

FOUNTAIN VALLEY GENERAL PLAN UPDATE

DRAFT EXISTING CONDITIONS REPORT

Prepared for:



April 2019

OC18 - 0601

FEHR & PEERS

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1. INTRODUCTION & OVERVIEW

This document presents the physical and operational conditions of the circulation network in Fountain Valley, including an evaluation of existing conditions for regional roadways, public transit, bicycle and pedestrian circulation, and goods movement in the City. This document also describes key terms and methodologies that explain the current conditions and the identified deficiencies in Fountain Valley's transportation system, along with the regulatory framework affecting transportation in the City. This information will be used to determine changes to existing policies and the development of new policies regarding mobility in the City of Fountain Valley's General Plan and the General Plan Environmental Impact Report.

KEY TAKEAWAYS

EXISTING STREET SYSTEM

Roadway Classifications

The City of Fountain Valley has a system of roadway classifications which currently designate roadway types by right-of-way, number of lanes, divisions, capacity, and other factors. Current roadway classifications prioritize automobile travel by the nature of design standards. Through the General Plan update the City of Fountain Valley may consider a reclassification of roadways to better serve the needs of all ages, abilities, and modes, consistent with AB 1358. Reclassifying roadways by identifying prioritized modes and accommodated modes on specific roadways is one approach jurisdictions throughout California are taking to reclassification.

Roadway Performance

The City of Fountain Valley 2008 Circulation Element uses volume-to-capacity (V/C) ratios to analyze the level of service (LOS) for intersections. Based on the analysis of sixty-three roadway segments, all roadways in the City operate acceptably, with the following exceptions:

- One segment at an LOS of E on Euclid Street from I-405 NB to Talbert Street, and two segments at an LOS of F from Warner Avenue to Heil Avenue and from Heil Avenue to Edinger Avenue.
- Two segments at an LOS F on Ellis Avenue from Bushard Street to Brookhurst Street and from Ward Street to I-405 SB Off-Ramp.



Bicycle Network

Currently, Fountain Valley does not have any planned bike facilities outside the 2008 Circulation Element. The District 1&2 Bikeways Strategy by OCTA has identified several bike facilities gap closures in Fountain Valley. OCTA is also leading a countywide "OC Active" Transportation Plan that will include local bikeway planning from the City of Fountain Valley. The City could consider creating a Bicycle Master Plan in order to assess and update the bikeway network. The City may focus on the development of the bikeways near the Crossings Specific Plan Area, where there is the highest concentration of bikeway gaps. Fountain Valley may choose to take advantage of its grid roadway network and mix of land uses to develop facilities, such as bicycle boulevards to increase the safety of people walking and bicycling. The use of bicycle boulevards and recent Caltrans adopted cycletracks (Class IV bikeway), where appropriate, could make it safer for users of all ages and abilities. The bicycle network update should also take account of the existing truck routes network and consider a layered networks approach. A layered networks approach would prioritize bikes and trucks on different routes where possible.

Transit Facilities

Transit is a vital part of the City of Fountain Valley's transportation system. Currently, Orange County Transportation Authority (OCTA) is the only transit operator in Fountain Valley, and a city-led Senior Mobility Program provides on-call service to the senior residents in the City. Existing local services are mostly commonly used by transit dependent users (those who must use public transit for travel), such as older persons, persons with disabilities, and students. OCTA should continue to provide reliable service on the local and limited-stop lines, which provides connections to the City's major destinations such as Mile Square Regional Park on Euclid Street, Orange Coast Memorial Hospital on Talbert Avenue and the mixed-use businesses at the Crossings Specific Plan Area.

The City should focus on improving first-last mile options that help people connect to transit and reach their destination. One option for improved connections can be partnerships with Transportation Network Companies (TNCs), such as Uber and Lyft to better connect people to transit and their destinations.

Safety

The City averages around 275 vehicle collisions and 27 pedestrian and bicycling collisions annually, as documented in the Statewide Integrated Traffic Records System (SWITRS) database (2015 – 2017). The top three cited factors contributing to vehicle-vehicle collisions are: right-of-way violations (36%), unsafe speed (26%), and violation of traffic signals and signs (12%). Over a three-year period (2015 – 2017), the City of Fountain Valley has seen an increase in pedestrian collisions, but bicycle collisions have remained relatively constant. The City is currently proactive in education, enforcement, and



engineering efforts to reduce collision rates. The City may consider making a greater commitment to safety and further developing their efforts by pledging as a Vision Zero City, making it their goal to eliminate traffic deaths completely.

TRANSPORTATION SYSTEM AND CONTEXT

Housing-Employment Dynamics

Travel patterns in the City indicate that a large share of residents do not work in Fountain Valley. There may not be specific job opportunities residents' desire, causing people to drive outside the City for employment. Most people traveling outside of Fountain Valley for work are going in two general direction—northwest and east. The general plan update should investigate ways to improve the jobs-housing match in the City of Fountain Valley and focus on east-west commute alternatives to single occupancy vehicles.

Regulatory Setting

State regulations such as the California Complete Streets Act and Senate Bill 743 (SB 743) are affecting the way that city streets are designed and the analysis of transportation impacts. The California Complete Street Act (Assembly Bill 1358) requires a circulation element to plan for all modes of transportation where appropriate, including walking, biking, car travel, and transit. The General Plan should meet AB 1358 requirements by adopting a Complete Streets approach to street design, providing accessibility for users of all ages and abilities. SB 743 aims to balance the needs of congestion management, infill development, public health, and greenhouse gas reductions by changing the metrics traditionally used to measure impacts. The State Bill calls for a shift from measuring auto delay (LOS) to vehicle miles traveled (VMT) to determine transportation impacts under CEQA. In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package, which includes guidance on how to implement SB 743. The Governor's Office of Planning and Research (OPR) also developed a Technical Advisory on Evaluating Transportation Impacts in CEQA, which contains OPR's technical advice related to assessing VMT, determining significance thresholds, and identifying mitigation measures.¹

¹ <http://opr.ca.gov/ceqa/updates/sb-743/>



Planned Improvements

The City has several major planned improvements:

- The ongoing I-405 Improvement Project aims to improve freeway capacity, traffic and interchange operations, and road safety, in order to meet state and federal standards. OCTA and Caltrans are collaborating on widening the I-405 between State Route 73 (SR-73) and Interstate 605 (I-605).
- The transportation impact analysis for the Fountain Valley Crossings Specific Plan identifies three intersections for improvements to make sure these intersections will operate at LOS D or better, consistent with the 2008 Circulation Element I of service policy.
- The Fountain Valley Ten-year Capital Improvement Program has identified several transportation improvements.

Goods Movement

Goods movement is necessary for the vitality of Fountain Valley and the region as a whole. Truck traffic on City streets is restricted to specific routes that are designated for thru-traffic of trucks over three tons. Ensuring that designated key routes are designed to accommodate trucks by partnering with Caltrans and the adjacent cities of Santa Ana, Garden Grove, Costa Mesa and Huntington Beach is critical for Fountain Valley to consider for goods movement management. The City should continue to monitor trucks on City streets and maintain routes that reduce the exposure of pollutants and air particulates released by trucks from residents. As the City updates trucks routes, a layered networks approach should be considered with focus on separating bicycle facilities from truck routes.

Mobility Trends

The following items may be considered in the General Plan update:

- Autonomous vehicles are coming, and they will affect how people travel and park in the City. The General Plan should discuss this future mobility option.
- Transportation network companies affect travel behaviors, transit use, and curb space management. The General Plan should discuss strategic policies to leverage the emergence of TNCs and dockless active modes such as shared bikes and e-scooters.



2. TRANSPORTATION SYSTEM & CONTEXT

This section frames the existing transportation system by focusing on commute trends and the current regulatory framework shaping transportation in the City of Fountain Valley. The City is located in Orange County and bordered by the cities of Westminster and Garden Grove to the north, Huntington Beach to the east and south, Costa Mesa to the south, and Santa Ana to the west. Regional access to Fountain Valley is provided by Interstate 405 (I-405). The City limits are shown in **Figure 2-1**.

REGULATORY SETTING

The regulatory framework is meant to inform decision makers about the regulatory agencies and policies that affect transportation in the City of Fountain Valley. This enables decision makers to execute informed decisions about planning improvements to transportation systems in the City.

STATE REGULATIONS

AB 1358 (Complete Streets)

The California Complete Streets Act (Assembly Bill [AB] 1358) was signed into law on September 30, 2008. Since January 1, 2011, AB 1358 has required circulation element updates to address the transportation system from a multi-modal perspective. The act states that streets, roads, and highways must “meet the needs of all users in a manner suitable to the rural, suburban, or urban context of the general plan.” The act requires a circulation element to plan for all modes of transportation where appropriate, including walking, biking, car travel, and transit. In addition, the act requires circulation elements to consider the multiple users of the transportation system, including children, adults, seniors, and the disabled.

The City of Fountain Valley should strive to comply with AB 1358 by addressing the transportation system from a multi-modal and multiple user perspective in the General Plan. Fountain Valley should plan for active transportation modes such as walking, bicycling, and transit, and provide better service to users of these prioritized modes. Through the General Plan update process the City should adopt a Complete Streets approach, providing accessibility for all users of all ages and abilities.

AB 32 (Global Warming Solutions Act)

The Global Warming Solutions Act (AB 32) was signed into law on September 27, 2006. AB 32 established a comprehensive program to reduce greenhouse gas emissions to combat climate change. This bill requires the California Air Resources Board (CARB) to develop regulations to reduce greenhouse gas emissions to 1990 levels by 2020. On January 1, 2012, the greenhouse gas rules and market mechanisms, adopted by CARB, took effect and became legally enforceable.



The reduction goal for 2020 is to reduce greenhouse gas emissions by 25% of the current rate in order to meet 1990's level, and a reduction of 80% of current rates by 2050. The AB 32 Scoping Plan contains the main strategies California will use to reduce greenhouse gases. The scoping plan has a range of greenhouse gas reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms (such as a cap-and-trade system), and an AB 32 program implementation regulation to fund the program.

CARB recognizes cities as "essential partners" in reducing greenhouse gas emissions. The Air Resources Board has developed a Local Government Toolkit with guidance for GHG reduction strategies such as improving transit, developing bicycle/pedestrian infrastructure, increasing city fleet vehicle efficiency, and other strategies.

The City of Fountain Valley should follow the example of other cities that voluntarily strive to comply with AB 32 and implement greenhouse gas reduction strategies into the City's General Plan.

SB 375 (Sustainable Communities and Climate Protection Act)

The Sustainable Communities and Climate Protection Act, or Senate Bill (SB) 375, provides incentives for cities and developers to bring housing and jobs closer together and to improve public transit. The goal is to reduce the number and length of automobile commuting trips, helping to meet the statewide targets for reducing greenhouse gas emissions set by AB 32.

SB 375 requires each Metropolitan Planning Organization to add a broader vision for growth, called a Sustainable Communities Strategy (SCS), to its transportation plan. The SCS must lay out a plan to meet the region's transportation, housing, economic, and environmental needs in a way that enables the area to lower greenhouse gas emissions. The SCS should integrate transportation, land-use, and housing policies to plan for achievement of the emissions target for their region. The Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) and SCS were adopted in 2016.

SCAG has identified several actions that could be incorporated into the General Plan. Applicable components of the SCS include:

- Support transit-oriented development
- Support infill housing development and redevelopment
- Support mixed-use development which improves community walkability
- Improve jobs-to-housing ratio
- Promote land use patterns that encourage the use of alternatives to single-occupant automobile use
- Apply Transportation System Management (TSM) and Complete Streets practices to arterials to maximize efficiency
- Improve modes through enhanced service, frequency, convenience, and choices
- Expand and enhance Transportation Demand Management (TDM) practices to reduce barriers to alternative travel modes and attract commuters away from single occupant vehicle travel



SB 743 – General CEQA Reform, VMT

SB 743 was signed into law on September 27, 2013 and has fundamentally changed the traditional transportation impact analyses conducted as part of the CEQA process. According to this bill, parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area will not be considered significant impacts. Also, residential, mixed-use, and employment center projects meeting specific criteria would be exempt from CEQA.

Furthermore, this bill eliminates measures such as auto delay, level of service (LOS) and other vehicle-based measures of capacity in many parts of California. Instead, Vehicle Miles Traveled (VMT) is the preferred metric for assessing passenger vehicle-related impacts.

The purpose of SB 743 is to balance the needs of congestion management, infill development, public health, and greenhouse gas reductions. As mentioned, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package, and released a Technical Advisory on Evaluating Transportation Impacts in CEQA, in December 2018. The City of Fountain Valley now has until July 1, 2020 to update their CEQA guidelines to develop significance criteria and traffic impact study guidelines consistent with SB 743.

REGIONAL PROGRAMS AND REGULATIONS

Orange County Congestion Management Program (CMP)

The passage of Proposition 111 in June 1990 established a process for each metropolitan county in California, including Orange County, to prepare a Congestion Management Plan (CMP). The CMP was prepared by the Orange County Transportation Authority (OCTA) in consultation with the County of Orange, cities within Orange County, Caltrans, and the South Coast Air Quality Management District (SCAQMD). It is an effort to align land use, transportation, and air quality management efforts to promote reasonable growth management programs that effectively use statewide transportation funds, while ensuring that new development pays its fair share of needed transportation improvements. The CMP contains a number of policies designed to monitor and address system performance issues.

The process for developing the CMP is also meant to be a systematic procedure that enables consistent and effective integrated monitoring and management of the multimodal transportation system. This process entails:

- Creating congestion management goals
- Developing metrics for multimodal transportation system performance
- Collecting data on these metrics
- Preparing and implementing congestion management recommendations
- Assessing the effectiveness of the recommendations



Caltrans

Guide for the Preparation of Traffic Studies

The Caltrans Traffic Impact Study Guide (2002) provides a starting point and a consistent basis on which Caltrans evaluates traffic impacts to state highway facilities. The guide provides information on when a traffic impact study is needed, the scope of a traffic impact study (i.e. the boundaries of the traffic study and the analysis scenarios), the required data for a traffic impact study, analysis methodologies for various types of state facilities, and guidelines for mitigating impacts. Caltrans does not provide guidelines for VMT impacts.

OC Go (also known as Measure M) - Orange County Half-Cent Sales Tax

In 1990, Orange County voters approved Measure "M1;" a one-half cent increase in sales tax over a twenty-year period to be used for transportation purposes. Between 1990 and 2011, Measure M1 provided \$4 billion worth of transportation improvements. In November 2006, Orange County community members launched Measure M2 by renewing the half-cent sales tax for another 30 years. In 2017, Measure M2 was rebranded as "OC Go". The OC Go Transportation Investment Plan outlines strategies to provide more than \$13 billion worth of transportation enhancement to Orange County by the year 2041. The plan includes major improvement projects for the County's freeways, streets and roads, transit and environmental programs. While OC Go is successful, it can only fund a fraction of the transportation improvements necessary to prevent a potential breakdown of the regional transportation system. Among the approved OC Go projects, the I-405 widening between SR-73 and I-605 and improvements to freeway entrances, exits and bridges fall in the jurisdiction of Fountain Valley. The Senior Mobility Program in Fountain Valley is also funded by OC Go. The latest Traffic Synchronization Program by OC Go that was implemented in Fountain Valley was Brookhurst Street in 2016 and the 2019 project list is in progress.

Southern California Association of Governments Transit Area

Transit Priority Area (TPA) and High Quality Transit Area (HQT)

Southern California Association of Governments (SCAG) has designated an area within one-half mile of an existing or planned major transit stop as Transit Priority Areas (TPA) that includes a rail transit station, a ferry terminal, or the intersection of two or more major bus routes with a headway of 15 minutes or less during the morning and afternoon peak commute periods. Parts of Euclid Street and Harbor Boulevard in Fountain Valley are designated as a TPA. Similarly, a High Quality Transit Area (HQT) is the designation for areas within one-half mile from major transit stops and High Quality Transit Corridors (HQTC) that are either existing or identified in 2040 Regional Transportation Plan (RTP). Fountain Valley can avail the opportunities to promote higher-density development and active transportation near HQTAs. The HQTCs identified in



Fountain Valley are Euclid Street, Harbor Boulevard and Edinger Avenue, and the HQTA is half-mile around the corridors. The TPA designation also will matter for transportation impact assessment per SB 743 as most projects within a TPA will not be required to conduct VMT analysis for CEQA.

Housing-Employment Dynamics

According to the 2017 American Community Survey (ACS) and the 2015 Longitudinal Employer-Household Dynamics Origin Destination Employment Statistics, the City of Fountain Valley currently has 56,640 residents, of which 24,410 or approximately 43% are employed. Commute patterns for employed residents are described below:

- 56% of residents travel less than 10 miles to reach their employment
- 23% of residents travel between 10 and 24 miles to reach their employment
- 12% of residents travel 25 to 50 miles to reach their employment
- 8% of residents travel more than 50 miles to reach their employment

In sum, approximately 43% of Fountain Valley residents travel more than 10 miles to reach their place of employment. The inflow and outflow of workers, which shows the number of people who are employed in Fountain Valley but live outside of the area, and those that live in Fountain Valley but are employed outside of the area, is shown on **Figure 2-2**.



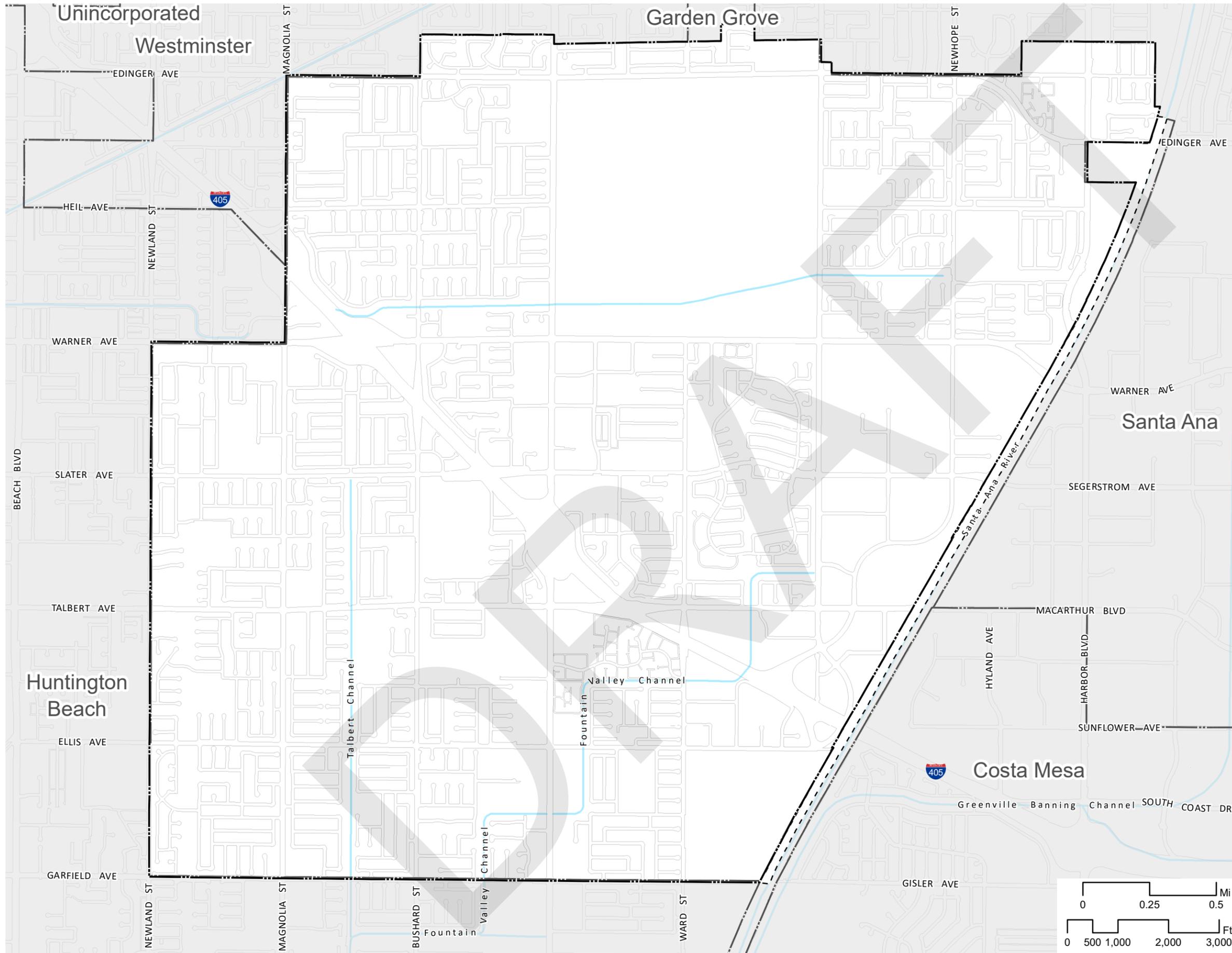


Figure 2-1:
City Limits

- Fountain Valley City Limit
- Sphere of Influence Areas

Source: City of Fountain Valley 2008

Date: 4/24/2019

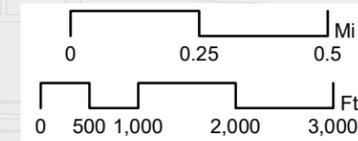
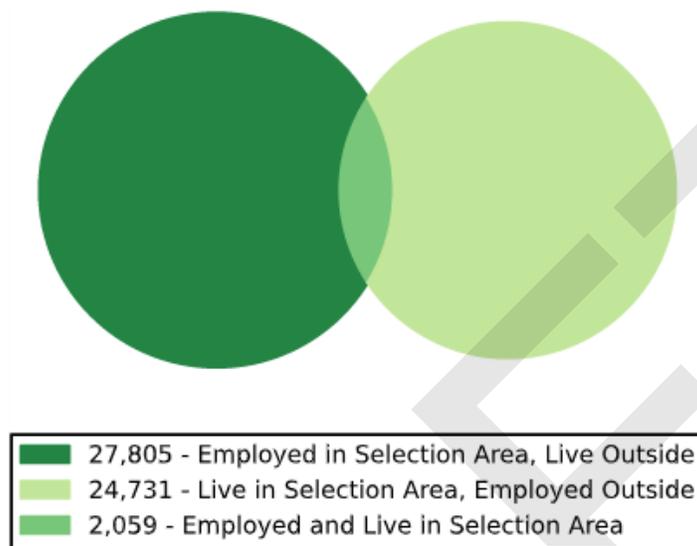


Figure 2-2: Inflow and Outflow Job Counts for Fountain Valley, 2015



Data source: U.S. Census Bureau. 2015. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. <http://onthemap.ces.census.gov/>

About 7% of the City's working population lives and works in the City of Fountain Valley, while the other 93% lives in the City, but is employed outside of it. Most people who work in the City are commuting into the area from the outside. The City should focus on policies that grow the number of people who both work and live in Fountain Valley to increase the opportunity for active transportation and reduce greenhouse gas emissions. The City may also maintain efforts that increase environmentally sustainable transportation options for workers coming into and leaving Fountain Valley. The table below shows which counties Fountain Valley residents work in **Table 2-1**.



Table 2-1: Cities where Fountain Valley Residents are Employed

| County | Count | Share |
|----------------------|---------------|----------|
| Irvine, CA | 2,616 | 10.7% |
| Santa Ana, CA | 2,090 | 8.6% |
| Fountain Valley, CA | 1,786 | 7.3% |
| Huntington Beach, CA | 1,753 | 7.2% |
| Costa Mesa, CA | 1,358 | 5.6% |
| Los Angeles, CA | 1,276 | 5.2% |
| Anaheim, CA | 1,092 | 4.5% |
| Newport Beach, CA | 1,014 | 4.2% |
| Garden Grove, CA | 910 | 3.7% |
| Long Beach, CA | 869 | 3.6% |
| All Other Locations | 9,646 | 39.5% |
| Total | 24,410 | - |

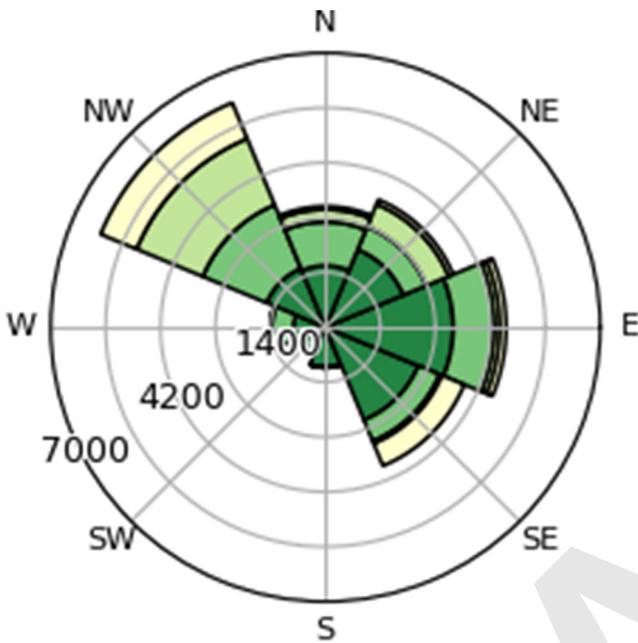
Source: U.S. Census Bureau. 2015. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. <http://onthemap.ces.census.gov/>

The majority of Fountain Valley Residents work in the surrounding cities. Fountain Valley residents traveling to work experience heavy levels of morning and evening congestion on freeways like I-405, SR-22, and the I-5. There are about 26,929 total jobs and about 18,527 total households in Fountain Valley.² The City's jobs to housing ratio is 1.45, where there are about 1.45 jobs per household. An ideal rate for jobs-to-housing ratio is >1.1. For retail jobs, an ideal rate is 0.20 – 0.25 and a rate of 0.8 – 1.0 for non-retail jobs. The current breakdown for Fountain Valley using the 2013-2017 ACS Data, indicates a rate of 0.15 and 1.30 for retail and non-retail jobs, respectively. Fountain Valley is healthy balance of retail and non-retail jobs and its rates are close or directly within recommended ranges.

² 2013 – 2017 American Community Survey, 5-Year estimates.

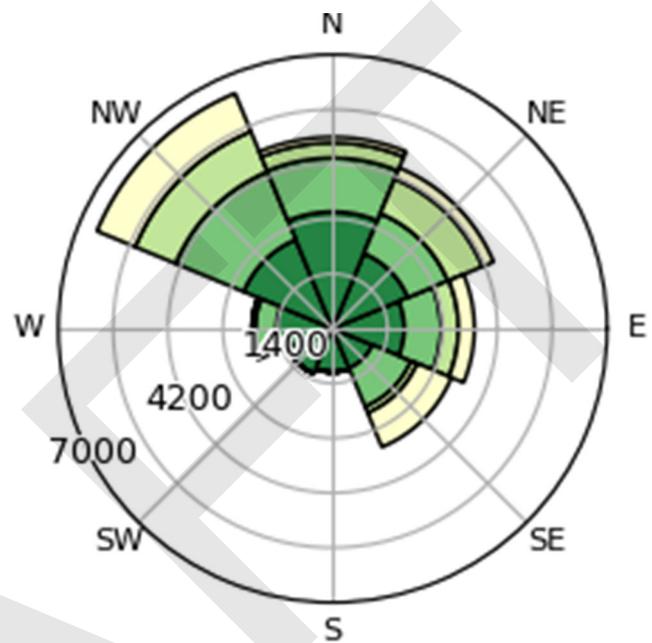


Figure 2-3: Residents of Fountain Valley Commute to Work (Magnitude and Direction)



| | 2015 | |
|-----------------------|--------|--------|
| | Count | Share |
| Total Primary Jobs | 24,410 | 100.0% |
| Less than 10 miles | 13,740 | 56.3% |
| 10 to 24 miles | 5,679 | 23.3% |
| 25 to 50 miles | 3,024 | 12.4% |
| Greater than 50 miles | 1,967 | 8.1% |

Figure 2-4: Workers of Fountain Valley Commute to Home (Magnitude and Direction)

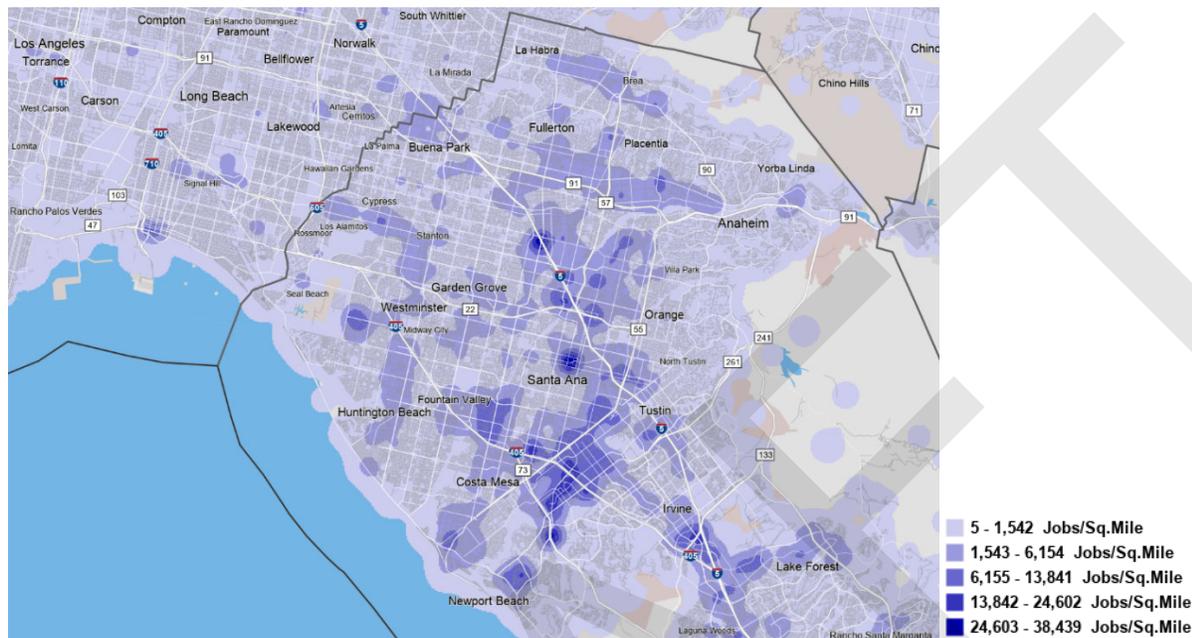


| | 2015 | |
|-----------------------|--------|--------|
| | Count | Share |
| Total Primary Jobs | 27,158 | 100.0% |
| Less than 10 miles | 14,240 | 52.4% |
| 10 to 24 miles | 6,898 | 25.4% |
| 25 to 50 miles | 3,169 | 11.7% |
| Greater than 50 miles | 2,851 | 10.5% |

Source: U.S. Census Bureau. 2015. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. <http://onthemap.ces.census.gov/>

The majority of Fountain Valley commuters travel northwest in order to reach employment as shown in **Figure 2-3**. I-405 is a popular route into Orange County to reach employment. Workers that travel northwest most commonly travel 10 to 50 miles to reach employment. There are a limited number of workers who travel north, northeast, east, and southeast for work. **Figure 2-4** displays the magnitude and direction of people who work in Fountain Valley and travel home. Most workers employed in Fountain Valley travel northwest, north, northeast, east, and southeast to reach their homes. Travel by Fountain Valley residents to work is more concentrated by location in comparison to persons who work in Fountain Valley and live outside of the City of Fountain Valley. **Figure 2-5** shows the magnitude of employment distribution in the region. The aggregated majority of jobs are located to the northwest of Fountain Valley, some in Garden Grove and Westminster, but mostly in Los Angeles County. The rest of the jobs are mostly concentrated to the north and east in Santa Ana, Anaheim, Irvine and Costa Mesa. The City should take advantage of the concentrated travel location and pursue policies that further expand carpool and transit as part of the City's mode share, helping reach AB 32 goals.



Figure 2-5: Regional Employment Distribution Magnitude

Source: U.S. Census Bureau. 2015. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. <http://onthemap.ces.census.gov/>

MODE CHOICE

The primary mode of travel for the City of Fountain Valley is the automobile. Car trips make up about 93% of total travel for the City of Fountain Valley and 88% for Orange County. As shown in **Table 2-2**, when compared to California as a whole, Fountain Valley has higher levels of automobile travel. The City may use strategic measures to improve and further incentivize carpool trips as a way to create a more sustainable transportation system. Bicycling and walking are less common in Fountain Valley when compared to the county, and the state. The City may improve the safety and connectivity of the bicycle network in order to increase the vitality of using active modes of transportation for persons who live and work in the City, consistent with AB 32.

The City's public transit modal share is lower than the County's, and is served by only OCTA transit lines. Changes to the current bus system can help incentivize greater ridership and shift more car trips to transit. It is important that the City incorporate policy directives into their General Plan in order to increase the modal share of transit, carpool, bicycling, and walking in order to create a more environmentally sustainable transportation system that is consistent with AB 1358, AB 32, and SB 375. Strategic measure to improve the modal share of active modes of transport are discussed later in this report, such as the reclassification of roadways that explicitly prioritize some modes over others and the adoption of a complete streets approach to design.



Table 2-2: Commuter Modal Split

| Mode Choice | Fountain Valley | Orange County | California |
|-----------------------|-----------------|---------------|------------|
| Single Occupant Auto | 83.9% | 78.6% | 73.6% |
| Carpool | 9.2% | 9.8% | 10.4% |
| Public Transit | 0.8% | 2.2% | 5.2% |
| Walking | 0.2% | 1.9% | 2.7% |
| Bicycling/Other Means | 1.5% | 2.0% | 2.6% |
| Work at Home | 4.4% | 5.6% | 5.6% |

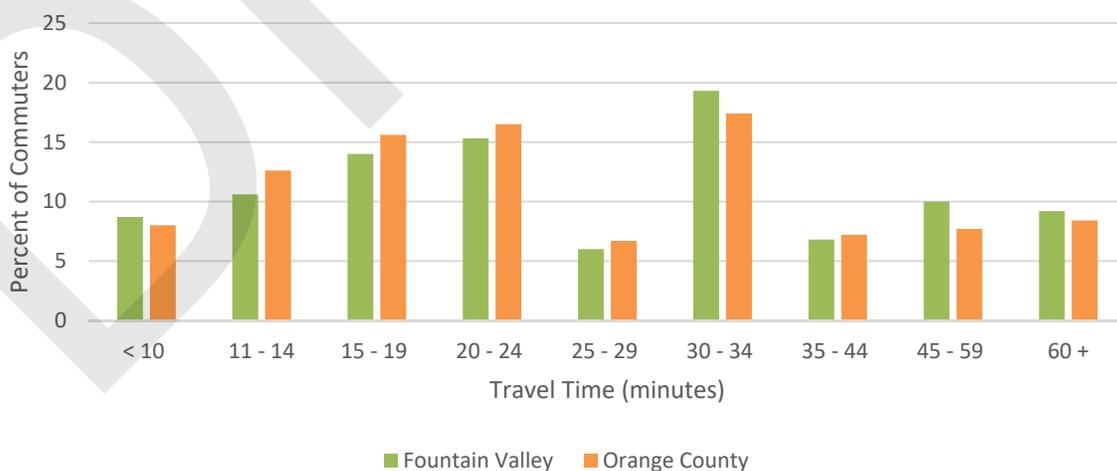
Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Note: Public transit includes metro ridership

TRAVEL TIME TO WORK

On average, Fountain Valley residents spend more time traveling to work as compared to Orange County as a whole. **Chart 2-1** displays travel time to work by percent of total population for the City of Fountain Valley and Orange County. A greater share of Fountain Valley residents have longer commutes in terms of travel time and a smaller share of Fountain Valley commuters have short commutes – 24 minutes or less, in comparison to Orange County as a whole. **Figure 2-3** shows that close to half of Fountain Valley residents travel between 10 and 24 miles, while **Chart 2-1** shows that residents are traveling 30-34 minutes at the highest frequency. Fountain Valley residents traveling to work, mostly in a northwestern direction towards other cities in Orange County as well as Los Angeles County, experience high levels of traffic congestion.

Chart 2-1: Travel Time to Work



Source: American Community Survey (2013 - 2017)



3. EXISTING STREET SYSTEM

ROADWAY SYSTEM

The City of Fountain Valley is connected regionally and bisected by the I-405. The freeway provides north-south connectivity to surrounding metropolitan areas. According to the Circulation Element of 1995 Fountain Valley General Plan (which was last updated in 2008) there are nine functional systems that make up the roadway system, which include the following: freeway, major arterial, primary arterial, secondary arterial, collector roadway, local street, augmented roadway, enhanced intersection, and right-of-way reserve. The street classification is based on a functional hierarchy defined by the number of travel lanes, roadway width (curb to curb), right-of-way (public property line to public property line), and traffic volumes. The network of streets provides connectivity within the City of Fountain Valley and to neighboring communities.

ROADWAY CLASSIFICATIONS

Fountain Valley's roadway classifications are shown in **Figure 3-1**. Functional classification refers to how a road accommodates two characteristics: first, the extent to which the roadway prioritizes the through movement of traffic; and second, the level of access provided to adjacent properties. Based on these generalized characteristics, roadways often vary in terms of right-of-way, roadway width, number of lanes, intersection and traffic signal spacing, speed, and other factors. Functional classification is generally determined in the Circulation Element of the City's General Plan, in which the functional classification is assigned to a particular roadway based on the criteria above. **Table 3-1** below identifies roadway types for the City of Fountain Valley, based on the 2008 Circulation Element and provides the general characteristics of each.



Table 3-1: Fountain Valley 2008 Circulation Element Roadway Functional Classifications

| Roadway Type | Description | Number of Lanes and Division | Capacity | Right-of-Way |
|------------------------------------|--|-------------------------------|-----------------------------|-------------------------|
| Freeway | Limited access, high-speed travelways. Carry regional traffic. Access is provided at interchanges. | 6+ Lane, Divided ¹ | N/A | N/A |
| Major Arterial | Carry a large volume of regional traffic not handled by freeway | 6 Lane, Divided | 56,300 ADT, 5,630 peak-hour | 120', 104' curb-to-curb |
| Primary Arterial | Similar function to that of a Major Arterial but with less capacity. | 4 Lane, Divided | 37,500 ADT, 3,750 peak-hour | 100', 84' curb-to-curb |
| Secondary Arterial | Distribute traffic between local streets and arterials | 4 Lane, Undivided | 25,000 ADT, 2,500 peak-hour | 80', 64' curb-to-curb |
| Collector Roadway ² | Similar function to that of a Secondary Arterial but with less capacity. | 2 Lane, Undivided | N/A | N/A |
| Local Street ² | Provides direct access to abutting properties. | 2 Lane | N/A | N/A |
| Augmented Roadway ³ | Any of the three arterial street categories can be designated as augmented, to allow for improvements to be made related to increased capacity, alignment with local conditions, and increased efficiency of right-of-way use. | N/A | N/A | N/A |
| Enhanced Intersection ³ | This overlay enables intersections to receive improvements to increase capacity, alignment with local conditions, and enhance operations. | N/A | N/A | N/A |
| Right-of-Way Reserve | This is a unique designation that preserves the right-of-way for the Garfield-Gisler bridge and assumes it to be that of a primary arterial. | N/A | N/A | N/A |

Notes: 1. This facility is under Caltrans' jurisdiction

2. Not included in the General Plan circulation system

3. Detailed engineering studies necessary

Source: City of Fountain Valley 2008 Circulation Element



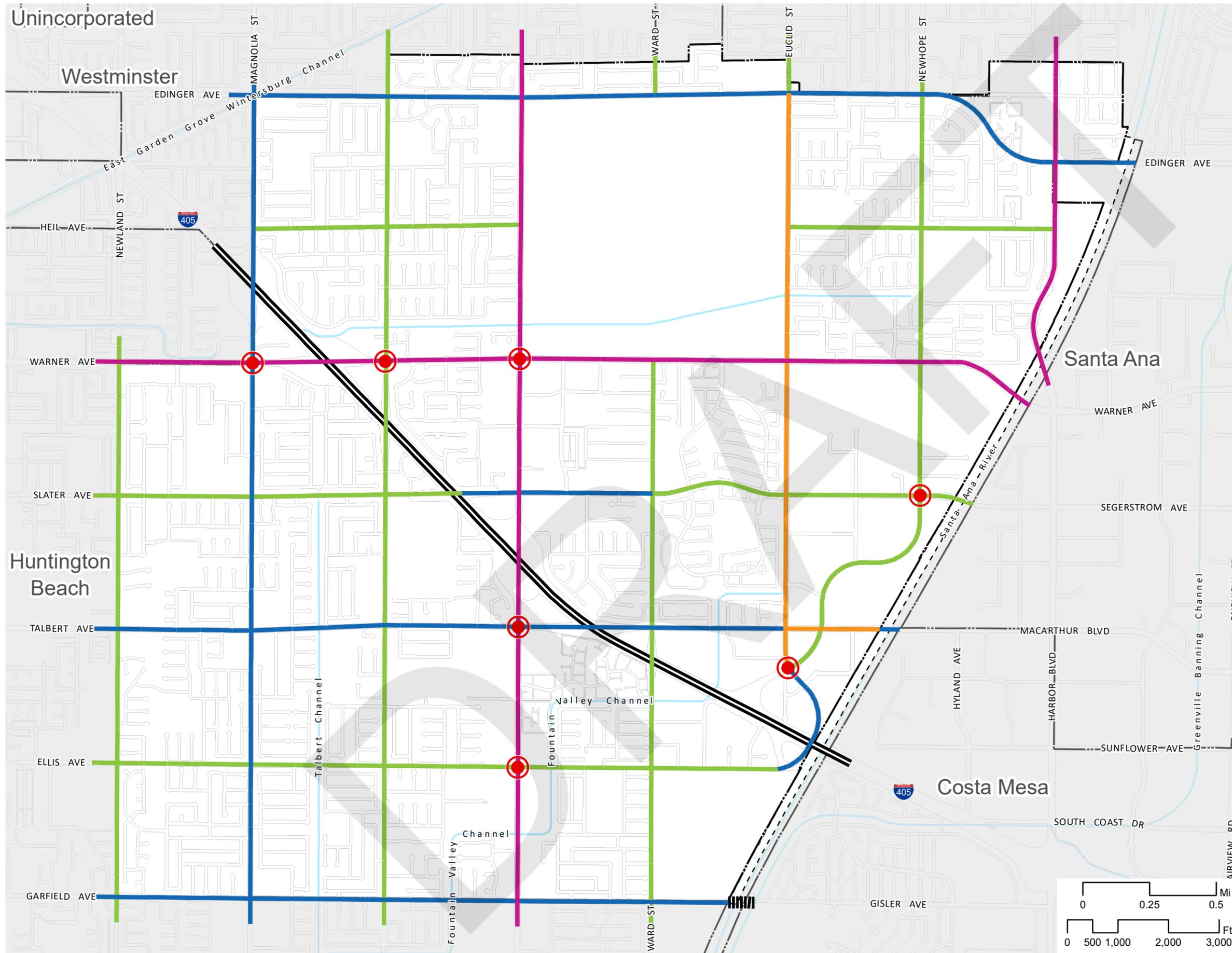
The 2008 Circulation Element provides descriptions of the current roadway classifications, including purpose, number of lanes, capacity, and configurations generally associated with each type. Note that in regard to the Right-of-Way Reserve roadway type, the Garfield-Gisler Bridge will no longer be built. Thus, this classification may no longer be needed. The plan also contains cross-sections for the following classes, as shown in **Figure 3-2**.

- Major Arterial
- Primary Arterial
- Secondary Arterial
- Collector Roadway

Figure 3-2 shows the schematic cross-sections of each roadway category in terms of their desirable lane configurations/widths, medians, sidewalks, etc. Variations may occur depending on the local context, right-of-way limitations, turn lane requirements, and capacity requirements.

The current roadway classifications do not mention facilities for bicyclists and pedestrians, however, Fountain Valley has adopted three bikeway standards that are described further in the “Bicycle Network” section of this report.





**Figure 3-1:
Existing Circulation Plan**

-  Freeway
-  Major Arterial
-  Augmented Primary Arterial
-  Primary Arterial
-  Secondary Arterial
-  Right-of-Way Reserve Overlay
-  Enhanced Intersection
-  Fountain Valley City Limit
-  Sphere of Influence Areas

Source: City of Fountain Valley 2008

Date: 4/24/2019

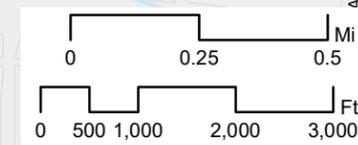
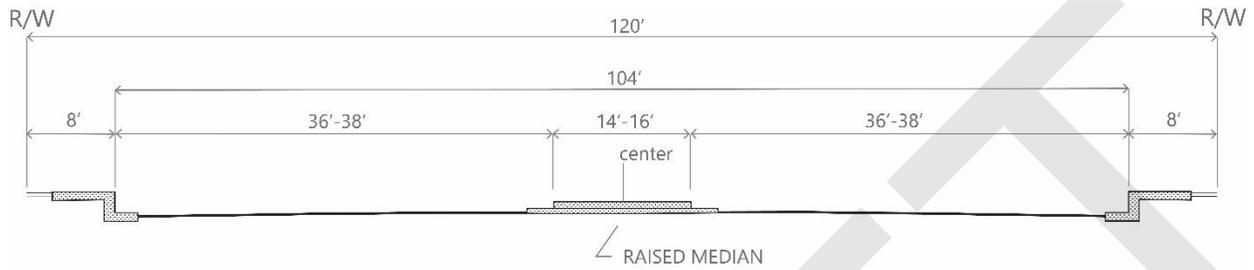
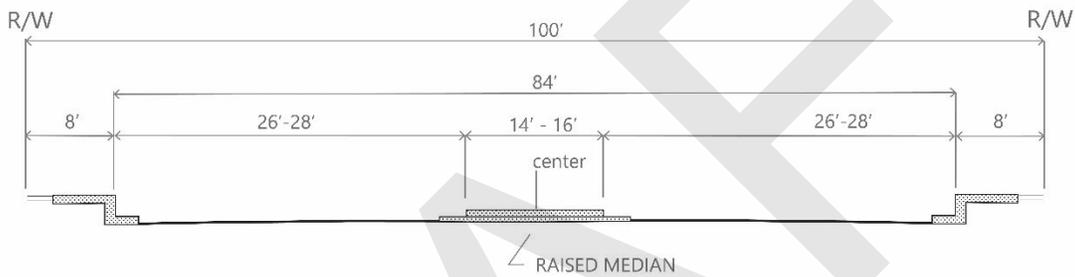


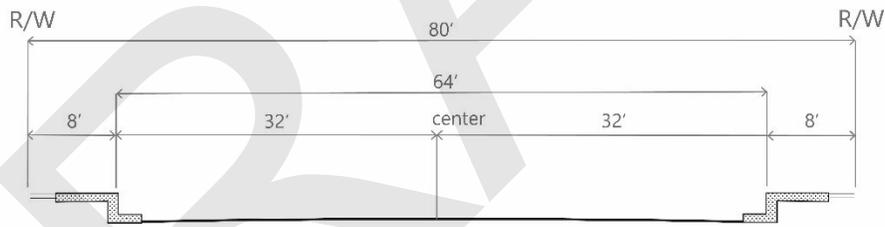
Figure 3-2: Roadway Cross Sections



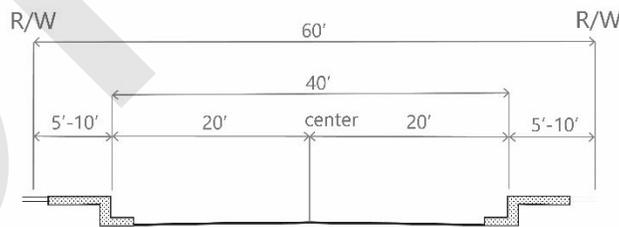
Major Arterial (6 Lanes, Divided)



Primary Arterial (4 Lanes, Divided)



Secondary Arterial (4 Lanes, Divided)



Collector Roadway (2 Lanes, Divided)



KEY CITY ROADWAYS

FREEWAY

Interstate 405 (I-405) Freeway

The I-405 freeway is a north-south facility in Southern California. It covers roughly 70 miles, beginning in San Fernando Valley in Los Angeles County and terminating in south Irvine in Orange County. Most of the I-405 traversing Fountain Valley has 10 lanes, including a high occupancy vehicle (HOV) lane in each direction, with a posted speed limit of 65 miles per hour (MPH). The I-405 is the only freeway through Fountain Valley.

MAJOR ARTERIAL

Brookhurst Street

Brookhurst Street is classified as a six-lane divided major arterial between Edinger Avenue and Garfield Avenue. The roadway is a north-south facility that is surrounded by single family, multifamily, and commercial land uses. The roadway has a 45 MPH posted speed limit, and offers access to Fountain Valley Sports Park (within Mile Square Regional Park) and the I-405.

Harbor Boulevard

Harbor Boulevard is classified as a six-lane major arterial between Gloxinia Avenue and the Santa Ana River. The roadway is a north-south regional facility connecting multiple cities including La Habra, Fullerton, Anaheim, Garden Grove, Santa Ana, Fountain Valley and Costa Mesa. It connects single family, multifamily, and commercial land uses, and has a 45 MPH posted speed limit.

Warner Avenue

Warner Avenue is classified as a six-lane major arterial between Newland Street and the Santa Ana River. The east-west roadway provides access from the City of Fountain Valley to the I-405 and surrounding cities such as Westminster and Santa Ana. It also offers access to Mile Square Regional Park. The roadway has a speed limit of 45 MPH and provides access to single family, multi-family and commercial land uses.



PRIMARY ARTERIAL

Euclid Street

Euclid Street is a north-south facility that is classified as a primary arterial from West Lenhardt Avenue to Edinger Avenue, an augmented primary arterial from Edinger Avenue to Talbert Avenue, and then a primary arterial from Talbert Avenue to Ellis Avenue. Through most of Fountain Valley it is a six-lane divided roadway with a posted speed limit of 45 MPH. Euclid Street provides access to Mile Square Regional Park, several residential areas, and some industrial and commercial areas.

Talbert Avenue

Talbert Avenue is an east-west facility that is classified as a primary arterial from Newland Street to Euclid Street, and an augmented primary arterial from Euclid Street to the Santa Ana River. Through most of Fountain Valley it is a four-lane divided roadway with a posted speed limit of 45 MPH. Talbert Avenue connects through residential and commercial areas, and provides access to the I-405.

Edinger Avenue

Edinger Avenue is an east-west, four-lane divided roadway, and is classified as a primary arterial from Magnolia Street to the Santa Ana River. It has a posted speed limit of 45 MPH. As a major thoroughfare along the northern edge of the City, Edinger Avenue provides access to residential areas and Mile Square Regional Park.

Magnolia Street

Magnolia Street is a north-south, four-lane divided roadway, and is classified as a primary arterial from Edinger Avenue to Garfield Avenue. It has a posted speed limit of 45 MPH, and connects mostly residential and commercial areas.

Garfield Avenue

Magnolia Street is an east-west, four-lane divided roadway, that is classified as a primary arterial from Newland Street to the Santa Ana River. As mentioned, the segment that is the Garfield-Gisler bridge is classified as a right-of-way reserve overlay. It has a posted speed limit of 45 MPH, and is connects through residential and commercial areas.



SECONDARY ARTERIAL

Ward Street

Ward Street is a north-south facility classified as a secondary arterial between Margarita Avenue and Garfield Avenue. Through most of Fountain Valley it is an undivided four lane facility. From Edinger Avenue to Warner Avenue, Ward Street is interrupted by the Mile Square Regional Park. Segments of Ward Street have a Class II bike lane in each direction and a posted speed limit of 45 MPH. Ward Street provides access to residential areas and schools, as well as the David L. Baker Golf Course at the north-east corner of Mile Square Regional Park.

Ellis Avenue

Ellis Avenue is classified as a secondary arterial between Newland Street and Euclid Street according to the City of Fountain Valley Circulation Element and is an east-west facility. Throughout most of Fountain Valley Ellis Avenue is an undivided four lane facility with a posted speed limit of 45 MPH. It connects commercial and residential areas, and provides access to the I-405.

Heil Avenue

Heil Avenue is an east-west facility classified as a secondary arterial between Magnolia Street and Harbor Boulevard. Between Brookhurst Street and Euclid Street, Heil Avenue is interrupted by the Mile Square Regional Park. Throughout most of Fountain Valley, Heil Avenue is an undivided four lane facility with a posted speed limit of 45 MPH. It provides to mostly residential areas.

Slater Avenue

Slater Avenue is an east-west facility that is classified as a secondary arterial between Newland Street and the Santa Ana River, except for the segment between the I-405 and Ward Street, which is classified as a primary arterial. Throughout most of Fountain Valley, Slater Avenue is an undivided four lane facility with a posted speed limit of 45 MPH. It connects through residential and industrial areas.

Newland Street

Newland Street is a north-south facility that is classified as a secondary arterial between Warner Avenue and Garfield Avenue. It is an undivided four lane facility with a posted speed limit of 45 MPH. It provides access to residential areas on the west side of the City.



Bushard Street

Bushard Street is a north-south facility that is classified as a secondary arterial between Edinger Avenue and Garfield Avenue. Throughout most of Fountain Valley it is an undivided four lane facility with a posted speed limit of 45 MPH. It provides access to school facilities and residential areas.

Newhope Street

Newhope Street is a north-south facility that is classified as a secondary arterial between Edinger Avenue and Euclid Street. Throughout most of Fountain Valley it is an undivided four lane facility with a posted speed limit of 40 MPH. It connects through residential, commercial, and industrial areas.

ENHANCED INTERSECTIONS

According to Fountain Valley's 2008 Circulation Element, the enhanced intersection overlay provides flexibility from implementing the standard intersection capacity. Reasons for deviating from the standard include offering increased capacity, enhanced operations, and alignment with local conditions. To meet these objectives, the following types of improvements could be made, after detailed engineering studies have been completed: additional lanes, decreased median width, increased right-of-way width, removal of bike lanes, or decrease in parkway width.

The following intersections are considered enhanced according to the 2008 Circulation Element:

- Warner Avenue & Magnolia Street
- Warner Avenue & Bushard Street
- Warner Avenue & Brookhurst Street
- Newhope Street & Slater Avenue
- Talbert Avenue & Brookhurst Street
- Ellis Avenue & Brookhurst Street
- Newhope Street & Euclid Street

COMPLETE STREETS APPROACH

The current roadway classifications Fountain Valley uses are typical throughout the State, but the current structure focuses only on automobile travel. The City may consider a reclassification and reprioritization of travel modes on roadways to better support complete streets designs and improvements that serve users of all ages, abilities, and mode choice. An approach to reclassification of roadways may include the following roadway types and descriptions shown on **Table 3-2**. Any updates to Fountain Valley's roadway classifications would only occur after discussion with City staff and the community through the General Plan update process.



Table 3-2: Complete Streets Approach to Roadway Classifications

| Roadway Type | Description | Prioritized Mode(s) | Accommodated Mode(s) |
|---------------------------|--|---------------------------|-----------------------------------|
| Freeways | Serve the purpose of interregional travel by automobile. | Automobile | Transit |
| Arterial Streets | Arterial streets should allow all mode types but are major corridors for automobile travel. These types of streets may have up to six lanes. | Automobile, Transit | Bicycle, Walk |
| Collector Street | Streets that connect neighborhoods together and accommodate auto, bike, and pedestrian travel. | Bicycle, Walk, Automobile | Transit |
| Local/Neighborhood Street | Local streets most commonly provide access to housing. Street width should accommodate street parking. Maintain low speeds by using traffic calming tools such as speed humps or bulb-outs. Class III sharrows may also be used. | Bicycle, Walk, | Automobile |
| Bicycle Corridor | Streets that become the backbone of the bicycle network. Buffered and protected (Class IV) bicycle lanes with reduced automobile speeds. | Bicycle | Walk, Transit, Automobile |
| School Street | Streets that connect to schools. May provided wide sidewalks, high visibility crosswalks, bicycle lanes, raised medians, and reduced travel speeds. | Walk, Bicycle | Automobile, Transit, School Buses |

Source: Fehr & Peers, 2019

Identifying prioritized travel modes for each roadway type can better support complete streets, consistent with AB 1358 (Complete Streets). One approach to support complete streets is known as a layered networks approach which recognizes that not all streets can provide the best service for each travel mode type. A narrow street with multiple crossings may be great for walking, but not for driving because of competing interests. By explicitly prioritizing a travel mode for each roadway type, the City can increase active transportation opportunities for people. For example, a roadway type that prioritizes transit may not exclude bicycles or automobiles, but would accommodate them, while maintaining transit as the priority mode.



PEDESTRIAN NETWORK

The existing Circulation Element of the General Plan calls for the implementation of the Fountain Valley Trails Plan, to offer access to employment and educational centers, and nearby communities. A map of the trail plan is shown in **Figure 3-3**. The plan also states that trails can be a recreational resource. In general, active modes of transportation are environmentally friendly alternatives to motor vehicles that enhance both personal and social well-being.

Safe, convenient, attractive, and well-designed pedestrian and bicycle facilities are essential if these modes are to be properly accommodated and encouraged. Inadequate facilities discourage users and use valuable resources on underused facilities.

PEDESTRIAN FACILITIES

The suburban tract housing layout, major through streets, and separation of land uses that comprise a notable portion of the city has resulted in an automobile-oriented community. Although walking may not be a viable form of transportation for errand trips, large neighborhood sidewalks provide a walking environment that accommodates walking trips for leisure and exercise. Six factors that affect walkability and the pedestrian experience in the city at large have been analyzed, including:

Sidewalk Continuity – Communities are more walkable if sidewalks do not end abruptly and are present on the entire segment and both sides of a roadway. This is especially important for mobility-impaired users or those pushing small children in strollers.

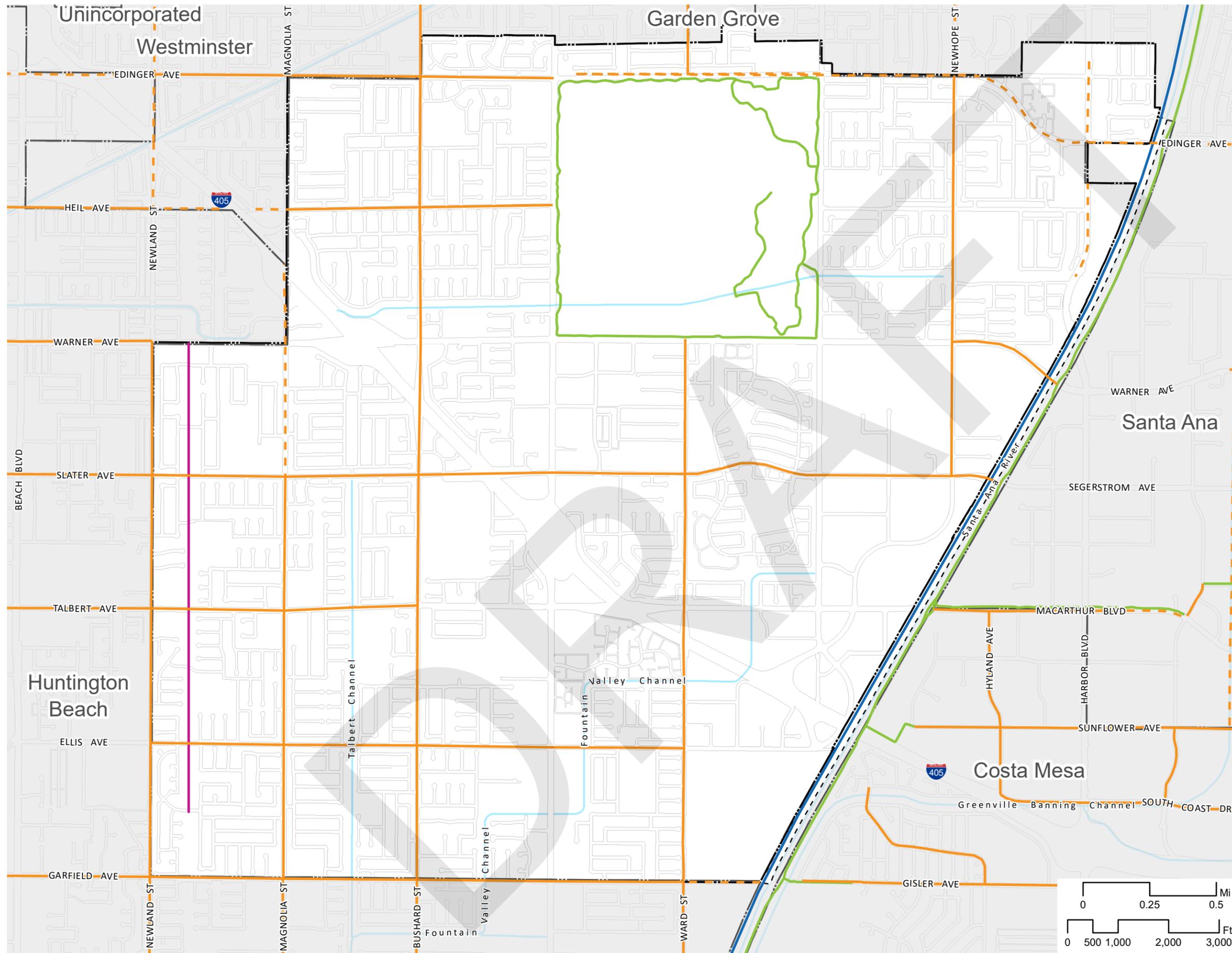
Sidewalk Conditions - This refers to the physical condition of sidewalk surfaces. Sidewalks that are broken or cracked can deter walkability and pose a safety hazard; particularly for mobility-impaired users, such as those in wheel chairs, persons using walkers, or strollers.

Shading - Persons are more inclined to walk in areas where there is shade present, particularly in Southern California with its relatively warm weather and limited rainfall, as compared to other locations. Additionally, shade trees create an aesthetic value that is pleasing to the pedestrian.

Grade - Persons are more inclined to walk in areas that are relatively flat or have limited grade changes.

Amenities - All else being equal, persons are more inclined to walk in areas that are interesting environments with shopping, retail, restaurants, and other similar uses. Pedestrian-friendly amenities include street furniture, attractive paving, high visibility crosswalks, frequent crossings, slower vehicle speeds, way-finding signage, enhanced landscaping, and pedestrian-level lighting.





**Figure 3-3:
Bike Facilities & Trails Map**

- Bike Facilities Type**
- Existing Class I
 - Existing Class II
 - - - Planned Class II
 - Existing Pedestrian Trail
 - Existing County Equestrian Trail
 - Fountain Valley City Limit
 - Sphere of Influence Areas

Source: SCAG (2015), Fehr & Peers (2019)

Date: 4/24/2019



Buffers - A more walkable environment includes some degree of separation between the pedestrian and the motorist. This typically includes wider sidewalks, street parking, and sidewalk bulb-outs at intersections where feasible. Crosswalks with appropriate signage serve as an important buffer as well. A general evaluation of the pedestrian environment in Fountain Valley is provided in **Table 3-3** below.

Table 3-3: Existing Pedestrian Facilities

| Criteria | Evaluation |
|---------------------|---|
| Sidewalk Continuity | Most major roadways in Fountain Valley have continuous sidewalks on one or both sides. Most residential streets also have continuous sidewalks on both sides of the street. |
| Sidewalk Conditions | Throughout the City, sidewalks are generally in good condition, free of cracks, fissures, or uplift. The City of Fountain Valley has also made improvements to sidewalks in older neighborhoods that previously lacked accessibility (see Image 1). Sidewalks are generally wide enough to accommodate multiple users, though in some cases there are obstructions due either to various utility boxes, street lights or overgrown landscaping (see Image 2). |
| Shading | Generally, shading on Fountain Valley sidewalks is extensive. Most shading is provided along the Mile Square Regional Park. Several major roadways including Brookhurst Avenue, Euclid Street, Warner Avenue, Slater Avenue have medians with shading for beautification purpose (See Image 3). Some shade is provided by trees on private properties adjacent to sidewalks. In few cases, there is no shading whatsoever. |
| Grade | Most of the major arterials in Fountain Valley have limited slopes. The roadways passing over I-405 (See Image 4) and Santa Ana River have significant grade. Land areas with limited slope can encourage more active forms of transportation. |
| Amenities Offered | Most major roadways in Fountain Valley have crosswalks with pedestrian crossing signals. Most residential neighborhoods do not have crosswalks (See Image 5). In general, the crosswalks are in good condition, but some need restriping (See Image 6). In the Fountain Valley Crossings area, most roadways are missing a sidewalk on one or both sides. A significant portion of the bus stops in Fountain Valley offer pedestrian-oriented amenities such as a bench or a shaded bus shelter (see Image 7). There are also a number of bus stops with aging facilities or no shade, as shown in Image 2 . The City has few traffic calming amenities on neighborhood streets which can make walking less attractive, especially for children or older adults. |
| Buffers | No curbside parking facilities such as parking meters, signage or striping were observed along the major arterials of Fountain Valley. Vehicles were observed to be parked along the Mile Square Regional Park (See Image 3). The existing buffers consist of bike lanes and some landscaping, such as trees or parkways, between sidewalks and automobile travel lanes. Bike lanes do not have a buffer between sidewalks and moving vehicle traffic. There is a multi-use path with buffer along the Mile Square Regional Park (See Image 8). On most City sidewalks, sidewalks lack a buffer between the pedestrian right-of-way and vehicle travel lane as is shown on Image 9 . |

Source: Fehr & Peers, 2019





Image 1: Sidewalk with Accessible ramp

Sidewalk with accessible curb ramp at the corner of Euclid Street and Stonecress Avenue



Image 2: Sidewalk with Obstacles

Sidewalk with utility boxes and posts at the corner of Euclid Street and Stonecress Avenue





Image 2: Shading in Median
Shading in median on Euclid Street



Image 3: Grading
Grade change over I-405 on Brookhurst Street





Image 4: Sidewalk with no Crosswalk
Sidewalk in image is located on East Euclid Street



Image 5: Aging Crosswalk Infrastructure
Sidewalk in image is located at Warner Avenue and Ward Street



Image 7: Bus Stop with Shelter
Bus stop in image is located on Warner Avenue



Image 8: Sidewalk with Landscape Buffer
Sidewalk in image is located on Warner Avenue



Image 9: Sidewalk with No Buffer Adjacent to Travel Lane

Sidewalk in image is located on Slater Avenue

The City has a solid foundation of pedestrian facilities but can improve the most in the area of *amenities offered*. The City could consider site design approaches that make it more attractive, easier, and safer to walk along streets within neighborhoods, and other developed areas. In addition, the City can complement and enhance the pedestrian sidewalk experience with treatments such as high-visibility crosswalks, mid-block crosswalks, curb extensions, curb cuts, and landscaping on streets prioritized for pedestrians. These types of treatments can improve accessibility and safety for non-driving populations, such as older adults and children, who may use routes for short distance trips, including recreation and school trips. The Fountain Valley Pedestrian Pathway Improvement within School Zones was approved for funding by the California Transportation Commission (CTC) in 2017. The City can seek similar funding opportunities for pedestrian improvements.

BICYCLE NETWORK

The 2008 Circulation Element states that City of Fountain Valley has adopted three bikeway standards that parallel those included in the "2009 OCTA Commuter Bikeways Strategic Plan". A summary of the bicycle system classifications in Fountain Valley is provided in **Table 3-4**.

Table 3-4: Existing Bikeway Classification

| Bicycle Facility | Description |
|----------------------|---|
| Class I (Path) | Paved facilities designated for bicycle use that are physically separated from roadways by space or a physical barrier. |
| Class II (Bike Lane) | Lanes on the outside edge of roadways reserved for the exclusive use of bicycles and designated with special signing and pavement markings. |
| Class III (Route) | Roadways recommended for bicycle use and often connected to bike lanes and bike paths. Routes are designated with signs only and may not include additional pavement width. |

Source: 2009 OCTA Commuter Bikeways Strategic Plan

As shown in **Table 3-4**, the 2008 Circulation Element calls for Class I and II bike facilities throughout the City. Also, **Table 3-5** below summarizes the total number of centerline miles currently existing and the total number of planned miles. Improving walking and bicycling facilities can improve their desirability for short distance trips, school trips, and recreational activities, while also enhancing the City's urban environment. Bicyclists were observed to ride on sidewalks where bike lanes were not provided (See **Image 10**). By shifting mode share to include higher rates of active travel, the City can reduce greenhouse gas emissions, promoting a healthy lifestyle, consistent with AB 32.





Image 10: No Bike Lane
 No Bike Lane provided on Euclid Street

Table 3-5: Completed and Planned Trails in Fountain Valley (centerline miles)

| Facility Type | Completed (miles) | Planned (miles) | Total |
|--------------------------|-------------------|-----------------|-------------|
| Class I (Path) | 5.6 | 0 | 5.6 |
| Class II (Bike Lane) | 16.2 | 2.9 | 19.1 |
| Class III (Route) | 0 | 0 | 0 |
| Total Bicycle Facilities | 21.9 | 2.9 | 0 |
| Pedestrian Trail | 1.8 | 0 | 0 |
| Equestrian Trail | 3.6 | 0 | 0 |
| Total | 27.3 | 2.9 | 24.7 |

Source: SCAG (2015), Fehr & Peers (2019)

Note: Where bicycle facilities differ on a roadway segment (e.g. one side of the roadway is a Class I and the other side a Class II), centerline miles were calculated by assigning the dual facility roadway segment to the facility with the most protection (Class I as most protected and Class III as least protected).



The City has striped 21.9 centerline miles of Class I and II lanes, 1.8 miles of pedestrian trails and 3.6 miles of equestrian trails. OCTA has identified 2.9 miles of planned Class II lanes in 2009 Commuter Bikeways Strategic Plan but has not set a date for completion. To meet demand for bikeway facilities from the community, the City should update its bicycle facility classifications to ensure the community's needs and desires are best met. The sections below describe the different types of classifications recently adopted by Caltrans and recommended for Fountain Valley.

Class I Bikeways (Bike Paths)

Class I bikeways are completely separate facilities designated for the exclusive use of bicyclists and pedestrians with minimal vehicle crossings. An image of these types of bikeways is below.



CLASS I - Multi-Use Path

Provides a completely separated right-of-way for exclusive use of bicycles and pedestrians with crossflow minimized.



MUTCD R44A (CA)

Currently, Fountain Valley has Class I bikeways along the Santa Ana River and Mile Square Regional Park (See **Image 11 & 12**).





Image 11: Class I Bicycle Path
Class I Bicycle Path/Multi-use Trail on Warner Avenue

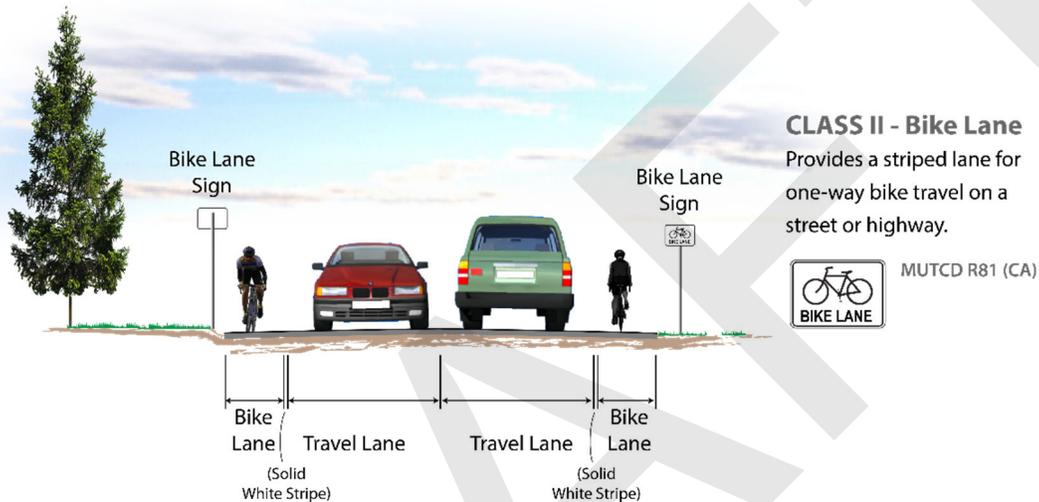


Image 12: Class I Bicycle Path
Class I Bicycle Path on Santa Ana River Trail



Class II Bikeways (Bike Lanes)

Class II Bikeways are striped lanes designated for the use of bicycles on a street or highway. Vehicle parking and vehicle/pedestrian cross-flow are permitted at designated locations. These types of bikeways can be employed as traffic calming measures because they narrow lane widths and thus limit vehicle speeds. A cross-section of this type of bikeway facility is shown below.



Class II bikeways are at the following locations:

- Along Edinger Ave from Magnolia St to Brookhurst St
- Along Heil Ave from Magnolia St to Brookhurst St
- Along Heil Ave from Euclid St to Newhope St
- Along Slater Ave from the city limit to Santa Ana River (see **Image 12**)
- Along Talbert Ave from city limit to Bushard St
- Along Ellis Ave from city limit to Ward St
- Along Gardfield Ave from city limit to Santa Ana River
- Along Warner Ave from Newhope St to Santa Ana River
- Along Newland St from Warner Ave to Garfield Ave
- From Warner Ave to Bluebird Ave connecting the Westmont Park, Fulton Park, Courreges Park and Harper Park
- Along Magnolia St from Slater Ave to Garfield Ave
- Along Bushard St from city limit to Garfield Ave
- Along Ward St from Warner Ave to Garfield Ave
- Along Ward St from Edinger Ave to city limit
- Along Newhope St from city limit to Slater Ave



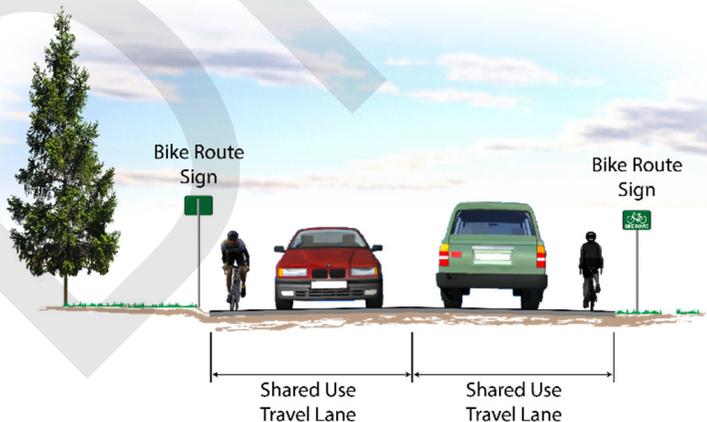


Image 12 Class II Bicycle Lane

Class II Bicycle Lane on Slater Avenue between Los Alamos St and Ward Street

Class III Bikeways (Bike Routes)

Class III Bikeways, also referred to as bike routes, and are only identified by signs or pavement markings. A bicycle route is meant for use by bicyclists and motor vehicle travel (i.e., shared use). A cross-section of a Class III route is below:



CLASS III - Bike Route

Provides a shared use with pedestrians or motor vehicle traffic, typically on lower volume roadways.



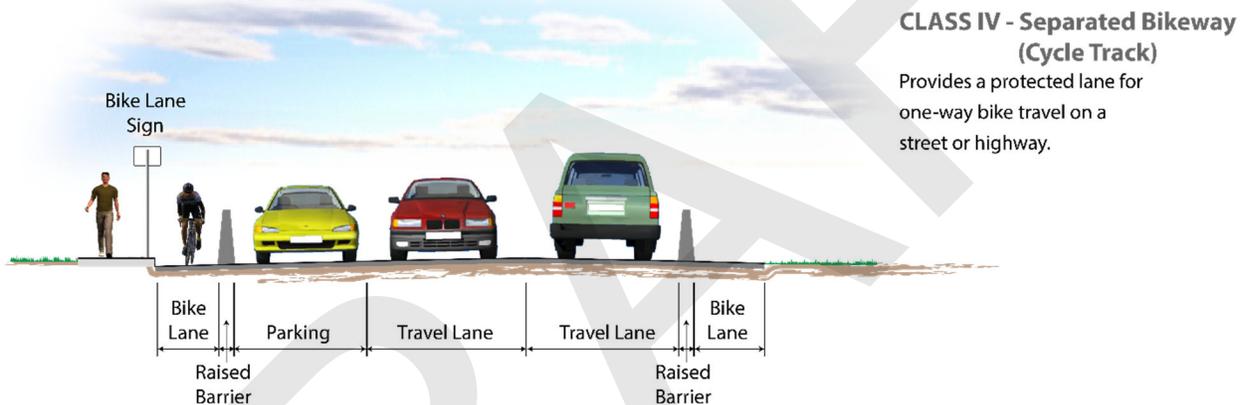
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There are no existing Class III bikeways in Fountain Valley.



Class IV Bikeways (Cycletracks)

Class IV Bikeways were not included in Fountain Valley's 2008 Circulation Element; however, this classification is recommended to be included in the City's General Plan Update as these facilities are approved by Caltrans. California Assembly Bill 1193 (AB 1193) legalized and established design standards for Class IV bikeways, a cross-section of which is shown below. Class IV bikeways are protected bike lanes, which provide a right-of-way designated exclusively for bicycle travel within a roadway, protected from vehicular traffic with devices such as curbs, flexible posts, inflexible physical barriers, or on-street parking. Fountain Valley does not currently have any Class IV bikeways, but now that Caltrans officially recognizes Class IV bikeways, or "cycletracks," the City can consider the installation of such bikeways.



Bicycle Boulevards

Like Class IV Bikeways, Bicycle Boulevards were not included in Fountain Valley's 2008 Circulation Element but have been approved by Caltrans and could be considered in the City's next General Plan Update. Bicycle boulevards are low-volume and low-speed streets parallel to a major commercial corridor that promote bicycle travel through design. Traffic calming devices such as speed humps, curb extensions, or bicycle boxes are used to encourage bicycle movement and discourage through vehicle movement. Currently, Fountain Valley does not have any of these facilities.

Bicycle Master Plan

The multijurisdictional "West/Central Orange County Bikeways Strategy Report", completed in 2013, identifies several proposed bikeways. An Active Transportation update by OCTA is also currently underway. The creation of a bicycle master plan could improve facilities that can make it safer for users of ages and abilities to ride a bicycle on city streets such as cycletracks (Class IV). A bicycle master plan can also help



meet the needs and desires of community members through additional outreach and the procurement of state and federal grant funding.

Fountain Valley has a rich network of local streets laid out in a grid fashion throughout the City, which are excellent for a low-stress bicycle network. The Mile Square Regional Park attracts regional visitors to the area for recreation. The Brookhurst Street has concentration of general commercial, high- and medium-density residential use. The Fountain Valley Crossings Specific Plan Area, located north of Ellis Avenue, is zoned for a high level of mixed land uses compared to the rest of the City. The City could take advantage of the grid network and mix of land uses to develop bicycle boulevards that will increase the safety of people walking and bicycling. Local trips made by bicycle or foot can be prioritized by expanding bicycle boulevards in the area. The City could pursue bicycle boulevards as a way to improve the walking and bicycle experience through the menu of treatments listed in the section above.

A bicycle master plan could also consider the use of bike lanes or routes on the same streets as truck routes as the uses are not compatible. A layered networks approach should be employed to keep the modes separate when possible.

End-of-Trip Facilities

Installation of end-of-trip facilities such as bike parking and lockers in front of commercial centers, businesses and parks encourage people to bike. Providing bike racks on bus also helps bicyclists use various modes seamlessly. There is currently no zoning ordinance in Fountain Valley that requires the developments to provide bicycle parking. Partnership with major employers in the city is could be beneficial to implement improved end-of-trip facilities. Improving bicycling facilities can increase the desirability of active transportation for short distance trips.

Safety and Education Programs

Safety and education programs on bicycling help can prevent potential injuries. Bicyclists learn about bicycle safety laws, and proper bicycle safety equipment, and the motorists about the rules of the road. Fountain Valley Police Department conducts "School Bicycle Safety Program" for third and fourth grade students on proper bicycle safety.



TRANSIT FACILITIES

Public transportation is a vital part of the circulation system within Fountain Valley. Transit expands mobility options to citizens that may not be able to afford or physically operate other means of travel, while some choose not to drive. Providing good transit facilities also produces a number of commuter benefits that includes reduced traffic congestion, reduced need for roadway improvements, and reduced environmental impact. The City of Fountain Valley has a circulation system along its major arterials, as shown on **Figure 3-4**. The walking distance between the transit routes are quarter-mile, which is conducive to walking. OCTA provides intercity buses, local buses, and demand-responsive service; all of which help people move. Currently, there is no Metrolink station or transit center in Fountain Valley.

ORANGE COUNTY TRANSPORTATION AUTHORITY (OCTA)

Fountain Valley is closely tied to the surrounding cities, the Los Angeles County and the Inland Empire job market, which creates a demand for transit service. OCTA operates the Huntington Beach to Irvine Express that uses the I-405 freeways to connect several cities. Routes 37 and 70 run on 15-min frequency on weekday rush hours. The Bravo 543 route down Harbor Boulevard operates everyday from the Fullerton Transportation Center to MacArthur Blvd in Costa Mesa with fewer stops. OCTA facilitates easy transfers by accepting the same bus fare on the same route. In addition to the cash fares on boarding, OCTA also provides different types of passes for both local and express routes. OCTA has undertaken the I-405 improvement project in collaboration with Caltrans which will improve the bus flow on express lanes.

PARATRANSIT

Paratransit is an alternative mode of flexible passenger transportation that does not follow fixed routes or schedules. Vans, mini-buses, and taxis are typically used to provide paratransit service. Paratransit services vary considerably on the degree of flexibility they provide their customers. At their simplest, they may consist of a taxi or small bus that will run along a more or less defined route and then stop to pick up or discharge passengers on request. At the other end of the spectrum (fully demand-responsive transport), the most flexible paratransit systems offer on-demand call-up door-to-door service from any origin to any destination in a service area.

The Senior Transportation "Hop On" Program, which is operated by the City of Fountain Valley, is an on-demand, shared-ride transit system. The service provides mobility to the seniors of 60 years of age and older. Riders register to participate in the program and call ahead to schedule their trip and can receive curb-to-curb service in the City and neighboring county areas. Currently, "Hop On" offers service seven days a week, with a two-dollar one-way adult fare, and free rides to the accompanying caregivers.



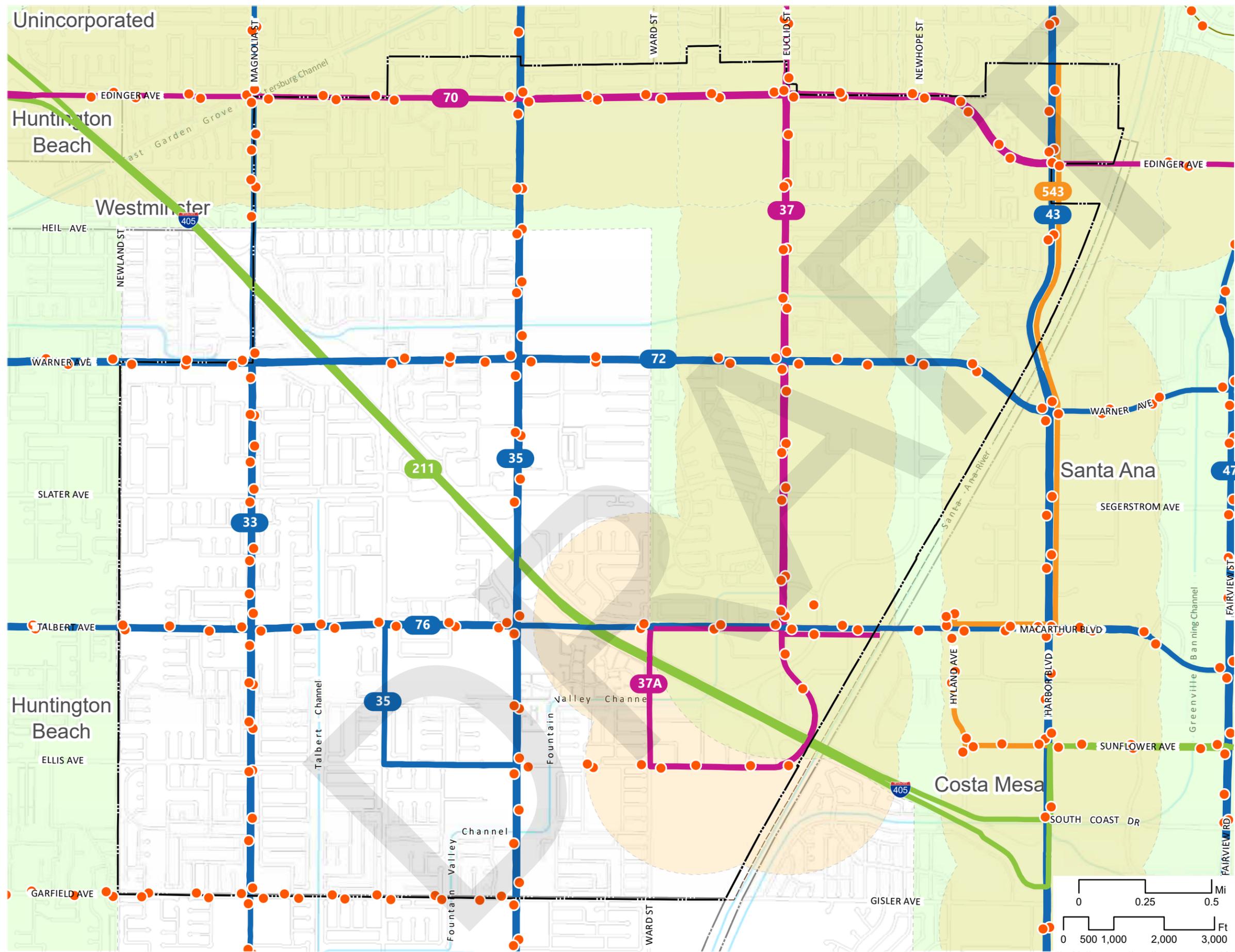


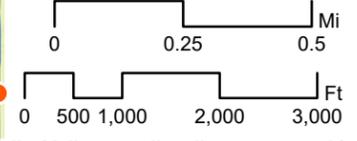
Figure 3-4:
Existing Transit
Facilities

- Bus Stops
- Transit Routes**
- █ Weekday Rush Hour 15-min Frequency
- █ Local Routes
- █ Bravo Limited Stop Service
- █ Intracounty OC Express Routes
- Transit Priority Area
- High Quality Transit Area
- Fountain Valley City Limit
- Sphere of Influence Areas

Date: 4/24/2019



Source: SCAG (2015), OCTA (2019), Fehr & Peers (2019)



ROADWAY SEGMENT ANALYSIS

The City of Fountain Valley 2008 Circulation Element uses volume-to-capacity (V/C) ratios to analyze the level of service (LOS) for intersections. For signalized intersections within the jurisdiction of Fountain Valley, the traffic analysis of this project was evaluated in accordance with the CMP guidelines using the Intersection Capacity Utilization (ICU) methodology.

The ICU methodology is considered a standard approach for evaluating signalized intersection operations in Orange County and the City of Fountain Valley. The ICU methodology evaluates the critical movements for each signal and compares that to the critical movement capacity of the intersection, resulting in a V/C ratio. After the quantitative V/C estimates are complete, the methodology assigns a qualitative letter grade that represents the operations of the intersection. These grades range from Level of Service (LOS) A (minimal delay) to LOS F (excessive congestion). LOS E represents at-capacity operations. For the City of Fountain Valley, LOS D or better is considered acceptable. Once the delay is estimated, the LOS grade is assigned based on the criteria as shown in **Table 3-6**.

Table 3-6: Level of Service Summary

| LOS | V/C Ratio |
|-----|------------------------------|
| A | 0.60 |
| B | 0.70 |
| C | 0.80 |
| D | 0.90 (City Minimum Standard) |
| E | 1.00 |

Notes: Peak hour intersection LOS is based on ICU values calculated as follows: Saturation flow rate: • 1,700 vehicles per hour (VPH); • Clearance Interval = 0.5 of an ICU value; • ADT V/C follows same standard of significance.

Using the City’s latest data (2016) for average daily traffic on roadway segments, sixty-three roadway segments were selected for analysis. **Table 3-7** displays the roadway segments, classification, roadway capacity, existing daily volumes, V/C ratios, and LOS. Street segments were chosen based on their significance, in terms of use. Roadway segments that were analyzed operate acceptably, except:

- One segment at an LOS of E on Euclid Street from I-405 NB to Talbert Street, and two segments at an LOS of F from Warner Avenue to Heil Avenue and from Heil Avenue to Edinger Avenue.
- Two segments at an LOS F on Ellis Avenue from Bushard Street to Brookhurst Street and from Ward Street to I-405 SB Off-Ramp.



Table 3-7: Roadway Segment Analysis of Major Arterials

| Roadway | Classification | Capacity | ADT | V/C | LOS |
|---------------------------------|-----------------------------|----------|--------|------|-------------|
| Magnolia Street | | | | | |
| Garfield Avenue to Ellis Avenue | Primary Arterial (4 lane) | 37,500 | 24,200 | 0.65 | C or Better |
| Ellis Avenue to Talbert Avenue | Primary Arterial (4 lane) | 37,500 | 26,800 | 0.71 | C or Better |
| Talbert Avenue to Slater Avenue | Primary Arterial (4 lane) | 37,500 | 30,100 | 0.80 | C or Better |
| Slater Avenue to Warner Avenue | Primary Arterial (4 lane) | 37,500 | 31,400 | 0.84 | D |
| Bushard Street | | | | | |
| Garfield Avenue to Ellis Avenue | Secondary Arterial (4 lane) | 25,000 | 15,100 | 0.60 | C or Better |
| Ellis Avenue to Talbert Avenue | Secondary Arterial (4 lane) | 25,000 | 15,900 | 0.64 | C or Better |
| Talbert Avenue to Slater Avenue | Secondary Arterial (4 lane) | 25,000 | 16,200 | 0.65 | C or Better |
| Slater Avenue to Warner Avenue | Secondary Arterial (4 lane) | 25,000 | 18,600 | 0.74 | C or Better |
| Warner Avenue to Heil Avenue | Secondary Arterial (4 lane) | 25,000 | 18,100 | 0.72 | C or Better |
| Heil Avenue to Edinger Avenue | Secondary Arterial (4 lane) | 25,000 | 15,900 | 0.64 | C or Better |
| Brookhurst Street | | | | | |
| Garfield Avenue to Ellis Avenue | Major Arterial (6 lane) | 56,300 | 39,300 | 0.70 | C or Better |
| Ellis Avenue to Talbert Avenue | Major Arterial (6 lane) | 56,300 | 37,100 | 0.66 | C or Better |
| Talbert Avenue to Slater Avenue | Major Arterial (6 lane) | 56,300 | 50,100 | 0.89 | D |
| Slater Avenue to Warner Avenue | Major Arterial (6 lane) | 56,300 | 48,000 | 0.85 | D |
| Warner Avenue to Heil Avenue | Major Arterial (6 lane) | 56,300 | 45,200 | 0.80 | C or Better |
| Heil Avenue to Edinger Avenue | Major Arterial (6 lane) | 56,300 | 44,100 | 0.78 | C or Better |
| Edinger Avenue to Mango Lane | Major Arterial (6 lane) | 56,300 | 40,800 | 0.72 | C or Better |
| Ward Street | | | | | |
| Garfield Avenue to Ellis Avenue | Secondary Arterial (4 lane) | 25,000 | 17,400 | 0.70 | C or Better |
| Ellis Avenue to Talbert Avenue | Secondary Arterial (4 lane) | 25,000 | 11,600 | 0.46 | C or Better |
| Talbert Avenue to Slater Avenue | Secondary Arterial (4 lane) | 25,000 | 10,200 | 0.41 | C or Better |
| Slater Avenue to Warner Avenue | Secondary Arterial (4 lane) | 25,000 | 7,900 | 0.32 | C or Better |
| | | | | | |



Table 3-7: Roadway Segment Analysis of Major Arterials

| Roadway | Classification | Capacity | ADT | V/C | LOS |
|-------------------------------------|-------------------------------------|----------|--------|------|-------------|
| Euclid Street | | | | | |
| I-405 NB to Talbert Street | Primary Arterial (4 lane) | 37,500 | 34,700 | 0.93 | E |
| Talbert Avenue to Slater Avenue | Augmented Primary Arterial (4 lane) | 37,500 | 30,800 | 0.82 | D |
| Slater Avenue to La Amada Avenue | Augmented Primary Arterial (4 lane) | 37,500 | 32,400 | 0.86 | D |
| Warner Avenue to Heil Avenue | Augmented Primary Arterial (4 lane) | 37,500 | 40,800 | 1.09 | F |
| Heil Avenue to Edinger Avenue | Augmented Primary Arterial (4 lane) | 37,500 | 40,300 | 1.07 | F |
| Harbor Boulevard | | | | | |
| Warner Avenue to Heil Avenue | Major Arterial (6 lane) | 56,300 | 44,700 | 0.79 | C or Better |
| Heil Avenue to Edinger Avenue | Major Arterial (6 lane) | 56,300 | 43,200 | 0.77 | C or Better |
| Edinger Avenue to Lilac Avenue | Major Arterial (6 lane) | 56,300 | 45,000 | 0.80 | C or Better |
| Garfield Avenue | | | | | |
| Newland Street to Magnolia Street | Primary Arterial (4 lane) | 37,500 | 15,900 | 0.42 | C or Better |
| Magnolia Street to Bushard Street | Primary Arterial (4 lane) | 37,500 | 17,900 | 0.48 | C or Better |
| Bushard Street to Brookhurst Street | Primary Arterial (4 lane) | 37,500 | 16,500 | 0.44 | C or Better |
| Brookhurst Street to Ward Street | Primary Arterial (4 lane) | 37,500 | 9,400 | 0.25 | C or Better |
| Ellis Avenue | | | | | |
| Newland Street to Magnolia Street | Secondary Arterial (4 lane) | 25,000 | 20,200 | 0.81 | D |
| Magnolia Street to Bushard Street | Secondary Arterial (4 lane) | 25,000 | 22,100 | 0.88 | D |
| Bushard Street to Brookhurst Street | Secondary Arterial (4 lane) | 25,000 | 25,900 | 1.04 | F |
| Brookhurst Street to Ward Street | Secondary Arterial (4 lane) | 25,000 | 21,500 | 0.86 | D |
| Ward Street to I-405 SB Off-Ramp | Secondary Arterial (4 lane) | 25,000 | 30,500 | 1.22 | F |
| Talbert Avenue | | | | | |
| Newland Street to Magnolia Street | Primary Arterial (4 lane) | 37,500 | 22,400 | 0.60 | C or Better |
| Magnolia Street to Bushard Street | Primary Arterial (4 lane) | 37,500 | 28,400 | 0.76 | C or Better |
| Bushard Street to Brookhurst Street | Primary Arterial (4 lane) | 37,500 | 31,100 | 0.83 | D |
| Brookhurst Street to Ward Street | Primary Arterial (4 lane) | 37,500 | 22,600 | 0.60 | C or Better |
| Ward Street to Euclid Street | Primary Arterial (4 lane) | 37,500 | 28,700 | 0.77 | C or Better |



Table 3-7: Roadway Segment Analysis of Major Arterials

| Roadway | Classification | Capacity | ADT | V/C | LOS |
|-------------------------------------|-----------------------------|----------|--------|------|-------------|
| Slater Avenue | | | | | |
| Newland Street to Magnolia Street | Secondary Arterial (4 lane) | 25,000 | 18,500 | 0.74 | C or Better |
| Magnolia Street to Bushard Street | Secondary Arterial (4 lane) | 25,000 | 18,300 | 0.73 | C or Better |
| Bushard Street to Brookhurst Street | Secondary Arterial (4 lane) | 25,000 | 20,000 | 0.80 | C or Better |
| Brookhurst Street to Ward Street | Primary Arterial (4 lane) | 37,500 | 21,100 | 0.56 | C or Better |
| Ward Street to Euclid Street | Secondary Arterial (4 lane) | 25,000 | 17,600 | 0.70 | C or Better |
| Euclid Street to New Hope Street | Secondary Arterial (4 lane) | 25,000 | 16,600 | 0.66 | C or Better |
| Warner Avenue | | | | | |
| Magnolia Street to Bushard Street | Major Arterial (6 lane) | 56,300 | 33,600 | 0.60 | C or Better |
| Bushard Street to Brookhurst Street | Major Arterial (6 lane) | 56,300 | 39,800 | 0.71 | C or Better |
| Brookhurst Street to Ward Street | Major Arterial (6 lane) | 56,300 | 42,400 | 0.75 | C or Better |
| Ward Street to Euclid Street | Major Arterial (6 lane) | 56,300 | 41,800 | 0.74 | C or Better |
| Euclid Street to New Hope Street | Major Arterial (6 lane) | 56,300 | 47,700 | 0.85 | C or Better |
| New Hope Street to Harbor Boulevard | Major Arterial (6 lane) | 56,300 | 19,500 | 0.35 | C or Better |
| Heil Avenue | | | | | |
| Magnolia Street to Bushard Street | Secondary Arterial (4 lane) | 25,000 | 5,600 | 0.22 | C or Better |
| Bushard Street to Brookhurst Street | Secondary Arterial (4 lane) | 25,000 | 6,200 | 0.25 | C or Better |
| Euclid Street to Newhope Street | Secondary Arterial (4 lane) | 25,000 | 5,500 | 0.22 | C or Better |
| Newhope Street to Harbor Boulevard | Secondary Arterial (4 lane) | 25,000 | 6,600 | 0.26 | C or Better |
| Edinger Avenue | | | | | |
| Bushard Street to Brookhurst Street | Primary Arterial (4 lane) | 37,500 | 25,100 | 0.67 | C or Better |
| Brookhurst Street to Ward Street | Primary Arterial (4 lane) | 37,500 | 28,600 | 0.76 | C or Better |
| Ward Street to Euclid Street | Primary Arterial (4 lane) | 37,500 | 33,300 | 0.89 | D |

Source: Fehr & Peers, 2019



CUT-THRU TRAFFIC

Fountain Valley experiences cut-thru traffic on City streets during peak commute hours from the I-405 freeway. As a way to avoid traffic congestion at the I-405 interchange, people traveling through Fountain Valley on the major corridors will use the City arterial routes to bypass freeway congestion.

Cut-thru traffic is problematic because it exacerbates congestion and greenhouse gas emissions on City streets. Widening City roads and adding capacity is not a good or sustainable practice, since it may increase the desirability of driving on those roads, ultimately inducing more trips. The City can evaluate the most used roads for cut-thru traffic and propose traffic calming treatments on local and collector streets to discourage cut-thru traffic. The City may also want to consider instituting policies and strategies to discourage cut-thru traffic and make local streets safer.

Neighborhoods in the City may also experience cut-thru traffic that may be speeding or distracted. Affected neighborhoods may benefit from traffic calming measures as a way to improve safety and reduce cut-thru. The City currently has a neighborhood traffic management program community handbook, which discourages the use of chokers, speed humps, chicanes, or roundabouts. The City does not currently install speed humps because they are not recognized as an official traffic control device by the State. Other treatments are not currently installed due to their cost or potential loss of on-street parking. However, cities across the state are installing speed humps to calm traffic.

Numerous resources support the use of speed humps as well, such as National Association of City Transportation Officials and the U.S. Traffic Calming Manual. The City may want to revisit the issue of traffic calming treatments as a way to reduce cut-thru traffic in neighborhoods and improve safety. Funding opportunities for implementing traffic calming strategies in Fountain Valley can include public funds such as Surface Transportation Improvement Grants from US Department of Transportation, Bicycle and Pedestrian Program and State Highway Safety Office grants from Federal Highway Administration as well as neighborhood and private financing.

EMERGENCY RESPONSE TIME

The Fountain Valley Police Department offers around-the-clock patrol services and responds to a variety of incidents. The Police Department has a communications center which is staffed 24 hours a day by Dispatchers and call-takers. Annually, 75,000 phone calls are received from the public and over 55,000 service calls are processed. These calls include Officer initiated activity and Officers sent to assist the public. Calls received by Dispatchers are categorized as either Priority 1, 2, 3 or 4. Priority 1 calls are in-progress



crimes or in-progress emergencies. **Table 3-8** displays average response times from 2011 to 2015. Response time over this 5-year period averages 5.06 seconds.³

Table 3-8: Priority 1 Response Time (2011–2015)

| Response Time Type | 2011 | 2012 | 2013 | 2014 | 2015 |
|--------------------------|----------------------|---------------------|----------------------|---------------------|----------------------|
| Priority 1 Response Time | 4 minutes 52 seconds | 5 minutes 3 seconds | 4 minutes 49 seconds | 5 minutes 2 seconds | 5 minutes 32 seconds |

Source: Fountain Valley Police Department Strategic Plan, 2015 Annual Report

PLANNED IMPROVEMENTS

I-405 IMPROVEMENTS

A current major construction project in Fountain Valley is known as the I-405 Improvement Project. The purpose of the project is to improve freeway capacity, traffic and interchange operations, and road safety, in order to meet state and federal standards in this heavily congested freeway. OCTA and Caltrans are collaborating on widening the I-405 between State Route 73 (SR-73) and Interstate 605 (I-605). The project will improve 16 miles of the I-405 and includes the addition of one regular lane in each direction from Euclid Street to I-605, as well as improvements to freeway entrances, exists, and bridges. It will also include the construction of the I-405 Express Lanes, which will incorporate the existing carpool lanes and consist of two lanes in each direction from SR-73 to I-605. These changes will impact the entire section of the I-405 that is located in Fountain Valley.⁴

As part of this project, several bridges over the I-405 in Fountain Valley on the following streets will receive improvements⁵:

- **Ward Street:** Two new travel lanes and a northbound sidewalk
- **Talbert Avenue:** Two new travel lanes and bike lanes on both sides of the bridge
- **Brookhurst Street:** New bike lanes on both sides of the bridge
- **Warner Avenue:** New westbound sidewalk
- **Magnolia Street:** Two new lanes of travel, northbound sidewalk, and bike lanes on both sides of the bridge

³ <https://www.fountainvalley.org/DocumentCenter/View/4459/2015-Fountain-Valley-Police-Department-Annual-Report>

⁴ <https://www.fountainvalley.org/922/I-405-Improvement-Project>

⁵ <https://i405improvements.kleinfelder.com/>



FOUNTAIN VALLEY CROSSINGS SPECIFIC PLAN IMPROVEMENTS

A transportation impact analysis was undertaken for the proposed Fountain Valley Crossings Specific Plan in 2017. The project site is bordered by Ellis Avenue to the south, Talbert Avenue to the north, Ward Street to the west, and the Santa Ana River Trail to the east. The project proposes to improve the following three intersections in order to ensure that these intersections will operate at LOS D or better, consistent with the 2008 Circulation Element level of service policy⁶:

- **Talbert Avenue & Mt. Washington Street:** Capacity improvements by either modifying the westbound approach or limiting the southbound movement
- **Euclid Street & Newhope Street/Northbound I-405 Ramps:** Optimization of the PM traffic signal cycle lengths and splits within the coordinated signal timing plan
- **Ellis Avenue & Ward Street:** Capacity improvements by either modifying the northbound approach or adjusting the signal phasing

CAPITAL IMPROVEMENTS PROGRAM (CIP)

The Fountain Valley Ten-year Capital Improvement Program identifies several transportation improvements in its 2018-19 report:

- **Talbert Avenue & Mt. Washington Street-Costco Way New Traffic Signal:** Start May 2019, end TBD
- **Traffic Signal Timing and Equipment Improvements along Brookhurst Street and Magnolia city limit to city limit:** TBD
- **Warner Avenue & Greenleaf Street New Traffic Signal:** TBD
- **Edison Easement Road Improvement Project from Northern City Limit to Southern City Limit:** TBD
- **Arterial Median Landscape Improvements at eight locations:** TBD. The locations are Brookhurst Street, Edinger Avenue, Euclid Street, Slater Avenue, Warner Avenue, Magnolia Street, Talbert Avenue and Newhope Street
- **Protected/Permitted Left-Turn (PPLT) Improvement Project at eight locations:** TBD. The locations are Edinger Avenue at Ward Street, Brookhurst Street at Heil Avenue, Harbor Boulevard at Lilac Avenue, Magnolia Street at Slater Avenue, Euclid Street at Slater Avenue, Warner Avenue at Los Jardines West, Ellis Avenue at Bushard Street, and Ellis Avenue at Ward Street

⁶<https://www.fountainvalley.org/DocumentCenter/View/6517/Draft-Crossings-Traffic-Impact-Analysis-Report-10202017?bidId=>



SAFETY – COLLISIONS

A traffic collision is considered to be any event where a vehicle strikes any object while moving. That object could be another car, a pedestrian, or something fixed in place (such as a light post). When collisions cause damage or injury, the details are recorded by the Traffic Injury Mapping System (TIMS) from the Statewide Integrated Traffic Records System (SWITRS) database. The City of Fountain Valley's collisions database, which includes the latest SWITRS data (2015-2017), was used to analyze collisions in Fountain Valley.

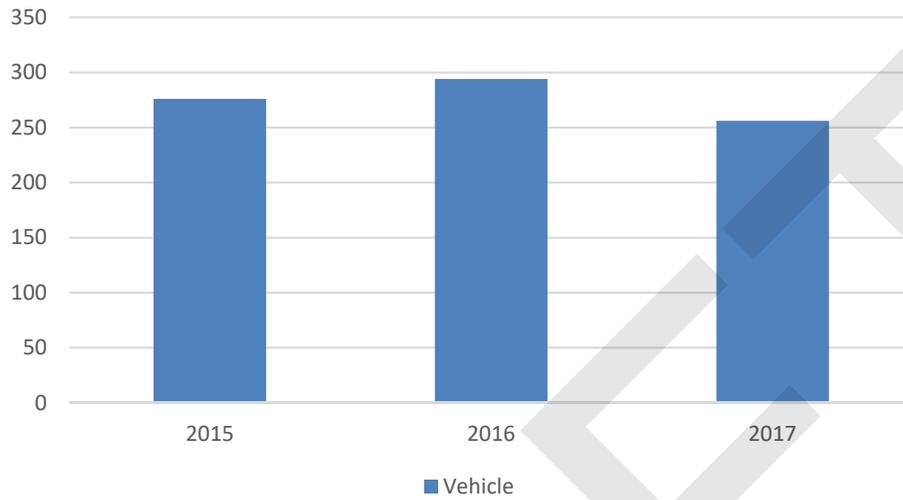
From 2015 to 2017, there were a total of 826 collisions, with a total of 7 fatalities and 38 people severely injured. The top three cited factors contributing to collisions are right-of-way violations (36%), unsafe speed (26%), and violation of traffic signals and signs (12%).

The number of vehicle collisions of any type during the three-year period between 2015 and 2017 ranged from 256 to 296 per year, as shown on **Chart 3-1**. During the same time period, the number of collisions involving a pedestrian or bicyclist ranges from 25 to 30. The concentration of the vehicle collisions are shown in **Figure 3-5**. Shown on **Chart 3-2** the number of pedestrian collisions has been on the rise from 2015 to 2017, with 12 collisions in 2015, 15 in 2016, and 19 in 2017. Bicycle collisions display less of a trend, with 13 collisions in 2015, 11 in 2016, and staying the same to 11 in 2017. The pedestrian and bicyclist collision locations are shown in **Figure 3-6**.

The City has been proactive in reducing the number collisions that occur around the school zone in the City. In partnership with Los Amigos High School, Fountain Valley Police Department has been conducting "Every 15 Minutes", a two-day program focusing on high school Juniors and Seniors, every other year since 1998. The program focuses on traffic safety issues involving drinking, personal safety, driving habits and the drivers' responsibility to make mature decisions. The Fountain Valley Police Department Strategic Plan (2015) outlines the City's targeted enforcement in the locations and times where traffic collisions or safety concerns have been identified previously.

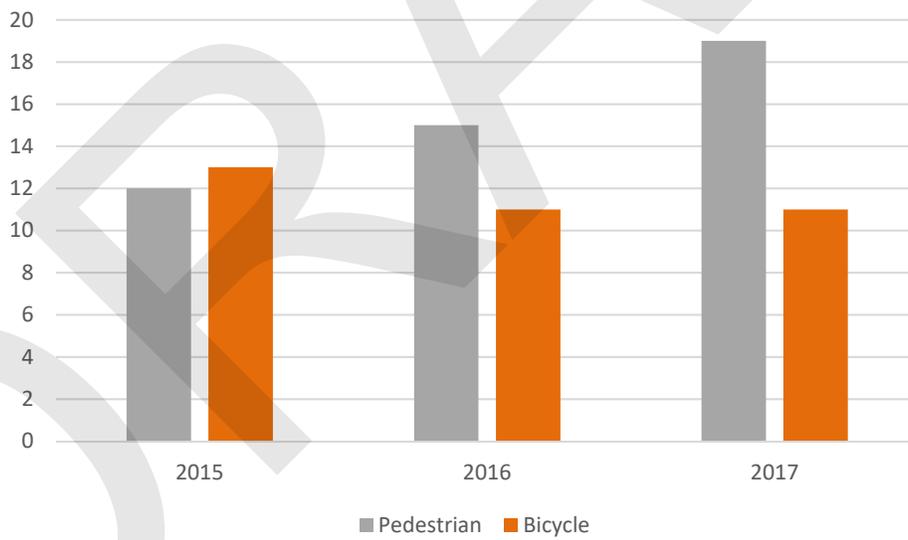


Chart 3-1: Vehicle Traffic Collisions (2015 – 2017)



Source: City of Fountain Valley SWITRS Database, 2015 – 2017

Chart 3-2: Bicycle or Pedestrian Collisions (2015 – 2017)



Source: City of Fountain Valley SWITRS Database, 2015 – 2017



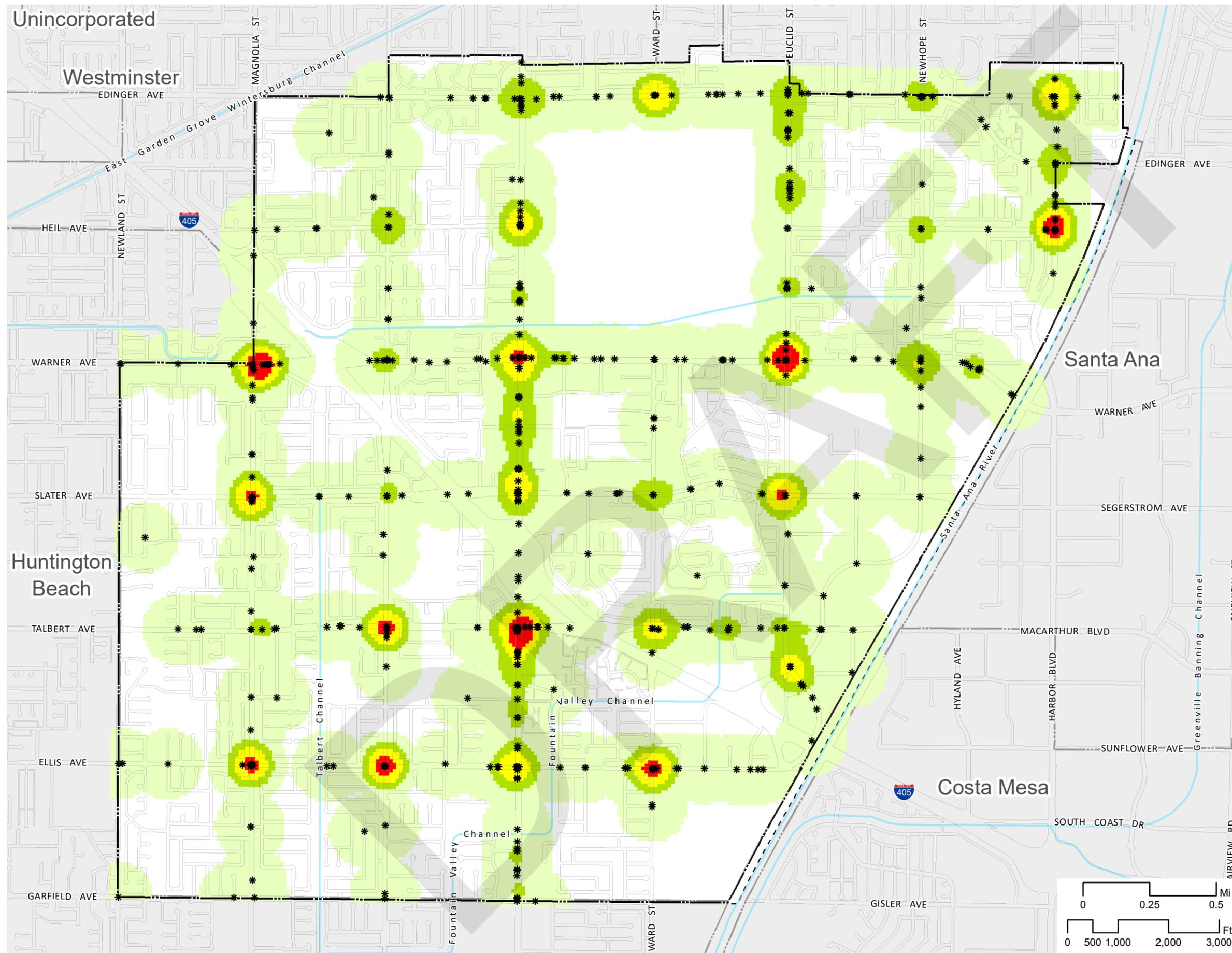
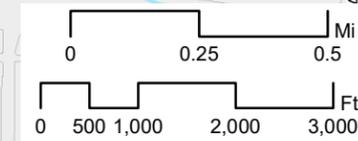


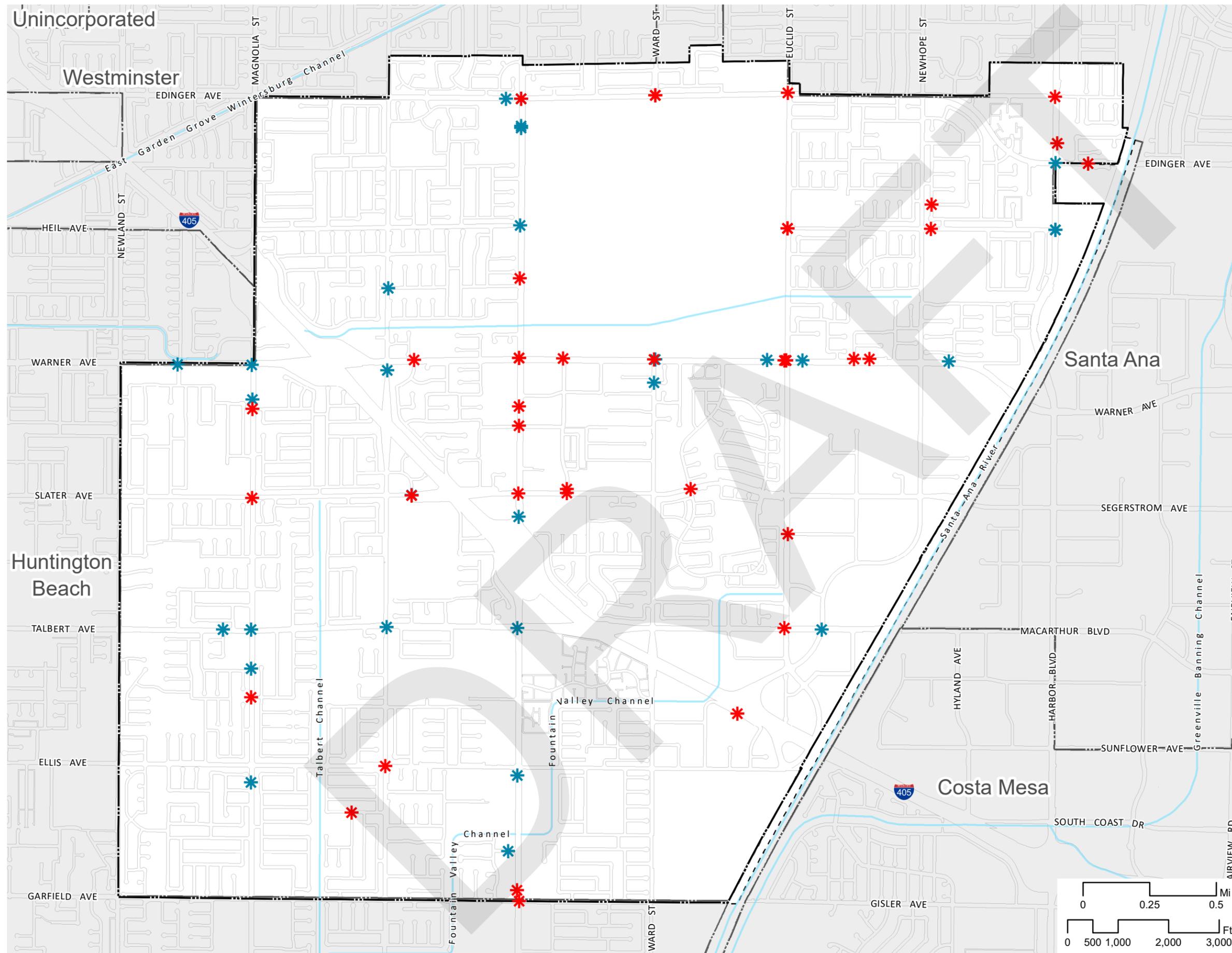
Figure 3-5:
Traffic Collisions
(2015-2017)

- * Individual Traffic Collisions
 - ▭ Fountain Valley City Limit
 - - - Sphere of Influence Areas
- Collision Density**
- 1-5
 - 6-10
 - 11-15
 - 16-20

Source: SWITRS (2015-2017), Fehr & Peers (2019)

Date: 4/25/2019





**Figure 3-6:
Pedestrian and Bicyclist
Collisions (2015-2017)**

- * Pedestrian Collisions
- * Bike Collisions
- Fountain Valley City Limit
- Sphere of Influence Areas

Source: SWITRS (2015-2017), Fehr & Peers (2019)

Date: 4/24/2019

PARKING

The City of Fountain Valley has two park and ride facilities available to commuters. Park and ride lots are made possible through partnerships with private property owners, Caltrans, and OCTA. Parking lots are strategically located to serve persons who need a place to park their car for free for 72 hours while they join with a carpool, vanpool, or use transit. Park and ride lots are valuable resources to the city as they can aid with reducing automobile travel and subsequent emissions, consistent with AB 32. **Table 3-9** displays existing park and ride facilities in the City.

Table 3-9: Park-and-Ride Facilities in Fountain Valley

| Name | Operator | # of Stalls | Transit Connections |
|---|----------|-----------------|---------------------|
| Mile Square Regional Park & Ride | Caltrans | 56 | OCTA |
| King of Glory Lutheran Church Park & Ride | Caltrans | 36 ¹ | OCTA |

Data Source: http://www.dot.ca.gov/d12/planning/pdf/PNR_brochure.pdf

1. Permit required

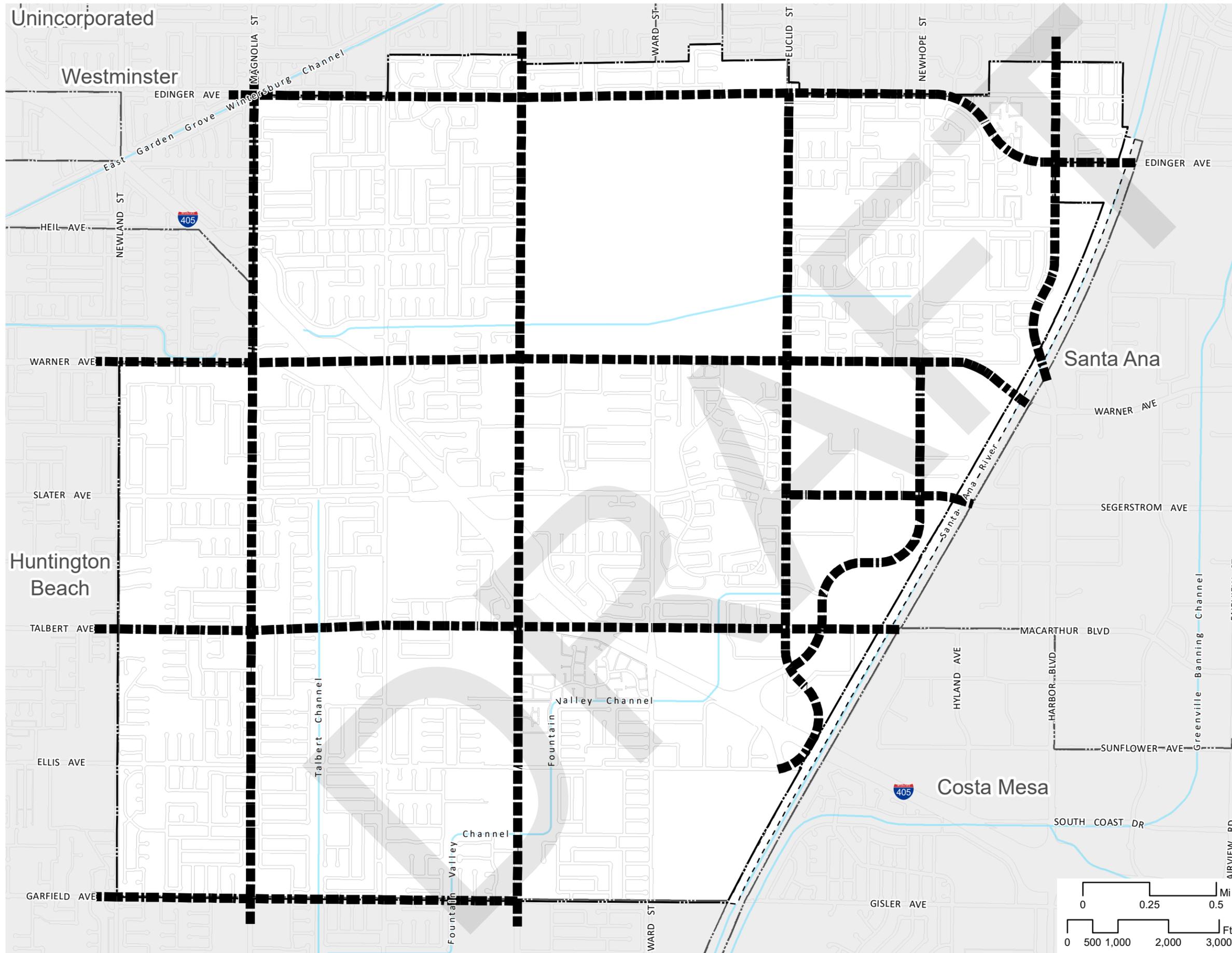
According to the SCAG 2016 RTP/SCS approved project list, Caltrans has no park-and-ride facilities planned for the City of Fountain Valley. Fountain Valley currently has about 9.2% of commuters carpooling to work and more lots would provide opportunities to increase the share of workers who carpool to work, helping meet AB 32 goals.



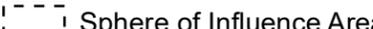
4. GOODS MOVEMENT

Goods movement is necessary for the vitality of Fountain Valley and the region as a whole. Regional goods movement in the City occurs primarily by trucks on major freeways that bisect the City, including I-405. Truck traffic on City streets is restricted to specific routes that are designated for thru-traffic of trucks over three tons. Trucks are allowed on designated routes even if they do not have an origin or destination within the City. **Figure 4-1** displays the truck route system. There are bicycle routes that exist or are proposed along existing and/or proposed truck routes. The two modes may not be compatible on specific routes and a layered network approach is recommended to keep the modes separate which could be implemented through the General Plan update process or the creation of a Bicycle Master Plan.



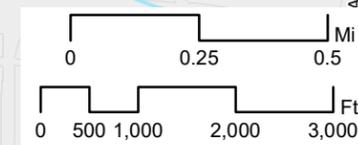


**Figure 4-1:
Existing Truck
Circulation Network**

-  Designated Truck Route
-  Fountain Valley City Limit
-  Sphere of Influence Areas

Source: City of Fountain Valley 2008

Date: 4/24/2019



5. OTHER KEY ITEMS

This section discusses key items such as the future of transportation and state regulations that will have an impact on the City of Fountain Valley's development. The General Plan should respond to these items and set forth policies to address concerns and anticipate growing technologies.

TRAVEL MODE SHARE

The suburban tract housing layout, ample parking, major through streets, and separation of land uses that compromise a notable portion of the City have resulted in an automobile dominant community. Recognizing an existing built environment prominently tailored for cars, the City should encourage more environmentally sustainable uses of the automobile by increasing carpool, the use of TNCs, and transit opportunities to minimize the total share of single occupant vehicle use. The City can seek funds from federal, state and local sources such as the Public Transportation Account, Sustainable Communities Funding Programs, Active Transportation Program, Non-Motorized Transportation Funding, etc. in order to fund projects.

TRANSPORTATION IMPROVEMENT FUNDING

SENATE BILL 1 TRANSPORTATION FUNDING

The California Legislature passed Senate Bill No. 1 (SB 1) in 2017. The bill focuses on transportation funding through an increase on vehicle fees and gas taxes. The increases in fees and taxes are expected to raise an average of \$5 billion per year over the next decade in new revenue for road repairs, transit, and active transportation. Three avenues in Fountain Valley including Edinger Avenue, Warner Avenue and Talbert Avenue are funded for improvement under Solutions for Congested Corridors Program by this bill.

ACTIVE TRANSPORTATION PROGRAM

The Active Transportation Program (ATP) was created by Senate Bill 99 and Assembly Bill 101 to encourage increased use of active modes of transportation, such as biking and walking. The ATP consolidates various transportation programs, including the federal Transportation Alternative Program, State Bicycle Transportation Account, and federal and state Safe Routes to School Programs,



into a single program.⁷ The ATP is meant to increase the proportion of active mode trips, increase the mobility and safety of active transportation users, enhance public health, improve greenhouse gas reduction efforts, and ensure disadvantaged communities benefit from the program by dedicating 25% of program funds.

Program funding is distributed in three ways, including to the State of California, areas with populations of 200,000 or less, and to Metropolitan Planning Organizations. The City can seek funds as a way to complete the bicycle network and improve pedestrian facilities. These efforts will improve equity and help reach AB 32 goals of reducing greenhouse gas emissions.

TRANSPORTATION DEMAND MANAGEMENT

The City can consider undertaking Transportation Demand Management (TDM) strategies to analyze the existing traffic network to understand the travel behavior patterns, determine the traffic impact and decrease VMT. This effort can encourage multimodal and active modes of transportation by taking various strategies, such as a different approach to signal operations, efficient use of multiple routes throughout the City, development of smaller and more consistent platoons of traffic throughout the traffic network. This will reduce congestion at oversaturated areas and encourage alternate routes, providing an overall improvement in travel time throughout the City.

AUTONOMOUS VEHICLES AND THE FUTURE OF TRAVEL AND PARKING

There are several levels of vehicle autonomy. They range from cruise control (low level of autonomy) to fully autonomous vehicles (AVs) that require no interaction with the driver. Manufacturers are developing this technology, and the Federal and State governments will likely determine regulations for a fully autonomous fleet.

It is unknown how long the vehicle fleet will take to turn over to a fully autonomous fleet. However, it is coming, and the City of Fountain Valley should address the rising technology in the General Plan from a policy perspective.

⁷ <http://www.dot.ca.gov/hq/LocalPrograms/atp/>



This expansion of AVs will likely alter travel behavior in the City. AVs are expected to make car travel less stressful, increase travel safety, and reduce operational inefficiencies on freeways; all leading to the increase in demand for automobile travel. The transition period, when streets carry large numbers of both conventional and autonomous vehicles, will involve complex interactions and require new informed analysis methods and professional judgment to address conflicts and benefits. AV interactions with pedestrians and bicyclists will also require careful planning and design. The City's General Plan should guide the City of Fountain Valley through policy directives to anticipate a future AV fleet and provide infrastructure to support this fleet.

Parking utilization will be altered by the introduction of AVs. In the United States, a considerable amount of land is dedicated to parking by way of minimum parking requirements. There are about five parking spaces per vehicle in the United States. In a shared AV fleet, the need for ample parking spaces will be less necessary and the General Plan should direct the City of Fountain Valley to adjust parking requirements accordingly. In addition, as the demand for parking is reduced, the demand for curbside pick-up and drop-off space increase.

Other factors that should be considered as part of a fully AV fleet are noted below:

- Increased or decreased VMT
- Increased or decreased safety
- Decreased need for parking
- Improved freight, logistics, handling, and deliveries

TRANSPORTATION NETWORK COMPANIES (TNC)

Transportation network companies (TNCs), such as Uber and Lyft, are increasing in popularity and usage. TNCs combine web-based applications, such as mobile applications, and ridesharing vehicles. While TNCs could reduce the number of vehicles on the roadway network, it is also likely to increase vehicle miles traveled. The greatest factors that TNCs will affect in cities include parking, curb-space management, and transit use—especially in areas where parking is currently considered “difficult” or congested.

TNCS, PARKING, AND CURB SPACE MANAGEMENT

When people use TNC services in place of a privately-owned automobile, the demand for parking goes down, while the demand for curbside drop-off and pick-up locations rises. As TNCs continue to rise and capture a greater share of travel modes, the City of Fountain Valley will have to identify areas where it



is difficult park and develop strategies for curb space management, while reconsidering minimum parking requirements. Minimum parking requirements may be reduced or eliminated; or maximum parking requirements could be introduced in specific areas of the City.

TNCS AND TRANSIT

Cities across California are testing partnerships between TNCs and transit agencies. TNCs can help improve first-last mile connections, where a person must find transportation options to get to a transit station and from transit to their destination. The City of Fountain Valley's General Plan may guide the City through policy directives to leverage the existence of TNCs to improve the use of sustainable modes of travel. Existing transit routes need to be examined to focus resources most effectively in combination with TNCs. Policies should also be identified in the General Plan that would address curbside management, such as areas that either prioritize or restrict passenger loading and unloading, and safety. Capitalizing on partnerships with major employers such as Hyundai, the hospital, Coastline College, etc could also help to provide first-last mile options or incentives for taking shared transit modes.

DOCKLESS SHARED BIKES AND E-SCOOTERS

Over the last few years, there has been a surge of dockless shared bike and e-scooter services in many cities across California. It's still a new phenomenon that requires further understanding of their impacts on the overall transportation system including short trip calculation, transit connection, active mode of transportation and car ownership rates. The dockless ride-hailing services also present public nuisance in the absence of specific regulation. The City of Fountain Valley's General Plan may devise regulatory guidelines for the adoption of dockless ride-hailing services mirroring the broader trend in micro-mobility transportation services. No e-scooter was observed in Fountain Valley. E-scooter riders from the adjacent cities were observed to ride on Newhope Street (See **Image 13**).





Image 13 Dockless E-Scooters

Dockless e-scooters at Slater Avenue and Newhope Street

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