APPENDIX C

CIRCULATION AND PARKING ANALYSIS

IN THIS APPENDIX

Appendix C
circulation and parking analysis

This appendix provides a detailed assessment of the existing circulation system in North Fair Oaks, including all modes of transportation, and existing parking conditions, analyzes of circulation and parking needs for both existing and future conditions, and describes potential strategies to address circulation and parking needs in North Fair Oaks.

C1 – MULTI-MODAL CIRCULATION SYSTEM

The following sections describe the transportation system serving North Fair Oaks. It identifies the facilities and circulation patterns of different modes of transportation that access or pass through the area.

ROADWAY SYSTEM

Existing Vehicular Circulation and Street Connectivity

The streets that automobiles, buses, shuttles, and emergency and delivery vehicles use within and near North Fair Oaks are classified under the San Mateo County functional classification system as freeways, expressways, arterials and local streets. Middlefield Road and 5th Avenue serve as primary access points to the area. State highways such as El Camino Real (SR-82) and Woodside Road (SR-84) provide regional connections between North Fair Oaks and neighboring cities. US 101 extends along the bayside of the peninsula to the northeast of North Fair Oaks and provides a regional connection to San Francisco and San Jose. Other key roadways within North Fair Oaks include Marsh Road, Fair Oaks Avenue, 2nd Avenue, 8th Avenue, and Bay Road.

The Southern Pacific Railroad and Caltrain rail spurs run directly through the area. This creates a barrier effect, dividing the community into three distinct areas and limiting connectivity and circulation. There is an existing grade-separated undercrossing of the Caltrain tracks at 5th Avenue, but there are no existing at-grade Caltrain rail crossings within North Fair Oaks. There are several existing at-grade railroad crossings along the Southern Pacific Railroad line near the intersections of Middlefield Road at Hurlingame Avenue, 2nd Avenue at Northside Avenue, 5th Avenue at Edison Way, and Marsh Road at Bohannon Drive/Florence Street, but there is no grade-separated crossing of the Southern Pacific tracks.

Although the character of North Fair Oaks is generally urban, several of the roadways were designed in the past based on rural street standards, providing relatively narrow roadway widths and areas with narrow or no sidewalks. This is evident along Fair Oaks Avenue east of Edison Way, and along several roads within the area bounded by Seventh Avenue, Fair Oaks Avenue Eighteenth Avenue and Oak Drive. In some cases, neighborhood residents prefer these characteristics and desire to maintain the rural character of these streets. However, this can negatively affect the walkability of the community and can create accessibility and safety issues for pedestrians and individuals with disabilities. A major goal of the updated Community Plan is to improve circulation within North Fair Oaks by identifying roadway and intersection improvements to overcome existing barriers to connectivity and improve access and safety for all users.

The existing roadway system is illustrated and described in detail in the Existing Conditions Analysis, located in Appendix A.

Future Traffic Demand

Buildout of the proposed land use plan will introduce higher-intensity mixed-use development within North Fair Oaks. This future development is anticipated to generate additional traffic demand for all modes within the Plan Area, which will also ultimately be distributed to the local and regional street network. Based on the analysis of traffic conditions with implementation of the Community Plan, development of the land use program is anticipated to generate 2,059 net new vehicle trips during the AM peak hour, and 2,873 net new vehicle trips during the PM peak hour. Transit, bicycle and pedestrian travel demand is also anticipated to increase within North Fair Oaks with implementation of the development plan, particularly with the recommendations introduced in this plan to support integration of higher-intensity mixed-use development with quality transit service and a well-connected pedestrian system. In order to sufficiently accommodate the increased travel demand for all modes with build out of the community, several roadway system improvements are recommended in the following sections.

Roadway System Strategies and Improvements

A major goal of the Community Plan is to improve

alternative means of circulation in North Fair Oaks. At the same time, the needs of vehicular traffic must be met. The plan proposes improvements to the street network that will help accommodate both existing traffic and additional traffic anticipated as development occurs. These recommendations are presented as improvements for specific streets or intersections, as well as in the form of overarching improvements or design features that are desired for various street and intersection typologies.

Currently Planned or Approved Roadway and Intersection Improvements

The following roadway and intersection improvement projects, as identified in applicable City General Plans and in recent planning studies, are proposed within the vicinity of the North Fair Oaks:

- Middlefield Road Utility Undergrounding Project – A utility undergrounding project is currently planned along Middlefield Road west of 5th Avenue to relocate the existing above-ground utilities to below the roadway surface, and to widen the existing sidewalks. The project proposes the conversion of angled on-street parking along Middlefield Road to parallel parking in order to widen the sidewalks along the street to eight feet. The initial plans for the project include curb extensions at several intersections and ADA improvements at curb ramps and crossings.
- Middlefield Road Pedestrian Safety Study – The County of San Mateo recently completed
- Middlefield Road Pedestrian Safety Study – The County of San Mateo recently completed a Pedestrian Safety Study for the section of Middlefield Road corridor within North Fair Oaks. The study included an analysis of pedestrian accident history, an assessment of existing pedestrian facilities, and a series of recommendations to improve pedestrian safety and walkability within the study area. The study also included a series of potential conceptual design improvements for Middlefield Road, including two options that feature a road diet from 5th Avenue to Douglas Avenue. This design option is also recommended as a key roadway improvement in the Community Plan and is discussed in further detail in the following section.
- Redwood City Traffic Impact Mitigation Fee Study – The Redwood City Traffic Impact Mitigation Fee Study was prepared and adopted to establish a source of funding for future transportation system capital improvements in Redwood City. The following facilities within the vicinity of North Fair Oaks are identified in the study for improvements:
  - Bay Road/5th Avenue (Installation of a traffic signal)
  - Woodside Road (SR-84) has been identified for widening to six lanes from El Camino Real north to US 101 and from El Camino Real south to Valota Road. A Caltrans-prepared Project Study Report (PSR) and Environmental Document (ED) have been approved for this project
- Metropolitan Transportation Commission (MTC) Transportation 2035 Plan – The MTC Transportation 2035 Plan specifies how some $218 billion in anticipated federal, state and local transportation funds will be spend in the nine-county Bay Area during the next 25 years. The 2035 Plan indentifies the following relevant roadway projects in San Mateo County within the vicinity of North Fair Oaks:
  - US 101 in San Mateo County from San Mateo/Santa Clara County line to Whipple Avenue (convert HOV lanes to express lanes)
  - Reconstruct US 101/Woodside Road interchange
  - Construct auxiliary lanes (one in each direction) on US 101 from Marsh Road to Embarcadero Road
  - Improve access to/from west side of Dumbarton Bridge on Route 84 connecting US 101 (includes flyovers, interchange improvements and conversion of Willow Road between Route 84 and US 101 to expressway)
  - Improve streetscape and traffic calming along Bay Road and construct new northern access connection between Demeter Street and University Avenue
- Hoover Area Community Mobility Plan (2009) – The Redwood City Redevelopment Agency led a neighborhood mobility study for the area near the Hoover School, generally covering the region bounded by Chestnut Street, Spring Street, Douglas Avenue and Southern Pacific/

Caltrain railroad track. This study utilized input from community outreach efforts to identify issues and potential solutions to improve pedestrian and bicycle mobility and safety in the area. Several improvements identified in the study that impact facilities within the vicinity of North Fair Oaks include:

- Stripe bicycle lanes on Middlefield Road southeast of Woodside Road to connect to existing and planned lanes on adjacent segments of Middlefield Road
- Add bicycle lanes along Woodside Road to connect to existing Redwood City bicycle networks
- Improve pedestrian crossings at the intersection of Middlefield Road and Woodside Road
- Improve pedestrian crossings, sidewalks and other streetscape improvements throughout the area, particularly along Chestnut Street and Middlefield Road

Community Plan Proposed Roadway Improvements

Currently, the roadway system in North Fair Oaks is defined according the San Mateo County functional classification system: freeways, expressways, arterials, collectors, and local streets. This traditional approach is primarily focused on ensuring access and circulation for automobiles, and generally does not consider the needs of other travel modes or the context of the surrounding land uses and development character. To ensure a balanced transportation network of complete streets, where the design and configuration of each facility considers the context and prioritization of different travel modes, the Community Plan Update defines the several specific street typologies within North Fair Oaks. These typologies are intended to augment the existing functional classification and help guide the development of standards and street improvements within the community:

- Destination Street – Middlefield Road is designated as a "Destination Street," representing a facility that serves as a primary access road for all modes of transportation, including pedestrians, bicyclists, transit users and drivers. The vision for Middlefield Road is a transit corridor within a mixed-use district with a variety of local and regional destinations, including retail stores, restaurants and community-serving facilities.

  The Community Plan strategy for Middlefield Road is to explore the potential to implement a road diet for the segment of Middlefield Road between 8th Avenue and Douglas Avenue. The proposed roadway configuration would reduce the number of travel lanes to a single lane in each direction, with a center left turn lane, bike lanes and diagonal/angled on-street parking (preferably back-in angled parking to reduce bicycle conflicts). The proposed design would also incorporate pedestrian-oriented treatments such as pedestrian-scaled lighting and street furniture, as well as enhanced intersection and mid-block crossing treatments including bulbouts and high-visibility crosswalks. Detailed design guidelines and illustrative concepts for Middlefield Road are provided in Chapter 7: Design Standards and Guidelines.
- Regional Connector – This street type includes State highways and arterials that serve as key regional links to adjacent cities and major freeways. While the primary purpose of this type of thoroughfare is to facilitate through movement of vehicles, there are design elements that can be incorporated to improve transit, bicycle and pedestrian mobility. Key "Regional Connectors" within the North Fair Oaks include El Camino Real (SR-82), Bay Road/ Florence Street, and Marsh Road.

The Grand Boulevard Initiative is a collaboration of 19 cities, San Mateo and Santa Clara Counties, and other local agencies to guide the transformation of El Camino Real from an auto-oriented commercial corridor into an attractive multi-modal boulevard. Currently, the State design requirements provide little flexibility for local agencies to incorporate roadway design features that are sensitive to specific community needs. The Initiative focuses on guiding coordination between Caltrans and member agencies to develop policies and strategies to allow new design treatments to transform El Camino Real to a transit-friendly multi-modal corridor. A key strategy of the Community Plan is to support the goals of the Grand Boulevard Initiative to implement the vision for El Camino Real near North Fair Oaks, which includes the following design elements:

- Reduced lane widths, where feasible
- Improved pedestrian facilities, including bulbouts and median refuges
- Designated bike lane, with curbside parking and corner bulbouts
- Potential for dedicated transit lanes for BRT and/or transit facilities
- Potential for locating street trees within parking zone planters
- High-visibility warning signs and pavement markings at pedestrian crossings
- Wider sidewalks to expand pedestrian environment and accommodate street trees, landscaping, pedestrian-scaled lighting, street furniture and enhanced transit amenities (shelters, bike racks, etc.)

However, because El Camino Real is primarily under Caltrans' control, the Community Plan does not propose or require any direct changes or improvements to El Camino Real, but only supports, at a policy level, the intent and proposals of the Grand Boulevard Initiative.

- Primary Neighborhood Connector – The segment of 5th Avenue between El Camino Real and Bay Road is envisioned as a "Primary Neighborhood Connector." This street provides a key north-south connection for pedestrians and bicyclists along its length, while retaining its role for moving traffic. Currently, 5th Avenue provides a moderate-to-poor pedestrian environment with narrow unprotected sidewalks, fast moving traffic, few trees and a somewhat circuitous path as the street crosses under the Caltrain tracks and pedestrian overpass.

  The vision for 5th Avenue south of the Caltrain tracks (El Camino Real to Waverly Avenue) features a single travel lane in each direction, a center left turn lane, bike lanes and on-street parallel parking lane with corner bulbouts. North of Middlefield Road, the desired configuration for 5th Avenue includes a single lane in each direction, bike lanes and a parallel on-street parking lane with bulbouts at key intersection crossings. Detailed design guidelines and illustrative concepts for 5th Avenue are provided in Chapter 7: Design Standards and Guidelines.

- Secondary Neighborhood Connector – This street type primarily accommodates local traffic and serves as a key connection for pedestrians and bicyclists to travel within the neighborhood. The Community Plan roadway system identifies the following Secondary Neighborhood Connectors: 2nd Avenue, 8th Avenue, Fair Oaks Avenue, Park Road, Oak Drive, Douglas Avenue, and Spring Street. Secondary Neighborhood Connectors and other local streets within the Plan Area shall have minimum five-foot wide continuous ADA accessible sidewalks where feasible. The use of traffic calming elements, similar to what currently exists on Edison Way and other residential streets in North Fair Oaks, shall be explored to help slow vehicles and support a pedestrian and bike-friendly environment along local neighborhood streets.

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Recommended design elements for Middlefield Road, 5th Avenue, Edison Way and other streets within North Fair Oaks are summarized in Chapter 7: Design Standards and Guidelines. The Community Plan proposed roadway system is illustrated in Figure 3.1.

Community Plan Proposed Intersection Improvements

In addition to the planned/proposed intersection improvements listed above, the traffic analysis for North Fair Oaks identified that the following intersection improvements will help to provide acceptable traffic operations with build out of the Community Plan development program:

- El Camino Real (SR-82)/5th Avenue – Re-stripe the southbound approach to feature one dedicated left turn lane, one right turn lane, and one shared left/right turn lane.
- Middlefield Road/Woodside Road (SR-84) – Modify traffic signal operations to include a westbound right turn overlap phase and a northbound right turn overlap phase. Prohibit U-turns for southbound and westbound left turn movements.
- Middlefield Road/5th Avenue – Prohibit on-street parking within the vicinity of the northbound, southbound and eastbound intersection approaches, stripe dedicated left turn lane and shared through/right turn lane for northbound and southbound approaches. Modify traffic signal operations from split phase to concurrent northbound and southbound

travel with projected left turn phasing. Stripe dedicated right turn lane for the eastbound intersection approach.

- Middlefield Road/Semicircular Road – In the eastbound direction, prohibit on-street parking and stripe dedicated left turn lane, resulting in one left turn lane, one through lane, and one shared through/right turn lane. Modify traffic signal operations to provide additional phase for concurrent eastbound Middlefield Road through movement and westbound Middlefield Road through/permitted left turn movements.
- Middlefield Road/Marsh Road – Construct a second eastbound left turn lane from Middlefield Road to Marsh Road. The need for future capacity improvements at this intersection has been identified in a previous traffic study for a proposed development project in Menlo Park. Development outside of North Fair Oaks will generate additional traffic demand, which further warrants capacity improvements at this intersection.
- Woodside Road (SR-84)/Bay Road – Construct an additional northbound through lane and additional southbound through lane (as part of planned Woodside Road widening). Construct a dedicated westbound right turn lane and modify signal operations to include a right turn overlap phase to coincide with the southbound left turn movement. Prohibit U-turns for southbound left turn approach.

The above listed intersection improvements will help to maintain acceptable vehicular levels of service (LOS) , as defined by the LOS standards set by the governing jurisdictions within the study area (San Mateo County, Redwood City, Menlo Park, Caltrans, C/CAG). However, the current LOS standards used by these agencies apply to automobile traffic and do not consider the needs of the many other users of the transportation network, specifically pedestrians, bicyclists and transit systems. These auto-oriented LOS standards do not support the goals of the Community Plan to provide a balanced multi-modal transportation system, since intersections that do not meet the standard are required to add capacity by adding traffic lanes or signal modifications. Often, these intersection improvements can worsen conditions for pedestrian and bicycle travel by increasing exposure to conflicts with vehicles and deteriorate the non-motorized environment.

For this reasons listed above, a key recommendation of the Community Plan is to support re-evaluation of the LOS policies for certain streets within North Fair Oaks where a balance of multi-modal mobility goals is desired, such as the Middlefield Road commercial corridor. For streets such as these, the County should consider the development of a new LOS policy that includes an emphasis on pedestrian, bicycle and transit access and circulation, maintenance of emergency vehicle response times, and considers, but does not deem, auto congestion to be the primary indicator of a significant traffic impact.

Community Plan Proposed Improvements to Connectivity

As previously discussed, the existing Caltrain and Southern Pacific Railroad tracks create significant barriers to connectivity within North Fair Oaks, effectively dividing the community distinctly separate areas. These barriers not only limit automobile circulation within North Fair Oaks, but also impede transit, pedestrian and bicycle mobility. As buildout of the community occurs, there will be opportunities to explore additional rail crossings. There may be potential to construct new grade-separated rail crossings with implementation of planned or proposed rail projects such as the Dumbarton Commuter Rail corridor and High Speed Rail. However, the likely scenario is that new rail crossings within North Fair Oaks would need to be at-grade. The addition of any new rail crossing requires significant safety analysis, design review and ultimate approval from the California Public Utilities Commission (CPUC) and other regulatory agencies. For the purposes of improving mobility and neighborhood connectivity, new rail crossing locations are desirable at the following locations:

- Proposed Southern Pacific (future Dumbarton Rail) Rail Crossings: 8th Avenue/Fair Oaks Avenue
- Proposed Caltrain (and future High Speed Rail) Rail Crossings: Berkshire Avenue, Pacific Avenue/Westmoreland Avenue (likely a pedestrian/bicycle only crossing)

To improve safe rail crossings within North Fair

Oaks, potential safety improvements should be evaluated at all existing and proposed at-grade rail crossings. Potential improvement measures include:

- Installation of additional warning signage
- Improvements to existing warning devices
- Installation or improvement to automobile and pedestrian control gates
- Installation of median separation to prevent vehicles from driving around crossing gates
- Reduction in the flangeway (rail track) gap to improve pedestrian and bicyclist safety
- Improvements to traffic signaling (e.g., signal preemption) at adjacent intersections
- Installation of fencing or walls to limit access of pedestrians onto the railroad right-of-way

TRANSIT SYSTEM

Existing Transit System

North Fair Oaks transit service is provided by SamTrans, operated by the San Mateo County Transit District. SamTrans currently operates eight fixed bus routes through the North Fair Oaks community – Routes KX, 72, 270, 271, 296, 297, 390, and 397 – primarily along El Camino Real, Middlefield Road, and Bay Road. The bus routes provide for inter-city travel between North Fair Oaks, Redwood City, Atherton, Menlo Park, and Palo Alto, and provide connections to key local and regional destinations, including several Caltrain stations and BART. The majority of these routes provide weekday and weekend service, while two of these routes provide overnight service. There are limited north-south bus routes within the community, which leaves several areas of North Fair Oaks outside of viable walking distance (typically considered to be ¼ mile) to the major transit corridors. Additionally, many existing bus stops provide limited amenities, such as benches, shelter and waste receptacles.

AC Transit, the transit provider for Alameda County, operates a regional Transbay bus route, Line M, from the East Bay to the Peninsula and San Mateo County. Line M connects Union City and Castro Valley BART to Foster City, Menlo Park and San Mateo. Through North Fair Oaks, Line M travels along Bay Road, then north on Douglas Avenue.

San Mateo County Transit District provides service to ADA and senior persons within San Mateo County. Paratransit service is provided by the San Mateo County Transit District using Redi-Wheels.

The existing bus transit routes and location of bus stops within the North Fair Oaks area are described in further detail in the Existing Conditions Analysis, located in Appendix A.

Caltrain provides commuter heavy rail services between San Francisco County and Santa Clara County, with the railroad line running through the southwest portion of the North Fair Oaks Community. There are two Caltrain stations near the community. The Atherton station, which has weekend service only, is currently located on Dinkelspiel Station Lane near Fair Oaks Lane, approximately half a mile to the southeast of the North Fair Oaks community. The Redwood City station is currently located on James Avenue near El Camino Real, approximately one mile to the northwest of the North Fair Oaks community. These two stations can be accessed by SamTrans bus service.

No at-grade Caltrain railroad crossings exist within North Fair Oaks. There are several at-grade railroad crossings along the Southern Pacific Railroad line, which runs east-west through the community and currently operates with limited freight service. The at-grade railroad crossings are near the intersections of Middlefield Road at Hurlingame Avenue, 2nd Avenue at Northside Avenue, 5th Avenue at Edison Way, and Marsh Road at Bohannon Drive/Florence Street.

Caltrain and the Peninsula Traffic Congestion Relief Alliance operate several shuttles in Redwood City and through parts of North Fair Oaks. The shuttles operate during peak commute times between the Redwood City Caltrain Station and major employers in the area. Shuttles help facilitate transit ridership among people whose ultimate destination is beyond walking or biking distance from Caltrain, or for those who cannot or prefer not to ride a bike or walk. If employees of major employers purchase Caltrain

tickets, the shuttle is free. The shuttles are partially funded by participating employers and other agencies such as Bay Area Air Quality Management District and the Peninsula Joint Powers Board. Another on-demand community shuttle service also operates in the eastern part of Redwood City, in the area approximately bounded by El Camino Real, Marsh Road, US 101, and Whipple Avenue.

Planned and Proposed Transit System Improvements

SamTrans System Changes

According to the San Mateo County Transit District Strategic Plan 2009-2013, the district is planning on improving the transit systems in San Mateo County. The district has outlined the following initiatives to improve transit service in San Mateo County:

- The Grand Boulevard Initiative, described earlier in this chapter, focuses on changing the key transit corridor in the peninsula, El Camino Real, into a livable corridor. Additionally, SamTrans' long-term planning is likely to include Bus Rapid Transit (BRT) service on El Camino Real.
- The San Mateo County Measure A Program, a half-cent sales tax generating revenue solely for transportation projects, was recently reapproved and will generate an estimated $3 billion for San Mateo County's transportation projects.

As presented in the SamTrans Short-Range Transit Plan 2009-2018, there will be many foreseeable changes to SamTrans service. One immediate change will be SamTrans service reductions, which are expected to result in a 7.5 percent reduction, including six fewer fixed-route bus routes and seven fewer express routes. Routes will also see a reduction in service frequency and some routes may be limited to a single direction loop during non-peak hours.

Caltrain 2025 Service and Electrification Plan

Caltrain continues to explore ways to improve service and increase ridership. However, the railroad's infrastructure, signal system and equipment inhibit expansion beyond the current service level of five trains per hour during the peak. Caltrain 2025 Service and Electrification Plan identifies several improvements to modernize the system, expand capacity, and improve safety. The program includes three projects: electrification of the railroad; positive train control; and electric-multiple units. By converting to electric trains, Caltrain will be able to operate with reduced emissions, faster travel times, increased capacity, and decreased noise levels.

Dumbarton Rail Corridor Proposal

The proposed Dumbarton Rail Corridor Project would extend commuter rail service across the southern portion of the San Francisco Bay between the Peninsula and the East Bay. The proposed rail corridor would link Caltrain, the Altamont Express, Amtrak's Capitol Corridor, and BART, in addition to East Bay bus systems, at a multi-modal transit center in Union City. The reconstruction of the rail corridor would include track improvements, a new rail bridge, four stations, and a centralized traffic control system. One potential service alternative would include six round-trip trains traveling from Union City during peak commute hours. Three of these trains would travel to San Francisco and three to San Jose. The proposed rail service would utilize the existing Southern Pacific Railroad tracks that travel through North Fair Oaks, and connect a proposed new Dumbarton Rail Station in Menlo Park to the Redwood City Caltrain station. Current plans do not identify final rail station locations along the Peninsula, but project analysis is currently examining potential locations, including East Palo Alto, Menlo Park, and North Fair Oaks.

High Speed Rail Proposal

The California High-Speed Rail project, headed by the California High-Speed Rail Authority (CHSRA), includes a future high-speed rail system linking California cities, such as Sacramento, San Jose, Fresno, Bakersfield and San Diego. The CHSRA is currently in the process of completing final planning, design, and environmental efforts. Once completed, high-speed rail service is anticipated to provide passenger service between San Francisco and Los Angeles in as little as two and a half hours. Current plans also identify a proposed high-speed rail corridor connecting San Francisco to San Jose along

a four-track shared-use alignment with the existing Caltrain rail corridor, with proposed shared-use stations at the Redwood City and Palo Alto Caltrain stations.

Redwood City Streetcar Proposal

The 2010 Redwood City General Plan includes a recommendation to study the feasibility of implementing a streetcar or similar system in Redwood City as a long-term community asset to enhance non-automobile connectivity between neighborhoods, the Downtown core and other transit hubs. Three potential streetcar corridors are identified in the General Plan: Broadway, Middlefield Road and Seaport Boulevard. The proposed Middlefield Road corridor is identified as extending from just east of 5th Avenue in North Fair Oaks to Broadway in Redwood City.

Recommended Transit System

Recommended Transit Circulation Plan

The Community Plan encourages the integration of land use and transit, with a mix and density of uses that would support transit ridership, viability, and high service levels. With the proposed land use plan, higher-density mixed-use development would be intensified along the El Camino Real and Middlefield Road transit corridors. The vision of the plan is to better integrate future development to the existing and future transit system in order to promote transit use as the primary mode of transportation.

Implementation of the Plan could ultimately place additional demand on SamTrans, Caltrain, shuttle service, as well as potential future service such as the streetcar and ferry terminal proposed on the Redwood City General Plan, high speed rail service, and the proposed Dumbarton Rail service.

The Community Plan includes recommendations to support improvements to transit service in the area including, but not limited to the following:

- Explore potential to reduce headways and add new stops for existing SamTrans bus routes serving North Fair Oaks.
- Support plans for future projects to improve transit service within the area and establish as County policy the intent to create key stations/stops/transit hubs within North Fair Oaks. Potential transit projects in the area include:
  - Proposed new multi-modal transit hub within the Plan Area with the potential to accommodate high-frequency bus service and potentially Caltrain or Dumbarton Rail passenger rail service if the opportunity arises.
  - SamTrans' long-range plans for potential high-frequency Bus Rapid Transit (BRT) service on El Camino Real (SR-82).
  - Potential streetcar service along Middlefield Road (as identified in the Redwood City General Plan) and/or 5th Avenue.
  - California High Speed Rail.
- Expand on plans for streetcar service proposed by Redwood City to add north/south route through North Fair Oaks that would connect routes proposed along Middlefield Road and Broadway. This would create a loop route through Redwood City and North Fair Oaks and create a more direct route to the proposed ferry terminal on Seaport Boulevard.
- Explore potential for re-routing of existing bus service, or potential to provide a new local circulator route to provide better north-south connectivity between the bus routes on El Camino Real, Middlefield Road and Bay Road. A logical route would be along 5th Avenue, which serves as one of the few continuous north-south connections through North Fair Oaks.

The future transit system within North Fair Oaks is shown in Figure 3.2.

Transit Improvement Design Features

Existing and proposed bus stops should provide additional user amenities and complement other street furnishings and lighting. A well-designed bus stop can provide several benefits, including enhancing the experience of transit riders, adding an attractive element to the street, and providing useful information and wayfinding assistance. All bus stops should be designed to meet the current ADA standards. Standard stops should at a minimum provide amenities such as shelters, benches, pedestrian-scaled lighting, trash receptacles, real-time passenger information panels, and route maps. Enhanced bus stops could also include bicycle racks, newspaper racks, information displays, and signage and wayfinding elements.

Rail Station Feasibility

There are two rail corridors that travel through North Fair Oaks, one active and one proposed to be active with passenger service. However, there are no train stations within practical walking distance for the North Fair Oaks community. Caltrain provides commuter services between San Francisco County and Santa Clara County with stops currently in Atherton, approximately one half mile southeast of the area, and Redwood City, approximately one mile northwest of the area. The Dumbarton Rail Corridor project proposes to provide rail service connecting the East Bay and the Peninsula. The proposed multi-modal transit hub is located along the Dumbarton line and could provide an opportunity to link rail and local bus transit service. A transit station with rail and bus would provide additional transit options for community residents, employees, and retail customers. Significant issues would need to be addressed, such as noise and vibration impacts, traffic and parking impacts, and existing at-grade rail crossings.

STATION ACCESS, CONNECTIVITY AND CIRCULATION

The Community Plan identifies an area for a new multi-modal transit hub (which could be a full multimodal transit station, or could be another configuration of multiple transit services short of a full station) to potentially accommodate local bus, high-frequency bus, passenger rail, and streetcar service. Passenger rail service could include potential Dumbarton rail service, high speed rail, Caltrain, or other rail service, depending on future rail development. The hub would also connect to pedestrian and bicycle facilities to provide non-motorized connections to transit. The transit hub would serve as a multi-modal transit center for the community and a catalyst for surrounding transit-oriented development.

The primary purpose of the transit hub is to provide access to and from transit and the neighboring community by consolidating, interfacing, and interconnecting multiple modes of transportation within a single facility or location and increase the number of travel options. The transit hub would ideally provide convenient and safe paths for pedestrians and bicyclists, efficient space for bus customer loading and unloading, efficiently facilitate transfer activity between transportation options, and integrate park-and-ride lots for auto customers.

A transit hub that is well planned and designed can extend the hub's area of influence by providing strong pedestrian connectivity, seamless connections to buses and shuttles, and efficient parking facilities. Strong pedestrian connectivity to surrounding neighborhoods provides convenience to customers in the immediate area. Buses and shuttles can transport customers from nearby communities to the station from a wider catchment area and reduce the total demand for parking at the station. In order to create seamless connections between the various modes of travel, the transit hub would need to be properly designed, taking into account the location, size, function, and interface between all travel modes.

The North Fair Oaks Community Plan identifies the area where Middlefield Road crosses the future Dumbarton Rail Line as the preferred location for a multi-modal transit hub. Three SamTrans bus routes currently operate along this segment of Middlefield Road. Local vehicular access is provided along Middlefield Road with regional access to El Camino Real, Woodside Road, and 5th Avenue. A future transit hub would also provide access to future bicycle facilities along Middlefield Road, in addition to the planned streetcar along Middlefield Road. The Community Plan permits higher density and mixed use development around the designated transit hub, which would generate additional pedestrian and bicycle trips to and from the hub.

Pedestrian Access and Connectivity to Adjacent Development

The proposed transit hub should be easily accessible by pedestrians and provide direct routes to adjacent pedestrian facilities, creating a network of safe, direct, and appealing pedestrian routes. All pedestrian routes should meet the current ADA standards. Multiple pedestrian routes should be provided connecting the hub with the other pedestrian facilities to shorten the actual and

perceived walking distance to the hub. Walking areas through and around the hub should be wide enough to accommodate the peak period pedestrian demands. All pedestrian crossings through the area and at adjacent intersections should be marked and boldly delineated, signifying a crossing area. Bulbouts should be incorporated to minimize the crossing distance, slow traffic speeds, and provide a safer path for pedestrians. Appropriately scaled lighting, trees, seating, and other amenities should be provided, in addition to area maps identifying surrounding streets, popular destinations, and pedestrian facilities.

Bus and Shuttle Vehicle Access and Circulation

The transit hub should be designed to accommodate all future transit demand with a measure of flexibility for future changes. Bus bays and layover areas should be provided and designed to accommodate numerous vehicle types – local buses, articulated buses, shuttles, and others. The transit hub should include separate auto and bus travel lanes to improve circulation, safety, and reliability of service for transit customers and to avoid potentially dangerous situations where automobile drivers must interact with large buses and high pedestrian-volume transit stops. A one-way circulating bus-loading area should be considered to minimize the footprint of the hub, improve access and circulation for all travel modes, and reduce the number of pedestrian, bicycle, automobile, and bus conflict areas.

Bicycle Access and Circulation

Routes to and from the transit hub should provide adequate bicycle facilities to support and encourage the use of transit by bicyclists of all skill levels. Off-site signage should be provided along adjoining streets and bikeways to facilitate access to and from the hub, and should be incorporated with signage within the hub. Area maps identifying streets, popular destinations, and bicycle facilities should be provided at the hub. Adjacent traffic signals to the transit hub should be appropriately actuated and include adequate bicycle detection for all movements leading into and out of the area. Bicycle routes through the hub should be identified and directed though the hub to minimize the number of conflicts between bicyclists, pedestrians, automobiles, and buses. Bicycling on sidewalks should not be encouraged due to the high pedestrian demand unless the sidewalk has been properly designed to accommodate both pedestrians and bicyclists. Adequate bicycle parking and/or lockers should be provided and located in sheltered, secure, and well-lit locations, and in areas where bicyclists do not have to dismount and walk, but can ride up to and park.

Automobile Access and Circulation

A transit hub should accommodate automobiles by providing drop-off and pick-up areas in addition to nearby parking facilities. Clearly marked drop-off and pick-up areas should be located in safe and well-marked areas that minimize congestion impacts along adjacent streets and within the transit hub. Drivers should be able to stop without impeding traffic flow or delaying transit vehicles. The pick-up area should be adequately sized to meet peak hour demand and should provide a waiting area for vehicles that does not obstruct other modes of travel.

The hub should also include parking areas for various users. For instance, carpool and motorcycle parking should be located in an area that is closer to the transit hub than the majority of at-large parking spaces to promote those types of travel. Reserved spaces for car-sharing services should also be located in higher profile locations closer to the transit hub. If the parking area regularly fills to capacity, signage should be provided directing drivers to other parking options at the same hub or same travelshed. Reserved spaces should also be considered for midday use to support off-peak ridership. The parking area should also be designed so that it can be shared with other users in the area. The parking area should be designed to provide a comfortable experience for drivers as they move from their parking space to the hub by providing comfortable walking environments through the parking aisles and internal roadways.

PEDESTRIAN AND BICYCLE SYSTEM

Existing Bicycle and Pedestrian System

The bicycle and pedestrian transportation network within the context of the Community Plan area consists of sidewalks, crosswalks at signalized and unsignalized intersections, on-street and off-street bike facilities, and accessibility features such as curb ramps. These facilities are intended to serve the circulation needs of bicyclists, pedestrians, and persons with disabilities throughout the community.

Currently, there are no designated bicycle facilities in North Fair Oaks, with the exception of bike lanes on 5th Avenue between Waverly Avenue and Semicircular Road. While there are future plans to implement bicycle facilities in North Fair Oaks, currently bike lanes exist only on Middlefield Road directly to the west of the Plan Area in Redwood City and directly to the east of the Plan Area in Menlo Park. The Bay Trail Class I bikeway travels along the Bayfront Expressway, approximately one mile northeast of North Fair Oaks, and connects to multi-use trails on the Dumbarton Bridge, which allows bicyclists to reach destinations in the East Bay. Another Class I Bikeway travels along US 101 from Whipple Road in Redwood City to San Carlos. Due to the lack of designated bicycle facilities and the barrier effect created by the Caltrain and Southern Pacific railroads, bicycle mobility is currently significantly impeded within North Fair Oaks.

Sidewalks currently exist through much of North Fair Oaks. However, there are several unimproved streets, primarily within the residential neighborhoods on the eastern side of the community, where sidewalks are not provided. Where pedestrian facilities exist, they generally meet the minimum ADA requirements; however, some of the pedestrian facilities within North Fair Oaks were not designed using current ADA best practices. At stop-controlled intersections, painted crosswalks are usually provided, while at signalized intersections, painted crosswalks and pedestrian signals are typically provided at each leg of the intersection. Sidewalk curb extensions, often called bulbouts, are provided at several intersections along Middlefield Road east of 5th Avenue with the purpose of shortening the crossing distance for pedestrians. Several of the unsignalized crossings on Middlefield Road west of 5th Avenue provide advance warning signs and flashing warning lights to alert motorists of pedestrians crossing the street. While most existing pedestrian facilities meet the minimum needs of users, there are several improvements that could be made to enhance the pedestrian environment and improve connectivity and accessibility within North Fair Oaks.

Proposed Community Plan Bicycle and Pedestrian System

Proposed Bicycle System

The Community Plan Update supports the goals and findings of the San Mateo County Comprehensive Bicycle and Pedestrian Plan (2011), which outlines the framework for bicycle-oriented improvements to develop a comprehensive bicycle and pedestrian network within San Mateo County. The Bicycle and Pedestrian Plan identifies proposed bicycle facilities within the County, including several potential connections within North Fair Oaks. Existing and proposed bicycle facilities are defined using the standard classification system:

Class I Bikeway (Bike Path or Bike Trail) – Provides completely separated right-of-way designated for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized.

Class II Bikeway (Bike Lane) – Provides a restricted right-of-way designated for the exclusive use or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists provided.

Class III Bikeway (Bike Route) – Provides a right-of-way designated by signs or permanent markings and shared with pedestrians or motorists. "Bicycle boulevards" are a type of bicycle route typically used on streets that lack width for bicycle lanes

and are usually low volume and low speed streets, parallel to busy arterials. Bicycle boulevards are given a distinctive appearance using frequent uniform signs and pavement markings called "sharrows" that alert motorists that the street is a priority route for bicyclists.

The intent of the Community Plan is to build on the recommendations of the San Mateo County Comprehensive Bicycle and Pedestrian Plan to develop a well-connected bicycle network within North Fair Oaks. Community Plan recommendations for bicycle system improvements include:

- Support the implementation of on-street Class II or Class III bike lanes or bike routes on El Camino Real, as envisioned in the County Bike Plan and the Grand Boulevard Initiative.
- Provide Class II bike lanes on Middlefield Road to connect to the existing Middlefield Road bike lanes in Redwood City and Menlo Park.
- Stripe Class II bike lanes on 5th Avenue from El Camino Real to Broadway
- Designate on-street Class II bike lanes or Class III bike routes per the County Bike Plan and Redwood City General Plan along the following streets:
  - Woodside Road (Alameda de las Pulgas to Veterans Boulevard)
  - Semicircular Road (5th Avenue to Middlefield Road)
  - Bay Road (Beech Street to Florence Street)
  - Florence Street (Bay Road to Marsh Road)
  - Marsh Road (North Fair Oaks Plan Area boundary to Scott Drive)
  - Broadway (Brewster Avenue in Redwood City to 5th Avenue)
  - Dumbarton Avenue (Oakwood Boulevard to Westmoreland Avenue and Westside Avenue to Flood Avenue)
  - 2nd Avenue (Middlefield Road to US 101)
- Designate Class III bicycle boulevards with appropriate signage and "sharrow" pavement markings to emphasize shared use between vehicles and bicyclists on the following streets:
  - Edison Way (2nd Avenue to Fair Oaks Avenue)
  - Fair Oaks Avenue (Douglas Avenue to Marsh Road)
  - Douglas Avenue (Middlefield Road to Bay Road)
  - Charter Street (Middlefield Road to Bay Road)
- Explore the potential to provide off-street Class I bicycle/pedestrian paths along the Hetch-Hetchy right-of-way.
- Explore opportunity to connect North Fair Oaks bicycle network to the surrounding bicycle system in Redwood City, Menlo Park, and particularly to the Class I recreational trails north of US 101.
- Provide safe, secure bicycle parking along commercial areas, designated bike routes, parks and schools and major transit stops.

With the bicycle improvements proposed in the Community Plan , north-south bike travel is would be accommodated along 5th Avenue, 2nd Avenue, Douglas Avenue, Marsh Road, and Woodside Road. East-west bike travel would be accommodated with bicycle facilities along El Camino Real, Middlefield Road, and Bay Road, along with neighborhood bicycle boulevards on Edison Way and North Fair Oaks Avenue. Potential Class I shared-use bicycle/pedestrian paths along the Hetch-Hetchy right-of-way could provide additional opportunity for recreational bicycle travel within North Fair Oaks. The improved bicycle system proposed by the Community Plan is shown in Figure 3.3.

Proposed Pedestrian System

Chapter 7: Design Standards and Guidelines identifies key streets within North Fair Oaks and sets standards for streetscape improvements. It also establishes guidelines for private development along those streets and corridors. These standards and guidelines will help to improve the appearance, safety and connectivity for pedestrians on these streets. Proposed pedestrian connectivity and accessibility improvements contained in the Community Plan include:

- Maintain a continuous ADA-accessible sidewalk that is a minimum of five feet wide along all streets, where appropriate.
- Provide eight-foot sidewalks on pedestrian oriented commercial corridors, such as Middlefield Road and El Camino Real.

- Allow and encourage pedestrian easements within the private realm to provide wider ADA accessible sidewalks for trees, landscaping, street furniture, café space and other amenities to the pedestrian realm.
- Provide high-visibility 10-foot wide crosswalks at all controlled intersections and ensure that crosswalks have ramps and warning strips that comply with ADA standards.
- Allow use of mid-block crossings at locations with high pedestrian activity between intersections. Ensure that all mid-block crossings include high-visibility, 10-foot wide crosswalks, advanced warning signage and flashing beacons or in-pavement flashers where possible.
- Explore the use of special paving materials for crosswalks to heighten visibility and lend identity to the area.
- Provide bulbouts at intersections and mid-block pedestrian crossings to reduce crossing distances.
- Provide pedestrian-oriented lighting along pedestrian paths and all major pedestrian corridors and arterials, including Middlefield Road, El Camino Real, and segments of 5th Avenue.
- Emphasize ongoing maintenance of existing pedestrian facilities while upgrading unimproved streets to urban standards over time. Use low-cost pedestrian and stormwater improvements (such as swales and unpaved pedestrian paths) for unimproved areas that lack adequate pedestrian facilities.
- Explore potential to provide additional rail crossings to improve pedestrian connectivity within the community. Optimal locations for new crossings of the Caltrain tracks include Pacific Avenue/Westmoreland Avenue (most likely a pedestrian and bicycle only crossing) and at Berkshire Avenue. An ideal location for a new Southern Pacific Rail spur crossing is at 8th Avenue/Fair Oaks Avenue.
- Improve pedestrian safety at all existing and future at-grade rail crossings, including appropriate improvements to crossing gates, ADA-compliant crossing surfaces and audible warning tones. Installation of fencing or walls to limit access of pedestrians onto the railroad right-of-way is also encouraged, as well as improvements to street lighting, particularly along Northside Avenue and other streets fronting the railroad tracks.
- Implement new neighborhood connection at Berkshire Avenue to connect Marlborough Avenue to Markham Avenue.

Detailed design guidelines for on-street bicycle facilities and pedestrian facilities are included in Chapter 7: Design Standards and Guidelines. The Community Plan bicycle and pedestrian system is shown in Figure 3.3.

C2 – PARKING STRATEGY

Parking is a critical component of mixed-use and transit-oriented development. While pedestrian, bicycle and transit modes of transportation are supported and encouraged by the goals and policies of the Community Plan, considerations must also be made for residents, employees, and visitors who use automobiles. Parking is already a key concern and parking demand will undoubtedly increase with new development. For this reason, it is critical that effective policies and strategies are in place to efficiently manage existing and future parking needs. This section describes the existing parking conditions in North Fair Oaks, establishes appropriate parking requirements for new development in the community, provides an assessment of the projected future parking supply and demand, and introduces recommended parking management tools and strategies to be considered for implementation in North Fair Oaks.

EXISTING PARKING CONDITIONS

Off-Street Parking

There are currently no public off-street parking lots or structures provided within North Fair Oaks. Private off-street parking lots exist at most multi-family housing sites and at several of the commercial and industrial developments fronting El Camino Real (SR-82), Middlefield Road, 5th Avenue, Edison Way, and other streets. Observations of the existing private off-street parking facilities show that, in general, commercial and industrial parking is moderately utilized during typical business hours, while off-street residential parking lots for multi-family developments are highly utilized due to high vehicle ownership.

On-Street Parking

On-street parking is provided along the majority of the streets within North Fair Oaks. On-street parking consists primarily of parallel spaces, while angled spaces currently exists along segments of Middlefield Road and some 90-degree spaces exist fronting the industrial uses along Edison Way east of 5th Avenue. Several streets within the residential areas on the eastern side of the community are too narrow to accommodate on-street parking; thus, residents typically park off-street along wide gravel or paved shoulders. Observations of existing conditions show that in general, on-street parking is highly utilized. This is particularly evident on streets with higher concentrations of multi-family housing, where auto-ownership is high, as well as along streets such as Bay Road, Spring Street and segments of Fair Oaks Avenue, where mixes of industrial and residential uses exist.

PARKING REQUIREMENTS FOR NORTH FAIR OAKS

The San Mateo County Zoning Regulations (1999) establish the current parking standards for North Fair Oaks, including the number of required parking and loading spaces for new development. (See Appendix A - Existing Conditions Analysis for a summary of existing San Mateo County parking requirements.) The current County parking standards are designed for relatively isolated auto-dependent development occurring in lower-density or suburban areas. For this reason, many of the current parking requirements are potentially inappropriate for a higher-density mixed-use district, with a walkable pedestrian-oriented environment and quality access to transit. When requirements designed for low-density suburban uses are applied to higher intensity mixed-use areas, the result is often an excessive amount of parking lots, garages, curb cuts and driveways, and a decline of pedestrian amenities.

Implementation of the Community Plan presents the opportunity to establish parking standards that are tailored to address the specific needs of North Fair Oaks. This includes the use of appropriate parking requirements for new development and the integration of innovative parking management techniques. In order to support the goals of the Community Plan, which promote a vision of a walkable, mixed-use and transit-oriented district, the following recommended parking requirements are proposed for new development within the community's Neighborhood Mixed-Use, Commercial Mixed-Use and Industrial Mixed-Use districts (see Chapter 7: Design Standards and Guidelines for proposed zoning designations and allowable land uses):

Table 3.1: Recommended Parking Requirements for North Fair Oaks

Use	Minimum Parking Spaces Required
Single Family Residential	1 space for each dwelling unit having up to 2 bedrooms. 2 spaces for each dwelling unit having 3 or more bedrooms.
Multifamily Residential	1 space for each dwelling unit having 0 or 1 bedroom. 1.5 spaces for each dwelling unit having 2 or more bedrooms. Plus 1 additional uncovered guest parking space for each 5 units.
Retail	1 space for every 400 sq. ft. of floor area.
Office	1 for each 350 sq. ft. of floor area.
Light Industrial	1 for each 700 sq. ft. of floor area.
All Other Uses and Areas not zoned for mixed-use development	No change to current San Mateo County requirements.

Source: MIG, Inc. and Kimley-Horn and Associates, Inc.
Reductions to required parking will be considered for developments with affordable housing components or other uses where reduced parking demand can be demonstrated by comparing parking demand for a similar development or through other empirical data.

As shown in Table 3.1, the recommended parking ratios for residential, retail, office and light industrial uses located within the areas zoned for mixed-use development are lower than the current County requirements. For land uses located outside of the areas zoned for mixed-use, or for uses not specifically listed above, the current County parking requirements would apply. The practical benefits of implementing appropriate parking standards in North Fair Oaks include increased support for transit, a more attractive pedestrian environment, reduced costs and efficient utilization of development capacity by not providing unwarranted excess parking for development. The effectiveness of the proposed standards is maximized when coupled with transportation/parking demand management programs and innovated parking management policies that support shared parking opportunities, paid parking considerations and transportation/parking demand management strategies. These strategies are discussed in detail later in this chapter.

FUTURE PARKING NEEDS

Future Parking Supply and Demand

The parking analysis for the Community Plan Update included an assessment of the anticipated increase in parking demand and required parking supply for the proposed development program for North Fair Oaks. The analysis uses the methodology and parking demand assumptions customarily used in the parking industry and published by the Institute of Transportation Engineers (ITE) and the Urban Land Institute (ULI). Parking demand methods and assumptions include:

- Parking demand rates (the number of accumulated parked cars expected for a specific type and amount of land use at its peak generation on a weekday or weekend day) are from the ITE's Parking Generation, 4th Edition and ULI's Shared Parking, 2nd Edition. Parking Generation and Shared Parking is a standard reference used by jurisdictions throughout the country for the estimation of parking demand potential of proposed developments.
- Demand rates are used to estimate the addition of parking demand from new development.
- For the purposes of this analysis, no required parking is assumed for "Public" uses (parks/recreation).
- Additional adjustments were applied when estimating parking demand for the proposed land uses to properly reflect conditions in a mixed-use and transit-oriented district with quality access to transit and a well-connected pedestrian environment. Adjustments were applied to reduce the parking generation estimates to account for transit, bicycle, walking and captive trips (internal non-auto trips where people park once and walk to multiple locations).

Table 3.2: Future Parking Supply and Demand

Scenario	Parking Supply (in addition to existing)	Parking Demand (in addition to existing)	% Utilization (demand/supply)
Using San Mateo County Parking Requirements	7,498	4,780	64%
Using Recommended Parking Requirements for North Fair Oaks	6,083		79%
Net Difference	1,415	-	15%

Source: Kimley-Horn and Associates, Inc.

With build out of North Fair Oaks at the densities permitted by the Community Plan, parking demand is anticipated to increase by approximately 4,780 spaces. The amount of new parking required with build out of the proposed land use plan was estimated using both the existing San Mateo County parking standards, and the modified parking standards recommended for North Fair Oaks (as presented in Table 3.1). The estimated total number of required new parking spaces is compared to the projected increase in parking demand in Table 3.2.

As shown in Table 3.2, the current County parking standards would require additional parking supply of 7,498 spaces, which significantly exceeds the parking demand generated by new development. The recommended parking standards would require 6,083 new spaces to be provided, which exceeds the increase in parking demand without providing substantial excess parking. Using the recommended parking requirements, the net increase in parking demand is generally close to the practical capacity of 85 to 90 percent utilization. This keeps some of the spaces vacant to provide a cushion in excess of necessary parking spaces to allow for the dynamics of parking (e.g., people circulating in search of a space and moving in and out of parking spaces). To avoid the costs and inefficiencies resulting from the creation of unnecessary excess parking supply, the recommended parking requirements should be implemented for new development within the vicinity

of the proposed transit hub and within proposed mixed-use areas.

Recommendations for Accommodating Future Parking Demand

Additional parking supply is needed to accommodate the future peak parking demands in North Fair Oaks. The following recommendations are provided to guide the development of new parking facilities.

Allow Some Required Parking for New Development to be Provided in Public/Off-Site Parking Facilities

With higher-density development proposed for North Fair Oaks, it will be difficult and costly to provide parking facilities for each individual development, particularly within the Middlefield Road and El Camino Real mixed-use districts. There are also several small or oddly-shaped parcels where it would likely be challenging to provide the code-required amount of on-site parking. Due to these challenges, the County should modify parking policies in North Fair Oaks to allow and encourage the development and use of public shared parking areas/facilities to meet some of the parking requirements for new non-residential and non-industrial development.

On-street parking can be used to accommodate some of the required parking for new development. However, on-street parking is currently well utilized within North Fair Oaks and there are existing concerns regarding spillover within residential neighborhoods. For this reason, on-street parking should only be considered for accommodating parking requirements for new development if the peak parking utilization within the area remains below practical capacity (85 to 90 percent occupied). Off-street parking facilities should be the primary resource for shifting some required parking for new development to off-site/public areas. Allowing the use of off-site parking facilities to meet some of the parking requirements for new development promotes efficient use of the available parking supply and increases the feasibility of new higher-density development. Future development would not be completely exempt from the costs of providing new parking, but could pay their fare share of off-site parking costs through various types of fee programs, which are discussed later in this section.

Allow and Encourage Shared Parking in Mixed-Use Districts

Shared parking is defined as a grouping of parking spaces shared by more than one land use, which allows parking facilities to be used more efficiently. It is most effective in mixed-use areas where land uses have significantly different peak parking characteristics that vary by time of day, day of week, and/or season of the year. For example, peak office parking demand occurs during the day while employees are working and residential peak parking demand occurs during the evening when residents return home, allowing these two uses to effectively share parking. The use of shared parking is an effective way to efficiently use existing parking resources and reduce the costs of constructing excess parking facilities in the future. Current County development standards significantly limit the potential for shared parking, as mixed-use parking facilities are required to provide the total peak parking required for each individual use. As part of the Community Plan Update strategy, the parking requirements for North Fair Oaks should allow and encourage the use of shared parking facilities in mixed-use areas. Listed below are several ways that that implementation of shared parking facilities can be encouraged:

- If adjacent projects are being planned within the same time frame, they must coordinate their development plans to consider the use of joint parking resources and explore opportunities for collaborating with their transportation/parking demand management strategies during the approval process
- Allow new parking facilities to be phased. Let the first developer(s) use vacant lots as temporary surface parking, until structured parking is reasonable and financially feasible. By delaying construction of new parking garages there is an opportunity to share parking with another development which may come later
- As discussed in previous sections, allow

developers to use off-site public parking supplies to meet their projected demand.

Explore Options for Increasing Public/Off-Site Parking Supply

Public parking can be provided in surface parking lots, on-street spaces or structured parking garages. Recommended options for providing additional public parking facilities include the following:

- Increase on-street parking supply by requiring on-street parking for newly-constructed streets in conjunction with future development of mixed-use areas and within the proposed transit hub area;
- Increase on-street parking supply by exploring potential to convert existing on-street parking from parallel to angled spaces where sufficient width exists or where additional width can be provided through acquisition of right-of-way with future development/redevelopment of the street-fronting properties;
- Increase off-street parking supply by exploring opportunities to provide County- or privately-owned public parking lots or structures near areas of concentrated parking demand. This could include new surface parking lots of structured parking near the proposed transit center or in the Middlefield Road and El Camino Real commercial districts, or small neighborhood parking lots in residential areas with high parking demand.

Potential locations for future public parking facilities are identified in Figure 3.4.

Parking Costs and Funding Options

As discussed previously, parking is best utilized within the proposed mixed-use districts when public/off-site facilities are utilized to accommodate a portion of the future parking demand. Typical costs to construct new parking (excluding property acquisition) include approximately $3,500 per surface parking space and $24,000 per structured parking space. In order to fund the costs of providing new public parking facilities in North Fair Oaks, the County should explore the following funding mechanisms:

1. 1. In-Lieu Parking Fees – In-lieu fees are established by municipalities as an alternative to requiring on-site parking spaces. With in-lieu fees, developers are able to circumvent constructing parking on-site by paying the County a fee. The County, in return, provides centralized, off-site parking that is available for use by the development's tenants and visitors. The fees can be determined by the County and are generally much lower than the cost of land that the business would otherwise need to buy and maintain for their own off-street parking. These fees also tend to be significantly lower than the opportunity cost of foregoing floor area that could otherwise be available for a larger building.

2. Special Assessment Tax District – Special assessment taxation is the policy of raising tax revenues by charging each landholder within a defined boundary, known as a Special Assessment District, a portion of the value of a site or parcel in order to fund certain public projects, such as the construction of new municipal parking facilities. A special assessment tax may only be charged against properties that receive a direct "benefit" from the public project, such as the use of public parking facilities. If funding public parking facilities, the assessment district is generally limited to the properties within viable walking distance (approximately ¼ mile).

PARKING MANAGEMENT STRATEGIES

As future development is introduced in North Fair Oaks, the combination of higher-density development and a greater mix of uses provide opportunities for managing parking in a way that balances the need for automobile parking with the need and desire to encourage and enhance transit use and pedestrian travel. Parking strategies need to accommodate the needs of multiple users, including residents, guests, customers (non-residential visitors, shoppers, diners), employees, delivery and public services (police, fire, refuse, etc.). The following sections provide recommended tools and strategies to reduce parking demand and implement effective management methods to extend the life of the available parking supply.

Transportation Demand Management

Transportation Demand Management (TDM) refers to strategies to reduce automobile traffic, and in turn, parking demand. TDM strategies serve the purpose of improving air quality, reducing traffic congestion and delaying/reducing the need to construct costly roadway improvements or expansion of parking facilities. The County should encourage and assist in the formation of a Transportation Management Association (TMA) to promote, implement, and monitor TDM programs for employers and residential developments in North Fair Oaks. In addition to the transit, bicycle and pedestrian system improvements identified in the Community Plan Update, the following strategies are recommended to reduce parking demand.

Employer TDM Measures

The County should work with existing and prospective small, midrange and large employers to encourage workers to use alternative transportation modes by providing viable options for traveling to work and making mid-day trips while at work. Employer-based TDM measures include:

- Establish preferential parking spaces for carpools and vanpools and promote Rideshare services.
- Reserve on-street or future off-street public parking spaces for future carshare vehicles.
- Secure (long-term) bicycle parking for employees and short-term bicycle parking for visitors in commercial buildings.
- Encourage/advise employers to offer the following services:
  - New employee commute options orientation program
  - Pre-tax transit fare purchases
  - Co-sponsor a commuter/transportation fair (potentially in conjunction with other community events)
  - Guaranteed Ride Home Program through 511.org
  - Establish a "Commuter Club" providing cash drawings and other incentives for using alternative modes and completing travel diaries.
  - Encourage mid-to-large size employer (>50 employees) to designate a TDM coordinator who will coordinate with the local TMA, if one exists

Residential TDM Parking Measures

The County should work with rental property owners, managers and homeowners/neighborhood associations for existing and future residential developments to encourage the use of alternative modes of travel. TDM strategies can be particularly effective for medium-to-high density multi-family developments. The following TDM measures should be considered for residential developments:

- Mandate membership in a TMA, if one exists, with required financial contributions for services.
- Reserve on-site parking spaces for future carshare vehicles.
- Provide both long-term and short-term bicycle parking.
- Explore the possibility of unbundling (separating the cost of parking from housing in the lease or purchase of housing) the second parking space for housing units where more than one parking space per unit is provided.
- Share visitor parking with commercial uses and explore sharing additional parking spaces (such as the second parking space where more than one parking space per unit is provided).
- Encourage homeowners associations and rental

property managers to provide a part-time on-site TDM coordinator serving North Fair Oaks residents.

- Encourage rental property managers or other community groups to provide 25 to 50 percent subsidized transit passes for new residents.
- Explore carshare services funded by homeowners associations or rental property management (through purchase of vehicles to be managed, maintained and insured by private enterprise).
- Develop programs to promote repair or donation of non-operational vehicles
- Consider providing incentives such as transit passes, free or discounted towing, gift cards/ coupons to local businesses.

Implement a Residential Permit Parking Program

Parking spillover is a significant problem in the residential neighborhoods in North Fair Oaks. It is important that the future development within the community does not contribute to these existing spillover problems. In order to prevent spillover parking in residential neighborhoods adjacent to the proposed transit hub and commercial districts along El Camino Real and Middlefield Road, the County should consider implementing a Residential Parking Permit District (RPPD), where a limited number of parking permits are issued to residents, usually for free or a nominal fee. Not only does the RPPD restrict the number of on-street parking spaces that residents are allowed to use, but the permits also prevent commuters, visitors or employees of nearby commercial districts from parking in the residential neighborhoods.

An alternate form of residential parking management that should be considered for North Fair Oaks is a Residential Parking Benefits (RPB) district. This is similar to a Residential Parking Permit district, but with the key difference that non-residents with permits are allowed to park in a neighborhood, typically during the day or when residential demand is low. By charging non-residents a higher permit fee than residents, new revenue is generated through permit fees that can help pay for neighborhood improvements and enforcement. The key to success of conversion to RPB districts is that net revenues above the cost of administering the program should be dedicated to pay for public improvements in the neighborhood where the revenue is generated.

Paid Parking Options and Monitoring Strategies

Charging fees for public parking is one of the most effective parking demand management strategies and should be strongly considered for the commercial districts in North Fair Oaks. Variable pricing levels for different lengths of time, or peak periods, can encourage the use of alternative modes of travel and reserve spaces for the short-term needs of visitors and customers. Generally, charging fees for parking is considered only after parking levels have increased to unacceptable levels and time restrictions and strong enforcement have been maximized. Ideally, the price of parking in the North Fair Oaks commercial districts should eventually reflect market rates. This can be achieved by installing parking meters for on-street spaces and gradually increasing the hourly rate of meters in prime locations close to popular destinations. Public parking lots or garages should also charge for parking using a pricing structure that favors short-term parking close to concentrations of retail, entertainment and civil uses, and favors long-term parking for employees in more remote locations. On-street parking should have a higher hourly rate than the rate in public structures, to encourage parking turnover of on-street spaces. Potential locations where metered parking should be considered are identified in Figure 3.4.

Monitoring the utilization of metered spaces and public off-street facilities before and after implementation of paid parking will provide feedback on the effectiveness of the pricing structure and indicate when a rate change is warranted (e.g., when higher rates do not affect utilization or when utilization regularly exceeds practical capacity). The process should be continued until a market rate has been achieved. A market rate is one that is consistent with similar commercial districts and one that achieves the desired 85 percent occupancy goal. Once rates have been established and accepted by the public, it is a

matter of maintenance to update the rates when necessary to maintain the 85 percent occupancy goal as development continues in North Fair Oaks.

Parking Enforcement

Parking enforcement is a challenge in North Fair Oaks, as the County does not currently have sufficient resources to provide adequate parking enforcement personnel in the area. There are several options to explore for providing future parking enforcement, which is an essential component of the success of the potential paid parking strategies and residential permit programs discussed above. Options for providing parking enforcement for short-term public parking and paid parking and in residential permit areas include:

- Collect revenues through paid parking fees and parking violations to fund enforcement.
- Create parking assessment district to fund enforcement program.
- Encourage use of privatized parking enforcement funded through commercial business association (may not be feasible within public right-of-way).
- Subsidize parking enforcement through adjacent jurisdictions (Menlo Park, Redwood City).

User Information, Wayfinding Signage and Promotion

Inadequate signage or information can lead to confusion and incorrect perceptions regarding the availability of parking, particularly in mixed-use commercial districts. Visitors need information on parking location, price (when applicable) and whether there are less expensive alternatives. This information can be disseminated through maps, signs, brochures and websites. Such information improves user convenience and security, increases the utilization of parking (particularly in less identifiable facilities and locations), and dispels misconceptions about parking availability. User information and promotion is often funded through a parking assessment district, or developed and maintained by the Chamber of Commerce or business association. Parking guidance systems or real-time parking availability signs at garage entrances are the most efficient way to guide motorists to parking facilities.

FIGURE 3.1: North Fair Oaks Roadway System

Figure 3.1
North Fair Oaks Roadway System

NORTH FAIR OAKS COMMUNITY PLAN

- Project Area
- Parcel
- Park
- School
- Rail Line

Roadway Functional Classification (per General Plan)

- US Highway
- State Route
- Arterial
- Local Street (only key local connections highlighted)

Community Plan Roadway Typology

- Destination Street
- Regional Connector
- Primary Neighborhood Connector
- Secondary Neighborhood Connector
- Proposed Neighborhood Connection
- Existing Signalized Intersection
- Proposed Signalized Intersection
- Existing Grade-Separated Railroad Crossing
- Existing At-Grade Railroad Crossing
- Proposed At-Grade Railroad Crossing
- Intersection Capacity Improvements Proposed

Data Source: San Mateo County

0 400 800 1,600 Feet

N

MIG

FIGURE 3.2: Future Transit System

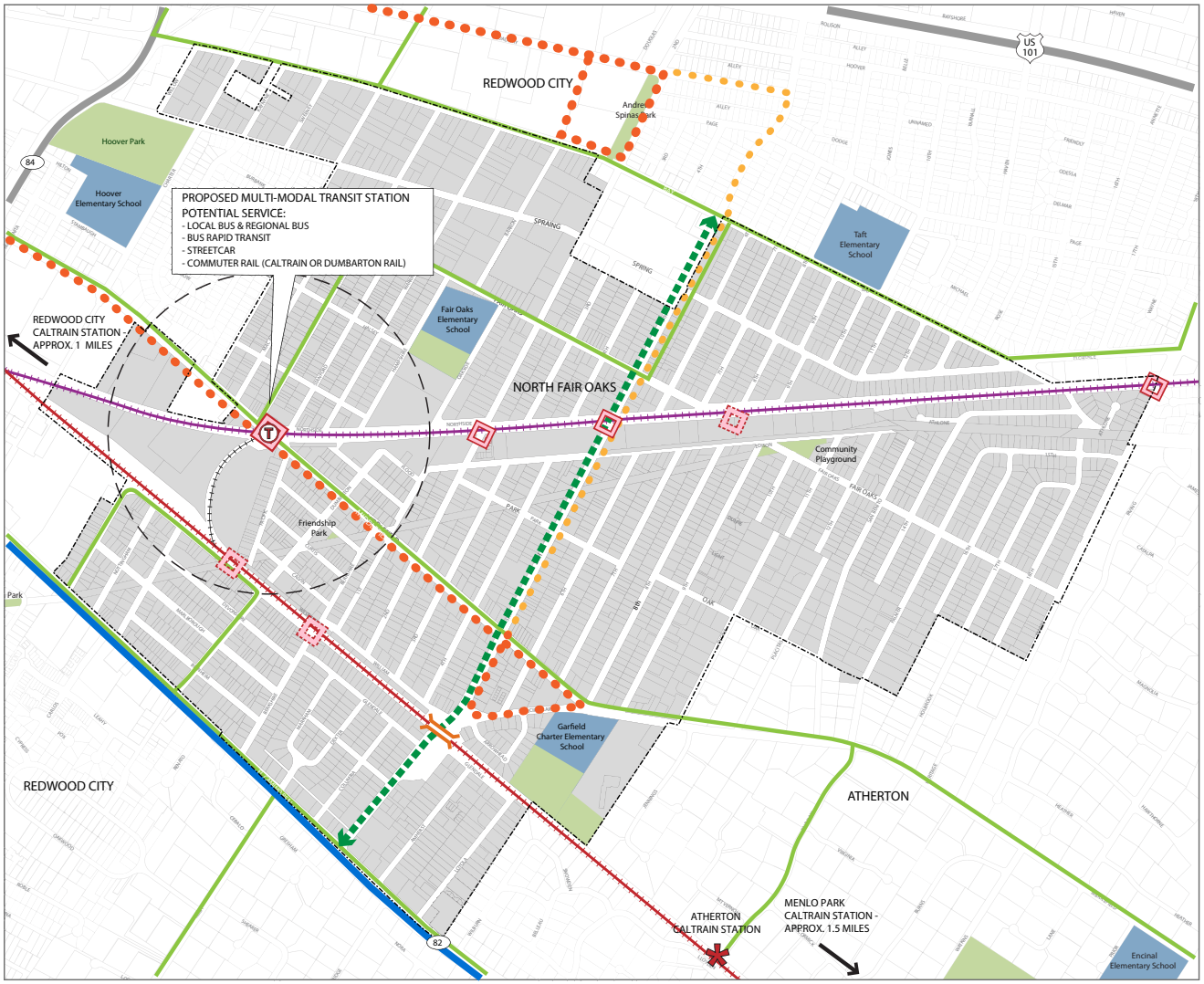

Figure 3.2
Future Transit System

NORTH FAIR OAKS COMMUNITY PLAN

- Project Area
- Parcel
- Park
- School
- Highway
- Rail Line
- Caltrain and Proposed High Speed Rail Line
- Proposed Dumbarton Commuter Rail Line
- Proposed Transit Station
- Caltrain Station
- 1/4-mile Station Area Wakshed
- Existing SamTrans and AC Transit Bus Service
- Proposed Bus Re-routing or New Circulator/Shuttle Service
- Planned/Proposed Bus Rapid Transit
- Planned Redwood City Streetcar Route
- Proposed Streetcar Route Extension
- Existing Grade-Separated Railroad Crossing
- Existing At-Grade Railroad Crossing
- Proposed At-Grade Railroad Crossing

Data Source: San Mateo County

0 400 800 1,600 Feet

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FIGURE 3.3: Future Bicycle and Pedestrian System

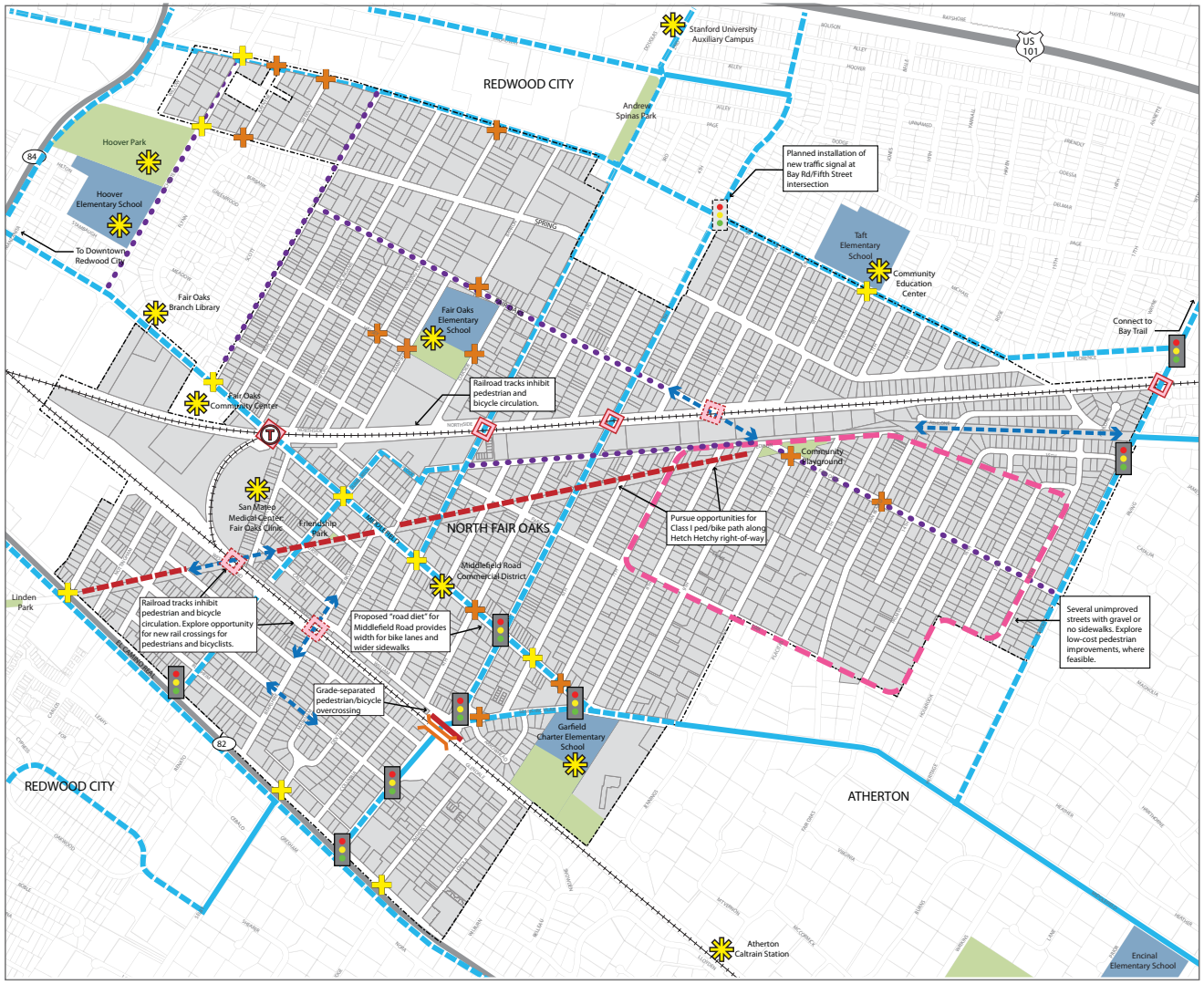

Figure 3.3
Future Bicycle and Pedestrian System

NORTH FAIR OAKS COMMUNITY PLAN

- Project Area
- Parcel
- Park
- School
- Highway
- Rail Line
- Key Destinations
- Existing Class I Ped/Bike Path
- Proposed Class I Ped/Bike Path
- Existing Class II Bike Lanes
- Existing Class III Bike Route
- Proposed On-Street Bike Facility (Class II or Class III)
- Proposed Bicycle Boulevard
- Areas with Unimproved Pedestrian Infrastructure
- Key Existing Unsignalized Pedestrian Crossing
- Plan-Recommended Enhanced Unsignalized Crossing (bulbouts, high-visibility markings, ADA improvements)
- Existing Grade-Separated Railroad Crossing
- Existing At-Grade Pedestrian Rail Crossing
- Community Plan Proposed Pedestrian Rail Crossing
- Existing Signalized Pedestrian Crossing
- Planned signalized Pedestrian Crossing (currently unsignalized crossing)
- Proposed Neighborhood Connection
- Proposed Multi-modal Transit Hub

Data Source: San Mateo County; KHA, Inc; San Mateo County Draft Comprehensive Bicycle Route Plan (2011)

0 400 800 1,600 Feet

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FIGURE 3.4: North Fair Oaks Parking Strategies

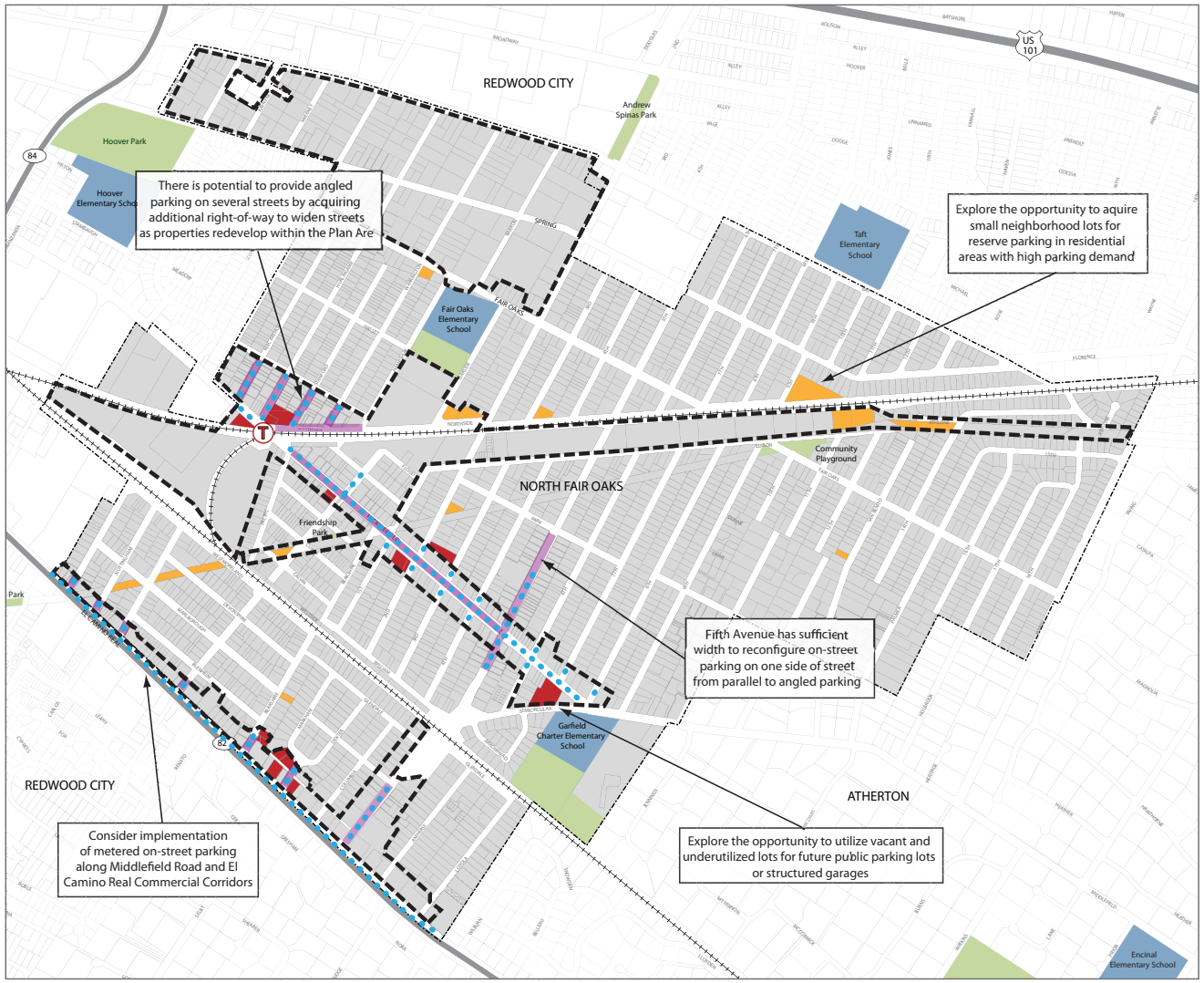

Figure 3.4
North Fair Oaks Parking Strategies

NORTH FAIR OAKS COMMUNITY PLAN

- Project Area
- Parcel
- Park
- School
- Highway
- Rail Line
- Potential Transit Station
- Proposed Reduced Parking Requirements Applied within Proposed Mixed-Use Districts
- Potential Area for Angled Parking
- Areas Recommended for Paid Metered Parking
- Potential Location for Future Public Parking Lot/Structure
- Potential Location for Small Neighborhood Parking Lot

Data Source: San Mateo County

0 400 800 1,600 Feet

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Prepared 11.10.09

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