

3

Mobility Element

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3.1 INTRODUCTION



The Mobility Element of the General Plan represents the City's overall transportation management plan. The transportation plan includes both the physical transportation system itself such as streets, highways, rail lines, bicycle routes and sidewalks, as well as the various modes of transportation such as cars, buses, trucks, trains, bicycles, ridesharing, on demand service and pedestrians using these facilities. The City also recognizes the emergence of automated (self-driving) and inter-connected vehicles and the implications that this technology could have on the workforce, land use, urban design, and public transportation infrastructure. These various modes of transportation provide for the movement of people, goods, and products throughout the City. The circulation and transportation system provide a vital role in shaping, managing and operating the overall form and structure as well as economic development of the City as it connects various parts of the City internally and externally to the surrounding region.

In addition to the traditional vehicular transportation planning needs of the General Plan, the Mobility Element also addresses inter-connected transit and active transportation modes (pedestrians, bikeshare programs, and bicycles) to the level that recognizes the City's commitment toward advancing transportation innovation as well as long term sustainability as outlined in SB 375 (Senate Bill 375 The Sustainable Communities and Climate Protection Act of 2008 which supports the State's climate action goals to reduce greenhouse gas emissions through coordinated transportation and land use planning with the goal of more sustainable communities.)

The Mobility Element also encompasses the philosophies and requirements outlined in AB 1358 and SB 1000 (Assembly Bill 1358 Complete Streets Act of 2008, Senate Bill 1000) by planning for an interconnected multi-modal transportation network that meets the needs of all users of streets, roads, and highways, including motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation.



The emergence of autonomous vehicles and other advanced mobility technologies (i.e., digital infrastructure) will require deliberate preparation and ongoing management and operation of the City's transportation system to ensure a safe, clean and efficient system for all segments of the community. Therefore, the Mobility Element incorporates autonomous vehicle policy provided by the National Association of City Transportation Officials' (NACTO) Policy Statement on Automated Vehicles,¹ released in 2016, and other resources with the understanding that approaches for integrating autonomous vehicles into the City's transportation system will evolve over time as new data and best practices become available. While the development and implementation of autonomously operating vehicles is largely driven by the private sector, public sector transportation professionals need to start looking at the interconnection of autonomous vehicles with public transportation management systems and adaptive traffic signal timing systems. At the time of this writing, autonomous and interconnected vehicle technologies are emerging industries that will evolve quickly over time rendering first generations of these technologies obsolete. The City's focus in this area is to better understand

¹ National Association of City Transportation Officials (NACTO), Policy Statement on Automated Vehicles, published June 22, 2016

how interconnection technologies should be built into the backbone traffic management system with scalability to ensure that public infrastructure can adapt to meet the needs of autonomous vehicle technology now and in the future.

The Mobility Element is closely related to the Land Use Element, since the circulation system must adequately handle future traffic conditions and provide the means to move people and goods through and within the City of Placentia. As vehicle ownership decreases and reliance on shared automated vehicle fleets increases, the City must also ensure that land use and infrastructure planning allow for adaptability and can capitalize on new mobility technologies.

Placentia shares its borders with the City of Fullerton to the west and Anaheim to the south. Many of Placentia's arterial roadways extend beyond the City's borders into these neighboring cities and beyond. Land use decisions and traffic patterns in these adjacent cities therefore have the potential to affect the quality of traffic flow and mobility in the City of Placentia, and in turn, traffic conditions and decisions made by the City of Placentia can affect these neighboring cities.

Many of the local, state, and regional transportation agencies encourage coordination of mobility elements among local planning agencies, and funding for new infrastructure and the maintenance of existing infrastructure can benefit from a regional approach.

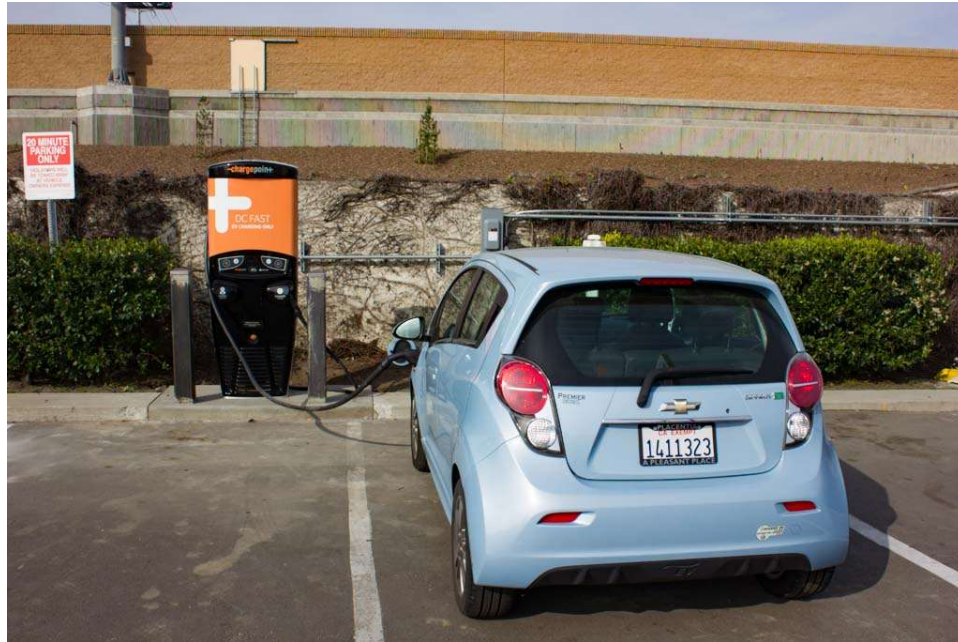
One such agency is the Southern California Associate of Governments (SCAG) which is a Joint Powers Authority under California state law. It was established as an association of local governments and agencies that voluntarily convene to address regional issues. In addition, federal law, SCAG is designated as a Metropolitan Planning Organization (MPO) and under state law as a Regional Transportation Planning Agency and a Council of Governments. The agency develops long-range regional transportation plans including sustainable communities strategy and growth forecast components, regional transportation improvement programs, regional housing needs allocations and a portion of the South Coast Air Quality management plans.

The California Department of Transportation (Caltrans) is particularly interested in the transportation planning roles of local general plans and suggests that the following areas should be considered, with a goal of resolving transportation problems early enough in the process to avoid costly delays:

- Coordination of planning efforts between local agencies and Caltrans districts
- Preservation of transportation corridors for future multimodal system improvements;
- Development of coordinated transportation system management plans that include multimodal and transportation system demand strategies to achieve the optimal use of present and proposed infrastructure; and

- Identification of complete streets and multimodal improvements on state highway routes
- Coordinating state and local transportation planning is a key to the success of a mobility element

3.2 PRESENT DAY TRANSPORTATION SYSTEM



The City of Placentia is served by various major transportation facilities including two State Highways, major north-south and east-west arterials, and minor north-south and east-west roadways. Placentia also has a major transit provider, the Orange County Transportation Authority (OCTA), and one freight rail line (BNSF), on which the Southern California Regional Rail Authority (SCRRA, or Metrolink) operates a commuter rail line. Placentia has adopted two streetscape master plans for both its Transit Oriented District and Old Town Placentia project areas which are based on the “complete streets” concepts with the goal to enhance pedestrian facilities with improvements to sidewalks, curb ramps, signage, lighting, and streetscape amenities. Both master plans also expand multi-modal access to the planned Metrolink Station strategically located in between both project areas by adding dedicated Class II bike lanes, narrower roads and one-way traffic to slow vehicle speeds, landscape improvements and pedestrian buffers, all with the intent to enhance the pedestrian and bicycle environment. In the Transit Oriented Development District (see Land Use Map), one development in particular has an opportunity to connect directly to the Metrolink platform.

Roadways, Designated Truck Routes, and Analysis of Present-Day Traffic Conditions

The Orange County Master Plan of Arterial Highways (MPAH) establishes a countywide surface roadway network intended to provide a guideline for the development of an inter-community arterial highway system to effectively serve existing and future land uses in the County. The MPAH provides a tool for coordination of the transportation and land use planning and implementation processes engaged in by the various cities, the County, and adjacent jurisdictions. Consistency with the MPAH ensures that each city and the County implement the same base transportation network using similar standards and assumptions. The Orange County 2017 MPAH network is shown on Exhibit 3-1.

The two principal goals of the MPAH are to provide a countywide circulation (arterial highway) system to accommodate regional travel demand, and to provide an arterial highway system that supports City and County land use policies. Consistency with the MPAH is required for local agencies to be eligible for Orange County Measure M2 funding. Local agency mobility elements are required to include all roadways that are included on the MPAH, and to be consistent with the functional classifications described in the MPAH and shown on the MPAH map.

Exhibit 3-1. Orange County Master Plan of Arterial Highway (MPAH)

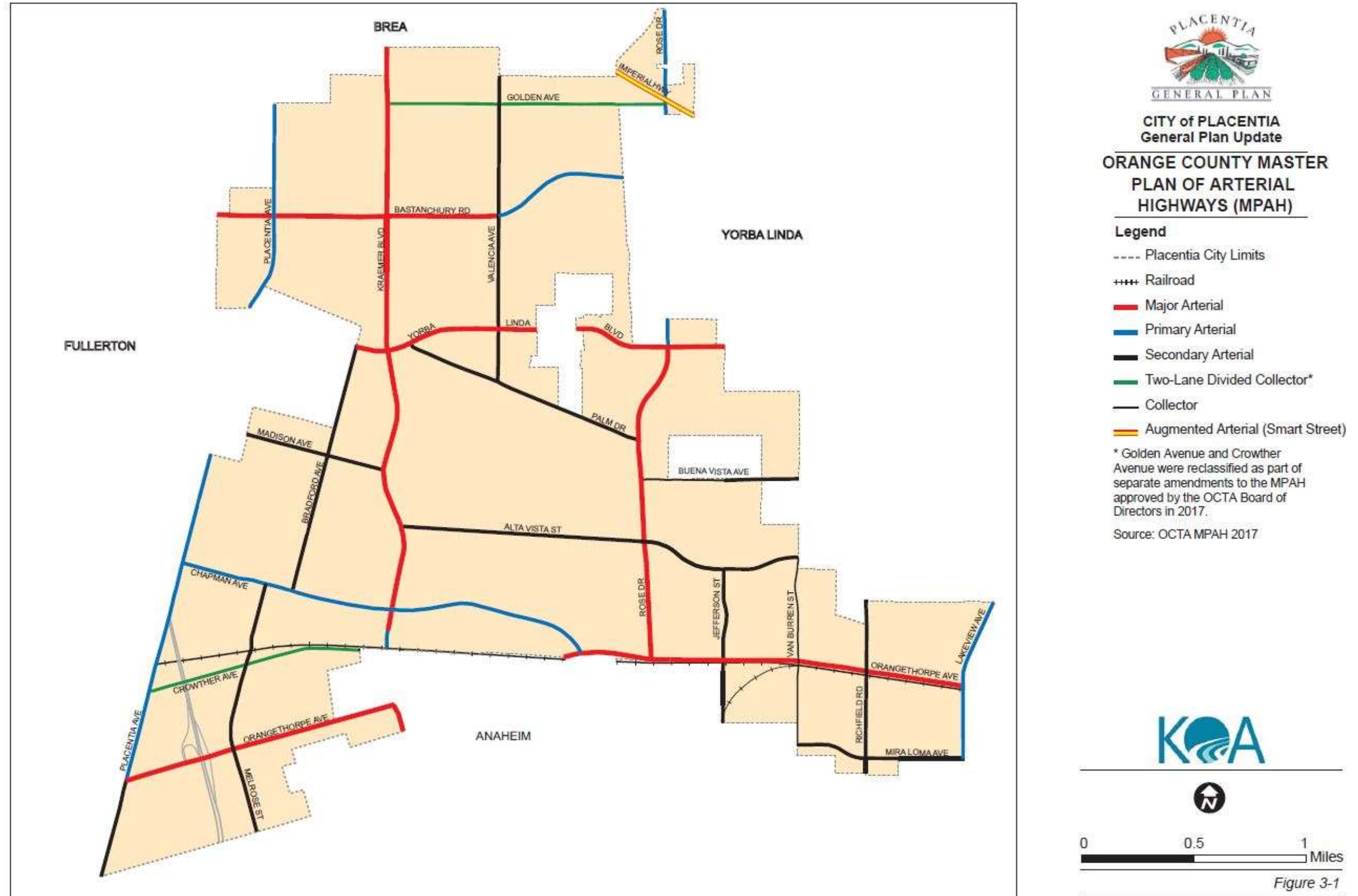
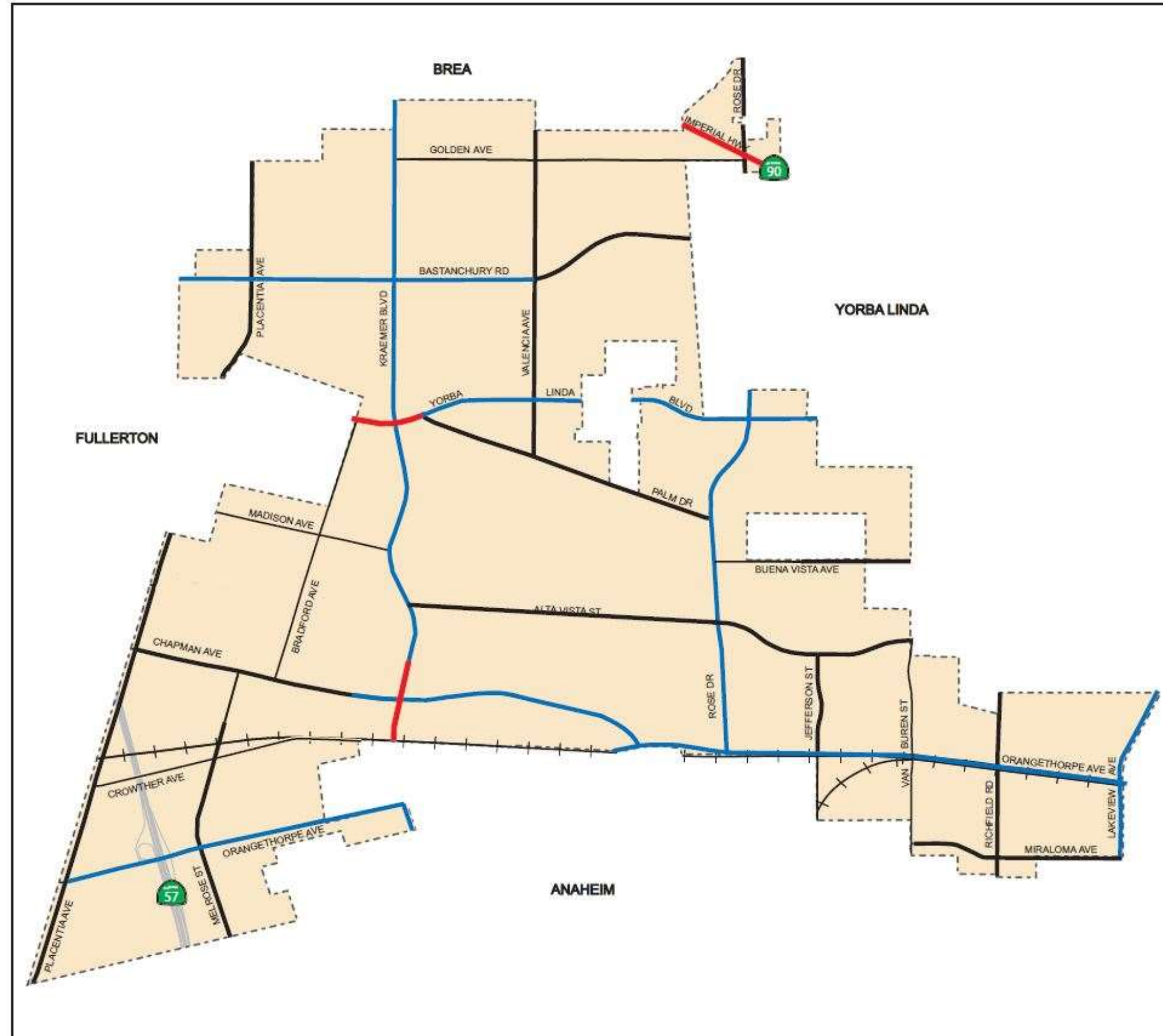


Exhibit 3-2A. Existing Roadway Conditions



CITY of PLACENTIA
General Plan Update

Existing Roadway Conditions

Legend

- Placentia City Limits
- ++++ Railroad
- Red line Major Arterial
- Blue line Primary Arterial
- Thick black line Secondary Arterial
- Thin black line Collector



0 2,500 5,000
Feet

Figure 3-2

There are eight major functional classifications of streets included in the MPAH, including smart streets, principal arterials, major arterials, primary arterials, secondary arterials, divided collector, collectors, and local streets. These various classifications have been developed to provide regional traffic movement and local access. The principal, major and primary arterial classifications, and smart streets primarily serve through traffic. Secondary, divided collector and collector arterial highways or streets function as collectors funneling traffic from local streets to primary, major, and principal arterials. Each functional classification that exists within the City of Placentia is described below, along with the specific roadways falling within each classification. The majority of the major, primary and secondary arterials within the City are built out to their full paved cross sections, with curb, gutter and sidewalk.

Table 3-1 provides a general description of the existing configurations of the major streets in the City.

Table 3-1. General Description of Roadways, Existing Conditions

Roadway	Functional Classification	Existing Lanes ¹	LOS E Capacity
Imperial Highway*	Major Arterial	6D	56,300
Golden Avenue*	Collector	2U	12,500
Bastanchury Road (Valencia Avenue to Eastern City Limit)	Secondary Arterial	4U	25,000
Bastanchury Road (Western City Limit to Valencia Ave)	Primary Arterial	4D	37,500
Yorba Linda Boulevard (Western City Limit to Palm Drive)	Major Arterial	6D	56,300
Yorba Linda Boulevard (Palm Drive to Eastern City Limit)	Primary Arterial	4U/4D	37,500
Palm Drive	Secondary Arterial	2U/4U/4D	25,000
Madison Avenue	Collector	2U	12,500
Buena Vista Avenue (Rose Drive to Westmore Drive)	Collector	2U	12,500
Buena Vista Avenue (Westmoreland Drive to Eastern City Limit)	Secondary Arterial	4U/4D	25,000
Alta Vista Street	Secondary Arterial	2U/4U/4D	25,000
Chapman Avenue (Western City Limit to Angelina Drive)	Secondary Arterial	4U	25,000
Chapman Avenue (Angelina Drive to Orangethorpe Avenue)	Primary Arterial	4D	37,500

Roadway	Functional Classification	Existing Lanes ¹	LOS E Capacity
Crowther Avenue*	Collector	2U/2D/4U	12,500
Orangethorpe Avenue (Western City Limit to Kraemer Boulevard)	Primary Arterial	6D/4U	37,500
Orangethorpe Avenue (BNFS rail track to Eastern City Limit)	Primary Arterial	4D	37,500
Miraloma Avenue	Secondary Arterial	4U	25,000
Placentia Avenue (Southern City Limit to Ruby Drive)	Secondary Arterial	4D	25,000
Placentia Avenue (Macadamia Lane to Northern City Limit)	Secondary Arterial	4U/4D	25,000
Melrose Street (Santa Fe Avenue to Southern City Limit)	Secondary Arterial	3D/4U/4D	25,000
Melrose Street (Santa Fe Avenue to Chapman Avenue)	Collector	2U	
Bradford Avenue	Collector	2U	12,500
Kraemer Boulevard (Connecticut Way to Northern City Limit)	Primary Arterial	4D	37,500
Kraemer Boulevard (Southern City Limit to Connecticut Way)	Major Arterial	6D	56,300
Valencia Avenue	Secondary Arterial	4U	25,000
Rose Drive	Primary Arterial	4D	37,500
Jefferson Street (Alta Vista Street to Orangethorpe Avenue)	Secondary Arterial	4U	25,000
Jefferson Street (Orangethorpe Avenue to Southern City Limit)	Collector	2U	12,500
Richfield Road	Secondary Arterial	4U	25,000
Lakeview Avenue	Primary Arterial	3U/3D/4U/4D	37,500
Van Buren Street	Secondary Arterial	2U/2D	12,500

SOURCE: KOA Corporation, 2012 Note 1: U = Undivided; D = Divided

*Golden Avenue and Crowther Avenue were reclassified as part of separate amendments to the MPAH approved by the OCTA Board of Directors in 2017

Table 3-2 lists a description of the 2040 General Plan configurations of the major streets in the City, based on the Orange County MPAH.

Table 3-2. General Description of Roadways, MPAH Conditions

Roadway	Functional Classification	MPAH Lanes ¹	LOS E Capacity
Imperial Highway	Smart Street	6D	56,300
Golden Avenue*	Divided Collector	2D	22,000
Bastanchury Road (Valencia Avenue to Eastern City Limit)	Primary Arterial	4D	37,500
Bastanchury Road (Western City Limit to Valencia Avenue)	Major Arterial	6D	56,300
Yorba Linda Boulevard	Major Arterial	6D	56,300
Palm Drive	Secondary Arterial	4U	25,000
Madison Avenue	Secondary Arterial	4U	25,000
Buena Vista Avenue (Rose Drive to Jefferson Street)	Collector	2U	12,500
Buena Vista Avenue (Rose Drive to Jefferson Street)	Secondary Arterial	4U	25,000
Alta Vista Street	Secondary Arterial	4U	25,000
Chapman Avenue	Primary Arterial	4D	37,500
Crowther Avenue*	Collector	2D	22,000
Orangethorpe Avenue	Major Arterial	6D	56,300
Miraloma Avenue	Secondary Arterial	4U	25,000
Placentia Avenue (Northern City Limit to Orangethorpe Avenue)	Primary Arterial	4D	37,500
Placentia Avenue (Orangethorpe Avenue to Southern City Limit)	Secondary Arterial	4U	25,000
Melrose Street	Secondary Arterial	4U	25,000
Bradford Avenue	Secondary Arterial	4U	25,000
Kraemer Boulevard (Northern City Limit to Hawaii Way)	Major Arterial	6D	56,300

Roadway	Functional Classification	MPAH Lanes ¹	LOS E Capacity
Kraemer Boulevard (Hawaii Way to Southern City Limit)	Primary Arterial	4D	37,500
Valencia Avenue	Secondary Arterial	4U	25,000
Rose Drive (Northern City Limit to Yorba Linda Boulevard)	Primary Arterial	4D	37,500
Rose Drive (Yorba Linda Boulevard to Southern City Limit)	Major Arterial	6D	56,300
Jefferson Street	Secondary Arterial	4U	25,000
Richfield Road	Secondary Arterial	4U	25,000
Lakeview Avenue	Primary Arterial	4D	37,500
Van Buren Street	Collector	2U	12,500

SOURCE: OCTA MPAH 2017

*Golden Avenue and Crowther Avenue were reclassified as part of separate amendments to

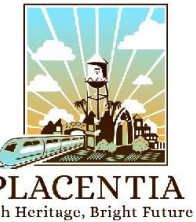
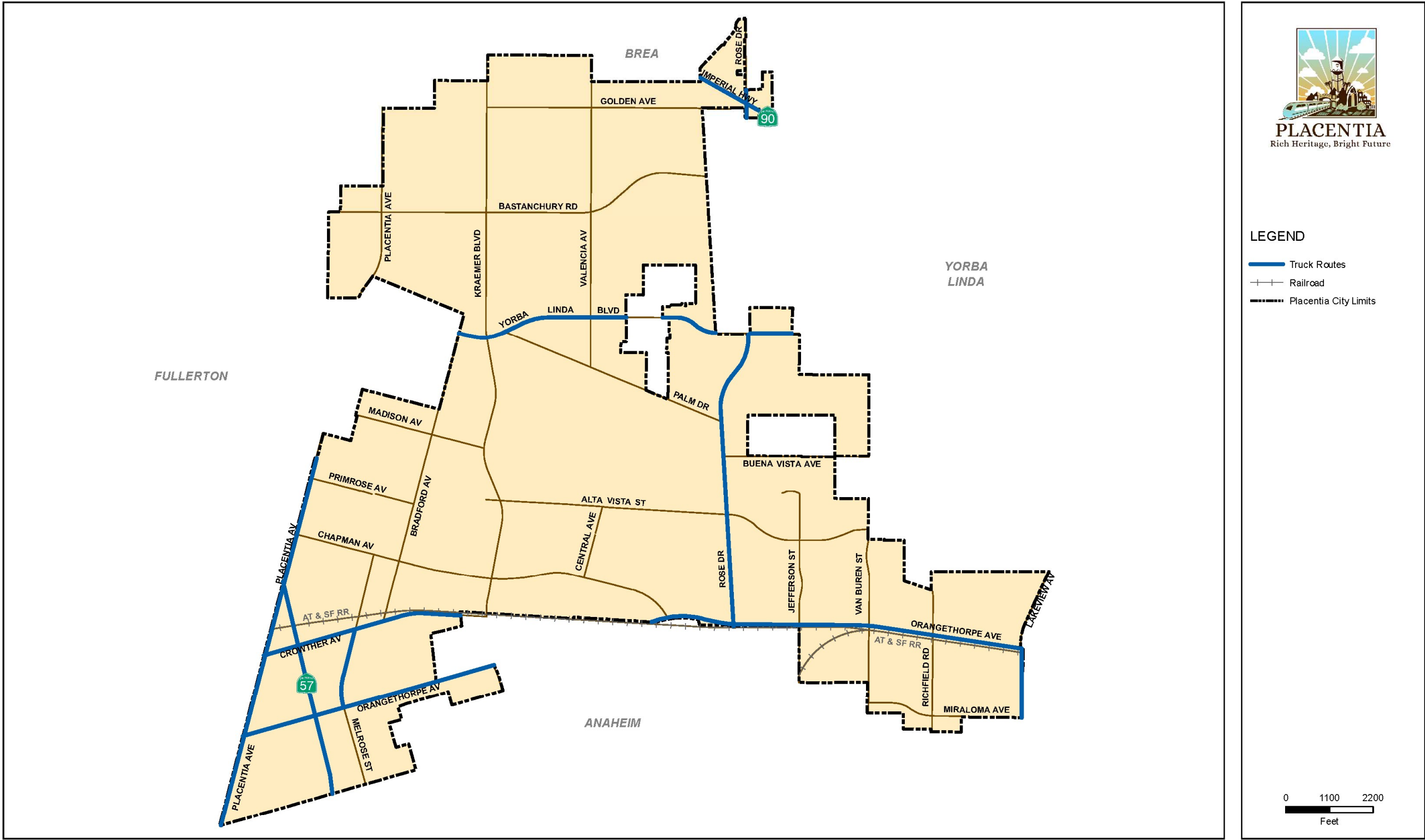
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the MPAH approved by the OCTA Board of Directors in 2017. Imperial Highway is a Caltrans highway.

Note 1: U = Undivided; D = Divided

The City of Placentia has designated truck routes that allow for the movement of truck traffic where they would cause the least amount of neighborhood intrusion, and where noise and other impacts on residential areas and other sensitive land uses would be minimized. Figure 3-2 (Existing Truck Routes) shows the City's truck routes along the Orange Freeway (SR-57), Placentia Avenue, Melrose Street, Rose Drive, Lakeview Avenue, Imperial Highway, Yorba Linda Boulevard, Chapman Avenue, Crowther Avenue, and Orangethorpe Avenue. Crowther Avenue will be removed from the approved list of truck routes once the TOD project area is fully developed.

Exhibit 3-3. Existing Truck Routes



LEGEND

- Truck Routes
- Railroad
- Placentia City Limits

0 1100 2200
Feet

Truck Routes

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Level of Service Criteria

Orange County Congestion Management Program (CMP) criteria and the City's traffic study guidelines were used to establish assessment criteria for long-range impacts of the projected growth in the City's planning area. Two types of analyses are used to assess traffic: The Intersection Capacity Utilization (ICU) and the Highway Capacity Manual (HCM) methodologies, both of which were used to measure existing and future traffic. The ICU method measures capacity levels (reserve capacity or overcapacity), while the HCM method quantifies delay. The City's current General Plan defines LOS D as an acceptable level of service, while Orange County defines LOS E as acceptable for CMP intersections. The City of Placentia has five CMP intersections: Rose Drive and Del Cerro Drive; Del Cerro Drive and Orangethorpe Avenue; Rose Drive and Imperial Highway; State Route (SR) 57 northbound ramps and Orangethorpe Avenue; and SR 57 southbound ramps and Orangethorpe Avenue.

Roadway Segment Level of Service Definition

Roadway segment level of service or operating conditions is generally defined in terms of a scale ranging from LOS A (free flow) to LOS F (highly congested). Forecasting the expected daily traffic volume for each roadway segment and comparing this volume to the appropriate Level of Service capacity for that roadway classification determines level of service. The daily traffic volume is forecast based on the County traffic model forecast. Level of service criteria for roadway segments was obtained from the document Guidance for Administration of the Orange County Master Plan of Arterial Highways (OCTA, August 14, 2017), as defined in Table 3-3 below.

Table 3-3. Roadway Segment Level of Service Definitions

Level of Service	Interpretation
A	LOS A describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow
B	LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the
C	LOS C describes stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is

Level of Service	Interpretation
D	LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E	LOS E is characterized by unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is
F	LOS F is characterized by flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections has a volume-to-capacity ratio greater than 1.0.

SOURCE: Guidance for Administration of the Orange County Master Plan of Arterial Highways (OCTA, August 14, 2017)

The MPAH defines the goal for highway design capacity as providing a Level of Service C or better on arterial highway links. The LOS indicators are based on the volume of traffic for designated sections of roadway during a typical day and the practical vehicular capacity of that roadway segment. These indicators are used to illustrate general traffic conditions along the City's roadways. They are not necessarily an indicator of specific operational issues or needs on a specific roadway segment.

For planning purposes, the MPAH assigns roadway capacities and levels of service based on number of lanes and roadway classification. The Mobility Element uses these established maximum roadway capacities along with the roadway daily traffic volumes to determine level of service for the roadway segments. Roadway segment level of service thresholds based on maximum roadway capacity, number of lanes and roadway classification are shown in Table 3-4.

Table 3-4. Roadway Segment Level of Service Thresholds

Facility Type	Lane Configuration	Levels of Service					
		A	B	C	D	E	F
Principal Arterial	8 Lanes Divided	45,000	52,500	60,000	67,500	75,000	—
Major ¹	6 Lanes Divided	33,900	39,400	45,000	50,600	56,300	—
Primary ²	4 Lanes Divided	22,500	26,300	30,000	33,800	37,500	—

Facility Type	Lane Configuration	Levels of Service					
		A	B	C	D	E	F
Divided Collector	2 Lanes Divided	9,000	12,000	15,000	20,000	22,000	
Secondary	4 Lanes Undivided	15,000	17,500	20,000	22,500	25,000	–
Collector	2 Lanes Undivided	7,500	8,800	10,000	11,300	12,500	–

Note 1: Includes “Modified Major”

Note 2: Includes “Modified Primary”

SOURCE: Guidance for Administration of the Orange County Master Plan of Arterial Highways (OCTA, August 14, 2017)

As indicated, roadway segment level of service is based on a range of traffic volumes by functional roadway classification. It indicates the appropriate roadway classification and number of through travel lanes for roadways based upon expected daily usage. Daily roadway capacity and level of service is most appropriately used as a screening check to determine the need for more detailed peak hour analysis and to assist in determining the appropriate mitigation measures. In the City of Placentia, all roadway segments operate at an acceptable level of service.

Intersection Level of Service Definition

Intersection level-of-service is used to both quantitatively and qualitatively describe operating conditions at both signalized and unsignalized roadway intersections. Level of Service for intersections is a report-card scale used to indicate the quality of traffic flow. Levels of service range from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion). Brief definitions of intersection level of service are described in Table 3-5. The intersection level-of-service analysis is based on both the ICU and HCM methodologies. The ICU methodology is generally based on critical volume/capacity ratios, and the HCM methodology is based on average delay at the intersection. The AM and PM peak hour level-of-service analyses were conducted for the study intersections based on these methodologies. The reported level-of-service is for the “worst case” analysis (either ICU or HCM method). Table 3-5 presents the relationship between level of service and ICU, and level of service and stop delay for signalized intersections, and level of service and stop delay for unsignalized intersections. Table 3-6 provides intersection LOS thresholds based on the HCM method of delay.

Table 3-5. Intersection Level of Service Definitions

Level of Service	Definition
A	EXCELLENT. No Vehicle waits longer than one red light and no approach phase is fully used.
B	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups
C	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit
E	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles
F	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

SOURCES: Transportation Research Board, *Highway Capacity Manual* (2000); Orange County Transportation Authority, *Orange County Congestion Management Plan* (October

Table 3-6. Intersection Level of Service Thresholds

Level of Service	Intersection Capacity	Signalized Intersection Control Delay	Unsignalized Intersection Control
A	0.000-0.600	0 – 10	0 – 10
B	0.601-0.700	10.1 – 20	10.1 – 15
C	0.701-0.800	20.1 – 35	15.1 – 25
D	0.801-0.900	35.1 – 55	25.1 – 35
E	0.901-1.000	55.1 – 80	35.1 – 50
F	> 1.000	More than 80	More than 50

Note 1: Applies to both boulevard stop and all-way stop intersections

SOURCE: Transportation Research Board, *Highway Capacity Manual* (2010)

Traffic counts obtained by the City and OCTA were utilized to calculate the level-of-service values for the 42 study intersections. The peak hour factors based on the counts were used for the existing LOS values calculations. The majority of the City's intersections are operating at an acceptable Level of Service D or better condition for both the AM and PM peak hours. However, in 2017 there were two signalized

study intersections operating at unacceptable LOS E or LOS F conditions during the AM peak hour:

- Morse Avenue at Kraemer Boulevard during the AM peak hour
- Madison Avenue at Kraemer Boulevard during the AM peak hour

These two intersections on Kraemer Boulevard are part of the Regional Traffic Signal Synchronization Program (TSSP). At the time of this writing, the signal timing plans are still being prepared and there will be a subsequent two-year maintenance and operation period where the timing will be analyzed and refined during this time as needed. The traffic operation at these two intersections is expected to be improved after the implementation of TSSP is completed.

Intersection Improvements for Current General Plan Scenario

Recommended measures to improve operating conditions at six specific intersections under the Current General Plan Scenario are presented below. The proposed improvements are expected to mitigate the negative effects of increased traffic through incorporation of various traffic control and intersection capacity improvement measures.



Traffic volumes at the intersection of Rose Avenue and Imperial will increase primarily as a result of regional traffic growth. This increase in traffic volumes will require improvements to this intersection by 2040. This intersection and traffic signal is owned and managed by Caltrans and the City has a limited amount of right-of-way near the intersection. City staff are working with Caltrans staff to incorporate the modest mitigation measure noted above in Caltrans' budget and work plan. The following improvements are recommended to improve traffic conditions:

- Install Westbound Right-Turn Overlap Traffic Signal Phasing
- Optimize Signal Timing

These changes will improve operating conditions at the intersection of Rose Drive at Imperial Highway to Level of Service E, considered acceptable for State Highway intersections. Proposed General Plan Intersection impacts result in the Rose/Imperial intersection operating at LOS E AM and LOS E PM.

Kraemer Boulevard at Morse Avenue

This intersection is currently operating at a LOS value of F during the AM peak hour. The intersection would continue to operate at a LOS value of F during the AM peak hour under the current General Plan scenario. The following improvements are therefore recommended to improve operating conditions:

- Restripe the westbound left-through lane to a left-turn only lane
- Restripe the westbound right-turn only lane to through-right turn lane

This change will improve operating conditions at the intersection of Kraemer Boulevard and Morse Avenue to a LOS value of B during the AM peak hour. This intersection is part of the Regional TSSP. The traffic operation at this intersection is expected to be improved after the implementation of TSSP is completed.

Rose Drive at Palm Drive

The regional growth in traffic will result in traffic volume increases on Rose Drive which will require improvements to this intersection by 2040. Additional southbound through capacity will be required to improve operating conditions during the AM peak hour. This will be consistent with the MPAH. The southbound approaches at the intersection currently include one left-turn only lane, one through lane and one through-right turn lane. The through-right turn lane is approximately 21 feet wide. Therefore, the study considered a defacto right-turn lane under the existing conditions for LOS analysis.

The following improvements are therefore recommended at the intersection of Rose Drive and Palm Drive, and the proposed improvement can be accomplished by restriping alone:

- Restripe the southbound approaches to the following configuration:
 - 1 left-turn only lane
 - 2 through lanes
 - 1 through-right turn lane

This change will improve operating conditions at the intersection to a LOS value of C during the AM peak hour, considered acceptable by the City.

Chapman Avenue at Kraemer Boulevard

Additional northbound left-turn capacity will be required to improve operating conditions at this intersection during the PM peak hour. The following improvements are therefore recommended at the intersection of Kraemer Boulevard and Chapman Avenue to improve operating conditions:

- Northbound left-turn phasing changed from protected to protected and permissive

This change will improve operating conditions at the intersection from a LOS value of E to a LOS value of C during the PM peak hour. This intersection is part of the Kraemer Boulevard Regional TSSP. The traffic operation at this intersection is expected to be improved after the implementation of the TSSP is completed.

Orangethorpe Avenue at SR-57 Northbound Off Ramp

Expected traffic volumes increases on Orangethorpe Avenue at SR -57 Freeway, due primarily to regional traffic growth will require capacity improvements to maintain acceptable operating conditions. The following improvements are recommended to improve traffic conditions:

- Restripe the Northbound Off Ramp to the following configuration:
 - 1 left-turn only lane
 - 1 left-right shared lane
 - 1 right-turn only lane

This change will improve operating conditions at the intersection of Orangethorpe Avenue at SR -57 Northbound Ramps from a LOS value of E to a LOS value of C during the PM peak hour.

Orangethorpe Avenue at Melrose Street

Additional northbound left-turn capacity will be required to improve operating conditions at this intersection during the PM peak hour. The following improvements are recommended to improve traffic conditions at this intersection:

- Northbound left-turn phasing changed from protected to protected and permissive
- This change will improve operating conditions at this intersection from a LOS value of F to a LOS value of C during the PM peak hour.

Transit Service

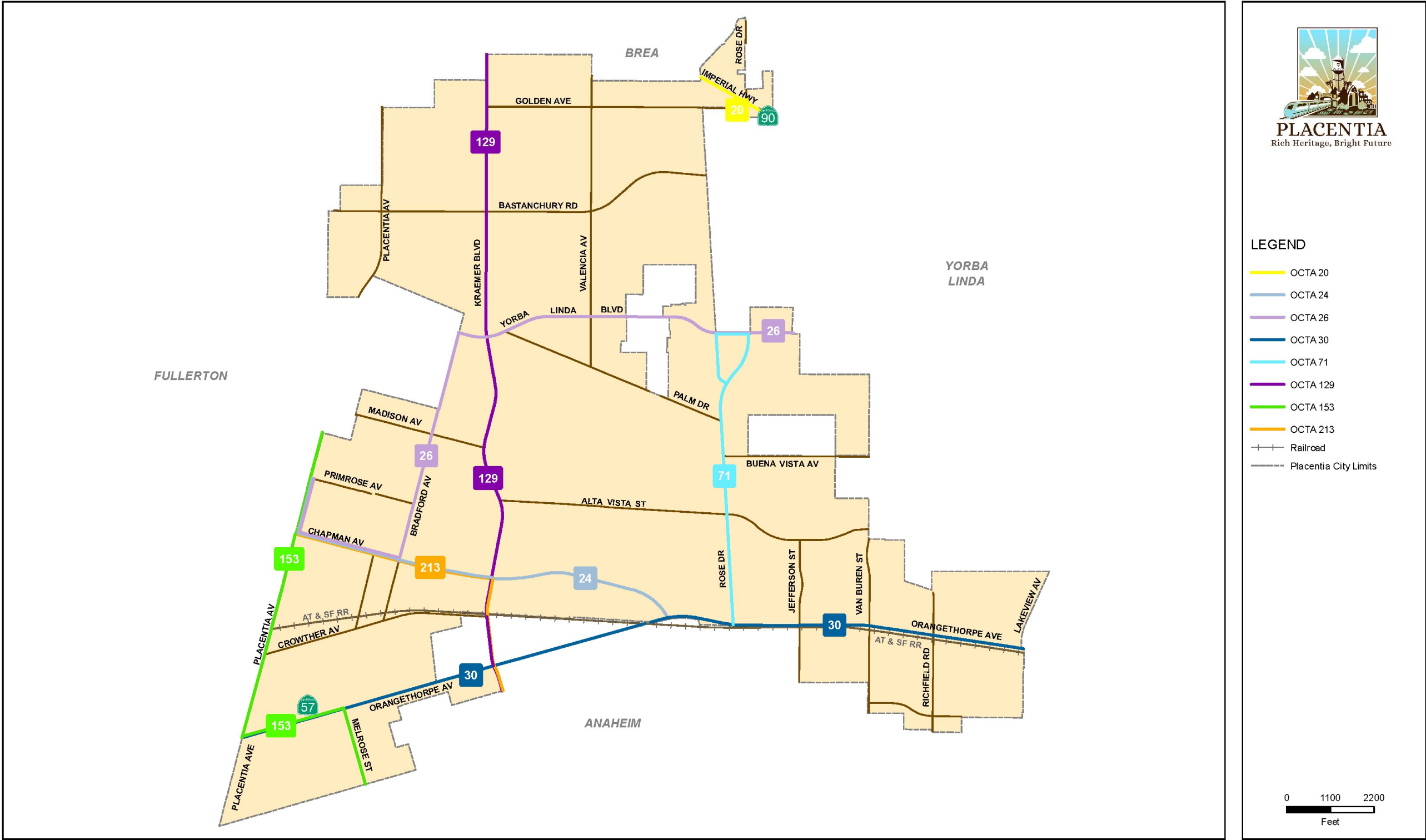


The Orange County Transportation Authority (OCTA) provides fixed route bus, commuter bus and paratransit services within the City. OCTA operates seven fixed bus routes providing service to Placentia, La Habra, Brea, Yorba Linda, Orange, Anaheim, Fullerton, Santa Ana, and other cities. Bus stops are located approximately 0.25 mile apart along major routes in the City. Most routes operate 7 days a week. Figure 3-3 provides a map of the existing transit routes in the City of Placentia.

The following provides brief descriptions of each transit route serving the City:

- OCTA Route 24 travels from the City of Buena Park to the City of Orange via Malvern Avenue, Chapman Avenue, and Tustin Avenue. This route operates Monday through Friday with weekday headways of 60 minutes AM and PM peak periods
- OCTA Route 26 travels along Chapman Avenue, Bradford Avenue, and Yorba Linda Boulevard with the eastern extent and western extent respectively Placentia Avenue and Rose Drive. The route has weekday headways of 15/30 minutes AM and PM peak periods.
- OCTA Route 30 travels from the City of Cerritos to the City of Anaheim via Orangethorpe Avenue. This route operates both weekdays and weekends and has a weekday headways of 30 minutes AM and PM peak periods.
- OCTA Route 71 travels along Rose Drive within the City of Placentia with Yorba Linda Boulevard and Orangethorpe Avenue being its north and south extents respectively. This route operates with a Monday through Friday headway of thirty minutes and a fifty-minute interval Saturday and Sunday.

Exhibit 3-4. Existing Transit Routes



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OCTA Route 129 operates along Kraemer Boulevard within the City of Placentia with the north and south extents being Golden Avenue and Orangethorpe Avenue respectively. This route operates both weekdays and weekends with a headway of 65-minute AM and PM peak periods.

- OCTA Route 153 travels Placentia Avenue, Orangethorpe Avenue, and Melrose Street within the City of Placentia. The routes north and south operation extents respectively are Madison Avenue and La Jolla Street. This route operates on both weekdays and weekends, and weekday headways of 45 minutes AM peak and 50-minute PM peaks.
- OCTA Route 213/A travels along Chapman Avenue and Kraemer Boulevard with operation extents of Placentia Avenue and La Jolla Street within the City of Placentia. This route operates Monday through Friday with an average headway of 30 minutes.

OCTA will be adding a new bus stop on Crowther Avenue to serve the new Placentia Metrolink Station and may consider rerouting an existing bus route to serve this new bus stop.

As part of OCTA's Senior Mobility Program (SMP), the City of Placentia provides a curb-to-curb Dial-A-Ride transportation service for Seniors 65 and older and persons with disabilities who are residents of the City of Placentia. It operates Monday through Friday (except holidays) from 7:30 AM until 4:30 PM to destinations within Placentia as well as Saint Jude Medical Center. The OCTA ACCESS program provides paratransit service for disabled persons. Vanpool service is available by local privately-owned companies to major destinations such as commercial and employment centers.

Bicycle and Pedestrian Facilities



As the principal non-motorized transportation modes, bicycling and pedestrian options in conjunction with improved transit availability and flexibility are cost-effective ways of reducing congestion, improving air quality, and achieving mobility goals. Meeting the needs of residents and visitors for non-transportation options by providing additional bikeway facilities and programs will contribute toward reaching the City's transportation goals.

The Mobility Element contains goals and policies to enable the City to develop and adopt a bicycle master plan in the future. The Mobility Element and recommended future bicycle master plan will enable the City of Placentia to become eligible for a variety of outside funding sources to implement the bicycle master plan.

The City of Placentia currently has over 13.2 miles of existing bikeways, including 1 mile of Class I bike paths, 8 miles of Class II bike lanes, and 4 miles of Class III bike routes. An additional 4 miles of Class I, 11.4 miles of Class II, and 2.6 miles of Class III bikeways are planned.

The existing and proposed Placentia bikeway network is shown on Figure 3-4. The three existing bikeway facility types provided for in the City are described below – Class I bike paths (off-road paved), Class II bike lanes (on-road striped and signed), and Class III bike routes (on-road signed). The City shall continually seek out new opportunities to implement new bike facilities throughout the community.

Class I Bike Paths

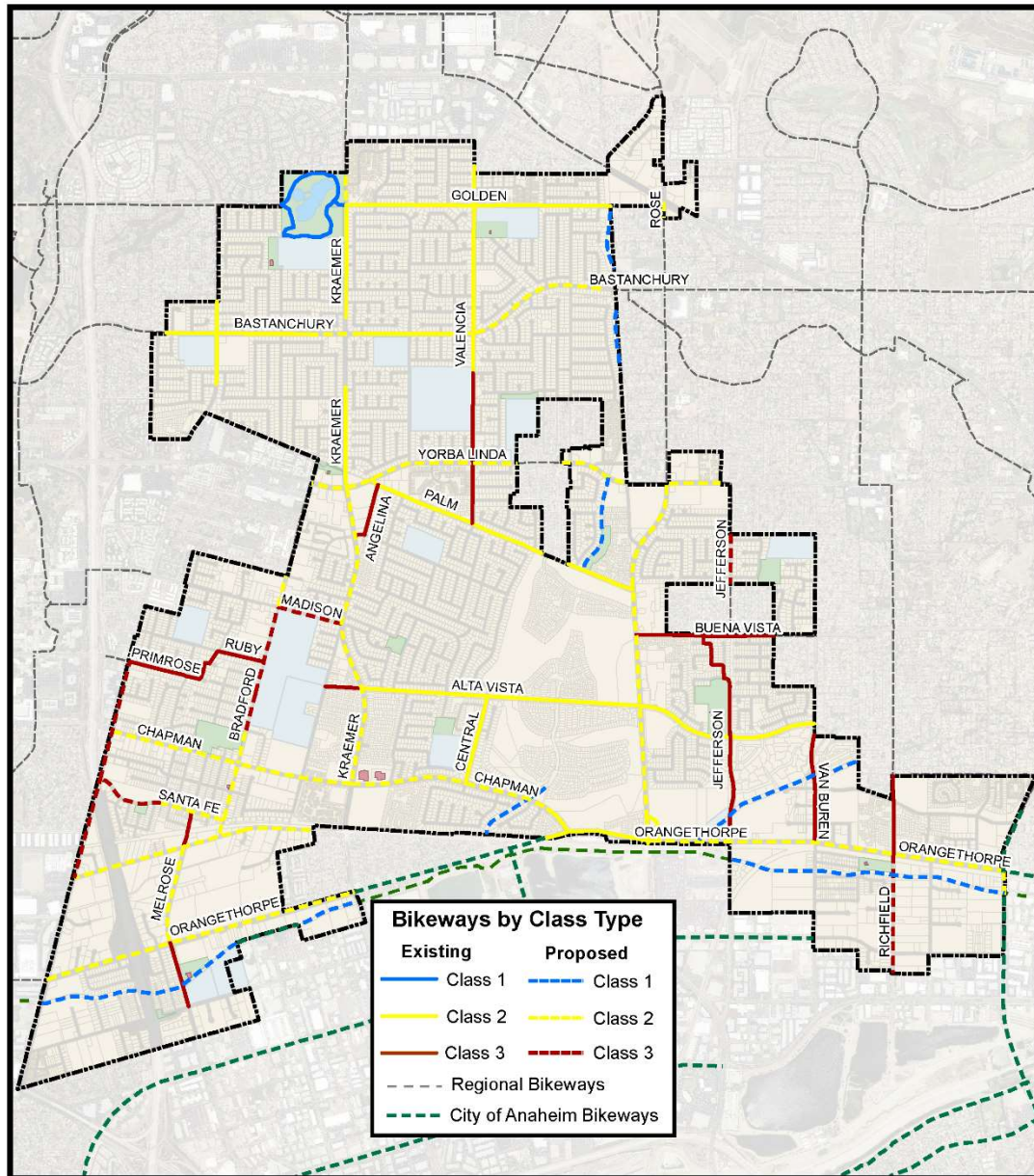
Class I bike paths are located off roadways, with at-grade or grade-separated roadway crossings. Class I bike paths are paved and do not allow motor vehicle traffic. Class I bike paths are typically located along long uninterrupted corridors such as rivers, creeks, flood control channels, and railroad rights-of-way. Class I bike paths adjacent to flood control channels, inland waterways, and railroad rights-of-way are primarily intended for bicyclists but are often shared by other recreational users such as walkers, runners, and equestrians. There is an existing Class I bicycle loop around the lake in Tri-City Park, however, the park was turned over to the County of Orange, and the facility is now part of the County park system.

Class II Bike Lanes



Class II bicycle facilities are signed and striped bicycle lanes located to the right of the vehicle traffic lane along a roadway. Bicycle lanes are typically located along collector and arterial roadways that provide connections through the City street system. They are the primary bike routes in the City. Class II facilities are not as attractive to bicyclists as Class I routes, as they must be shared with vehicle traffic, but they generally are more feasible to develop and provide access to more destinations, since they can potentially be implemented on many different types of streets.

Exhibit 3-5, Existing and Proposed Bike Network



City of Placentia

0 1 2 Miles



Class III Bike Routes

Class III bike routes are signed as bikeways intended to provide continuity to the bikeway system. Typically, Class III bike routes have no designated area for bicyclists as they are shared with motor vehicles on the street. Additional enhancements of Class III facilities can be provided by adding markings along the route. There are numerous existing Class III bicycle facilities in the City totaling approximately 4.4 miles. These facilities include a loop road around the lake in Tri-City Park. The park was recently turned over to the County of Orange for operation and maintenance.

Class IV Bike Routes

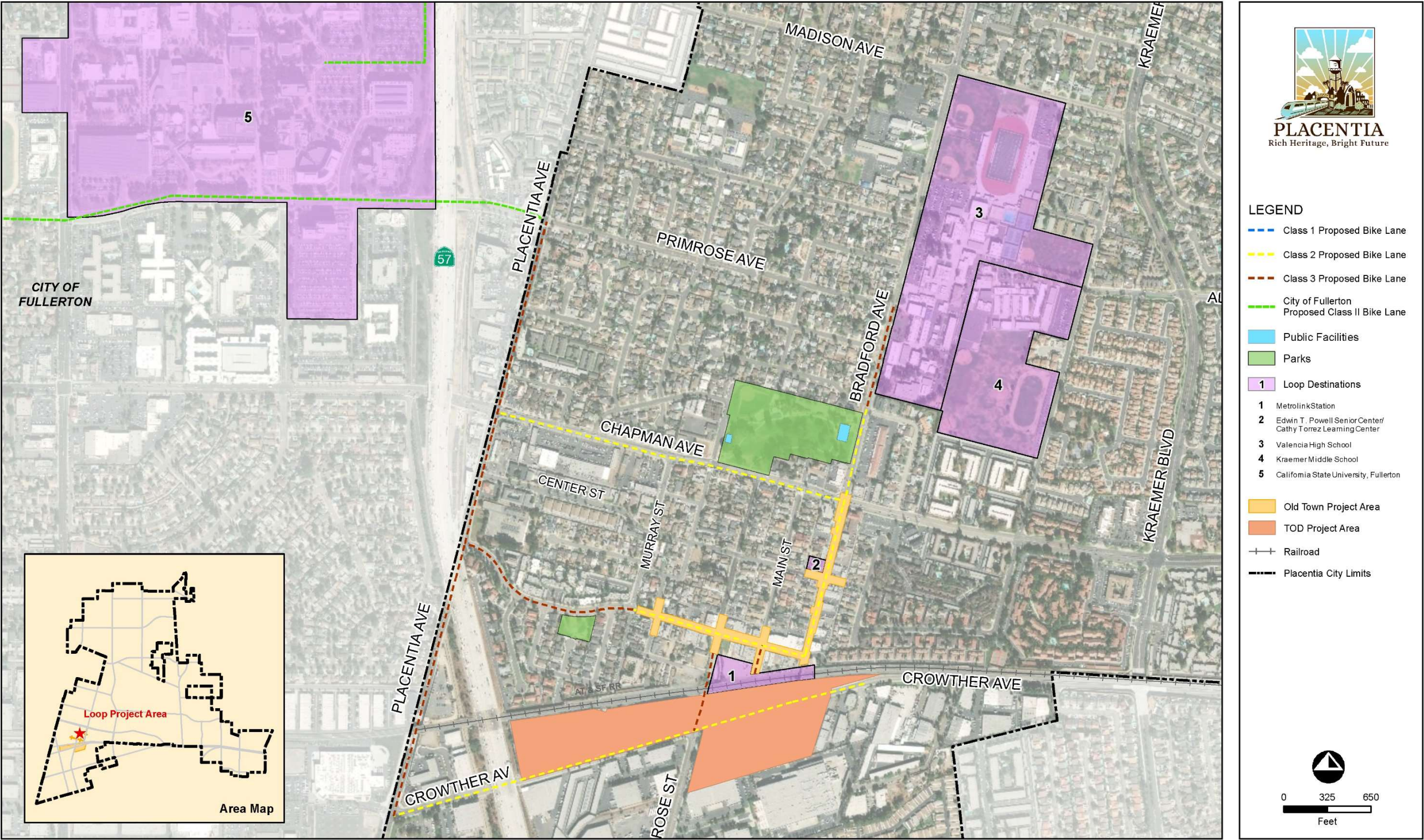
Class IV separated bikeways are on-street facilities reserved for use by bicyclists, with physical separation between the bikeway and travel lanes. Separated bikeways can be one-way facilities on both sides of the street or two facilities on one side of the street. Physical separation can include concrete curbs, landscaping, parking lanes, bollards, or other vertical elements. Class IV bikeways are not Class I shared-use paths or Class II bike lanes as they are on-street yet physically separated from vehicle traffic. There are currently no Class IV bikeways in the City of Placentia however there are several potential locations around the City where Class IV facilities can be implemented.

Go Placentia Loop

The Go Placentia Loop is a master planned bikeway network linking the planned Placentia Metrolink Station with the Transit Oriented District (TOD) to the south, Old Town Placentia to the north and other nearby destinations, most notably California State University, Fullerton. The Loop will be a combination of various bike lanes and routes that will provide bicyclists with on-street facilities as part of a larger planned multi-modal transportation network within both project areas. Detailed Streetscape Master plans were adopted by the City Council for both the TOD and Old Town project areas which include the future construction of extensive pedestrian and bicycle facilities that will serve transit riders arriving at the Placentia station as well as existing and future residents who live within both project areas. Our local Go Placentia Loop will connect to the overall Orange County (OC) Loop, which plans 66 miles of seamless connections throughout Orange County, giving people an opportunity to bike, walk, and connect to some of California's most scenic beaches and inland reaches. Exhibit 3-5

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Exhibit 3-6. Go Placentia Loop Map



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Current Pedestrian Network

Pedestrian facilities are critical when planning for pedestrian connectivity and enhancing the walkability of neighborhoods and commercial districts. The City of Placentia is generally laid out on a grid street pattern, which affords pedestrian connectivity throughout much of the City. The City provides sidewalks on the majority of these streets, and many are equipped with enhanced pedestrian facilities such as curb ramps, pedestrian crosswalks, and tactile Americans with Disabilities Act (ADA) pads to provide connectivity and accessibility to major attractions such as shopping centers, schools, and parks.



Rail Transportation

Both freight and passenger railroads operate through the City of Placentia. The Burlington Northern Santa Fe Railway (BNSF) operates a major double-track freight rail line known as the Orange County Gateway along the Orangethorpe Corridor. This rail line connects the Ports of Los Angeles and Long Beach with the Inland Empire and Midwest United States. Currently more than 70 freight trains and 12 passenger trains per day use this rail line. By Year 2030 it is forecast that over 150 trains per day, or a train every 10 minutes, will use this line.

The OCTA railroad grade separation (OC Bridges) projects were recently completed to physically separate rail and highway traffic at five at-grade rail/highway grade crossings in the City. The grade separation projects have eliminated significant delays to north-south vehicle traffic due to increasing freight and passenger rail traffic on the double-track BNSF rail line adjacent to and south of Orangethorpe Avenue. The grade separation locations are as follows, listed from west to east:

- Placentia Avenue north of Crowther Avenue

- Kraemer Boulevard at Crowther Avenue
- Orangethorpe Avenue west of Chapman Avenue
- Rose Drive/Tustin Avenue at Orangethorpe Avenue
- Lakeview Avenue at Orangethorpe Avenue

The nearest train station for residents of Placentia is in Fullerton, which is served by both Metrolink and Amtrak. A new Metrolink Station in Placentia will be constructed by 2020 and will be located near the intersection of Melrose Avenue and Crowther Avenue in the heart of Old Town. This station will serve both the Metrolink 91 Line and the Inland Empire-Orange County Line. Currently, 10 Metrolink trains per day use the rail line that passes through Placentia, with train frequencies expected to increase to 13 trains per day by the time the Placentia Metrolink station is completed. In addition to the train station, a new 4-story 246 space parking structure will be built adjacent to the station to accommodate Metrolink riders.

3.3 THE FUTURE TRANSPORTATION SYSTEM

The Future Transportation System is developed by evaluating the improvements necessary to accommodate the land use increases planned for by the City. The majority of proposed land use changes are through the redevelopment of existing developed parcels rather than development of currently vacant land. The City proposes no net changes to commercial land uses and a 14% increase in high density residential uses, with increases in the following categories:

- High Density Residential – 19.2 acres
- Parks – 5.7 acres
- Schools and Institutional – 13.3 acres
- Specific Plan – 11.8 acres

An analysis was performed to determine the amount of additional traffic that would be added from these land uses, and what impact, if any, this additional traffic would have on the existing roadway. Finally, improvements that would mitigate the impacts were proposed

Future Traffic Conditions

Forecasted (2040) daily traffic volumes are shown in Figure 3-6. The majority of the roadway segments are expected to operate at acceptable conditions with the proposed land use increases, with the exception of the following segment:

- Rose Drive between Alta Vista Street and Palm Drive

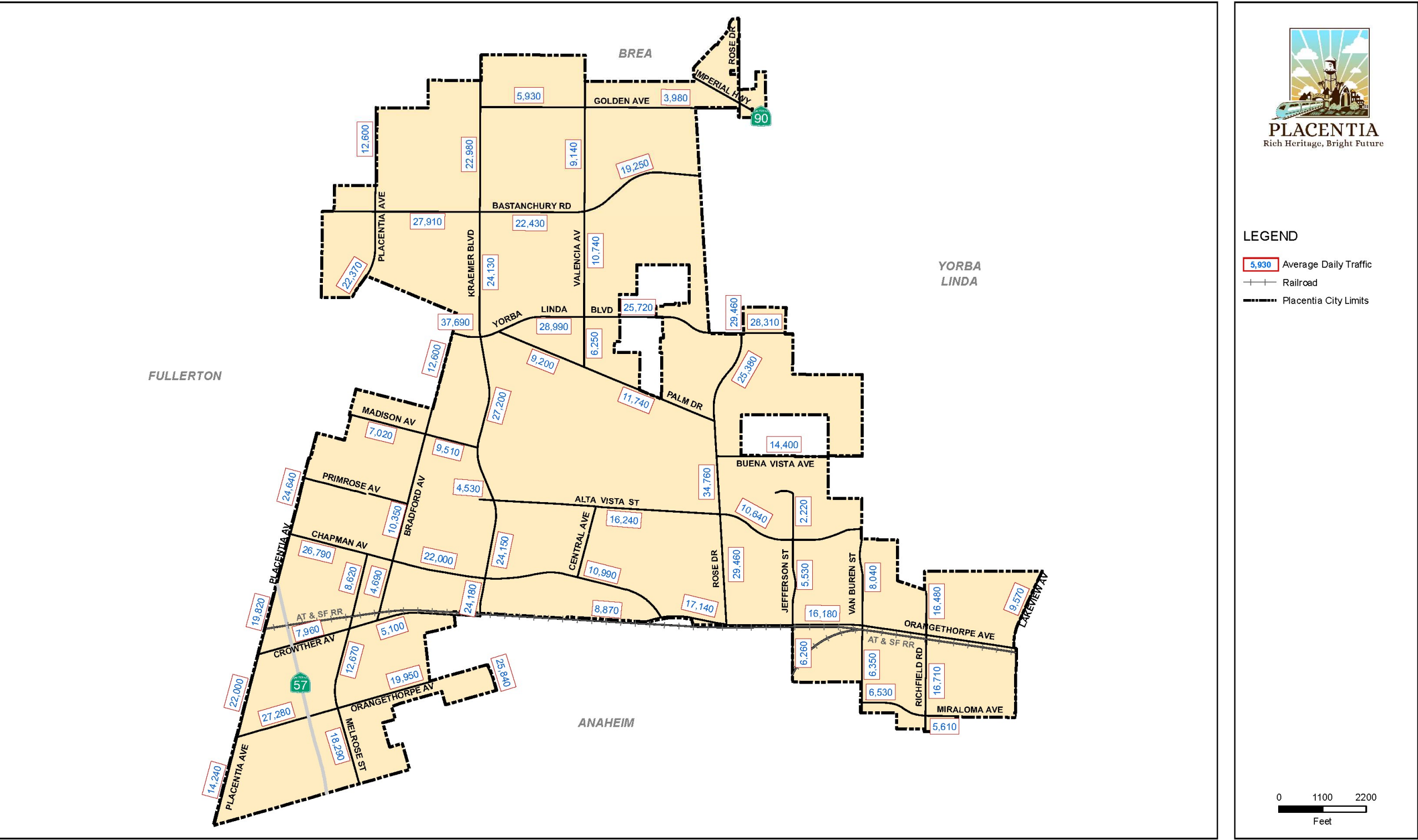
Future Traffic Conditions at Intersections

An analysis was similarly conducted to determine the impact, if any, on intersections from the proposed land use increases. The majority of the intersections in Placentia are expected to operate at acceptable levels of service under the Proposed General Plan scenario. The following five intersections are expected to operate at unacceptable LOS E or F conditions during AM and/or PM peak hours:

- Rose Drive at Imperial Highway (Caltrans intersection)
- Morse Avenue at Kraemer Boulevard AM peak hour
- Kraemer Boulevard and Chapman Avenue PM peak hour
- SR-57 NB Off Ramps at Orangethorpe PM peak hour
- Melrose Street at Orangethorpe Avenue PM peak hour

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Exhibit 3-7. Proposed General Plan ADT



Future Daily Traffic Volumes

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Recommended Roadway and Intersection Improvements

The combined effects of regional traffic growth and local land use changes are forecast to result in declines in levels of service to below acceptable levels on one roadway segment and at five specific roadway intersections. The expected declines in levels of service can be addressed through improvements to general roadway configurations consistent with planned MPAH classifications and through specific intersection improvements. Recommendations for changes to these roadways and intersections to improve operating conditions are presented below.

Roadway Improvements for Proposed General Plan Scenario

Roadway improvements are recommended for one additional roadway segment for the General Plan scenario. The recommended improvements are consistent with the planned MPAH configurations of this roadway and will improve operating conditions both for this roadway segment and for the intersection within the segment limits.

- Rose Drive between Alta Vista and Palm – restripe roadway as a 6-lane Major Arterial with southbound approaches at Palm Drive to be restriped with 1 left-turn only lane, 2 through lanes, 1 through-right turn lane

Intersection Improvements for Proposed General Plan Scenario

Five intersections are expected to have unacceptable levels of service under the Proposed General Plan scenario, presented below. The expected LOS after improvement is also listed.

- Rose Drive at Imperial Highway – Install westbound right-turn overlap traffic signal phasing and optimize signal timing:
 - LOS AM: E
 - LOS PM: E

This is a Caltrans intersection and traffic signal and the City has a limited ability to implement these improvements. City staff will work with Caltrans staff to incorporate these improvements into a future Caltrans capital improvement project.

- Morse Avenue at Kraemer Boulevard – Restripe the westbound left-through lane to left-turn only lane and restripe the westbound right-turn only lane to through-right turn lane
 - LOS AM: B
 - LOS PM: A
- Chapman Avenue at Kraemer Boulevard – Northbound left-turn phasing changed from protected to protected and permissive
 - LOS AM: C
 - LOS PM: C

- Orangethorpe Avenue at SR-57 Northbound Off Ramp – Restripe the Northbound Off Ramp to the following configuration: 1 left-turn only lane, 1 left-right shared lane and 1 right-turn only lane
 - LOS AM: A
 - LOS PM: C
- Orangethorpe Avenue at Melrose Street – Northbound left-turn phasing changed from protected to protected and permissive
 - LOS AM: C
 - LOS PM: C

Table 3-7 shows forecast LOS with and without identified mitigations

Table 3-7. Change in Level-of-Service with Improvements, Study Intersections, Proposed General Plan Scenario

ID	Study Intersections	Peak Hour	Proposed General Plan				With Mitigation			
			ICU	HCM	LOS	LOS Below Acceptable Level?	ICU	HCM	LOS	LOS Below Acceptable Level?
3	Rose Dr. at Imperial Hwy*	AM	0.921	64.9	E	Yes	0.921	61.0	E	No
		PM	1.000	83.2	F	Yes	0.912	61.6	E	No
13	Morse Ave at Kraemer Blvd	AM	0.690	125.1	F	Yes	0.690	13.0	B	No
		PM	0.585	48.5	D	No	0.585	8.7	A	No
25	Kraemer Blvd at Chapman Ave	AM	0.787	44.5	D	No	0.787	30.3	C	No
		PM	0.712	71.9	E	Yes	0.712	24.4	C	No
31	SR-57 NB Ramps at Orangethorpe Ave*	AM	0.758	19.0	C	No	0.576	11.6	A	No
		PM	0.939	65.9	E	Yes	0.709	20.5	C	No
32	Melrose St at Orangethorpe Ave	AM	0.721	27.8	C	No	0.721	24.3	C	No
		PM	0.827	87.3	F	Yes	0.827	29.1	C	No

Note: Appendix J in the Traffic Study (2018) contains the intersection operations analysis worksheets for the Proposed General Plan conditions, with improvements.

Proposed General Plan Functional Roadway Classifications

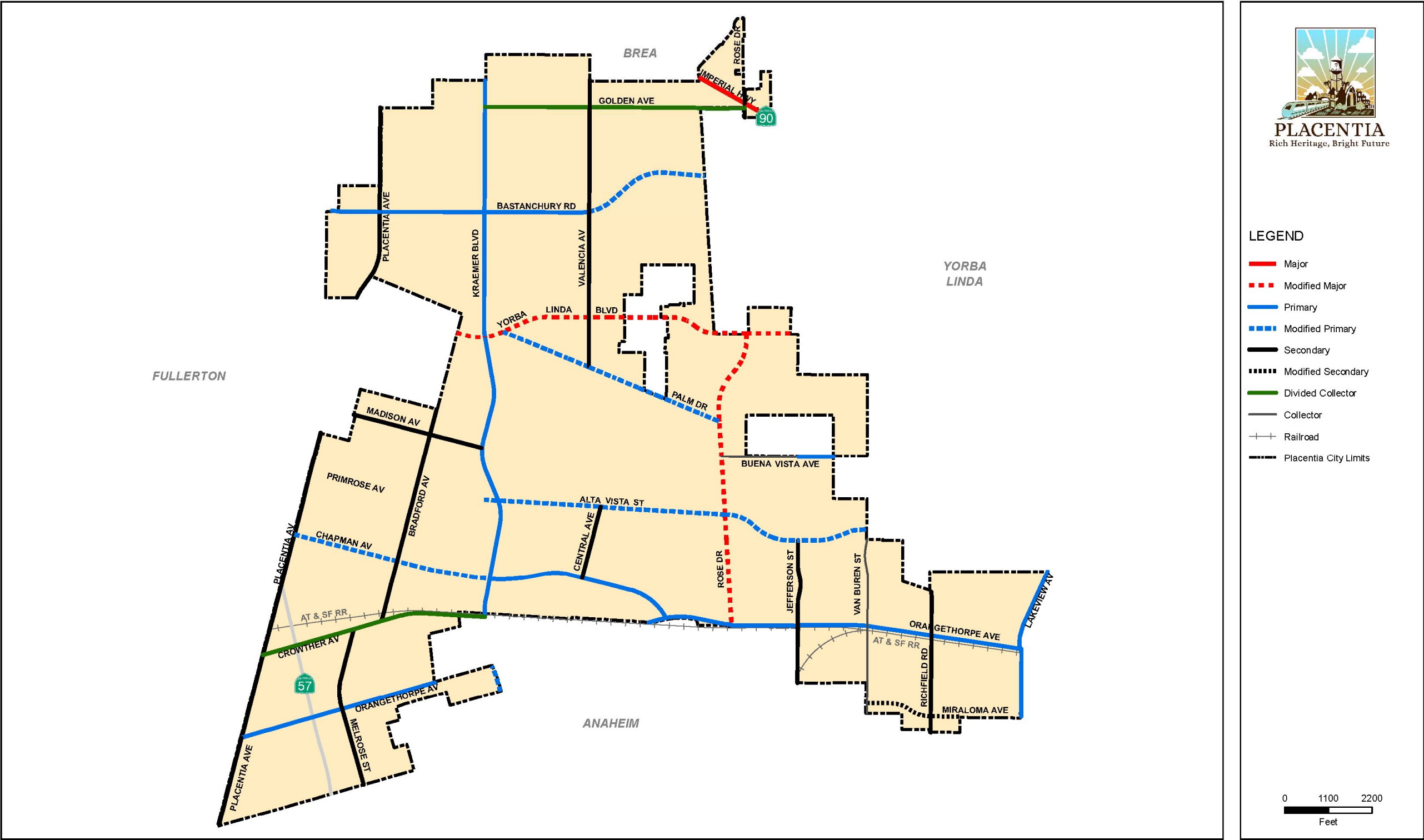
Figure 3-7 shows the Proposed General Plan Functional Classifications, which includes the five OCTA grade separation projects.

Complete Streets

Multimodal transportation networks allow for all modes of travel including walking, bicycling, and transit to be used to reach key destinations in a community and region safely and directly. The City of Placentia can use complete streets design to construct networks of safe streets that are accessible to all modes and all users no matter their age or ability based on appropriateness of local context. The adopted Streetscape Master Plans for the TOD and Old Town project areas were based on complete streets concepts.

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Exhibit 3-8. Proposed General Plan Functional Roadway Classifications



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3.4 MOBILITY GOALS AND POLICIES

Maximize and Enhance Transportation Facilities

GOAL MOB - 1 *Provide adequate transportation facilities for existing and future inhabitants of the City, maximizing use of existing facilities and enhancing those facilities as growth occurs.*

Policy MOB - 1.1 Developments that are under the City's jurisdiction are to provide improvements needed to maintain LOS D or better with existing plus new development traffic.

Policy MOB - 1.2 Assure all new development pays its fair share of costs associated with that development including regional traffic mitigation. The City adopted a revised and updated Citywide Traffic Impact Development Fee as well as a TOD Traffic Development Impact Fee in 2017.

Policy MOB - 1.3 For development projects, an approved phasing program (if applicable) is required that identifies phases of the proposed development that also corresponds to required improvements to roadway capacities. The phasing program must demonstrate the adequacy of the infrastructure to support the proposed project as well as a financing source to fund the improvements.

Policy MOB - 1.4 The City shall continue to collect Traffic Impact Development Fees for improvements within its boundaries and shall work with adjacent jurisdictions through the Inter-Jurisdictional Forums to determine acceptable impact fees. These fees may be assessed and increased as necessary.

Policy MOB - 1.5 Roadway improvements and expansions shall include prioritizing public transit and shared mobility in order to address gaps in the multi-modal transit system, improve and incentivize mobility for shared vehicles, discourage single-occupancy vehicles, and expand non-motorized transportation options.

Balanced, Functional, And Efficient Street System

GOAL MOB - 2 *Maintain a safe, efficient, economical, and aesthetically pleasing transportation system providing for the movement of people, goods, and services to serve the existing and future needs of the City of Placentia.*

Policy MOB - 2.1 Link with arterial highways of adjoining jurisdictions so that projected traffic flows safely and efficiently through the City.

- Policy MOB - 2.2** Ensure adequate capacity to accommodate the traffic generated by land uses within the City, while balancing the needs of the pedestrian, cyclists and other multi-modal users.
- Policy MOB - 2.3** Participate in transportation planning efforts which involve other governmental agencies, mandated programs, and regulations in order to minimize environmental impacts related to transportation and to enhance transportation systems. Continue participating in multi-agency/jurisdiction traffic signal synchronization projects.
- Policy MOB - 2.4** Respond to transportation problem areas with efforts to implement both interim and long-term solutions.
- Policy MOB - 2.5** Encourage development which contributes to a balanced land use, which in turn serves to reduce overall trip lengths (i.e., locate retail in closer proximity to residents).
- Policy MOB - 2.6** Require new development to conform to the standards and criteria of the City of Placentia and other mandated programs. This includes mitigation of traffic impacts to the surrounding street system as well as ensuring new developments manage their parking onsite with no impact to surrounding public streets.
- Policy MOB - 2.7** Maintain consistency between the City's Mobility Element and the Orange County Master Plan of Arterial Highways (MPAH).
- Policy MOB - 2.8** Route through traffic around residential neighborhoods and recreational areas as well as prepare and implement a Citywide Neighborhood Traffic Management Program.
- Policy MOB - 2.9** Encourage and implement subdivision design and traffic calming techniques that reduce vehicle speed and discourage through traffic on local streets.
- Policy MOB - 2.10** Reduce potential traffic conflicts by controlling access and minimizing driveway and local street intersections with arterial highways.
- Policy MOB - 2.11** Design streets and turning movements to provide vehicle-operating speeds consistent with traffic needs and adjacent land use.
- Policy MOB - 2.12** Develop additional capacity on arterial streets using the existing right-of-way, as needed or required.
- Policy MOB - 2.13** Encourage the development of aesthetic streetscapes to promote a positive City image and provide visual relief and traffic calming benefits.
- Policy MOB - 2.14** Require adequate off-street parking for all land uses and eliminate parking on all arterial streets. Ensure that off-street parking facilities are designed to be future-compatible and adaptively reusable for retail, distribution and other uses,

reflecting advances in shared automobile technology and shifts toward e-commerce and new urban goods movement and delivery models.

- Policy MOB - 2.15** Minimize the use of signs and billboards along arterial highways and ensure adequate visibility of necessary traffic and informational signs. Implement a Citywide, uniform Wayfinding Signage Program.
- Policy MOB - 2.16** Require adequate noise mitigation measures for new developments along arterial highways including the use of rubberized asphalt.
- Policy MOB - 2.17** Continue to assure safety at the railroad/roadway crossing locations.
- Policy MOB - 2.18** Coordinate with railroad lowering efforts to improve safety at railroad crossings within the City.
- Policy MOB - 2.19** Require the use of Transportation Control Measures (TCM's) to improve air quality and reduce traffic congestion.
- Policy MOB - 2.20** Continue to provide Local Signal Synchronization Plan (LSSP) as a TDM/TSM strategy and to remain in compliance with OCTA Measure M guidelines.
- Policy MOB - 2.21** Analyze the need for, and incorporate into street design, passenger drop-off/pick-up zones for shared vehicles (i.e., Uber, Lyft, etc.) to improve the safety and efficiency for drivers and passengers using these transportation modes.
- Policy MOB - 2.22** Analyze citywide curb space to identify how the curbs are used and where the City may establish time-based access restrictions and/or pricing for certain vehicle types (e.g., automated freight, single-occupant, and zero-occupant vehicles during peak travel periods.

Transit and Active Transportation Modes

GOAL MOB - 3 *Encourage transit and active transportation modes, including public transportation, bicycles, ridesharing, and walking, and other alternative modes of transportation to support land use plans and related transportation needs.*

- Policy MOB - 3.1** Encourage development and improvements which incorporate innovative methods of accommodating transportation demands.
- Policy MOB - 3.2** Support the development of a high quality- public transit system that minimizes dependency on the automobile.
- Policy MOB - 3.3** Ensure that effective Transportation Demand Management (TDM) measures and programs such as ridesharing and increased vehicle occupancy are being implemented.

- Policy MOB - 3.4** Implement adequate sidewalks and crosswalks to meet the required uses and needs, which serve to encourage alternative modes of transportation.
- Policy MOB - 3.5** Respond to increases in demand for additional bus service through interaction with OCTA and other available resources and seek out grant funding to provide supplemental transit services such as additional fixed bus/trolley routes or subsidized on-demand transit services such as Lyft or Uber.
- Policy MOB - 3.6** Install handicap access ramps to improve disabled access.
- Policy MOB - 3.7** Encourage pedestrian activities through streetscape and transit enhancement programs.
- Policy MOB - 3.8** Cooperate and assist transit agency efforts to enhance transit environments by improving passenger loading sites by providing bus benches, safety lighting and other improvements to enhance bus stops.
- Policy MOB - 3.9** Working cooperatively with OCTA, construct the planned Placentia Metrolink Station and parking structure as well as implement maintenance and operation plans for the station to serve both residents and commuters.
- Policy MOB - 3.10** Continue to support the accessibility and accommodation of all transit users.
- Policy MOB - 3.11** Continue to develop and improve access to and from transit routes by walking and bicycling and by people with disabilities.

GOAL MOB - 4 *Encourage bicycle travel as a primary mode of transportation.*

- Policy MOB - 4.1** Develop and adopt a comprehensive bicycle master plan to position for region, state, and federal funding opportunities.
- Policy MOB - 4.2** Once a comprehensive bicycle master plan is adopted, update it as necessary: generally, a five-year cycle.
- Policy MOB - 4.3** Review the existing Class I, II and III bikeways and modify as needed to comply with the *California Manual on Uniform Traffic Control Devices* (CA MUTCD).
- Policy MOB - 4.4** Provide direct, continuous bicycle routes for commuter and recreational cyclists that also improve the safe passage of cyclists.
- Policy MOB - 4.5** Support the safe and efficient movement of cyclists through and across intersections, including compliance with bicycle detection requirements in the CA MUTCD.
- Policy MOB - 4.6** Incorporate bicycle planning into the traditional transportation planning process.

- Policy MOB - 4.7** Support bikeways that minimize cyclist/motorist conflicts, such as constructing the planned replacement of the Golden Avenue Bridge to link directly to Segment D of the OC Loop Project to further link multiple bikeways into a 66-mile branded facility throughout northern and central Orange County as well as implementation of the Go Placentia Loop linking the Placentia Metrolink Station to major destinations near and around Placentia.
- Policy MOB - 4.8** Support regional and sub-regional efforts to ensure cyclists are considered when developing new or retrofitting existing transportation facilities and systems.
- Policy MOB - 4.9** Support and implement policies and regulations to comply with recognized bicycle infrastructure design standards of the Federal Highway Administration (FHWA), the California Department of Transportation (Caltrans) and the American Association of Highway and Transportation Officials (AASHTO).
- Policy MOB - 4.10** Support efforts to maintain, expand and create new connections between the Placentia bikeways, the bikeways in neighboring jurisdictions and regional bikeways.
- Policy MOB - 4.11** Support policies, programs and projects that make bicycling safer and more convenient for all types of cyclists.
- Policy MOB - 4.12** Support and facilitate programs in conjunction with local bicycle shops, organizations and advocates to foster responsible ridership and reduce barriers to bicycling.
- Policy MOB - 4.13** Support projects and programs to facilitate safer travel by bicycle to key destinations within the community and the larger region, including the new Metrolink station, when completed.
- Policy MOB - 4.14** Require that new streets or developments contain adequate right-of-way for bicycle lanes, where appropriate.
- Policy MOB - 4.15** Where space and appropriate roadway conditions currently exist, continue to install bike routes.
- Policy MOB - 4.16** Work with the Orange County Flood Control District under the City and District's cooperative agreement to develop and utilize District facilities within Placentia as off-road recreational bike trails and loop connections to other existing or planned on-street bicycle facilities.
- Policy MOB - 4.17** Seek out grant funding opportunities to fund the cost of additional off-road bicycle and recreational trails.
- Policy MOB - 4.18** Reduce or eliminate parking on arterial roads to provide space for expanding Class II bicycle lanes.

Policy MOB - 4.19 Plan for and give careful consideration to the future implementation of personal transport devices and develop an ordinance regulating their use within the public-right-of way.

Autonomous Vehicles and Future Mobility Technologies

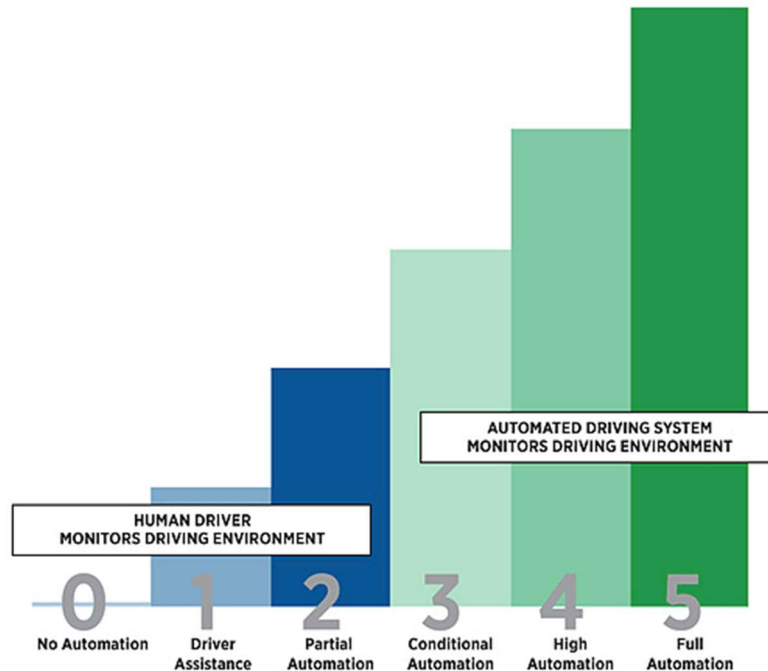
GOAL MOB - 5 *Support and prepare for the imminent emergence of autonomous vehicles in a way that strengthens the City's transportation and land use goals to create a more walkable, bikeable, transit-oriented, safe and efficient circulation system.*

Policy MOB - 5.1 Coordinate with OCTA as well as the Los Angeles Department of Transportation (LADOT) to customize and implement region-wide transportation technology strategies to ensure an integrated and interoperable regional system.

Policy MOB - 5.2 Complete a Citywide transportation technology strategy that develops short-, mid-, and long-term strategies for becoming a smart-street City that can optimize and capitalize on emerging transportation technology.

Policy MOB - 5.3 Allow a combination of human-driven (SAE Level 0 and 1, see graphic below) and fully automated vehicle operations (SAE Level 4 or 5), as defined by the Society of Automotive Engineers (SAE International)² within the City of Placentia to eliminate the dangers of partial automation (SAE Levels 2 and 3) that encourages distracted driving patterns and exacerbates driving error.

² Society Of Automotive Engineers. Taxonomy And Definitions For Terms Related To On-Road Motor Vehicle Automated Driving Systems, January 16, 2014, <https://www.SAE.org/standards>.



Policy MOB - 5.4 Require shared automated vehicle fleets to use fully electric vehicles.

Policy MOB - 5.5 Require submission of detailed data from automated owned vehicles, shared fleet services, commercial fleets, freight, and transit to neutral data platforms in order to evaluate and respond to impacts of automated vehicles on City streets. Required data will include vehicle speeds, crash and near miss reports, average latency of vehicle-to-infrastructure and vehicle-to-vehicle data flows, trip time, trip route, trip origins and destinations, vehicle occupancy, pavement quality, and environmental conditions.

Policy MOB - 5.6 Protect the privacy of individuals by anonymizing personally identifiable data generated by connected and automated vehicles.

Policy MOB - 5.7 Ensure the benefits of automated mobility are equitably distributed and accessible for all segments of the community, consider the safety needs of vulnerable populations and loading needs of seniors, families with children, and individuals with mobility impairments.

Policy MOB - 5.8 Assess and implement alternatives to parking and state gas tax revenue sources, through such mechanisms as zero- and low-occupancy fees, curbside dwell time fees, per mile road use charges, peak period surcharges, penalty structures for declined rides by shared automated fleets, etc.

Policy MOB - 5.9 Develop strategic research partnerships to determine needs and effectiveness of physical pricing infrastructure, connected

sensor infrastructure, and requirements for personal digital devices.

Policy MOB - 5.10 Consider an update to the Zoning Code with new standards that regulate the curb for optimal access; require that all new parking is adaptively reusable for retail, distribution and other uses (including mandating higher floor heights and above-ground parking to enable retrofits) and is furnished with Level 2 EVSE charging infrastructure.

Policy MOB - 5.11 Consider an update to the Zoning Code as demand for personal vehicles decreases to remove parking minimums and address other needs such as new passenger and delivery forms, shared mobility hubs, drop off/pick up zones, and design standards for digital technology.

Policy MOB - 5.12 Seek out new opportunities to install traffic infrastructure to support the interconnection of vehicles

Inter-Jurisdictional Cooperation

GOAL MOB - 6 *Coordinate and cooperate with neighboring jurisdictions, the County and the region to reduce traffic and parking congestion and other traffic impacts.*

Policy MOB - 6.1 The City shall continue to participate in Inter-Jurisdictional Planning Programs to discuss developments with multi-jurisdictional impacts and appropriate mitigation measures.

Policy MOB - 6.2 The City shall cooperate with OCTA in the annual Congestion Management Plan update in order to continue receiving Measure M Fair Share funds for road and traffic improvements.

Policy MOB - 6.3 The City shall participate in meetings with other jurisdictions and the Air Quality Management District (AQMD) and the Southern California Association of Governments (SCAG) to develop and adopt Transportation Control Measures that will improve air quality and reduce traffic congestion.

Policy MOB - 6.4 Continue partnering with neighboring jurisdictions to advance and implement regional traffic signal synchronization projects.

Policy MOB - 6.5 Work with neighboring jurisdictions to link up bicycle facilities and recreational trails to expand their regional reach and benefits to the larger community.

Policy MOB - 6.6 The City shall collaborate with federal and state policymakers to ensure that the City's local controls and police powers related to automated vehicle regulation are not preempted.

Policy MOB - 6.7 Work with the region's transit agencies to pilot new automated transit service delivery models that improve first- and last-mile transit connections and grow the public transit market.