Mobility

Chapter 3

City of Fremont
General Plan

Adopted December 2011

CITY OF
Fremont

This page intentionally left blank.

Introduction

The Mobility Element addresses the movement of people and goods in and around Fremont. The Element establishes policies for expanding transportation choices, reducing dependence on single passenger automobiles, and making it easier to walk, bicycle, and use public transportation in the City. Policies in this Element also seek to redefine the function of Fremont's thoroughfares, so that they become more than simply conduits for cars. The Element is based on the premise that major streets should become great public spaces that define the identity of the City and support multiple modes of travel. The Mobility Element looks beyond transportation infrastructure, however, and covers broader issues related to travel in and around the City, connections between Fremont and the region, and the way that transportation shapes Fremont's form and identity. The Element also looks at accessibility, or the ease of reaching various destinations in the City, and the barriers to travel for persons of varying physical needs.

Most of Fremont was developed as an "auto-oriented" suburb, reflecting the urban planning philosophies of the 1950s, 60s, and 70s. The City has a well defined road hierarchy, characterized by high-volume arterials, moderate-volume collector streets, and low-volume local streets serving residential neighborhoods. This system has served the City well in the past, but it will need to evolve to serve future needs and respond to local, national, and global change. New modes of travel will be necessary to keep Fremont moving, and to create a more sustainable, dynamic community in the 21st Century.

CIRCULATION

State law requires the general plan include a Circulation Element that addresses…."the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the land use element of the plan."

The General Plan addresses public utilities and facilities in the Public Facilities element, allowing this element to focus on transportation related functions.

Aerial view of typical auto-oriented development pattern

REGIONAL RESPONSIBILTIES

The State Government Code requires that cities take into account their regional setting and responsibilities related to transportation. This element highlights the City's relationship with other transportation agencies including Caltrans, BART, AC Transit, Valley Transportation Authority (VTA), and the Alameda County Transportation Commission (ACTC).

The Mobility Element includes policies on freight transportation

Organization of the Mobility Element

This Element is organized into two major sections. The first section provides an overview of existing and future mobility conditions in Fremont. It includes background information on vehicle ownership and commute patterns and describes the characteristics of the transportation network, including roads, bridges, bikeways, sidewalks, trails, transit systems, and other modes. The focus is on the performance of these systems in 2010 and the expected performance in 2035 based on growth, planned improvements, and changes in travel behavior. The analysis of future conditions helps identify necessary future capital improvements, and shapes future land use and transportation policies.

The second section of the element presents goals, policies and implementing actions. This section is organized into seven topic areas, corresponding to the following key issues:

- Transforming Fremont's corridors into "complete streets" that are designed for multiple modes of travel
- Reducing the number of vehicle miles traveled by Fremont residents and workers by providing more non-automobile travel options and more compact land use patterns
- Making the City more accessible and interconnected through the design of the circulation system
- Balancing the need for convenience and speed with the need to create safe, pedestrian-friendly streets
- Improving connections between Fremont and the region's other cities
- Maintaining the ability to move goods through the City
- Managing the demand for parking, while still creating a less auto-oriented city

Mobility Profile

Relationship to the Regional Transportation Network

Overview

Fremont's location in the southeastern San Francisco Bay Area, midway between San Francisco/Oakland and San Jose, has influenced its transportation infrastructure and the transportation habits and needs of its residents and businesses. The City's economy is highly dependent on the regional transportation network, and relies on this network to move people and goods across the region, state, nation, and globe. Diagram 3-1 shows Fremont's location relative to major regional transportation facilities.

Two major freeways link Fremont to the rest of the Bay Area and California. Interstate 880 is located on the western side of Fremont and provides a direct link to San Jose to the south and Oakland to the north. Interstate 680 flanks Fremont on the southeast and is the major traffic corridor between San Jose and the Tri-Valley area of Livermore, Dublin, and Pleasanton. Three state highways also pass through the City: State Routes 84, 262, and 238.

Fremont is within 20 miles of three international airports in San Francisco, Oakland, and San Jose. It has been the end of the line station for the Bay Area Rapid Transit (BART) system for over 35 years, and will be served by two new stations as the system is extended south to San Jose. Fremont is served by two regional bus systems, AC Transit and Valley Transportation Authority (VTA), which provide service within the City and between the City and other Bay Area cities. The City is also served by two passenger rail lines—Amtrak and Altamont Commuter Express (ACE) —which link Fremont to Sacramento and Stockton in the Central Valley. Fremont is also served by three Union Pacific railroad lines that provide for the movement of container freight and other goods in and out of the city.

LAND USE & TRANSPORTATION

An overarching principle of the policies and implementing actions in both the Land Use and Mobility Elements is to improve coordination between land use and transportation decisions. This is essential to becoming a more sustainable city and achieving the goals in these Elements and all other elements of the General Plan.

REGIONAL TRANSPORTATION PLAN (RTP)

The RTP is a comprehensive document adopted by MTC to oversee the long-term development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities throughout the Bay Area. The 2030 RTP outlines a vision for improving road conditions, retrofitting bridges to withstand a major earthquake, improving the bus network, upgrading rail stations, and improving pedestrian infrastructure.

Caltrans maintains freeway intersections in Fremont.

Regulatory Agencies

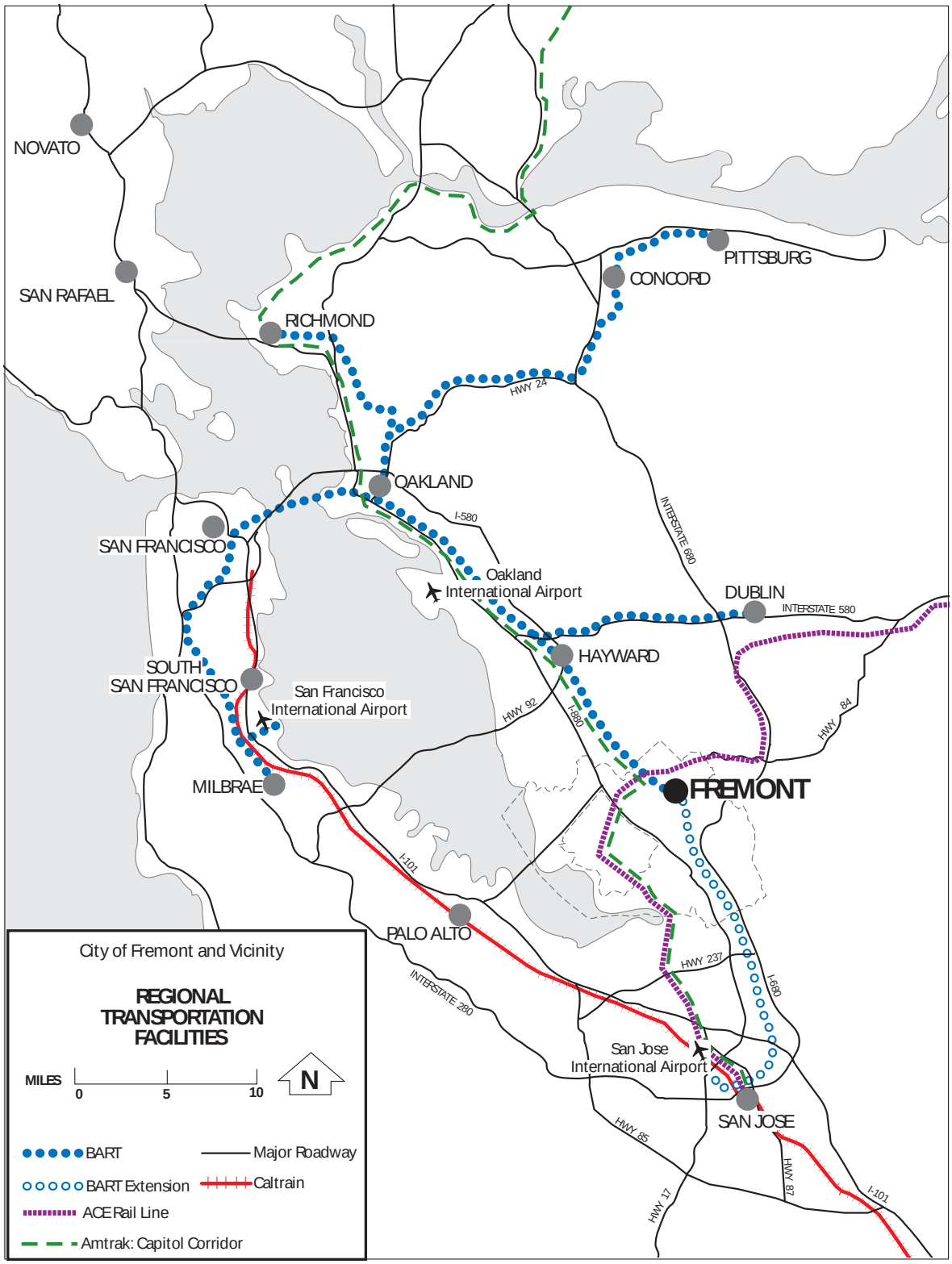
Transportation management occurs at the federal, state, regional, and local levels. At the federal level, the US Department of Transportation oversees federal transportation funding, and ensures the safety and efficiency of the nation's highways, airports, rail lines, and ports. At the state level, the California Department of Transportation (Caltrans) manages more than 45,000 miles of highway and freeway lanes, provides intercity rail services, permits more than 400 public use airports and special-use hospital heliports, and works with local agencies to manage local transportation projects.

At the regional level, the Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating and financing agency for the San Francisco Bay Area. MTC screens state and federal grant requests from local agencies to ensure their consistency with the Regional Transportation Plan (RTP).

At the county-wide level, the Alameda County Transportation Commission (ACTC) manages the County's transportation information and funding stream. ACTC was created in 2010 through the merger of the Alameda County Congestion Management Agency and the Alameda County Transportation Improvement Authority. The combined agency manages the County's half-cent transportation sales tax, which is used to support capital projects and operations. It also distributes pass-through funds to cities and other agencies for streets, transit, special needs transportation, bicycle and pedestrian safety projects, and transit oriented development. The agency also performs county-wide traffic modeling to help coordinate development across jurisdictional lines, direct transportation funding, and plan for future regional transportation improvements.

At the local level, the City of Fremont has a Transportation Engineering Division that coordinates regional transportation projects; plans and designs bicycle, pedestrian and street improvement projects; operates and maintains the City's traffic signal system; and analyzes the transportation impacts of new development. The City also has a Maintenance Services Division that handles street maintenance and repair, street sweeping, and other duties to keep the system operating safely.

Diagram 3-1
Regional Transportation Facilities



This page intentionally left blank.

Travel Patterns in Fremont

Arterial roadway in Fremont

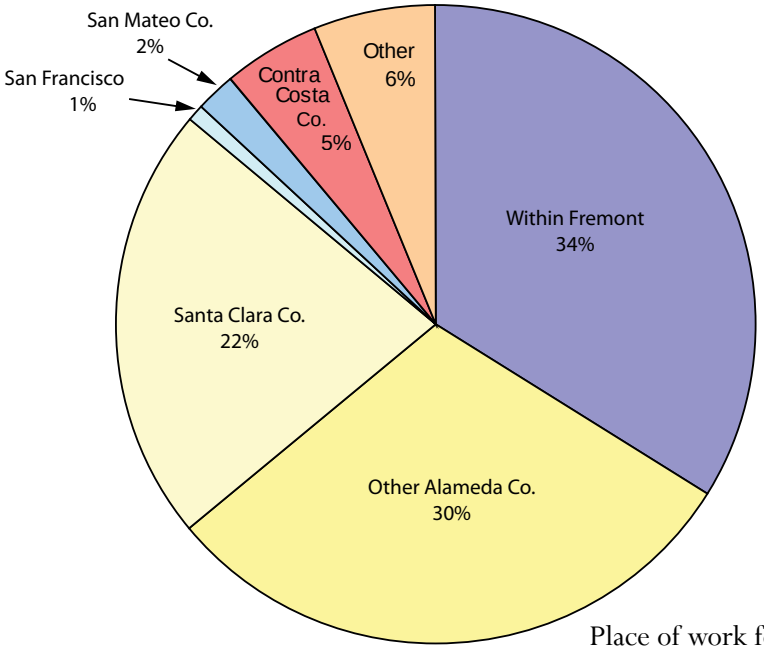
Figure 3-1 shows the commute patterns of Fremont residents as of the year 2000, the most recent year for which data is available. In that year, 32 percent of the City's residents worked within Fremont and 32 percent commuted to Santa Clara County. Approximately 23 percent of the City's residents commuted elsewhere in Alameda County, and 7 percent commuted to San Mateo County. Only 4 percent commuted to San Francisco, and 2 percent commuted to Contra Costa County.

Figure 3-1 also shows the city or county of residence for persons who worked in Fremont in 2000. Approximately 34 percent of the jobs in the City were filled by Fremont residents. Some 30 percent of the City's workers commuted in from the north and east in Alameda County, while 22 percent commuted in from the south and west in Santa Clara County. Five percent of the City's workers commuted in from Contra Costa County and 2 percent commuted in from San Mateo County. A small but significant percentage of the workforce commuted in from San Joaquin County and other locations outside the Bay Area.

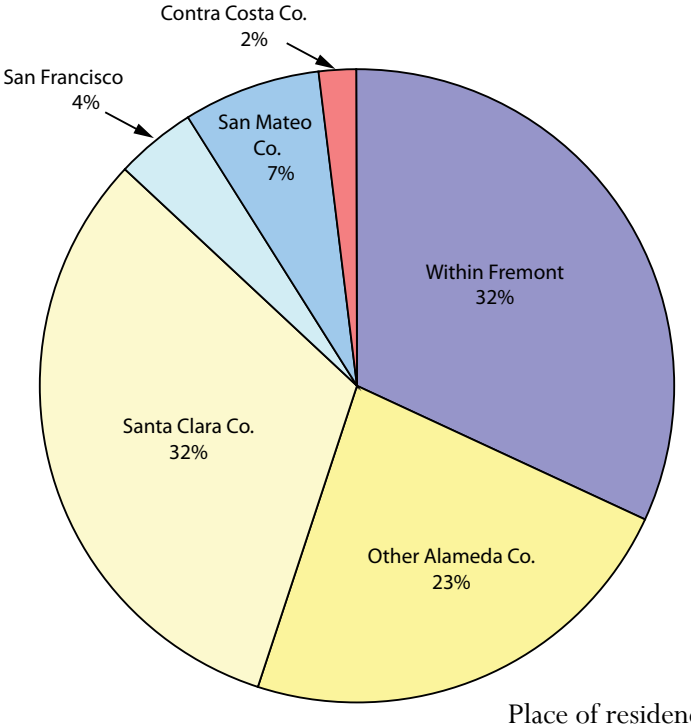
Because there are more employed residents than jobs in the City, there are more trips leaving Fremont during the morning peak hour and entering Fremont during the evening peak hour. The City has actively worked to become less of a bedroom community and provide more local employment opportunities for Fremont residents. However, balancing the number of jobs and employed residents in the City does not guarantee that local jobs will actually be filled by local residents. Many other factors, particularly the cost of housing, make it difficult for all of those who work in Fremont to also live in the City. The City also offers a high quality of life that makes it attractive to those who work elsewhere in the region and prefer to live in Fremont rather than closer to their jobs. However, the City will always strive to provide and maintain high quality and high paying jobs.

Fremont's freeways are regional facilities that handle hundreds of thousands of trips with origins and destinations beyond the city limits each day. Because of the City's location in between the region's major central cities, traffic tends to be high in both directions during peak commute hours. Many residents in Alameda and Contra Costa counties commute south through the City during the morning, while Santa Clara County residents commute north. This "bidirectional" rush hour pattern is reversed during the evening commute.

Figure 3-1
Commute Patterns in Fremont



Place of work for employed Fremont residents, 2000



Place of residence for persons employed in Fremont, 2000

According to the Alameda County Transportation Commission (ACTC), the most congested freeway segment in Fremont during the morning commute is southbound Interstate 880 between Auto Mall Parkway and Mission Boulevard. The average rush hour travel speed on this segment in 2008 was just 22 miles per hour. By contrast, average northbound speeds were 44 miles per hour between Dixon Landing Road and Mission, indicating some degree of congestion in both directions. The morning commute on Interstate 680 is more one-directional, with average southbound speeds between 40 and 50 miles per hour in Fremont and northbound traffic moving close to the speed limit.

Regional Traffic Congestion

During the evening peak hour, traffic tends to be heaviest in the northbound direction. On Interstate 880, average northbound speeds in 2008 were 34 miles per hour between Dixon Landing Road and Mission Boulevard, and 33 miles per hour between Decoto Road and Fremont Boulevard (North). Average southbound speeds were between 44 and 61 miles per hour, with the slowest segment between Auto Mall and Mission. The slowest freeway volumes were on Interstate 680 northbound, where average speed was just 20 miles per hour between Mission Boulevard (262) and Durham Road / Auto Mall Parkway, increasing to 40 miles per hour north of Washington and Mission Boulevards. Average I-680 southbound volumes during this time period were over 60 MPH.

BART will be extended to Warm Springs and eventually to San Jose, increasing commute options in the South Bay

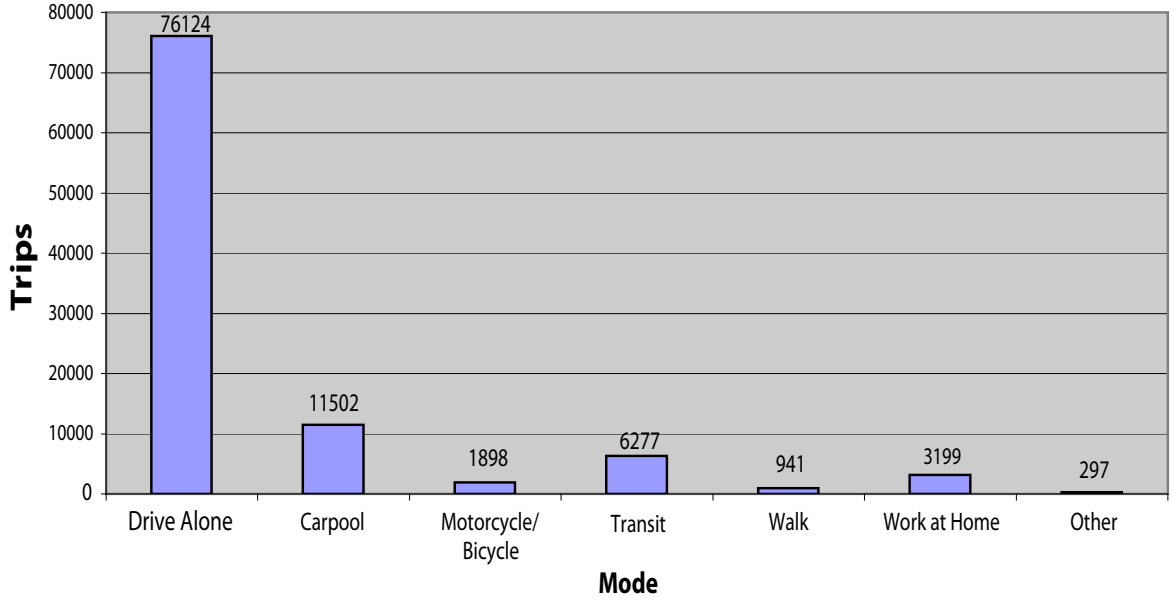
In the east-west direction, the prevailing commute on most state highways in Fremont is westbound in the morning and eastbound in the evening. However, large volumes of commute traffic use Mission Boulevard and Auto Mall Parkway to connect between I-680 and I-880, leading to congested conditions in both directions during the peak hours. Traffic is also heavy in both directions on State Route 84 between I-880 and the Dumbarton Bridge. In the morning, westbound speeds in 2008 were 41 MPH between I-880 and Ardenwood Boulevard, and 42 MPH between Paseo Padre Parkway and the Dumbarton Toll Plaza. Eastbound speeds were higher, but congestion occurred in the one-mile stretch approaching I-880. In the evening, average eastbound speeds on this same segment (Ardenwood Boulevard to I-880) were just 16 MPH, and traffic moved at less than 40 MPH between the toll plaza and Ardenwood Boulevard. Westbound traffic moved closer to the speed limit.

Travel on BART and on the Altamount Commuter Express (ACE) trains follows more traditional commute patterns, with predominant directional flows for AM and PM commuters. On an average day, 7,294 passengers board BART at the Fremont station. Of this number, 5,431 passengers are

coming from home and 1,862 passengers are coming from other locations, such as work or school. Of those coming from home, 72 percent live in Fremont, 13 percent live in San Jose, 9 percent live in Newark or Milpitas, and 6 percent live elsewhere. The ACE trains tend to carry more passengers westbound in the morning and eastbound in the evenings, which is to be expected given the system's design as a commuter service from San Joaquin County to the South Bay.

Figure 3-2 provides information on how Fremont residents travel to work. The data indicates that an overwhelming majority of residents—over 77 percent—travel to work by driving alone. About 12 percent of the City's residents carpooled and 5 percent took public transportation. Less than 3 percent of Fremont residents worked at home and less than 2 percent walked or bicycled to work.

Figure 3-2
Mode to Work



Source: 2005-2007 American Community Survey

This data is from the 2007 American Community Survey and although will become dated, it is likely that the percentage of riders driving to work alone will remain higher than all other travel modes combined. The land use pattern in Fremont, the long commute distances, and the limited public transportation options make driving the preferred (and sometimes the only feasible) means of travel for most work trips. In 2007, about 40

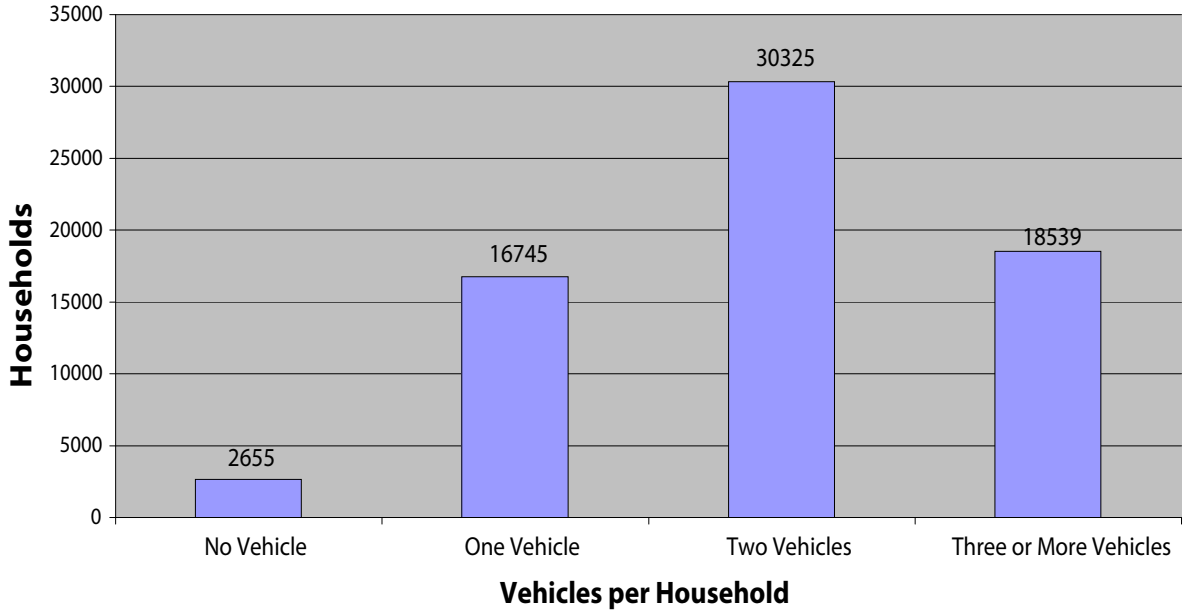
percent of employed Fremont residents had one-way commute times of 30 to 60 minutes and 13 percent had one-way commute times of more than an hour.

Fremont is similar to the region in this regard. The percent of work trips made by solo drivers is more than 70 percent in every city adjoining Fremont, and in almost every city in the region outside of Oakland, Berkeley, and San Francisco.

Vehicle Ownership

Figure 3-3 provides information on the number of vehicles owned per household in Fremont. The data provides an indication of the potential number of vehicle trips made per household and the tendency for households to rely on cars versus other mode choices. It is also an indicator of parking demand in the City.

Figure 3-3
Vehicles per Household



Source: 2005-2009 American Community Survey,

Approximately 72 percent of the City's households have two cars of more, while 27 percent own at least three vehicles. Only 3 percent of the city's households do not own a vehicle, and 7 percent have four or more vehicle. The figures are comparable to those for surrounding cities and reflect Fremont's reliance on vehicles as the primary means of transportation.

Fremont's Transportation Network

Fremont's transportation network is comprised of the following components, profiled in the section below:

- A roadway system that has traditionally been designed to move private cars, but will increasingly be adapted to meet the needs of other travel modes
- A pedestrian and bicycle system that primarily exists within the roadway system, but also includes dedicated off-road facilities such as trails.
- A bus system that operates within the roadway system
- A rail system that includes passenger and freight lines

Roadway Classification

Roads provide the fundamental means of mobility and access in Fremont. Even as the city strives to become less auto-oriented, roads will continue to provide the primary basis for moving through and around the city. Modes of travel will expand but the essential function of streets to provide access to property and facilitate movement will remain.

The city's roads can be thought of as serving a continuum of needs, with movement on one end of the scale and access on the other. For example, the primary function of a freeway is movement, with no access to adjacent properties. On the other hand, the primary function of a local street is access, with driveways serving individual homes and no through-traffic. The design standards and right-of-way requirements for roads reflect the balance between mobility and access. Fremont has developed a system of classifying roads and defining design standards based on this balance.

The City has adopted engineering standards for roads based on this classification system. These standards address physical design characteristics such as curb-to-curb width, bicycle lanes, parking lanes, right-of-way requirements and sidewalk locations. The standards are periodically reviewed to make Fremont streets "friendlier" to bicycles, pedestrians, and transit vehicles. The last review and update occurred in 2006. The Community Character Element of the General Plan introduces a new classification system for major roads and their adjacent land uses (referred to as "corridors"). This system considers the urban design character of the road rather than its transportation function, and uses terms such as "urban," "suburban," and "landscaped" to characterize road segments. The urban design, or "place type," system is intended to work in tandem with the stan-

Roadway Classification System

Streets in Fremont are classified into the following categories based on their function: The streets listed here are typically public property, consisting of a right-of-way that includes a paved roadway, and some combination of shoulders, parking lanes, sidewalks, and planting strips. Fremont also allows private streets to be constructed. Such streets are typically built to public standards but are privately maintained and may have reduced rights of way.

Freeways are dedicated exclusively to vehicle movement with no property access. They are typically high speed/high capacity transportation facilities serving regional traffic with limited access. Intersections with other roadways are grade separated and are spaced and designed to maintain smooth traffic flow. Freeways are under the jurisdiction of Caltrans. Examples in Fremont include Interstates 880 and 680.

Primary Arterials provide the primary means of access through a community and serve more than 20,000 vehicles per day. They accommodate high volumes at efficient speeds and link neighborhoods, shopping areas, and employment districts to the freeway system and to each other. To keep traffic moving smoothly, ingress and egress may be limited. Examples of primary arterials include Mowry Avenue, Fremont Boulevard, and Peralta Boulevard.

Minor Arterials are similar to Primary Arterials, however, they generally include roadways that serve less than 20,000 vehicles per day. Examples of minor arterials in Fremont include Central Avenue, Blacow Road and Grimmer Boulevard.

Collectors provide access to individual parcels but also move traffic through residential, commercial, and industrial areas. They connect arterials with local streets, and typically serve short trips from homes to activity centers. In some cases, collectors incorporate the design features of an arterial but are shorter in length with lower volumes. Examples include Roberts Avenue and Farwell Drive.

Local streets provide access to property. Movement is incidental and involves traveling to and from collector streets. Frequent driveways and curb cuts may be present.

LEVELS OF SERVICE (LOS)

Traffic service levels are expressed using a grade scale from "A" to "F." An LOS of "A" represents excellent operating conditions (no congestion) and an LOS of "F" represents failing conditions.

LOS measurements are generally calculated during the morning (7 am – 9 am) and evening (4 pm – 6 pm) peak hours, since these times typically represent the worst traffic conditions.

Current Roadway Operations

Diagram 3-2 shows traffic volume data for major roads in the city as of 2008. The data provides some sense of how traffic moves through the city, but it does not indicate roadway performance or congestion levels.

The performance of a road is typically measured by considering the volume of traffic passing through an intersection or along a road segment, the average speed of travel, and the amount of delay in seconds. This is typically expressed through "level of service" (LOS) ratings, which are based on actual traffic volumes compared to road capacity at a given time and location.

Each lettered rating is associated with a particular amount of delay or rate of speed. For the past two decades, Fremont has designed its roads based on a standard of LOS "D," which is roughly equivalent to operations at 85 to 90 percent of design capacity. This is measured slightly differently at intersections than it is along the roadway segments in between intersections. LOS "D" at a signalized intersection usually equates to 35 to 55 seconds of delay. Along roadway segment, LOS "D" refers to moderate traffic, with some delay and reduction in speed due to volume.

Historically, LOS measurements have focused only on vehicles, without considering the number of persons per vehicle, the presence of transit vehicles such as buses, or travel by other modes such as foot or bicycle. As a result, the most common solution to congestion has been to add lanes or expand intersections rather than to reduce the number of cars or provide alternatives to driving.

In 2007, an analysis of citywide traffic conditions indicated that Fremont streets operated in a relatively efficient fashion. Only six out of 107 road segments in Fremont operated below LOS "D". For intersections where measurements were taken, the data showed that 10 out of 68 were operating below LOS D. These intersections are listed in Table 3-1 and include major arterial roads that carry large amounts of traffic. Some are located at freeway on and off ramps and others are located on state highways such as Mission Boulevard. Three of the 10 intersections are on Fremont Boulevard and two are on Auto Mall Parkway.

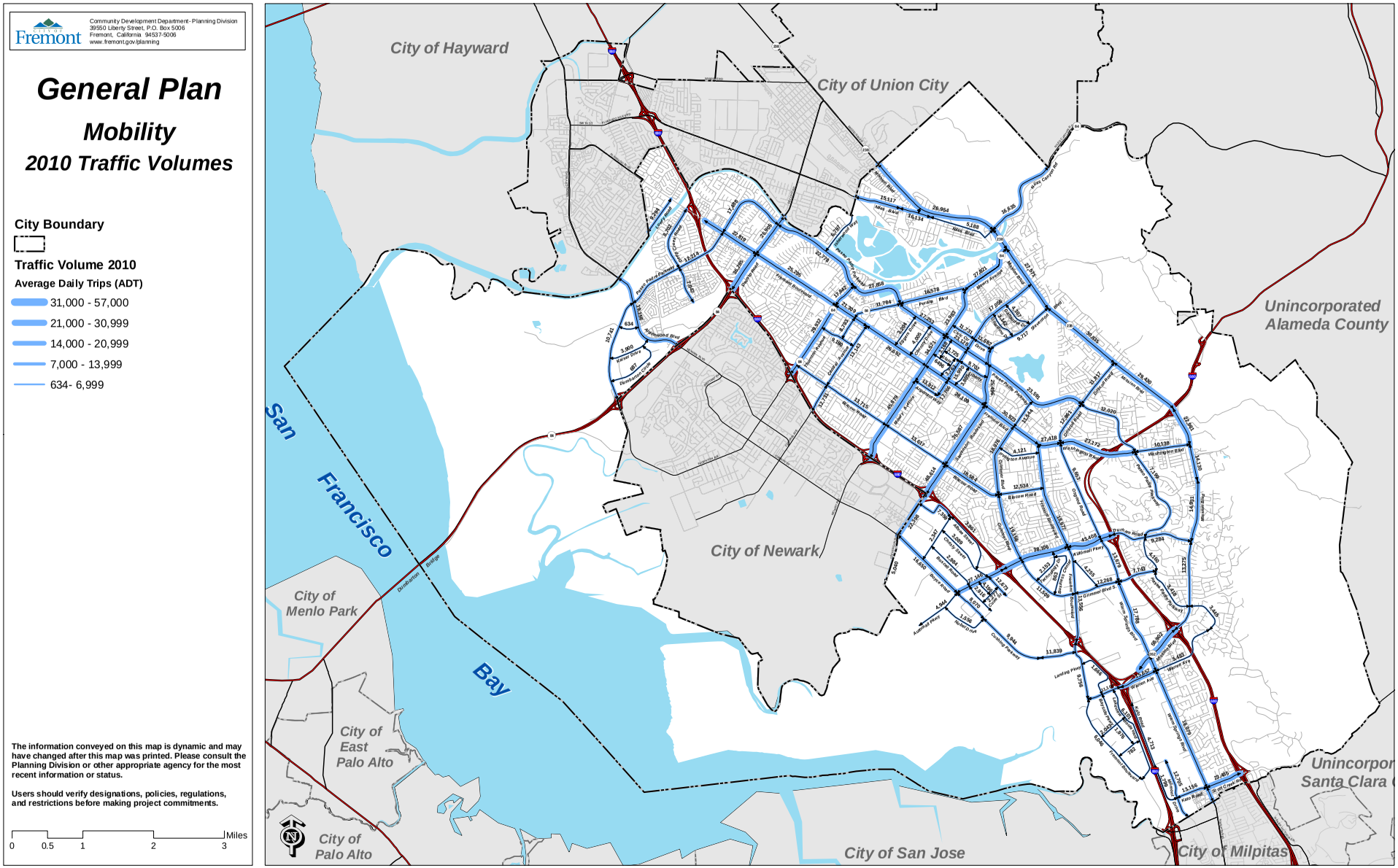


Diagram 3-2 2010 Traffic Volumes

This is a reduced image. Please see the most current color full-size maps available at the Fremont Planning Division or online at www.fremont.gov/planning
The information on this diagram is dynamic and may have changed since this page was last printed.

This page intentionally left blank.

Table 3-1
Worst Intersections by Level of Service, 2010

Intersection	Time	Average Delay (seconds)	LOS
Fremont Blvd and Mowry Ave	AM Peak	38.0	D
	PM Peak	48.3	D
Mission Blvd and Niles Canyon Road	AM Peak	50.3	D
	PM Peak	58.3	E
Mission Blvd and Mowry Ave	AM Peak	104.7	F
	PM Peak	89.5	F
Blacow Rd and Stevenson Ave	AM Peak	57.9	E
	PM Peak	119.9	F
Fremont Blvd and Auto Mall Parkway	AM Peak	40.5	D
	PM Peak	55.8	E
Blacow Rd and Grimmer Blvd	AM Peak	96.2	F
	PM Peak	49.6	D
Auto Mall Parkway at Osgood Road	AM Peak	67.2	E
	PM Peak	100.1	F
Osgood Rd-Warm Springs Blvd at South Grimmer Blvd	AM Peak	83.0	F
	PM Peak	34.3	C
Warm Springs Blvd at Mission Blvd (SR-262)	AM Peak	73.3	E
	PM Peak	41.3	D

Source: DKS Associates, 2010

Level of Service (LOS) D is just a target threshold, and there may be compelling reasons to accept congestion at an intersection rather than redesign it to accommodate more vehicles. This will become evident as the city shifts to different standards for measuring congestion and other modes of travel. This Mobility Element acknowledges that LOS E or F may be acceptable in some locations due to environmental, aesthetic, historic, or urban design objectives, or where regional traffic influences conditions. For instance, in the City Center, some level of peak hour vehicle congestion is acceptable if the result is a more vibrant street environment, more viable public transportation systems, and safer conditions for bicycles and pedestrians. On the other hand, intersections in more suburban settings

CREATING A MORE "PEDESTRIAN-FRIENDLY" CITY

One of the overarching goals of the General Plan is to make Fremont a more pedestrian-friendly city. In some cases, this will require enhancing intersections to improve pedestrian safety and convenience.

A good example is at the corner of Fremont Boulevard and Bonde Way, in the heart of Centerville. The crosswalks at this intersection provide access to the Centerville Train station, a bus stop, and a weekly farmers market. Traffic volumes are high, the boulevard is approximately 80 feet wide, and there are numerous pedestrians crossing the street. The 2007 Pedestrian Master Plan identified strategies for making this crossing safer and more attractive. These include creating higher visibility crosswalks, relocating the bus stop and developing a new bus shelter to minimize the bus blocking pedestrians in the crosswalk, and placing truncated domes on the curb ramps to help visually impaired pedestrians.

where there are fewer alternatives to driving may be candidate locations for road capacity improvements.

Pedestrian and Bicycle System

Although pedestrian and bicycle trips represent less than 2 percent of commute trips in Fremont, they are an important and growing component of travel in the city. Walking and cycling are healthy, environmentally sustainable modes of travel. They are a practical means of transportation in Fremont given the city's topography and climate. These modes have traditionally been thought of as a form of recreation rather than a practical means of daily travel. As Fremont shifts toward a more multi-modal system, walking and cycling will become increasingly practical ways to get around.

Most of the City's pedestrian system is comprised of sidewalks constructed within street rights-of-way. In some areas, the sidewalk system is supplemented by trails, primarily built for recreational purposes within parks or along flood control channels. Some parts of the city lack sidewalks, creating gaps in the system that tend to hinder walking. Other areas are well served by sidewalks, but lack convenient crosswalks or require long crossings of wide arterials. In addition, the suburban layout of many Fremont neighborhoods tends to favor auto travel over walking, particularly for trips from home to shopping or transit. Circuitous routes along meandering streets may be required to reach destinations that are just a few hundred feet away.

Fremont has adopted a Pedestrian Master Plan (2007) that outlines future improvements and programs to encourage walking. The Plan identifies specific projects to make walking a more viable mode of transportation in the city. Many of these projects are located near activity generators such as schools, commercial districts and transit stations. The Pedestrian Master

Pedestrian Bridge Crossing Paseo Padre Parkway

Plan also supports education and awareness of the health benefits of walking, as well as pedestrian safety.

The City has also adopted a Bicycle Master Plan which provides strategies for emphasizing bicycling as a safer, more efficient means of travel in the city. In addition to mapping the existing and proposed network of bicycle routes, the Plan includes provisions for bicycle parking and support facilities. The Bicycle Master Plan also addresses coordination between the different agencies that operate bicycle trails in Fremont, including the flood control and regional park districts.

The City's bicycle network exists primarily within street rights-of-way. Like the pedestrian network, it is supplemented by off-road facilities in parks and along flood control channels. Many of these facilities are shared by bicycles and pedestrians. Bicycle facilities are generally classified as:

- Bike paths, which are located entirely outside of the paved portion of a street. Examples include the Alameda Creek Trail between Niles and Coyote Hills Park, and the trail around Lake Elizabeth in Central Park. These are also called "Class I" facilities.
- Bike lanes, which are striped lanes exclusively for bicycles within the paved portion of a street. Examples include Thornton Avenue and Walnut Avenue. These are also called "Class II" facilities.
- Bike routes, which are roads on which bicycles travel within the same lanes used by cars and other vehicles. Examples include Farwell and Eggers Drive. These are also called "Class III" facilities.

Buses

The Alameda-Contra Costa Transit District (AC Transit) provides local bus service for western Alameda and Contra Costa counties, extending from Pinole on the north to Fremont on the south. The routes provide feeder service from Fremont neighborhoods to the BART station, and also connect major institutions, shopping areas, and employment centers. All AC Transit buses are equipped with bicycle racks.

KEEPING FREMONT STREETS SAFE

Fremont implements a number of programs to ensure traffic, bicycle and pedestrian safety. These programs are designed to reduce the risk of accidents, discourage speeding, eliminate road hazards, and avoid conflicts between different modes of travel. The City uses data on collisions and other accidents to guide decisions on the installation of new traffic control devises, such as pavement markers, stop signs, and traffic signals.

The City also offers bicycle rodeos and community traffic safety rodeos that teach students and their parents about responsible cycling and walking behavior.

AC Transit Bus

VTA Bus

Bicycle lanes are considered Class II facilities.

ACE Train

Fremont is also served by the Santa Clara Valley Transportation Authority (VTA). VTA operates buses between the Fremont BART station and destinations to San Jose and the south. Additionally, the Dumbarton Express provides weekday bus service from Fremont to Santa Clara and San Mateo Counties. In the years ahead it is anticipated that bus service will continue by one or more providers, although routes may shift due to the extension of BART into South Fremont and Fremont's vision to become more strategically urban.

Passenger Rail

Bay Area Rapid Transit (BART) provides heavy rail service to more than 20 cities and four counties in the Bay Area, including Fremont. Direct service is provided from Fremont to Oakland, Richmond, and San Francisco. Connecting service is available to Pittsburg, Dublin/Pleasanton, and San Francisco International Airport. The Fremont BART station is a multi-modal transit hub. In 2009, AC Transit had 14 bus lines serving the station while VTA had four. The station also provides 1,500 parking spaces, serving Fremont residents and others who drive to the station from nearby cities.

As the southernmost terminus of BART and the station nearest to Silicon Valley, Fremont's BART Station has served two-directional commute traffic for many years. Many Fremont residents board BART to travel north to work in Oakland, San Francisco, and other employment centers of the Central Bay Area. Conversely, many BART riders in the Central Bay Area travel south to Fremont and continue their journey on VTA or Dumbarton Express buses. These patterns will change in the coming years as the BART line is extended south.

Fremont is also served by the Altamont Commuter Express (ACE) and Amtrak Capitol Corridor train lines, with both services stopping at the Centerville train station. The ACE train travels from Stockton to San Jose. As of 2011, the system made three round trips per day. The 86-mile corridor parallels Interstates 580, 680, State Route 84 and 880. The trains stop at three San Joaquin County stations, four Alameda County stations, and two Santa Clara County stations. The Capitol Corridor links Fremont to Sacramento and San Jose, using the same track as Amtrak's nationwide service. Between Sacramento and San Jose, the train serves 13 stations in six counties and is complemented by a bus network that provides connections from its stations to the rest of the Bay Area.

High Speed Rail

The California High Speed Rail Authority is the lead agency for developing an 800 mile, 24 station rail network between San Francisco and Los Angeles via the Central Valley, and connections eventually to Sacramento and San Diego. California's electrically-powered, high-speed trains will help the state meet the growing demands on its transportation infrastructure. In the Bay Area, the network is proposed to connect from the Central Valley to Gilroy, San Jose and up the Peninsula to San Francisco.

Paseo Padre Parkway Grade Separation

Freight Rail

Fremont has three active freight rail lines, all operated by the Union Pacific Railroad (UPRR). Freight is transported on an "as needed" schedule, with at least one train a day passing through Fremont. Freight rail gives Fremont the capacity to support heavy industry, warehousing and distribution facilities, and other activities that require raw materials or produce large volumes of goods. Fremont's freight rail lines intersect its street system at locations throughout the city. Some of the railroad crossings are grade-separated (i.e., underpasses or overpasses) and others consist of grade-level crossings with warning lights and crossing arms. Some of the grade-level crossings are planned for separation in the future, including Warren Avenue and Kato Road in the Warm Springs area.

Railroad Quiet Zones

Railroad Quiet Zones have been identified as a method to improve neighborhood quality of life for residents who live in the vicinity of railroad at-grade crossings. There are three active rail lines in the City of Fremont with 15 public at-grade crossings which have flashing lights and automatic gates. Of the 15 public at-grade crossings, six crossings are anticipated to be eliminated because of grade separation projects within the next few years. The City is considering the establishment of railroad quiet zones for the other locations. A quiet zone is a segment of rail line comprising one or more at-grade highway-rail crossing where trains are ordered not to routinely sound the horn. Current rules require trains to sound their horns before the approach to an at-grade crossing (but not more than ¼-mile away) until the locomotive occupies the crossing location.

Safety concerns regarding freight rail include the transport of hazardous materials, noise and vibration impacts on nearby homes and businesses, and pedestrian and vehicle safety. Noise and vibration impacts must be addressed when new development is proposed near rail lines. Measures

to mitigate these impacts include site planning, sound walls, landscaping, building design, and insulation, among others.

Planned Improvements and Future Mobility Conditions

The estimated addition of more than 15,000 households and 43,000 jobs in Fremont over the next 25 years will create additional demands on the transportation system. New development will generate more traffic, higher demand for public transportation, and a greater need for bicycle and pedestrian facilities. The Bay Area as a whole will add over one million new residents, placing additional pressure on the regional transportation facilities that cross Fremont. There are also improvements planned to the transportation system that will affect mobility in the City. These range from small, localized projects such as the addition of turning lanes at various intersections to large-scale regional projects such as the extension of BART from Fremont to San Jose and Santa Clara.

The City's overall strategy is to reduce dependency on single passenger automobiles as growth occurs. This will occur through a combination of land use decisions (i.e., directing most new development to areas where transit is available) and transportation investments (i.e., expanding the bicycle, pedestrian, and public transportation systems.) Improvements to the road and freeway system will also be necessary, as the automobile will continue to be a dominant form of transportation and the most feasible means of long-distance travel in much of the city.

Planned Road Improvements

Diagram 3-3 shows the roadway classification of freeways, arterials, collectors, and local streets envisioned for 2035. The map indicates both existing and planned road segments and should be used to guide capital improvements and transportation planning during the coming years. Diagram 3-4 indicates the planned number of lanes on Fremont's streets in 2035. Major improvements are profiled below. These include Interstate 880/Mission Boulevard improvements, the East-West connector, the South Fremont Boulevard extension, and various grade separation and road enhancement projects.

Most of Fremont's Interstate 880 freeway interchanges were reconstructed between 1990 and 2010 to handle increased traffic volumes. Ramp meters have been installed and capacity has been expanded. Improvements to the I-880/Mission Boulevard interchange are underway in 2010, clos-

ing the gap in the high-occupancy vehicle (HOV) lane system between Alameda and Santa Clara Counties and installing direct, high speed connector ramps between I-880 and Mission Boulevard. Funded improvements around this interchange also include a new Warren Avenue overcrossing (of I-880) and the widening of Mission Boulevard.

Planning is also underway for an improved and new connection between Interstate 880 and Mission Boulevard in Union City. The road was initially conceived as a high-speed limited access roadway following a new alignment between the Fremont/Decoto intersection and Alameda Creek, and continuing on to Union City. Instead, the extension will rely on a combination of existing roads and new roads. Decoto Road will be improved between Interstate 880 and Paseo Padre Parkway. A new bridge will be constructed across Alameda Creek about one-half mile east of the Decoto/Paseo Padre intersection, and a roadway will be built northwest of Quarry Lakes Regional Park. The extension will provide an important connection between the Dumbarton Bridge and Mission Boulevard and improve east-west connectivity in the northern part of Fremont.

For many years, there has also been discussion of a freeway connector between Interstates 680 and 880, either in South Fremont or Milpitas. The two interstates run parallel for several miles, and are connected by surface streets that are frequently congested. This General Plan acknowledges the possibility for such a facility and includes policy language in the event such a facility is proposed in the future. However, the traffic forecasts and modeling do not currently assume its construction. A grade-separated intersection is planned for Mission Boulevard at Warm Springs, which should improve flow between the two freeways and alleviate some of the localized congestion.

This General Plan removes several road projects that had been proposed by the prior (1991) General Plan, due to changing local and regional transportation priorities. These include State Route 61, which was originally conceived as a new freeway through the baylands west of I-880 between Oakland and San Jose. Similarly, the Plan does not show the once-proposed extension of Stevenson Boulevard from its western terminus near the Union Pacific tracks to Auto Mall Parkway and beyond to Cushing Parkway. Construction of a new road in this area is constrained by wetlands. Moreover, much of the adjacent land is now part of or adjacent to the Don Edwards National Wildlife Refuge. Like the previous General Plan, the 2035 General Plan continues to support an extension of Fremont Boulevard from its southern terminus to Dixon Landing Road.

TAKING CARE OF OUR ROADS

In 2010, the City of Fremont budgeted approximately $4.5 million a year on road maintenance. The primary funding sources are the City's General Fund, the Alameda County Measure B sales tax, the State gasoline tax, and Proposition 42. Although preventive maintenance is a significant annual expense, it helps reduce the long-term cost of road repair. Ongoing maintenance activities include:

- Cape seal treatment, which involves filling pavement cracks with a rubberized sealer, overlaid by paving oil, rock chips, and slurry seal
- Street overlays, in which pavement is resurfaced, repaired, and restored
- Slurry seal, which consists of a mixture of asphalt emulsion oil and sand being applied to the pavement to protect it from deterioration
- Bridge repair, which is done as needed in accordance with Caltrans biennial inspections
- Concrete, curb, and gutter repair, including sidewalk and ramp repair.

Improvements to the existing road system also are planned, using capital improvement funds generated through the City's traffic impact fee (TIF) program and other sources. The list of projects funded by the TIF is periodically updated based on development and traffic forecasts. The projects generally consist of turning lanes, traffic signal modifications, crosswalks and other safety improvements, installation of sidewalks and bike lanes, curb and gutter improvements, and road widening projects. As the 2035 General Plan's policies are implemented, the focus of TIF-related improvements will begin to shift away from those that increase road capacity toward those that improve other modes of travel and enhance the visual quality of Fremont's major streets.

Among the major improvements planned for the coming years are a series of grade separation projects along the UPRR to facilitate BART. The City recently completed grade separation projects on Washington Boulevard and Paseo Padre Parkway in the Irvington area. A future grade separation project will extend Blacow Road eastward across the UPRR to intersect Osgood Road. Kato Road and Warren Avenue will also be grade separated from the railroad crossing in Warm Springs.

Diagram 3-3 Functional Classification

This is a reduced image. Please see the most current color full-size maps available at the Fremont Planning Division or online at www.fremont.gov/planning
The information on this diagram is dynamic and may have changed since this page was last printed.

This page intentionally left blank.

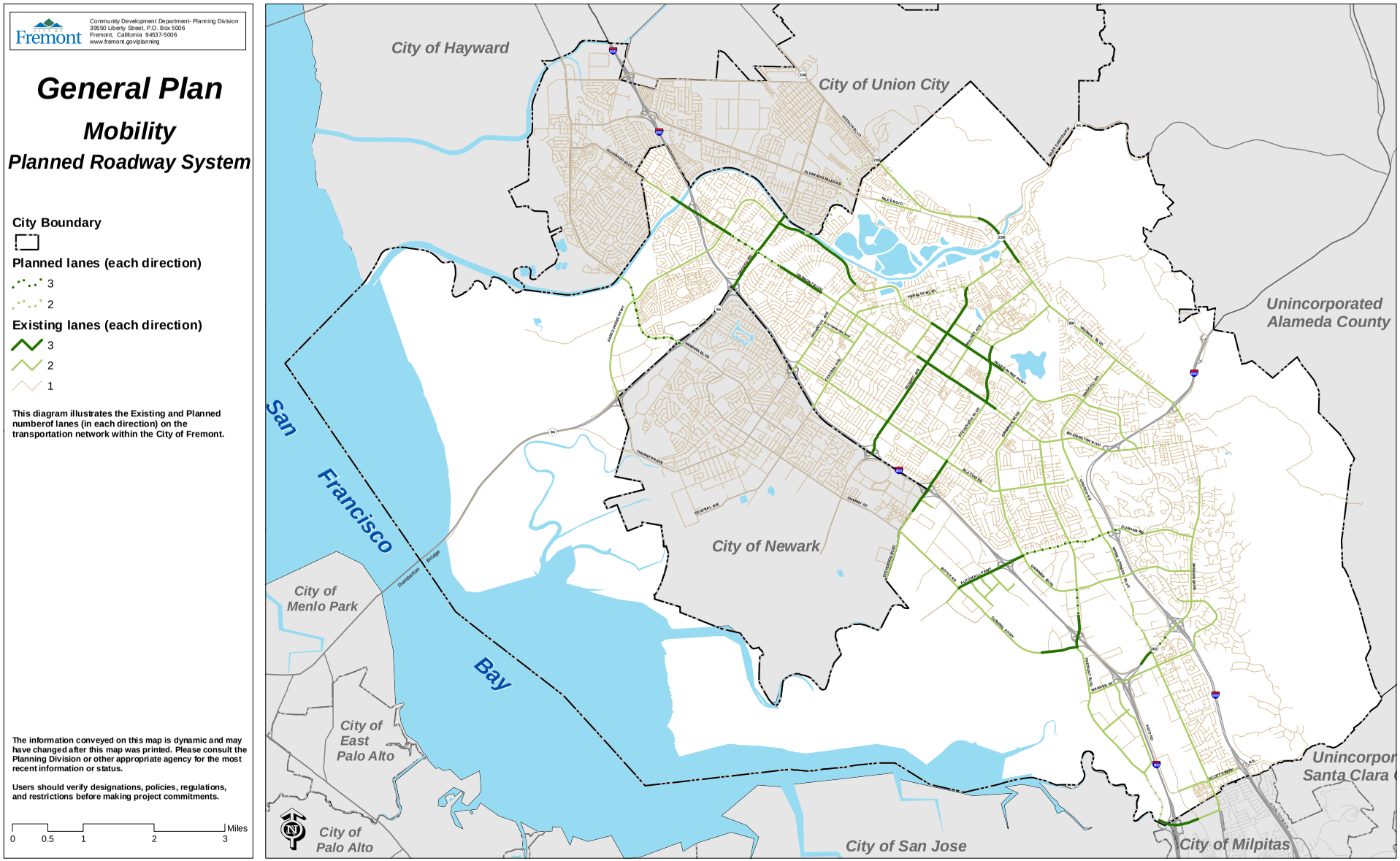


Diagram 3-4 Planned Roadway System

This is a reduced image. Please see the most current color full-size maps available at the Fremont Planning Division or online at www.fremont.gov/planning
The information on this diagram is dynamic and may have changed since this page was last printed.

This page intentionally left blank.

Planned Bicycle and Pedestrian Improvements

As noted earlier in this chapter, Fremont has adopted master plans for its bicycle and pedestrian networks. Each master plan includes a series of capital projects as well as policies and programs to promote these modes of travel. Diagram 3-5 indicates the existing and future bicycle and pedestrian circulation systems.

Fremont's bicycle network will be expanded through the addition of new bike lanes and paths. Cycling will be further supported through new bicycle parking facilities and programs to improve bicycle safety, education, signage, and route maintenance. A number of capital projects are recommended in the Bicycle Master Plan, including a new bike path in the UPRR right-of-way (ROW) extending from Niles Canyon to Warren Avenue. The Bicycle Plan also calls for new off-road trails along Mission Creek, in the Hetch Hetchy ROW, between Fremont Boulevard and Dixon Landing Road, and between Farwell Drive and Lemke Place. In all, 16 miles of new Class I (off-road) bike paths are recommended.

The bicycle plan also calls for 27 miles of new Class II bike lanes and 33 miles of new Class III bike routes. The bike lane projects include striping a dedicated lane for bicycles on approximately 25 Fremont streets, including parts of Fremont Boulevard, Washington Boulevard, Osgood Road, Kato Road, Paseo Padre Parkway, Peralta Boulevard, and Central Avenue. Improvements to existing bike lanes are also identified in the Plan, including those along Mowry, Mission, and other major thoroughfares. In addition, nearly 50 bike route projects are identified. These projects consist primarily of wayfinding signage and safety improvements to facilitate bicycle movement within existing travel lanes on collector streets. The City has identified a number of potential sources for financing capital improvements and covering maintenance costs.

Dedicated bikeways improve safety and encourage ridership.

THE BAY TRAIL AND RIDGE TRAIL

The Bay Trail is a bicycle and pedestrian trail that is intended to eventually circle San Francisco Bay and San Pablo Bay. The entire trail network, including spurs, is about 400 miles long. About 240 miles were in place as of 2010 and there are still many discontinuous segments.

The Ridge Trail is planned to be a 550-mile trail encircling the Bay along the ridgetops of the region's hills. Its primary users are hikers, equestrians, mountain bikers, and outdoor enthusiasts. As of 2010, about 325 miles of the trail were in place.

Improving trail connections is a key City objective. Such connections are facilitated by the City's Bicycle and Pedestrian Master Plans, as well as ongoing plans to extend trails through newly acquired open space. For example, the recent designation of Sabercat Historical Park provides an opportunity for extending the Antelope Hills Trail, which could connect the hills to the new Irvington BART station and Central Park. Such trails could ultimately be extended to provide cross-town links between the hills and the bay.

More bike lanes for bike riders

Pedestrian friendly features

Many of the bicycle network improvements will also facilitate walking. The 2007 Pedestrian Master Plan identified $11.2 million in capital improvements to close gaps in the sidewalk system, create curb ramps, improve intersections, enhance streetscapes, add new paths, and improve pedestrian safety around schools. The City will place the highest priority on funding projects in areas of greatest demand and in areas where pedestrian safety will be enhanced. Closing gaps in the sidewalk system along streets such as Auto Mall Parkway, Osgood Road, Mission Boulevard and Warm Springs Boulevard will make walking a safer, more comfortable alternative for short trips. Improvements such as audible pedestrian crossing signals, higher-visibility crosswalk markings, and curb extensions will likewise improve the pedestrian environment. The Pedestrian Master Plan calls for specific improvements to 17 intersections around the City, as well as sidewalk improvements and new pedestrian paths.

The Pedestrian Master Plan also includes new policies and programs, some of which are referenced later in the Mobility Element (see Goals 1 and 2). These promote education and awareness of pedestrian safety issues, increased information on the health benefits of walking, and designing buildings and public facilities to promote walking. As Fremont's City Center, Town Centers and BART Station areas become more dense, walking is expected to become a more practical, functional, and enjoyable means of travel.

Completing the sidewalk network is imperative to meet the goals of the Pedestrian Master Plan and the General Plan vision to reduce vehicle miles traveled. Right-of-way dedication and sidewalk installation is required of developers and owners completing improvements on their property. Historically, this was the responsibility of the City but overtime this responsibility was shifted to developers and property owners. Funding limitations led the City to revise ordinances in 2010 to clearly put the responsibility of sidewalk maintenance on private property owners. Sidewalk installation is the responsibility of developers and property owners depending improvements being made per the City's Street Improvement Ordinance.

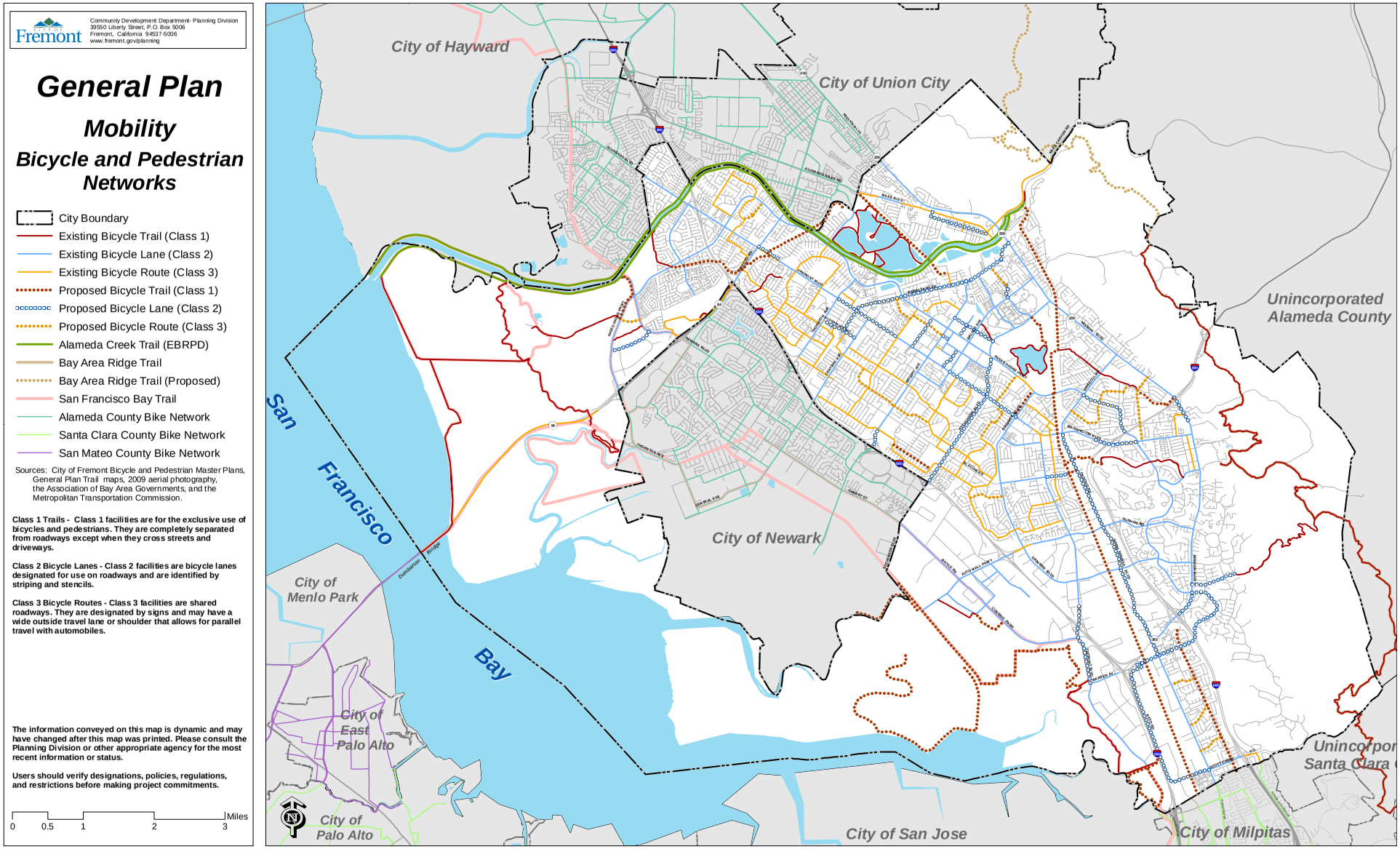


Diagram 3-5 Bicycle and Pedestrian Networks

This is a reduced image. Please see the most current color full-size maps available at the Fremont Planning Division or online at www.fremont.gov/planning
The information on this diagram is dynamic and may have changed since this page was last printed.

This page intentionally left blank.

Planned Transit Improvements

Public transit—including buses and trains—are expected to handle a growing share of trips in Fremont during the years ahead. This will occur in part because of increased congestion and longer drive times on regional roadways and in part because future development will occur in a way that makes taking the bus or BART an easier and more affordable alternative to driving. Increased transit ridership will also be made possible by unprecedented investments in rail infrastructure in Fremont—namely the extension of BART to San Jose and the development of two new stations in the City. By 2020, Fremont will be one of only five cities in the Bay Area with three or more BART stations.

AC Transit Bus

AC Transit has expressed a commitment to improving bus service in the East Bay through its Strategic Vision Plan. The Plan calls for high-frequency enhanced bus routes, new vehicles, on-street rider amenities, signal priority on major streets, and round-the-clock service. Most of the major capital projects, including a proposed Bus Rapid Transit (BRT) system are in the northern part of the service area between Berkeley and San Leandro. In the Fremont area, service will continue to be concentrated along key trunk lines such as Fremont Boulevard and feeder service to the BART stations, ACE station, and park-and-ride facilities. Ridership will be regularly monitored and route adjustments will be made as BART is extended and new development takes place.

The City of Fremont will work with AC Transit to sustain, and if possible expand, service during the coming years. The City is especially interested in reinforcing Fremont Boulevard's role as Fremont's transit spine, and recognizing the importance of bus service along Fremont Boulevard as a way to connect the city, provide access to BART, and support planned development in Centerville, City Center, Irvington, and Warm Springs. If ridership levels and demand rise to sufficient levels, the City supports the eventual development of BRT or light rail along this corridor. This will help sustain denser development, facilitate north-south travel, and create a more distinctive identity for the city.

The most significant transportation improvement planned during for the next two decades is the extension of BART to San Jose. The first phase of the extension begins at Fremont station and extends south 5.4 miles to a new station at South Fremont/Warm Springs. An additional station has been planned in Irvington, approximately midway between Fremont station and the Warm Springs terminus. The project includes construction

Amtrak Capitol Corridor at the Centerville Train Depot

of a subway beneath Central Park, track and road improvements, and the development of a new end-of-the-line station on Warm Springs Boulevard just south of Grimmer Boulevard. The South Fremont/Warm Springs station is expected to be operational by 2015. The South Fremont/Warm Springs and Irvington station areas have been identified as Priority Development Areas creating the potential for transit oriented development and increased ridership through these stations.

The Warm Springs extension is part of a larger program to extend BART another 16 miles beyond Warm Springs into Santa Clara County. Stations are planned in Milpitas, Berryessa, Alum Rock, Downtown San Jose, Diridon, and Santa Clara. The Silicon Valley extension includes a five mile subway underneath Central San Jose and connections to the VTA light rail system and Caltrain system at a number of locations. It could also potentially link to the proposed California High Speed Rail project. Once operational, the BART extension will facilitate transit-oriented development in Irvington and Warm Springs, and provide a commute alternative for thousands of East Bay and Santa Clara County residents.

In addition to BART improvements, the City will continue to support Altamont Commuter Express (ACE) and Capitol Corridor service. The Centerville station area has also been identified as a Priority Development Area, creating the potential for more frequent service in the future.

Rendering of future Irvington BART Station

Future Traffic Conditions

The City of Fremont prepares forecasts of future traffic conditions using a computerized traffic model. The model considers the projected amount of job and household growth in various locations around the city by a given year (in this case, 2035). Different land uses generate different amounts of traffic, enabling the model to test the impacts that growth may have on future traffic conditions. Future "trips" are added to the transportation network, taking into consideration planned road improvements, new transit facilities and other infrastructure changes. The model makes assumptions about the directional flow of these trips and the percent of trips that will be made by car, bus, BART, and so on based on travel behavior data.

The forecasts also consider increases in background traffic resulting from growth in the Bay Area and development in nearby cities that will affect local streets and highways.

The traffic model is used to identify intersections and road segments that are likely to be congested in the future. This information is used to plan improvements to the system, including bicycle, pedestrian, and transit projects as well as increases in road capacity. The model results are also used to adjust land use plans. For example, if the model indicates future congestion at a particular intersection, the City might change the allowable density of development in the vicinity to reduce the number of new trips that would be generated. It might also phase future development so that it keeps pace with transportation improvements.

Projected Traffic Volumes

As the Bay Area's population and employment base grows, congestion on the freeway system is expected to get worse. As the freeways become more congested, there may be indirect affects on Fremont streets as traffic seeks less congested alternatives. During peak hours, some freeway traffic may divert on to Fremont Boulevard, Paseo Padre Parkway, Mission Boulevard, and other north-south arterials. This may also affect Decoto, Thornton, Mowry, Stevenson, Auto Mall, Mission, Washington, and other thoroughfares that serve as primary arterials between the freeways and Fremont neighborhoods. The use of Intelligent Transportation Systems (i.e. dynamic message signs with real-time information on travel times) can help motorists make more informed decisions about their travel routes and alleviate some of these impacts.

The extension of BART to San Jose will divert some trips off of the freeways and onto public transportation. Similarly, improvements to AC Transit and VTA service, continued ACE and Capitol Corridor service, and expansion of the local bicycle system may enable a growing number of travelers to choose modes other than private cars for peak hour trips. For those who live and work near BART stations, public transportation may become the fastest and most affordable way to travel to Oakland, San Francisco, or San Jose during the peak hour.

The City's response to congestion at these locations will vary depending on the function of the street, the nature of the traffic (i.e., local versus regional), and the policies in this General Plan. In some instances, it may be unrealistic or even contrary to other General Plan policies to strive for LOS D at these intersections. For instance, the Mowry Avenue/Fre-

mont Boulevard intersection (which is forecast to operate at LOS F in the evening rush hour) is located within the City Center, an area where the City seeks to encourage more pedestrian activity. Slower travel speeds and some peak hour congestion would be consistent with the vision for this area, while widening the street to increase speeds and capacity is not.

This General Plan proposes a new approach to evaluating traffic congestion, recognizing that LOS alone is not sufficient to evaluate how well the street network is performing. Policies under Goal 4 in the Mobility Element allow lower levels of service (E or F) in specific locations where there would be other public benefits, such as transit-oriented development, and more opportunities for pedestrians, bicyclists, and transit users. These policies work in tandem with those under Goal 1 of the Mobility Element, which recognize that streets serve a greater function than simply moving cars across the city (see "Complete Streets" discussion later in this chapter).

Primary Mobility Routes

Diagram 3-6 summarizes the primary mobility system during the horizon of the General Plan. The Map is intended to be a composite of the city's transportation priorities for the next 20 years. It combines Fremont's primary travel modes on a single diagram, including major transit spines, multi-modal streets (e.g., auto, bike, bus, etc.), bicycle routes, pedestrian trails, and rail facilities. In most cases, a given route may support more than one mode of travel. For instance, the "transit spines" generally support cars, bikes, and pedestrians as well as buses. However, for capital improvement planning and from an urban form perspective, a greater priority may be placed on transit investments on these routes. Similarly, many of the bicycle routes indicated on the diagram are actually collector streets. Over time, these roads may be improved to facilitate bicycle travel—but they will continue to accommodate cars, pedestrians, and other modes.

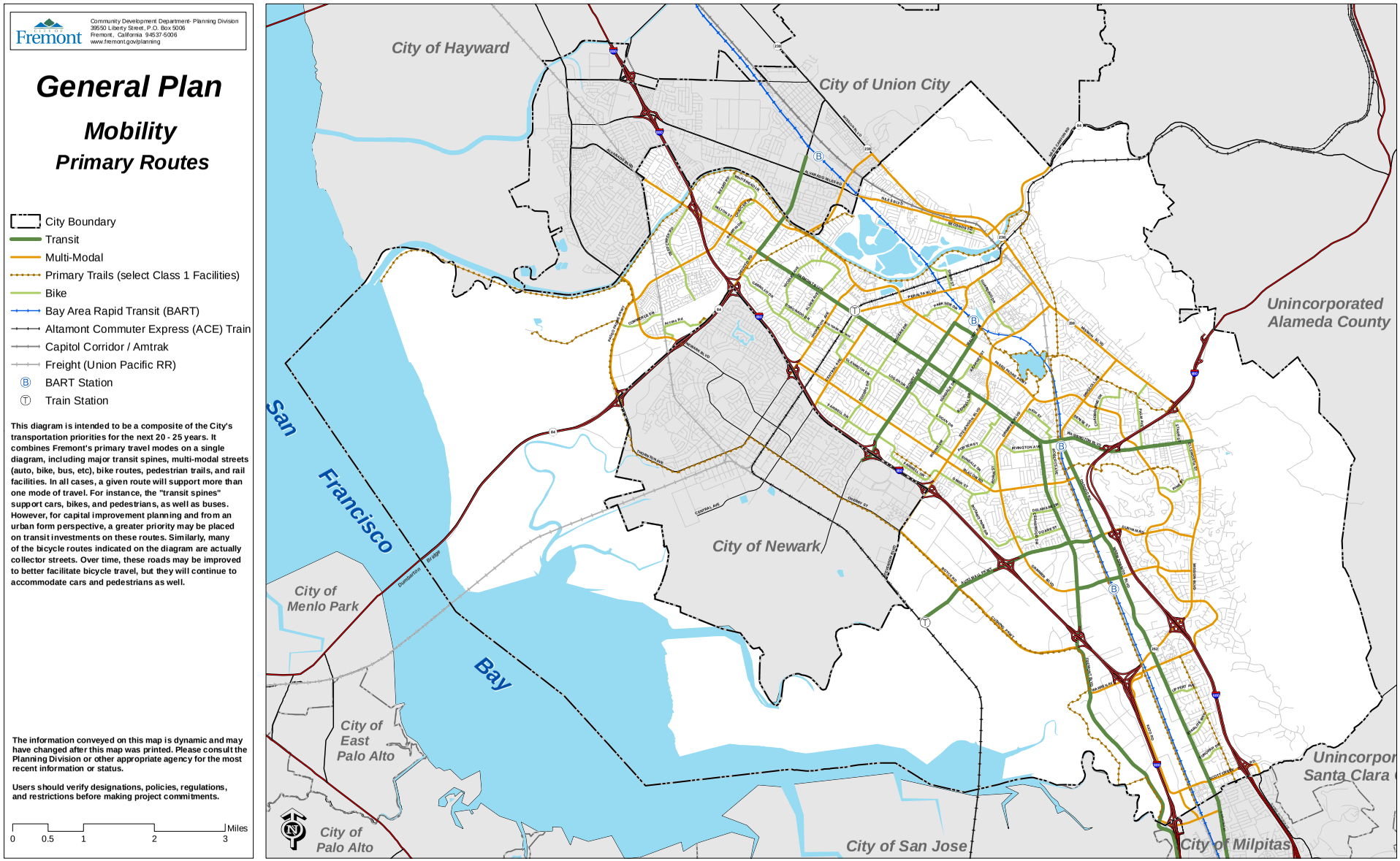


Diagram 3-6 Primary Routes

This is a reduced image. Please see the most current color full-size maps available at the Fremont Planning Division or online at www.fremont.gov/planning
The information on this diagram is dynamic and may have changed since this page was last printed.

This page intentionally left blank.

Goals, Policies and Implementing Actions

This section of the Mobility Element presents goals, policies, and implementing actions. The text is organized into seven topic areas:

- Creating "Complete" Streets
- Reducing Vehicle Miles Traveled
- Enhancing Accessibility, Efficiency and Connectivity
- Balancing Mobility and Neighborhood Quality
- Connecting to the Region
- Moving Goods
- Managing Parking

The policies within each topic area have been developed concurrently with those addressing land use and community character and respond to the analysis in the previous part of the Mobility Element. The Element moves the City toward its vision of a multi-modal transportation system that provides safe, convenient access across the city while connecting Fremont to the region around it. Such a system will balance the historic emphasis on vehicles and roads with a new emphasis on other travel modes such as walking, bicycling, and public transit. An efficient, high-quality transportation system that responds to the diverse needs of the city's residents and businesses is essential to Fremont's quality of life and economic vitality. Perhaps no other part of the General Plan is as critical to achieving the city's sustainability and greenhouse gas reduction goals.

The goals, policies and actions include supplemental text where needed to elaborate on how the policy is to be interpreted or why it is important. As in other elements of the General Plan, policies and actions related to the theme of sustainability are noted with a leaf symbol.

Goal 3-1: Complete Streets

City streets that serve multiple modes of transportation while enhancing Fremont's appearance and character.

"Complete streets" are streets that are designed to accommodate all modes of travel and not just automobiles. They are planned and operated with multiple users in mind, including motorists, pedestrians, bicyclists, transit users, and people of all ages and physical abilities. In addition to driving lanes, they typically contain wide sidewalks, bike lanes, on-street parking, street trees, and features that lower traffic speeds such as raised crosswalks. Complete streets with higher traffic volumes or in urban settings may contain bus-only lanes, bus pullouts, or curb "bulbouts" (wider sidewalks at intersections) to encourage walking and transit use.

Complete streets can improve safety, create a stronger sense of place, and make streets more accessible for persons with disabilities. An important part of the concept is recognizing the importance of the street as a public space and a part of the city's identity. Adding landscaping, trees, and other features that make streets more comfortable can enhance the image of the city, and make the street a place for positive social interaction among neighbors.

Since most Fremont streets are already in place, application of Complete Streets principles will mostly occur through the retrofitting of existing streets. This will be a long-term transition that will require strategic planning and funding by the City and other agencies over many years. The initial focus should be on streets within the Priority Development Areas, particularly those in locations like Downtown where significant infill development is planned, and along Fremont Boulevard in places like Centerville and Irvington. Major gateway streets with wide rights of way such as Mowry Avenue are also likely candidates.

• Policy 3-1.1: Complete Streets

Design major streets to balance the needs of automobiles with the needs of pedestrians, bicyclists, and transit users. Over time, all Fremont's corridors should evolve into multi-modal streets that offer safe and attractive choices among different travel modes.

In 2008, the California legislature approved AB 1358, also known as the Complete Streets Act. The Act requires cities to commit to designing streets for multiple users in their general plans. AB 1358 emphasizes non-motorized travel modes, making the link to greenhouse gas reduction strategies, and strategies to improve public health by encouraging biking and walking.

> Implementation 3-1.1.A: Complete Streets Design Standards

Periodically review Fremont's street standards to continue implementation of Complete Streets concepts. Standards should accommodate multiple transportation modes within rights-of-way and achieve mutually supportive land use, transportation, and urban design objectives.

Fremont's original street standards were developed to move vehicle traffic quickly and efficiently across the city. Although the standards already include provisions for sidewalks and bike lanes, they do not always recognize the character of adjacent uses, the function of streets as public space, or the desire to create a more multi-modal transportation network. Fremont will maintain appropriate design standards and modify as needed to advance the General Plan vision of a less auto-centric, more walkable city.

> Implementation 3-1.1.B: Multi-modal Rights of Way

When major resurfacing projects occur, or where traffic volumes are well below a road's design capacity, consider converting auto lanes on major streets for multiple purposes, such as bus and bicycle travel and carpools.

> Implementation 3-1.1.C: Use of Traffic Impact Fees for Non-Auto Projects

Explore changes to Fremont's traffic impact fees that enable the use of these fees to improve transit, bicycle, and pedestrian facilities, and to undertake traffic calming projects.

> Implementation 3-1.1.D: Utilities

Ensure that utility easements and connections are accounted for when designing complete streets, includingthe undergrounding of utilities wehn appropriate.

• Policy 3-1.2: Contextual Street Design

Ensure that the design and scale of city streets is sensitive to the context of surrounding neighborhoods.

> Implementation 3-1.2.A: Streetscape Design Standards

Maintain design standards or guidelines for streetlights, landscaping, street furniture, and other roadway features that enhance the identity of Fremont's neighborhoods, with due consideration given to maintenance needs and operational costs.

See the Community Character Element for additional policies and actions on streetscape,corridor design, and the siting of buildings, entries, and parking areas relative to the street.

• Policy 3-1.3: Transit-Friendly Street Design

As appropriate, apply street design and development standards that require transit-supportive facilities such as bus stop curb extensions, bus shelters, benches, lighting, sidewalks, and convenient access to bus stops.

> Implementation 3-1.3.A: Bus Stop Locations

Work with transit providers to ensure that bus stops and shelters are sited in appropriate locations and are designed to maximize rider comfort and safety.

> Implementation 3-1.3.B: Designing With Transit

Utilize guidelines provided by transit providers for accommodating transit vehicles on city streets and incorporating transit facilities into new development and redevelopment.

• Policy 3-1.4: Walking, Bicycling, and Public Health

Recognize the importance of a walkable, bicycle- and pedestrian-friendly city to overall public health and wellness.

See the Parks and Recreation Element for additional policies to encourage walking and bicycling. See also Land Use Action 2-3.6-A on Neighborhood Connectivity.

> Implementation 3-1.4.A: Wellness Education

Educate local residents and employers on the health benefits of walking and bicycling through sponsorship of events such as "Bike to Work" day, and other programs which increase public awareness of the link between exercise and health, and the ways in which community design can address obesity and improve physical well-being.

• Policy 3-1.5: Improving Pedestrian and Bicycle Circulation

Incorporate provisions for pedestrians and bicycles on city streets to facilitate and encourage safe walking and cycling throughout the city. Landscaping should reduce wind, provide shade, provide a buffer to

adjacent roadways, and stimulate visual interest. Visually appealing, energy-efficient street lighting should be provided to ensure night-time safety.

As noted earlier in this Element, the City of Fremont has adopted a Pedestrian Master Plan and a Bicycle Master Plan as part of its General Plan. Both plans include maps showing routes and locations for future improvements. The emphasis is on closing gaps in the system and connecting existing sidewalks and trails. Both Plans also strive to provide additional facilities near major activity generators such as schools, commercial districts, and transit stations. Improvements can be scheduled through the City's Capital Improvement Projects, and may also be incorporated as mitigation measures as development is proposed.

> Implementation 3-1.5.A: Pedestrian and Bicycle Accommodations on Roadways

Require that road improvements incorporate facilities for pedestrians and bicycles in locations identified in the City's Pedestrian and Bicycle Master Plans.

> Implementation 3-1.5.B: Bike Route Design

On designated bike routes, develop striped bicycle lanes and off-road bicycle trails rather than shared bike/auto lanes. Design standards for bicycle lanes and trails should be consistent with those used by the State of California.

> Implementation 3-1.5.C: Relationship of Road Improvements to Bike and Pedestrian Plans

Ensure that roadway improvements do not cause a reduction in existing or planned capacity for Class I or II bike facilities as identified in the Fremont Bicycle Plan, or a reduction in sidewalk widths that result in an uncomfortable pedestrian environment.

• Policy 3-1.6: Pedestrian and Bicycle Safety

Improve the safety of pedestrians and bicyclists throughout Fremont through design, signage, capital projects, pavement maintenance, street sweeping and public education.

> Implementation 3-1.6.A: Safe Routes to School

Pursue grant funding opportunities to implement a Safe Routes to School program aimed at protecting the safety of students walking to and from school and that addresses physical improvements, including gaps in the sidewalk network.

Safe Routes to School (SRTS) is a federal program operated at the local and regional level established by the Transportation Bill of 2005. It provides grant funding to make walking and bicycling a safe and appealing form of transportation. Once established, the program is sustained by parents, schools, community leaders, and local officials. SRTS programs examine conditions around schools and conduct projects and activities that improve safety and accessibility and reduce traffic and air pollution in school areas. The ultimate goal is to improve the health and well-being of children by enabling and encouraging them to walk to school. MTC operates the regional program.

See the Public Facilities Element for additional policies on transportation to and from schools.

> Implementation 3-1.6.B: Bicycle-Parking Lane Conflicts

Develop a range of strategies to address those areas where the provision of bicycle lanes may conflict with on-street parking. These could include prohibiting parking during peak hours, relocating parking to off-street facilities, and reducing lane capacity, among others.

> Implementation 3-1.6.C: Pedestrian Crosswalks at Signalized Intersections

Provide enhanced pedestrian crossing times at locations with high pedestrian volumes and with large numbers of special needs and/or elderly residents. Install "countdown crosswalks" to improve the safety of pedestrian crossings. Also, consider the use of diagonal crosswalks at appropriate locations which require motorists in all directions to periodically stop for pedestrian crossings from all four corners of an intersection.

> Implementation 3-1.6.D: Public Education on Traffic Safety

Expand public education on laws relating to parking, circulation, speed limits, pedestrian crossings, right-of-way, and other "rules of the road." Special efforts should be made to ensure the safety of children and youth.

See the Public Facilities Element for additional policies on pedestrian access to schools and public buildings

• Policy 3-1.7: Sidewalks

Require the provision of sidewalks in all new development, including infill development and redevelopment, in order to eventually complete the City's sidewalk network. Sidewalks shall be required on both sides of all public streets, except in hillside areas where a single sidewalk may be adequate. Sidewalks and direct pedestrian connections between uses should also be provided in parking lots.

This is an existing City standard, and it will remain relevant and appropriate over the lifetime of this Plan. The specific design details are dependent on the adjacent land use. For example, sidewalks on residential streets are typically five feet wide and are separated from the curb by landscaping and also maintained by adjacent property owner. Sidewalks on commercial streets may be 10 feet wide and have tree wells.

> Implementation 3-1.7.A: Sidewalk Installation

Continue to require developers to finance and install sidewalks, pedestrian walkways, and other pedestrian-oriented features in new development.

> Implementation 3-1.7.B: Hillside Sidewalk Standards and Special Circumstances

In the hill areas, permit the use of non-conventional sidewalk materials and design standards in order to enhance the rural setting. Acknowledge that in other areas, i.e. historic districts or in historic settings, deviation from typical standards may also be warranted.

Sidewalks and trails are usually constructed of impervious materials like concrete and asphalt. This can increase the rate of stormwater runoff into nearby streets and cause erosion in hillside areas. Alternative materials such as brick pavers, stone, and gravel, can allow water to filter into the soil while also limiting the amount of grading that is required.

• Policy 3-1.8: Sound Walls

Generally discourage sound walls as the solution to high noise levels along transportation routes. Sound walls should only be used where other alternatives, such as landscaped buffers, berms, or sound insulation are infeasible or will not achieve the desired level of noise reduction.

• Policy 3-1.9: Private Streets

Allow construction of private streets in certain circumstances as a way to reduce City maintenance responsibility, preserve natural or historic resources, and meet the unique needs of a parcel of land or project. An exception to this policy shall be made for new street segments which provide a through-connection on existing "stubbed" public streets; such streets shall be public.

> Implementation 3-1.9.A: Private Street Standards

Periodically review and update private street standards to allow for narrower widths while still addressing the need for parking, emergency access, and street connectivity. Private street standards should ensure that materials and maintenance are the same quality as public streets.

Goal 3-2: Reducing Vehicle Miles Traveled

Improve mobility in Fremont while reducing the growth of vehicle miles traveled.

One of the overarching goals of the General Plan is to reduce the growth of "vehicle miles traveled" (VMT) as the city adds people and jobs. VMT refers to the total number of miles driven by all motor vehicles in the city during a given period of time (such as a day, week, or year). Population growth tends to increase the number of cars and drivers on local streets, leading to increases in VMT along with longer commutes and more congestion. Reducing VMT can be accomplished in a number of ways, including providing alternatives to driving (such as bicycling or transit), encouraging carpooling, reducing commute lengths, and placing services within walking distance of residents or workers. Reducing VMT is not only a strategy for managing congestion—it is also helps reduce greenhouse gas emissions and other pollutants.

An important part of reducing VMT is coordinating land use and transportation decisions. Such coordination is required by state law and is emphasized throughout the Land Use Element and the Mobility Element. By focusing new development around transit stations and along transit corridors, more residents can live and work without relying on their cars. Overall trip lengths can be shortened as different uses are clustered together at higher densities.

Another essential part of reducing VMT is to make it easier to travel in and around Fremont without a private automobile. The policies below strive to improve conditions for pedestrians and bicycles and make public transportation more convenient and attractive for residents and the local workforce. The former can be achieved by completing the local sidewalk and bike lane system, installing sidewalks in the industrial area and making walking and cycling safer and more comfortable. The latter requires significant capital investment and new funding sources for operation and maintenance. Transit policies include those with a short-term focus on improving bus service and reliability, and those with a long-term focus on developing new systems that reshape travel patterns and ultimately land use patterns in the city.

Looking forward, the City will need to think differently about how it addresses congestion and other growth-related impacts. In the past, the solution was to widen roads to accommodate more cars and increase vehicle capacity. This may still be an appropriate response in a few locations. New types of solutions will be needed in other parts of the city, with a focus on managing existing assets more efficiently, enhancing other modes of travel, and making it less necessary to drive in the first place. These desired outcomes are reflected in the designations on the General Plan Land Use Map and on the Mobility Diagram (Diagram 3-6) in this chapter.

• Policy 3-2.1: Coordinating Land Use and Transportation

Support land use choices and transportation investments which reduce the necessity of driving and create a community that is more walkable and serviceable by public transportation. Land use decisions should recognize the opportunities and constraints presented by the city's transportation system, including road capacity, transit availability, and pedestrian and bicycle mobility.

Implementing Policy 3-2.1 will require increasing densities around transit stations and along transit corridors, encouraging mixed use development, strategically balancing jobs and housing, and improving infrastructure for pedestrians, bicycles, and transit vehicles in the city. This will reduce the necessity of driving, as well as the cumulative distances residents will need to travel to reach work, shopping, and local services. Many of the subsequent policies in the Mobility Element support this guiding policy. Their associated implementing actions provide direction on the steps the City will take to reduce VMT while improving mobility and transportation choice.

> Implementation 3-2.1.A: Streetcar Service

Plan for the eventual development of a streetcar or equivalent transit system serving the Fremont Boulevard corridor. The feasibility of such a system should be studied over the coming years, and land use planning should anticipate its eventual development.

> Implementation 3-2.1.B: Traffic Impacts of Zoning and General Plan Densities

Periodically review zoning and General Plan densities/intensities and Map designations to ensure that they consider transportation capacity and expected trip generation.

Zoning should support the objective of promoting more density and intensity in areas that are well served by transit, and limiting the density and intensity of development elsewhere. This is particularly important for employment-generating uses such as offices, industry, retail, and mixed use development. The allowable floor area ratios for such uses are lower in locations where public transit and other travel modes are less accessible.

> Implementation 3-2.1.C: Transit Plan

Continue to work with the large variety of transit service providers in the City to coordinate service levels with anticipated City needs. Seek additional funding sources to prepare a transit plan that identifies core services goals corresponding to goals of the Land Use and Community Character Elements.

• Policy 3-2.2: Reducing Vehicle Trips through Land Use Choices

Support new forms of development that reduce the number of vehicle trips generated as compared to traditional suburban development. This includes live-work development, mixed use development (reducing the need to drive to services), and higher density development around transit stations (reducing the need to own and/or use a vehicle).

See also Land Use Element 2-1.7 on becoming a more Transit-Oriented City

> Implementation 3-2.2.A: Reduce Vehicle Ownership

Promote reduced vehicle ownership in TOD areas with lower parking requirements.

> Implementation 3-2.2.B: Home-Based Businesses

Continue to allow the growth of home-based businesses as a way to reduce peak hour travel demand and vehicle miles traveled.

This policy is intended to encourage low-impact home occupations that are compatible with residential neighborhoods, such as single-employee home-based offices. Zoning regulations which limit the impacts of home-based businesses (such as traffic, parking, and noise) will continue to apply.

• Policy 3-2.3: Pedestrian Networks

Integrate continuous pedestrian walkways in Fremont's City Center, Town Centers, residential neighborhoods, shopping centers, and school campuses. Place a priority on improving areas that are not connected by the City's pedestrian network, with the objective of making walking safer, more enjoyable, and more convenient.

According to the Metropolitan Transportation Commission, about 9 percent of the daily trips in Fremont in 2005 were made on foot. Rates were higher in places like Irvington and Centerville, and lower in the Hills. In 2007, the City adopted a goal of increasing the mode share of pedestrian trips to 13.5 percent by 2025. Policy 3-2.3 and the implementation measures below seek to improve pedestrian infrastructure as a way to achieve this objective. The Pedestrian Master Plan should be consulted for further guidance, including specific capital projects to enhance pedestrian travel.

> Implementation 3-2.3.A: Planning for Pedestrians

Include plans for integrated pedestrian circulation systems as part of any future area plan, neighborhood plan, specific plan, or development plan. Such plans shall include provisions for landscaping, street furniture, and other pedestrian amenities.

> Implementation 3-2.3.B: Walkways to BART

Strengthen pedestrian connections to all BART stations. Enhanced pedestrian access shall be considered an important element of station design.

> Implementation 3-2.3.C: Pedestrian Connectivity

Use the development review process to require pedestrian connectivity within proposed development and between development and destinations (public facilities, transit, neighborhood commercial uses, parks,

etc.) within a one-half mile radius. Require trail or sidewalk right-of-way dedication for development or improvement projects.

> Implementation 3-2.3.D: Mid-Block Paths

Strategically locate and develop highly visible mid-block pedestrian walkways and/or pedestrian-only streets in Fremont's City Center and other areas near transit or concentrated and higher density development.

The mid-block paths refer to pedestrian arcades, paseos, walkways, and other non-vehicular passageways that cut across large blocks to shorten the walking distance between destinations. As appropriate, the ends of mid-block paths may require mid-block cross-walks and appropriate traffic and speed controls to ensure the safety of pedestrians.

> Implementation 3-2.3.E: Improving Pedestrian Mobility

Improve crossings for pedestrians at key intersections through pavement changes, curb redesign, landscaping, countdown crosswalks, and other measures which improve safety and ease of travel.

See Policy 3-3.3 on grade separated crossings and the Community Character Element for additional guidance on making streets more pedestrian-friendly.

• Policy 3-2.4: Improving Bicycle Circulation

Enhance bicycle circulation, access, and safety throughout Fremont, particularly in the City Center, the Town Centers, around existing and planned BART stations, and near schools and other public facilities. Barriers and impediments to bicycle travel should be reduced.

> Implementation 3-2.4.A: Bicycle Route Maps

Maintain bicycle route maps and make them available to Fremont households, visitors, and businesses.

> Implementation 3-2.4.B: Connecting the Trail System

Connect recreational trails in City and regional parks, access trails along creeks and flood control channels, and sidewalks and bike lanes on local streets to fill the gaps and improve the continuity of the city's bike and pedestrian trail system. Require right-of-way dedication from development projects to complete the system.

> Implementation 3-2.4.C: Signage and Wayfinding

Implement a bicycle signage and wayfinding program, with directional signs along bike routes indicating major destinations.

See the Parks and Recreation Element for additional policies on linear parks and trails. See also Policy 3-7.4 regarding bicycle parking.

• Policy 3-2.5: Pedestrian and Bicycle Master Plans

Maintain and implement City master plans for pedestrian and bicycle travel, and use these plans as the basis for network development. These plans implement the General Plan but are not formally adopted as part of the General Plan. Any change or update to these plans does not require a General Plan Amendment

> Implementation 3-2.5.A: Bicycle and Pedestrian Capital Projects

Develop and periodically update a priority list for planned pedestrian and bicycle improvements, consistent with the route networks in the Pedestrian and Bicycle Master Plans (see Diagram 3-5).

Capital improvement funds for implementation of the City's Pedestrian and Bicycle Plans should be provided on an ongoing basis. The City has an active Bicycle and Pedestrian Advisory Committee that advises City staff on priority bicycling projects.

• Policy 3-2.6: Bus Service Improvements

Achieve a level of public bus service that makes taking the bus a convenient, affordable, reliable, and safe alternative to driving.

Successful implementation of this policy will require a state and federal commitment to transit funding beyond current levels. At the time this General Plan was prepared in 2011, AC Transit faced a $56 million deficit and was cutting service on 108 of its 113 lines. Although the cuts have been designed to minimize impacts on transit-dependent riders, they may make it more difficult to attract new riders to the system and make the bus a less attractive alternative than driving. The City will continue to work with AC Transit and other transit providers to restore service levels and seek new ways to increase ridership and revenues.

> Implementation 3-2.6.A: Bus Transit Improvements

Work with local bus transit providers to improve service levels in Fremont, and to adjust routes to maximize access to transit by persons who live or work in Fremont. A priority should be placed on improving feeder service from neighborhoods to BART, improving service between the five Town Centers, improving north-south service on Fremont Boulevard, closing service gaps in the Ardenwood and Warm Springs areas, and providing better service to local institutions.

Improving feeder service to BART is particularly important, as it can reduce the necessity of driving to the BART station. This can reduce parking demand around BART, as well as overall vehicle miles traveled.

> Implementation 3-2.6.B: Bus Speed

Explore changes to the road system that enable faster bus speeds, including transit signal prioritization, queue jump lanes, and bus-only lanes.

Cities across the country have made bus transit a more attractive choice by increasing speed and decreasing travel time. These changes may involve adjustments to routes, traffic signals, bus pull-outs and stops, and other infrastructure changes which enable buses to reach their destinations more quickly and efficiently.

> Implementation 3-2.6.C: Bus Rapid Transit

Continue to explore the feasibility of bus rapid transit (BRT), especially along Fremont Boulevard (including the Ardenwood and Warm Springs areas). Where appropriate, BRT service may be regarded as the "first" step toward a fixed guideway transit system such as a streetcar or light rail line, depending on future ridership and development patterns.

• Policy 3-2.7: Transit Provisions in New Development

Maximize access to public transit in new development along high-volume transit corridors and around BART stations. Buildings and pedestrian pathways in such areas should be sited and designed to facilitate transit use.

• Policy 3-2.8: Transfers Between Transit Modes

Improve connectivity between transit modes, especially transfers from rail to bus, to reduce waiting time and improve the feasibility of using transit.

Trips made on public transportation often require a transfer from one bus to another, or a transfer between bus and train. The time lost during transfers can be a major disincentive to using transit and can add significantly to overall travel time. By synchronizing schedules, waiting time can be minimized and the viability of transit can be greatly improved. The use of transit fare cards that which can be used on multiple systems (e.g., Clipper) also makes transferring easier and more efficient. Implementing this policy will require a higher level of coordination between the City, BART, AC Transit, VTA, and other service providers.

> Implementation 3-2.8.A: Schedule Coordination

Work with different transit agencies to coordinate scheduling, ticketing, and routing to facilitate intermodal connections and timed transfers.

> Implementation 3-2.8.B: Irvington Station Design

Ensure that the Irvington BART station is designed to facilitate intermodal transfer from BART to buses, and vice versa. The station shall also be designed to facilitate convenient access by pedestrians and bicyclists from surrounding neighborhoods.

• Policy 3-2.9: Reducing Single Occupancy Vehicle Commuting

Encourage efforts to reduce commuting by single occupant vehicles, including ride matching, carpooling, high-occupancy vehicle lanes, shuttles, preferential parking for carpools, expanded public transit, and similar strategies.

> Implementation 3-2.9.A: Regional Trip Reduction Programs

Support regional ridesharing and trip reduction programs such as the ACCMA's "Guaranteed Ride Home" program and the 5-1-1 traffic information program.

The Guaranteed Ride Home Program guarantees a ride home from work in case of unexpected illness, family crisis, unscheduled overtime, or a missed rideshare trip for those who use alternate modes of transportation. The 5-1-1 program provides up to the minute information on highway traffic, transit schedules, or finding a carpool or vanpool.

> Implementation 3-2.9.B: Park-and-Ride

Support the use and expansion of park and ride lots to promote carpooling and express bus use.

The City has three park-and-ride lots available for commuters to meet carpools, vanpools, and buses. These are located at Ardenwood Boulevard and Route 84, I-680 and Mission Boulevard, and Callery Court and

Mission Boulevard. The City supports the continued use and expansion of these lots, and should explore the development of new lots in the future.

> Implementation 3-2.9.C: Transit Passes in Transit-Oriented Development

Adopt requirements or incentives for commuter passes and transit vouchers in new transit-oriented development as a way to promote transit ridership, reduce commute costs, and increase the affordability of housing.

• Policy 3-2.10: Employer-Based Trip Reduction Programs

Encourage employers to provide transit subsidies, bicycle facilities, alternative work schedules, flextime, telecommuting cash-out programs and work-at-home programs, and other measures to reduce peak hour travel demand.

> Implementation 3-2.10.A: Transportation Management Associations

Support the formation of Transportation Management Associations and other entities that promote travel demand management (TDM) to reduce vehicle trips.

> Implementation 3-2.10.B: Transit Vouchers

Encourage continued support for subsidized transit vouchers, such as the Commuter Check program for the purchase of transit tickets.

Commuter checks are vouchers issued by employers and accepted by transit operators for the purchase of transit tickets. Employees have a designated dollar amount deducted from their pre-tax income for this purpose. This can effectively reduce transit cost by up to 35 percent for the commuter. Many of Fremont's large employers, including the City itself, participate in this program.

• Policy 3-2.11: Car-Sharing

Support the concept of car-sharing, in public and private development, particularly in and around transit station areas. Preferential parking for car-share vehicles should be provided in transit-oriented development overlay areas.

> Implementation 3-2.11.A: Public-Private Partnerships for Car-Sharing

Explore public-private partnerships and other measures to attract car-sharing companies or services to Fremont.

> Implementation 3-2.11.B: BART Station Car-Share Parking

Work with transit service providers to designate preferential parking spaces for shared cars at the existing and future BART and ACE stations.

> Implementation 3-2.11.B: Car-Share Parking in Private Lots and Garages

Designate parking spaces specifically for car-sharing in private parking lots and garages.

• Policy 3-2.12: Shuttle Buses and Circulators

Support the use of shuttle buses or circulators to supplement the conventional public bus system. Shuttle buses could be used to connect local employment centers to BART or ACE trains, and to link senior housing to shopping, recreation, medical facilities, and senior centers.

> Implementation 3-2.12.A: Downtown Shuttle

Explore the use of public-private partnerships to develop a new circulator service between the Fremont Hub, Kaiser and Washington Hospitals, the future Downtown development, the BART station, schools, recreational facilities, and other destinations in Fremont's City Center.

Goal 3-3: Accessibility, Efficiency and Connectivity

Maximize the efficiency of the transportation network, and its ability to connect the city, minimize travel distances, and increase mobility for all residents.

Fremont strives for a transportation system that is efficient, well-connected, and accessible to all residents. Policies related to this goal address the operation of the street system, management of local traffic, road maintenance, traffic safety and hazards, and provisions for those with special transportation needs. As the city becomes more urban and responds to sustainability initiatives, it will need to change the way it plans and designs its roads. New modes of travel and new forms of land use will require different design standards and new approaches to managing traffic.

One of the emerging objectives is to create a more "connected" city. This will mean less emphasis on cul-de-sacs and walled subdivisions, and more emphasis on through-streets or pathways that link homes to nearby services, schools, parks, neighborhoods, and transit facilities. Some of the city's existing neighborhoods can be adapted to reflect this objective, particularly for pedestrians and bicyclists. At the same time, road improvements or developments that would impede connectivity or divide neighborhoods should be discouraged. Creating a more connected city also means improving provisions for persons with special needs, and ensuring that all Fremont residents can travel through and around the city.

Improving transportation efficiency is another important objective. This means making the most of existing roadways and managing travel demand to reduce congestion during peak periods. Transportation demand management measures can avoid the need for costly road capacity improvements, while at the same time supporting the city's desire to promote other modes of transportation and reduce vehicle miles traveled. Keeping the city's roads in good, safe condition through pavement maintenance, reduction of accident hazards, and other measures is also a critical part of transportation efficiency.

• Policy 3-3.1: Street Hierarchy

Plan for a hierarchy of streets as depicted on Diagram 3-3. The hierarchy should consist of freeways, primary and minor arterials, collectors, and local streets.

The use of such a hierarchy is required to qualify for certain types of federal transportation funds. This is only part of the equation when determining the design requirements for streets, however. The classification system is intended to work in tandem with the "place type" descriptions in the Community Character

Element. For example, the design standards for an primary arterial may be different in an urban setting like Downtown than they would be in a more suburban setting like Auto Mall Parkway. The narrative text in this Element and in the Community Character Element provides additional discussion about how the hierarchy is used in practice.

> Implementation 3-3.1.A: Engineering Design Standards

Maintain engineering design standards for each street classification indicated on Diagram 3-3. These standards should be periodically updated in response to changing transportation needs and new technology.

As noted above, the design standards for each street category may be modified based on place type, as defined in the Community Character Element. This may require periodic updates to the existing City engineering design standards.

> Implementation 3-3.1.B: Narrower Streets

Where aesthetic, safety, and emergency access considerations can be addressed, design streets only as wide as required to provide all necessary functions in new development to create a less auto-oriented, more pedestrian-friendly street environment.

See also Implementation 3-1.1.B on conversion of reducing the number or width of travel lanes on major thoroughfares.

• Policy 3-3.2: Street Connectivity

Promote connectivity in the street network. Except where necessitated by topography, the use of dead-ends and cul-de-sacs shall be minimized, and the extension or preservation of a grid street pattern shall be encouraged. Additional street network connectivity (i.e., a "grid pattern") should be created and existing gaps in the road, bike, and pedestrian networks should be closed.

See also Land Use Element Policy 2.14 on neighborhood connectivity.

• Policy 3-3.3: Grade Separations

Consider grade-separated crossings where major streets bisect railroads or where such crossings are necessary to meet a regional transportation need. All grade-separated crossings shall be evaluated for their impacts on historic resources, neighborhood character, pedestrian mobility, noise, and scenic vistas. Grade separations should include provisions for pedestrian and bicycle crossing wherever feasible. With the exception of regional transportation improvements, grade separations between intersecting arterials or other surface streets should generally be discouraged.

As previously discussed, grade separations may be necessary to ensure safety, improve emergency vehicle response, and avoid unacceptable delays at railroad crossings. Grade separation projects are expensive and have the potential to adversely affect adjoining properties. While some grade separation projects can benefit pedestrians and bicyclists, they also have the potential to become barriers. Future grade separations should only be constructed when they improve the safety of railroad crossings, or are part of the Regional Transportation Plan.

• Policy 3-3.4: Transportation Systems Management

Implement transportation systems management measures to reduce peak hour congestion and make the most efficient use of the city's transportation infrastructure.

Transportation Systems Management, or TSM, refers to a variety of measures to maximize the efficiency of the existing road network. Typical strategies include adjustments to the timing of traffic signals, the use of left-turn arrows on traffic signals, and the dedication of carpool and bus lanes. TSM strategies also seek to influence travel behavior. This typically means shifting trips away from the peak hours (for example, through flextime, telecommuting, modified work or school schedules, and scheduling special events to avoid busy travel times). It can also mean using directional signs to route traffic to less congested roads. The ultimate goal is to reduce congestion and achieve more efficient travel patterns.

> Implementation 3-3.4.A: Signal Timing

Coordinate the timing of traffic signals on primary arterials to improve vehicular flow and reduce delays.

> Implementation 3-3.4.B: High-Occupancy Vehicle (HOV) and High-Occupancy Toll (HOT) Lanes

Support provision and expansion of HOV and HOT lanes on local interstates as a means of encouraging carpooling and increasing the number of passengers carried on freeways during the peak hour. The design of HOV/HOT lanes should allow ingress and egress for Fremont drivers as well as those passing through the city.

• Policy 3-3.5: Transportation Infrastructure Maintenance

Provide adequate funding to maintain roads, bridges, sidewalks, bike paths, and other transportation facilities in good operating condition.

> Implementation 3-3.5.A: Maintenance Evaluations

Regularly evaluate city roadway maintenance needs. Continue implementation of a Pavement Management Program to keep streets in good condition, maintain vehicle safety and driver comfort, and reduce the adverse effects of deteriorating roadways.

The City implements a Pavement Management Program that consists of surveying and testing roadway conditions, determining maintenance protocols, and estimating repair costs. The most recent pavement survey found that about 80 percent of Fremont's roadway network was in good or fair condition.

• Policy 3-3.6: Road Hazards

Minimize road hazards associated with overgrown vegetation, structures blocking sight lines, and other visual obstructions. New development should be reviewed to ensure that ingress and egress locations, driveways, crosswalks, and other circulation features, are sited to minimize accident hazards.

The City of Fremont monitors collision data in order to determine areas requiring special attention. This may result in the installation of warning signs, stop signs, more visible pavement markers, traffic signals, and other traffic control devices.

> Implementation 3-3.6.A: Traffic Control Devices

Install traffic control devices (signals, stop signs, etc.), streetlights, and other measures to enhance safety and reduce road hazards.

See the Safety Element for additional policies and actions on emergency response

• Policy 3-3.7: Traffic Safety Monitoring

Maintain the data needed to assess roadway safety and performance, including the safety of bicyclists and pedestrians as well as motorists.

The City presently maintains data on accident locations and characteristics and uses that data to make decisions about safety improvements. Transportation safety is an important aspect of transportation demand management. Reducing accident hazards can improve roadway operations and reduce travel delays. It can also increase the feasibility of other modes, particularly walking and bicycling.

> Implementation 3-3.7.A: Vehicle Accident Data

Monitor vehicle accident, collision, and traffic citation data in order to identify problem locations. Take appropriate measures to mitigate hazards, enhance safety, and identify areas where additional enforcement may be necessary.

> Implementation 3-3.7.B: Bicycle and Pedestrian Accident Data

Monitor bicycle and pedestrian accidents and recommend safety improvements where needed.

• Policy 3-3.8: Access Limitations along Parkways and Arterials

Limit access to parkways and arterials from abutting parcels to maintain capacity, efficiency, and traffic safety. Standards for driveways, curb cuts, and medians should reflect the primary function of these streets for cross-town traffic circulation.

> Implementation 3-3.8.A: Cross-Parcel Access Easements

Where appropriate, require cross-parcel access easements and parking lot connections to provide common access points to properties along arterials, rather than allowing curb cuts and driveways for each parcel.

• Policy 3-3.9: Planning for Technological Innovation

Plan ahead for the public and private infrastructure needed to adapt to changing transportation technology, such as electric vehicles (plug-ins), changeable roadway message signs, and natural gas or hydrogen fueling stations. New standards should be adopted as transportation demand and requirements change.

> Implementation 3-3.9.A: Fiber Optic Installation

Install fiber optic cabling and other infrastructure and technology as needed to maximize the efficient operation of the transportation system.

> Implementation 3-3.9.B: Emerging Modes of Travel

Monitor emerging modes of travel, such as personal accessibility vehicles, and evaluate the appropriateness of such travel on the pedestrian and bicycle networks.

>Implementation 3-3.9.C: Intelligent Transportation Systems

Use electronic signs and other wayfinding devices to direct traffic from more congested routes to less congested routes, and to assist motorists in reaching their destinations in the most efficient and timely way possible.

> Implementation 3-3.9.D: Technology and Transit

Encourage the use of technology to improve bus and train reliability, efficiency, and convenience. This should include automated and electronic schedule information, and real-time information on bus arrival and waiting time at selected bus shelters.

> Implementation 3-3.9.E: Alternative Fuel Vehicles

Encourage the development of a network of plug-in stations for hybrid, electric or other alternatively fueled vehicles. In particular, locations where cars are driven short distances and then parked for long periods, such as transit station lots and park-and-ride lots, should be prioritized as plug-in station locations.

• Policy 3-3.10: Transportation for Persons with Special Needs

Improve mobility for people of all physical capabilities, including residents who are elderly, disabled, use walkers or wheelchairs, or have other special needs.

The 2000 Census reported that more than 7 percent of Fremont's adult population had a mobility limitation that prevented them from traveling outside the home. Even residents without such limitations may have difficulty driving, or may be unable to access the bus system or other modes of travel. The City's Human Services Department and East Bay Paratransit provide essential transportation services to these individuals. The City has a Paratransit Advisory Committee to help identify unmet needs. The program presently has three primary functions: (1) door to door service for individuals; (2) group trips; and (3) in home meal delivery.

> Implementation 3-3.10.A: Paratransit

Assuming available funding, provide appointment-based van and taxi service (paratransit) for those who are unable to use conventional transit.

> Implementation 3-3.10.B: Transit Needs Assessments

Regularly assist transit agencies and social service organizations in assessing the level of demand and adequacy of transit services for persons with special needs, and in supporting programs to address unmet needs.

> Implementation 3-3.10.C: Visual and Audio Signals

Install visual and audio signals at pedestrian crossings as appropriate to improve safety for hearing-impaired and sight-impaired travelers.

Goal 3-4: Balancing Mobility and Neighborhood Quality

A transportation system that balances speed and convenience with the desire to have walkable neighborhoods and an enhanced sense of place.

The traditional approach to traffic planning in suburban cities has been to design roads to minimize congestion and maximize speed. As noted earlier in this chapter, most cities have pursued this objective by

adopting level of service ("LOS") standards related to average vehicle speed along roadways and volume to capacity (V/C) ratios at intersections. These standards have been used to determine where additional vehicle capacity was needed. The outcome in most cases has been wider streets, more turning lanes, grade separated interchanges, and a host of other improvements to keep cars moving smoothly and efficiently.

Another aspect of balancing mobility and neighborhood quality relates to the continued ability of Fremont residents to travel through the city by automobile. While the Mobility Element emphasizes alternative modes of travel, it should be recognized that a majority of Fremont residents live in single-family neighborhoods where autos are the primary form of transportation. Most residents rely on their cars to get to work, school, shopping, and recreation, and this is likely to be the case for many years to come. As the City invests in alternative modes of travel, it will also invest in improvements which mitigate and alleviate roadway congestion. Such investments are an essential part of maintaining the quality of life that Fremont residents enjoy today.

LOS standards have also been used to limit the density and intensity of development along congested routes, in order to reduce further increases in traffic. This has tended to perpetuate sprawl in the Bay Area, and resulted in a heavily auto-oriented landscape in Fremont. A legacy of planning for cars has made it more difficult to travel on foot or by bicycle in the city and has made public transit a less attractive choice for those with other options. There have also been impacts on neighborhood quality and the environment. Some neighborhoods are adversely affected by noise, fumes, and speeding traffic, while commercial areas are often dominated by vast surface parking lots. And despite billions of dollars in highway investments, peak hour congestion is still common on Fremont's major thoroughfares and freeways.

Planning for Fremont's next 50 years will need to approach mobility differently. The policies below mark a shift toward a more balanced strategy that considers not only vehicle speed, but the relationship of roads and other transportation facilities to the communities around them. The traditional metric for roadway planning—vehicle level of service—will need to evolve so that greater consideration is given to other modes of travel, environmental impacts, greenhouse gas reduction goals, and the quality and character of surrounding uses. Fremont will pioneer new approaches to managing traffic which better balance the needs of pedestrians, bicycles, transit users, and motor vehicles.

• Policy 3-4.1: Relating Vehicle Speed to Reflect Land Use and Community Character

Manage traffic on arterials and collectors to reduce unnecessary travel delays and maintain efficient vehicle flow. However, auto speed and convenience may be diminished in some locations in order to achieve a more liveable, walkable, and attractive community. In general, lower vehicle speeds will be encouraged in pedestrian-oriented areas such as the Town Centers and City Center. Roadway design and operation in these areas should emphasize community character, access to adjacent commercial and mixed land uses, and the accommodation of multiple travel modes, rather than vehicle speed.

• Policy 3-4.2: Variable Level of Service Standards

Adopt variable standards for traffic speed and travel delay that recognize the character of adjacent land uses, the functions of different streets, the different modes of transportation on a street or corridor, and other community development goals. The following standards shall apply:

For locations outside of the City Center, Town Centers, and Warm Springs BART Station area (as depicted on the Future Land Use Map), peak hour levels of service for signalized intersections should generally be maintained at Level of Service (LOS) "D" for minor arterials and collector streets, and LOS "E" for regional (CMA network) arterials. The design and construction of new signalized intersections and roadways in areas outside the City Center, Town Centers, and Warm Springs BART Station area should achieve a target operational capacity of midpoint LOS D or better upon completion.

For locations within the City Center, Town Centers, and Irvington and Warm Springs BART Station areas, and within PDA boundaries, peak hour LOS "E" or "F" may be acceptable. In these locations, the efficiency and convenience of vehicular operations must be balanced with the goal of increasing transit use, bicycling, and walking.

The above policy begins the shift to a more flexible level of service standard that encourages transit ridership, bicycling, and walking. This shift is important not only to achieve the city's Community Character goals, but also to achieve greenhouse gas reduction targets. The policy presumes the continued use of a standard based on vehicle flow, but accepts a greater level of congestion in the Priority Development Areas (PDAs). In the event a development project significantly contributes to traffic congestion in these areas, mitigation may still be required. However, the focus would be on enhancing non-auto modes rather than increasing vehicle capacity. As noted by the implementation measure below, the ultimate intent is to replace LOS measures with new standards that promote non-vehicular transportation.

> Implementation 3-4.2.A: Redefining Level of Service (LOS)

Develop new ways of calculating LOS which are based on people rather than vehicles. Such measures could take into account the relative volumes of transit users, pedestrians, carpoolers, and bicyclists passing through an intersection or along a road segment during a given time period and not solely the number of cars.

Until new standards are developed, the City will continue to use its current standards and methods for calculating LOS.

> Implementation 3-4.2.B: Multi-Modal Design

Adopt a formalized procedure for evaluating and analyzing intersections that considers the needs of each transportation mode and its relationship to adjacent land uses.

> Implementation 3-4.2.C: Improvements to Other Travel Modes

Require improvements to transit, bicycle, and pedestrian modes when vehicular improvements would be inconsistent with Policy 3-4.2.

• Policy 3-4.3: Allowing Decreased Levels of Vehicle Speed and Convenience

In addition to the conditions stated in Policy 3-4.2, allow decreased levels of speed and convenience on a case by case basis in areas where:

- Widening or altering a roadway would conflict with environmental, historic, or community character objectives
- A significant cause of the congestion is regional traffic beyond the City's control;
- Substantial transportation improvements have already been required and further mitigation is not feasible;
- There are other factors related to accommodation of pedestrians, bicyclists, and public transit, and road improvements that may be substantially detrimental to the desired capacity, convenience, safety, or efficiency of these other travel modes; or
- Congestion is of a limited duration due to special events or organized activities at local public facilities.

Policy 3-4.3 recognizes that there may be other circumstances where some degree of congestion may be acceptable in order to achieve another public benefit. For example, there are areas where widening a road might require the removal of an important historic building or an unacceptable amount of grading. There are roads such as Auto Mall Parkway or Mission Boulevard where much of the traffic has both origins and destinations outside of Fremont. The policy also recognizes the possibility of future "special generators" such as stadiums that periodically generate large amounts of traffic but only for brief periods.

> Implementation 3-4.3.A: Conditions for Allowing Reduced LOS

Develop specific findings, conditions, and/or CEQA thresholds for reduced roadway levels of service. Until a new approach for mitigating traffic impacts is developed, existing operating procedures shall be followed.

• Policy 3-4.4: Mitigating Development Impacts

Require new development to mitigate its impacts on mobility conditions through traffic impact fees, street and intersection improvements, transportation demand management programs, and other measures.

> Implementation 3-4.4.A: Transportation Impact Fee

Maintain Transportation Impact Fee (TIF) and mitigation requirements that meet expected transportation needs in an equitable way.

Following adoption of the General Plan, fees should be updated to reflect the expected land use patterns, multiple travel modes and associated transportation needs. Fees should be periodically updated and reviewed thereafter to ensure that they appropriately relate to actual construction costs and are competitive with those in other Bay Area cities.

> Implementation 3-4.4.B: Transportation Impact Fee Projects

Complete the transportation improvements identified in the City's Traffic Impact Fee (TIF) program.

> Implementation 3-4.4.C: Traffic Studies

As appropriate, require traffic impact analyses when development is proposed, and use these analyses to identify transportation improvements. Mitigation measures should consider transit, bicycle, and pedestrian improvements as well as road improvements.

• Policy 3-4.5: Traffic Calming

Incorporate measures to slow down or "calm" traffic on local streets, or in some special circumstances, collector streets, that experience cut-through traffic, hazardous conditions for bicycles or pedestrians, or a high incidence of vehicles traveling at excessive speeds. A variety of approaches, such as road design, increased enforcement, streetscape improvements, crosswalk pavers, chicanes, raised crosswalks near schools, and curb "bulbouts" should be used to address this issue.

Fremont has adopted a Residential Traffic Calming Program intended to reduce vehicle speeds and discourage neighborhood bypass traffic on local residential streets. The program also seeks to slow traffic in the vicinity of schools. Traffic calming strategies vary based on volume, with speed "lumps" used on streets with fewer than 3,500 vehicles per day and alternative devices such as traffic circles, center islands, chicanes, speed tables, and raised crosswalks used on streets with higher volumes. As of 2010, the program has been suspended due to lack of funding, but it should be reinstated as budget conditions allow.

> Implementation 3-4.5.A: Traffic Calming in Future Plans

Incorporate traffic calming measures into major urban design projects, streetscape plans, specific plans, and concept plans for small areas within the city.

> Implementation 3-4.5.B: Funding Traffic Calming

Develop a plan for funding traffic calming improvements in the city, including identification of potential sources.

The City will pursue creative approaches to fund traffic calming, such as the use of traffic impact fees, and grants from non-traditional sources such as the US Department of Justice, and police and firefighter federal grant programs.

• Policy 3-4.6: Off-Site Impacts of Traffic Calming

Generally discourage traffic calming measures on arterial streets and other areas which would adversely impact nearby neighborhood streets. Consistent with existing City guidelines, if a traffic calming measure would cause traffic on an adjacent street to increase by up to 25% of its existing average daily traffic (ADT) or 500 vehicles a day (whichever is less), an analysis of the adjacent street will be required. Traffic calming measures should strive to reduce vehicle speed and improve pedestrian safety without closing streets or installing barricades or traffic diverters.

• Policy 3-4.7: Transportation and the Environment

Ensure that investments in transportation infrastructure, including roads, BART, rail lines, bus-only lanes, bike lanes, and pedestrian bridges are sited and designed in a way that complements the natural and built environments.

Major transportation projects are typically subject to environmental review under the California Environmental Quality Act (CEQA). This provides an opportunity to identify possible environmental impacts and mitigation measures to avoid or reduce impacts. Design guidelines and engineering standards can further reduce the potential for adverse effects by proactively identifying how and where transportation improvements should occur.

> Implementation 3-4.7.A: Transportation and Sensitive Natural Features

Ensure that proposed transportation facilities are designed and constructed to avoid or minimize potential impacts on wetlands, steep slopes, and other environmentally sensitive areas.

> Implementation 3-4.7.B: Transportation and Historic Resources

Ensure that transportation improvements respect and conserve identified historic structures, sites and landmark trees whenever feasible.

> Implementation 3-4.7.C: Mitigating Operational Impacts

Ensure that transportation facilities are designed and constructed to mitigate operational impacts such as noise and vibration on adjacent land uses. Use quiet pavement design when repaving primary arterials to the extent feasible.

Goal 3-5: Connecting to the Region

Fremont becomes a more prominent regional transportation hub and is seamlessly connected to locations throughout the Bay Area and state.

Fremont benefits from excellent access to the regional freeway system, the BART system, and the region's major airports and harbors. The City's rapid growth was made possible by the interstate highway system, particularly the construction of Interstate 880 and the subsequent construction of Interstate 680. Fremont is one of the few Bay Area cities served by three commuter rail systems (BART, ACE, Capitol Corridor), and will eventually have three BART stations. These assets will help sustain the city as a thriving job and population center. Careful management and coordination will still be required to meet the transportation needs of all residents and businesses.

The interface between the local transportation system and the regional system is particularly important. This applies not only to the relationship between freeways and local thoroughfares, but also to the relationship between rail transit stations and the local bus and bike networks, and even the connections between the Bay Trail and local bike trails and pathways. The City will continue to partner with state and regional agencies, transportation service providers, Alameda County and nearby cities to ensure Fremont's continued regional accessibility.

• Policy 3-5.1: Regional Transportation and Land Use Planning

Participate in regional transportation and land use planning efforts, including programs to balance jobs and housing, manage congestion, address auto-related emissions and greenhouse gases, and reduce the share of the region's trips made by single occupant vehicles.

The most significant transportation agencies with which the city coordinates are the State Department of Transportation (Caltrans), the Metropolitan Transportation Commission (MTC), and the Alameda County Transportation Commission. The Association of Bay Area Governments (ABAG) is also crucial and manages many of the initiatives to link regional land use planning activities to regional transportation investments.

> Implementation 3-5.1.A: Regional Transportation Plans

Work with Caltrans, MTC, ABAG, BART, AC Transit, VTA, and other local and regional agencies to implement future Transportation Plans, and to promote land use decisions that reinforce regional transportation investments.

> Implementation 3-5.1.B: Travel Forecasting

Continue to participate in traffic forecast modeling and regularly update traffic forecasts based on the best available information and projections.

The City currently participates in traffic modeling led by the Alameda County Transportation Commission (formerly the Congestion Management Agency) and the Metropolitan Transportation Commission. The traffic models consider proposed patterns of growth and development in Alameda County and the Bay Area to determine the need for additional investment in roads, transit, and other transportation facilities. This provides the basis for allocating state and federal funds to local capital improvement projects.

> Implementation 3-5.1.C: Smart Growth Legislation

Monitor and implement State legislation designed to link land use and transportation choices.

This includes Senate Bill 375 and the accompanying Sustainable Communities Strategy being led by ABAG.

> Implementation 3-5.1.D: I-880/I-680 Connections

Continue working with County and regional planning agencies to improve connections between Interstate 680 and Interstate 880. Within Fremont, the City supports improvements to Mission Boulevard and Auto Mall Parkway rather than development of a new facility linking the two freeways. In the event a new facility is built, however, limited local access from Fremont streets should be considered and impacts on adjacent land uses should be mitigated to the greatest extent feasible.

Interstates 880 and 680 are the main travel routes between Alameda and Santa Clara counties and are only about a mile apart in the southern part of Fremont. Most traffic moving from one freeway to the other uses Auto Mall Parkway or Mission Boulevard. These streets have the highest average daily traffic volumes in Fremont today and are frequently congested. An improved connector between the two freeways has been studied for decades, but has not been built due to cost and environmental impacts. Projects to improve connectivity between these two freeways may continue to be studied in the coming decades.

> Implementation 3-5.1.E: Coordination of Infrastructure Projects

Coordinate road maintenance, reconstruction, and resurfacing projects with infrastructure, utility, and telecommunication projects to minimize project costs and disruption to motorists and nearby properties.

> Implementation 3-5.1.F: Journey to Work Data

Use the Census Transportation Planning Package (CTPP) and other quantifiable "journey to work" data to ensure that transportation improvements, including changes to transit service, are responsive to actual commute patterns in and out of Fremont.

The CTTP provides information regarding travel origins and destinations, travel modes, and commute times. This data provides insight into where Fremont residents work and live, as well as the number of vehicles owned per household. It is an important tool for local and regional transportation planning.

• Policy 3-5.2: Regional Trail Development

Promote and coordinate the planning of pedestrian and bicycle trail systems with Alameda County, Newark, Milpitas, Union City, Santa Clara County, ABAG, BCDC, EBRPD, SFPUC, ACFC, and other jurisdictions and organizations.

In addition to the City of Fremont's Bicycle Master Plan, there is also a Countywide Bicycle Plan for Alameda County. One of the purposes of the Countywide Plan is to coordinate the efforts of the cities, the East Bay Regional Park District (which has its own Bicycle Plan), and other agencies that do more localized or focused bicycle planning. The Countywide Plan also focuses on linkages to adjacent counties.

> Implementation 3-5.2.A: Bay Trail and Ridge Trail

Support completion of the Bay Trail and the Ridge Trail through Fremont and establish trail connections across the city between these two regional networks.

> Implementation 3-5.2.B: Rails to Trails

Support the conversion of abandoned or vacated railroad rights of way to linear parks containing bicycle trails and walking paths. A priority should be placed on the surplus Union Pacific corridor between Niles and Milpitas.

> Implementation 3-5.2.C: Trail Dedication

Require new development to dedicate and improve right-of-way for trails indicated on General Plan Diagrams.

See the Parks and Recreation Element for additional policies on trails and linear parks

• Policy 3-5.3 Regional Commuter Bus Service

Support improved regional commuter bus service, including routes serving Fremont's employment centers and routes connecting Fremont to employment centers elsewhere in the region.

> Implementation 3-5.3.A: Trans-Bay Service

Ensure continued express bus service between Fremont and the Peninsula via the Dumbarton Bridge.

The Dumbarton Consortium, in conjunction with AC Transit, currently provides express service across the Dumbarton Bridge to Santa Clara and San Mateo Counties on weekdays.

> Implementation 3-5.3.B: VTA Service to BART

Coordinate with Valley Transportation Authority (VTA) to ensure continued service between the terminus of the BART line in Fremont and Santa Clara County until the BART extension to San Jose has been completed.

The Santa Clara VTA connects the Fremont BART station and portions of Fremont with multiple destinations in Santa Clara County, including Milpitas, San Jose, Santa Clara, Mountain View, and Sunnyvale. All VTA routes into Fremont terminate at the BART station, with stops along Mission Boulevard and Stevenson Boulevard. The VTA buses also accommodate bicycles.

• Policy 3-5.4: Passenger Rail Service

Support the provision of convenient and affordable commuter rail service to Fremont residents, visitors, workers and businesses.

> Implementation 3-5.4.A: BART Extension

Work collaboratively with BART and surrounding jurisdictions in the planning, design, and construction of the BART extension from Fremont to San Jose.

This is the City's highest regional transportation improvement priority. The City will coordinate with BART on station area planning around Irvington and South Fremont/Warm Springs. The South Fremont/Warm Springs station is planned to feature an at-grade platform with an overhead concourse, intermodal access to bus lines, approximately 2,000 parking spaces, and a drop-off area. The Irvington station is proposed and its completion is dependent on funding through the City of Fremont.

> Implementation 3-5.4.B: Altamont Commuter Express

Work with the Altamont Commuter Express (ACE) to enhance train service between the Central Valley and South Bay, including Centerville. Continue to support the development of an additional stop at the west end of Auto Mall Parkway, and plan accordingly for parking and intermodal transfer facilities at this location.

> Implementation 3-5.4.C: Amtrak/Capitol Corridor

Support continued Amtrak/Capitol Corridor service at the Centerville station, providing an alternate means of travel to San Jose, Oakland, Sacramento, and points beyond, including potential connections to future high speed rail. Encourage continued improvements to the Centerville station area, possibly including additional parking and better multi-modal connections for transit riders.

> Implementation 3-5.4.D: High Speed Rail Service

Support state and federal initiatives to encourage appropriately designed high speed passenger rail service in California as a way of reducing auto use. This includes the California High Speed Rail project from San Francisco to Los Angeles and other regional projects. Review proposed rail alignments through Fremont to ensure impacts are minimized and consideration is given to a station in Fremont.

> Implementation 3-5.4.E: ACE/BART Connections

Continue to study opportunities for intermodal connections between the ACE/Capitol Corridor system and the BART system. In the event an intermodal station is proposed where the two lines intersect, coordinate capital improvements with land use planning for properties in the vicinity.

The elevated BART tracks currently cross the ACE/Capitol corridor tracks on separate grades in an area about midway between City Center and Niles. An intermodal station providing a connection between the lines could be explored at this location which is currently developed with industrial uses.

> Implementation 3-5.4.F: Dumbarton Rail

Participate in discussions to maximize benefits and reduce impacts from the Dumbarton Rail project, which has been proposed to connect the Union City BART station to the lower Peninsula, with a transbay rail crossing parallel to the Dumbarton Bridge.

The Dumbarton Rail is a proposed 20.5 mile commuter rail intended to provide rail service between San Jose or San Francisco and a new multi-modal station in Union City. It would cross the Bay via the unused Dumbarton and Newark Slough Railroad Bridges and on existing Union Pacific railroad tracks. Development of the rail corridor includes track improvements, a new moveable rail bridge, five stations, and centralized traffic control systems. The existing train depot in Centerville would serve as the Fremont station. Fremont does not consider Dumbarton Rail as a regional priority and because the project is not fully funded, plans for its design and operation are subject to change.

• Policy 3-5.5: Coordination with Adjacent Cities and Other Public Agencies

Coordinate with Newark, Milpitas, Union City, and other nearby jurisdictions and local public agencies to ensure compatible plans and road development standards and to coordinate major transportation investments. This should include coordination with the Fremont Unified School District on the provision of school bus service and school-related traffic issues.

See the Public Facilities Element for additional policies on improving transit service to schools

• Policy 3-5.6: Ferry Service

Participate in regional discussions aimed at improving ferry service and water transportation on San Francisco Bay, including the possible extension of ferry service to the southern part of the Bay.

• Policy 3-5.7: Emergency Response

Coordinate with regional, state, and federal agencies to develop and maintain contingency plans and emergency response plans in the event that road or transit service is disrupted by natural or manmade disaster.

Goal 3-6: Goods Movement

Safe, efficient movement of goods to support the local economy, with minimal impacts on residential neighborhoods and local traffic patterns.

Fremont's economy depends on the movement of goods on local roadways and railroads. The city supports many industries that rely on trucks, freight rail, and nearby ports and airports to deliver goods and services across the country and around the globe. Policies relating to Goods Movement seek to increase economic efficiency, safety and security, while reducing negative effects on the environment and sensitive land uses. This requires maintaining sufficient transportation capacity to meet the city's long-term needs, reducing emissions to help achieve air quality goals, and working with federal, state, and regional agencies to sustain the city's role as a center for international trade and commerce.

Like other aspects of mobility planning, maintaining the efficient movement of goods will require balancing competing objectives. On the one hand, the General Plan strives to promote alternative modes of travel for residents and employees. On the other, the City seeks to improve the efficiency of its transportation system for local businesses and industry—in part, by expanding the capacity of its roadways. Proactive steps are needed to meet Fremont's future commercial transportation needs without undermining the city's efforts to reduce greenhouse gas emissions and create a less auto-dependent city. The City also faces the challenge

of accommodating commercial traffic while avoiding truck intrusion into neighborhoods and reducing the health impacts associated with noise, diesel fumes and other pollutants.

The policies below strive to improve the operational efficiency of the transportation system, mitigate environmental and quality of life impacts, relieve congestion and delays, and apply equitable strategies for funding new improvements. Implementing these policies will require the application of emerging technologies and practices to reduce the impacts of trucking and rail transportation on neighborhoods. It will also require focused investment in new infrastructure, and new programs such as intelligent transportation systems (ITS) to improve operational efficiency.

• Policy 3-6.1: Transportation and the Economy

Support transportation improvements that facilitate the timely movement and security of goods, meet the needs of local business and industry, and support the efficient transfer of goods between truck, rail, and other transportation modes as long as improvements do not negatively impact air quality, quality of life, and the City's ability to meet future growth needs.

See also Economic Development Implementation 6-1.4.E

• Policy 3-6.2: Truck Routes

Protect residential neighborhoods from intrusion by truck traffic by maintaining and enforcing an efficient system of designated truck routes, as shown on Diagram 3-7.

Trucks pose special concerns due to their size, weight, emissions, and noise. Trucks accelerate slowly, require a large amount of road space, have large turning radii, and break down pavement because of their weight. They are noisier than cars because of their larger engines, higher engine placement, and use of air brakes. They also emit more exhaust than typical passenger vehicles. To reduce the potential for conflicts between truck and auto traffic and to reduce adverse effects on nearby uses, the City has designated truck routes for vehicles with maximum weights exceeding 10,000 pounds. All trucks exceeding this limit must use truck routes except for local delivery and pick-up.

> Implementation 3-6.2.A: Truck Route Designation

Periodically evaluate truck routes in response to changes in traffic patterns, volumes, land uses, level of usage, and adequacy of routes to serve local truck needs.

> Implementation 3-6.2.B: Commercial Truck Parking

Maintain and enforce limits on commercial truck parking, especially on neighborhood streets.

The Fremont Municipal Code regulates the parking of commercial vehicles over 10,000 pounds on any public street which is not a designated truck traffic route. A truck may not park in front of any residence or hotel unless it is loading or unloading goods or providing a service to a property on that block.

• Policy 3-6.3: Niles Canyon

Support the Niles Canyon Scenic Corridor Protection Plan and banning trucks through Niles Canyon.

> Implementation 3-6.3.A: Trucks and Hazardous Materials in Niles Canyon

Continue to support the ban of hazardous materials transport through Niles Canyon and support a full ban of Niles Canyon as a truck route.

• Policy 3-6.4: Trucking and Interstate Highways

Support measures that encourage through truck traffic to use interstate highways rather than local truck routes.

This policy is particularly applicable to Interstate 880. Trucks should use the freeway rather than Fremont Boulevard, Warm Springs Boulevard, or other parallel streets. Similarly, trucks should use Route 84 (west of I-880) and Route 262 (between I-880 and 680) rather than local east-west streets in Fremont. Measures to implement this policy would include signage, coordination with Caltrans, and information provided to major employers and trucking companies about local truck routes.

• Policy 3-6.5: Industrial Road Upgrades

Maintain and upgrade roads in Fremont's industrial districts as needed to meet the needs of local trucks and other commercial vehicles.

• Policy 3-6.6: Trucking and Land Use Compatibility

Generally discourage the location of businesses generating large amounts of truck traffic in areas where residential streets or land uses would be negatively impacted. In mixed use areas where businesses and residences are in close proximity, ingress and egress for truck traffic should be designed to minimize the potential for impacts on residences and neighborhood streets.

The site plan review process should be used to ensure that businesses are designed to minimize the impact of truck traffic and delivery vehicles on through-traffic. Loading docks and delivery/service areas should be sited to the rear of buildings to minimize traffic disruption and maintain the visual quality of public streets.

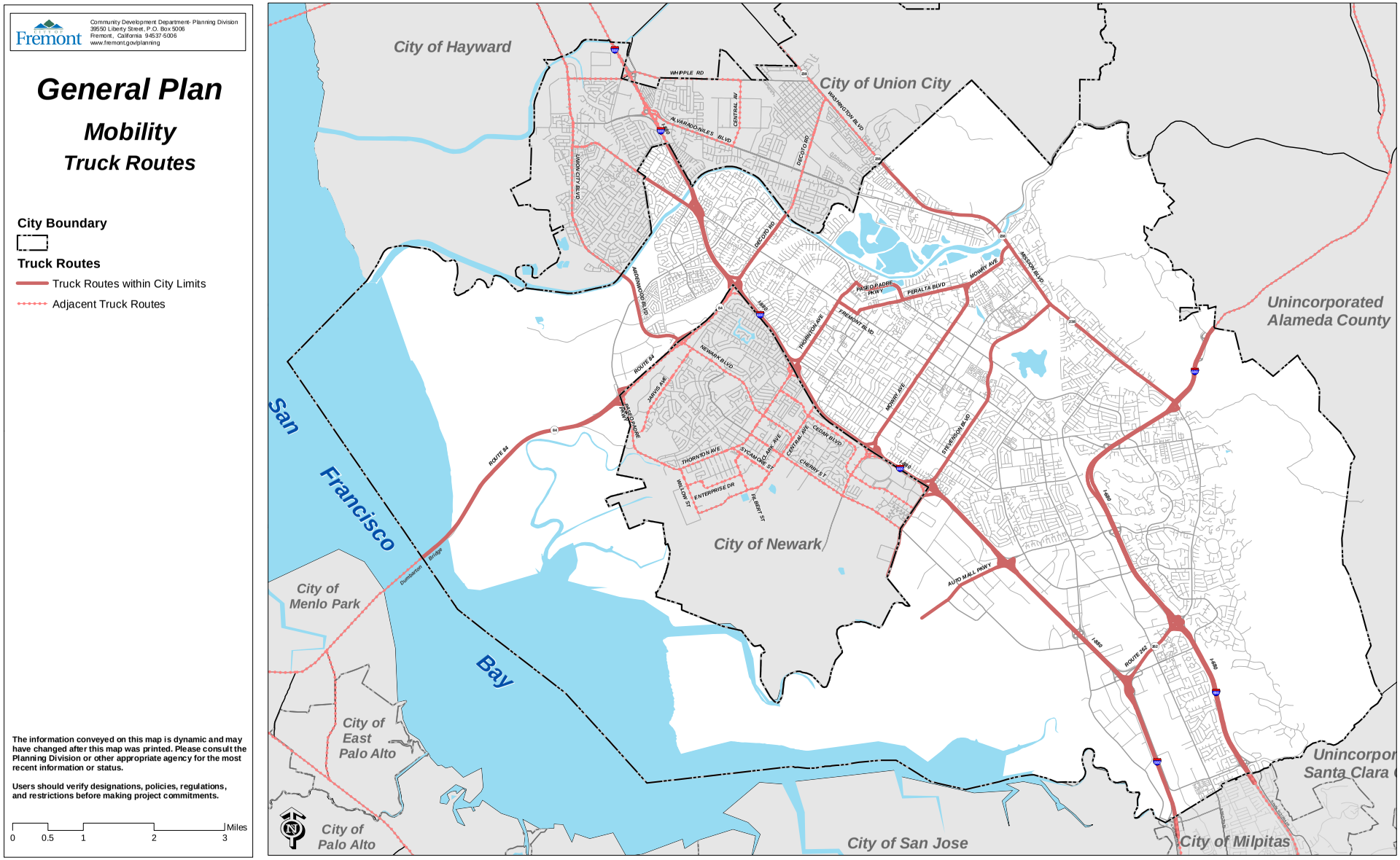


Diagram 3-7 Truck Routes

This is a reduced image. Please see the most current color full-size maps available at the Fremont Planning Division or online at www.fremont.gov/planning
The information on this diagram is dynamic and may have changed since this page was last printed.

This page intentionally left blank.

• Policy 3-6.7: Freight Rail

Work with local freight rail operators to maintain a system of freight rail lines serving Fremont's industrial areas and to ensure safe, secure rail operations. Discourage freight operations and rail yards within TOD overlay areas.

> Implementation 3-6.7.A: Alternative Uses for Surplus Rail Lines

In the event a rail line, siding, or spur is vacated or abandoned, evaluate alternative uses such as parkland or public transit.

Portions of the former Western Pacific (now Union Pacific) Railroad are being planned as a trail corridor as part of the City's Pedestrian Master Plan. The intent is to provide a continuous trail from Niles to Warm Springs on this former rail line.

See the Parks and Recreation Element for additional discussion of rail line conversion to trails and linear parks.

• Policy 3-6.8: Mitigating Rail Impacts

Consider measures to reduce external impacts of rail lines, including noise, vibration, and hazardous materials transport

Safety concerns along railroad tracks include the transport of hazardous materials, noise and vibration impacts, and pedestrian and vehicle activity near at-grade rail crossings. Hazardous material transport is regulated by state and federal agencies, and is monitored by the Fremont Fire Department. Noise and vibration impacts are typically addressed through site and building design measures, such as sound walls, building setbacks, and insulated windows. Grade separations and automated crossing arms are used to improve rail crossing safety.

> Implementation 3-6.8.A: Rail Crossing Safety

Monitor traffic and safety conditions at at-grade rail crossings to determine the need for crossing guard improvements, and other measures to minimize hazards.

> Implementation 3-6.8.B: Quiet Zones Study

Undertake follow-up measures to mitigate train horn noise as recommended by the Railroad Quiet Zones Feasibility Study.

A quiet zone is a segment of rail line comprising one or more at-grade highway rail crossings where trains are ordered not to routinely sound the horn. Current rules require trains to sound their horns within ¼ mile of at-grade crossings and continue until the locomotive occupies the crossing location. A 2006 federal rule preempts state and local laws governing the sounding of locomotive horns but describes specific steps for designating quiet zones. In order to establish such a zone, the City needs to assess the risk of banning horn blowing and consider installation of supplemental safety measures at the grade crossings to mitigate the potential increase in collisions. These measures could include the installation of additional railroad gates or median islands.

> Implementation 3-6.8.C: Transport of Hazardous Cargo

Monitor the transport of hazardous materials through Fremont and take measures to reduce the risk of accidents and ensure the security of residents and workers.

See the Safety Element for additional policies on hazardous materials transport.

• Policy 3-6.9: Aviation

Support continuing improvements to the international airports at Oakland, San Jose, and San Francisco, accompanied by continuing efforts to mitigate potential noise and other impacts. The region's airports provide access for Fremont residents to destinations across the country and globe and are an important component of the city's mobility goals and quality of life. The airports also help sustain economic development in the city, and make Fremont a location of choice for business and industry.

There are three commercial international airports serving passengers in the Bay Area. These include Mineta San Jose International Airport about 20 miles to the south in San Jose, Oakland International 25 miles to the north in Oakland, and San Francisco International 30 miles to the northwest on the Peninsula just south of San Francisco. Fremont is home to one of the Federal Aviation Administration (FAA) air route traffic control centers. The primary purpose of this center is to provide seamless air traffic control support to en route aircraft within the Bay Area and the west coast.

Goal 3-7: Parking

Parking that meets the needs of residents, workers, visitors, and shoppers in a way that is consistent with broader goals related to sustainability and community character.

Parking is simultaneously a land use issue, a mobility issue, and a community character issue. From a mobility perspective, the availability of parking influences transportation choice and traffic flow. Providing a large and convenient supply of free parking tends to encourage driving. Conversely, where parking is limited or expensive people may be more inclined to use transit or choose another travel mode. Parking affects traffic flow on several levels. For example, there may be conflicts or delays associated with parking vehicles and moving traffic. The locations of driveways and parking lot entrances can lead to traffic delays or reduce the safety and efficiency of a street. Inappropriate driveway locations can also lead to traffic. Parking can also affect the ability of bicycles to use the street.

Reconciling parking supply and demand requires balancing competing—and not always compatible—objectives. Limiting parking supply in order to encourage the use of other travel modes is not always practical. For example, providing fewer parking spaces in new residential development as a way to encourage transit use will only succeed if transit is actually available, reliable, and affordable. Without transit or other mode choices, fewer on-site spaces would simply result in more street parking, and more vehicle miles traveled as cars search for parking nearby. Although Fremont wishes to be less auto-oriented and create a more urban character near its transit stations, the reality is that most residents will continue to own cars, and will continue to use these cars for daily errands, work trips, shopping, and other activities. The challenge is to provide enough parking to meet these needs without providing so much parking that trips are unnecessarily induced. The design and location of parking is a key part of the solution.

The practical impact of the City's parking strategies is that conditions will not change in most of the city, particularly in low and medium density residential neighborhoods. The focus will be on the higher density residential, commercial, and mixed use development areas that are to become "strategically urban" in the future. Policies for these areas focus on making more efficient use of parking facilities, while de-emphasizing parking as a feature of Fremont's landscape. This will mean greater use of shared parking lots that support multiple uses at different times of the day, more flexible and accurate parking standards, and continued use of park and ride lots and other parking facilities that support transit. It also will mean greater accommodation of bicycle parking, preferential parking for car-share vehicles and carpools, and even new pricing policies for parking in the highest-demand areas.

• Policy 3-7.1: Parking Management

Manage on-street parking to ensure the efficient use of curbside space, avoid conflicts with residents and neighborhoods, and provide adequate customer parking for local businesses.

> Implementation 3-7.1.A: Parking Management Strategies

Work with local retailers, business associations, and neighborhood groups to develop parking management strategies, focusing on measures which maximize the availability of on-street spaces for customers and minimize parking encroachment in nearby neighborhoods. Such measures could include parking districts, permit parking, parking time limits, and metered parking.

> Implementation 3-7.1.B: Reducing Surface Parking Lot Area

Reduce the land area in Fremont dedicated to surface parking lots. This should be accomplished by encouraging shared parking, developing parking structures and underground parking, making more efficient use of on-street parking, adjusting local parking standards, and reducing the need to drive.

> Implementation 3-7.1.C: Development of Parking Structures

Work with merchant groups and landowners in commercial centers to build parking structures where on-site parking is insufficient. Consider the establishment of parking districts to finance such facilities.

• Policy 3-7.2: Parking Requirements

Apply parking requirements and standards for residential and commercial development which adequately respond to demand and minimize adverse effects on neighboring properties.

The City's parking requirements are comparable to other suburban cities in the Bay Area and vary based on land use. Residentially uses typically require 1.5 to 2 spaces per unit; office and commercial uses require one space per 300 square feet of floor area, and shopping centers require one space per 250 square feet of floor area. Requirements are much lower for warehouses and other industrial uses since there are fewer employees per square foot. Parking requirements should be periodically revised based on changing travel patterns, geographic and demographic factors, technology, economic, and other factors.

> Implementation 3-7.2.A: Parking Standards

Update parking standards and regulations to ensure that parking is efficiently designed and addresses the desire to encourage walking, bicycling, the use of alternative fuel vehicles, and public transit use, especially

in TOD Overlay areas. Such evaluations should also consider changing business patterns, technology, consumer behavior, demographics, and changes in vehicle design and technology.

> Implementation 3-7.2.B: Parking Reductions

Promote and strongly encourage reduced parking requirements where certain findings can be made, including proximity to BART, bus routes, lower rates of vehicle ownership by expected occupants (i.e., senior housing, affordable housing), carpooling and vanpooling programs, availability of bicycle and car-sharing facilities, and other measures that reduce vehicle use.

The Fremont Zoning Code provides considerable flexibility for the Planning Commission to grant parking reductions. The Commission has the discretion to grant reductions for projects near BART, Amtrak, or equivalent passenger rail service if it finds that the use will require a lower level of parking because alternatives to driving are available. Reductions are also permitted when the Commission finds they would support the goal of a more pedestrian-oriented environment, or when the occupants would be likely to have lower rates of car ownership. Guest parking requirements may also be reduced if the Commission finds that there is sufficient on-street parking nearby. The Zoning Code also establishes conditions for waiving parking requirements in some cases, and for paying an in-lieu fee for BART parking improvements rather than providing parking on-site for projects within 500 feet of a BART station.

See also the Housing Element for policies related to parking requirements for affordable housing

> Implementation 3-7.2.C: Parking Maximums

Adopt "parking maximums" for development in the BART station areas and TOD Overlay areas. Such standards would limit the number of parking spaces that may be provided for private development near BART, thereby creating an incentive to use transit rather than drive.

> Implementation 3-7.2.D: Standards for Parking Structures

Develop guidelines and standards for parking structures and garages, including the potential use of mechanical (vertical/stacked) parking serving high density residential and mixed use development. Recognize that parking structures and garages have different design criteria than surface parking lots.

> Implementation 3-7.2.E: Tandem Parking

Develop standards for tandem parking, particularly for multi-family residential development.

> Implementation 3-7.2.F: City as a Role Model

Ensure that parking standards for City buildings and parking policies for City employees support the policies set forth in the General Plan. The City should be a role model for the private sector and its residents in the way it manages its own parking supply and demand.

See the Housing Element for policies on "unbundling" residential parking spaces from multi-family units. See the Parks and Recreation Element for an implementation measure regarding parking in Fremont Central Park. See the Community Character Element for policies on the design and placement of parking lots.

• Policy 3-7.3: Shared Parking

Strongly encourage the concept of shared parking (and shared parking agreements) for land uses where the peak parking demand occurs at different times of the day, thereby reducing the aggregate number of spaces required.

Sharing parking spaces can substantially reduce the number of spaces needed in a commercial district, and can reduce residential parking demand since some of the potential users are away at any given time. The benefits are usually greatest for mixed land uses, since spaces used for businesses during the daytime can serve residents in the evening. Shared parking is also an effective strategy in older business districts, where it is neither feasible nor desirable to provide a parking lot for each individual business. By pooling resources (through in-lieu fees, assessments, or other means), a centralized parking facility can be developed in a way that provides economic and urban design benefits, as well as transportation benefits.

See also Implementation 3-3.8.A regarding agreements or easements to connect parking lots serving properties along arterial streets.

• Policy 3-7.4: Bicycle Parking and Storage Facilities

Require the provision of secured bicycle parking at (or near) all new or substantially modified commercial or industrial development projects, education and recreational facilities, and BART Stations and transit centers. In commercial areas, bicycle parking may be consolidated in racks serving multiple businesses to create a cleaner and more attractive street appearance. At larger employment centers and BART Stations, lockers and showers should be encouraged to facilitate bicycle use.

Bicycle parking facilities are important to provide security and convenience for cyclists. The availability of such facilities may influence the decision to bicycle to work, school, shopping, or other destinations. Effective bicycle parking requires a properly designed rack or locker in an appropriate location for the adjacent land use.

• Policy 3-7.5: BART Station Area Parking

Provide a supply of parking at Fremont's BART stations that is sufficient to meet locally generated demand, while still supporting transit-oriented development goals.

Provisions for BART parking should recognize that it may not be feasible for all residents to take transit, walk, or bicycle to the stations. At the same time, station area parking should be managed so as not to induce commuter traffic to Fremont's stations from other cities, and to ensure that land around stations is used as efficiently as possible.

Different approaches to parking management may be needed at each of the city's BART stations, depending on the location of the station, surrounding land uses, and projected ridership. The approach to parking management may also change over time. For instance, the existing Fremont station currently attracts a large number of commuters since it is the terminus of the line. Once BART is extended, the function of the station may change and new parking strategies may be needed. Since two of the three BART stations have yet to be built, the City has an opportunity to shape the design of stations to achieve its parking objectives. This

should include the inclusion of "Kiss and Ride" facilities at Irvington, and other design features which promote access to the station without the need to park a vehicle.