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DOWNEY VISION 2025 COMPREHENSIVE GENERAL PLAN UPDATE ENVIRONMENTAL IMPACT REPORT

SCH #2004031159

VOLUME II

prepared for:

CITY OF DOWNEY

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Appendix A

Sample goals, policies and programs in The Downey Vision 2025 General Plan.

General Plans,Policies and Programs

AIR/QUALITY

The following sample policies and programs are included in the Downey Vision 2025 General Plan Update. They will help reduce the impacts of the General Plan Update on Air Quality.

Policy 1.6.1: The City shall monitor, review and comment on regional plans, as they relate to the City's General Plan

Program 1.6.1.1: The City shall comply with and incorporate the applicable requirements of the Air Quality and Congestion Management Plan.

Program 1.6.1.2: The City shall examine and promote land uses that encourage telecommuting, thus reducing VMT (vehicle miles traveled) as required by the air quality plan.

Policy 2.3.1: The City shall encourage the use of public transit.

Program 2.3.1.8: Encourage Downey businesses to provide employee information to public transit authorities to assist in their planning for public transit services.

Policy 2.3.2: The City shall encourage efforts to reduce the number and length of vehicle trips generated by land uses in Downey.

Program 2.3.2.1: Promote the development of park and ride facilities.

Program 2.3.2.2: Promote ridesharing through provision of information to the public.

Program 2.3.2.3: Promote transit-oriented developments.

Program 2.3.2.4: Promote on-site child-care facilities at major employment centers.

Program 2.3.2.6: Encourage efforts to shift the time of day of trips away from peak commuter hours through the use of flex-time, staggered working hours, and other means.

Policy 2.6.1: The City shall encourage bicycling as an attractive alternative to vehicular transportation.

Program 2.6.1.1: Encourage the use of bicycling as a form of transportation for employment commuting and business purposes, in addition to recreational purposes.

Program 2.3.1.2: Establish a bikeway master plan to link employment centers, recreational facilities, and bikeways along the Rio Hondo River, the San Gabriel River, Union Pacific Railroad Line, and those of neighboring communities via a network of bike routes, lanes, and paths.

Program 2.6.1.3: Encourage the provision of bicycle racks at retail service and other businesses for use by customers and employees.

Program 2.6.1.5: Promote street intersection design and signalization that are safe and convenient to bicyclists.

Program 2.6.1.6: Promote site development design that is safe and convenient to bicyclists.

Policy 2.6.2: The City shall encourage walking as an attractive alternative to vehicular transportation.

Program 2.6.2.1: Promote site development design that is safe and convenient to pedestrians.

Program 2.6.2.2: Require sidewalks in new development and major remodeling consistent with the sidewalk Master Plan.

Geology and Soils

The following policies and programs in the Downey Vision 2025 General Plan Update are related to seismic-related ground failure, including liquification. They will reduce the impacts of the update on geology and soils.

The following policies and gprograms in the updated General Plan are related to seismic-related ground failure, including liquification.

Policy 5.2.1: The City shall promote programs that minimize hazards in the event of a major earthquake.

Program 5.2.1.2: Promote pubic education about earthquake safety.

Program 5.2.1.5: Continue to require geotechnical reports for developments to address soil liquefaction hazards.

Hazards and Hazardous Materials

The Downey Vision 2025 General Plan Update contains sample goals related to hazardous materials or wastes and hazardous material or waste sites in the City of Downey. They will help reduce the impacts of the Plan Update on hazards and hazardous materials. These goals include:

- Protect the health, safety and welfare of residents from the improper use, storage, handling and disposal of hazardous materials.

The Downey Vision 2025 General Plan Update also contains policies and programs related to hazardous materials and wastes and to hazardous materials and wastes sites in the City of Downey. These policies and programs include:

Policy 5.1.1: The City shall prepare for protecting life and property in the event of natural and non-natural disasters.

Program 5.1.1.1: Maintain a multi-hazard function emergency preparedness plan to include, but not be limited to, the following threats: 1) major earthquakes, 2) hazardous materials incidents, 3) imminent or actual flooding, 4) imminent or actual dam failure, mass casualty incidents, 6) aircraft incident, terrorism, 8) civil unrest and 9) war;

Program 5.1.1.2: Maintain the CERT, Civilian Emergency Response Team, as a civilian group to supplement staff during emergencies;

Program 5.1.1.5: Maintain the city's Emergency Operating Center;

Program 5.1.1.6: Coordinate emergency preparedness with the State Emergency Management System (SEMS), school districts and other local agencies;

Program 5.1.1.7: Coordinate with County Department of Health Services regarding monitoring the closed landfill at Rio San Gabriel Park for subsidence, odor and toxic gases;

Policy 5.9.1*:* The City shall continue to promote education and training in proper disposal of hazardous materials;

Program 5.9.1.1: Co-sponsor, with Los Angeles County, collection and disposal services for small quantity generators to include a convenient collection/transfer location for small quantity generators and a triennial "drop off" to be run by a licensed handler/services and coordinated by the Fire and Public Works Departments;

Program 5.9.1.2: Provide education/information programs and workshops for the public and industries to increase awareness of industry options for safe disposal and waste minimization;

Program 5.9.1.3: Promote public education to clarify definition of hazardous materials, including biological waste, and specifying that household materials such as garden pesticides, batteries, fingernail polish removers and paint have hazardous properties and become hazardous waste when discarded;

Program 5.9.1.4: Sponsor, in conjunction with the County Sanitation District, household pick-up days, to be advertised in local newspapers and utility billings;

Program 5.9.1.5: Promote education of the proper disposal of hazardous waste through articles in the City newsletter, the cable channel and through the Keep Downey Beautiful program;

Policy 5.9.2: The City shall ensure the safe transport of hazardous materials through the City;

Program 5.9.2.1: Require existing businesses that transport hazardous waste develop routing plans to be reviewed and approved by the City;

Program 5.9.2.2: Restrict hazardous waste transportation on City streets to major streets and during non-peak hours;

Policy 5.9.3: The City shall identify and regulate inactive, active or potential hazardous waste contaminated properties;

Program 5.9.3.1: Maintain an annual inventory of the location, type of facility, type and amount of hazardous waste kept at properties in the City, as well as inactive contaminated sites;

Program 5.9.3.2: Implement Federal, State and local regulations regarding the use, storage or handling of hazardous materials;

Program 5.9.3.3: Require disclosure of amounts of hazardous materials during the business review process so that it may be determined if reportable amounts are involved which trigger regulation;

Program 5.9.3.4: Require a Hazardous Materials Disclosure Package for existing and proposed facilities with reportable amounts of hazardous materials;

Program 5.9.3.5: Adopt a code amendment to require a Conditional Use Permit for existing and proposed facilities with reportable amounts of hazardous materials;

Program 5.9.3.6: Require that the Downey Fire Department annually contact all government facilities, notifying them of City hazardous materials requirements;

Program 5.9.3.7: Cooperate with Los Angeles County to sponsor legislation requiring other government agencies to comply with hazardous materials regulations;

Program 5.9.3.8: Require that all Federal, State and County facilities disclose hazardous materials storage and waste disposal quantities; and

Policy 1.5.1: The City shall prevent the establishment of incompatible land uses in proximity.

Hydrology and Water Quality

The Downey Vision 2025 General Plan Update includes the following sample goals, policies and programs that will help reduce the impact of the General Plan Update on hydrology and water quality.

- Conserve and utilize our water and energy resources; and
- Protect local rivers and oceans by reducing the volume of stormwater discharge and concentration of contaminants in runoff.

Program 4.1.2.1: Complement Local, State and Federal efforts to protect the groundwater.

Program 4.1.2.2: Participate with the Water Replenishment District to implement policies that assure groundwater quality in the Central Basin.

Program 4.1.2.3: Prepare annual water quality report required by State.

Program 4.1.2.4: Continue monitoring water production wells related to contamination

Program 4.1.2.5: Discourage land use classes that contribute to ground water contamination.

Program 4.1.2.6: Encourage businesses to install measures to prevent contamination.

Policy 5.3.2: Work towards improving the storm drain system.

Program 5.3.2.1: Adopt a master plan identifying and prioritizing necessary stormwater system improvements.

Program 5.3.2.2: Establish a dedicated development recovery fee program to require new developments and expansions of existing developments to contribute towards stormwater conveyance system improvements.

Program 5.3.2.3: Encourage that new developments and expansions of existing developments generate less stormwater runoff levels after development.

Program 5.3.2.4: Continue to require hydrology studies that address downstream stormwater capacity.

Program 5.3.2.5: Preserve existing naturally vegetated areas and encourage re-vegetation and soil restoration where feasible.

Program 5.3.2.6: Utilize street tree wells, landscaped parkways, medians, islands, and other elements of the streetscape to minimize, capture, and reuse storm water runoff.

Program 5.3.2.7: Continue to provide effective street cleaning.

Policy 5.3.3: The City shall promote through the development review process those site designs that reduce the contaminant level of stormwater and urban runoff.

Program 5.3.3.1: Maximize the amount of landscaped planning areas and other pervious surfaces on properties to decrease runoff volumes and increase areas available for infiltration and retention of stormwater and urban runoff.

Program 5.3.3.2: Minimize the sizes of rooftops, parking lots, driveways, walkways, and other impervious surfaces.

Program 5.3.3.3: Direct surface runoff to pervious surfaces for stormwater quality protection.

Program 5.3.3.4: Encourage building roof designs which direct rooftop runoff to pervious surfaces for stormwater quality protection.

Program 5.3.3.5: Incorporate stormwater runoff systems into site design to provide areas for infiltration and retention of stormwater runoff on site.

Program 5.3.3.6: encourage the use of courtyards, plazas, and other amenity open space to infiltrate water quality protection.

Program 5.3.3.7: Establish mechanisms to guarantee long term management and maintenance of impervious surfaces and stormwater runoff treatment systems.

Program 5.3.3.8: Encourage proper storage and handling of construction materials to avoid the contact of pollutants with stormwater runoff during construction.

The Downey Vision 2025 General Plan also contains a goal related to the depletion of groundwater resources. This goal is as follows.

- Conserve and utilize our water and energy resources.

The Downey Vision 2025 General Plan Update contains policies and programs related to the depletion of groundwater resources.

Policy 4.1.1: The City will continue to encourage the conservation of water through a tiered billing process.

Program 4.1.1.2: Reassess water rates and up-grade metering to encourage water conservation.

Program 4.1.1.3: Continue to offer financial incentives to those who conserve water, such as requiring higher rates for those who do not conserve water.

Program 4.1.1.4: Explore other methods including public education to encourage water users to conserve water.

Policy 4.1.2: Information shall be made available to users regarding conservation methods.

Program 4.1.2.1: Complement Local, State and Federal efforts to protect the groundwater.

Land Use

The Downey Vision 2025 General Plan contains the following sample land use related policies and programs. They will help reduce the impacts of the General Plan Update on land use.

Policy 1.2.1: The City shall strive to retain the relative balance of land uses.

Program 1.2.1.1: The City shall retain the balance between single-family residential, multi-family residential, commercial, industrial, schools and open space.

The Downey Vision 2025 General Plan Update proposes to change land use designations in Downey. The proposed changes in land use designations would not significantly alter the balance between land uses in the Downey. The new land use designations would encourage the future development of a balance of land uses, and would also encourage the siting of land uses in areas where they would not conflict with established or surrounding land uses. The proposed Downey Vision 2025 General Plan Update, therefore, would be consistent with Program 1.2.1.1.

Program 1.2.1.3: The City shall promote land uses within Downey that diversify the tax base.

The Downey Vision 2025 General Plan Update includes a mix of uses that would be responsive to specific market demand. The proposed project, therefore, has the potential to introduce new sources of tax revenue in the City. This would represent a potential diversification of the City's tax base. The proposed Downey Vision 2025 General Plan Update, therefore, would be consistent with Program 1.2.1.3.

Policy 1.3.1: The City shall encourage quality construction of development as properties recycle.

The Downey Vision 2025 General Plan Update would encourage quality construction of development by clustering land uses in the areas most appropriate for the development of the specific land uses. Development in the City pursuant to the Downey Vision 2025 General Plan Update would continue to be subject to the City's permitting process for new construction and for renovations of existing development, and to the City's zoning codes and construction guidelines. The proposed Downey Vision 2025 General Plan Update, therefore, would be consistent with Policy 1.3.1.

Program 1.3.1.2: The City shall adopt Floor-area ratios (FAR) to determine building intensity.

The proposed Downey Vision 2025 General Plan Update includes FAR to determine building intensity; therefore the proposed Downey Vision 2025 General Plan Update is consistent with Program 1.3.1.2.

Policy 1.3.3: The City shall create areas for mixed land uses.

Program 1.3.3.1: The City shall designate areas for mixed land uses, with residential/commercial or commercial/manufacturing.

As illustrated above in Table 5.1-1, the proposed Downey Vision 2025 General Plan Update designates areas for mixed land uses, including areas designated as "Neighborhood Commercial," and "Commercial/Manufacturing." Therefore, the proposed Downey Vision 2025 General Plan Update would be consistent with Program 1.3.3.1

Policy 1.3.4: The City shall continually review areas in the process of transition.

The Downey Vision 2025 General Plan Update has been proposed as a response to the City's recognition that various land use designations in Downey were no longer relevant. The Update proposes to re-designate areas in which existing land uses may be in conflict with other existing land uses, as a

guide to future development in those areas. Therefore, the proposed Downey Vision 2025 General Plan Update would be consistent with Policy 1.3.4.

Noise

The Downey Vision 2025 General Plan Update contains the following sample noise related policies and programs. They will help reduce the impacts of the General Plan Update on noise.

Program 6.2.1.9: Impose additional restrictions, in addition to those in the Noise Ordinance, on large construction projects that may create noise impacts on surrounding properties.

Policy 6.3.1: The City shall continue to enforce the existing noise ordinance.

Program 6.2.1.1: Continue to respond to noise-related complaints in a manner consistent with the noise ordinance.

Program 6.3.1.2: Continue to enforce provisions prohibiting construction activities during noise-sensitive hours.

Policy 6.3.2: The City shall periodically review the Noise Chapter of the Municipal Code and establish new noise performance standards as necessary.

Program 6.3.2.1: Evaluate prohibiting the use of outdoor public announcement and paging systems.

Program 6.3.2.2: Evaluate amending the code to reduce the maximum permissible noise levels above ambient levels.

Policy 6.1.1: The City shall strive to reduce noise generated by vehicular traffic.

Program 6.1.1.1: Coordinate with and encourage Caltrans to install and maintain freeway sound walls, especially providing sound walls for the south side of the I-5 Freeway east of Lakewood Boulevard adjacent to Dennis the Menace Park.

Program 6.1.1.2: Enforce regulations to require truck traffic to use designated truck routes in the City.

Program 6.1.1.3: Continue to work with the Metropolitan Transportation Authority and other transit agencies towards minimizing noise impacts by discouraging the use of local residential streets as transit routes.

Program 6.1.1.4: Enforce the State motor vehicle noise standards for cars, trucks and motorcycles through coordination with the Downey Police Department and the California Highway Patrol.

Program 6.1.1.5: Review City operations to ensure that noise from its own actions, such as refuse collection, street cleaning, and transit, are reduced to the lowest possible level and lessen the contribution to noise pollution.

Program 6.1.1.6: Enforce speed limits on local residential streets to discourage the use of local residential streets by business and commuter through traffic.

Program 6.1.1.7: Promote the use of alternative fuel vehicles that result in reduced noise generation than standard gasoline vehicles.

Policy 6.1.2: The City shall work towards reducing noise generated by railroad traffic.

Program 6.1.2.1: Coordinate with the railroad companies in developing and implementing noise reduction methods in their operations.

Program 6.1.2.2: Encourage railroad companies to develop and implement programs to minimize train pass-by and switching movement noise, and the use horns, especially near noise sensitive areas and during the night.

Program 6.1.2.3: Coordinate with the railroad companies to maintain rubberized railroad crossings at intersections.

Program 6.1.2.4: Evaluate a plan for the eventual grade separation of the Union Pacific Railroad Line, parallel to Firestone Boulevard.

Policy 6.1.3: The City shall work towards reducing noise generated by air traffic.

Program 6.1.3.1: Coordinate with the Federal Aviation Administration, the Division of Aeronautics and the Los Angeles County Airport Land Use Commission to develop guidelines for addressing airplane and helicopter noise, including unplanned flights.

Program 6.1.3.2: Recommend that the Federal Aviation Administration (FAA) divert air traffic from the Downey flight path.

Program 6.1.3.3: Monitor LAX expansion plans to decrease air traffic over Downey.

Program 6.1.3.4: Promote the creation of new regional airports.

Program 6.1.3.5: Examine the development of an ordinance and standards relating to the siting of helipads in the City.

Policy 6.2.1: The City shall require that noise-generating land uses reduce impacts onto noise-sensitive land uses.

Program 6.2.1.1: Develop a program to require that existing land uses that are generating noise beyond the acceptable levels incorporate mitigation measures to bring the noise not compliance with the Noise Ordinance of the City.

Program 6.2.1.2: Require that proposed land uses maintain noise generation at acceptable levels.

Program 6.2.1.3: Concentrate land uses that generate high amount of traffic at locations where local residential streets will not be used as through traffic routes, thus creating more traffic-related noise.

Program 6.2.1.4: Consider noise impacts generated by schools, churches, and other similar noise-sensitive uses.

Program 6.2.1.5: Discourage loading doors, windows, and other openings on buildings from facing residential and other noise-sensitive land uses.

Program 6.2.1.6: Discourage the placement of air conditioning equipment, electric generators, or other noise-generating equipment in close proximity to adjacent properties.

Program 6.2.1.7: Encourage that activities are maintained indoors to reduce noise impacts onto adjacent properties.

Program 6.2.1.8: Amend the code to expand the list of land uses prohibited from locating adjacent to residential zones and those that require a conditional use permit to be established adjacent to residential zones based on the potential of increasing ambient noise levels.

The Downey Vision 2025 General Plan Update also contains the following noise programs that would help to reduce temporary and periodic increases in ambient noise levels.

Program 6.2.1.10: Concentrate construction activities producing the most noise during midday hours to minimize impacts onto nearby residents.

Program 6.2.1.11: Encourage the use of noise-suppression equipment.

Public Services

The Downey Vision 2025 General Plan contains sample policies and programs related to the provision of fire protection services. They will help reduce the impacts of the General Plan Update on fire protective services.

Policy 5.4.1: The City shall upgrade and maintain the fire flow system.

Program 5.4.1.1: Require that development projects install fire hydrants, water mains, or otherwise contribute its fair share towards mitigating impacts on the fire flow system.

Program 5.4.1.2: Develop a program to monitor fire flow capacity throughout the City.

Program 5.4.1.2: Adopt a master plan to prioritize and implement the upgrade of the fire flow system.

Policy 5.4.2: The City shall improve emergency vehicle response times by improving access along public streets and alleys.

Program 5.4.2.1: Identify and maintain an acceptable response time of 3 minutes for fire emergency service calls.

Program 5.4.2.2: Promote passable travel lanes along major and secondary arterials that are 12 feet wide or otherwise designed to accommodate emergency vehicles.

Program 5.4.2.3: Consider emergency response as a factor during the design or redesign of roadway medians and islands, including traffic calming designs.

Program 5.4.2.4: Promote the design or redesign of roadway terminals (cul-de-sac) and elbows to accommodate emergency vehicle turn movements.

Program 5.4.2.5: Control traffic lights by a City-approved emergency traffic preemption system

Program 5.4.2.6: Require the development of new alleys with widths of at least 26-feet.

Policy 5.4.3: The City shall promote improvements to fire safety through the development process.

Program 5.4.3.1: Require fire sprinklers for the new development of, or remodel (where construction is equal to 15-percent or more of structure value) of existing, residential structures of three attached units or more.

Program 5.4.3.2: Recommend fire sprinklers for new residential structures and for remodels of existing residential structures.

Program 5.4.3.3: Recommend fire sprinklers and fire alarm systems for the new development of, or remodel (where construction is equal to 25-percent or more of structure value) of existing, assembly occupancies and/or commercial, industrial, and other non-residential structures with gross floor areas of 5,000 square feet or more.

Program 5.4.3.4: Recommend fire sprinklers for new commercial, industrial, and other non-residential structures and for remodels of existing commercial, industrial, and other non-residential structures.

Program 5.4.3.5: Require the use of Class A or B roofs on new construction or roof remodels and repair within a 12-month period that cover more than 30-percent of the roof area.

Program 5.4.3.6: Promote the design of private properties with fire lane width and turnaround capability appropriate for emergency vehicle access.

Program 5.4.3.7: Require methods of access for emergency vehicles through security pedestrian and vehicular gates.

The Downey Vision 2025 General Plan also includes the following sample policies and programs that will help reduce the impacts of the General Plan Update on police services and public services.

Policy 5.5.1: The City shall work to protect life and property from criminal activities.

Program 5.5.1.1: Continue to work towards keeping crime rates and property loss rates at the lowest levels feasible.

Program 5.5.1.2: Maintain an acceptable response time for police emergency service calls.

Program 5.5.1.3: Promote the design or redesign of roadway medians and islands that do not impede emergency vehicles access.

Program 5.5.1.4: Continue to provide the highest level of police service with the resources available.

Program 5.5.1.5: Continue to evaluate the civilianization of police service tasks wherever possible to maximize the efficiency of sworn personnel.

Program 6.6.1.6: Continue to use technology as tools to improve staff productivity.

Program 5.5.1.7: Coordinate with Federal, State and County agencies to address illegal activities.

Policy 5.5.2: The City shall promote crime prevention programs.

Program 5.5.2.1: Promote programs to deter crime through child and family development, behavioral counseling and modeling, and diversion/alternate activity.

Program 5.5.2.2: Continue to support coordination between schools and the City to address juvenile crime in a proactive and preventative manner, including support of school-based disciplinary systems (for example, school attendance review boards).

Program 5.5.2.3: Integrate the efforts by the various departments and divisions towards crime prevention.

Program 5.5.2.4: Promote understanding that investing in defensible space planning principles onto building and site design is similar to fire prevention measures to reduce loss.

Program 5.5.2.5: Promote building and site design that address safety concerns by providing walkways and entrances that are visible and well-lit and other defensible space planning principles.

Program 5.5.2.5: Promote Neighborhood Awareness programs.

Program 5.5.2.6: Promote community organizations whose goals and missions are consistent with crime prevention.

Program 5.5.2.7: Improve the visibility of police in neighborhoods.

Program 5.5.2.8: Continue to support the integration of community concerns with police services towards long-term problem solving.

Program 5.5.2.9: Continue to provide incentives for bilingual staff.

Program 5.5.2.10: Maintain focus on preventing gang activity.

Policy 7.4.1: The City shall cooperate with the local school districts and other groups to maintain the high quality of schools and educational programs.

Program 7.4.1.1: Maintain effective lines of communication between the local school district, the City and the community.

Program 7.4.1.2: Require that new developments adequately mitigate potential impacts on area schools as provided for in State law.

Program 7.4.1.4: Continue to support the local school district's efforts to raise funds for educational and recreational services.

Recreation and Open Space

The Downey Vision 2025 General Plan Update contains sample goals related to recreation as follows that will help reduce the impacts of the General Plan Update on recreation.

Goal:

- Develop plans for the preservation and rational increased use of open space;
- Create and maintain a public system of park recreational facilities; and
- Develop a network of streets, pedestrian paths and bikeways, which promote the safer and efficient movement of people and goods.

The Downey Vision 2025 General Plan Update also contains the following recreation related policies and programs.

Policy 7.1.1: The City shall adopt programs to preserve existing open space.

Program 7.1.1.1: Adopt an ordinance that designates parks, public schools, utility easements, cemeteries, riverbeds and golf course as open space.

Program 7.1.1.2: Adopt an ordinance that maintains the current minimum of 106 acres of public parklands.

Policy 7.2.1: The City shall develop new parks and recreational facilities in the areas of greatest need.

Program 7.2.1.1: Adopt a Parks Master Plan identifying areas of the City in greatest need of additional parks.

Program 7.2.1.2: Develop 10 to 13 acres of the Downey Landing development for a public park and potential school site.

Program 7.2.1.3: Develop an open space area or plaza in the downtown area.

Program 7.2.1.4: Develop a portion of the Rancho Business Center for a park and historic interpretive center.

Program 7.2.1.5: Develop "pocket parks" in areas of greatest need for additional parks.

Policy 7.2.2: The City shall examine the use of existing right-of-ways for recreation facilities.

Program 7.2.2.1: Assess the possibility of using utility easements, the riverbeds, the railroad, public controlled rights-of-way and surplus I-105 lots for recreation.

Program 7.2.2.2: Request that Union Pacific grant an easement over part of the railroad right-of-way parallel to Firestone Boulevard for a bike trail linking exiting bike trails along the riverbeds.

Policy 7.2.3: The City shall provide handicap accessible facilities.

Policy 7.2.4: The City shall require developments to establish usable open space in their projects;

Policy 7.3.1: The City shall upgrade existing recreation facilities and parks.

Program 7.3.1.1: Complete and maintain upgrade of Rio Hondo clubhouse facility.

Program 7.3.1.2: Adopt a Master Plan and Capital Improvement Program for replacement of playground equipment, installation of lighting at playing fields and remodeling and maintenance of park structures.

Program 7.3.1.3: Renovate Rio San Gabriel Park as needed and monitor the conditions of the abandoned landfill.

Program 7.3.1.4: Develop the south end of Wilderness Park.

Program 7.3.1.5: maintain an adequate level of recreational staffing at park facilities.

Policy 7.3.2: The City shall continue to secure alternative means of funding for parks and recreational facilities;

Program 7.3.2.1: Maintain and expand program collecting park in-lieu fees for new residential developments.

Program 7.3.2.2: Continue to secure grants, donations, user fees and public/private partnerships.

Policy 7.4.2: The City shall cooperate with the Downey Unified School District to provide recreational facilities and programs.

Program 7.4.2.1: Continue coordination with the Downey Unified School District to ensure the availability of school recreational facilities for public recreation.

Program 7.4.2.2: Continue the development of parks and/or special facilities on school property.

Traffic and Circulation

The Downey Vision 2025 General Plan Update also contains the following sample transportation related goals, policies and programs that will help reduce the impact of the General Plan Update on traffic and circulation..

Goals

- Develop a network of streets, paths, and bikeways, which promote the safer and efficient movement of people and goods.
- Achieve an efficient and effective system for the delivery of services in the community.

Policy 2.1.1: The City shall maintain a street system that provides safe and efficient movement of people and goods.

Program 2.1.1.1: Maintain intersections and street segments at acceptable service levels, defined as level of service (LOS) "A", "B", "C", or 'D", improve and not worsen those intersections and street segments currently operating at unacceptable levels, defined as level of service (LOS) "E" or "F".

Program 2.1.1.2: Establish a street improvement master plan prioritizing areas to be included in annual updates of the capital improvement program.

Program 2.1.1.3: Develop a signal system master plan to promote state-of-the-art intelligent transportation system (ITS) improvements to better service on-going traffic conditions.

Program 2.1.1.4: Prohibit on-street parking on major and secondary streets to improve safety and increase traffic flow.

Program 2.1.1.5: Require widening of street rights-of-ways, pursuant to the Roadway Development Standards found below, as necessary and consistent with providing adequate level of service.

Program 2.1.1.6: Encourage appropriate turn lanes and other operational improvements at major arterial intersections identified as congested.

Program 2.1.1.7: Identify and concentrate land uses with high traffic generation near major transportation corridors and public transit facilities.

Program 2.1.1.8: Review and implement applicable standards for parking of vehicles on public streets in the City.

Roadway Development Standards

Roadway Type	Typical Right-of-way	Number of Lanes
Major Arterial*	112 feet	4 to 6 lane divided roadway
Secondary Arterial	84 feet	2 to 4 lane undivided roadway
Collector	60 feet	2 to 4 lane undivided roadway
Local	Varies, up to 60 feet	2 to 4 lane undivided roadway

* Additional right-of-way required at major intersections and regional truck routes

Policy 2.1.2: The City shall promote improvements in the street system through the development process.

Program 2.1.2.1: Establish a development recovery fee program to require new developments and expansions of existing developments to pay the cost of circulation improvements.

Program 2.1.2.2: Require development projects to mitigate off-site traffic impacts to the maximum extent feasible, including install or upgrade traffic signals at intersections, or contribute its fair-share towards mitigating impacts.

Program 2.1.2.3: Reduce the number of driveway access points on streets.
Program 2.1.2.4: Promote the use of parking and access agreements and/or the consolidation of parking areas to help reduce the number of driveway access points on streets.

Program 2.1.2.5: Promote site designs, street patterns, and street signalization that discourages the use of local streets as through routes.

Program 2.1.2.6: Discourage projects that generate high amounts of traffic onto local and collector streets.

Policy 2.2.1: The City shall coordinate with regional agencies, including CalTrans, MTA, SCAG, Gateway Cities COG, and I-5 Joint Powers Authority, to promote multi-modal improvements strategies to improve traffic.

Program 2.2.1.1: Coordinate with I-5 Joint Power Authority regarding increasing capacity of the I-5 Freeway in a method that minimizes impacts on private properties.

Program 2.2.1.2: Promote replacement of the 4-lane bridges with 6-lane roads from Florence Avenue over the San Gabriel Rive and the I-5 Freeway, as part of the I-5 improvement project.

Policy 2.3.1: The City shall encourage the use of public transit.

Program 2.3.1.1: Install bus shelters and bus benches at key transit transfer stops.

Program 2.3.1.2: Maintain the intracommunity transit service (DowneyLINK) at a minimal fare amount for users.

Program 2.3.1.3: Maintain the intracommunity transit service (Downey LINK) with fixed routes covering most sections of the City.

Program 2.3.1.4: Evaluate providing a transit stop for the intracommunity transit service (DowneyLINK) at the Green Line Metro Rail Stations at Lakewood Boulevard & the I-105 Freeway and at Studebaker Road in the City of Norwalk.

Program 2.3.1.5: Evaluate providing transit stops for the intracommunity transit service (DowneyLINK) at transit stops of intracommunity transit services of adjacent communities.

Program 2.3.1.6: Improve the appearance, cleanliness, and maintenance of transit stops.

Program 2.3.1.7: Coordinate with MTA and other public transit authorities to assure their planning efforts will meet the changing and increasing public transit needs of the City, especially along Lakewood Boulevard.

Program 2.3.1.8: Encourage Downey business to provide employee information to public transit authorities to assist in their planning for public transit services.

Program 2.3.1.9: Review projected development and redevelopment of land with public transit authorities to determine whether alterations to service will be required.

Policy 2.3.2: The City shall encourage efforts to reduce the number and length of vehicle trips generated by land uses in Downey.

Program 2.3.2.1: Promote the development of park-and-ride facilities.

Program 2.3.2.2: Promote ridesharing through provision of information to the public.

Program 2.3.2.3: Promote transit-oriented developments.

Program 2.3.2.4: Promote on-site child-care facilities at major employment centers.

Program 2.3.2.5: Promote home-based businesses.

Program 2.3.2.6: Encourage efforts to shift the time of day of trips away from peak commuter hours through the use of flex-time, staggered working hours, and other means.

Policy 2.4.1: Evaluate a plan for the grade separation or abandonment of the Union Pacific Railroad Line, parallel to Firestone Boulevard.

Program 2.4.1.1: Document traffic delays caused by railroad line crossings and/or faulty signals by quantifying coast of traffic delays by number of vehicle hours and life loss due to delay to paramedic getting across.

Program 2.4.1.2: Evaluate the cost and feasibility of a grade separation of the railroad line.

Program 2.4.1.3: Establish a development recovery fee program to require new developments and expansions of existing developments to contribute towards an eventual grade separation and other railroad-related improvements.

Policy 2.5.1: The City shall promote the safe and efficient movement of truck traffic through the City.

Program 2.5.1.1: Enforce truck traffic to use designated truck routes in the City.

Program 2.5.1.2: Co-ordinate with local, regional, and state agencies involved in mitigation truck traffic impacts in the region.

Program 2.5.1.3: Widen street right-of-way to accommodate truck turning movements.

Program 2.5.1.4: Promote efforts to encourage the use and extension of the railroad transportation corridors (including the Alameda Corridor) to relieve traffic on City streets.

Program 2.5.1.5: Support efforts to upgrade the I-710 Freeway to address and restrict container truck traffic.

Policy 2.5.3: Discourage land uses that generate high amounts of truck traffic.

Program 2.5.3.1: Discourage land uses that attract high amounts of truck traffic without a corresponding creation of jobs.

Program 2.5.3.2: Require discretionary approval process for land uses generating high amounts of truck traffic, including general warehouses, truck parking, truck company headquarters, and distribution centers.

Policy 2.6.1: The City shall encourage bicycling as an attractive alternative to vehicular transportation.

Program 2.6.1.1: Encourage the use of bicycling as a form of transportation for employment commuting and business purposes, in addition to recreational purposes.

Program 2.6.1.2: Establish a bikeway master plan to link employment centers, recreational facilities, and bikeways along the Rio Hondo River, the San Gabriel River, Union Pacific Railroad Line, and those of neighboring communities via a network of bike routes, lanes, and paths.

Program 2.6.1.3: Encourage the provision of bicycle racks at retail service and other businesses for use by customers and employees.

Program 2.6.1.4: Encourage the provision of showers, changing rooms, and bicycle storage areas at retail, office, industrial, and other businesses for use by employees.

Program 2.6.1.5: Promote street intersection design and signalization that are safe and convenient to bicyclists.

Program 2.6.1.6: Promote site development design that is safe and convenient to bicyclists.

Policy 2.6.2: The City shall encourage walking as an attractive alternative to vehicular transportation.

Program 2.6.2.1: Promote site development design that is safe and convenient to pedestrians.

Program 2.6.2.2: Require sidewalks in new development and major remodeling consistent with the Sidewalk Master Plan.

Policy 2.7.1: The City's multiple year Capital Improvements Program should address the following improvements, as necessary:

Street systems
Sewer facilities
Water supply
Drainage facilities
Sidewalk
Parkway landscaping
Street lights
Transportation System Management
Other major capital investments necessary to sustain the City's growth and operation.

Program 2.7.1.1: Continue to rely upon funding programs that are earmarked for the continued maintenance and improvement of these systems.

Program 2.7.1.2: Develop a system, which will prioritize the use of funds for the completion of these improvements.

Program 2.7.1.3: Require future development to contribute its fair share of mitigating its impacts on public infrastructure.

The Downey Vision 2025 General Plan Update also contains the following goals and policies and a number of programs related to congestion management. They will help reduce the impacts of the General Plan Update on congestion management.

Policy 2.2.1: The City shall coordinate with regional agencies, including CalTrans, MTA, SCAG, Gateway Cities COG, and I-5 Joint Powers Authority, to promote multi-modal improvement strategies to improve traffic.

Program 2.2.1.3: Comply with provisions of the Congestion Management Plan, adopted by Los Angeles County.

Program 2.2.1.4: Review the Circulation Chapter on an annual basis for consistency with the Congestion Management Plan adopted by the County.

Program 2.2.1.5: Coordinate with the County in identifying the Level of Service of those monitoring locations in the City identified in the Congestion Management Plan.

Program 2.2.1.6: Adopt a Transportation Demand Management (TDM) ordinance as required by the Congestion Management Plan.

Program 2.7.1: Develop and continue to maintain a seven-year Capital Improvements Program (Transportation System Management (TSM) to address deficiencies on existing streets.

Utilities and Service Systems

The Downey Vision 2025 General Plan Update contains the following utilities and services goals, policies and programs that will help reduce the impacts of the General Plan Update on utilities and service systems.

- Conserve and utilize out water and energy resources.

Policy 4.1.1: The City will continue to encourage the conservation of water through a tiered billing process.

Program 4.1.1.2: Reassess water rate and upgrade metering to encourage water conservation.

Program 4.1.1.3: Continue to offer financial incentives to those who conserve water, such as requiring higher rates for those who do not conserve water.

Program 4.1.1.4: Explore other methods including public education to encourage water users to conserve water.

Policy 4.2.1: The City shall continue to encourage the use of reclaimed water.

Program 4.2.1.1: Evaluate the feasibility of using reclaimed water throughout the City.

Program 4.2.1.2: Encourage reclaimed water use by high volume water users.

Program 4.2.1.3: Expand the use of reclaimed water for golf courses, public parks and schools.

Policy 4.2.2: The City shall design facilities that conserve water.

Program 4.2.2.1: Water public open spaces during low demand periods.

Program 4.2.2.2: Use drought tolerant plant material in public open spaces where appropriate.

Program 4.2.2.3: Develop a capital improvement program, with provisions for the repair and replacement of older water mains throughout the City.

Program 4.2.2.4: Design City facilities to conserve water.

Policy 4.3.1: The City shall develop standards for water conserving plumbing and other fixtures in all new and existing construction.

Program 4.3.1.1: Maintain requirements for the installation of water conservation devices in all new and renovated construction, such as but not limited to: flow limiting faucets and shower heads, toilets, and urinals.

Program 4.3.1.2: Require water conserving appliances and fixtures in all commercial and industrial developments.

Program 4.3.1.3: Encourage high volume water users to re-use water on-site.

Policy 4.3.2: the City shall continue its public information program pertaining to water conservation.

Program 4.3.2.1: Promote water conservation by citizens.

Program 4.3.2.2: Fund school education programs with written materials regarding the importance of water conservation around the home.

Program 4.3.2.3: Encourage the use of "advanced irrigation" systems that conserve water usage.

Program 4.3.2.3: Encourage the use of drought resistant plants. Develop a plan describing drought resistant plants that may be used in landscaping various areas.

The Downey Vision 2025 General Plan Update also contains the following Public Utility related goals, policies and programs.

Policy 4.7.1: The City shall require recycling and source reduction in residential, commercial and industrial areas of the City.

Program 4.7.1.1: Continue to provide information to citizens about recycling and source reduction and the need to recycle waste.

Program 4.7.1.2: Require residences and businesses to recycle solid waste.

Program 4.7.1.3: Continue recycling programs to use state mandates products when practical.

Program 4.7.1.4: Conform to the City's source reduction and recycling plan.

Program 4.7.1.5: Work with waste hauler company, Materials Recovery Facility (MRF), landfill operators and state officials to ensure accurate recording of waste disposal information.

Appendix B

Traffic Study

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DOWNEY
GENERAL PLAN UPDATE TRAFFIC STUDY
DOWNEY, CALIFORNIA

Prepared for:

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July 26, 2004

CW:AT:jb
JN:01815-02

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DOWNEY
GENERAL PLAN UPDATE TRAFFIC STUDY

1.0 TRANSPORTATION PLANNING CONTEXT

This Traffic Study has been prepared in support of the City of Downey General Plan update. The General Plan emphasizes the maintenance of a balanced multi-modal transportation system for the City that responds to demands of the current and planned land uses. This study establishes acceptable roadway service levels. The use of non-vehicular travel modes such as transit, walking, and biking is also accommodated in the proposed network.

The City of Downey has a circulation system consisting of freeways, major arterials, secondary highways, collector streets, and railways. The I-5, I-605, and I-105 Freeways provide regional access to the City. Established transit service connects the City to the nearby communities and surrounding area.

For vehicular transportation, a hierarchical roadway network is established with designated roadway types and design standards. The roadway type is linked to anticipated daily traffic levels, and acceptable levels of service are established to determine when capacity improvements are necessary. Peak hour analysis has also been performed to determine the existing roadway levels of service. Because local circulation is linked with the regional system, the plan also focuses on participation in regional programs to alleviate traffic congestion and construct capacity improvements. Alternative transportation modes are also emphasized to reduce dependency on the automobile and thereby improve environmental quality.

Several transportation plans prepared by the City and other regional agencies focus on the regional transportation system. Plans and programs related to the General Plan include the following:

City of Downey Master Plan of Streets & Highways

The City of Downey Master Plan of Streets & Highways comprises the currently adopted City of Downey General Plan circulation system. Designating roadways with specific arterial functional classifications, the City of Downey Master Plan of Streets & Highways serves to define the intended roadway system for the city. Surrounding cities are expected to achieve consistency with the regional plans in individual General Plan circulation elements.

County of Los Angeles Congestion Management Program

Urbanized areas within the state of California such as Los Angeles County are required to adopt a Congestion Management Program (CMP). The goals of the CMP are to reduce traffic congestion and to provide a mechanism for coordinating land use development and transportation improvement decisions. Los Angeles County compiles the data and submits the results to the Southern California Association of Governments (SCAG) for a finding of regional consistency. The I-5, I-605, and I-105 freeways and SR-19 are roadway components of the Congestion Management Plan system.

Regional Transportation Plan

The Regional Transportation Plan (RTP) is a component of the Regional Comprehensive Plan and Guide prepared by SCAG to address regional issues, goals, objectives, and policies for the Southern California region into the early part of the 21st century. The RTP, which SCAG periodically updates to address changing conditions in the Southland, has been developed with active participation from local agencies throughout the region, elected officials, the business community, community groups, private institutions, and private citizens. The RTP sets broad goals for the region and provides strategies to reduce problems related to congestion and mobility.

2.0 EXISTING CONDITIONS

The City of Downey is located in southeastern Los Angeles County. Exhibit 2-A shows the project location map. Regional access to the City of Downey is provided by the I-5, I-605, and I-105 freeways. Local traffic is served by the following existing arterial roadways:

- Old River School Road
- Paramount Boulevard
- Downey Avenue
- Brookshire Avenue
- Lakewood Boulevard (SR-19)
- Clark Avenue
- Bellflower Boulevard
- Woodruff Avenue
- Studebaker Road
- Telegraph Road
- Gallatin Road
- Firestone Boulevard
- Stewart & Gray Road
- Imperial Highway
- Gardendale Street/Foster Road
- Rosecrans Avenue
- Garfield Avenue

EXISTING ROADWAY CHARACTERISTICS

Urban Crossroads, Inc. staff performed an extensive inventory to determine the City of Downey arterial roadways existing conditions. Exhibit 2-B presents the existing number of through lanes on the arterial system. Exhibit 2-C illustrates the existing intersection controls, and Exhibit 2-D depicts the existing intersection lane configurations (at

EXHIBIT 2-A

LOCATION MAP

LEGEND:

– · – · – = CITY OF DOWNEY BOUNDARY

N

EXHIBIT 2-B

EXISTING ARTERIAL THROUGH LANES

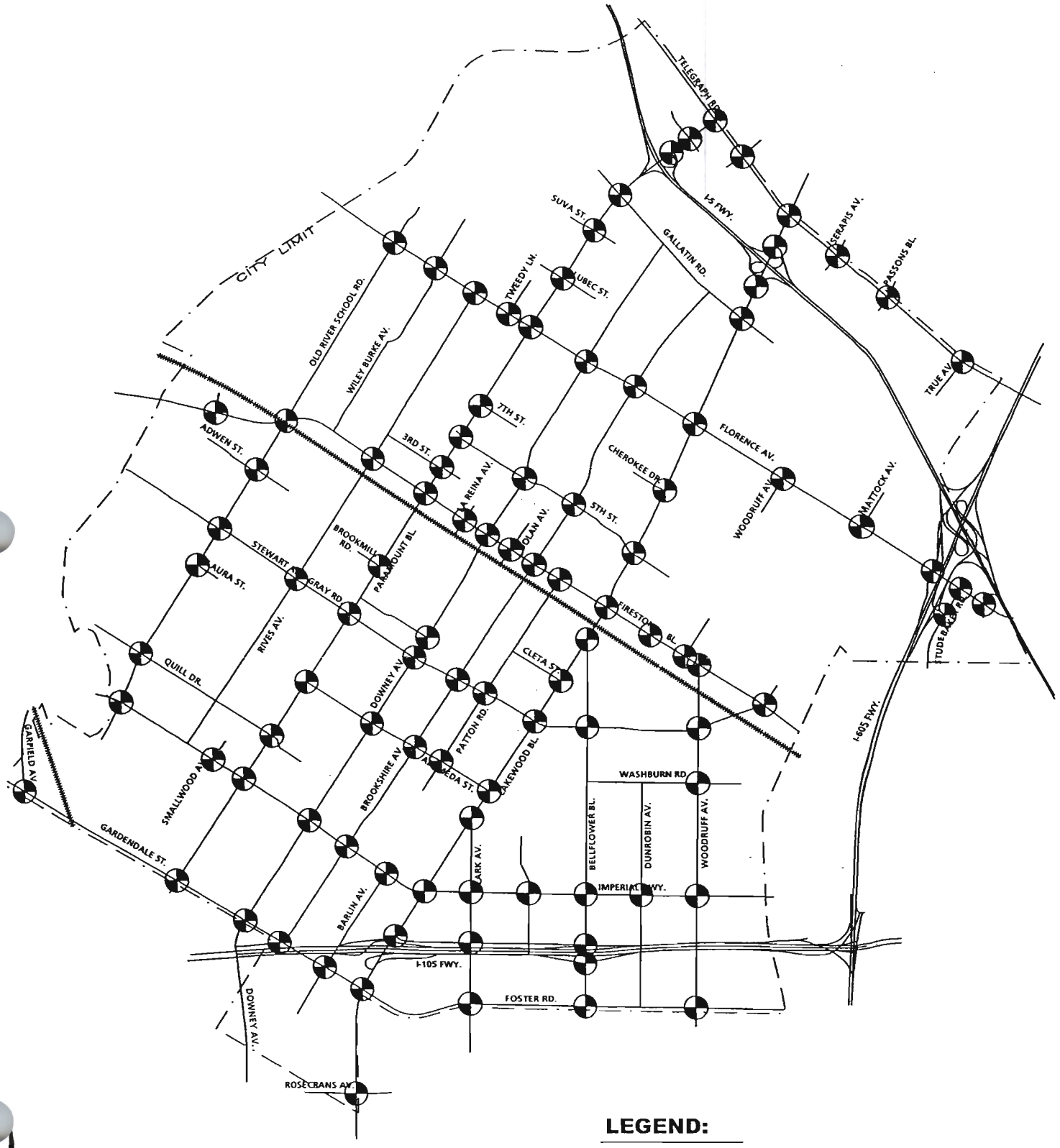
LEGEND:

D = DIVIDED
U = UNDIVIDED
4 = THROUGH LANES (TOTAL BOTH DIRECTIONS)

* = BASED ON PEAK PERIOD PARKING RESTRICTIONS

EXHIBIT 2-C

EXISTING ARTERIAL INTERSECTION CONTROLS

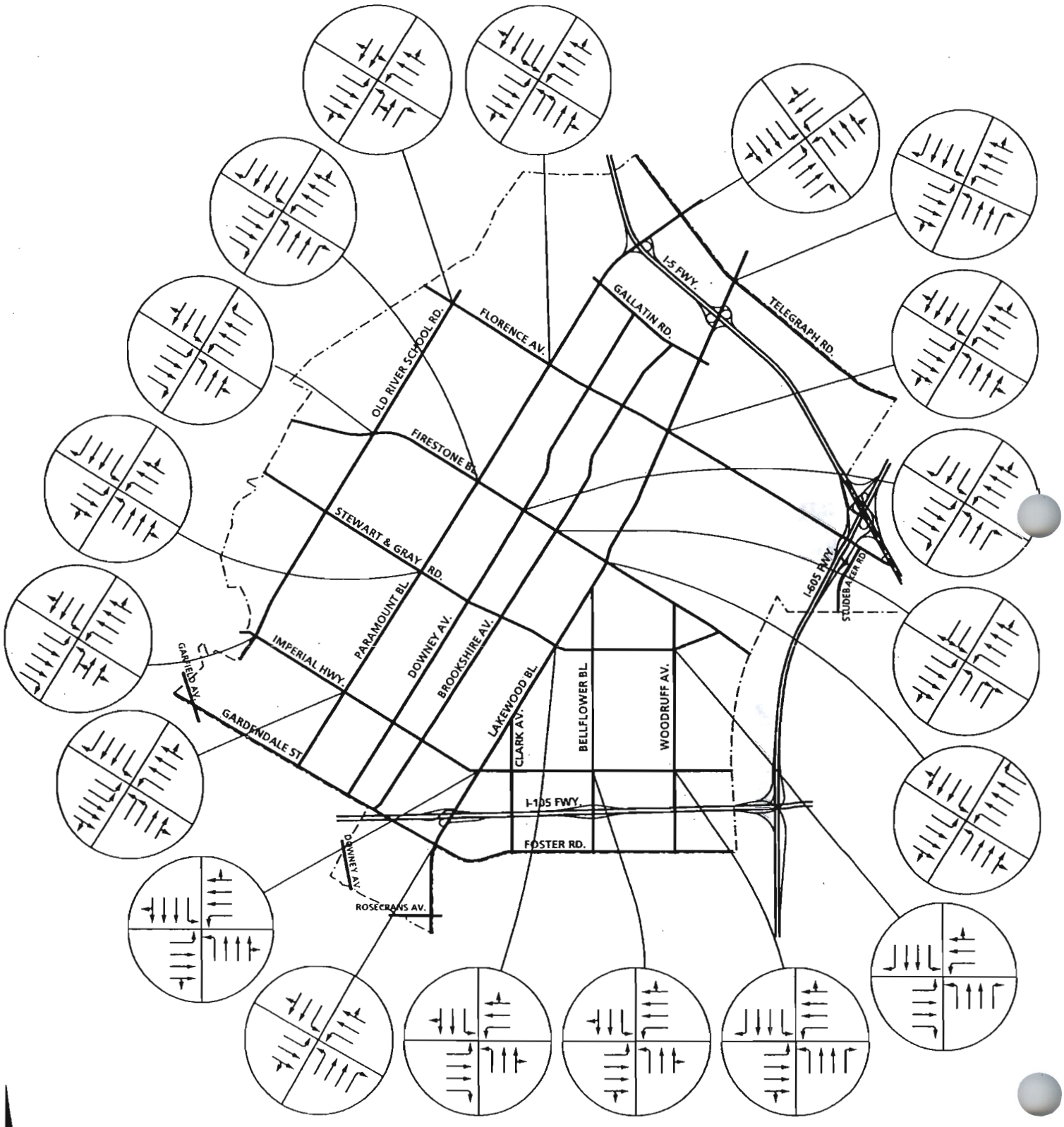


LEGEND:

= TRAFFIC SIGNAL

EXHIBIT 2-D

EXISTING INTERSECTION LANE CONFIGURATION



analysis locations selected by City staff), respectively. Existing speed limits are shown on Exhibit 2-E. Truck routes within the City are shown on Exhibit 2-F.

The currently adopted Master Plan of Streets and Highways is included as Exhibit 2-G. General plan roadway cross-sections are shown on Exhibit 2-H. These sections represent desirable standards, but variation in right-of-way width and specific road improvements will occur in certain cases due to physical constraints and/or right-of-way limitations.

In particular, the median width of Major Arterials will vary according to the area being served, right-of-way constraints and turn lane requirements. Any of the arterial classifications may deviate from the standards where physical constraints exist or where preservation of community character dictates special treatment. Bikeways and sidewalks also affect the specific standards applied to various facilities. Parking restrictions allow wider usable roadway width during periods when the restriction is in place. Parking restrictions on study area arterial roadways vary throughout the City. Many on-street parking restrictions vary on a block by block basis or even within individual blocks. In general parking restrictions increase roadway capacity, with the maximum benefit occurring when parking is prohibited altogether. The overriding circulation goal is that all roadways carry the designed volumes of traffic at the desired level of service.

Performance Criteria

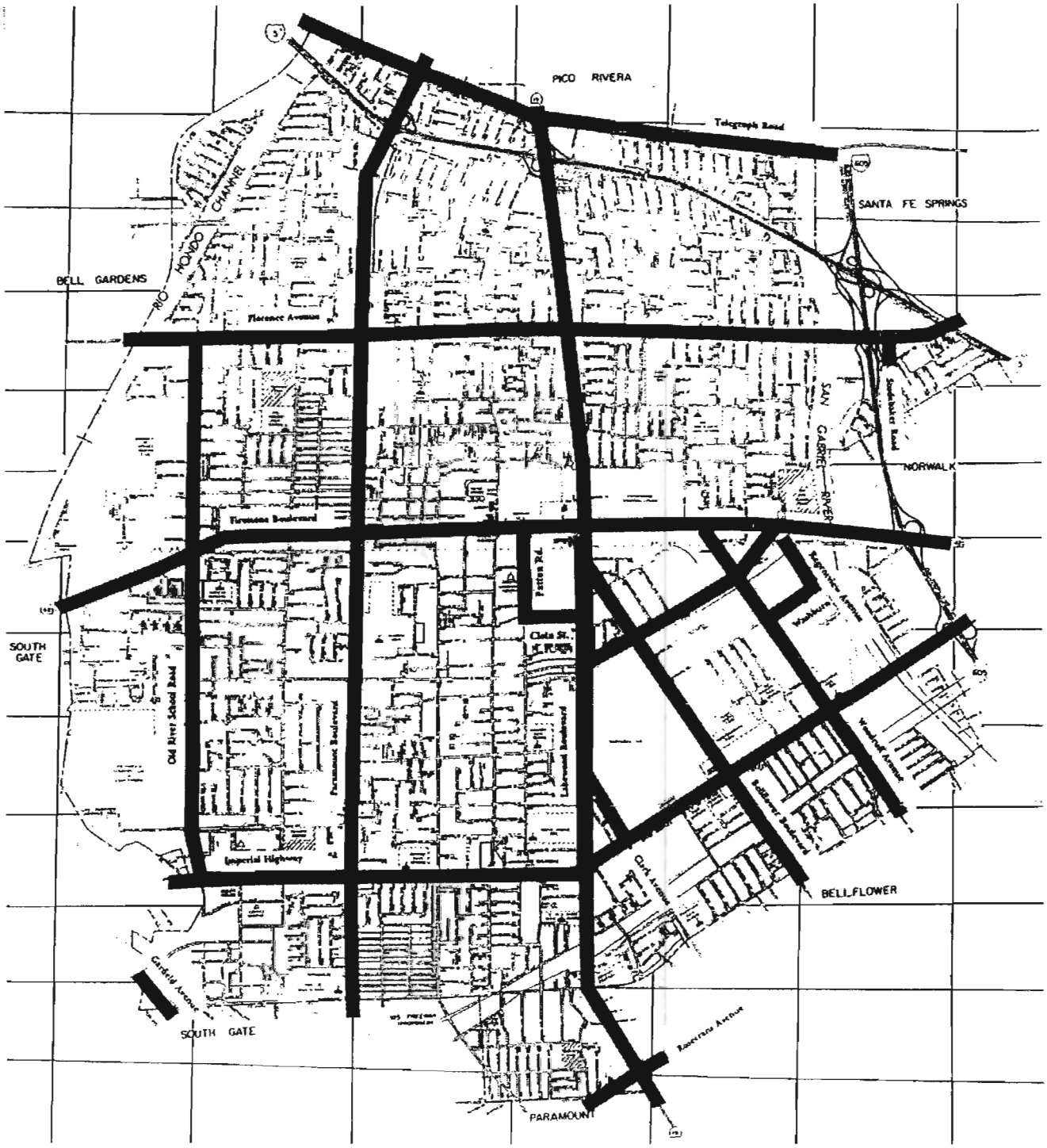
For this General Plan study, the technical evaluation of the City of Downey roadway system has been conducted with volume-to-capacity (V/C) ratios. V/C ratios are calculated based on existing or future average daily traffic (ADT) volumes and daily capacity values for the various types of arterials. A level of service (LOS) scale is used to evaluate roadway performance based on V/C ratios. The levels range from "A" to "F" with LOS "A" representing free flow conditions and LOS "F" representing severe traffic congestion.

EXHIBIT 2-E

EXISTING ARTERIAL ROADWAY SPEED LIMIT

EXHIBIT 2-F

CITY OF DOWNEY
EXISTING TRUCK ROUTES



LEGEND:

= Existing Truck Routes

N

SOURCE: CITY OF DOWNEY

URBAN CROSSROADS

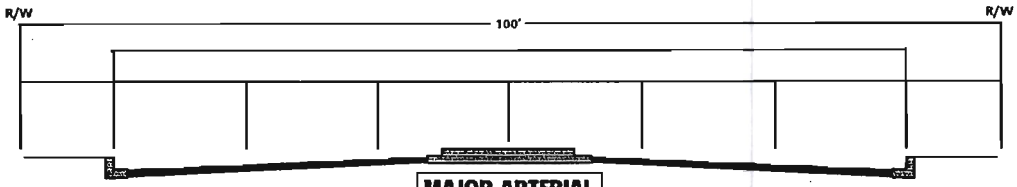
EXHIBIT 2-G

CITY OF DOWNEY CURRENTLY ADOPTED MASTER PLAN OF STREETS & HIGHWAYS

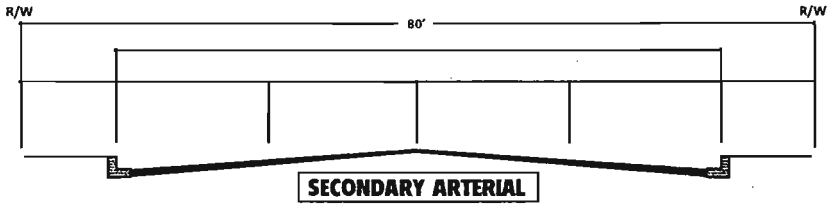
SOURCE: CITY OF DOWNEY GENERAL PLAN CIRCULATION ELEMENT

EXHIBIT 2-H

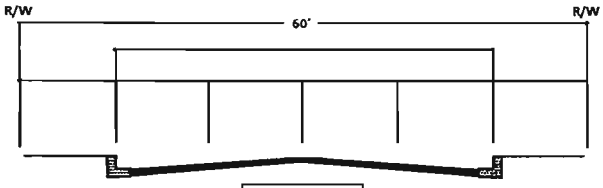
CITY OF DOWNEY CURRENTLY ADOPTED GENERAL PLAN ROADWAY CROSS-SECTIONS



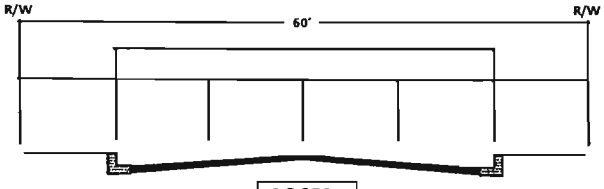
MAJOR ARTERIAL
(4 TO 6 LANES)



SECONDARY ARTERIAL
(2 TO 4 LANES)



COLLECTOR
(2 TO 4 LANES)



LOCAL
(2 TO 4 LANES)

SOURCE: CITY OF DOWNEY GENERAL PLAN CIRCULATION ELEMENT

Various LOS policy standards have been established for evaluating observed traffic conditions, future development plans, and circulation system modifications. At the regional planning level, the statewide Congestion Management Plan (CMP) specifies LOS "E" (V/C ratio less than or equal to 1.00) as the operating standard for roadways on the CMP highway system. Based on direction from City staff, the City of Downey strives to maintain LOS "D" on the roadway system, however under extenuating circumstances (e.g., intersection configuration beyond typical engineering practice of dual-left turn lane and one-right turn lane) LOS "E" would be considered acceptable. This traffic study evaluates the improvements necessary to provide LOS "E" or LOS "D" service levels and identifies locations where the improvements required to provide LOS "D/E" exceeds the typical engineering practice described previously. The above level of service standards have been used to evaluate City arterial roadways.

Table 2-1 shows roadway capacity values for the different roadway classifications. A roadway is considered to be a divided roadway when a center median area is present. The median can either be painted or delineated by a raised island, interrupted by left turn pockets where necessary. The daily capacity values are used for calculating roadway V/C ratios. Due to the generalized nature of ADT capacities, the values are typically viewed as general rather than absolute guides for estimating levels of service and sizing the future roadway system. Table 2-1 includes a second set of capacities reflecting the increase in roadway capacity that can be expected when Transportation Systems Management (TSM) measures are implemented. TSM measures include various strategies, such as signal interconnect, intersection widening, and access management (e.g., raised medians, eliminating/restricting on-street parking, deceleration lanes at major centers, joint property access, etc.). The 7% increase in capacity/reduction in delays shown on Table 2-1 is consistent with research results regarding the effectiveness of TSM measures. In addition, roadway segment capacity is also increased when augmented lanes are provided as necessary at key intersections. Capacity increases can vary from 5 to 20%, depending on the roadway segments' individual traffic patterns and the spot improvements (augmented intersection lanes) implemented. Table 2-2 shows the V/C ranges associated with each Level of Service.

TABLE 2-1

ROADWAY LINK CAPACITY[1]

ROADWAY GEOMETRY CLASSIFICATION	CAPACITY (LOS "E")	CAPACITY WITH TSM[2] MEASURES
Two Lanes Undivided (2U)	12,500 Vehicles Per Day	13,400
Four Lanes Undivided (4U)	25,000 Vehicles Per Day	26,800
Four Lanes Divided (4D)	37,500 Vehicles Per Day	40,100
Six Lanes Divided (6D)	56,300 Vehicles Per Day	60,200
Eight Lanes Divided (8D)	75,000 Vehicles Per Day	80,300

1 These roadway capacities are approximate figures only, and are used at the General Plan level. They are affected by such factors as intersections (numbers & configuration), degrees of access control, roadway grades, design geometrics (horizontal & vertical alignment) and traffic variation on a temporal basis.

2 Transportation System Management (TSM) measures consist of operational enhancements, including (but not limited to) traffic signal interconnections, traffic signal timing optimization, parking restrictions, incident management, and intersection widening, and access management (e.g., raised medians, deceleration lanes at major centers, joint property access, etc.).

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TABLE 2-2

ROADWAY SEGMENT LEVEL OF SERVICE (LOS) DEFINITION

LOS	ROADWAY SEGMENT VOLUME TO CAPACITY (V/C) RATIO		
A	0	-	0.6
B	0.61	-	0.7
C	0.71	-	0.8
D	0.81	-	0.9
E	0.91	-	1.00
F			>1.00

U:\UcJobs_01800\01815\Excel\[01815-02.xls]T 2-2

The operation of major roadways will be monitored. As the V/C ratio exceeds the LOS standards, roadway capacity will be expanded by restricting on-street parking, improving signal timing, widening intersections, and adding through and turn lanes.

Where the City determines that proposed development projects will cause LOS standards to be exceeded, appropriate mitigation can be required to improve roadways to meet LOS standards.

Existing daily traffic count data for the study area were assembled by Urban Crossroads, Inc. staff based on data supplied by the City of Downey. Traffic count data is included in Appendix A. Existing Average Daily Traffic (ADT) volumes are shown on Exhibit 2-I. The data is expressed in terms of passenger car equivalents (PCEs) to account for the presence of heavy vehicles (large trucks, etc.) in the traffic stream. A PCE equivalent factor of 3.0 has been used in this study.

Arterial Roadways

Telegraph Road is classified as a Major Arterial on the Master Plan of Streets and Highways. It is currently a four lane divided roadway in the study area. Telegraph Road carries between 33,300 and 39,900 vehicles per day (VPD) between Paramount Boulevard and Lakewood Boulevard.

Florence Avenue is classified as a Major Arterial on the Master Plan of Streets and Highways. It is currently a six lane divided roadway through the study area. This stretch carries between 31,000 and 46,500 vehicles per day.

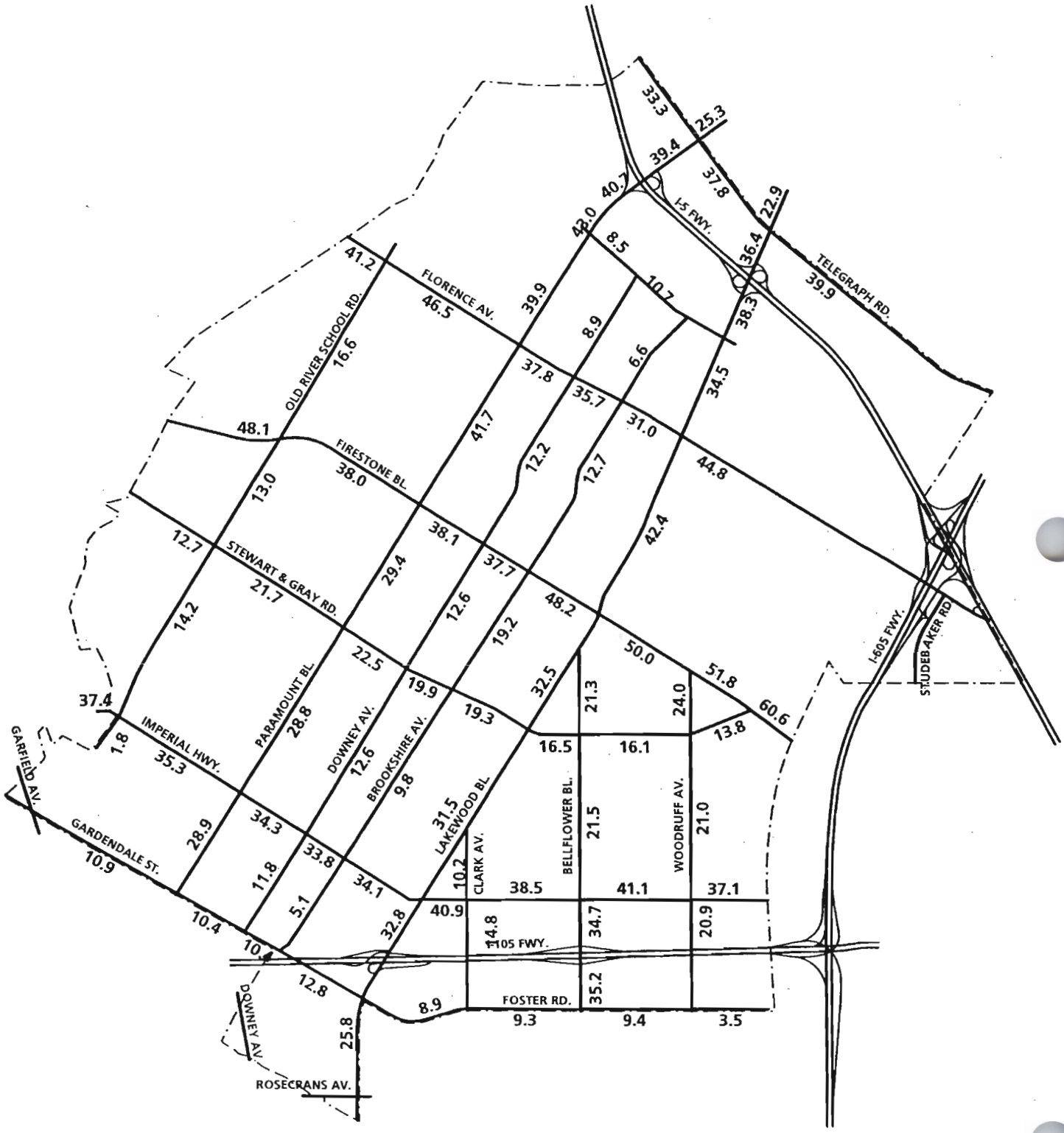
Firestone Boulevard is classified as a Major Arterial on the Master Plan of Streets and Highways. It is a four to six lane divided roadway through the study area. Firestone Boulevard carries from 37,700 to 60,600 vehicles per day in the City of Downey.

Stewart and Gray Road is classified as a Secondary Highway. It is a four lane roadway that varies between a divided and undivided cross-section. It carries between 12,700 and 22,500 vehicles per day under existing conditions.

Imperial Highway is classified as a Major Arterial. It is constructed as a six lane divided highway under existing conditions. It carries between 33,800 and 41,100 vehicles per day.

EXHIBIT 2-I

EXISTING AVERAGE DAILY TRAFFIC (ADT)



Gardendale/Foster Road is classified as a Secondary Highway. It is constructed as a four lane undivided roadway. It carries between 3,500 and 12,800 vehicles per day.

Old River School Road is classified as a Secondary Highway. It is generally a four lane undivided roadway (with some divided sections) and carries from 13,000 to 16,600 vehicles per day in the study area.

Paramount Boulevard is a four lane divided Major Arterial. It carries 28,800 to 43,000 vehicles per day in the study area.

Downey Avenue is a generally four lane undivided Secondary Highway, with variations in cross-section from two-lane undivided to four lane divided. Downey Avenue is currently carrying 8,900 to 12,600 vehicles per day.

Brookshire Avenue is also generally a four lane undivided Secondary Highway with variations in cross-section from a two lane undivided roadway to a four lane divided roadway. Brookshire is currently carrying 5,100 to 19,200 vehicles per day.

Rosemead Boulevard/Lakewood Boulevard is classified as a Major Arterial. It is generally constructed as a four lane divided roadway with a short stretch in the vicinity of the I-5 Freeway constructed as a six lane divided facility. It carries 31,500 to 42,400 vehicles per day.

Clark Avenue is a four lane undivided Secondary Highway carrying 10,200 to 14,800 vehicles per day.

Bellflower Boulevard is classified as a four lane divided Secondary Highway carrying 21,300 to 35,200 vehicles per day.

Woodruff Avenue is classified as a four lane undivided Major Arterial carrying 21,000 to 24,000 vehicles per day.

ROADWAY SEGMENT DAILY CAPACITY ANALYSIS

Roadway system performance is generally described in terms of level of service (LOS). Daily roadway segment analysis requires calculating the daily traffic volume divided by the roadway capacity (shown in Table 2-1). The resulting V/C ratio may then be compared to the level of service (LOS) ranges to estimate the LOS expressed in terms of the letter grades LOS "A" through LOS "F". Much like a report card, LOS "A" represents the highest or best LOS, while LOS "F" represents the lowest or worst LOS. During peak hours, levels of service "A" to "D" are acceptable (at a minimum). Each LOS can be summarized as follows:

LOS A - LOS "A" conditions are characterized by free flow operations. Vehicles are unimpeded in their ability to maneuver within the traffic stream, and stopped delay at intersections is minimal.

LOS B - LOS "B" conditions are characterized by travel speeds which are within 70% of free flow operational speeds. Vehicles are slightly restricted in their ability to maneuver within the traffic stream, and stopped delay at intersections is not bothersome to most drivers.

LOS C - LOS "C" conditions are characterized as stable operations. The ability to maneuver and change lanes may be somewhat restricted, and travel speeds may drop to 50% of free flow speeds. Some queuing typically occurs at signalized intersections, however all vehicles clear the intersection on all or nearly all cycles.

LOS D - LOS "D" conditions are characterized by high density traffic flows. Travel speeds may range as low as 40% of free flow operational speeds. Vehicles are restricted in their ability to maneuver within the traffic stream, and one or more vehicles may not clear the intersection within a single signal cycle on a regular basis.

LOS E - LOS "E" conditions are characterized as operations at or near capacity. There is little or no freedom to maneuver within the traffic stream. Comfort and convenience levels are low, and driver frustration is generally high. Operations at this level are generally unstable, with even minor disturbances or disruptions resulting in the breakdown of operations and substantially increased delays. The failure of vehicles to clear an intersection in a single cycle is a regular occurrence.

LOS F - LOS "F" conditions represent forced or breakdown flow. The traffic volume approaching location exceeds the capacity of the system at that location. Intersections often become the focal point for roadway system failure. Operations are characterized by extensive queues and long delays. Some or all vehicles fail to clear the intersection during every signal cycle.

The daily capacity of a roadway correlates to a number of widely varying factors, including traffic peaking characteristics, traffic turning volumes, and the volume of traffic on crossing streets. The daily capacities are therefore most appropriately used for long range General Plan analysis, or as a screening tool to determine the need for more detailed peak hour analysis.

Roadway link capacity analysis has been performed at locations where existing count data was available. Table 2-3 contains the results of this analysis. Several study area roadways have volume/capacity ratios greater than 0.90, confirming the need for more detailed peak hour analysis. Roadways with one or more segments carrying volumes exceeding a V/C ratio of 0.90 include:

- Telegraph Road
- Firestone Boulevard
- Paramount Boulevard
- Downey Avenue
- Brookshire Avenue
- Lakewood Avenue
- Bellflower Boulevard

TABLE 2-3

EXISTING ROADWAY SEGMENT VOLUME TO CAPACITY ANALYSIS

STREET	ROAD SEGMENT	ROADWAY CLASSIFICATION	ROADWAY CAPACITY	EXISTING ADT	VOLUME TO CAPACITY RATIO (V/C)	LOS
Telegraph Rd.	WCL - Paramount	4U	25,000	33,347	1.33	F
	Paramount-Lakewood	4D	37,500	37,752	1.01	F
	Lakewood-I605	4D	37,500	39,896	1.06	F
Gallatin Rd.	Paramount Blvd.-Downey Ave.	4U	25,000	8,500	0.34	A
	Downey Ave.-Brookshire Ave.	4U	25,000	10,700	0.43	A
Florence Ave.	Garfield Ave.- Old River School Rd.	6D	56,300	41,235	0.73	C
	Old River School Rd.-Paramount Blvd.	6D	56,300	46,529	0.83	D
	Paramount Blvd.-Downey Ave.	6D	56,300	37,767	0.67	B
	Downey Ave.-Brookshire Ave.	6D	56,300	35,745	0.63	B
	Brookshire Ave.-Lakewood Blvd.	6D	56,300	38,960	0.69	B
	Lakewood Blvd.-I605	6D	56,300	44,750	0.79	C
Firestone Blvd.	Garfield Ave.- Old River School Rd.	4D	37,500	48,121	1.28	F
	Old River School Rd.-Paramount Blvd.	4D	37,500	37,961	1.01	F
	Paramount Blvd.-Downey Ave.	6D	56,300	38,061	0.68	B
	Downey Ave.-Brookshire Ave.	6D	56,300	37,682	0.67	B
	Brookshire Ave.-Lakewood Blvd.	6D	56,300	48,240	0.86	D
	Lakewood Blvd.-Woodruff Ave. (South)	6D	56,300	50,037	0.89	D
	Woodruff Ave. (South)-Stewart & Gray Rd.	6D	56,300	51,767	0.92	E
	Stewart & Gray Rd - ECL	6D	56,300	60,589	1.08	F
Stewart and Gray Rd.	Garfield Ave.-Old River School Rd.	4D	37,500	12,710	0.34	A
	Old River School Rd.-Paramount Blvd.	4U	25,000	21,668	0.87	D
	Paramount Blvd.-Downey Ave.	4U	25,000	22,468	0.90	D
	Downey Ave.-Brookshire Ave.	4D	37,500	19,868	0.53	A
	Brookshire Ave.-Lakewood Blvd.	4D	37,500	19,327	0.52	A
	Lakewood Blvd.-Bellflower Blvd.	4D	37,500	16,517	0.44	A
	Bellflower Blvd.-Woodruff Ave.	4D	37,500	16,130	0.43	A
	Woodruff Ave.-Firestone Blvd.	4D	37,500	13,750	0.37	A
Imperial Hwy.	Garfield Ave.-Old River School Rd.	6D	56,300	37,384	0.66	B
	Old River School Rd.-Paramount Blvd.	6D	56,300	35,268	0.63	B
	Paramount Blvd.-Downey Ave.	6D	56,300	34,391	0.61	B
	Downey Ave.-Brookshire Ave.	6D	56,300	33,837	0.60	A
	Brookshire Ave.-Lakewood Blvd.	6D	56,300	34,096	0.61	B
	Lakewood Blvd.-Clark Ave.	6D	56,300	40,851	0.73	C
	Clark Ave.-Bellflower Blvd.	6D	56,300	38,540	0.68	B
	Bellflower Blvd.-Woodruff Ave.	6D	56,300	41,149	0.73	C
	Woodruff Ave. -- ECL	6D	56,300	37,092	0.66	B
Gardendale St./Foster Rd.	Garfield Ave.-Paramount Blvd.	4U	25,000	10,900	0.44	A
	Paramount Blvd.-Downey Ave.	4D	37,500	10,410	0.28	A
	Downey Ave.-Brookshire Ave.	4D	37,500	10,406	0.28	A
	Brookshire Ave.-Lakewood Blvd.	4D	37,500	12,806	0.34	A
	Lakewood Blvd.-Clark Ave.	4U	25,000	8,884	0.36	A
	Clark Ave.-Bellflower Blvd.	4U	25,000	9,284	0.37	A
	Bellflower Blvd.-Woodruff Ave.	4U	25,000	9,358	0.37	A
	Woodruff Ave. - ECL	4D	37,500	3,472	0.09	A
Old River School Rd.	Florence Ave.-Firestone Blvd.	4U	25,000	16,630	0.67	B
	Firestone Blvd.-Stewart & Gray Rd.	4U	25,000	12,984	0.52	A
	Stewart & Gray Rd.-Imperial Hwy.	4U	25,000	14,168	0.57	A

TABLE 2-3 (CONTINUED)

EXISTING ROADWAY SEGMENT VOLUME TO CAPACITY ANALYSIS

STREET	ROAD SEGMENT	ROADWAY CLASSIFICATION	ROADWAY CAPACITY	EXISTING ADT	VOLUME TO CAPACITY RATIO (V/C)	LOS
Paramount Blvd.	Telegraph Rd.- I-5 Fwy.	4D	37,500	39,412	1.05	F
	I-5 Fwy. - Gallatin Rd.	4D	37,500	40,726	1.09	F
	Gallatin Rd.-Suva St.	4D	37,500	43,025	1.15	F
	Suva St.-Florence Ave.	4D	37,500	39,869	1.06	F
	Florence Ave.-Firestone Blvd.	4D	37,500	41,684	1.11	F
	Firestone Blvd.-Stewart & Gray Rd.	4D	37,500	29,411	0.78	C
	Stewart & Gray Rd.-Imperial Hwy.	4D	37,500	28,811	0.77	C
	Imperial Hwy-Gardendale St./Foster Rd.	4D	37,500	28,864	0.77	C
Downey Ave.	Gallatin Rd.-Florence Ave.	4U	25,000	8,913	0.36	A
	Florence Ave.-Firestone Blvd.	2U	13,400	12,210	0.91	E
	Firestone Blvd.-Stewart & Gray Rd.	4U	25,000	12,610	0.50	A
	Stewart & Gray Rd.-Imperial Hwy.	4U	25,000	12,553	0.50	A
	Imperial Hwy.-Gardendale St./Foster Rd.	4U	25,000	11,800	0.47	A
Brookshire Ave.	Gallatin Rd.-Florence Ave.	4U	25,000	6,600	0.26	A
	Florence Ave.-Firestone Blvd.	2U	13,400	12,670	0.95	E
	Firestone Blvd.-Stewart & Gray Rd.	4U	25,000	19,200	0.77	C
	Stewart & Gray Rd.-Imperial Hwy.	4U	25,000	9,800	0.39	A
	Imperial Hwy.-Gardendale St./Foster Rd.	4U	25,000	5,100	0.20	A
Lakewood Blvd	Telegraph Rd.-I-5	4D	37,500	36,434	0.97	E
	I-5 -Gallatin Rd.	6D	56,300	38,262	0.68	B
	Gallatin Rd.-Florence Ave.	4D	37,500	34,492	0.92	E
	Florence Ave.-Firestone Blvd.	4D	37,500	42,380	1.13	F
	Firestone Blvd.-Stewart & Gray Rd.	4D	37,500	32,461	0.87	D
	Stewart & Gray Rd.-Imperial Hwy.	4D	37,500	31,468	0.84	D
	Imperial Hwy.-Gardendale St./Foster Rd.	4D	37,500	32,792	0.87	D
Clark Ave.	Lakewood Blvd.-Imperial Hwy.	4D	37,500	10,155	0.27	A
	Imperial Hwy.-Gardendale St./Foster Rd.	4U	25,000	14,837	0.59	A
Bellflower Blvd.	Lakewood Blvd.-Stewart & Gray Rd.	4D	37,500	21,298	0.57	A
	Stewart and Gray Rd.-Imperial Hwy.	4D	37,500	21,458	0.57	A
	Imperial Hwy.-I-105 WB Ramps	4D	37,500	34,691	0.93	E
	I-105 EB Ramps-Gardendale St./Foster Rd.	4D	37,500	35,196	0.94	E
Woodruff Ave.	Firestone Blvd.-Stewart & Gray Rd.	4D	37,500	23,955	0.64	B
	Stewart & Gray Rd.-Imperial Hwy.	4D	37,500	20,968	0.56	A
	Imperial Hwy.-Gardendale St./Foster Rd.	4D	37,500	20,920	0.56	A

Intersection analysis locations are shown on Exhibit 2-J. Whereas the City of Downey has many critical intersections, nineteen intersections were selected for the purpose of analyzing bottleneck areas. These included nearly all intersections of Major (to Major) Arterials, as well as many other key intersections. Existing AM and PM peak hour intersection volumes are shown on Exhibits 2-K and 2-L, respectively. Count data sheets appear in Appendix A. Existing intersection operations analysis has been performed, and is included in Appendix B. Table 2-4 summarizes the results of this analysis. As shown in Table 2-4, five intersections during the AM peak hour and ten intersections during the PM peak hour are operating at a deficient (LOS "E" or "F") level of service. Table 2-5 summarizes the intersection LOS by LOS level. Many (but not all) of the deficient intersections are located along roadways where a daily deficiency was identified.

EXHIBIT 2-J

INTERSECTION ANALYSIS LOCATIONS

EXHIBIT 2-K

EXISTING AM PEAK HOUR INTERSECTION VOLUMES

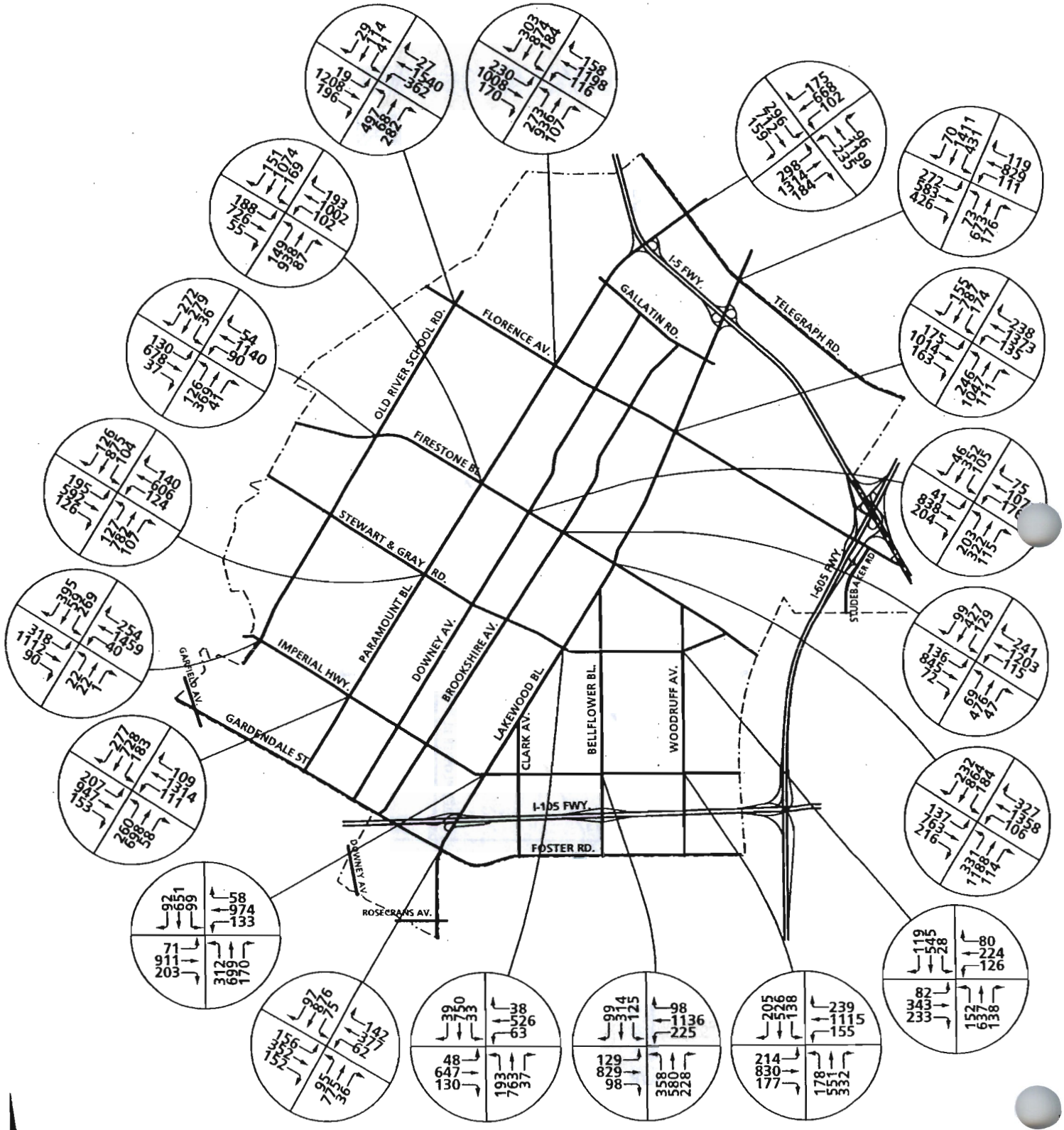


EXHIBIT 2-L

EXISTING PM PEAK HOUR INTERSECTION VOLUMES

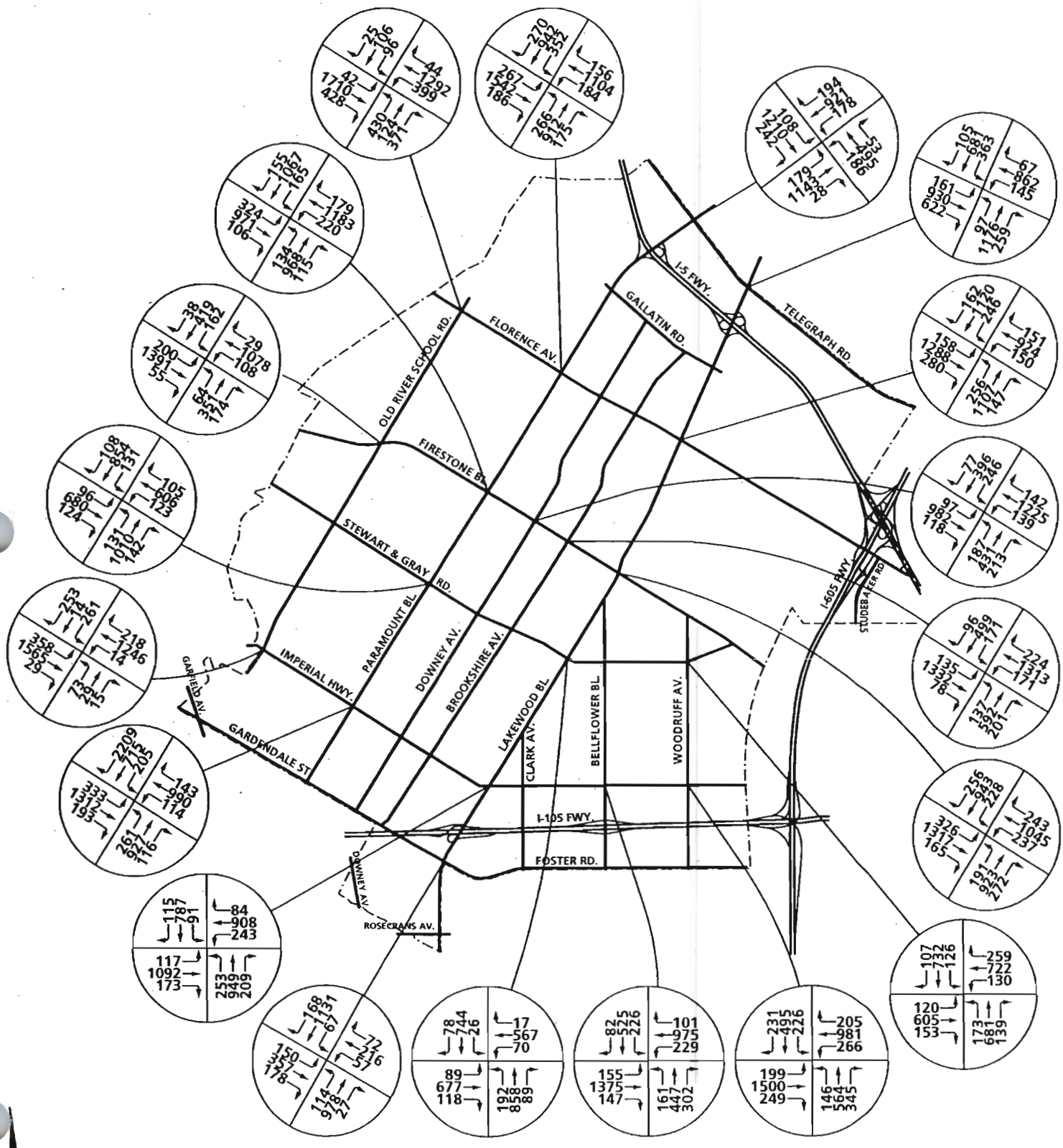


TABLE 2-4

INTERSECTION ANALYSIS SUMMARY FOR EXISTING CONDITIONS

INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1]												DELAY[2] (SECS.)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Old River School Rd. (NS) at:																	
• Florence Av. (EW)	TS	1.5	0.5	1	0.5	1.5	0	1	3	0	1	2	0	50.9	--[4]	D	F
• Firestone Bl. (EW)	TS	1	2	0	1	2	0	1	2	1	1	2	1	32.9	47.1	C	D
• Imperial Hw. (EW)	TS	1.5	1.5	0	1.5	1.5	0	1	3	1	1	3	0	40.1	35.1	D	D
Paramount Bl. (NS) at:																	
• Telegraph Rd. (EW)	TS	1	2	1	1	2	0	1	3	0	1	3	0	--[4]	69.9	F	E
• Florence Av. (EW)	TS	2	2	0	2	2	0	1	3	0	1	3	0	--[4]	--[4]	F	F
• Firestone Bl. (EW)	TS	1	2	1	1	2	1	1	2	1	1	3	0	48.7	--[4]	D	F
• Stewart & Gray Rd. (EW)	TS	1	3	0	1	2	1	1	2	0	1	2	0	36.4	33.2	D	C
• Imperial Hw. (EW)	TS	2	2	0	1	2	1	2	3	0	1	3	0	36.6	--[4]	D	F
Downey Av. (NS) at:																	
• Firestone Bl. (EW)	TS	1	1	1	1	1	1	1	2	1	1	3	0	25.0	32.6	C	C
Brookshire Av. (NS) at:																	
• Firestone Bl. (EW)	TS	1	2	0	1	2	0	1	3	0	1	3	0	23.1	34.8	C	C
Lakewood Bl.																	
• Telegraph Rd. (EW)	TS	1	2	1	1	2	1	1	3	0	1	3	0	69.1	--[4]	E	F
• Florence Av. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	0	57.9	--[4]	E	F
• Firestone Bl. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	1	55.8	61.2	E	E
• Stewart & Gray Rd. (EW)	TS	1	2	0	1	2	0	1	2	1	1	2	0	35.4	34.1	D	D
• Imperial Hw. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	0	39.4	48.3	D	D
• Foster Rd. (EW)	TS	1	2	1	1	2	0	1	2	0	1	2	0	31.7	36.5	C	D
Bellflower Bl. (NS) at:																	
• Imperial Hw. (EW)	TS	1	2	0	1	2	0	1	3	0	1	3	0	40.4	--[4]	D	F
Woodruff Av. (NS) at:																	
• Stewart & Gray Rd. (EW)	TS	1	2	1	1	2	1	1	2	1	1	2	0	13.1	29.3	B	C
• Imperial Hw. (EW)	TS	1	2	1	1	2	1	1	3	0	1	3	0	40.2	--[4]	D	F

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right

[2] Delay and level of service calculated using Synchro analysis software. Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal

[4] -- = Delay High, Intersection Unstable, Level of Service "F".

TABLE 2-5

EXISTING CONDITIONS LEVEL OF SERVICE SUMMARY

INTERSECTION	LOS "A" AM	LOS "A" PM	LOS "B" AM	LOS "B" PM	LOS "C" AM	LOS "C" PM	LOS "D" AM	LOS "D" PM	LOS "E" AM	LOS "E" PM	LOS "F" AM	LOS "F" PM
Old River School Rd. (NS) at:												
• Florence Av. (EW)							X					X
• Firestone Bl. (EW)					X			X				
• Imperial Hw. (EW)							X	X				
Paramount Bl. (NS) at:												
• Telegraph Rd. (EW)										X	X	
• Florence Av. (EW)											X	X
• Firestone Bl. (EW)							X					X
• Stewart & Gray Rd. (EW)						X	X					
• Imperial Hw. (EW)							X					X
Downey Av. (NS) at:												
• Firestone Bl. (EW)					X	X						
Brookshire Av. (NS) at:												
• Firestone Bl. (EW)					X	X						
Lakewood Bl.												
• Telegraph Rd. (EW)									X			X
• Florence Av. (EW)									X			X
• Firestone Bl. (EW)									X	X		
• Stewart & Gray Rd. (EW)							X	X				
• Imperial Hw. (EW)							X	X				
• Foster Rd. (EW)					X			X				
Bellflower Bl. (NS) at:												
• Imperial Hw. (EW)							X					X
Woodruff Av. (NS) at:												
• Stewart & Gray Rd. (EW)			X			X						
• Imperial Hw. (EW)							X					X
TOTAL			1		4	4	9	5	3	2	2	8

3.0 ACCOMMODATIONS FOR ALTERNATIVE TRAVEL MODES

Public transportation and alternative modes of travel, such as bicycling and walking, are an important component of a comprehensive circulation system. Public and alternative modes of transportation offer an alternative to the use of automobiles and help reduce air pollution and road congestion. To promote the increased usage of these modes of transportation, adequate facilities must be provided.

TRAIL SYSTEM

Los Angeles County has established bikeways in various locations throughout the County. No comprehensive summary is available. A Class I bikeway (off-road) provides a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians. Crossflows with motorized vehicles are minimized. Very few opportunities for Class I bikeways are available in the City of Downey. Class I bikeways are currently provided along the San Gabriel River and Rio Hondo flood control channels in the City of Downey.

A Class II bikeway (on-road) provides a restricted right-of-way on a roadway's shoulder designated for the exclusive or semi-exclusive use of bicycles. Through travel by motor vehicles or pedestrians is prohibited. Crossflows by pedestrians and motorists are permitted. Vehicle parking is prohibited. Opportunities for Class II bikeways may exist on some of the less heavily utilized arterial roadways in the City of Downey.

MTA (the Los Angeles County public transportation agency) is working to encourage bike use in conjunction with bus riding. According to the agency website www.mta.net, many rail stations have bike parking (lockers and racks). An inventory of bike parking is conducted quarterly to determine if additional lockers/racks are needed and to keep available amenities in operating order. Lockers and racks can also be found at Metrolink stations, schools, and colleges. Currently, bicycle racks have also been installed on many MTA buses and all Metro Rapid buses.

Exhibit 3-A shows design cross-sections for bikeways, per the Caltrans Highway Design Manual, 5th Edition. According to the Manual on Uniform Traffic Control Devices 2003 Edition (US Department of Transportation, 2003), bicycle signs shall be standard in shape, legend, and color. All signs shall be retroreflectorized for use on bikeways, including shared-use paths and bicycle lane facilities. On shared-use paths, lateral sign clearance shall be a minimum of 0.9 m (3 ft) and a maximum of 1.8 m (6 ft) from the near edge of the sign to the near edge of the path. Mounting height for ground-mounted signs on shared-use paths shall be a minimum of 1.2 m (4 ft) and a maximum of 1.5 m (5 ft), measured from the bottom edge of the sign to the near edge of the path surface. When overhead signs are used on shared-use paths, the clearance from the bottom edge of the sign to the path surface directly under the sign shall be a minimum of 2.4 m (8 ft).

The City should continue to coordinate with Los Angeles County agencies to enhance the bikeway system. The goal is to link residential areas, schools, parks and commercial centers so that residents can travel within the community without driving. New development projects will be required to include safe and attractive sidewalks, walkways, and bike lanes, and homeowners associations will be encouraged to construct links to adjacent areas and communities where appropriate.

BUS FACILITIES

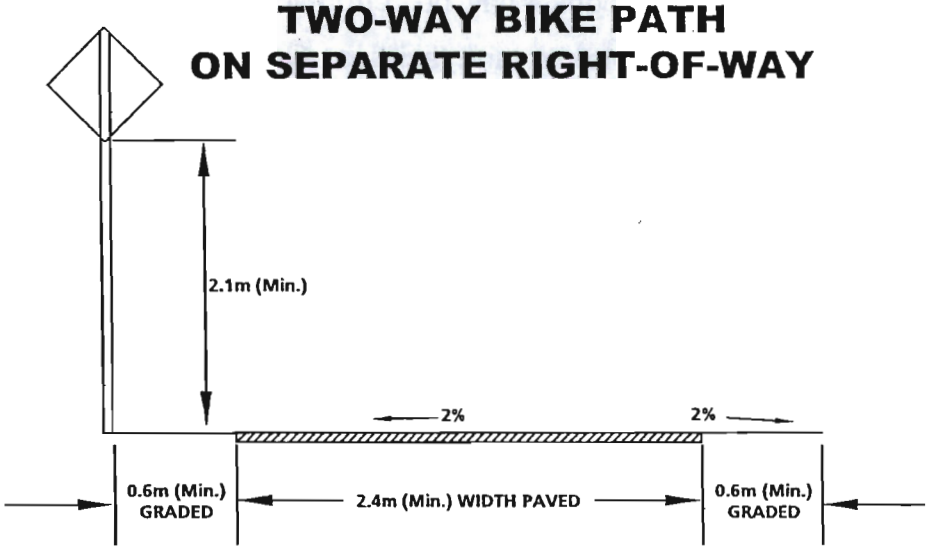
Public bus service is provided by MTA. An established network of bus routes provides access to employment centers, shopping and recreational areas within the City. Exhibit 3-B shows bus routes throughout the City of Downey.

The City Downey is committed to ensuring that public transportation remains a viable alternative to the automobile for residents. To achieve this objective, the City should coordinate with MTA in developing future scheduling and route alignments to serve Downey as necessary. The City should also participate in efforts to develop/maintain important transit support facilities, including park-and-ride lots, bus stops and shelters. To serve the needs of seniors and youth, the City should collaborate with MTA,

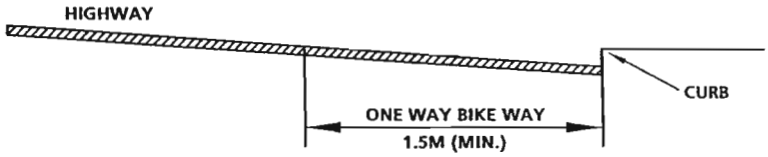
EXHIBIT 3-A

STANDARD BIKE PATH CROSS-SECTIONS

CLASS I
TWO-WAY BIKE PATH
ON SEPARATE RIGHT-OF-WAY



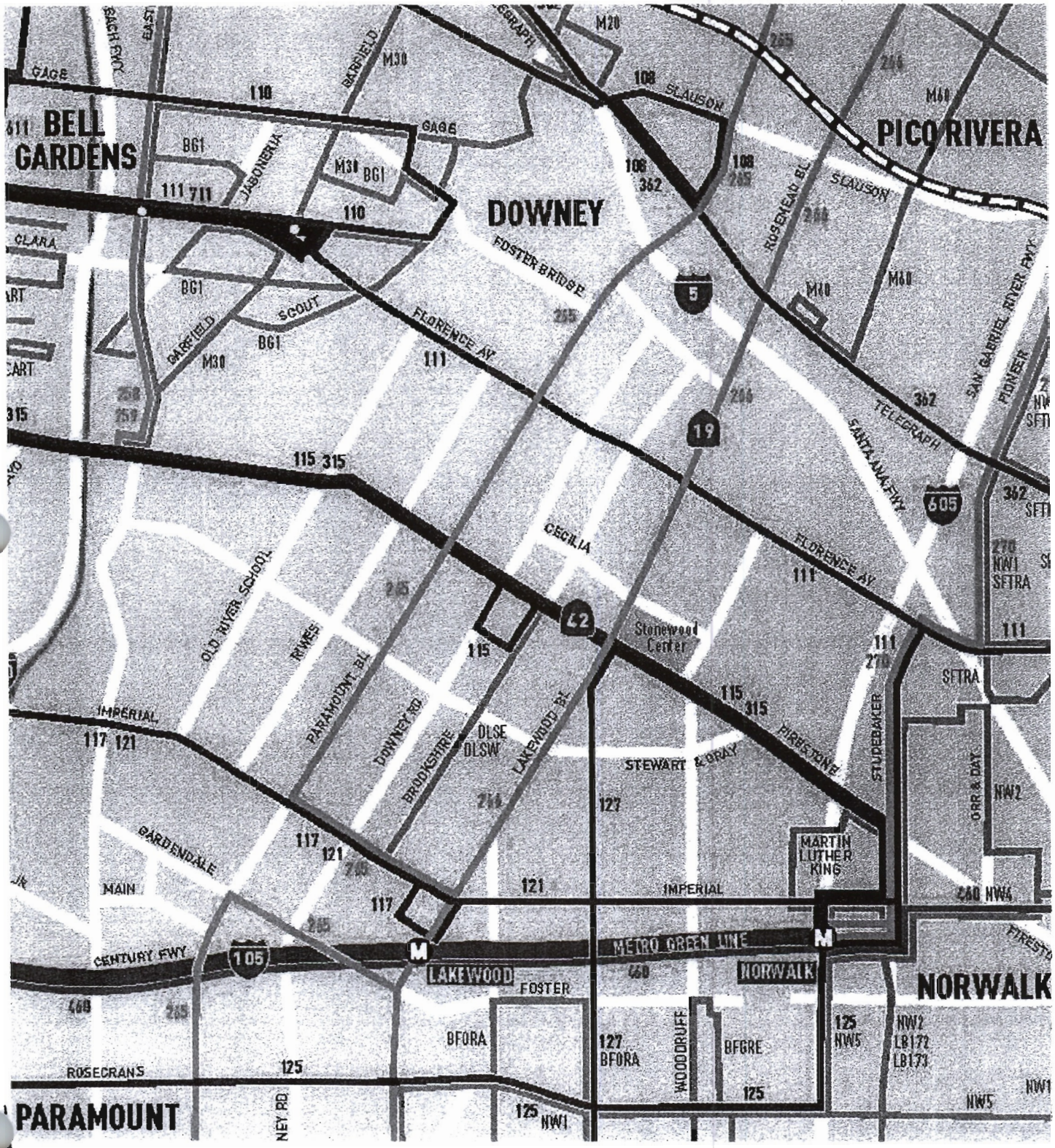
CLASS II
TYPICAL CROSS-SECTION
OF BIKE WAY ALONG HIGHWAY



SOURCE: CALTRANS HIGHWAY DESIGN MANUAL, 5 TH EDITION

EXHIBIT 3-B

CITY OF DOWNEY
CURRENT PUBLIC TRANSPORTATION ROUTE STRUCTURE



SOURCE: WWW.MTA.NET

neighboring cities and other providers to ensure that adequate public transit access is provided to pivotal youth and senior centers. Also, public improvements will be designed to promote the use of public transportation as an alternative to the automobile.

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4.0 FUTURE TRAFFIC VOLUMES

Future traffic volume forecasts have been developed to evaluate the utilization of Downey area roadways. Currently Adopted General Plan volumes were developed based on regional model data, combined with information related to the Downey Landing Specific Plan project. Proposed General Plan traffic volume forecasts were then developed by overlaying the potential traffic changes related to the various proposed land use designation change areas on the Currently Adopted General Plan volumes as described hereafter.

4.1 Currently Adopted General Plan Traffic Volumes

Appendix "C" includes the regional model data used to develop the Currently Adopted General Plan traffic volumes. Data related to existing and future passenger car traffic and heavy truck traffic volumes have been used to develop the Currently Adopted General Plan traffic volumes. A passenger car equivalent (PCE) value of 3 passenger cars for each heavy truck has again been applied, consistent with the existing conditions analysis. Urban Crossroads, Inc. staff derived future Average Daily Traffic (ADT) volumes by using the regional modeling data provided (see Appendix "C" for model forecasts reasonableness review) and then adding volumes generated from the adopted Downey Landing project traffic analysis.

The data included in Appendix "C" indicates that the overall baseline (prior to Downey Landing) growth in traffic within the City of Downey is approximately 23%. Table 4-1 summarizes the anticipated growth in housing, population and employment within the City of Downey from 2000 to 2020. As shown on Table 4-1, the growth in these socioeconomic variables ranges from 5.68% to 7.46%. Table 4-2 presents a similar summary of anticipated growth within the City of Downey from 2000 to 2030, with growth ranging from 8.54% (housing) to 12.28% (population). The growth in traffic within the City of Downey is much greater than the growth in socioeconomic activity, suggesting a substantial through traffic contribution to the overall traffic growth. The data contained in Appendix "C" also suggests that heavy truck activity will be even more prevalent under future conditions. It will be necessary to ensure that the roadway geometric design parameters, particularly lane widths, accommodate such vehicles.

TABLE 4-1

2020 SOCIOECONOMIC DATA GROWTH SUMMARY

VARIABLE	YEAR		GROWTH	% GROWTH
	2000	2020		
TOTAL HOUSING UNITS	34,010	35,983	1,973	5.80%
TOTAL POPULATION	107,823	115,881	8,058	7.47%
EMPLOYMENT	55,500	58,650 [1]	3,150	5.68%

[1] Interpolated from 2010 and 2030 data.

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TABLE 4-2

2030 SOCIOECONOMIC DATA GROWTH SUMMARY

VARIABLE	YEAR		GROWTH	% GROWTH
	2000	2030		
TOTAL HOUSING UNITS	34,010	36,915	2,905	8.54%
TOTAL POPULATION	107,823	121,063	13,240	12.28%
EMPLOYMENT	55,500	60,400	4,900	8.83%

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Growth related to the Downey Landing Specific Plan has been assumed to occur in addition to the growth attributable to increases accounted for in the regional travel demand model. Table 4-3 summarizes the trip generation characteristics of Option 1 (adopted) from the Downey Landing environmental analysis. Exhibit 4-A depicts the Downey Landing trip distribution assumptions used in this traffic study. The trip distribution is based upon the data included in the Downey Landing environmental analysis, however the data has been expanded to encompass the entire study area for the General Plan update traffic study.

Exhibit 4-B summarizes the resulting Currently Adopted General Plan average daily traffic (ADT) volumes, while Table 4-4 summarizes the growth compared to existing conditions. All ADT volumes are expressed in passenger car equivalents (PCEs). The overall increase in traffic on the arterial system averages just above 30%, with the greatest percentage increases occurring in the vicinity of the Downey Landing Specific Plan. The highest absolute traffic volumes are anticipated on Firestone Boulevard, near the eastern city limit, where a daily traffic volume of 81,500 vehicles per day (VPD) is projected. Exhibit 4-C and Exhibit 4-D show the Currently Adopted General Plan AM and PM peak hour traffic volumes, respectively.

4.2 Proposed General Plan Traffic Volumes

A total of 16 areas have been proposed for land use designation changes as part of the General Plan update effort. Many of these areas are proposed for changes in land use designations that are consistent with existing land use within the areas (for example, two existing school sites are proposed to be designated as school land uses). In some other areas, the change in designated land use is not expected to substantially alter the types of allowable land use from a traffic analysis perspective (for instance, from one type of commercial land use designation to another).

Table 4-5 summarizes the existing, currently adopted, and proposed land uses for the 16 areas recommended for consideration by City staff. A number of other areas have been considered and discarded as part of the land use designation

TABLE 4-3

DOWNEY LANDING TRIP GENERATION SUMMARY

LAND USE	PEAK HOUR AM IN	PEAK HOUR AM OUT	PEAK HOUR PM IN	PEAK HOUR PM OUT	DAILY
OPTION 1					
Retail	226	144	765	828	16,890
-With 25% Passby Reduction	170	108	574	621	12,670
Studio/Production	396	75	128	455	6,700
Museum/Community Center	44	22	30	58	1,140
Park/Open Space	20	10	20	30	400
Office	607	83	112	546	4,680
Subtotal	1,463	442	1,629	2,538	42,480
KAISER DEVELOPMENT					
Hospital	201	185	156	495	11,870
Medical Office Building	569	142	289	782	10,580
Subtotal	770	327	445	1,277	22,450
TOTAL	2,233	769	2,074	3,815	64,930

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EXHIBIT 4-A

DOWNEY LANDING TRIP DISTRIBUTION (BASED ON PREVIOUS STUDY)

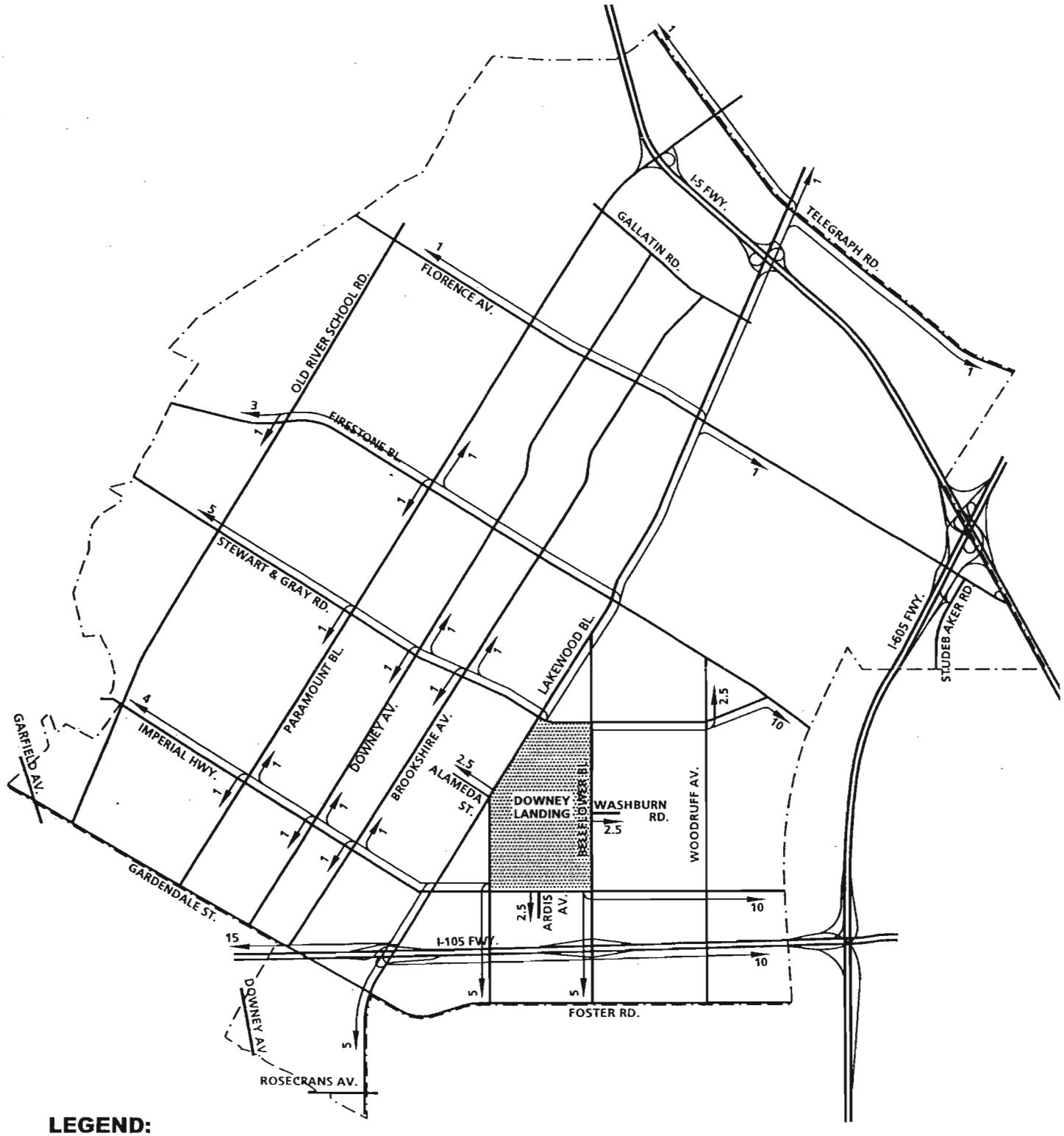

EXHIBIT 4-B

CURRENTLY ADOPTED GENERAL PLAN AVERAGE DAILY TRAFFIC (ADT)

LEGEND:

10.0 = VEHICLES PER DAY (1000'S)

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TABLE 4-4 (1 OF 2)

CURRENTLY ADOPTED GENERAL PLAN PROJECTED DAILY VOLUME GROWTH

STREET	ROAD SEGMENT	EXISTING	CURRENTLY ADOPTED GENERAL PLAN	GROWTH	GROWTH (%)
Telegraph Rd.	WCL - Paramount	33,347	39,205	5,858	17.57%
	Paramount-Lakewood	37,752	44,695	6,943	18.39%
	Lakewood-I605	39,896	44,339	4,443	11.14%
Gallatin Rd.	Paramount Blvd.-Downey Ave.	8,500	10,455	1,955	23.00%
	Downey Ave.-Brookshire Ave.	10,700	13,161	2,461	23.00%
Florence Ave.	Garfield Ave.- Old River School Rd.	41,235	52,524	11,289	27.38%
	Old River School Rd.-Paramount Blvd.	46,529	58,080	11,551	24.83%
	Paramount Blvd.-Downey Ave.	37,767	49,809	12,042	31.88%
	Downey Ave.-Brookshire Ave.	35,745	42,586	6,841	19.14%
	Brookshire Ave.-Lakewood Blvd.	38,960	46,425	7,465	19.16%
	Lakewood Blvd.-I605	44,750	51,490	6,740	15.06%
Firestone Blvd.	Garfield Ave.- Old River School Rd.	48,121	55,209	7,088	14.73%
	Old River School Rd.-Paramount Blvd.	37,961	44,853	6,892	18.16%
	Paramount Blvd.-Downey Ave.	38,061	45,281	7,220	18.97%
	Downey Ave.-Brookshire Ave.	37,682	46,882	9,200	24.41%
	Brookshire Ave.-Lakewood Blvd.	48,240	58,643	10,403	21.57%
	Lakewood Blvd.-Woodruff Ave. (South)	50,037	59,740	9,703	19.39%
	Woodruff Ave. (South)-Stewart & Gray Rd.	51,767	59,239	7,472	14.43%
	Stewart & Gray Rd - ECL	60,589	76,472	15,883	26.21%
Stewart and Gray Rd.	Garfield Ave.-Old River School Rd.	12,710	16,972	4,262	33.53%
	Old River School Rd.-Paramount Blvd.	21,668	30,199	8,531	39.37%
	Paramount Blvd.-Downey Ave.	22,468	31,399	8,931	39.75%
	Downey Ave.-Brookshire Ave.	19,868	21,855	1,987	10.00%
	Brookshire Ave.-Lakewood Blvd.	19,327	27,754	8,427	43.60%
	Lakewood Blvd.-Bellflower Blvd.	16,517	35,577	19,060	115.40%
	Bellflower Blvd.-Woodruff Ave.	16,130	28,416	12,286	76.17%
	Woodruff Ave.-Firestone Blvd.	13,750	22,798	9,048	65.80%
Imperial Hwy.	Garfield Ave.-Old River School Rd.	37,384	47,023	9,639	25.78%
	Old River School Rd.-Paramount Blvd.	35,268	46,231	10,963	31.08%
	Paramount Blvd.-Downey Ave.	34,391	46,415	12,024	34.96%
	Downey Ave.-Brookshire Ave.	33,837	42,269	8,432	24.92%
	Brookshire Ave.-Lakewood Blvd.	34,096	46,350	12,254	35.94%
	Lakewood Blvd.-Clark Ave.	40,851	66,261	25,410	62.20%
	Clark Ave.-Bellflower Blvd.	38,540	48,792	10,252	26.60%
	Bellflower Blvd.-Woodruff Ave.	41,149	49,813	8,664	21.06%
	Woodruff Ave. -- ECL	37,092	45,348	8,256	22.26%
Gardendale St./Foster Rd.	Garfield Ave.-Paramount Blvd.	10,900	11,990	1,090	10.00%
	Paramount Blvd.-Downey Ave.	10,410	11,668	1,258	12.08%
	Downey Ave.-Brookshire Ave.	10,406	13,741	3,335	32.05%
	Brookshire Ave.-Lakewood Blvd.	12,806	16,889	4,083	31.88%
	Lakewood Blvd.-Clark Ave.	8,884	12,265	3,381	38.06%
	Clark Ave.-Bellflower Blvd.	9,284	13,099	3,815	41.09%
	Bellflower Blvd.-Woodruff Ave.	9,358	12,946	3,588	38.34%
	Woodruff Ave. - ECL	3,472	4,789	1,317	37.93%
Old River School Rd.	Florence Ave.-Firestone Blvd.	16,630	21,498	4,868	29.27%
	Firestone Blvd.-Stewart & Gray Rd.	12,984	19,391	6,407	49.35%
	Stewart & Gray Rd.-Imperial Hwy.	14,168	17,972	3,804	26.85%

TABLE 4-4 (2 OF 2)

CURRENTLY ADOPTED GENERAL PLAN PROJECTED DAILY VOLUME GROWTH

STREET	ROAD SEGMENT	EXISTING	CURRENTLY ADOPTED GENERAL PLAN	GROWTH	GROWTH (%)
Paramount Blvd.	Telegraph Rd.- I-5 Fwy.	39,412	48,788	9,376	23.79%
	I-5 Fwy. - Gallatin Rd.	40,726	47,987	7,261	17.83%
	Gallatin Rd.-Suva St.	43,025	49,413	6,388	14.85%
	Suva St.-Florence Ave.	39,869	44,585	4,716	11.83%
	Florence Ave.-Firestone Blvd.	41,684	49,289	7,605	18.24%
	Firestone Blvd.-Stewart & Gray Rd.	29,411	39,183	9,772	33.23%
	Stewart & Gray Rd.-Imperial Hwy.	28,811	39,975	11,164	38.75%
	Imperial Hwy-Gardendale St./Foster Rd.	28,864	40,585	11,721	40.61%
Downey Ave.	Gallatin Rd.-Florence Ave.	8,913	10,733	1,820	20.42%
	Florence Ave.-Firestone Blvd.	12,210	14,991	2,781	22.78%
	Firestone Blvd.-Stewart & Gray Rd.	12,610	16,172	3,562	28.25%
	Stewart & Gray Rd.-Imperial Hwy.	12,553	18,794	6,241	49.72%
	Imperial Hwy.-Gardendale St./Foster Rd.	11,800	14,753	2,953	25.03%
Brookshire Ave.	Gallatin Rd.-Florence Ave.	6,600	10,100	3,500	53.03%
	Florence Ave.-Firestone Blvd.	12,670	24,921	12,251	96.69%
	Firestone Blvd.-Stewart & Gray Rd.	19,200	35,657	16,457	85.71%
	Stewart & Gray Rd.-Imperial Hwy.	9,800	14,373	4,573	46.66%
	Imperial Hwy.-Gardendale St./Foster Rd.	5,100	8,300	3,200	62.75%
Lakewood Blvd	Telegraph Rd.-I-5	36,434	40,532	4,098	11.25%
	I-5 -Gallatin Rd.	38,262	43,452	5,190	13.56%
	Gallatin Rd.-Florence Ave.	34,492	39,304	4,812	13.95%
	Florence Ave.-Firestone Blvd.	42,380	52,597	10,217	24.11%
	Firestone Blvd.-Stewart & Gray Rd.	32,461	45,595	13,134	40.46%
	Stewart & Gray Rd.-Imperial Hwy.	31,468	49,642	18,174	57.75%
	Imperial Hwy.-Gardendale St./Foster Rd.	32,792	81,985	49,193	150.02%
Clark Ave.	Lakewood Blvd.-Imperial Hwy.	10,155	12,732	2,577	25.38%
	Imperial Hwy.-Gardendale St./Foster Rd.	14,837	18,660	3,823	25.77%
Bellflower Blvd.	Lakewood Blvd.-Stewart & Gray Rd.	21,298	26,184	4,886	22.94%
	Stewart and Gray Rd.-Imperial Hwy.	21,458	34,503	13,045	60.79%
	Imperial Hwy.-I-105 WB Ramps	34,691	42,853	8,162	23.53%
	I-105 EB Ramps-Gardendale St./Foster Rd.	35,196	43,587	8,391	23.84%
Woodruff Ave.	Firestone Blvd.-Stewart & Gray Rd.	23,955	36,128	12,173	50.82%
	Stewart & Gray Rd.-Imperial Hwy.	20,968	31,663	10,695	51.01%
	Imperial Hwy.-Gardendale St./Foster Rd.	20,920	31,838	10,918	52.19%
TOTAL		2,197,012	2,868,662	671,650	30.57%

[1] Growth rate has been increased to reflect 10% minimum growth rate

[2] Indicates Incremental Growth approach.

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EXHIBIT 4-C

CURRENTLY ADOPTED GENERAL PLAN AM PEAK HOUR INTERSECTION VOLUMES

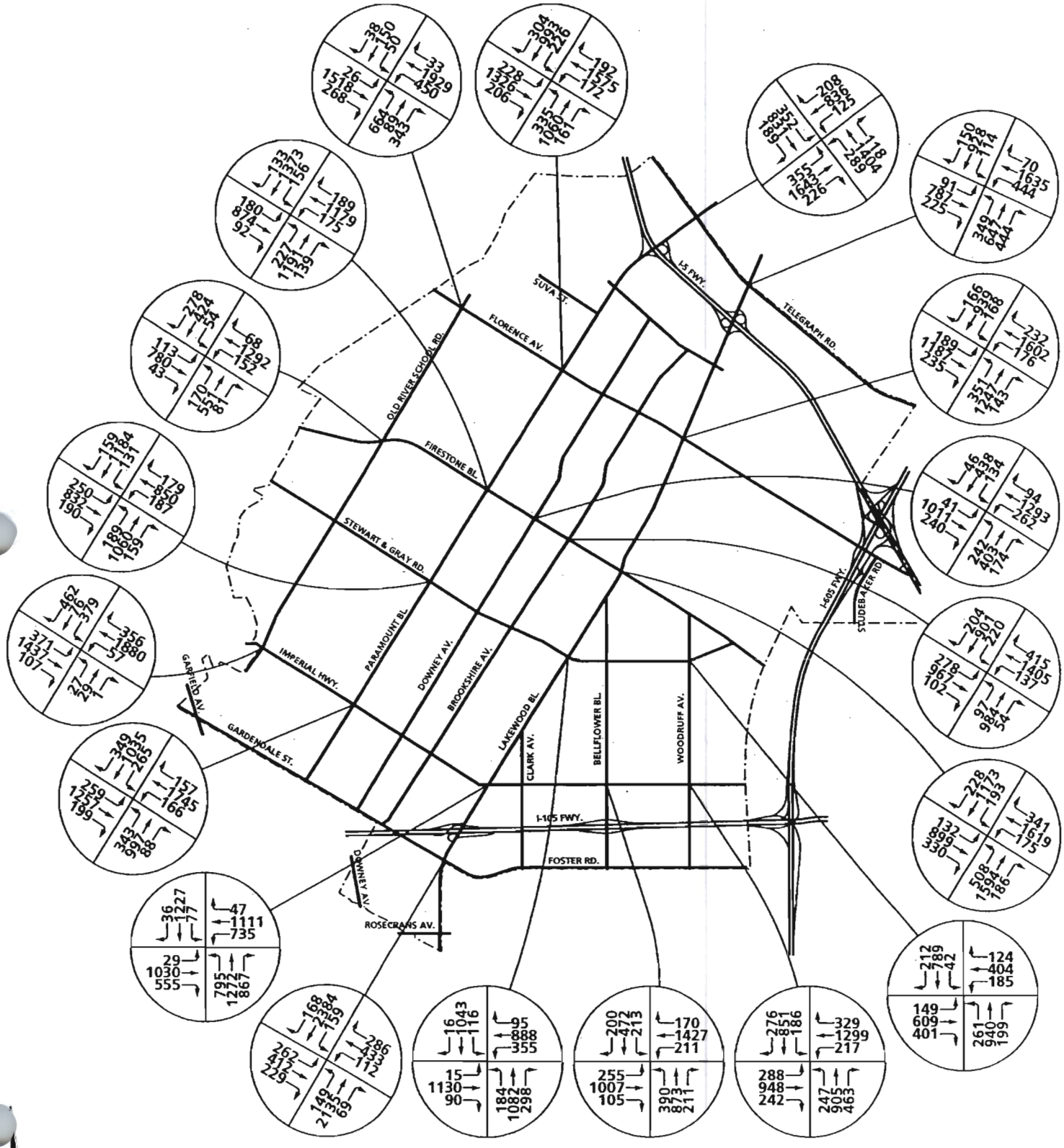

EXHIBIT 4-D

CURRENTLY ADOPTED GENERAL PLAN PM PEAK HOUR INTERSECTION VOLUMES

TABLE 4-5

LAND USE COMPARISON AND TRAFFIC CHANGE EVALUATION

AREA	EXISTING LU	CURRENTLY ADOPTED LAND USE	PROPOSED LAND USE	POTENTIAL TRAFFIC CHANGE?
1	Med Density Residential/Vacant/Utility	Office	Med Density Residential	X YES
2	Commercial	Med Density Residential	Neighborhood Commercial	NO
3	Commercial (65%)/Residential(35%)	Office	Neighborhood Commercial	X YES
4	Commercial	Neighborhood Commercial	General Commercial	NO
5	School	Low Density Residential	School	NO
6	Commercial Restaurant	Office	Neighborhood Commercial	NO
7	Commercial	Neighborhood Commercial	General Commercial	NO
8	Residential (75%)/Commercial (25%)	General Commercial	Med Density Residential	NO
9	Commercial (85%)/Residential (15%)	Office	General Commercial	X YES
10	General Office	Mixed Use	Commercial Manufacturing	NO
11	Medical Office (65%) /Commercial (35%)	Neighborhood Commercial	Commercial Manufacturing	NO
12	SFDR/Commercial/Rail Station = "Mixed Use"	Low/Med Residential & General Commercial	Mixed Use	NO
13	Residential Apartments	Neighborhood Commercial	General Commercial	X YES
14	School	General Commercial	School	NO
15	Low Density Residential	Office	Low Density Residential	NO
16	Low Density Residential	Med Density Residential	Low Density Residential	NO

process that has already occurred. Commercial uses, regardless of specific designation (Neighborhood vs. General Commercial), allow a similar set of commercial uses and can be expected to generate the same levels of traffic. As shown on Table 4-5, only Areas 1, 3, 9, and 13 are expected to generate substantially different traffic as a result in the change of land use designation. This finding is based either on the similarity of the already existing land uses compared to the proposed land use designation, or else because the currently adopted and proposed land use designations are not expected to result in a substantial change in area trip generation. For instance, Area 12 (proposed mixed use) already includes a mixture of uses (residential, commercial, rail station) consistent with the uses allowed for the Mixed Use designation.

Table 4-6 presents the trip generation rates for the areas where land use changes are expected to change future traffic conditions within the City of Downey. Table 4-7 summarizes the actual changes in trip generation expected. As shown on Table 4-7, an increase in daily trip generation of 6,481 trips per day is expected as a result of the proposed land use changes.

Exhibit 4-E through Exhibit 4-H depict the distribution of traffic assumed for each of the land use change areas requiring explicit analysis. Exhibit 4-I presents the resulting Proposed General Plan daily traffic volumes that are anticipated when the traffic attributable to the land use change areas is added to the Currently Adopted General Plan daily traffic volumes. The change in daily traffic is relatively small, with an incremental increase of less than 1,000 VPD anticipated on most of the arterial roadway system. Exhibit 4-J and Exhibit 4-K show the anticipated Proposed General Plan AM and PM peak hour traffic volumes, respectively.

4.3 Congestion Management Program (CMP) Traffic Contribution

The net effect of the proposed General Plan is expected to result in an increase in traffic volumes within the City of Downey and surrounding areas. The potential increase in traffic resulting from the proposed land use changes have been evaluated to determine if further CMP analysis is necessary. The CMP

TABLE 4-6

TRIP GENERATION RATES[1]

LAND USE	ITE CODE	UNITS[2]	PEAK HOUR AM IN	PEAK HOUR AM OUT	PEAK HOUR PM IN	PEAK HOUR PM OUT	DAILY
Residential	210	DU	0.19	0.56	0.64	0.37	9.57
Neighborhood Commercial - 9.48 TSF	820[3]	TSF	2.45	1.57	6.7	7.25	154.91
General Commercial (Area 9) - 16.41 TSF	820[3]	TSF	1.97	1.26	5.56	6.02	127.84
General Commercial (Area 13) - 20.53 TSF	820[3]	TSF	1.8	1.15	5.15	5.58	118.2

[1] Source: ITE (Institute of Transportation Engineers) Trip Generation Manual, 7th Edition, 2003.

[2] DU = Dwelling Units
TSF = Thousand Square Feet

[3] Commercial land use triprates based on regression equations (dependent variable is size of retail center/use).

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TABLE 4-7

PROPOSED GENERAL PLAN LAND USE CHANGE TRIP GENERATION SUMMARY

AREA	LAND USE	QUANTITY	UNITS[1]	PEAK HOUR				DAILY
				AM		PM		
				IN	OUT	IN	OUT	
1	Residential	51	DU	10	29	33	19	488
3	Neighborhood Commercial	9.48	TSF	23	15	64	69	1,469
9	General Commercial	16.41	TSF	32	21	91	99	2,098
13	General Commercial	20.53	TSF	37	24	106	115	2,427
TOTAL				102	88	293	301	6,481

[1] DU = Dwelling Units

[2] TSF = Thousand Square Feet

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EXHIBIT 4-E

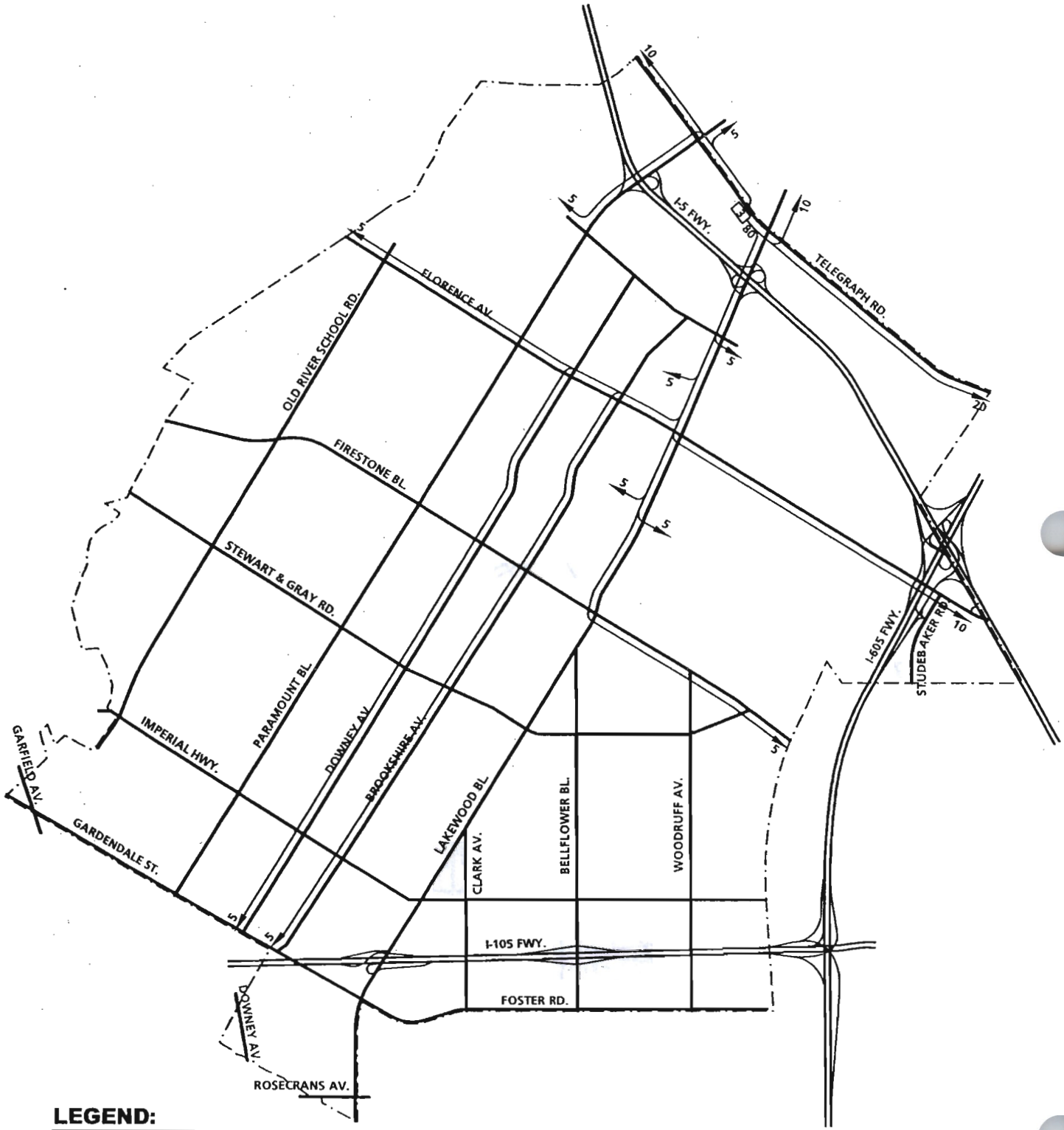
AREA 1 TRIP DISTRIBUTION

LEGEND:

10 = PERCENT TO/FROM PROJECT

EXHIBIT 4-F

AREA 3 TRIP DISTRIBUTION



LEGEND:

10 = PERCENT TO/FROM PROJECT

N

EXHIBIT 4-G

AREA 9 TRIP DISTRIBUTION

LEGEND:

10 = PERCENT TO/FROM PROJECT

N

EXHIBIT 4-H

AREA 13 TRIP DISTRIBUTION

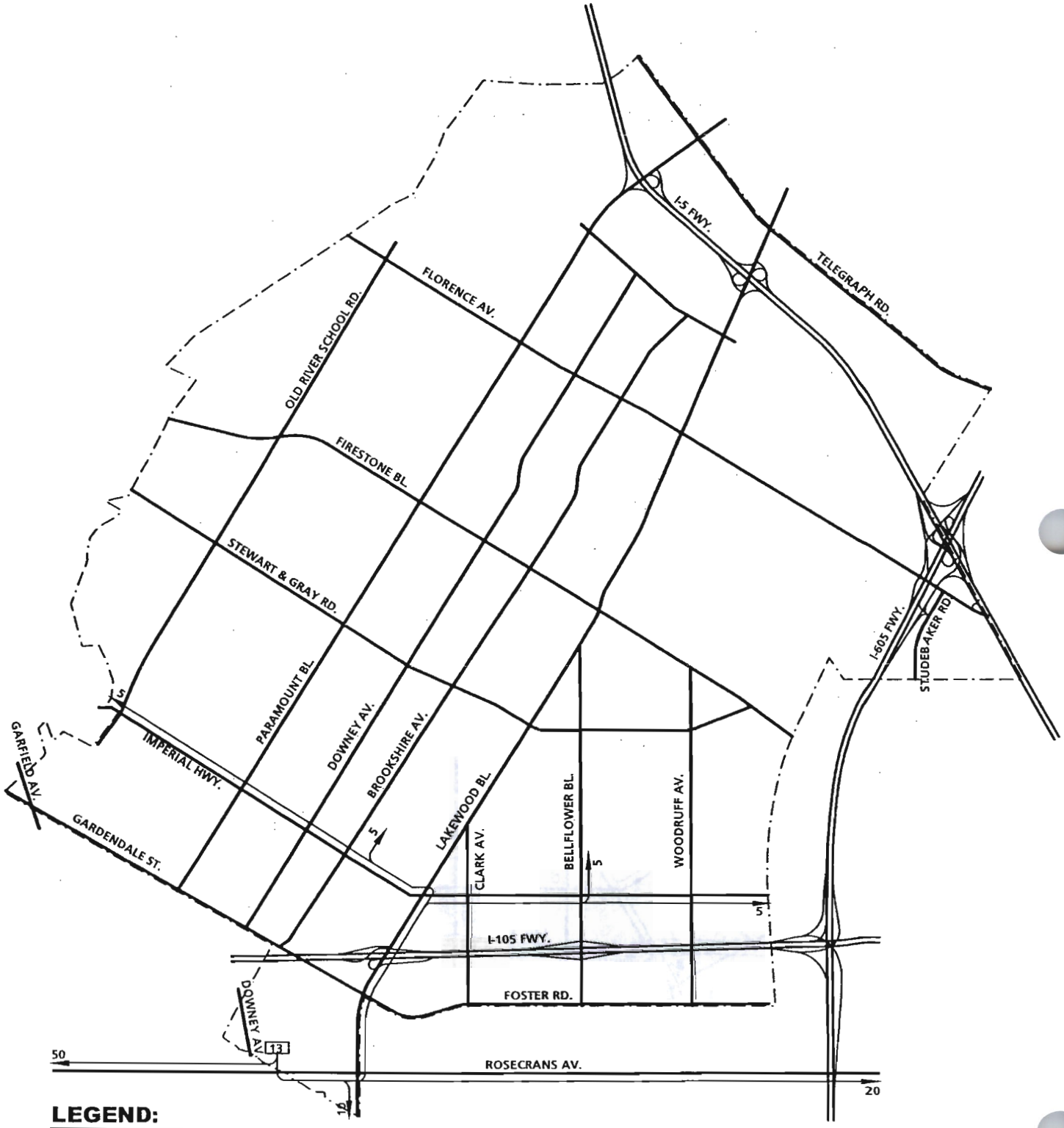


EXHIBIT 4-I

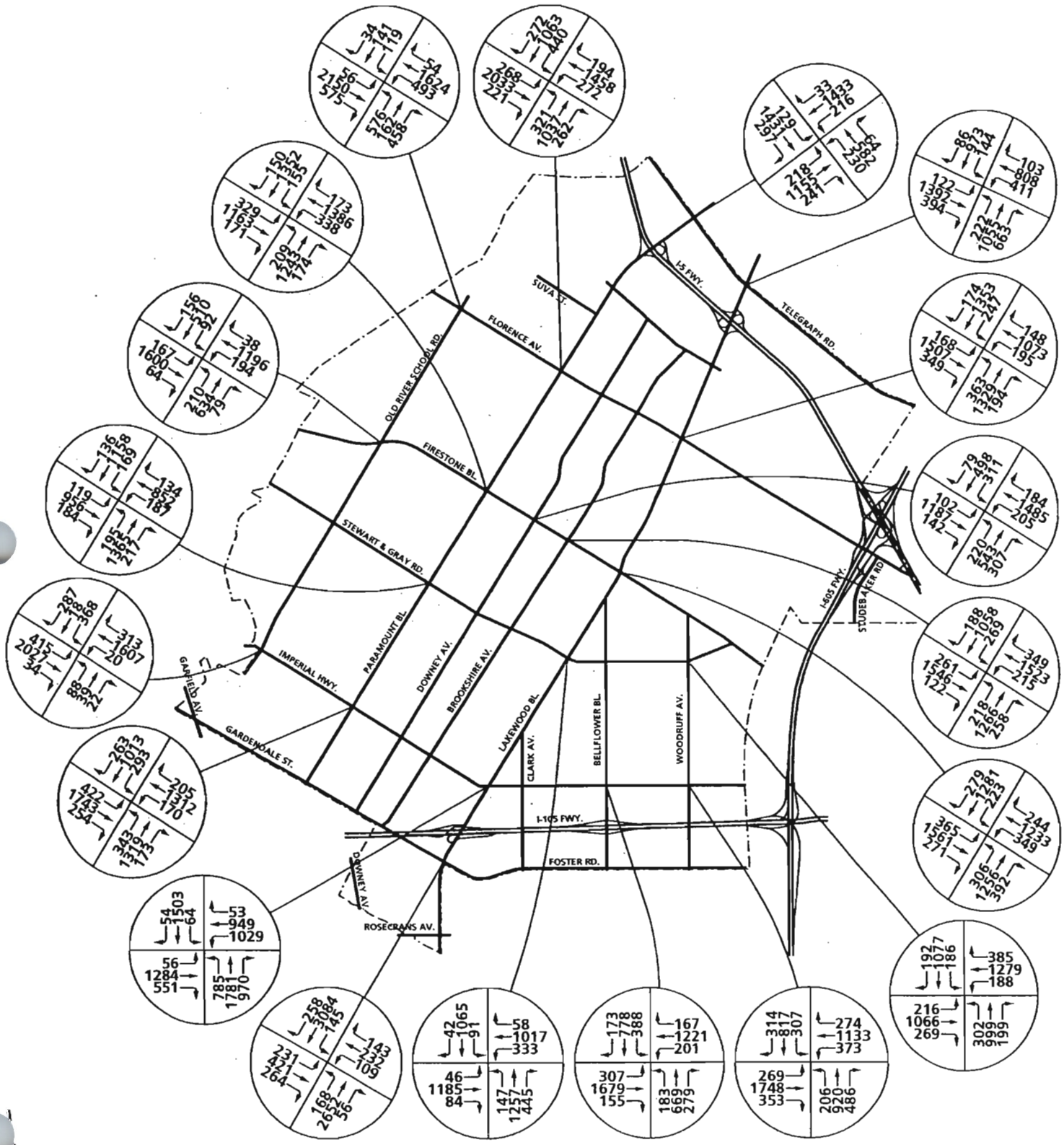
PROPOSED GENERAL PLAN AVERAGE DAILY TRAFFIC (ADT)

EXHIBIT 4-J

PROPOSED GENERAL PLAN AM PEAK HOUR INTERSECTION VOLUMES

EXHIBIT 4-K

PROPOSED GENERAL PLAN
PM PEAK HOUR INTERSECTION VOLUMES



establishes a standard of an increase of 50 peak hour trips or more at CMP intersections as the basis for determining if further CMP analysis is required.

The net effect of the changes in land use primarily impacts the City of Downey and no increases of 50 peak hour trips are anticipated at intersections outside the City of Downey. The only CMP intersection within the City of Downey is the intersection of Lakewood Boulevard (NS) at Firestone Boulevard (EW). The previously presented changes in trip generation by area have been combined with the previously presented trip distributions to determine if the CMP threshold of 50 peak hour trips is met at the intersection of Lakewood Boulevard (NS) at Firestone Boulevard (EW).

Table 4-8 summarizes the results of this analysis. As shown on Table 4-8, the proposed land use changes will contribute less than the CMP threshold of 50 peak hour trips, and no further analysis is necessary in accordance with CMP requirements.

TABLE 4-8

LAKEWOOD BL. (NS) AT FIRESTONE BL. (EW)
CMP PROJECT TRAFFIC CONTRIBUTION SUMMARY

AREA	AREA PM PEAK HOUR TRIP GENERATION	TRIP DISTRIBUTION PERCENTAGE	AREA CONTRIBUTION
1	52	5%	3
3	133	5%	7
9	190	20%	38
13	221	0%	0
TOTAL	596		48

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5.0 FUTURE TRAFFIC OPERATIONS ANALYSIS

For General Plan buildout conditions, both Currently Adopted General Plan conditions and Proposed General Plan conditions have been evaluated. Traffic operations both without and with transportation systems management (TSM) measures have been evaluated for each of these sets of future traffic volume forecasts. Furthermore, for each scenario, two sets of improvements were developed to provide either LOS "E" or LOS "D" operations.

5.1 Currently Adopted General Plan Traffic Operations

Roadway segment operations for currently adopted General Plan conditions have been evaluated on both a daily basis and also for peak hour conditions where necessary to determine that the City of Downey desired levels of service can be achieved.

5.1.1 Currently Adopted General Plan Roadway Segment Operations Analysis

Daily traffic planning level traffic operations along the various arterial roadways within the City of Downey are summarized on Table 5-1. Where necessary, additional through travel lanes, consistent with the currently adopted Circulation Element Master Plan of Streets and Highways, have been assumed to be implemented. In general, most roadways must be widened to their ultimate number of through lanes to accommodate projected traffic volumes. Even so, some segments of the following roadways (a total of 17 segments altogether) are projected to experience daily planning level deficiencies without the implementation of further measures:

- Florence Avenue
- Firestone Boulevard
- Stewart and Gray Road
- Imperial Highway
- Brookshire Avenue
- Lakewood Boulevard

TABLE 5-1

CURRENTLY ADOPTED GENERAL PLAN ROADWAY SEGMENT VOLUME TO CAPACITY ANALYSIS

STREET	ROAD SEGMENT	EXISTING	ROADWAY CLASSIFICATION	ROADWAY CAPACITY	CURRENTLY ADOPTED GENERAL PLAN	VOLUME TO CAPACITY RATIO	LOS
Telegraph Rd.	WCL - Paramount	33,347	6D[1]	56,300	39,205	0.70	B
	Paramount-Lakewood	37,752	6D[1]	56,300	44,695	0.79	C
	Lakewood-I605	39,896	6D[1]	56,300	44,339	0.79	C
Gallatin Rd.	Paramount Blvd.-Downey Ave.	8,500	4U	25,000	10,455	0.42	A
	Downey Ave.-Brookshire Ave.	10,700	4U	25,000	13,161	0.53	A
Florence Ave.	Garfield Ave.- Old River School Rd.	41,235	6D	56300	52,524	0.93	E
	Old River School Rd.-Paramount Blvd.	46,529	6D	56300	58,080	1.03	F
	Paramount Blvd.-Downey Ave.	37,767	6D	56300	49,809	0.88	D
	Downey Ave.-Brookshire Ave.	35,745	6D	56300	42,586	0.76	C
	Brookshire Ave.-Lakewood Blvd.	38,960	6D	56300	46,425	0.82	D
	Lakewood Blvd.-I605	44,750	6D	56300	51,490	0.91	E
Firestone Blvd.	Garfield Ave.- Old River School Rd.	48,121	6D[1]	56,300	52,935	0.94	E
	Old River School Rd.-Paramount Blvd.	37,961	6D[1]	56,300	44,853	0.80	C
	Paramount Blvd.-Downey Ave.	38,061	6D[1]	56,300	45,281	0.80	C
	Downey Ave.-Brookshire Ave.	37,682	6D[1]	56,300	46,882	0.83	D
	Brookshire Ave.-Lakewood Blvd.	48,240	6D[1]	56,300	58,643	1.04	F
	Lakewood Blvd.-Woodruff Ave. (South)	50,037	6D[1]	56,300	59,740	1.06	F
	Woodruff Ave. (South)-Stewart & Gray Rd.	51,767	6D[1]	56,300	59,239	1.05	F
	Stewart & Gray Rd - ECL	60,589	6D[1]	56,300	76,472	1.36	F
Stewart and Gray Rd.	Garfield Ave.-Old River School Rd.	12,710	4U	25000	16,972	0.68	B
	Old River School Rd.-Paramount Blvd.	21,668	4D[1]	37,500	30,199	0.81	D
	Paramount Blvd.-Downey Ave.	22,468	4D[1]	37,500	31,399	0.84	D
	Downey Ave.-Brookshire Ave.	19,868	4U	25000	21,855	0.87	D
	Brookshire Ave.-Lakewood Blvd.	19,327	4D[1]	37,500	27,754	0.74	C
	Lakewood Blvd.-Bellflower Blvd.	16,517	4D[1]	37,500	35,577	0.95	E
	Bellflower Blvd.-Woodruff Ave.	16,130	4D[1]	37,500	28,416	0.76	C
	Woodruff Ave.-Firestone Blvd.	13,750	4U	25000	22,798	0.91	E
Imperial Hwy.	Garfield Ave.-Old River School Rd.	37,384	6D	56300	47,023	0.84	D
	Old River School Rd.-Paramount Blvd.	35,268	6D	56300	46,231	0.82	D
	Paramount Blvd.-Downey Ave.	34,391	6D	56300	46,415	0.82	D
	Downey Ave.-Brookshire Ave.	33,837	6D	56300	42,269	0.75	C
	Brookshire Ave.-Lakewood Blvd.	34,096	6D	56300	46,350	0.82	D
	Lakewood Blvd.-Clark Ave.	40,851	6D	56300	66,261	1.18	F
	Clark Ave.-Bellflower Blvd.	38,540	6D	56300	48,792	0.87	D
	Bellflower Blvd.-Woodruff Ave.	41,149	6D	56300	49,813	0.88	D
	Woodruff Ave. – ECL	37,092	6D	56300	45,348	0.81	D
Gardendale St./Foster Rd.	Garfield Ave.-Paramount Blvd.	10,900	4U	25000	11,990	0.48	A
	Paramount Blvd.-Downey Ave.	10,410	4U	25000	11,668	0.47	A
	Downey Ave.-Brookshire Ave.	10,406	4U	25000	13,741	0.55	A
	Brookshire Ave.-Lakewood Blvd.	12,806	4U	25000	16,889	0.68	B
	Lakewood Blvd.-Clark Ave.	8,884	4U	25000	12,265	0.49	A
	Clark Ave.-Bellflower Blvd.	9,284	4U	25000	13,099	0.52	A
	Bellflower Blvd.-Woodruff Ave.	9,358	4U	25000	12,946	0.52	A
	Woodruff Ave. - ECL	3,472	4U	25000	4,789	0.19	A
Old River School Rd.	Florence Ave.-Firestone Blvd.	16,630	4U	25000	21,498	0.86	D
	Firestone Blvd.-Stewart & Gray Rd.	12,984	4U	25000	19,391	0.78	C
	Stewart & Gray Rd.-Imperial Hwy.	14,168	4U	25000	17,972	0.72	C

TABLE 5-1 (CONTINUED)

CURRENTLY ADOPTED GENERAL PLAN ROADWAY SEGMENT VOLUME TO CAPACITY ANALYSIS

STREET	ROAD SEGMENT	EXISTING	ROADWAY CLASSIFICATION	ROADWAY CAPACITY	CURRENTLY ADOPTED GENERAL PLAN	VOLUME TO CAPACITY RATIO	LOS
Paramount Blvd.	Telegraph Rd.- I-5 Fwy.	39,412	6D[1]	56300	48,788	0.87	D
	I-5 Fwy. - Gallatin Rd.	40,726	6D[1]	56300	47,987	0.85	D
	Gallatin Rd.-Suva St.	43,025	6D[1]	56300	49,413	0.88	D
	Suva St.-Florence Ave.	39,869	6D[1]	56300	44,585	0.79	C
	Florence Ave.-Firestone Blvd.	41,684	6D[1]	56300	49,289	0.88	D
	Firestone Blvd.-Stewart & Gray Rd.	29,411	6D[1]	56300	39,183	0.70	B
	Stewart & Gray Rd.-Imperial Hwy.	28,811	6D[1]	56300	39,975	0.71	C
	Imperial Hwy-Gardendale St./Foster Rd.	28,864	6D[1]	56300	40,585	0.72	C
Downey Ave.	Gallatin Rd.-Florence Ave.	8,913	4U	25000	10,733	0.43	A
	Florence Ave.-Firestone Blvd.	12,210	4U	25000	14,991	0.60	A
	Firestone Blvd.-Stewart & Gray Rd.	12,610	4U	25000	16,172	0.65	B
	Stewart & Gray Rd.-Imperial Hwy.	12,553	4U	25000	18,794	0.75	C
	Imperial Hwy.-Gardendale St./Foster Rd.	11,800	4U	25000	14,753	0.59	A
Brookshire Ave.	Gallatin Rd.-Florence Ave.	6,600	4U	25000	10,100	0.40	A
	Florence Ave.-Firestone Blvd.	12,670	4D[1]	37,500	24,921	0.66	B
	Firestone Blvd.-Stewart & Gray Rd.	19,200	4D[1]	37,500	35,657	0.95	E
	Stewart & Gray Rd.-Imperial Hwy.	9,800	4U	25000	14,373	0.57	A
	Imperial Hwy.-Gardendale St./Foster Rd.	5,100	4U	25000	8,300	0.33	A
Lakewood Blvd	Telegraph Rd.-I-5	36,434	6D	56300	40,532	0.72	C
	I-5 -Gallatin Rd.	38,262	6D	56300	43,452	0.77	C
	Gallatin Rd.-Florence Ave.	34,492	6D	56300	39,304	0.70	B
	Florence Ave.-Firestone Blvd.	42,380	6D	56300	52,597	0.93	E
	Firestone Blvd.-Stewart & Gray Rd.	32,461	6D[1]	56300	45,595	0.81	D
	Stewart & Gray Rd.-Imperial Hwy.	31,468	6D[1]	56300	49,642	0.88	D
	Imperial Hwy.-Gardendale St./Foster Rd.	32,792	6D[1]	56300	81,985	1.46	F
Clark Ave.	Lakewood Blvd.-Imperial Hwy.	10,155	4U	25000	12,732	0.51	A
	Imperial Hwy.-Gardendale St./Foster Rd.	14,837	4U	25000	18,660	0.75	C
Bellflower Blvd.	Lakewood Blvd.-Stewart & Gray Rd.	21,298	4D	37500	26,184	0.70	B
	Stewart and Gray Rd.-Imperial Hwy.	21,458	4D	37500	34,503	0.92	E
	Imperial Hwy.-I-105 WB Ramps	34,691	4D	37500	42,853	1.14	F
	I-105 EB Ramps-Gardendale St./Foster Rd.	35,196	4D	37500	43,587	1.16	F
Woodruff Ave.	Firestone Blvd.-Stewart & Gray Rd.	23,955	4D	37500	36,128	0.96	E
	Stewart & Gray Rd.-Imperial Hwy.	20,968	4D	37500	31,663	0.84	D
	Imperial Hwy.-Gardendale St./Foster Rd.	20,920	4D	37500	31,838	0.85	D

[1] Based on traffic volumes, raodwy augmented to General Plan Circulation Element designations

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- Bellflower Boulevard
- Woodruff Avenue

The initial mitigation measure considered in this analysis is the implementation of transportation systems management improvements as described previously. Table 5-2 summarizes the resulting daily levels of service for currently adopted General Plan with TSM implementation. With the implementation of TSM, only 10 segments along the following roadways are projected to experience daily planning level capacity deficiencies (LOS "E" or "F"):

- Florence Avenue
- Firestone Boulevard
- Imperial Highway
- Lakewood Boulevard
- Bellflower Boulevard

As indicated by this analysis, TSM implementation will reduce potential future daily deficiencies, but will not eliminate the deficiencies entirely. Further peak hour roadway segment analysis has been completed for those roadway segments where LOS "D" or better operations are not provided through the combination of additional through lanes consistent with the currently adopted Master Plan of Streets and Highways or TSM implementation. Table 5-3 summarizes the peak hour analysis. As shown on Table 5-3, acceptable peak hour roadway segment operations can be expected for currently adopted General Plan conditions.

5.1.2 Currently Adopted General Plan Peak Hour Intersection Operations Analysis

Table 5-4 summarizes future peak hour intersection operations for Currently Adopted General Plan conditions. For Currently Adopted General Plan conditions, with existing lanes, all of the 19 intersection analysis locations will experience unacceptable peak hour operations (LOS "E" or Worse). Table 5-4 shows the necessary improvements

TABLE 5-2

CURRENTLY ADOPTED GENERAL PLAN WITH TSM ROADWAY SEGMENT VOLUME TO CAPACITY ANALYSIS

STREET	ROAD SEGMENT	EXISTING	ROADWAY CLASSIFICATION	ROADWAY CAPACITY	CURRENTLY ADOPTED GENERAL PLAN	VOLUME TO CAPACITY RATIO	LOS
Telegraph Rd.	WCL - Paramount	33,347	6D[1]	60,200	39,205	0.65	B
	Paramount-Lakewood	37,752	6D[1]	60,200	44,695	0.74	C
	Lakewood-I605	39,896	6D[1]	60,200	44,339	0.74	C
Gallatin Rd.	Paramount Blvd.-Downey Ave.	8,500	4U	26,800	10,455	0.39	A
	Downey Ave.-Brookshire Ave.	10,700	4U	26,800	13,161	0.49	A
Florence Ave.	Garfield Ave.- Old River School Rd.	41,235	6D	60,200	52,524	0.87	D
	Old River School Rd.-Paramount Blvd.	46,529	6D	60,200	58,080	0.96	E
	Paramount Blvd.-Downey Ave.	37,767	6D	60,200	49,809	0.83	D
	Downey Ave.-Brookshire Ave.	35,745	6D	60,200	42,586	0.71	C
	Brookshire Ave.-Lakewood Blvd.	38,960	6D	60,200	46,425	0.77	C
	Lakewood Blvd.-I605	44,750	6D	60,200	51,490	0.86	D
Firestone Blvd.	Garfield Ave.- Old River School Rd.	48,121	6D[1]	60,200	52,935	0.88	D
	Old River School Rd.-Paramount Blvd.	37,961	6D[1]	60,200	44,853	0.75	C
	Paramount Blvd.-Downey Ave.	38,061	6D[1]	60,200	45,281	0.75	C
	Downey Ave.-Brookshire Ave.	37,682	6D[1]	60,200	46,882	0.78	C
	Brookshire Ave.-Lakewood Blvd.	48,240	6D[1]	60,200	58,643	0.97	E
	Lakewood Blvd.-Woodruff Ave. (South)	50,037	6D[1]	60,200	59,740	0.99	E
	Woodruff Ave. (South)-Stewart & Gray Rd.	51,767	6D[1]	60,200	59,239	0.98	E
	Stewart & Gray Rd - ECL	60,589	6D[1]	60,200	76,472	1.27	F
Stewart and Gray Rd.	Garfield Ave.-Old River School Rd.	12,710	4U	26,800	16,972	0.63	B
	Old River School Rd.-Paramount Blvd.	21,668	4D[1]	40,100	30,199	0.75	C
	Paramount Blvd.-Downey Ave.	22,468	4D[1]	40,100	31,399	0.78	C
	Downey Ave.-Brookshire Ave.	19,868	4U	26,800	21,855	0.82	D
	Brookshire Ave.-Lakewood Blvd.	19,327	4D[1]	40,100	27,754	0.69	B
	Lakewood Blvd.-Bellflower Blvd.	16,517	4D[1]	40,100	35,577	0.89	D
	Bellflower Blvd.-Woodruff Ave.	16,130	4D[1]	40,100	28,416	0.71	C
	Woodruff Ave.-Firestone Blvd.	13,750	4U	26,800	22,798	0.85	D
Imperial Hwy.	Garfield Ave.-Old River School Rd.	37,384	6D	60,200	47,023	0.78	C
	Old River School Rd.-Paramount Blvd.	35,268	6D	60,200	46,231	0.77	C
	Paramount Blvd.-Downey Ave.	34,391	6D	60,200	46,415	0.77	C
	Downey Ave.-Brookshire Ave.	33,837	6D	60,200	42,269	0.70	B
	Brookshire Ave.-Lakewood Blvd.	34,096	6D	60,200	46,350	0.77	C
	Lakewood Blvd.-Clark Ave.	40,851	6D	60,200	66,261	1.10	F
	Clark Ave.-Bellflower Blvd.	38,540	6D	60,200	48,792	0.81	D
	Bellflower Blvd.-Woodruff Ave.	41,149	6D	60,200	49,813	0.83	D
	Woodruff Ave. – ECL	37,092	6D	60,200	45,348	0.75	C
Gardendale St./Foster Rd.	Garfield Ave.-Paramount Blvd.	10,900	4U	26,800	11,990	0.45	A
	Paramount Blvd.-Downey Ave.	10,410	4U	26,800	11,668	0.44	A
	Downey Ave.-Brookshire Ave.	10,406	4U	26,800	13,741	0.51	A
	Brookshire Ave.-Lakewood Blvd.	12,806	4U	26,800	16,889	0.63	B
	Lakewood Blvd.-Clark Ave.	8,884	4U	26,800	12,265	0.46	A
	Clark Ave.-Bellflower Blvd.	9,284	4U	26,800	13,099	0.49	A
	Bellflower Blvd.-Woodruff Ave.	9,358	4U	26,800	12,946	0.48	A
	Woodruff Ave. - ECL	3,472	4U	26,800	4,789	0.18	A
Old River School Rd.	Florence Ave.-Firestone Blvd.	16,630	4U	26,800	21,498	0.80	C
	Firestone Blvd.-Stewart & Gray Rd.	12,984	4U	26,800	19,391	0.72	C
	Stewart & Gray Rd.-Imperial Hwy.	14,168	4U	26,800	17,972	0.67	B

TABLE 5-2 (CONTINUED)

CURRENTLY ADOPTED GENERAL PLAN WITH TSM ROADWAY SEGMENT VOLUME TO CAPACITY ANALYSIS

STREET	ROAD SEGMENT	EXISTING	ROADWAY CLASSIFICATION	ROADWAY CAPACITY	CURRENTLY ADOPTED GENERAL PLAN	VOLUME TO CAPACITY RATIO	LOS
Paramount Blvd.	Telegraph Rd.- I-5 Fwy.	39,412	6D[1]	60,200	48,788	0.81	D
	I-5 Fwy. - Gallatin Rd.	40,726	6D[1]	60,200	47,987	0.80	C
	Gallatin Rd.-Suva St.	43,025	6D[1]	60,200	49,413	0.82	D
	Suva St.-Florence Ave.	39,869	6D[1]	60,200	44,585	0.74	C
	Florence Ave.-Firestone Blvd.	41,684	6D[1]	60,200	49,289	0.82	D
	Firestone Blvd.-Stewart & Gray Rd.	29,411	6D[1]	60,200	39,183	0.65	B
	Stewart & Gray Rd.-Imperial Hwy.	28,811	6D[1]	60,200	39,975	0.66	B
	Imperial Hwy-Gardendale St./Foster Rd.	28,864	6D[1]	60,200	40,585	0.67	B
Downey Ave.	Gallatin Rd.-Florence Ave.	8,913	4U	26,800	10,733	0.40	A
	Florence Ave.-Firestone Blvd.	12,210	4U	26,800	14,991	0.56	A
	Firestone Blvd.-Stewart & Gray Rd.	12,610	4U	26,800	16,172	0.60	A
	Stewart & Gray Rd.-Imperial Hwy.	12,553	4U	26,800	18,794	0.70	B
	Imperial Hwy.-Gardendale St./Foster Rd.	11,800	4U	26,800	14,753	0.55	A
Brookshire Ave.	Gallatin Rd.-Florence Ave.	6,600	4U	26,800	10,100	0.38	A
	Florence Ave.-Firestone Blvd.	12,670	4D[1]	40,100	24,921	0.62	B
	Firestone Blvd.-Stewart & Gray Rd.	19,200	4D[1]	40,100	35,657	0.89	D
	Stewart & Gray Rd.-Imperial Hwy.	9,800	4U	26,800	14,373	0.54	A
	Imperial Hwy.-Gardendale St./Foster Rd.	5,100	4U	26,800	8,300	0.31	A
Lakewood Blvd	Telegraph Rd.-I-5	36,434	6D	60,200	40,532	0.67	B
	I-5 -Gallatin Rd.	38,262	6D	60,200	43,452	0.72	C
	Gallatin Rd.-Florence Ave.	34,492	6D	60,200	39,304	0.65	B
	Florence Ave.-Firestone Blvd.	42,380	6D	60,200	52,597	0.87	D
	Firestone Blvd.-Stewart & Gray Rd.	32,461	6D[1]	60,200	45,595	0.76	C
	Stewart & Gray Rd.-Imperial Hwy.	31,468	6D[1]	60,200	49,642	0.82	D
	Imperial Hwy.-Gardendale St./Foster Rd.	32,792	6D[1]	60,200	81,985	1.36	F
Clark Ave.	Lakewood Blvd.-Imperial Hwy.	10,155	4U	26,800	12,732	0.48	A
	Imperial Hwy.-Gardendale St./Foster Rd.	14,837	4U	26,800	18,660	0.70	B
Bellflower Blvd.	Lakewood Blvd.-Stewart & Gray Rd.	21,298	4D	40,100	26,184	0.65	B
	Stewart and Gray Rd.-Imperial Hwy.	21,458	4D	40,100	34,503	0.86	D
	Imperial Hwy.-I-105 WB Ramps	34,691	4D	40,100	42,853	1.07	F
	I-105 EB Ramps-Gardendale St./Foster Rd.	35,196	4D	40,100	43,587	1.09	F
Woodruff Ave.	Firestone Blvd.-Stewart & Gray Rd.	23,955	4D	40,100	36,128	0.90	D
	Stewart & Gray Rd.-Imperial Hwy.	20,968	4D	40,100	31,663	0.79	C
	Imperial Hwy.-Gardendale St./Foster Rd.	20,920	4D	40,100	31,838	0.79	C

[1] Based on traffic volumes, raodwy augmented to General Plan Circulation Element designations

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TABLE 5-3

CURRENTLY ADOPTED GENERAL PLAN WITH TSM PEAK HOUR ROADWAY LINK CAPACITY ANALYSIS

ROADWAY SEGMENT	FROM	TO	LANES	ADT	PEAK HOUR CAPACITY	HIGHEST PEAK VOLUME	V/C	LOS
Florence Av.	Old River School Rd.	Paramount Bl.	3	58,080	4,800	2,722	0.57	A
Firestone Bl.	Garfield Av.	Old River School Rd.	3	55,209	4,800	1,767	0.37	A
Firestone Bl.	Brookshire Av.	Lakewood Bl.	3	58,643	4,800	2,355	0.49	A
Firestone Bl.	Lakewood Bl.	Woodruff Av.	3	59,740	4,800	2,173	0.45	A
Firestone Bl.	Woodruff Av.	Stewart & Gray Rd.	3	59,539	4,800	N/A	0.45	A[1]
Firestone Bl.	Stewart & Gray Rd.	East City Limit	3	76,472	4,800	N/A	0.68	B[2]
Imperial Hw.	Lakewood Bl.	Clark Av.	3	66,261	4,800	2,303	0.48	A
Lakewood Bl.	Imperial Hw.	Foster Rd.	3	81,985	4,800	3,494	0.73	C
Bellflower Bl.	Imperial Hw.	I-105 WB Ramps	2	42,853	3,200	1,474	0.46	A
Bellflower Bl.	I-105 EB Ramps	Foster Rd.	2	43,587	3,200	N/A	0.47	A[3]

[1] Peak Hour Level of Service estimated based on results for Firestone Bl. between Lakewood Bl. and Woodruff Av.

[2] Peak Hour Level of Service estimated based on results for Lakewood Bl. between Imperial Hw. and Foster Rd.

[3] Peak Hour Level of Service estimated based on results for Bellflower Bl. between Imperial Hw. And I-105 WB Ramps

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TABLE 5-4 (1 OF 2)

CURRENTLY ADOPTED GENERAL PLAN INTERSECTION ANALYSIS SUMMARY

INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
Old River School Rd. (NS) at:																	
• Florence Av. (EW)	TS	1.5	0.5	1	0.5	1.5	0	1	3	0	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	2	1>>	2	2	0	2	3	1	2	3	0	36.5	51.1	D	D
• Firestone Bl. (EW)	TS	1	2	0	1	2	0	1	2	1>>	1	2	1>>	51.9	--[4]	D	F
-with LOS "E" improvements	TS	1	2	0	1	2	0	1	3	0	1	3	0	38.9	57.3	D	E
-with LOS "D" improvements	TS	1	2	1	1	2	0	1	3	0	1	3	0	38.6	47.3	D	D
• Imperial Hw. (EW)	TS	1.5	1.5	0	1	2	0	1	3	1>	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	1.5	1.5	0	1	2	0	2[7]	3	1>	2	3	1	41.3	38.2	D	D
Paramount Bl. (NS) at:																	
• Telegraph Rd. (EW)	TS	1	2	1>	1	2	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	3	1	2	3	0	2	3	0	2	3	0	53.9	49.4	D	D
• Florence Av. (EW)	TS	2	2	0	2	2	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements[5]	TS	2	3	1	2	3	1	2[7]	3	1	2[7]	3	1	36.6	58.6	D	E
-with LOS "D" improvements[6]	TS	2	3	1	2	3	1	2	4	1	2	3	1	36.1	43.9	D	D
• Firestone Bl. (EW)	TS	1	2	1>	1	2	1	1	2	1	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2[7]	3	1	2[7]	3	1	2	2	1	2	2	1[7]	40.8	61.8	D	E
-with LOS "D" improvements	TS	2	3	1	2	3	1	2	2	1	2	3	0	34.5	50.3	C	D
• Stewart & Gray Rd. (EW)	TS	1	3	0	1	2	1	1	2	0	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	1	3	0	1	2	1	2	2	1	2	2	1	50.3	51.8	D	D
• Imperial Hw. (EW)	TS	2	2	0	1	2	1>	2	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	3	0	2	3	1	2	3	1	2	3	1	45.1	54.9	D	D
Downey Av. (NS) at:																	
• Firestone Bl. (EW)	TS	1<	1	1	1<	1	1	1<	2	1	1<	3	0	40.0	--[4]	D	F
-with LOS "D/E" improvements	TS	2	2	1	2	2	0	1	2	1	1<	3	0	30.6	38.0	C	D
Brookshire Av. (NS) at:																	
• Firestone Bl. (EW)	TS	1<	2	0	1<	2	0	1<	3	0	1<	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2	3	1	2	2	1	2	3	1	2	3	1	39.0	60.0	D	E
-with LOS "D" improvements[6]	TS	2	3	1	2	2	1	2	4	1	2	4	1	34.5	47.3	C	D
Lakewood Bl.																	
• Telegraph Rd. (EW)	TS	1	2	1	1	2	1	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2	2	2	2	2	1	2	3	1	2	3	1	56.8	47.0	E	D
-with LOS "D" improvements	TS	1	3	2	1	3	1	2	3	1	2	3	1	48.3	45.6	D	D
• Florence Av. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2[7]	3	0	2[7]	3	1	2[7]	3	1	2[7]	3	0	63.8	48.6	E	D
-with LOS "D" improvements	TS	2	3	0	2	3	1	2	3	1	2	3	1	49.2	47.9	D	D
• Firestone Bl. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	1	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2	3	1	2	3	0	2	3	1	2	3	1	77.5	59.3	E	E
-with LOS "D" improvements[6]	TS	2	3	1	2	3	1	2	3	1	2	4	1	49.4	48.8	D	D
• Stewart & Gray Rd. (EW)	TS	1	2	0	1	2	0	1	2	1	1	2	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	1	3	1	1	3	0	2	2	1>	2	2	1	62.4	55.1	E	E
-with LOS "D" improvements[6]	TS	1	3	1	1	3	0	2	3	1>	2	2	1	45.4	41.9	D	D
• Imperial Hw. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements[6]	TS	3	3	2	2	4	1	2	4	1>>	3	3	1	39.1	52.6	D	D
• Foster Rd. (EW)	TS	1	2	1	1	2	0	1	2	0	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements[6]		2	3	1	2	4	1	2	2	1	2	2	0	46.6	47.5	D	D

TABLE 5-4 (2 OF 2)

CURRENTLY ADOPTED GENERAL PLAN INTERSECTION ANALYSIS SUMMARY

INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1]												DELAY[2] (SECS.)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Bellflower Bl. (NS) at:																	
• Imperial Hw. (EW)	TS	1	2	0	1	2	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	**2**	2	**1**	**2**	2	0	1	3	0	1	3	0	58.0	67.5	E	E
-with LOS "D" improvements	TS	2	2	1	2	2	0	**2**	3	**1**	**2**	3	**1**	37.5	47.2	D	D
Woodruff Av. (NS) at:																	
• Stewart & Gray Rd. (EW)	TS	1	2	1	1	2	1	1	2	1>>	1	2	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	**2**	2	1	**2**	2	1	**2**	2	1>>	**2**	2	1	15.9	57.9	B	E
-with LOS "D" improvements[6]	TS	2	2	1	2	2	1	2	2	1>>	2	**3**	1	15.9	46.9	B	D
• Imperial Hw. (EW)	TS	1	2	1	1	2	1	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	**2**	**3**	**2**	**2**	2	1	**2**	3	**1**	**2**	3	0	50.9	46.6	D	D

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1 When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; < = Protected and permitted; >> = Free right; > = Right turn overlap; **1** = improvement

2 Delay and level of service calculated using the following analysis software: Traffix, Version 7.6 (2003). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

3 TS = Traffic Signal

4 = Delay High, Intersection Unstable, Level of Service "F".

5 = Intersection is at a satisfactory Level of Service, but the Volume over Capacity Ratio is greater than 1.00.

6 = Improvements beyond allowable limits were necessary to Improve intersection to satisfactory Level of Service

7 = Improvement consistent with Downey Vision 2010

required to improve all deficient intersections to LOS "D" or LOS "E". To achieve LOS "E" traffic operations, three of the intersections would require improvements beyond typical (e.g., additional through lanes) for roadway sizes in the City of Downey Currently Adopted Master Plan of Streets and Highways. Appendix D contains the detailed operations analysis worksheets for Currently Adopted General Plan conditions with the existing intersection lane configurations. Appendix E includes the detailed operations analysis worksheets for Currently Adopted General Plan conditions with the lane configurations required to achieve LOS "E" or better traffic operations. Appendix F contains the detailed operations analysis worksheets, if necessary, showing the lane configurations and resulting intersection operations required to achieve LOS "D" operations (if the same improvements result in intersection operations at LOS "D/E", then no additional worksheet is included in Appendix F).

If a Traffic System Management (TSM) is implemented, a capacity increase of 7% could be obtained. Operations analyses were also conducted on the intersections using existing plus adopted lanes with TSM geometries. As shown in Table 5-5, the number of deficient intersections has not been reduced. Table 5-5 also shows the necessary improvements required to bring all intersections to LOS "E" or LOS "D". The same four intersections would require improvements beyond the conditions in the Master Plan of Streets and Highways to obtain LOS "E", although fewer spot improvements (turn lanes) would be required. Appendix G contains the detailed operations analysis worksheets for Currently Adopted General Plan with TSM conditions with the existing intersection lane configurations. Appendix H includes the detailed operations analysis worksheets for Currently Adopted General Plan with TSM conditions with the lane configurations required to achieve LOS "E" or better traffic operations. Appendix I contains the detailed operations analysis worksheets, if necessary, showing the lane configurations and resulting intersection operations required to achieve LOS "D" operations (if the same improvements result in intersection operations at LOS "D/E", then no additional worksheet is included in Appendix I).

TABLE 5-5 (1 OF 2)

CURRENTLY ADOPTED GENERAL PLAN WITH TSM INTERSECTION ANALYSIS SUMMARY

INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
Old River School Rd. (NS) at:																	
• Florence Av. (EW)	TS	1.5	0.5	1	0.5	1.5	0	1	3	0	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	1	1	2	1	0	2	3	1	2	3	0	38.9	47.3	D	D
• Firestone Bl. (EW)	TS	1	2	0	1	2	0	1	2	1>>	1	2	1>>	43.4	--[4]	D	F
-with LOS "E" improvements	TS	2	2	0	2	2	0	1	2	1>>	1	2	1>>	32.9	57.7	C	E
-with LOS "D" improvements	TS	2	2	0	2	2	0	2	2	1>>	2	2	1>>	29.1	47.7	C	D
• Imperial Hw. (EW)	TS	1.5	1.5	0	1	2	0	1	3	1>	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	1.5	1.5	0	1	2	0	2[7]	3	1>	1	3	0	45.7	38.3	D	D
Paramount Bl. (NS) at:																	
• Telegraph Rd. (EW)	TS	1	2	1>	1	2	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	3	0	2	3	0	2	3	0	2	3	0	53.4	47.5	D	D
• Florence Av. (EW)	TS	2	2	0	2	2	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2	3	0	2	2	1	2[7]	3	1	2[7]	3	0	44.7	64.7	D	E
-with LOS "D" improvements	TS	2	3	1	2	3	0	2	3	1	2	3	1	36.7	53.8	D	D
• Firestone Bl. (EW)	TS	1	2	1>	1	2	1	1	2	1	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2[7]	3	0	2[7]	3	0	2	2	1	2	3	0	33.0	48.3	C	C
• Stewart & Gray Rd. (EW)	TS	1	3	0	1	2	1	1	2	0	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	1	3	0	1	2	1	2	2	1	2	2	0	47.8	19.8	D	D
• Imperial Hw. (EW)	TS	2	2	0	1	2	1>	2	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	3	0	2	2	1	2	3	1	2	3	1	45.9	49.5	D	D
Downey Av. (NS) at:																	
• Firestone Bl. (EW)	TS	1<	1	1	1<	1	1	1<	2	1	1<	3	0	33.6	--[4]	C	F
-with LOS "D/E" improvements	TS	1<	2	1	1<	2	1	1<	3	1	1<	3	0	28.8	31.9	C	C
Brookshire Av. (NS) at:																	
• Firestone Bl. (EW)	TS	1<	2	0	1<	2	0	1<	3	0	1<	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2	2	1	2	2	1	2	3	1	2	3	1	41.3	69.4	D	E
-with LOS "D" improvements[6]	TS	2	3	1	2	2	1	2	3	1	2	3	1	32.7	48.2	C	D
Lakewood Bl.																	
• Telegraph Rd. (EW)	TS	1	2	1	1	2	1	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	2	2	2	2	1	2	3	0	2	3	0	52.6	51.0	D	D
• Florence Av. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	0	73.9	--[4]	E	F
-with LOS "E" improvements	TS	2[7]	3	0	2[7]	3	0	2[7]	3	0	2[7]	3	0	54.2	55.6	D	E
-with LOS "D" improvements	TS	2	3	0	2	3	0	2	3	1	2	3	0	53.1	43.2	D	D
• Firestone Bl. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	1	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2	3	0	2	3	0	2	3	1	2	3	1	65.5	51.9	E	D
-with LOS "D" improvements	TS	2	3	1	2	3	1	2	3	1	2	3	1	54.2	54.7	D	D
• Stewart & Gray Rd. (EW)	TS	1	2	0	1	2	0	1	2	1	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	3	1	2	3	1	2	2	1	2	2	1	51.4	45.9	D	D
• Imperial Hw. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements[6]	TS	3	3	2	2	3	1	2	4	2	3	3	0	41.2	57.4	D	E
-with LOS "D" improvements[6]	TS	3	3	2	2	3	1	2	4	1>>	3	3	0	36.8	53.7	D	D
• Foster Rd. (EW)	TS	1	2	1	1	2	0	1	2	0	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements[6]	TS	2	3	1	2	4	1	2	2	0	2	2	0	40.7	46.7	D	D

TABLE 5-5 (2 OF 2)

CURRENTLY ADOPTED GENERAL PLAN WITH TSM INTERSECTION ANALYSIS SUMMARY

INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
Bellflower Bl. (NS) at:																	
• Imperial Hw. (EW)	TS	1	2	0	1	2	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	**2**	2	0	**2**	2	0	1	3	0	1	3	0	57.8	67.1	E	E
-with LOS "D" improvements	TS	2	2	0	2	2	0	**2**	3	**1**	**2**	3	**1**	38.8	46.6	D	D
Woodruff Av. (NS) at:																	
• Stewart & Gray Rd. (EW)	TS	1	2	1	1	2	1	1	2	1>>	1	2	0	26.1	--[4]	C	F
-with LOS "D/E" improvements	TS	**2**	2	1	**2**	2	1	**2**	2	1>>	**2**	2	**1**	22.4	46.7	C	D
• Imperial Hw. (EW)	TS	1	2	1	1	2	1	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	**2**	2	1	**2**	2	1	**2**	3	**1**	**2**	3	**1**	35.2	49.4	D	D

1 When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; < = Protected and permitted; >> = Free right; > = Right turn overlap; **1** = improvement

2 Delay and level of service calculated using the following analysis software: Traffix, Version 7.6 (2003). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

3 TS = Traffic Signal

4 = Delay High, Intersection Unstable, Level of Service "F".

5 = Intersection is at a satisfactory Level of Service, but the Volume over Capacity Ratio is greater than 1.00.

6 = Improvements beyond allowable limits were necessary to Improve intersection to satisfactory Level of Service

7 = Improvement consistent with Downey Vision 2010

5.2 Proposed General Plan Traffic Operations

Roadway segment operations for proposed General Plan conditions have also been evaluated on both a daily basis and also for peak hour conditions where necessary to determine that the City of Downey desired levels of service can be achieved.

5.2.1 Proposed General Plan Roadway Segment Operations Analysis

Daily traffic planning level traffic operations along the various arterial roadways within the City of Downey under proposed General Plan conditions are summarized on Table 5-6. Where necessary, additional through travel lanes, consistent with the currently adopted Circulation Element Master Plan of Streets and Highways, have again been assumed to be implemented. As before, most roadways must be widened to their ultimate number of through lanes to accommodate projected traffic volumes. Even so, 18 segments of the following roadways are projected to experience daily planning level deficiencies without the implementation of further measures:

- Florence Avenue
- Firestone Boulevard
- Stewart and Gray Road
- Imperial Highway
- Brookshire Avenue
- Lakewood Boulevard
- Bellflower Boulevard
- Woodruff Avenue

Consistent with the currently adopted General Plan analysis included in this study, the initial mitigation measure considered in this analysis is the implementation of transportation systems management improvements. Table 5-7 summarizes the resulting daily levels of service for proposed General Plan with TSM implementation. With the implementation of TSM, only 9 segments along the following roadways are projected to experience daily planning level capacity deficiencies (LOS "E" or "F"):

TABLE 5-6

PROPOSED GENERAL PLAN ROADWAY SEGMENT VOLUME TO CAPACITY ANALYSIS

STREET	ROAD SEGMENT	EXISTING	ROADWAY CLASSIFICATION	ROADWAY CAPACITY	PROPOSED GENERAL PLAN	VOLUME TO CAPACITY RATIO	LOS
Telegraph Rd.	WCL - Paramount	33,347	6D[1]	56,300	39,645	0.70	B
	Paramount-Lakewood	37,752	6D[1]	56,300	45,928	0.82	D
	Lakewood-I605	39,896	6D[1]	56,300	44,681	0.79	C
Gallatin Rd.	Paramount Blvd.-Downey Ave.	8,500	4U	25,000	10,455	0.42	A
	Downey Ave.-Brookshire Ave.	10,700	4U	25,000	13,161	0.53	A
Florence Ave.	Garfield Ave.- Old River School Rd.	41,235	6D	56,300	52,622	0.93	E
	Old River School Rd.-Paramount Blvd.	46,529	6D	56,300	58,178	1.03	F
	Paramount Blvd.-Downey Ave.	37,767	6D	56,300	49,907	0.89	D
	Downey Ave.-Brookshire Ave.	35,745	6D	56,300	42,757	0.76	C
	Brookshire Ave.-Lakewood Blvd.	38,960	6D	56,300	46,669	0.83	D
	Lakewood Blvd.-I605	44,750	6D	56,300	51,766	0.92	E
Firestone Blvd.	Garfield Ave.- Old River School Rd.	48,121	6D[1]	56,300	53,063	0.94	E
	Old River School Rd.-Paramount Blvd.	37,961	6D[1]	56,300	44,981	0.80	C
	Paramount Blvd.-Downey Ave.	38,061	6D[1]	56,300	45,409	0.81	D
	Downey Ave.-Brookshire Ave.	37,682	6D[1]	56,300	47,010	0.83	D
	Brookshire Ave.-Lakewood Blvd.	48,240	6D[1]	56,300	58,667	1.04	F
	Lakewood Blvd.-Woodruff Ave. (South)	50,037	6D[1]	56,300	59,838	1.06	F
	Woodruff Ave. (South)-Stewart & Gray Rd.	51,767	6D[1]	56,300	59,337	1.05	F
	Stewart & Gray Rd - ECL	60,589	6D[1]	56,300	76,570	1.36	F
Stewart and Gray Rd.	Garfield Ave.-Old River School Rd.	12,710	4U	25,000	17,045	0.68	B
	Old River School Rd.-Paramount Blvd.	21,668	4D[1]	37,500	30,303	0.81	D
	Paramount Blvd.-Downey Ave.	22,468	4D[1]	37,500	31,607	0.84	D
	Downey Ave.-Brookshire Ave.	19,868	4U	25,000	22,170	0.89	D
	Brookshire Ave.-Lakewood Blvd.	19,327	4D[1]	37,500	27,858	0.74	C
	Lakewood Blvd.-Bellflower Blvd.	16,517	4D[1]	37,500	35,891	0.96	E
	Bellflower Blvd.-Woodruff Ave.	16,130	4D[1]	37,500	28,520	0.76	C
	Woodruff Ave.-Firestone Blvd.	13,750	4U	25,000	22,902	0.92	E
Imperial Hwy.	Garfield Ave.-Old River School Rd.	37,384	6D	56,300	47,127	0.84	D
	Old River School Rd.-Paramount Blvd.	35,268	6D	56,300	46,335	0.82	D
	Paramount Blvd.-Downey Ave.	34,391	6D	56,300	46,519	0.83	D
	Downey Ave.-Brookshire Ave.	33,837	6D	56,300	42,495	0.75	C
	Brookshire Ave.-Lakewood Blvd.	34,096	6D	56,300	46,682	0.83	D
	Lakewood Blvd.-Clark Ave.	40,851	6D	56,300	66,713	1.18	F
	Clark Ave.-Bellflower Blvd.	38,540	6D	56,300	49,244	0.87	D
	Bellflower Blvd.-Woodruff Ave.	41,149	6D	56,300	50,039	0.89	D
	Woodruff Ave. – ECL	37,092	6D	56,300	45,470	0.81	D
Gardendale St./Foster Rd.	Garfield Ave.-Paramount Blvd.	10,900	4U	25,000	11,990	0.48	A
	Paramount Blvd.-Downey Ave.	10,410	4U	25,000	11,668	0.47	A
	Downey Ave.-Brookshire Ave.	10,406	4U	25,000	13,741	0.55	A
	Brookshire Ave.-Lakewood Blvd.	12,806	4U	25,000	16,889	0.68	B
	Lakewood Blvd.-Clark Ave.	8,884	4U	25,000	12,265	0.49	A
	Clark Ave.-Bellflower Blvd.	9,284	4U	25,000	13,204	0.53	A
	Bellflower Blvd.-Woodruff Ave.	9,358	4U	25,000	13,051	0.52	A
	Woodruff Ave. - ECL	3,472	4U	25,000	4,894	0.20	A
Old River School Rd.	Florence Ave.-Firestone Blvd.	16,630	4U	25,000	21,498	0.86	D
	Firestone Blvd.-Stewart & Gray Rd.	12,984	4U	25,000	19,391	0.78	C
	Stewart & Gray Rd.-Imperial Hwy.	14,168	4U	25,000	17,972	0.72	C

TABLE 5-6 (CONTINUED)

PROPOSED GENERAL PLAN ROADWAY SEGMENT VOLUME TO CAPACITY ANALYSIS

STREET	ROAD SEGMENT	EXISTING	ROADWAY CLASSIFICATION	ROADWAY CAPACITY	PROPOSED GENERAL PLAN	VOLUME TO CAPACITY RATIO	LOS
Paramount Blvd.	Telegraph Rd.- I-5 Fwy.	39,412	6D[1]	56,300	49,162	0.87	D
	I-5 Fwy. - Gallatin Rd.	40,726	6D[1]	56,300	48,263	0.86	D
	Gallatin Rd.-Suva St.	43,025	6D[1]	56,300	49,689	0.88	D
	Suva St.-Florence Ave.	39,869	6D[1]	56,300	44,785	0.80	C
	Florence Ave.-Firestone Blvd.	41,684	6D[1]	56,300	49,441	0.88	D
	Firestone Blvd.-Stewart & Gray Rd.	29,411	6D[1]	56,300	39,287	0.70	B
	Stewart & Gray Rd.-Imperial Hwy.	28,811	6D[1]	56,300	39,975	0.71	C
	Imperial Hwy-Gardendale St./Foster Rd.	28,864	6D[1]	56,300	40,585	0.72	C
Downey Ave.	Gallatin Rd.-Florence Ave.	8,913	4U	25,000	10,733	0.43	A
	Florence Ave.-Firestone Blvd.	12,210	4U	25,000	15,065	0.60	A
	Firestone Blvd.-Stewart & Gray Rd.	12,610	4U	25,000	16,246	0.65	B
	Stewart & Gray Rd.-Imperial Hwy.	12,553	4U	25,000	18,867	0.75	C
	Imperial Hwy.-Gardendale St./Foster Rd.	11,800	4U	25,000	14,826	0.59	A
Brookshire Ave.	Gallatin Rd.-Florence Ave.	6,600	4U	25,000	10,100	0.40	A
	Florence Ave.-Firestone Blvd.	12,670	4D[1]	37,500	24,995	0.67	B
	Firestone Blvd.-Stewart & Gray Rd.	19,200	4D[1]	37,500	35,835	0.96	E
	Stewart & Gray Rd.-Imperial Hwy.	9,800	4U	25,000	14,446	0.58	A
	Imperial Hwy.-Gardendale St./Foster Rd.	5,100	4U	25,000	8,373	0.33	A
Lakewood Blvd	Telegraph Rd.-I-5	36,434	6D	56,300	41,268	0.73	C
	I-5 -Gallatin Rd.	38,262	6D	56,300	44,396	0.79	C
	Gallatin Rd.-Florence Ave.	34,492	6D	56,300	39,996	0.71	C
	Florence Ave.-Firestone Blvd.	42,380	6D	56,300	52,881	0.94	E
	Firestone Blvd.-Stewart & Gray Rd.	32,461	6D[1]	56,300	45,805	0.81	D
	Stewart & Gray Rd.-Imperial Hwy.	31,468	6D[1]	56,300	50,692	0.90	D
	Imperial Hwy.-Gardendale St./Foster Rd.	32,792	6D[1]	56,300	82,979	1.47	F
Clark Ave.	Lakewood Blvd.-Imperial Hwy.	10,155	4U	25,000	12,732	0.51	A
	Imperial Hwy.-Gardendale St./Foster Rd.	14,837	4U	25,000	18,660	0.75	C
Bellflower Blvd.	Lakewood Blvd.-Stewart & Gray Rd.	21,298	4D	37,500	26,305	0.70	B
	Stewart and Gray Rd.-Imperial Hwy.	21,458	4D	37,500	34,503	0.92	E
	Imperial Hwy.-I-105 WB Ramps	34,691	4D	37,500	43,079	1.15	F
	I-105 EB Ramps-Gardendale St./Foster Rd.	35,196	4D	37,500	43,692	1.17	F
Woodruff Ave.	Firestone Blvd.-Stewart & Gray Rd.	23,955	4D	37,500	36,128	0.96	E
	Stewart & Gray Rd.-Imperial Hwy.	20,968	4D	37,500	31,663	0.84	D
	Imperial Hwy.-Gardendale St./Foster Rd.	20,920	4D	37,500	31,942	0.85	D

[1] Based on traffic volumes, roadwy augmented to General Plan Circulation Element designations

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TABLE 5-7

PROPOSED GENERAL PLAN WITH TSM ROADWAY SEGMENT VOLUME TO CAPACITY ANALYSIS

STREET	ROAD SEGMENT	EXISTING	ROADWAY CLASSIFICATION	ROADWAY CAPACITY	PROPOSED GENERAL PLAN	VOLUME TO CAPACITY RATIO	LOS
Telegraph Rd.	WCL - Paramount	33,347	6D[1]	60,200	39,645	0.66	B
	Paramount-Lakewood	37,752	6D[1]	60,200	45,928	0.76	C
	Lakewood-I605	39,896	6D[1]	60,200	44,681	0.74	C
Gallatin Rd.	Paramount Blvd.-Downey Ave.	8,500	4U	26,800	10,455	0.39	A
	Downey Ave.-Brookshire Ave.	10,700	4U	26,800	13,161	0.49	A
Florence Ave.	Garfield Ave.- Old River School Rd.	41,235	6D	60,200	52,622	0.87	D
	Old River School Rd.-Paramount Blvd.	46,529	6D	60,200	58,178	0.97	E
	Paramount Blvd.-Downey Ave.	37,767	6D	60,200	49,907	0.83	D
	Downey Ave.-Brookshire Ave.	35,745	6D	60,200	42,757	0.71	C
	Brookshire Ave.-Lakewood Blvd.	38,960	6D	60,200	46,669	0.78	C
	Lakewood Blvd.-I605	44,750	6D	60,200	51,766	0.86	D
Firestone Blvd.	Garfield Ave.- Old River School Rd.	48,121	6D[1]	60,200	53,063	0.88	D
	Old River School Rd.-Paramount Blvd.	37,961	6D[1]	60,200	44,981	0.75	C
	Paramount Blvd.-Downey Ave.	38,061	6D[1]	60,200	45,409	0.75	C
	Downey Ave.-Brookshire Ave.	37,682	6D[1]	60,200	47,010	0.78	C
	Brookshire Ave.-Lakewood Blvd.	48,240	6D[1]	60,200	58,667	0.97	E
	Lakewood Blvd.-Woodruff Ave. (South)	50,037	6D[1]	60,200	59,838	0.99	E
	Woodruff Ave. (South)-Stewart & Gray Rd.	51,767	6D[1]	60,200	59,337	0.99	E
	Stewart & Gray Rd - ECL	60,589	6D[1]	60,200	76,570	1.27	F
Stewart and Gray Rd.	Garfield Ave.-Old River School Rd.	12,710	4U	26,800	17,045	0.64	B
	Old River School Rd.-Paramount Blvd.	21,668	4D[1]	40,100	30,303	0.76	C
	Paramount Blvd.-Downey Ave.	22,468	4D[1]	40,100	31,607	0.79	C
	Downey Ave.-Brookshire Ave.	19,868	4U	26,800	22,170	0.83	D
	Brookshire Ave.-Lakewood Blvd.	19,327	4D[1]	40,100	27,858	0.69	B
	Lakewood Blvd.-Bellflower Blvd.	16,517	4D[1]	40,100	35,891	0.90	D
	Bellflower Blvd.-Woodruff Ave.	16,130	4D[1]	40,100	28,520	0.71	C
	Woodruff Ave.-Firestone Blvd.	13,750	4U	26,800	22,902	0.85	D
Imperial Hwy.	Garfield Ave.-Old River School Rd.	37,384	6D	60,200	47,127	0.78	C
	Old River School Rd.-Paramount Blvd.	35,268	6D	60,200	46,335	0.77	C
	Paramount Blvd.-Downey Ave.	34,391	6D	60,200	46,519	0.77	C
	Downey Ave.-Brookshire Ave.	33,837	6D	60,200	42,495	0.71	C
	Brookshire Ave.-Lakewood Blvd.	34,096	6D	60,200	46,682	0.78	C
	Lakewood Blvd.-Clark Ave.	40,851	6D	60,200	66,713	1.11	F
	Clark Ave.-Bellflower Blvd.	38,540	6D	60,200	49,244	0.82	D
	Bellflower Blvd.-Woodruff Ave.	41,149	6D	60,200	50,039	0.83	D
	Woodruff Ave. – ECL	37,092	6D	60,200	45,470	0.76	C
Gardendale St./Foster Rd.	Garfield Ave.-Paramount Blvd.	10,900	4U	26,800	11,990	0.45	A
	Paramount Blvd.-Downey Ave.	10,410	4U	26,800	11,668	0.44	A
	Downey Ave.-Brookshire Ave.	10,406	4U	26,800	13,741	0.51	A
	Brookshire Ave.-Lakewood Blvd.	12,806	4U	26,800	16,889	0.63	B
	Lakewood Blvd.-Clark Ave.	8,884	4U	26,800	12,265	0.46	A
	Clark Ave.-Bellflower Blvd.	9,284	4U	26,800	13,204	0.49	A
	Bellflower Blvd.-Woodruff Ave.	9,358	4U	26,800	13,051	0.49	A
	Woodruff Ave. - ECL	3,472	4U	26,800	4,894	0.18	A
Old River School Rd.	Florence Ave.-Firestone Blvd.	16,630	4U	26,800	21,498	0.80	C
	Firestone Blvd.-Stewart & Gray Rd.	12,984	4U	26,800	19,391	0.72	C
	Stewart & Gray Rd.-Imperial Hwy.	14,168	4U	26,800	17,972	0.67	B

TABLE 5-7 (CONTINUED)

PROPOSED GENERAL PLAN WITH TSM ROADWAY SEGMENT VOLUME TO CAPACITY ANALYSIS

STREET	ROAD SEGMENT	EXISTING	ROADWAY CLASSIFICATION	ROADWAY CAPACITY	PROPOSED GENERAL PLAN	VOLUME TO CAPACITY RATIO	LOS
Paramount Blvd.	Telegraph Rd.- I-5 Fwy.	39,412	6D[1]	60,200	49,162	0.82	D
	I-5 Fwy. - Gallatin Rd.	40,726	6D[1]	60,200	48,263	0.80	C
	Gallatin Rd.-Suva St.	43,025	6D[1]	60,200	49,689	0.83	D
	Suva St.-Florence Ave.	39,869	6D[1]	60,200	44,785	0.74	C
	Florence Ave.-Firestone Blvd.	41,684	6D[1]	60,200	49,441	0.82	D
	Firestone Blvd.-Stewart & Gray Rd.	29,411	6D[1]	60,200	39,287	0.65	B
	Stewart & Gray Rd.-Imperial Hwy.	28,811	6D[1]	60,200	39,975	0.66	B
	Imperial Hwy-Gardendale St./Foster Rd.	28,864	6D[1]	60,200	40,585	0.67	B
Downey Ave.	Gallatin Rd.-Florence Ave.	8,913	4U	26,800	10,733	0.40	A
	Florence Ave.-Firestone Blvd.	12,210	4U	26,800	15,065	0.56	A
	Firestone Blvd.-Stewart & Gray Rd.	12,610	4U	26,800	16,246	0.61	B
	Stewart & Gray Rd.-Imperial Hwy.	12,553	4U	26,800	18,867	0.70	B
	Imperial Hwy.-Gardendale St./Foster Rd.	11,800	4U	26,800	14,826	0.55	A
Brookshire Ave.	Gallatin Rd.-Florence Ave.	6,600	4U	26,800	10,100	0.38	A
	Florence Ave.-Firestone Blvd.	12,670	4D[1]	40,100	24,995	0.62	B
	Firestone Blvd.-Stewart & Gray Rd.	19,200	4D[1]	40,100	35,835	0.89	D
	Stewart & Gray Rd.-Imperial Hwy.	9,800	4U	26,800	14,446	0.54	A
	Imperial Hwy.-Gardendale St./Foster Rd.	5,100	4U	26,800	8,373	0.31	A
Lakewood Blvd	Telegraph Rd.-I-5	36,434	6D	60,200	41,268	0.69	B
	I-5 -Gallatin Rd.	38,262	6D	60,200	44,396	0.74	C
	Gallatin Rd.-Florence Ave.	34,492	6D	60,200	39,996	0.66	B
	Florence Ave.-Firestone Blvd.	42,380	6D	60,200	52,881	0.88	D
	Firestone Blvd.-Stewart & Gray Rd.	32,461	6D[1]	60,200	45,805	0.76	C
	Stewart & Gray Rd.-Imperial Hwy.	31,468	6D[1]	60,200	50,692	0.84	D
	Imperial Hwy.-Gardendale St./Foster Rd.	32,792	6D[1]	60,200	82,979	1.38	F
Clark Ave.	Lakewood Blvd.-Imperial Hwy.	10,155	4U	26,800	12,732	0.48	A
	Imperial Hwy.-Gardendale St./Foster Rd.	14,837	4U	26,800	18,660	0.70	B
Bellflower Blvd.	Lakewood Blvd.-Stewart & Gray Rd.	21,298	4D	40,100	26,305	0.66	B
	Stewart and Gray Rd.-Imperial Hwy.	21,458	4D	40,100	34,503	0.86	D
	Imperial Hwy.-I-105 WB Ramps	34,691	4D	40,100	43,079	1.07	F
	I-105 EB Ramps-Gardendale St./Foster Rd.	35,196	4D	40,100	43,692	1.09	F
Woodruff Ave.	Firestone Blvd.-Stewart & Gray Rd.	23,955	4D	40,100	36,128	0.90	D
	Stewart & Gray Rd.-Imperial Hwy.	20,968	4D	40,100	31,663	0.79	C
	Imperial Hwy.-Gardendale St./Foster Rd.	20,920	4D	40,100	31,942	0.80	C

[1] Based on traffic volumes, raodwy augmented to General Plan Circulation Element designations

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- Florence Avenue
- Firestone Boulevard
- Imperial Highway
- Lakewood Boulevard
- Bellflower Boulevard

As indicated by this analysis, TSM implementation will reduce potential future daily deficiencies, but will not eliminate the deficiencies entirely. Further peak hour roadway segment analysis has been completed for those roadway segments where LOS "D" or better operations are not provided through the combination of additional through lanes consistent with the currently adopted Master Plan of Streets and Highways or TSM implementation. Table 5-8 summarizes the peak hour analysis. As shown on Table 5-8, acceptable peak hour roadway segment operations can be expected for proposed General Plan Land Use Element.

5.2.2 Proposed General Plan Peak Hour Intersection Operations Analysis

Table 5-9 summarizes the results of the intersection operations analysis for proposed General Plan conditions. The peak hour forecasts have been reviewed for reasonableness in the context of the existing turn movement counts and the future daily traffic volume forecasts. Worksheets summarizing this review are included in Appendix "J". Analysis results using traffic volumes from the proposed General Plan with existing intersection configurations show that all intersections experience deficient operations in the absence of further intersection improvements. The required improvements to attain Level of Service "E" or Level of Service "D" for all intersections are also shown on Table 5-9. The same three intersections identified previously require improvements beyond those in the Currently Adopted Master Plan of Streets and Highways to reach LOS "E". For operation at LOS "D" or better, four intersections in the Master Plan of Streets and Highways require improvements greater than typical engineering practice. Appendix K contains the detailed

TABLE 5-8

PROPOSED GENERAL PLAN WITH TSM PEAK HOUR ROADWAY LINK CAPACITY ANALYSIS

ROADWAY SEGMENT	FROM	TO	LANES	ADT	PEAK HOUR CAPACITY	HIGHEST PEAK VOLUME	V/C	LOS
Florence Av.	Old River School Rd.	Paramount Bl.	3	58,178	4,800	2,727	0.57	A
Firestone Bl.	Brookshire Av.	Lakewood Bl.	3	58,667	4,800	2,357	0.49	A
Firestone Bl.	Lakewood Bl.	Woodruff Av.	3	59,838	4,800	2,176	0.45	A
Firestone Bl.	Woodruff Av.	Stewart & Gray Rd.	3	59,337	4,800	N/A	0.45	A[1]
Firestone Bl.	Stewart & Gray Rd.	East City Limit	3	76,570	4,800	N/A	0.67	B[2]
Imperial Hw.	Lakewood Bl.	Clark Av.	3	66,713	4,800	2,318	0.48	A
Lakewood Bl.	Imperial Hw.	Foster Rd.	3	82,979	4,800	3,487	0.73	C
Bellflower Bl.	Imperial Hw.	I-105 WB Ramps	2	43,079	3,200	1,482	0.46	A
Bellflower Bl.	I-105 EB Ramps	Foster Rd.	2	43,692	3,200	N/A	0.47	A[3]

[1] Peak Hour Level of Service estimated based on results for Firestone Bl. between Lakewood Bl. and Woodruff Av.

[2] Peak Hour Level of Service estimated based on results for Lakewood Bl. between Imperial Hw. and Foster Rd.

[3] Peak Hour Level of Service estimated based on results for Bellflower Bl. between Imperial Hw. And I-105 WB Ramps

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TABLE 5-9 (1 OF 2)

PROPOSED GENERAL PLAN INTERSECTION ANALYSIS SUMMARY

INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1]												DELAY[2] (SECS.)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Old River School Rd. (NS) at:																	
• Florence Av. (EW)	TS	1.5	0.5	1	0.5	1.5	0	1	3	0	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	2	1	2	2	0	2	3	1	2	3	0	36.6	51.4	D	D
• Firestone Bl. (EW)	TS	1	2	0	1	2	0	1	2	1>>	1	2	1>>	52.1	--[4]	D	F
-with LOS "E" improvements	TS	1	2	0	1	2	0	1	3	0	1	3	0	39.1	57.3	D	E
-with LOS "D" improvements	TS	1	2	0	1	2	0	2	3	0	2	3	0	34.2	46.2	C	D
• Imperial Hw. (EW)	TS	1.5	1.5	0	1	2	0	1	3	1>	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	1.5	1.5	0	1	2	0	2′	3	1>	1	3	0	62.0	46.9	E	D
-with LOS "D" improvements	TS	1.5	1.5	0	1	2	0	2	3	1>	1	3	1	41.0	38.5	D	D
Paramount Bl. (NS) at:																	
• Telegraph Rd. (EW)	TS	1	2	1>	1	2	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	3	1	2	3	0	2	3	1	2	3	0	54.4	38.7	D	D
• Florence Av. (EW)	TS	2	2	0	2	2	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements[6]	TS	2	3	1	2	3	1	2[7]	4	1	2[7]	3	1	36.3	44.2	D	D
• Firestone Bl. (EW)	TS	1	2	1>	1	2	1	1	2	1	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2[7]	3	1	2[7]	3	1	2	2	1	2	2	1[7]	41.1	62.6	D	E
-with LOS "D" improvements	TS	2	3	1	2	3	1	2	2	1	2	3	0	34.8	50.8	C	D
• Stewart & Gray Rd. (EW)	TS	1	3	0	1	2	1	1	2	0	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	1	3	0	1	2	1	2	2	1	2	2	1	48.8	52.2	D	D
• Imperial Hw. (EW)	TS	2	2	0	1	2	1>	2	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2	3	0	2	3	1	2	3	1	2	3	1	45.2	55.1	D	E
-with LOS "D" improvements	TS	2	3	1	2	3	1	2	3	1	2	3	1	43.9	48.6	D	D
Downey Av. (NS) at:																	
• Firestone Bl. (EW)	TS	1<	1	1	1<	1	1	1<	2	1	1<	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	2	1	2	2	0	1<	2	1	1<	3	0	30.8	38.1	C	D
Brookshire Av. (NS) at:																	
• Firestone Bl. (EW)	TS	1<	2	0	1<	2	0	1<	3	0	1<	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	4	1	2	2	1	2	3	1	2	3	1	36.3	53.8	D	D
Lakewood Bl.																	
• Telegraph Rd. (EW)	TS	1	2	1	1	2	1	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	1	2	1	1	3	1	2	3	1	2	3	1	51.9	54.8	D	D
• Florence Av. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2′	3	0	2′	3	1	2′	3	0	2′	3	1	55.1	63.6	E	E
-with LOS "D" improvements	TS	2	3	1	2	3	1	2	3	1	2	3	1	50.4	44.4	D	D
• Firestone Bl. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	1	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2	3	1	2	3	0	2	3	1	2	3	2	59.7	78.0	E	E
-with LOS "D" improvements[6]	TS	2	3	1	2	3	1	2	3	1	2	4	1	51.8	49.0	D	D
• Stewart & Gray Rd. (EW)	TS	1	2	0	1	2	0	1	2	1	1	2	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	1	3	1	1	3	0	2	2	1	2	2	1	64.1	51.7	E	D
-with LOS "D" improvements[6]	TS	1	3	1	1	3	0	2	3	0	2	2	1	44.2	46.1	D	D
• Imperial Hw. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements[6]	TS	3	3	2	2	4	1	2	4	1>>	3	3	1	39.4	55.0	D	E
-with LOS "D" improvements[6]	TS	3	4	1>>	2	4	1	2	4	1>>	3	3	1	34.7	52.7	C	D
• Foster Rd. (EW)	TS	1	2	1	1	2	0	1	2	0	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements[6]	TS	2	3	1	2	4	1	2	2	1	2	2	0	47.7	49.4	D	D

TABLE 5-9 (2 OF 2)

PROPOSED GENERAL PLAN INTERSECTION ANALYSIS SUMMARY

INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1]												DELAY[2] (SECS.)		LEVEL OF SERVICE	
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Bellflower Bl. (NS) at:																	
• Imperial Hw. (EW)	TS	1	2	0	1	2	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	**2**	2	**1**	**2**	2	0	1	3	0	1	3	0	58.7	68.8	E	E
-with LOS "D" improvements	TS	2	2	1	2	2	0	**2**	3	0	**2**	3	0	43.7	53.5	D	D
Woodruff Av. (NS) at:																	
• Stewart & Gray Rd. (EW)	TS	1	2	1	1	2	1	1	2	1>>	1	2	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	**2**	2	1	**2**	2	1	**2**	2	1>>	**2**	2	1	16.0	58.1	B	E
-with LOS "D" improvements	TS	2	2	1	2	**3**	0	2	2	1>>	2	2	1	19.2	50.9	B	D
• Imperial Hw. (EW)	TS	1	2	1	1	2	1	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	**2**	**3**	1	**2**	2	1	**2**	3	**1**	**2**	3	0	51.2	46.9	D	D

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1 When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; < = Protected and permitted; >> = Free right; > = Right turn overlap; **1** = improvement

2 Delay and level of service calculated using the following analysis software: Traffix, Version 7.6 (2003). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

3 TS = Traffic Signal

4 = Delay High, Intersection Unstable, Level of Service "F".

5 = Intersection is at a satisfactory Level of Service, but the Volume over Capacity Ratio is greater than 1.00.

6 = Improvements beyond allowable limits were necessary to Improve intersection to satisfactory Level of Service

7 = Improvement consistent with Downey Vision 2010

operations analysis worksheets for Currently Adopted General Plan with TSM conditions with the existing intersection lane configurations. Appendix L includes the detailed operations analysis worksheets for Currently Adopted General Plan with TSM conditions with the lane configurations required to achieve LOS "E" or better traffic operations. Appendix M contains the detailed operations analysis worksheets, if necessary, showing the lane configurations and resulting intersection operations required to achieve LOS "D" operations (if the same improvements result in intersection operations at LOS "D/E", then no additional worksheet is included in Appendix M).

Results of the analysis of the Proposed General Plan using TSM to increase capacity are shown in Table 5-10. Under existing conditions, all of the 19 intersections analyzed experience deficient operations. Improvements needed to reach LOS "E" or LOS "D" for all intersections are also shown in Table 5-10. Again, three of the intersections would require greater improvements than those shown in the Master Plan of Streets and Highways to reach LOS "E". For Level of Service "D" or better operation, four of the intersections would require greater improvements than those in the Master Plan of Streets and Highways. Appendix N contains the detailed operations analysis worksheets for Currently Adopted General Plan with TSM conditions with the existing intersection lane configurations. Appendix O includes the detailed operations analysis worksheets for Currently Adopted General Plan with TSM conditions with the lane configurations required to achieve LOS "E" or better traffic operations. Appendix P contains the detailed operations analysis worksheets, if necessary, showing the lane configurations and resulting intersection operations required to achieve LOS "D" operations (if the same improvements result in intersection operations at LOS "D/E", then no additional worksheet is included in Appendix P).

TABLE 5-10 (1 OF 2)

PROPOSED GENERAL PLAN WITH TSM INTERSECTION ANALYSIS SUMMARY

INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
Old River School Rd. (NS) at:																	
• Florence Av. (EW)	TS	1.5	0.5	1	0.5	1.5	0	1	3	0	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	1	1	2	1	0	2	3	1	2	3	0	39.0	47.8	D	D
• Firestone Bl. (EW)	TS	1	2	0	1	2	0	1	2	1>>	1	2	1>>	43.5	--[4]	D	F
-with LOS "D/E" improvements	TS	1	2	0	1	2	0	1	3	0	1	3	0	36.0	46.8	D	D
• Imperial Hw. (EW)	TS	1.5	1.5	0	1	2	0	1	3	1>	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	1.5	1.5	0	1	2	0	2[7]	3	1>	1	3	0	46.1	38.4	D	D
Paramount Bl. (NS) at:																	
• Telegraph Rd. (EW)	TS	1	2	1>	1	2	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	3	0	2	3	0	2	3	0	2	3	0	54.5	48.7	D	D
• Florence Av. (EW)	TS	2	2	0	2	2	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2	3	0	2	2	1	2[7]	3	1	2[7]	3	0	45.1	64.5	D	E
-with LOS "D" improvements	TS	2	3	1	2	3	0	2	3	1	2	3	1	38.2	53.9	D	D
• Firestone Bl. (EW)	TS	1	2	1>	1	2	1	1	2	1	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2[7]	3	0	2[7]	3	0	2	2	1	2	3	0	33.2	48.4	C	D
• Stewart & Gray Rd. (EW)	TS	1	3	0	1	2	1	1	2	0	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	1	3	0	1	2	1	2	2	1	2	2	0	48.2	50.2	D	D
• Imperial Hw. (EW)	TS	2	2	0	1	2	1>	2	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	3	0	2	2	1	2	3	1	2	3	1	46.1	49.8	D	D
Downey Av. (NS) at:																	
• Firestone Bl. (EW)	TS	1<	1	1	1<	1	1	1<	2	1	1<	3	0	33.9	--[4]	C	F
-with LOS "D/E" improvements	TS	1<	2	1	1<	2	1	1<	3	1	1<	3	0	29.0	32.0	C	C
Brookshire Av. (NS) at:																	
• Firestone Bl. (EW)	TS	1<	2	0	1<	2	0	1<	3	0	1<	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements[6]	TS	2	3	0	2	2	1	2	3	1	2	3	1	34.1	61.7	C	E
-with LOS "D" improvements[6]	TS	2	3	1	2	2	1	2	3	1	2	3	1	32.9	48.6	C	D
Lakewood Bl.																	
• Telegraph Rd. (EW)	TS	1	2	1	1	2	1	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	2	2	2	2	1	2	3	0	2	3	0	54.5	54.1	D	D
• Florence Av. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	0	76.5	--[4]	E	F
-with LOS "E" improvements	TS	2[7]	3	0	2[7]	3	0	2[7]	3	0	2[7]	3	0	55.5	56.5	E	E
-with LOS "D" improvements	TS	2	3	0	2	3	0	2	3	1	2	3	0	54.4	44.5	D	D
• Firestone Bl. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	1	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2	3	0	2	3	0	2	3	1	2	3	1	66.1	52.3	E	D
-with LOS "D" improvements[6]	TS	2	3	1	2	3	1	2	4	1	2	3	1	53.9	41.6	D	D
• Stewart & Gray Rd. (EW)	TS	1	2	0	1	2	0	1	2	1	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	3	1	2	3	1	2	2	1	2	2	1	52.0	46.6	D	D
• Imperial Hw. (EW)	TS	1	3	0	1	3	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements[6]	TS	3	3	2	2	3	1	2	4	2	3	3	0	42.5	59.8	D	E
-with LOS "D" improvements[6]	TS	3	3	1>>	2	3	1	2	4	1>>	3	3	0	34.4	51.3	C	D
• Foster Rd. (EW)	TS	1	2	1	1	2	0	1	2	0	1	2	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements[6]	TS	2	3	1	2	4	1	2	2	0	2	2	0	41.5	48.4	D	D

TABLE 5-10 (2 OF 2)

PROPOSED GENERAL PLAN WITH TSM INTERSECTION ANALYSIS SUMMARY

INTERSECTION	TRAFFIC CONTROL[3]	INTERSECTION APPROACH LANES[1] NORTH-BOUND L	T	R	SOUTH-BOUND L	T	R	EAST-BOUND L	T	R	WEST-BOUND L	T	R	DELAY[2] (SECS.) AM	PM	LEVEL OF SERVICE AM	PM
Bellflower Bl. (NS) at:																	
• Imperial Hw. (EW)	TS	1	2	0	1	2	0	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "E" improvements	TS	2	2	0	2	2	0	1	3	0	1	3	0	58.2	68.2	E	E
-with LOS "D" improvements	TS	2	2	0	2	2	0	2	3	1	2	3	1	39.3	47.2	D	D
Woodruff Av. (NS) at:																	
• Stewart & Gray Rd. (EW)	TS	1	2	1	1	2	1	1	2	1>>	1	2	0	26.3	--[4]	C	F
-with LOS "D/E" improvements	TS	2	2	1	2	2	1	2	2	1>>	2	2	1	22.4	47.0	C	D
• Imperial Hw. (EW)	TS	1	2	1	1	2	1	1	3	0	1	3	0	--[4]	--[4]	F	F
-with LOS "D/E" improvements	TS	2	2	1	2	2	1	2	3	1	2	3	1	35.4	49.9	D	D

1 When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; < = Protected and permitted; >> = Free right; > = Right turn overlap; 1 = improvement

2 Delay and level of service calculated using the following analysis software: Traffix, Version 7.6 (2003). Per the 2000 Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for worst individual movement (or movements sharing a single lane) are shown.

3 TS = Traffic Signal

4 = Delay High, Intersection Unstable, Level of Service "F".

5 = Intersection is at a satisfactory Level of Service, but the Volume over Capacity Ratio is greater than 1.00.

6 = Improvements beyond allowable limits were necessary to Improve intersection to satisfactory Level of Service

7 = Improvement consistent with Downey Vision 2010

6.0 CONCLUSIONS

Based on the analysis included in this traffic study, the following conclusions have been reached:

- Regional through traffic, especially including heavy vehicles, will contribute heavily to overall anticipated growth in traffic on the City of Downey's arterial street system.

- Heavy truck activity will be even more prevalent under future conditions. It will be necessary to ensure that the roadway geometric design parameters, particularly lane widths, accommodate such vehicles.

- LOS "D" operations can generally be achieved at most intersections and on most roadway segments within the City of Downey and should be considered as the generally acceptable level of service standard within the City of Downey. In certain instances, however, LOS "D" cannot be achieved without substantially augmenting the recommended roadway classifications and number of through lanes throughout the City on heavily traveled corridors. Therefore, the City should accept LOS "E" as the acceptable standard for traffic operations under extenuating circumstances (for instance, LOS "D" cannot be obtained without widening beyond the typical engineering standard of dual left turn lanes and an exclusive right turn lane at arterial intersections).

- Implementing traffic systems management measures, including eliminating parking on the arterial roadway system, constructing augmented turn lanes at arterial to arterial intersections, and ongoing funding of traffic operations measures such as optimizing traffic signal timing and traffic operations capability to respond to traffic accidents and other incidents, can reduce the need for additional physical improvements to the roadway system. In addition, access management measures, such as construction of raised medians, deceleration lanes at major driveways, and consolidation of driveways are an important aspect of TSM strategies and should be implemented wherever possible.

- The City should continue to coordinate with MTA in developing future scheduling and route alignments to serve Downey as necessary. The City should also participate in efforts to develop/maintain important transit support facilities, including park-and-ride lots, bus stops and shelters. To serve the needs of seniors and youth, the City should collaborate with MTA, neighboring cities and other providers to ensure that adequate public transit access is provided to pivotal youth and senior centers. Also, public improvements should be designed to promote the use of public transportation as an alternative to the automobile.

- The City should continue to coordinate with Los Angeles County agencies to enhance the bikeway system. The goal is to link residential areas, schools, parks and commercial centers so that residents can travel within the community without driving. New development projects should be required to include safe and attractive sidewalks, walkways, and bike lanes, and homeowners' associations should be encouraged to construct links to adjacent areas and communities where appropriate.

Table 6-1 summarizes the needed improvements to achieve LOS "D" where reasonably achievable (or LOS "E" otherwise) and presents the required improvements for both the Currently Adopted General Plan and Proposed General Plan scenarios, if transportation system management (TSM) measures are not implemented.

Table 6-2 summarizes the existing and recommended intersection lane configurations for both the Currently Adopted General Plan with TSM and Proposed General Plan with TSM scenarios. The differences are:

Old River School Road (NS) at Firestone Boulevard (EW):

- The Currently Adopted General Plan with TSM requires two left turn lanes on the northbound and southbound approaches. The Proposed General Plan scenario needs one left turn lane for the northbound and southbound approaches. For the eastbound and westbound

TABLE 6-1

REQUIRED INTERSECTION CONFIGURATIONS WITHOUT TSM MEASURES

INTERSECTION	TRAFFIC CONTROL[2]	INTERSECTION APPROACH LANES[1]											
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND		
		L	T	R	L	T	R	L	T	R	L	T	R
Old River School Rd. (NS) at:													
• Florence Av. (EW)													
-currently adopted general plan improvements	TS	2	2	1>>	2	2	0	2	3	1	2	3	0
-proposed general plan improvements	TS	2	2	1	2	2	0	2	3	1	2	3	0
• Firestone Bl. (EW)													
-currently adopted general plan improvements	TS	1	2	1	1	2	0	1	3	0	1	3	0
-proposed general plan improvements	TS	1	2	0	1	2	0	2	3	0	2	3	0
• Imperial Hw. (EW)													
-currently adopted general plan improvements	TS	1.5	1.5	0	1	2	0	2	3	1>	2	3	1
-proposed general plan improvements	TS	1.5	1.5	0	1	2	0	2	3	1>	1	3	1
Paramount Bl. (NS) at:													
• Telegraph Rd. (EW)													
-currently adopted general plan improvements	TS	2	3	1	2	3	0	2	3	0	2	3	0
-proposed general plan improvements	TS	2	3	1	2	3	0	2	3	1	2	3	0
• Florence Av. (EW)													
-currently adopted general plan improvements	TS	2	3	1	2	3	1	2	3	1	2	3	1
-proposed general plan improvements	TS	2	3	1	2	3	1	2	4	1	2	3	1
• Firestone Bl. (EW)													
-currently adopted/proposed general plan improvements	TS	2	3	1	2	3	1	2	2	1	2	3	0
• Stewart & Gray Rd. (EW)													
-currently adopted/proposed general plan improvements	TS	1	3	0	1	2	1	2	2	1	2	2	1
• Imperial Hw. (EW)													
-currently adopted general plan improvements	TS	2	3	0	2	3	1	2	3	1	2	3	1
-proposed general plan improvements	TS	2	3	1	2	3	1	2	3	1	2	3	1
Downey Av. (NS) at:													
• Firestone Bl. (EW)													
-currently adopted general plan improvements	TS	2	2	1	2	2	0	1	2	1	1<	3	0
-proposed general plan improvements	TS	2	2	1	2	2	0	1<	2	1	1<	3	0
Brookshire Av. (NS) at:													
• Firestone Bl. (EW)													
-currently adopted general plan improvements	TS	2	3	1	2	2	1	2	4	1	2	4	1
-proposed general plan improvements	TS	2	4	1	2	2	1	2	3	1	2	3	1
Lakewood Bl.													
• Telegraph Rd. (EW)													
-currently adopted general plan improvements	TS	1	3	2	1	3	1	2	3	1	2	3	1
-proposed general plan improvements	TS	1	2	1	1	3	1	2	3	1	2	3	1
• Florence Av. (EW)													
-currently adopted general plan improvements	TS	2	3	0	2	3	1	2	3	1	2	3	1
-proposed general plan improvements	TS	2	3	1	2	3	1	2	3	1	2	3	1
• Firestone Bl. (EW)													
-currently adopted general plan improvements	TS	2	3	1	2	3	0	2	3	1	2	3	1
-proposed general plan improvements	TS	2	3	1	2	3	0	2	3	1	2	3	2
• Stewart & Gray Rd. (EW)													
-currently adopted general plan improvements	TS	1	3	1	1	3	0	2	3	1>	2	2	1
-proposed general plan improvements	TS	1	3	1	1	3	0	2	3	0	2	2	1
• Imperial Hw. (EW)													
-currently adopted/proposed general plan improvements	TS	3	3	2	2	4	1	2	4	1>>	3	3	1
• Foster Rd. (EW)													
-currently adopted/proposed general plan improvements	TS	2	3	1	2	4	1	2	2	1	2	2	0

TABLE 6-1 (CONTINUED)

REQUIRED INTERSECTION CONFIGURATIONS WITHOUT TSM MEASURES

INTERSECTION	TRAFFIC CONTROL[2]	INTERSECTION APPROACH LANES[1]											
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND		
		L	T	R	L	T	R	L	T	R	L	T	R
Bellflower Bl. (NS) at:													
• Imperial Hw. (EW)													
-currently adopted general plan improvements	TS	2	2	1	2	2	0	2	3	1	2	3	1
-proposed general plan improvements	TS	2	2	1	2	2	0	2	3	0	2	3	0
Woodruff Av. (NS) at:													
• Stewart & Gray Rd. (EW)													
-currently adopted general plan improvements	TS	2	2	1	2	2	1	2	2	1>>	2	2	1
-proposed general plan improvements	TS	2	2	1	2	3	0	2	2	1>>	2	2	1
• Imperial Hw. (EW)													
-currently adopted general plan improvements	TS	2	3	2	2	2	1	2	3	1	2	3	0
-proposed general plan improvements	TS	2	3	1	2	2	1	2	3	1	2	3	0

[1] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; < = Protected and permitted; >> = Free right; > = Right turn overlap

[2] TS = Traffic Signal

U:\UcJobs_01800\01815\Excel\[01815-02.xls]T 6-1

TABLE 6-2

EXISTING AND RECOMMENDED INTERSECTION CONFIGURATIONS WITH TSM MEASURES

INTERSECTION	TRAFFIC CONTROL[2]	INTERSECTION APPROACH LANES[1]											
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND		
		L	T	R	L	T	R	L	T	R	L	T	R
Old River School Rd. (NS) at:													
• Florence Av. (EW)													
-existing lanes	TS	1.5	0.5	1	0.5	1.5	0	1	3	0	1	2	0
-currently adopted/proposed general plan improvements	TS	2	1	1	2	1	0	2	3	1	2	3	0
• Firestone Bl. (EW)													
-existing lanes	TS	1	2	0	1	2	0	1	2	1	1	2	1
-currently adopted general plan improvements	TS	2	2	0	2	2	0	2	2	1>>	2	2	1>>
-proposed general plan improvements	TS	1	2	0	1	2	0	1	3	0	1	3	0
• Imperial Hw. (EW)													
-existing lanes	TS	1.5	1.5	0	1.5	1.5	0	1	3	1	1	3	0
-currently adopted/proposed general plan improvements	TS	1.5	1.5	0	1	2	0	2	3	1>	1	3	0
Paramount Bl. (NS) at:													
• Telegraph Rd. (EW)													
-existing lanes	TS	1	2	1	1	2	0	1	3	0	1	3	0
-currently adopted/proposed general plan improvements	TS	2	3	0	2	3	0	2	3	0	2	3	0
• Florence Av. (EW)													
-existing lanes	TS	2	2	0	2	2	0	1	3	0	1	3	0
-currently adopted/proposed general plan improvements	TS	2	3	1	2	3	0	2	3	1	2	3	1
• Firestone Bl. (EW)													
-existing lanes	TS	1	2	1	1	2	1	1	2	1	1	3	0
-currently adopted/proposed general plan improvements	TS	2	3	0	2	3	0	2	2	1	2	3	0
• Stewart & Gray Rd. (EW)													
-existing lanes	TS	1	3	0	1	2	1	1	2	0	1	2	0
-currently adopted/proposed general plan improvements	TS	1	3	0	1	2	1	2	2	1	2	2	0
• Imperial Hw. (EW)													
-existing lanes	TS	2	2	0	1	2	1	2	3	0	1	3	0
-currently adopted/proposed general plan improvements	TS	2	3	0	2	2	1	2	3	1	2	3	1
Downey Av. (NS) at:													
• Firestone Bl. (EW)													
-existing lanes	TS	1	1	1	1	1	1	1	2	1	1	3	0
-currently adopted/proposed general plan improvements	TS	1<	2	1	1<	2	1	1<	3	1	1<	3	0
Brookshire Av. (NS) at:													
• Firestone Bl. (EW)													
-existing lanes	TS	1	2	0	1	2	0	1	3	0	1	3	0
-currently adopted general plan improvements	TS	2	2	1	2	2	1	2	3	1	2	3	1
-proposed general plan improvements	TS	2	3	0	2	2	1	2	3	1	2	3	1
Lakewood Bl.													
• Telegraph Rd. (EW)													
-existing lanes	TS	1	2	1	1	2	1	1	3	0	1	3	0
-currently adopted/proposed general plan improvements	TS	2	2	2	2	2	1	2	3	0	2	3	0
• Florence Av. (EW)													
-existing lanes	TS	1	3	0	1	3	0	1	3	0	1	3	0
-currently adopted/proposed general plan improvements	TS	2	3	0	2	3	0	2	3	1	2	3	0
• Firestone Bl. (EW)													
-existing lanes	TS	1	3	0	1	3	0	1	3	0	1	3	1
-currently adopted general plan improvements	TS	2	3	1	2	3	1	2	3	1	2	3	1
-proposed general plan improvements	TS	2	3	0	2	3	0	2	3	1	2	3	1
• Stewart & Gray Rd. (EW)													
-existing lanes	TS	1	2	0	1	2	0	1	2	1	1	2	0
-currently adopted/proposed general plan improvements	TS	2	3	1	2	3	1	2	2	1	2	2	1
• Imperial Hw. (EW)													
-existing lanes	TS	1	3	0	1	3	0	1	3	0	1	3	0
-currently adopted/proposed general plan improvements	TS	3	3	2	2	3	1	2	4	2	3	3	0
• Foster Rd. (EW)													
-existing lanes	TS	1	2	1	1	2	0	1	2	0	1	2	0
-currently adopted/proposed general plan improvements	TS	2	3	1	2	4	1	2	2	0	2	2	0

TABLE 6-2 (CONTINUED)

EXISTING AND RECOMMENDED INTERSECTION CONFIGURATIONS WITH TSM MEASURES

INTERSECTION	TRAFFIC CONTROL[2]	INTERSECTION APPROACH LANES[1]											
		NORTH-BOUND			SOUTH-BOUND			EAST-BOUND			WEST-BOUND		
		L	T	R	L	T	R	L	T	R	L	T	R
Bellflower Bl. (NS) at:													
• Imperial Hw. (EW)													
-existing lanes	TS	1	2	0	1	2	0	1	3	0	1	3	0
-currently adopted/proposed general plan improvements	TS	2	2	0	2	2	0	2	3	1	2	3	1
Woodruff Av. (NS) at:													
• Stewart & Gray Rd. (EW)													
-existing lanes	TS	1	2	1	1	2	1	1	2	1	1	2	0
-currently adopted/proposed general plan improvements	TS	2	2	1	2	2	1	2	2	1>>	2	2	1
• Imperial Hw. (EW)													
-existing lanes	TS	1	2	1	1	2	1	1	3	0	1	3	0
-currently adopted/proposed general plan improvements	TS	2	2	1	2	2	1	2	3	1	2	3	1

[1] When a right turn is designated, the lane can either be striped or unstnped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; < = Protected and permitted; >> = Free right; > = Right turn overlap

[2] TS = Traffic Signal

approaches, the Currently Adopted General Plan with TSM requires two left turn lanes, two through lanes, and a free right turn lane for each approach. The Proposed General Plan scenario requires the eastbound and westbound approaches to have one left turn lane, two through lanes, and one shared through-right lane.

Brookshire Avenue (NS) at Firestone Boulevard (EW):

- The Proposed General Plan with TSM requires two through lanes and one shared through-right lane for the northbound approach while the Currently Adopted General Plan land use scenario only requires two northbound through lanes and an exclusive northbound right turn lane.

Lakewood Boulevard (NS) at Firestone Boulevard (EW):

- The Currently Adopted General Plan with TSM requires three through lanes and an exclusive right turn lane for the northbound approach while the Proposed General Plan land use scenario requires two through lanes and one shared through-right turn lane for the northbound approach.

By comparing Table 6-1 to Table 6-2, it is possible to conclude that applying TSM measures to the Proposed General Plan land use scenario reduces the required lanes at most intersections. The changed lane requirements are:

Old River School Road (NS) at Florence Avenue (EW):

- TSM eliminates the need for a second northbound through lane and a second southbound through lane.

Old River School Road (NS) at Florence Avenue (EW):

- TSM eliminates the need for a second eastbound left turn lane and a second westbound left turn lane.

Old River School Road (NS) at Imperial Highway (EW):

- TSM eliminates the need for a westbound right turn lane.

Paramount Boulevard (NS) at Telegraph Road (EW):

- TSM eliminates the need for a northbound right turn lane and an eastbound right turn lane

Paramount Boulevard (NS) at Florence Avenue (EW):

- TSM eliminates the need for a southbound right turn lane and a fourth eastbound through lane.

Paramount Boulevard (NS) at Firestone Boulevard (EW):

- TSM eliminates the need for a northbound right turn lane and a southbound right turn lane.

Paramount Boulevard (NS) at Stewart and Gray Road (EW):

- TSM eliminates the need for a westbound right turn lane.

Paramount Boulevard (NS) at Imperial Highway (EW):

- TSM eliminates the need for a northbound right turn lane and a third southbound through lane.

Downey Avenue (NS) at Firestone Boulevard (EW):

- TSM eliminates the need for a second northbound left turn lane and a second southbound left turn lane.
- TSM requires a southbound right turn lane and a third eastbound through lane.

Brookshire Avenue (NS) at Firestone Boulevard (EW);

- TSM eliminates the need for a fourth northbound through lane and a northbound right turn lane.

Lakewood Boulevard (NS) at Telegraph Road (EW):

- TSM eliminates the need for a southbound through turn lane, an eastbound right turn lane, and a westbound right turn lane.
- TSM requires a second northbound left turn lane, a second northbound right turn lane, and a second southbound left turn lane.

Lakewood Boulevard (NS) at Florence Avenue (EW):

- TSM eliminates the need for a northbound right turn lane, a southbound right turn lane and a westbound right turn lane.

Lakewood Boulevard (NS) at Firestone Boulevard (EW):

- TSM eliminates the need for a northbound right turn lane and a second westbound left turn lane.

Lakewood Boulevard (NS) at Stewart and Gray Road (EW):

- The improvements are not directly comparable, as LOS "D" can be achieved with TSM, while LOS "E" is the best LOS that can be attained without TSM.

Lakewood Boulevard (NS) at Imperial Highway (EW):

- TSM eliminates the need for a fourth southbound through lane, an eastbound free right lane, and a westbound right turn lane.
- TSM requires two eastbound right turn lanes.

Lakewood Boulevard (NS) at Foster Road (EW):

- TSM eliminates the need for an eastbound right turn lane.

Bellflower Boulevard (NS) at Imperial Highway (EW):

- TSM eliminates the need for a northbound right turn lane.
- TSM requires an eastbound right turn lane and a westbound right turn lane

Woodruff Avenue (NS) and Stewart & Gray Road (EW):

- TSM eliminates the need for a third southbound through lane.
- TSM requires two southbound through lanes and one southbound right turn lane.

Woodruff Avenue (NS) and Imperial Highway (EW):

- TSM eliminates the need for a third northbound through lane.
- TSM requires two northbound right turn lanes.

The recommended Master Plan of Streets and Highways is depicted on Exhibit 6-A. Exhibit 6-B presents recommended arterial mid-block cross-sections, as well as augmented arterial (to arterial) intersection cross-sections that should be required in conjunction with any future (re)development activities within the City of Downey.

The recommended Master Plan of Streets and Highways includes a new arterial designation, Primary Arterial, that reflects a four lane divided cross-section. This designation has been recommended for Woodruff Avenue, which was formerly designated as a four to six lane Major Arterial. The Major Arterial designation is now used solely to designate six lane divided roadways, while the Secondary Arterial designation refers to roadways exhibiting a four lane undivided mid-block section. The addition of a Primary Arterial designation ensures that the City is clearly defining a specific desired roadway cross-section for all of the arterial roadways throughout the City.

Exhibit 6-A also identifies several locations where the required number of approach lanes exceeds even the recommended augmented roadway cross-sections. The feasibility of implementing some of these additional improvements is questionable. It may be necessary to identify these locations as intersections where a significant, unavoidable adverse impact will occur as a result of continued growth in the City of Downey and surrounding region. This finding would apply in the context of both the

EXHIBIT 6-A

CITY OF DOWNEY RECOMMENDED MASTER PLAN OF STREETS & HIGHWAYS

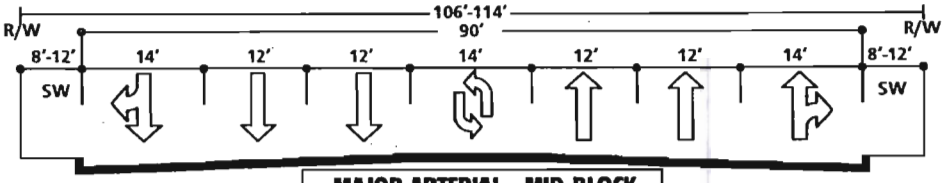
LEGEND:

= FREEWAY
= MAJOR ARTERIAL
= PRIMARY ARTERIAL
= SECONDARY ARTERIAL
= COLLECTOR STREET
= ADJACENT JURISDICTION/ UNCLASSIFIED ROADWAY
= RAILROAD

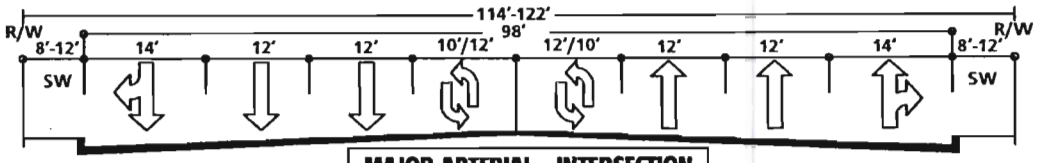
= REQUIRED APPROACH CONFIGURATION EXCEEDS AUGMENTED INTERSECTION APPROACH CONFIGURATION

EXHIBIT 6-B

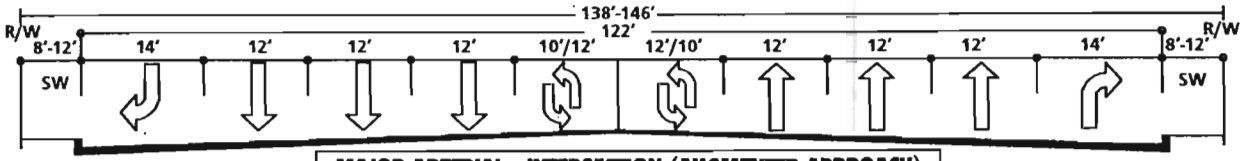
CITY OF DOWNEY RECOMMENDED GENERAL PLAN ARTERIAL ROADWAY CROSS-SECTIONS



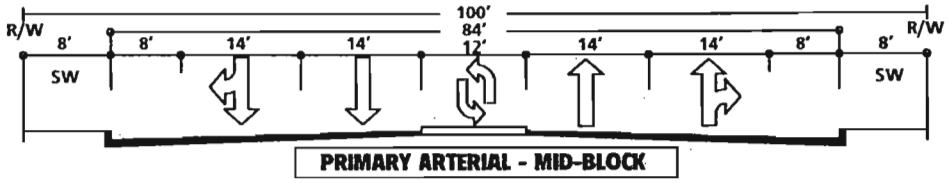
MAJOR ARTERIAL - MID-BLOCK



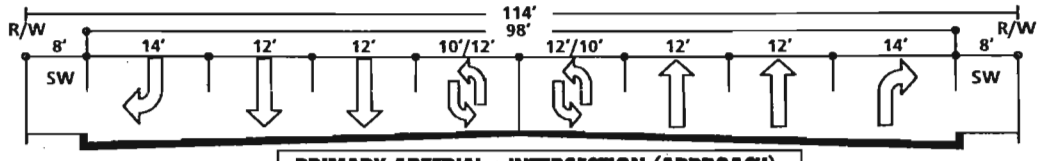
MAJOR ARTERIAL - INTERSECTION



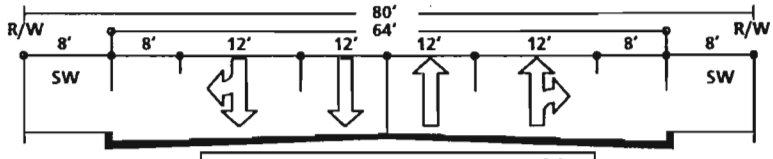
MAJOR ARTERIAL - INTERSECTION (AUGMENTED APPROACH)



PRIMARY ARTERIAL - MID-BLOCK

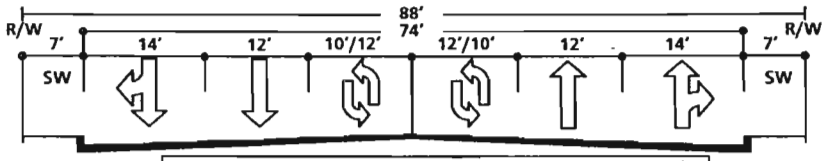


PRIMARY ARTERIAL - INTERSECTION (APPROACH)

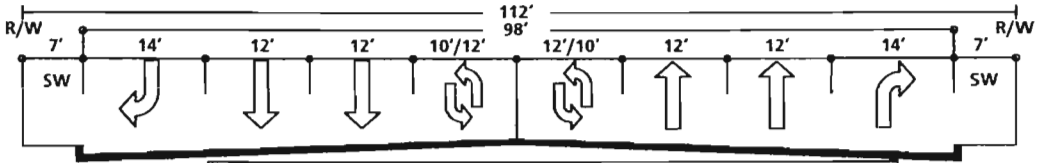


SECONDARY ARTERIAL - MID-BLOCK

NOTE: CROSS-SECTIONS INDICATE MINIMUM DESIRABLE SECTION; ADDITIONAL LANES/WIDTH MAY BE REQUIRED PER DETAILED ANALYSIS RESULTS



SECONDARY ARTERIAL - INTERSECTION (APPROACH)



SECONDARY ARTERIAL - INTERSECTION (AUGMENTED APPROACH)

Currently Adopted or Proposed General Plan land use scenarios. In addition, it is recognized that ongoing development within the City and the surrounding region will result in a significant, unavoidable adverse impact to the regional freeway system and the interchanges of the City of Downey arterial system with the regional freeway system, based on the analysis completed in conjunction with the regional transportation plan.

Improvements will be required at all intersections analyzed in this study, to achieve acceptable (LOS "D" or LOS "E" where LOS "D" is infeasible) traffic operations. Table 6-3 summarizes the achievable levels of service for each intersection. Some intersections will still experience LOS "F" unless improvements beyond typical engineering practice are implemented. Additional analysis has been completed at such locations to include only the (necessary) maximum typical engineering improvements. The additional analysis is included as Appendix Q. Recommended improvements for each intersection for Proposed General Plan conditions are:

Old River School Rd. (NS) at Florence Avenue (EW):

- Construct one additional northbound approach lane (total of four approach lanes) and stripe the northbound approach to provide two left turn lanes, one through lane, and one right turn lane.
- Construct one additional southbound approach lane (total of three approach lanes) and stripe the southbound approach to provide two left turn lanes one shared through-right lane.
- Construct two additional eastbound approach lanes (total of six approach lanes) and stripe the eastbound approach to provide two left turn lanes, three through lanes, and one right turn lane.
- Construct two additional westbound approach lanes (total of five approach lanes) and stripe the westbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.

Old River School Road (NS) at Firestone Boulevard (EW):

- No changes to the northbound approach.
- No changes to the southbound approach.

- Re-stripe the eastbound approach to provide one left turn lane, two through lanes, and one shared through-right lane.
- Re-stripe the westbound approach to provide one left turn lane, two through lanes, and one shared through-right lane.

Old River School Road (NS) at Imperial Highway (EW):

- No changes to the northbound approach.
- Re-stripe the southbound approach to provide one left turn lane, one through lane, and one shared through-right lane.
- Construct one additional eastbound approach lane (total of six approach lanes) and strip the eastbound approach to provide two left turn lanes, three through lanes, and one right turn lane with overlap phasing.
- No changes to the westbound approach.

Paramount Boulevard (NS) at Telegraph Road (EW):

- Construct one additional northbound approach lane (total of five approach lanes) and stripe the northbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.
- Construct two additional southbound approach lanes (total of five approach lanes) and stripe the southbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.
- Construct one additional eastbound approach lane (total of five approach lanes) and stripe the eastbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.
- Construct one additional westbound approach lane (total of five approach lanes) and stripe the westbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.

Paramount Boulevard (NS) at Florence Avenue (EW):

- Construct one additional northbound approach lane (total of five approach lanes) and stripe the northbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.

- Construct one additional southbound approach lane (total of five approach lanes) and stripe the southbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct two additional eastbound approach lanes (total of six approach lanes) and stripe the eastbound approach to provide two left turn lanes, three through lanes, and one right turn lane.
- Construct one additional westbound approach lane (total of five approach lanes) and stripe the westbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.

Paramount Boulevard (NS) at Firestone Boulevard (EW):

- Construct one additional northbound approach lane (total of five approach lanes) and stripe the northbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.
- Construct one additional southbound approach lane (total of five approach lanes) and stripe the southbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.
- Construct one additional eastbound approach lane (total of five approach lanes) and stripe the eastbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct one additional westbound approach lane (total of five approach lanes) and stripe the westbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.

Paramount Boulevard (NS) at Stewart & Gray Road (EW):

- No changes to the northbound approach.
- No changes to the southbound approach.
- Construct two additional eastbound approach lanes (total of five approach lanes) and stripe the eastbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct one additional westbound approach lane (total of four approach lanes) and stripe the westbound approach to provide two left turn lanes, one through lane, and one shared through-right turn lane.

Paramount Boulevard (NS) at Imperial Highway (EW):

- Construct one additional northbound approach lane (total of five approach lanes) and stripe the northbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.
- Construct one additional southbound approach lane (total of five approach lanes) and stripe the southbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct one additional eastbound approach lane (total of six approach lanes) and stripe the eastbound approach to provide two left turn lanes, three through lanes, and one right turn lane.
- Construct two additional westbound approach lanes (total of six approach lanes) and stripe the westbound approach to provide two left turn lanes, three through lanes, and one right turn lane.

Downey Avenue (NS) at Firestone Boulevard (EW):

- For the northbound approach, provide left turn protected and permitted phasing.
- For the southbound approach, provide left turn protected and permitted phasing.
- Construct one additional eastbound approach lane (total of five approach lanes) and stripe the eastbound approach to provide one left turn lane with protected and permitted phasing, three through lanes, and one right turn lane.
- For the westbound approach, provide left turn protected and permitted phasing.

Brookshire Avenue (NS) at Firestone Boulevard (EW):

- Construct two additional northbound approach lanes (total of five approach lanes) and stripe the northbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.
- Construct one additional southbound approach lane (total of five approach lanes) and stripe the southbound approach to provide two left turn lanes, two through lanes, and one right turn lane.

- Construct two additional eastbound approach lanes (total of six approach lanes) and stripe the eastbound approach to provide two left turn lanes, three through lanes, and one right turn lane.
- Construct two additional westbound approach lanes (total of six approach lanes) and stripe the westbound approach to provide two left turn lanes, three through lanes, and one right turn lane.

Lakewood Boulevard (NS) at Telegraph Road (EW):

- Construct two additional northbound approach lanes (total of six approach lanes) and stripe the northbound approach to provide two left turn lanes, two through lanes, and two right turn lanes.
- Construct one additional southbound approach lane (total of five approach lanes) and stripe the southbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct one additional eastbound approach lane (total of five approach lanes) and stripe the eastbound approach lane to provide two left turn lanes, two through lanes, and one shared through-right lane.
- Construct one additional westbound approach lane (total of five approach lanes) and stripe the westbound approach lane to provide two left turn lanes, two through lanes, and one shared through-right lane.

Lakewood Boulevard (NS) at Florence Avenue (EW):

- Construct one additional northbound approach lane (total of five approach lanes) and stripe the northbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.
- Construct one additional southbound approach lane (total of five approach lanes) and stripe the southbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.
- Construct one additional eastbound approach lane (total of five approach lanes) and stripe the eastbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.

- Construct one additional westbound approach lane (total of five approach lanes) and stripe the westbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.

Lakewood Boulevard (NS) at Firestone Boulevard (EW):

- Construct one additional northbound approach lane (total of five approach lanes) and stripe the northbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.
- Construct one additional southbound approach lane (total of five approach lanes) and stripe the southbound approach to provide two left turn lanes, two through lanes, and one shared through-right lane.
- Construct two additional eastbound approach lanes (total of six approach lanes) and stripe the eastbound approach to provide two left turn lanes, three through lanes, and one right turn lane.
- Construct one additional westbound approach lane (total of six approach lanes) and stripe the westbound approach to provide two left turn lanes, three through lanes, and one right turn lane.

Lakewood Boulevard (NS) at Stewart & Gray Road (EW):

- Construct three additional northbound approach lanes (total of six approach lanes) and stripe the northbound approach to provide two left turn lanes, three through lanes, and one right turn lane.
- Construct three additional southbound approach lanes (total of six approach lanes) and stripe the northbound approach to provide two left turn lanes, three through lanes, and one right turn lane.
- Construct one additional eastbound approach lane (total of five approach lanes) and stripe the eastbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct two additional westbound approach lanes (total of five approach lanes) and stripe the westbound approach to provide two left turn lanes, two through lanes, and one right turn lane.

Lakewood Boulevard (NS) at Imperial Highway (EW):

- Construct four additional northbound approach lanes (total of eight approach lanes) and stripe the northbound approach to provide three left turn lanes, three through lanes, and two right turn lanes.

- Construct two additional southbound approach lanes (total of six approach lanes) and stripe the southbound approach to provide two left turn lanes, three through lanes, and one right turn lane.
- Construct four additional eastbound approach lanes (total of eight approach lanes) and stripe the eastbound approach to provide two left turn lanes, four through lanes, and two right turn lanes.
- Construct two additional westbound approach lanes (total of six approach lanes) and stripe the westbound approach to provide three left turn lanes, two through lanes, and one shared through-right lane.

Lakewood Boulevard (NS) at Foster Road (EW):

- Construct two additional northbound approach lanes (total of six approach lanes) and stripe the northbound approach to provide two left turn lanes, three through lanes, and one right turn lane.
- Construct four additional southbound approach lanes (total of seven approach lanes) and stripe the southbound approach to provide two left turn lanes, four through lanes, and one right turn lane.
- Construct one additional eastbound approach lane (total of four approach lanes) and stripe the eastbound approach to provide two left turn lanes, one through lane, and one shared through-right lane.
- Construct one additional westbound approach lane (total of four approach lanes) and stripe the westbound approach to provide two left turn lanes, one through lane, and one shared through-right lane.

Bellflower Boulevard (NS) at Imperial Highway (EW):

- Construct one additional northbound approach lane (total of four approach lanes) and stripe the northbound approach to provide two left turn lanes, one through lane, and one shared through-right lane.
- Construct one additional southbound approach lane (total of four approach lanes) and stripe the southbound approach to provide two left turn lanes, one through lane, and one shared through-right lane.
- No changes to the eastbound approach.
- No changes to the westbound approach.

Woodruff Avenue (NS) at Stewart & Gray Road (EW):

- Construct one additional northbound approach lane (total of five approach lanes) and stripe the northbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct one additional southbound approach lane (total of five approach lanes) and stripe the southbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct one additional eastbound approach lane (total of five approach lanes) and stripe the eastbound approach to provide two left turn lanes, two through lanes, and one free right turn lane.
- Construct two additional westbound approach lanes (total of five approach lanes) and stripe the westbound approach to provide two left turn lanes, two through lanes, and one right turn lane.

Woodruff Avenue (NS) at Imperial Highway (EW):

- Construct one additional northbound approach lane (total of five approach lanes) and stripe the northbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct one additional southbound approach lane (total of five approach lanes) and stripe the southbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct two additional eastbound approach lanes (total of six approach lanes) and stripe the eastbound approach to provide two left turn lanes, three through lanes, and one right turn lane.
- Construct two additional westbound approach lanes (total of six approach lanes) and stripe the westbound approach to provide two left turn lanes, three through lanes, and one right turn lane.

Woodruff Avenue (NS) at Stewart & Gray Road (EW):

- Construct one additional northbound approach lane (total of five approach lanes) and stripe the northbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct one additional southbound approach lane (total of five approach lanes) and stripe the southbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct one additional eastbound approach lane (total of five approach lanes) and stripe the eastbound approach to provide two left turn lanes, two through lanes, and one free right turn lane.
- Construct two additional westbound approach lanes (total of five approach lanes) and stripe the westbound approach to provide two left turn lanes, two through lanes, and one right turn lane.

Woodruff Avenue (NS) at Imperial Highway (EW):

- Construct one additional northbound approach lane (total of five approach lanes) and stripe the northbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct one additional southbound approach lane (total of five approach lanes) and stripe the southbound approach to provide two left turn lanes, two through lanes, and one right turn lane.
- Construct two additional eastbound approach lanes (total of six approach lanes) and stripe the eastbound approach to provide two left turn lanes, three through lanes, and one right turn lane.
- Construct two additional westbound approach lanes (total of six approach lanes) and stripe the westbound approach to provide two left turn lanes, three through lanes, and one right turn lane.

Note: The Traffic Study appendix was too large to include in the Appendix to the Downey Vision 2025 General Plan Update EIR. The Technical Appendix to the Downey Traffic Study is available by calling Bob Rusby at The Planning Center at (714) 966-9220.