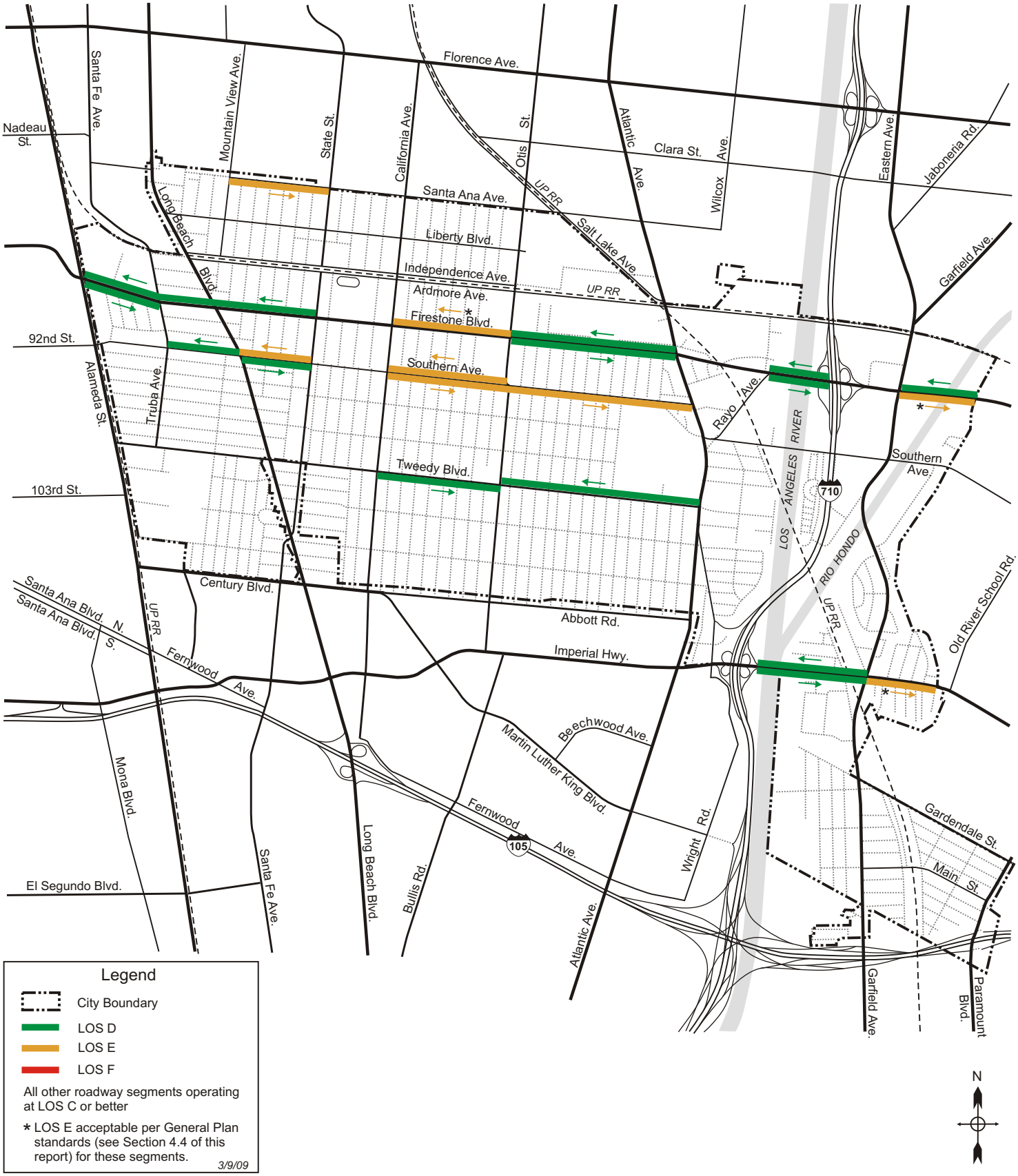

Figure 12
Year 2035 - Roadway Segments Operating at LOS D, E and F - PM Peak Hour

City of South Gate General Plan EIR

The **Mobility** Group
Transportation Strategies & Solutions

Overall Conclusion on Roadway Conditions

Table 7 provides a summary of the number of roadway segments in the City by forecast future levels of service, for both the A.M. and the P.M. peak hours. It can be seen that the vast majority will operate at LOS D or better. Only 5% of all roadway segments analyzed (Primary Arterials, Minor Arterials, and Collector Streets) will operate at LOS E in the A.M peak hour and only 9% in the P.M. peak hour. No roadway segments will operate at LOS F.

Table 7. Roadway Segments Level of Service Summary – Future Conditions

Level of Service	No. of Roadway Segments	
	AM Peak Hour	PM Peak Hour
A	49	43
B	15	12
C	10	11
D	10	14
E	4	8
F	0	0
Total	88	88

Freeways

Freeways are regional facilities and therefore outside the jurisdiction of the City. It is also beyond the scope of the City's General Plan and EIR to forecast future regional travel conditions on the freeway system. The future planning of the freeway system, including the preparation of future regional travel forecasts and necessary improvements is the responsibility of regional agencies such as SCAG, Caltrans, and LACMTA (Metro).

SCAG has recently completed and adopted the 2008 Regional Transportation Plan (RTP), which identifies future freeway needs in the region. In that the forecasts for the South Gate General Plan are based on the SCAG 2008 RTP forecasts they are consistent with that process and included within it. Metro has similarly recently prepared its 2008 Draft Long Range Plan.

Specific detailed planning is currently proceeding for the I-710 Freeway. Metro and six project participants are conducting an Environmental Impact Report/Environmental

Impact Statement (EIR/EIS) to analyze the range of possible improvement alternatives for the I-710 corridor, and to develop plans for specific improvements. The I-710 Corridor Project EIR/EIS will study 18 miles of the I-710 freeway between the Ports of Long Beach and Los Angeles and the Pomona Freeway (SR-60). This study will include the South Gate General Plan socioeconomic projections and the provisions of the South Gate General Plan Mobility Element.

4.5 Summary and Conclusions

This study has evaluated the provisions of the City of South Gate General Plan Mobility Element. It has prepared traffic forecasts that are consistent with the SCAG 2008 Regional Transportation Plan. It has evaluated the proposed transportation system in the City of South Gate and has concluded that the proposed roadway system will be adequate to handle future projected traffic flows according to the standards set forth in the Mobility Element.

APPENDICES

Appendix A. Travel Forecast Methodology

A.1 Introduction and Overview

South Gate is one of many cities in the highly developed Los Angeles area, and is surrounded by many other cities that share a sub-regional and regional transportation network. The volume of traffic on South Gate streets is therefore dependent not only on land uses in the City of South Gate but also land uses and transportation network characteristics in neighboring cities and in the region.

The traffic forecasts were therefore based on the SCAG 2008 RTP Regional Travel Model. This model was used by SCAG to prepare the travel forecasts for the recently adopted 2008 Regional Transportation Plan (RTP).

This model was used for a number of reasons: (1) because it accounts for adopted regional socioeconomic growth projections (population, households and employment) it is best suited for reflecting the implications of these growth projections on the local transportation network; (2) similarly, because it includes all planned regional transportation improvements it is also best suited for reflecting the implications of those improvements on regional travel patterns and the City's street system; (3) by using the adopted SCAG projections, the South Gate General Plan forecasting process is consistent with the SCAG regional transportation planning process.

The General Plan traffic forecasts are link based – i.e. are prepared for roadway segments. This is the most appropriate type of traffic forecast for a General Plan, as land use quantities and distributions in the Land Use Plan are forecast only at a very general level. Traffic forecasts at the intersection turning movement level are therefore less reliable and less accurate for the long time horizon (to 2035) than for roadway link forecasts. The General Plan identifies the overall level of roadway infrastructure necessary – as identified in the Mobility Element and summarized in Chapter 3 of this report. Specific intersection configurations will only be determined in the future as specific development occurs and are analyzed on an ongoing basis.

The SCAG Model was used to obtain the initial forecasts of traffic flows on roadway links/segments in the City of South Gate. However, because it is a regional model, certain adjustments were necessary to adequately reflect the specific local forecasts and components of the South Gate General Plan. A series of checks and adjustments were therefore made in order to ensure that the final traffic forecasts adequately reflect not only regional conditions but also the local conditions represented in the City's General Plan. This process, along with the checks and adjustments utilized, are described in the following sections.

A.2 Use of, and Adjustments Made to, the SCAG Regional Model Travel Forecasts

Step 1: Obtain SCAG Forecasts for South Gate Area

The SCAG Model was used to obtain estimates of traffic growth between 2003 (the SCAG Model base year) and 2035 (the SCAG forecast year) for numerous roadway segments (total of about forty locations) throughout the City. These locations were represented by a series of fourteen screenlines or cutlines, running north-south and east-west across the City, and representing total travel on each screenline. The forecast growths were then adjusted to represent growth from 2008 to 2035 and applied to 2008 existing traffic volumes on South Gate roadway segments to obtain initial forecasts of 2035 conditions.

Step 2: Adjust for Differential Locations of South Gate General Plan Growth

The SCAG socioeconomic projections were compared to the South Gate General Plan projections at the Transportation Analysis Zone (TAZ) level. There are nineteen TAZ's used in the SCAG Model in the City of South Gate. Any differences in localized growths within the City were adjusted for accordingly. This ensured that the higher growths in certain parts of the City were adequately reflected in the traffic forecasts.

The projected SCAG growths were first determined for each screenline at the total screenline level. The overall screenline growth was then allocated to the individual roadways in the screenline according to the relative growth forecast in the socioeconomic projections in the General Plan for that part of the City. This ensured that the higher land use growths in certain parts of the City were adequately reflected in the traffic forecasts.

The General Plan anticipates that the majority of growth in the City will be focused in certain key areas, namely:

- In the north-west of the City along Firestone Boulevard between Long Beach Boulevard and Alameda Street.
- In the Civic Center area along California Avenue north of Firestone Boulevard.
- Generally along Firestone Boulevard and along Atlantic Avenue.
- The area around the intersection of Firestone Boulevard and Atlantic Avenue, including the areas to the northwest (Gateway Project), the northeast (Transit Village District), and the southeast (redevelopment of the industrial area) of that intersection.

- Along the Garfield Avenue corridor north of the Rio Hondo Channel.

The overall general traffic growths identified in the SCAG model for each screenline were therefore allocated to individual roadways to reflect the higher growths in land uses in these specific areas, as well as to reflect lower growths in those parts of the City where below average or very little growth is expected.

Step 3: Adjust for Differential Overall Growth in City of South Gate General Plan

The socioeconomic growth projections assumed in the SCAG Model were also compared to the projections in the South Gate General Plan at the Citywide level. Any differences were accounted for by adjusting the traffic growths from the SCAG model accordingly.

Overall Citywide Land Use

This comparison is shown in Table A-1.

The adopted SCAG forecasts for South Gate show a 15% increase in households (additional 3,385 households), and a 7% increase in employment (additional 1,337 jobs) between 2003 and 2035.

The South Gate General Plan forecasts for the same period show a 22% increase in households (additional 5,050 households), and a 19% increase in employment (additional 3,745 jobs).

While these are relatively small differences, because the South Gate General Plan forecasts are slightly higher than the SCAG forecasts, it was considered important to adjust the SCAG forecasts.

In addition, the SCAG forecasts did not include an additional 4,600 school students anticipated in South Gate (at a New ES#4 at Firestone & Dorothy, at a new ES#9 at Firestone & Long Beach, and at a New Middle School and High School at Tweedy & Atlantic), nor an anticipated 24,000 student increase in the Los Angeles Community College campus north of Firestone at Santa Fe.

The travel forecasts were therefore adjusted to reflect the greater growths anticipated in the General Plan. This was accomplished by determining the additional vehicle trips that would be generated by the additional growth and assigning the additional trips to the roadway network and adding to the forecast obtained from the SCAG Model.

Table A-1. Comparison of SCAG and South Gate Socio Economic Forecasts - Citywide

Source/Year	Population	Households	Employment
SCAG 2008 RTP			
SCAG 2003	100,784	23,338	19,690
SCAG 2035	120,154	26,723	21,027
Increase	19,370	3,385	1,337
% Increase	19.2%	14.5%	6.8%
South Gate GP			
2003	100,784	23,338	19,690
2035	125,547	28,389	23,435
Increase	24,763	5,051	3,745
% Increase	24.6%	21.6%	19.0%

Additional Trips Generated by Additional Land Uses

The estimates of additional trips generated by these uses were based on households, commercial square footage, and the number of students. The number of households and students was obtained directly from the land use forecasts for the General Plan. The forecast employment numbers were converted into commercial building square footage, in discussion with the General Plan team, for totals of 482,000 sq. ft. of retail space, 241,000 sq. ft. of office space, and 120,000 sq. ft. of industrial space.

Trip generation estimates were then prepared using the land use quantities and standard trip rates from the Institute of Transportation Engineers (*ITE Trip Generation 7th Edition, 2003*). These standard rates were adjusted to reflect transit/walk mode splits and internal trips (trips with both ends in the City – to avoid double counting) based on information in the Year 2000 Census Transportation Planning Package (CTPP) for the City of South Gate. The trip generation estimates are summarized in Table A-2, and are shown in detail in Table A-3 at the end of this Appendix.

Table A-2. Additional Local Trips Added to SCAG 2035 Model Forecasts

Land Use Category	Quantity	Vehicle Trips		
		Daily	AM Peak Hour	PM Peak Hour
Households	1,650 D.U.'s	9,885	751	916
Employment	2,400 emps (843,000 sf)	20,006	803	1,878
Schools	4,600 Students	3,529	1,040	441
College	24,000 Students	20,205	1,974	1,981
Total		53,625	4,568	5,216

As shown in Table A-2, an additional 4,568 A.M. peak hour trips and 5,216 P.M. peak hour trips were added to the SCAG 2008 RTP Model forecasts to reflect the additional South Gate growths not included in the SCAG forecasts. These represent an increase of only about 10% in the peak period trips forecast to be generated in South Gate by the SCAG 2008 RTP Model travel forecasts, so represent a relatively minor adjustment to the SCAG travel forecasts.

Step 4: Adjust for Local Roadway Improvements in City of South Gate General Plan

Finally, certain local roadway transportation improvements are identified in the General Plan that were not incorporated in the SCAG Model. The SCAG forecasts were thus adjusted to reflect such local improvements (see Chapter 3 of this report).

A.3 SCAG 2008 RTP Model - 2035 Transportation Network

Regional Improvements

The SCAG 2035 Network includes the following planned regional transportation improvements in the vicinity of South Gate:

I-5	Add HOV Lanes - between SR-91 and I-710 Add mixed flow lanes – between SR-91 and I-605
I-710	Add general purpose lanes and dedicated truck lanes - between Long Beach and Commerce/Vernon
Alameda Corridor	HST Freight Corridor – between ports and Hobart Yard
Bus Rapid Transit	Add routes on Atlantic and Firestone
California HST	Downtown Los Angeles to Anaheim (generally I-5 corridor)

The effects of these planned improvements are thus implicitly accounted for in the travel forecasts.

Table A-3. South Gate General Plan EIR Traffic Study - Additional Trip Generation - 2035 12/1/2008

Land Use	Quantity Added	Trip Rate			Trips		
		Daily	AM	PM	Daily	AM	PM
RESIDENTIAL							
Apartment	1,383 D.U	6.72	0.51	0.62	9,294	705	857
Condominium	200 D.U	5.86	0.44	0.52	1,172	88	104
Single Family Housing	67 D.U	9.57	0.75	1.01	641	50	68
Subtotal Residential	1,650 D.U				11,107	844	1,029
Less Transit/Walk (11%)					-1,222	-93	-113
Net Residential					9,885	751	916
COMMERCIAL							
Retail	482,000 s.f	42.94	1.03	3.75	20,697	496	1,808
Office	241,000 s.f	11.01	1.55	1.49	2,653	374	359
Industrial	120,000 s.f	6.96	0.84	0.86	835	101	103
Subtotal Commercial	843,000 s.f				24,186	971	2,270
Less Internal (6%)					-1,451	-58	-136
Less Transit/Walk (12%)					-2,728	-110	-256
Net Commercial					20,006	803	1,878
SCHOOLS							
School - Elementary School	1,600 Students	1.29	0.42	0.28	2,064	672	448
Less Transit/Walk (50%)					-1,032	-336	-224
School - Middle School	1,500 Students	1.62	0.53	0.15	2,430	795	225
Less Transit/Walk (50%)					-1,215	-398	-113
School - High School	1,500 Students	1.71	0.41	0.14	2,565	615	210
Less Transit/Walk (50%)					-1,283	-308	-105
Subtotal Net School	4,600 Students				3,530	1,041	442
COLLEGE							
LACC	24,000 Students	1.20	0.12	0.12	28,800	2,880	2,880
Less Transit/Walk (20%)					-5,760	-576	-576
Subtotal College	24,000 Students				23,040	2,304	2,304
Less Existing Uses - Adult School	20,000 s.f	27.49	2.99	2.54	-550	-60	-51
Less Existing Uses - Transfer/Storage/Clothes Production	112,500 s.f	5.25	0.67	0.69	-591	-75	-78
Less Existing Uses - Mixed Use Storage/Office	250,000 s.f	6.78	0.78	0.78	-1,695	-195	-195
Subtotal Existing Uses	382,500 s.f				-2,835	-330	-323
Net College					20,205	1,974	1,981
Net Total					53,626	4,569	5,216