

City of Fresno Downtown Transportation and Infrastructure Study



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TABLE OF CONTENTS

Executive Summary.....	ES-1
1. Introduction	1-1
Central Area Community Plan	1-1
Other Reports.....	1-9
Future Access and Circulation Needs	1-15
Recommendations	1-19
Report Organization.....	1-20
2. Railroad Element.....	2-1
Current Setting	2-1
Issues and Needs	2-3
Recommendations	2-18
3. Traffic Element	3-1
Current Setting	3-1
Issues and Needs	3-9
Recommendations	3-24
4. Public Transit Element.....	4-1
Current Setting	4-1
Issues and Needs	4-7
Recommendations	4-13
5. Parking Element	5-1
Current Setting	5-1
Issues and Needs	5-8
Recommendations	5-18
6. Pedestrian Element.....	6-1
Current Setting	6-1
Issues and Needs	6-3
Recommendations	6-8
7. Bicycle Element	7-1
Current Setting	7-1
Issues and Needs	7-3
Recommendations	7-20
8. Fulton Mall Element.....	8-1
Current Setting	8-1
Issues and Needs	8-1
Recommendations	8-15
9. Wayfinding Element	9-1
Current Setting	9-1
Issues and Needs	9-2
Recommendations	9-9
Appendix A: Sample Bicycle Parking Ordinance.....	A-1
Appendix B: Bicycle Education/Promotion.....	B-1

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EXECUTIVE SUMMARY

The Downtown Transportation & Infrastructure Study (DTIS) addresses a wide range of transportation issues related to automobile circulation and parking, integration of bus and other types of transit, freight, passenger and high speed rail, pedestrian facilities and traffic calming, bicycle circulation and wayfinding. The DTIS provides recommendations to support desired economic and livability visions for Downtown Fresno addressing the near-term (2010), mid-term (2030), and long-term (2050) planning horizons.

The intent of the DTIS is to build on prior planning efforts, particularly the 1989 Central Area Community Plan while presenting a “fresh look” at previous studies, rather than a summary of the prior work. From a holistic Downtown viewpoint, the DTIS looks at how all the current recommendations fit together and how they relate to the comprehensive vision for Downtown and the region. The objective of the DTIS is to integrate and coordinate the prior planning efforts and outline a strategy to implement transportation improvements. As appropriate, new measures not found in previous studies were defined to update earlier concerns and to complement other planned improvements.

PLANNING CONTEXT

Relevant reports, studies and the adopted plan for the downtown include:

- Central Area Community Plan (adopted 1989);
- Making the Grass Greener (2006);
- Central Area Urban Design Strategy (1992);
- Downtown Vision, an Advisory Report of the Downtown Improvement Group (2003);
- Urban Land Institute Service Panel report (1999);
- Downtown Planning districts – “Vision 2010” (2003);
- Fulton Street Revitalization (2006);
- Uptown Arts District – Master Plan Update (2000);
- Report to the City Council and Agency Board (2002);
- Growth Response Study by Fresno Council of Governments (2002-2005); and
- Destination Downtown (2006).

Of these planning efforts, the Central Area Community Plan, the only adopted policy document for downtown, provides a strong framework and comprehensive vision; as such, it provides a vehicle for the revitalization of the Central Area and restoration of community pride in its core area.

Downtown Fresno is located at the heart of the region’s transportation network – both highway and transit. Recent growth/development patterns and projected growth patterns, however, are oriented to the periphery of the region. At some point in the future, regional congestion could contribute to a more intense use of downtown and a stronger role in the region. Achievement of the Central Area Community Plan’s vision will require stronger land use policies to become reality. The downtown transportation system needs to anticipate and accommodate the desired downtown growth. With the exception of the subject of the Fulton Mall, most of the more recent plans within the downtown area are consistent with and complementary to the Central Area Community Plan.

DTIS's review of these plans found:

- The Central Area Community Plan continues to be a good comprehensive plan for the downtown area. Compromises, however, have been made to the Plan's circulation network, which warrant remediation.
- Achievement of the Plan's vision will require aggressive economic development measures to attract developers and the marketplace away from fringe development in the region.
- Jump starting the desired revitalization of the downtown probably will necessitate "critical mass" livable community type of development.
- The Fulton Mall should be the heart of the downtown's retail and cultural activity and also its "soul".
- Greater emphasis should be directed towards revitalization efforts at and around the Fulton Mall to achieve the vision of the Central Area Community Plan.
- The recommended travel mode split targets for 2030 and 2050 should form the policy base for transportation planning for the downtown with an emphasis on reducing the auto mode share and increasing use of transit, pedestrian and bicycle modes.
- A complementary set of travel mode targets should be established for the COFCG Region to help improve air quality and livability as well as to help minimize regional traffic congestion and impacts of single-occupant vehicles.

RAILROAD ISSUES

There are two major railroad issues that have a major influence on downtown development and transportation, now and in the future. They include:

1. Railroad consolidation which would move BNSF freight trains and Amtrak passenger trains onto the UPRR corridor through Downtown and free the BNSF right-of-way for non-railroad uses.
2. California High Speed Rail (HSR) which would establish high speed (200 mph) passenger rail service on the UPRR corridor between Los Angeles and San Diego in Southern California and San Francisco, San Jose and Sacramento in Northern California.

The decision-making on both of these potential projects is outside the control of the City of Fresno. Currently, neither project is funded and, consequently, they represent major unknowns at this point in time; however, both projects could have huge implications on development and transportation in Downtown Fresno. While it is unlikely that either of these two important rail projects will be completed for the near-term planning horizon (2010), one or both could be in place by the mid-term (2030) or long-term (2050) planning horizons.

It seems clear that these unknowns must be considered in future planning for the downtown; there are development and redevelopment efforts that should be deferred (such as Chinatown Area redevelopment and railroad grade separations) until more concrete decisions are made about HSR and/or rail consolidation. The City of Fresno should communicate its position to the California High Speed Rail Authority regarding the location of a downtown station and integration of HSR into the downtown transportation network. There are also other possibilities to consider. Might the high speed rail effort also provide the funding for relocating freight operations to the UPRR corridor. If so, it is important to protect rights of way for this option and share the City's position with the community.

The DTIS recommends:

- **Rail Consolidation Implementation** - Implementation of the rail consolidation concept should be piggybacked with high speed rail development planning and funding. Consolidation of BNSF rail traffic onto the UPRR corridor makes sense and is consistent with current plans.
- **High Speed Rail Implementation** - With the projected growth in the San Joaquin Valley, development of high speed rail is needed and should be supported. The best means of traversing the downtown area would be in a trench shared with the freight railroads. The trench concept should be communicated to the California High Speed Rail Authority and its consultants as the locally preferred concept.

- **High Speed Rail Station Strategy** - The most promising location for a high speed rail station for Fresno is in the downtown between Tuolumne and Fresno Streets. This station location concept should be forwarded to the California High Speed Rail Authority as the preferred location. The best station concept and the lowest costs concept would be for the Fresno Station to have no passing tracks with all high speed trains stopping in Fresno. Fresno is one of the busiest stations in California and thus logical for all trains to stop at its stations.
- **Amtrak's San Joaquin Upgrades** - Amtrak's San Joaquin rail service is an important gateway to the city. Efforts should continue towards upgrading Amtrak's San Joaquin passenger rail service as an interim measure until high speed rail becomes a reality. Fresno should work with Caltrans to identify attractive investments to upgrade the current service - whether this is a "baby bullet train" or just increased service, speed and reliability.
- **Railroad Quiet Zones** - While implementing a railroad quiet zone will be challenging, it would make the downtown more attractive for new residential development. The Federal Railroad Administration has recently adopted rules that allow communities to reduce train noise impacts. A pre-feasibility study is recommended to better determine how viable a quiet zone would be for the downtown segment of the BNSF corridor. This study should focus on the feasibility of achieving a safe corridor more so than completion of the FRA quiet zone application. If it looks feasible, a formal application should then be pursued.
- **Grade Separations** - Grade separation investment on either the BNSF or UPRR corridors should await decisions regarding high speed rail and rail consolidation. Grade separations for the UPRR crossings could be wasted if high speed rail designs prove to conflict with these investments. Similarly, if rail consolidation moves forward, rail grade separation investments for the BNSF corridor would be wasted. The most promising grade separation location for the BNSF appears to be the Fresno Street crossing. More detailed engineering studies are needed to confirm this assessment.

TRAFFIC ISSUES

The existing traffic network is not user friendly and suffers from a number of network and local intersection deficiencies. Much of the original grid system has been compromised by closures to create superblock developments and by barriers imposed by the freeways and railroad. Currently, the street system carries only moderate traffic volumes and even with these network deficiencies does not experience significant congestion. Under future traffic conditions, however, this may change.

Some changes have been made to the circulation network that was envisioned by the Central Area Community Plan due to later development decisions. For example, the one-way couplet of Van Ness Avenue and Broadway has been replaced with a two-way Van Ness Avenue and a fragmented Broadway. In the core area of downtown, Broadway has essentially been converted into short discontinuous streets between Tuolumne Street and Ventura Avenue. The existing features and weaknesses in the downtown traffic circulation system include:

- Awkward **street grid interfaces** between the original diagonal street grid in the downtown core and the more recent north-south street orientation for the areas adjacent to the core;
- Discontinuities in the street grids due to **railroad barriers**;
- Discontinuities in the street grids due to **development related barriers**;
- Awkward **one-way to two-way street transitions**;
- **Atypical one-way street spacing** between P and M one-way couplet streets;
- Weak **hierarchy of streets**; and
- Ineffective **wayfinding** system.

The DTIS recommends:

- Adopt and implement travel mode split targets which call for a reduction in the auto mode share and an increase in transit, bicycle and pedestrian modes.
- Adopt the recommended street hierarchy shown in Figure ES-1 and deploy visual cues to multimodal users to simplify wayfinding in the downtown.
- Consider amending CEQA development impact intersection LOS threshold from the current level D to a reduced level of E.
- Do not further fragment the downtown circulation system with street traffic closures; instead use the Kern Street concept for minor streets to balance street parking and lower traffic speeds.
- Deploy traffic control measures to recognize pedestrian, bicycle and public transit use as well as general traffic. Short two phase signal cycles, minimal use of left turn signal phases and signal timing to manage speeds are effective multimodal traffic control strategies that support multimodal circulation.
- Traffic generation related to land use is strongly linked to the amount of parking that is provided. This is true of suburban and downtown development projects. For the downtown area, traffic impact fees might be waived for residential and retail projects because of the reduced infrastructure requirement for these developments. For office uses, the fees could be linked to whether the project includes on-site exclusive parking or if parking is shared with surrounding land uses.
- Retain the remaining one-way streets supported with wayfinding improvements and traffic calming measures to control speeds.
- Should the HSR project move forward with the trenched concept, opportunities to reconnect downtown streets should be further explored, particularly Inyo Street.
- Work with Caltrans to determine how best to simplify the Tulare SR-41 interchange.
- Consider the following street improvements to simplify and facilitate circulation:
 - Simplify Broadway Plaza's intersections with H Street and with Fresno Street.
 - Reconnect H Street and strengthen it as the major downtown street between Van Ness Avenue and the UPRR corridor.
 - Close Echo Street as a mean of simplifying the H Street/Divisadero intersection.
 - Study the closure of Stanislaus between Divisadero and Blackstone as a means of simplifying the P/Divisadero intersection.
 - Retain the O to P Street diagonal near SR-41 to simplify downtown access.
 - Keep all blocks of E, F and G Streets open on the west side of the UPRR corridor to maintain circulation convenience.
 - Change the one-way traffic pattern to two-way traffic on N Street between Tulare Street and Mariposa Street.
 - Create an at-grade signalized pedestrian crossing on Van Ness at Mariposa. This change will require some physical changes on the courthouse side of the street.

PUBLIC TRANSIT

Previous planning efforts for Downtown Fresno have envisioned an expanded role for public transit. To maximize its full potential, public transit needs to be integrated with pedestrian, parking and other transportation policies and facilities and coordinated with surrounding land uses. Public transit in a downtown setting has three traditional roles. First, it serves as the gateway into the region for regional trips. Secondly, it provides access into the downtown from other parts of the city. Lastly, public transit provides circulation within the downtown, minimizing the use of private cars for short distance trips.

The DTIS recommends:

- Adoption of target mode share for transit trips downtown to guide transportation policies.
- A transition for the downtown transit center, starting with an upgrade of facilities and working towards a shift in its function into a “super stop” with short dwell times for buses in the downtown.
- A stronger downtown circulator shuttle and upgraded FAX passenger stop facilities.
- A transit preferential streets (TPS) program in downtown.

PARKING

Parking is an essential element to both economic and livability objectives. In many cities, the provision of convenient, free parking is seen as essential to support downtown retail businesses and attract office employment and residential development in Downtown. However, too much parking as well as poorly designed and located parking facilities detract from efforts to achieve the ‘critical mass’ needed for a vibrant and livable community. It should be noted that parking needs and conditions ought to be considered for both the downtown as a whole and for sub-areas within the downtown. In practice, people rarely want to walk more than a few blocks from their parking spot to their destination; however, they are often willing to walk longer distances if the environment is designed with pedestrian amenities such as generous sidewalks and crosswalks, street furniture and landscaping. It is also important to recognize that there are many differences between residential parking needs and parking needs associated with other land uses.

The DTIS study supports the development of a comprehensive parking plan for Downtown as recommended in the Central Area Community Plan. Adoption of a set of parking planning principles is suggested to guide the development of the comprehensive parking plan. The DTIS recommends the following principles:

All of the Downtown

- Parking policies should support transportation demand management strategies to minimize auto travel to the downtown area, particularly for journey to work trips, and to lessen the demand for parking such as parking pricing and unbundling.
- Do not over supply parking. Excess supply reduces the effectiveness of strategies to reduce the demand for parking (i.e. reduce the use of single-occupant vehicles and promote alternative modes) and to finance the cost of providing and operating parking facilities.
- Maximize utilization of current parking investments with pricing and time-limit strategies.
- Adopt the LOS suggested guidelines for effective capacity.
- Adopt the suggested guidelines for walking distances.
- Adopt policies to discourage the bundling of parking costs into property lease and ownership costs in favor of full cost recovery pricing.
- Adopt policies that reflect shared use benefits in calculation of parking demands.

- Future parking for new residential developments should allow for some of the total demand to be met with on-street parking.
- On-street parking should be maintained to provide for short-term parking needs and as buffers between traffic and pedestrians.

Downtown Core Area

- With the exception of interim land banking uses, all future parking in the downtown core area should be in parking structures or underground.
- New parking structures for downtown needs should be located along the perimeter of the downtown core as shown in Figure ES-2 and connected via the downtown circulator shuttle.
- New parking structures should include retail and other active land uses on the ground level when adjacent to pedestrian corridors.
- Within the downtown core, non-residential off-site parking should be area-based, rather than address-based and the requirement for on-site or contiguous parking should be eliminated.
- Future non-residential parking facilities in the downtown core should be publicly provided and open to the general public (common use facilities).

PEDESTRIAN

A key strength of downtown relative to suburban areas is the pedestrian oriented environment. In the downtown, destinations are located conveniently within walking distances, and away from intimidating high speed and high volume traffic. The mixing of people at walking speeds affords the opportunity to experience the density of activities that the downtown has to offer. Full exploitation of the synergy available in downtown is best achieved by maximizing pedestrian activity. A good pedestrian environment is key to the strength of the downtown and enhancement of the pedestrian facilities and experience are fundamental strategies to make downtown more attractive to residents, workers and shoppers.

For those that enjoy living, shopping and working in a pedestrian oriented environment, downtown Fresno could offer this option. Vibrant downtowns with lively sidewalk activities therefore begin with downtown-oriented land use and development strategies. For example, offices that have self-contained parking and cafeterias do little to generate pedestrian activity on downtown streets and do little to support restaurants and other retail activity. In some ways these offices experience the negatives of a downtown location (parking and traffic congestion) but fail to reap the synergistic benefits of a downtown location. Future development in the downtown should encourage streetside activity and discourage projects that do not connect with the streets and activities of downtown.

The DTIS recommends:

- Improve the safety of mid-block crossings and signalized intersections for pedestrians.
- A new at-grade pedestrian crossing of Mariposa Street at Van Ness Avenue and the strengthening of Mariposa's branding as a pedestrian corridor.
- Improved wayfinding for pedestrians and pedestrian level lighting.
- A comprehensive pedestrian network audit/plan addressing 1) Remediation of existing barriers and gaps in the pedestrian environment, and 2) Development standards/guidelines for a good pedestrian environment to evaluate future development and redevelopment projects including:
 - Traffic speeds;
 - Pedestrian exposure;
 - Appropriate sidewalk widths;
 - Security;

- Lighting;
- Street activity; and
- Street trees and other amenities

BICYCLE

Downtown Fresno has the basic elements for a good bicycling community. The terrain is flat and the climate is generally mild. Unlike most areas where winter rains and cold temperatures may discourage bicycling, the high temperatures of Fresno in the summer are a greater deterrent to bicycling or other outdoor activities. Currently, many of the streets leading to Downtown (First, Elm, California, Church and Kearney Streets) have bike lanes or are signed as bike routes. Recently the first bike lanes in Downtown were installed on H Street.

The DTIS recommends:

- A downtown bicycle network including treatments for safe access into the downtown.
- Improved facilities for bike parking providing the preferred type of parking for the intended users (i.e. secure Class 1 facilities, such as lockers for long-term parking by employees and Class 2 bike racks for short-term parking by shoppers and visitors).
- Improved wayfinding for bicyclists.
- Programs to encourage bicycle use, educate on the benefits and safe practices of bicycling and enforce safe on-street behavior of both bicyclists and motorists.

FULTON MALL

For the past three decades the Fresno community has undertaken various efforts to revitalize the downtown and the Fulton Mall area. Numerous studies and community discussions have included recommendations regarding the Mall itself ranging from reopening the Mall to general traffic to retaining the Mall in its current form. The DTIS assessment of the transportation function of the Mall is as follows:

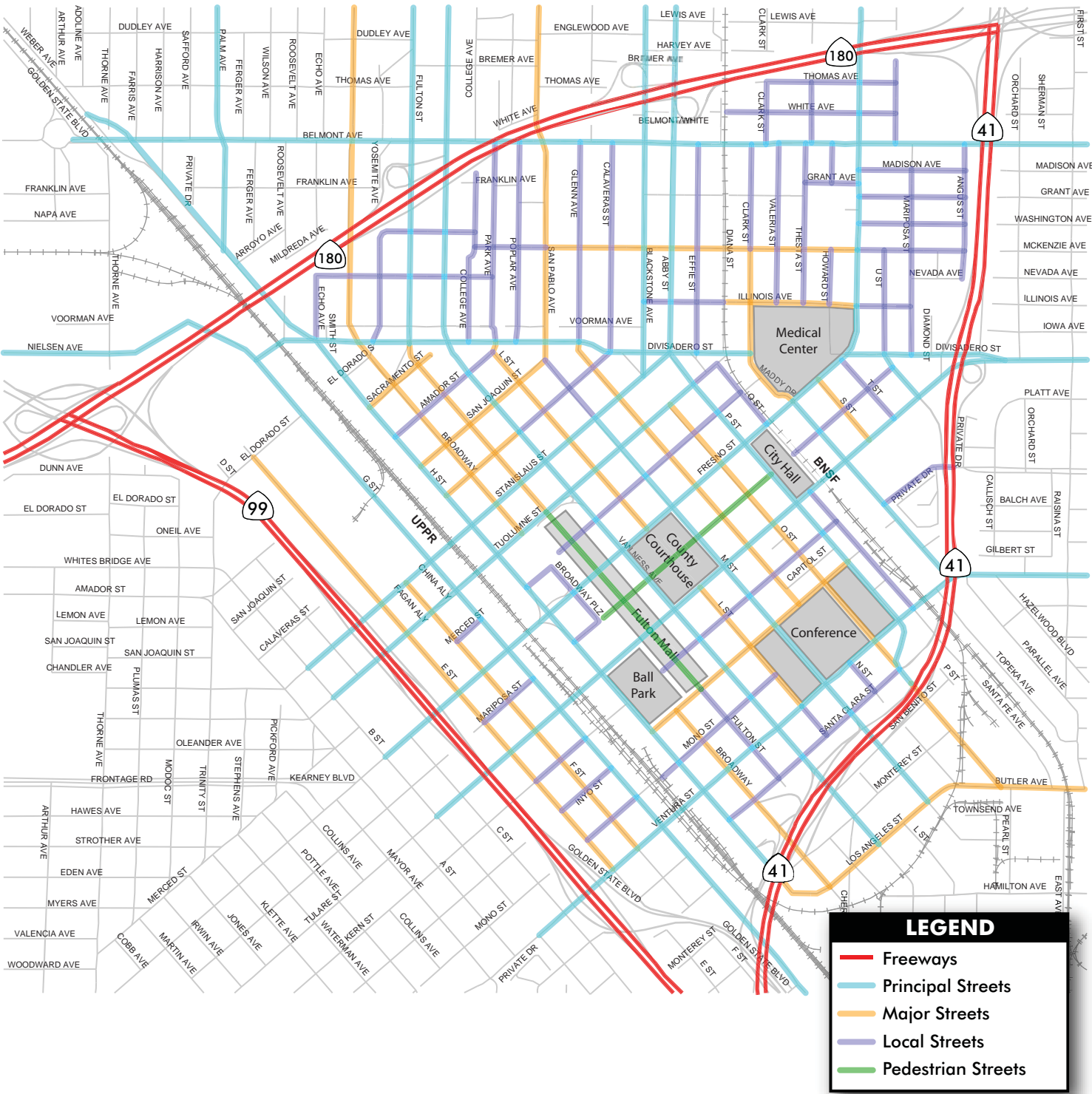
- Fulton Street is not a critical component of the traffic and transit circulation network in downtown; therefore, transportation should not drive decisions on the future of the Mall. Economic development opportunities and cultural factors should be the principal determinants along the Mall.
- Efforts are needed immediately to upgrade the Mall environment. These efforts include freshening of the streetscape and urban design, upgrading wayfinding, improving lighting, providing attractive and convenient public restrooms, and installing public art or other elements of interest into vacant storefronts.
- Event scheduling on the Mall should be strengthened.
- Visibility of the Mall from major traffic cross streets (Tuolumne, Fresno, Tulare and Inyo) should be emphasized. This could include sidewalk bulbouts, banners and/or marquee features.
- Major ‘critical mass’ project developers should be advised that the city is open to development proposals that may include changes to use and configuration of the Mall which are consistent with the general vision set forth for downtown in the Central Community Area Plan. This partnering flexibility should include openness regarding the use of historic buildings and the transportation network. This flexibility should not commit the city to undesirable compromises, but should form the start of discussions for the desired critical mass development which is needed to jump start revitalization of the Mall.

WAYFINDING

The lack of wayfinding in the downtown area is considered a major problem that deters people from coming downtown to patronize local businesses. A five element wayfinding plan is recommended consisting of:

1. Making the downtown simpler to understand;
2. Improving traffic and parking signage;
3. Improving transit signage;
4. Improving pedestrian signage; and
5. Improving signage for bicyclists.

FRESNO DOWNTOWN TRANSPORTATION PLAN



LEGEND

- Freeway
- Gateways
- Parking Belt
- Shuttle Route
- One-Way Streets



Figure ES-2
PERIMETER PARKING CONCEPT

CHAPTER 1 - INTRODUCTION

The Downtown Transportation & Infrastructure Study (DTIS) addresses a wide range of issues including: access and circulation demands, one-way versus two-way circulation, the Mall, integration of bus and other forms of transit, pedestrian and traffic calming, the supply location and policies for parking, wayfinding, railroad and freeway barriers, and integration of high speed rail. The Downtown Transportation & Infrastructure Plan must support desired economic and livability visions for Downtown. The DTIS addresses near-term (2010), long-term (2030), and a vision (2050) planning horizons.

From a holistic Downtown viewpoint, how do all the current recommendations fit together and how do they relate to the comprehensive vision for Downtown and the region? The intent of the DTIS is to build on prior planning efforts, particularly the 1989 Central Area Community Plan. DTIS's objective is to integrate and coordinate the prior planning efforts and outline a strategy to implement transportation improvements. It is a "fresh look" at recent planning studies, rather than a summary of prior work. As appropriate, new measures are defined by DTIS to update new issues and to complement other planned improvements.

This introductory chapter provides an overview of relevant plans for the downtown area, followed by a discussion of the forecast future access, circulation and mobility needs for downtown. It concludes with identification of key transportation planning issues.

Relevant plans for the downtown include:

- Adopted Central Area Community Plan;
- Making the Grass Greener;
- Central Area Urban Design Strategy;
- Downtown Vision, an Advisory Report of the Downtown Improvement Group;
- Urban Land Institute Service Panel report;
- Downtown Planning districts – "Vision 2010";
- Fulton Street Revitalization;
- Uptown Arts District – Master Plan Update;
- Report to the City Council and Agency Board;
- Growth Response Study by Fresno Council of Governments; and
- Destination Downtown.

Of these planning efforts, the Central Area Community Plan provides the broadest and also an adopted policy for downtown.

CENTRAL AREA COMMUNITY PLAN

The most comprehensive plan for the downtown area is the Central Area Community Plan which was adopted by the City in 1989. This Plan consisted of a Concept Plan, 12 subject elements and a discussion of three special issues. The Plan elements and special issue discussions were as follows:

Plan Elements

- Land Use
- Residential
- Commercial
- Infrastructure
- Historic Preservation
- Culture and Entertainment

- Government Facilities
- Industrial
- Transportation, Circulation and Parking
- Public Safety
- Urban Design
- Economic Development and Marketing

Special Issues

- Homeless-Special
- Signs-Special
- Fulton Mall Special

Key Land Use and Economic Recommendations

- The Heart of the Central Valley - Call for Downtown to be the commercial and retail district for the six county trade area
- Competing mid-rise buildings outside of downtown has reduced Fresno's competitive advantage.
- "There is a direct correlation between the explosion of fringe area development and the Central Area's growing problems. The statistics of overbuilding the suburbs and loss of markets in the Central Area and other parts of the City support it. Unless a clear edge is firmly established for what will constitute the extent of the City's geographic expansion over the next twenty years, and unless the City's adopted plans are followed with some measure of consistency, there appears to be little basis for actually reestablishing the economic vitality, strength and property functions of the Central Area."
- Cultural, historic, and government center
- "A clustering-tendency is promoted with the Plan's District approach. It is expected that the Central Area will embody a whole series of images and functions that will accommodate a very broad range of markets, lifestyles, and purposes. The residential districts should be urban villages clustered around open space amenities and located in proximity to Central Area employment and cultural centers. The commercial, civic, and culturally-oriented districts should offer a variety of services within, or in close proximity to the retail, office, or activity centers in each district.
- "A well-defined major street system is intended to move goods and people to and from each of the Districts and the freeway loop system encircling the area."
- Protect convention center by restricting development of convention facilities outside of downtown
- Develop central area mixed-use zone
- Strengthen City's plans and policies to redirect and bring balance to suburban growth that will be supportive of Central Area revitalization.








Review of this Plan by the DTIS consultant team and the TAC found the Central Area Community Plan continues to provide a strong framework for future planning.

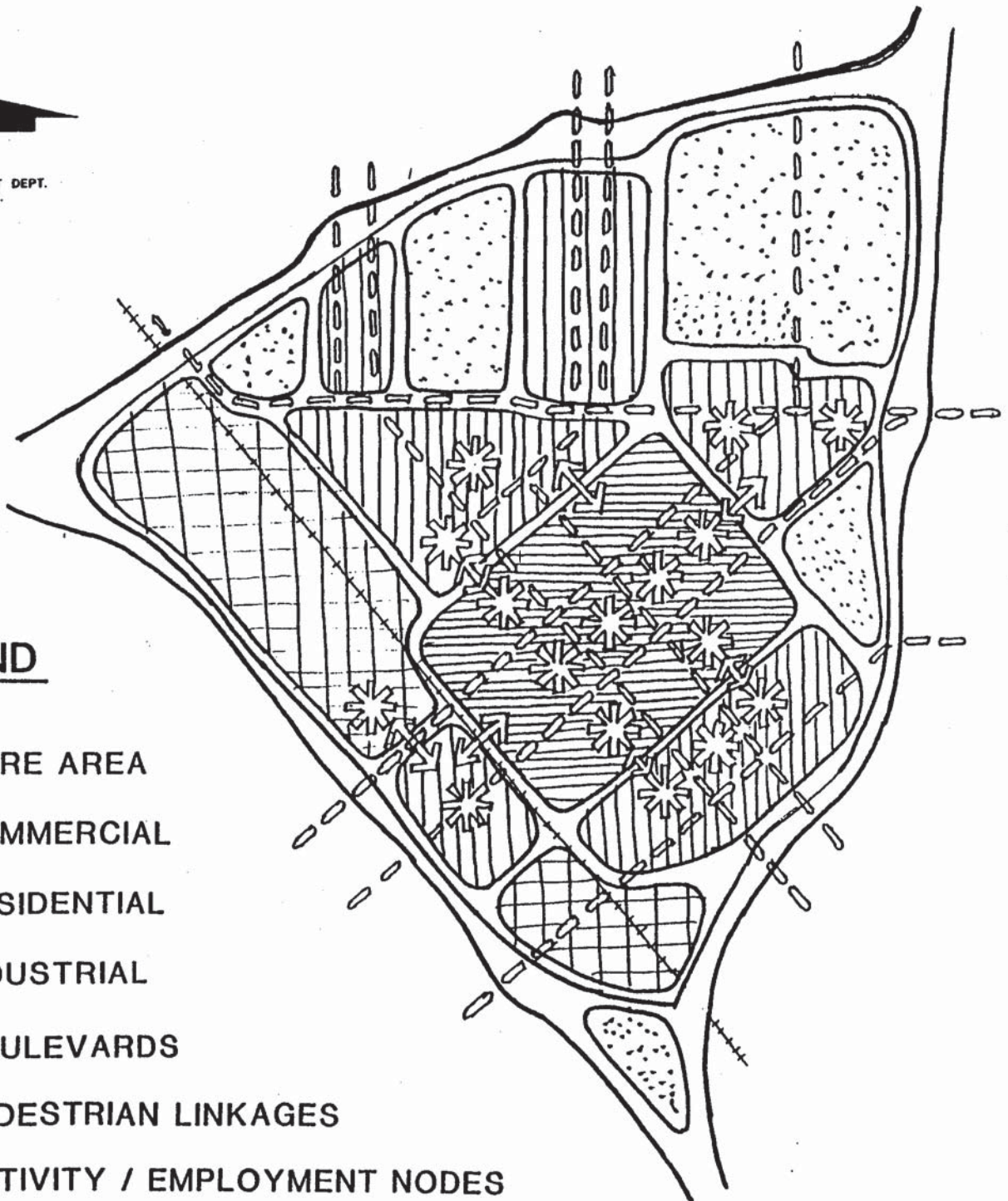
Figure 1-1 illustrates the land use concept for the downtown area. It describes a series of sub districts within the Central Area that are intended to establish an identity for the district which is both specific to the particular district and cumulative for the Central Area as a whole. The definition of districts boundaries is based upon transportation and pedestrian systems that create both linkages to interconnect activity centers and a synergistic energy for the Central Area's revitalization. The concept plan envisions a core area, roughly bounded by the UPRR tracks, Inyo, the BNSF tracks and Tuolumne Street. The Concept Plan shows a boulevard (Divisadero Street) passing through the medical center commercial district.



FRESNO
DEVELOPMENT DEPT.
PLANNING DIV.

LEGEND

-  CORE AREA
-  COMMERCIAL
-  RESIDENTIAL
-  INDUSTRIAL
-  BOULEVARDS
-  PEDESTRIAN LINKAGES
-  ACTIVITY / EMPLOYMENT NODES



Source: Central Area Community Plan

The idea of pedestrian based districts is very important to the design of an effective multimodal transportation system, as well as providing many other livability benefits. Viable walking distances are keys to the design of pedestrian systems, transit routings, and parking strategies. People are willing to walk two city blocks for most trips, three for other trips, but rarely more than six city blocks. It should be noted that short block lengths tend to increase the proportion of trips that are made on foot. The Core Area is approximately six blocks between Inyo Street and Tuolumne Street and ten blocks between the UPRR tracks and the BNSF tracks. It is generally a walkable distance. The entire Central Area between SR-41 and SR-180 along H Street is about 20 city blocks in length. Few people would walk this distance.

The land use element does recognize the benefits of mixed uses within each of the districts, but it is not specific in terms of residential neighborhood retail center locations, nor does it detail how grocery stores, active parks and schools fit into the downtown land use plan. All of these uses are important in the downtown to maximize pedestrian trips and the overall livability benefits of living, working and shopping downtown. For example, a grocery store typically needs about 6,000 residents to support it.

Transportation, Circulation and Parking Goals

The Central Area Community Plan defined a set of goals, policies and implementation actions for transportation. The goals are broad statements of philosophy that describe the hopes of the people and establish direction in the long term. Policies provide the basis for the consistent action directed toward achieving the goals. Implementation actions are ideas about how to create discrete projects and to carry-out the policies. The Transportation Goal is to “provide a balanced, effective, comprehensive transportation system to accommodate growth and enhance the vitality and livability of the Central Area”. Policies and implementation actions for the transportation element from the Central Area Community Plan are as follows.

Policy 1 - Identify, maintain, and improve major “gateway” routes and intersections which serve the Central Area from local, regional and state transportation systems.

Implementation Actions

1. Provide functional and aesthetic development standards which clearly identify major “gateway” routes and intersections.
2. Improve “gateway” routes and intersections.

Policy 2 - Enhance access to specific activity centers through a variety of transportation modes and facilities.

Implementation Actions

1. Develop a circulation system that links major activity centers to minimize traffic confusion and facilitate traffic flow. A cross-town transportation link should be developed to connect the Santa Fe corridor, Civic Center Square, the south end of the Fulton Mall District, and Chinatown, with a priority for utilizing the Kern corridor.
2. Develop and install unique signage that is effective and attractive.
3. Reevaluate the one-way street system within the Central Area to better facilitate access between activity centers.
4. Identify the parking demands of major activity centers within the Central Area and develop a convenient comprehensive program to accommodate these demands.
5. Establish pedestrian access routes to and between activity centers which promote pedestrian usage by providing a safe and aesthetically pleasing environment.
6. Develop an alternative mass transit system which can effectively link the activity centers, such as a shuttle system.

Policy 3 - Establish a comprehensive transportation system which interconnects major activity districts within the Central Area to other activity areas in the City such as the Fresno Air Terminal, California State University Fresno, Fresno City College and Roeding Park and which places a higher priority upon development opportunities and the pedestrian environment than upon optimizing the vehicular capacity of the major street system.

Implementation Actions

1. Develop a transportation plan that will balance out the traffic-carrying needs of the Central Area land uses with the needs for an enhanced pedestrian and visual environment. The transportation plan should identify route alternatives, major activity centers, and appropriate design standards. Public Works standards for dimensional cross-sections of major and local street rights-of-way should be reevaluated to reflect a greater emphasis upon the pedestrian and visual environment. All proposed street widenings should be reevaluated.
2. Change the classification of Belmont Avenue, Fresno Street from Freeway 99 to Broadway, Ventura Street and Blackstone and Abby Streets within the Central Area, from Arterials to Collectors
3. Conduct a market survey (study) to determine system feasibility and rider demands.
4. Identify financial alternatives and funding sources
5. Develop a multi-modal transportation center in the Central Area.

Policy 4 - Develop “on” and “off” street parking which is adequate, safe and convenient to accommodate the requirements of the activity centers.

Implementation Actions

1. Establish a Comprehensive Master Parking Plan and Management Program
2. Consolidate the Central Area into one parking district.
3. Encourage development of a comprehensive program to operate public and private parking facilities which provide a safe and secure environment.
4. Provide incentives to encourage creative alternatives to parking problems (e.g. paying employees not to drive).
5. Encourage development of structures which integrate parking with other uses, such as commercial uses at street level.
6. Encourage development of new parking structures, where appropriate, to meet the changing needs of the Central Area.
7. Develop standards to allow for less costly development of temporary (with time certain) surface parking on underutilized or undeveloped properties.

Policy 5 - Provide a comprehensive pedestrian system for the Central Area that provides visual and physical amenities to link activity centers and districts.

Implementation Actions

1. Develop a conceptual pedestrian system in accordance with the standards in the Urban Design Element that provides full pedestrian amenities.
2. Provide for different levels of pedestrian space including broad sidewalks, pedestrian malls, through block passage ways, jogging paths, and mixed pedestrian/vehicular streets.
3. Establish programs to monitor new developments in the Central Area to integrate pedestrian needs and provide appropriate improvements.

Policy 6 - Provide a comprehensive bikeway system to link activity centers and districts.

Implementation Actions

1. Formulate development standards which provide a bikeway system with good physical and visual amenities and various levels of design
2. Provide secure bicycle parking and storage in conjunction with public and private developments and in proximity to major activity centers.
3. Consider development of bicycle routes in conjunction with existing public and private transportation right-of-ways.
4. Develop a bicycle route system in the Central Area which links major activity centers, including residential, office, and commercial areas.

Transportation Planning Implication on Land Use

Convenient multimodal access and circulation is critical for economic success. The most efficient means of transportation is the pedestrian mode. In order to maximize pedestrian travel it is important that activity centers are located in close proximity. The more dispersed activity centers become in the Central Area, the lower the proportion of trips that will be made on foot. Shorter block lengths and short traffic signal cycles will also tend to increase pedestrian travel.

UPRR and BNSF trains are required to sound their horns at at-grade pedestrian and traffic crossings. The Central Area is impacted by two very busy rail corridors with more than 60 trains a day sounding their horns as they pass through the area. This noise is detrimental to viable residential, hotel, medical and most other land uses. Noise is an important transportation/land use issue.

Land Use and Economic Clarifications

Land use is the most important determinant of transportation needs. The 1989 Central Area Community Plan's land use element appears to be consistent with a livable transportation system. Among the land use and development questions raised by the consultant team during the review of current plans are:

1. To what extent are the eight redevelopment districts in the Central Area cooperating versus competing for development? (Figure 1-2)
2. To what extent does the desire to preserve all of the historic buildings in the core area discourage revitalization of the area and push development to the perimeter?
3. Might it be better to focus night time entertainment near the ballpark, rather than disperse it?
4. Should more of the development be concentrated near the Fulton Mall, rather than spread throughout the Central Area?
5. In today's marketplace, can the downtown really function as the retail center for the six-county trade area?
6. Should the near-term redevelopment efforts focus around the Fulton Mall?
7. Should each of the residential districts in the downtown have a designated neighborhood retail center?

These are not transportation issues, but they impact the definition of the best strategy for implementing transportation improvements.

The substantial growth that is projected for the Region and for the downtown represents opportunities more than challenges. It is likely that much of this growth will continue to be Hispanic and seniors. The Hispanic population growth will include an increasing number of second and third generation families with higher disposable incomes. The pedestrian nature of downtown with its higher intensity transit services should be attractive to those seniors desiring mobility, but not wanting to drive. Land use (grocery stores, active public playgrounds etc.) along with urban design treatments downtown could help to attract these growing markets.

Compromises to the Circulation Plan Element

Plans are flexible documents and often bend to meet manifesting development and community benefit opportunities. Since the adoption of the Central Area Community Plan, a number of compromises have been made to the Central Area Community Plan's Circulation Element. Most of these compromises have been elimination of street linkages. The envisioned roles for Divisadero Street and Broadway have largely been lost and have compromised the integrity and simplicity of the envisioned network.

NOTE:

Certain areas within the Central Area are subject to additional rules, codes, ordinances, specific land use, zoning, historic, and other development guidelines. The applicable specific or redevelopment plan should be consulted for further details in regard to the following areas:

- The Fulton-Fan Mesa Corridor between Freeway 180 and Yosemite Avenue is located within the Tower District Specific Plan.
- The area generally west of the 39th and north of Tulare Street is located within the Fresno-Chandler-Servicos Area Specific Plan's Northeastal Surface.
- There are 8 Redevelopment Plans in the Central Area (see Redevelopment Plan Location map, Exhibit No. 2).

LEGEND

- | | |
|-----------|------------------------------|
| | RESIDENTIAL |
| | COMMERCIAL |
| | COMMERCIAL MIXED USE LEVEL 1 |
| | COMMERCIAL MIXED USE LEVEL 2 |
| | COMMERCIAL / INDUSTRIAL |
| | CIVIC CENTER |
| | OPEN SPACE |
| C | CONVENTION CENTER |
| M | MUNICIPAL SERVICE CENTER |
| S | SCHOOL |
| CH | COURT HOUSE |
| H | HOSPITAL |

Central Area

**Proposed
LAND USE**



FRESNO
DEVELOPMENT DEPT.
PLANNING DIV.

Figure 1-2: Central Area Proposed Land Use

Source: City of Fresno, *Central Area Community Plan*, 1989

OTHER REPORTS

A number of other planning efforts have also addressed Downtown Fresno's transportation, land use and economic development issues and options. A brief overview of these reports is presented in this section. The overview does not capture all of the findings from these studies, but does attempt to reflect their spirit and content.

Making the Grass Greener (2006)

- Attraction for “knowledge workers”
- Create and promote a vibrant and livable Downtown
- Create walkable neighborhoods
- Improve Downtown streetscape and lighting
- Establish clear priorities for the Redevelopment Agency
- Establish a “pub crawl” like Santa Barbara’s State Street or San Diego’s Gaslamp districts
- Development should work around existing historic buildings
- Upgrade H street into a major thoroughfare

Central Area Urban Design Strategy (1992)

- 1,300 acres of land
- Regional center of the San Joaquin Valley
- Preservation of historic character that separates its from surrounding modern suburbia
- Mix of uses
- “Be Fresno”
- “Think smaller”
- Campus environment with good pedestrian connections
- Continue farmers market
- Relax zoning constraints near the Fulton Mall to create a vibrant eclectic of uses
- Super blocks
- Downtown education college district... “Contact has been made with the San Joaquin College of Law, California School of Professional Psychology, California State University, Fresno, Fresno Unified School District and Fresno County schools. All of these have shown interest in locating all or some of their facilities downtown within the Campus district.
- Make the mall shorter, shopping malls are generally 1,200 linear feet
- “... the mall would be enhanced by accentuating its appeal to the ethnic groups currently utilizing the mall, namely Hispanics.”
- Create visitor center
- Calls for two-way traffic

Downtown Vision, an Advisory Report submitted by the Infrastructure Committee (ICom) of the Downtown Improvement Group (2003)

- Perceptions indicate that public parking is inadequate and difficult to locate, public transportation is inadequate, streets are confusing, crime is high
- Create distinct districts connected by a traffic circulation loop, new shuttle system, pedestrian pathway

ULI Advisory Services Panel Report (1999)

- Issues include neglected rail corridors, crime, deteriorate physical conditions, single-purpose urban renewal projects, disconnected open space system, poor signage and lighting, vacant properties
- Lack of coordination
- Develop a clear, compelling, and overreaching vision linking Fresno's four main downtown nodes
- Restore part of the street grid, update street furniture
- Introduce more housing choices, (live/work, mixed-income)
- Improve connections, prioritize
- Create landmarks that would personify Fresno and its rich agricultural history
- Allow for merchants on the Fulton Mall, create public entertainment areas, eliminate raised seating areas, remove the clock tower
- Argue for two-way streets
- Prevent enclaves that block the buildings from the street
- Focus on an area
- Relocate the farmers market to the Fulton Mall, add events
- Focus restaurants on the south end...provide restaurant incentives
- Develop a retail incubator
- Create a PBID
- Re-do the INS building so that people don't have to wait outside
- Build kiosk
- 24 hour a day activity
- Historic re-use
- Make strategic alliances that use the Regional Medical Center as a catalyst for other medical related businesses.
- Don't add to the convention center considering the gaps

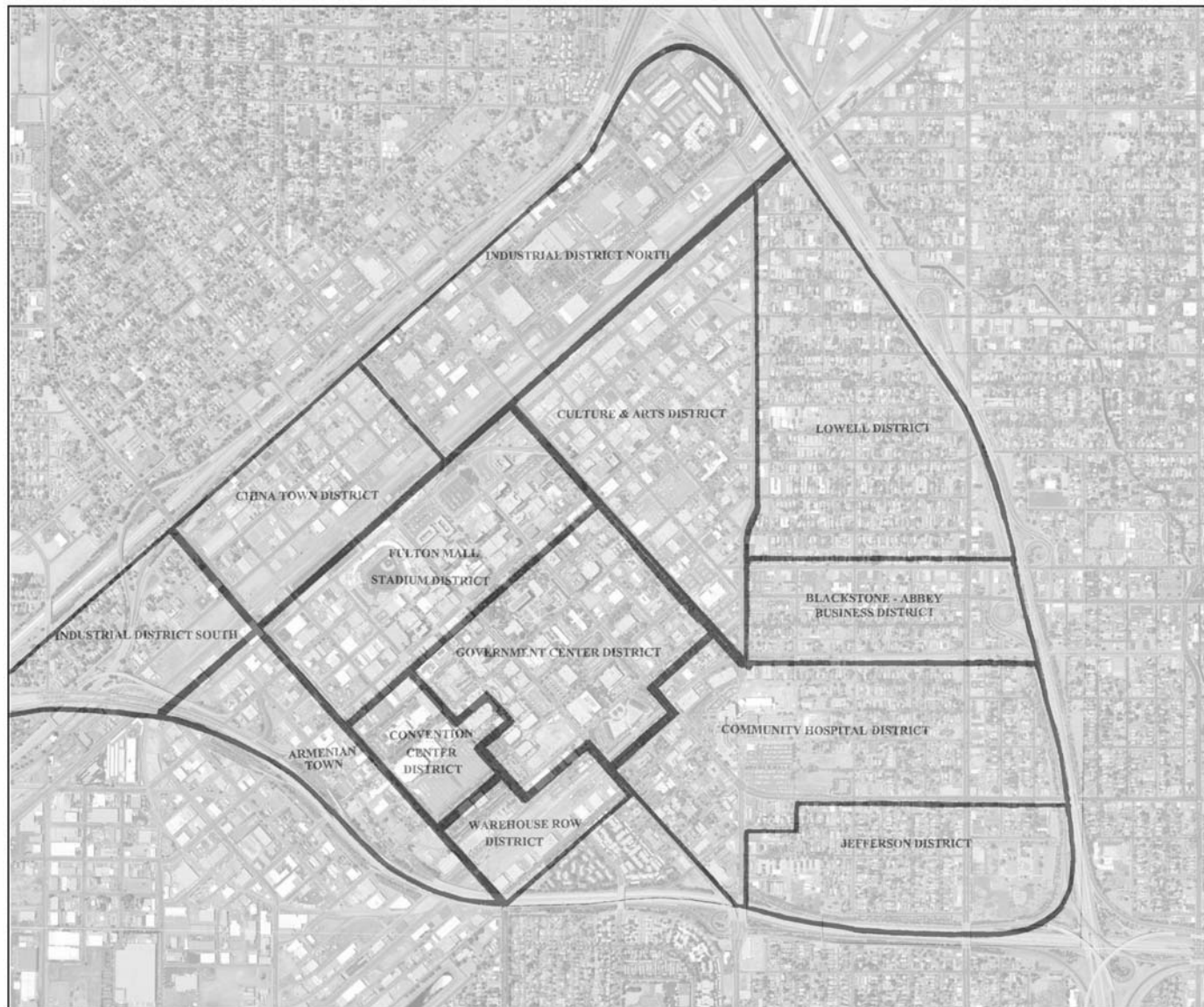
Downtown Planning Districts - "Vision 2010" (2003) (Figure 1-3)

- Follow-up of ULI plan that says "Just Do It"
- Convention Center, 80,000 sq. ft. CCSI office building on Tulare Street
- 385,000 sq. ft. Federal Courthouse
- Community Medical Center, UCSF Medical Education Research Center, Magnet School, and private medical offices

- Uptown – blight removal, streetscape improvements, parking, infill housing, and expansion for the museums
- Wyndham Hotel and convention center
- Chinatown streetscape improvements
- Armenian Town – Chamalian Office building, gateways
- Santa Fe Promenade and Depot Projects
- Festival and farmers market
- Riverwalk and lake project
- Downtown traffic loop concept
- Better use of H Street

Fulton Street Revitalization (2006)

- Destination tenants are required to support the stadium anchor and an entertainment anchor
- Develop a “story”
- Revise traffic patterns
- Parking must be signed
- Support new mixed use development
- Create farmers market
- Create central civic gather space
- Feature public art
- Concentrate commercial uses between Fresno and Inyo
- Rebuild street network at Merced and Kern streets
- Develop a pedestrian promenade on Mariposa
- Add water features
- A 10 mile radius shows lower incomes but a larger market area shows sufficient capacity for retail demand as a destination retail location
- Stretches too long
- Should be three separate areas, shopping and entertainment to the south towards the stadium, assemble lands to the north for greater development
- Urban office park to the north, a mixed-use center, and an ethnic marketplace
- Three themes – Northern Segment as government center, residential use, with large blocks; Middle Segment as civic gathering place, for retail expansion, replacement of large clock tower; and Southern Segment as dining and entertainment with improved connections to the stadium



Uptown Arts District - Master Plan Update (2000)

- Talks about a lot of facility expansions from African American Museum, Arts Americas, Cornerstone Church, Historical Museum, Metropolitan Museum, Warnor Theater, Valley Public Television
- Calls for streetscape improvements
- Land acquisition to consolidate parking
- Mixed-use development area at Calaveras and Fulton
- Historic preservation block where buildings are relocated – action step
- District Gateways
- Art Plaza/Bus Drop-off
- Pocket parks
- Farmers market locate contradicts with Fulton Mall concept
- Two-way traffic

Report to the City Council and Agency Board, (2002)

- ELS recommends reopening Fulton Street
- North governmental and housing campus
- Middle farmers market and public gathering

Growth Response Study from Fresno Council of Governments

- Overall interest to promote smart growth and encourage development around existing infrastructure
- Early phases of work have focused on travel demand forecasting, rather than land use and transportation investment decision-making
- Tested two regional alternatives - one of which represented high density infill development in the Downtown and Blackstone Corridor

Destination Downtown (2001) - (Figure 1-4)

- Federal Courthouse-Civic Center Square: P Street, Inyo Street, M Street and Tulare Street
- Grizzly Stadium
- Community Medical Center/UCSF Medical Education Center/Magnet School Fresno Unified School District
- Uptown Streetscape Project
- Downtown Hotel
- Chinatown
- Armenian Town and Chamlian Office Complex
- Santa Fe Depot Renovation
- The Tower at Convention Center Court
- Guarantee Building
- IRS Compliance Center Building
- South Stadium Project
- Eaton Plaza – Water Tower (Mariposa Mall N to O Streets)



FUTURE ACCESS AND CIRCULATION NEEDS

The Council of Fresno County Governments (COFCG) has developed forecast travel demands for the Year 2030 based on planned land use changes and extrapolation of current travel relationships to these planned land uses. The model produces forecasts of the number of vehicle trips generated, the distribution of these trips between areas of the city and an assignment of the vehicle trips to the road network based on shortest path of travel. The assignment considers capacity limitations on the road network. Like most travel models its forecasts are very dependent on fixed land use inputs and it generalizes trip generation and distribution features for given land use types. As shown in Figure 1-5, the amount of vehicle miles of travel per household ranges considerable. Vehicle miles of travel is simply the number of trips times the average length of trip. It is the principal determinant of congestion. Households in more densely developed areas produce substantially less congestion causing fewer vehicle miles of travel (VMT). These higher density residential areas tend to have more walk, bike and transit trips. The trip lengths for these households also tend to be shorter, since more destinations tend to be located nearby. Simplistically, four units per acre of residential development results in nearly twice the VMT (congestion) per residence as 20 units per acre of residential density.

Downtown Growth Relative to the COFCG Region.

The regional traffic model's forecast of future traffic is based on assumptions about how much development occurs and the locations where this growth is anticipated. Thus the traffic forecasts are a reflection of how the region sees its growth occurring moreover than where it wants the growth to occur. As shown in Figure 1-6, the total number of trips in the region is projected to increase 63.1 percent between 2006 and 2030. The proportion of total regional trips with either an origin or destination downtown is projected to increase only 47.2 percent and the number of trips with both origin and destination downtown (internal downtown trips) are projected to decline as a percentage of total local trips by 10.7 percent. In essence, the land use and associated traffic projections of the regional traffic model see downtown becoming less important in 2030. Furthermore the proportion of local trips made within downtown to the total number of regional trips is projected to decrease. Table 1-1 does show that the magnitude of local downtown trips and also of to/from downtown actually increase, just not at the same rate as the regional growth. In summary, the land use plans for the region as reflected by the model are not supportive of a "smart growth" oriented downtown centered regional economy.

Table 1-1: Projection of Downtown Person Trips

Travel Market	2006	2030	% Change
Total Regional Generation	10,671,144	17,404,200	63.1 %
Total Downtown Generation	596,508	878,064	47.2 %
Trips Entering and Leaving	270,336	436,524	61.5%
Trips Internal to Downtown	163,086	220,770	35.4 %
% Internal Downtown Trips	37.6 %	33.6 %	-10.7%

Figure 1-5: Relationship of Residential Density to Automobile Use

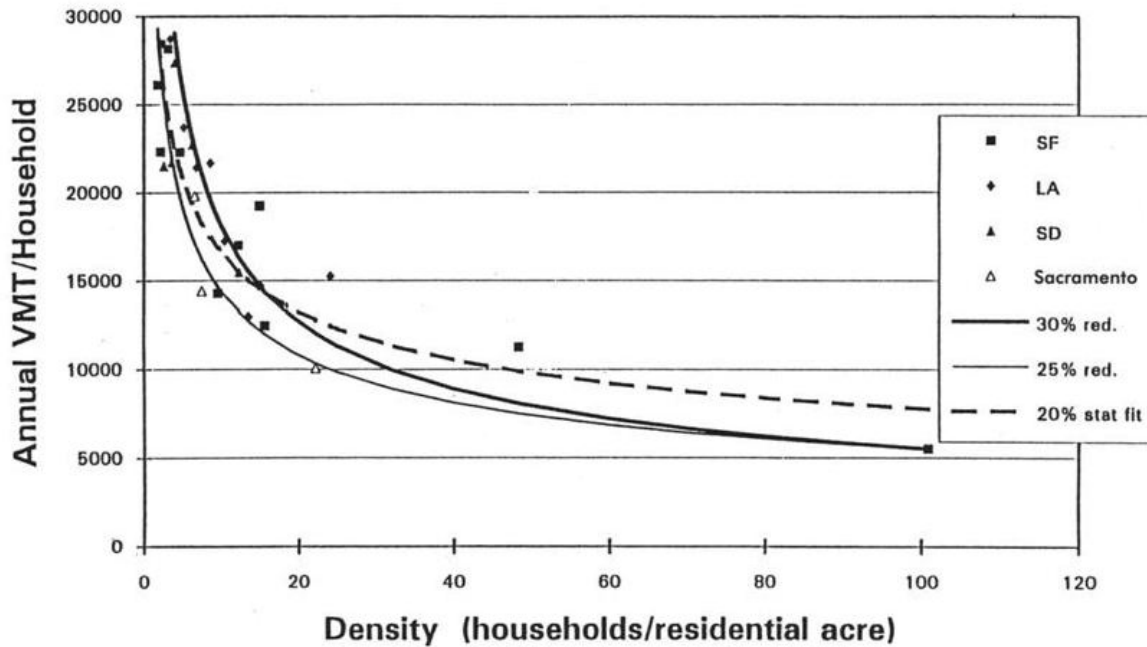
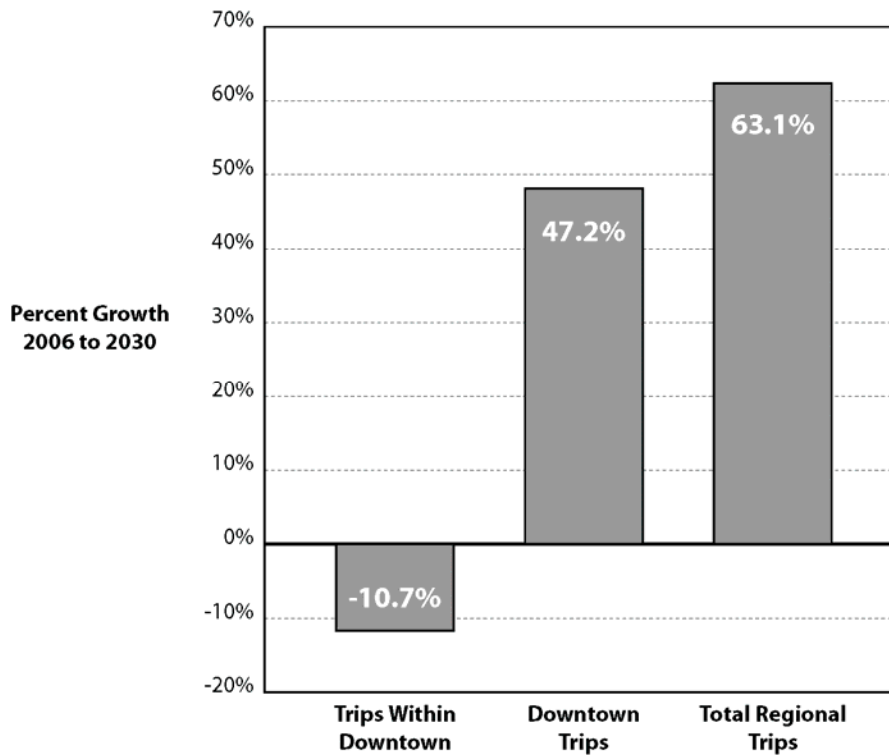


Figure 1-6: Forecast Travel Market Change 2006 - 2030



Distribution of Downtown Access Demands

As shown in Figure 1-7, the largest volume of daily traffic enters and leaves the downtown from the SR-41 side of town, but its growth is projected to be less than from the north and from across SR-99. Nearly 50 percent growth from the SR-41 corridor gateway into downtown suggests potential congestion problems at these interchanges in future years.

Modes of Access to Downtown

The number of trips to, from and within downtown and the modes used to complete these trips will depend largely on land use and transportation policies. Based on current land use plans for the region and downtown, we are recommending a set of transportation mode share policy targets for to guide the development of the downtown transportation plan. The mode share targets for non-car use that are shown in Table 1-2 and Figure 1-8 are intended to be aggressive, but realistic. Even these targets fail to keep vehicle downtown trips from increasing 44 percent by 2030 and 75 percent by 2050. Without the more aggressive transportation demand policies that are suggested in Table 1-2, vehicle traffic would increase two-fold by 2050 (about 100,000 more daily car trips).

Figure 1-7: Projected Daily Traffic Volume Growth 2006 - 2030

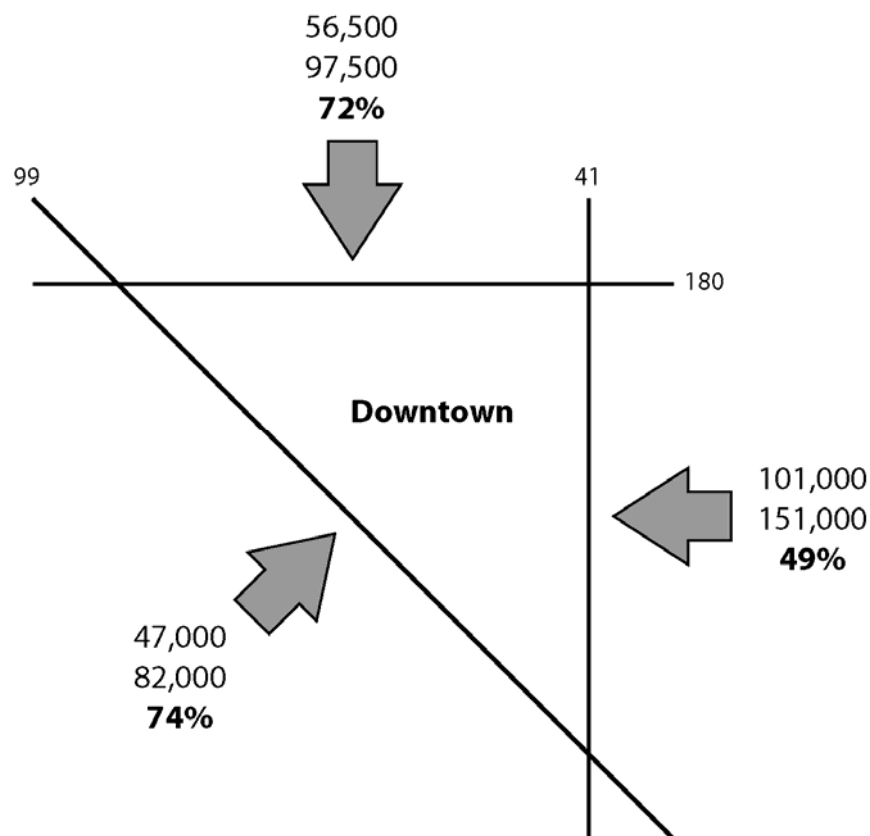
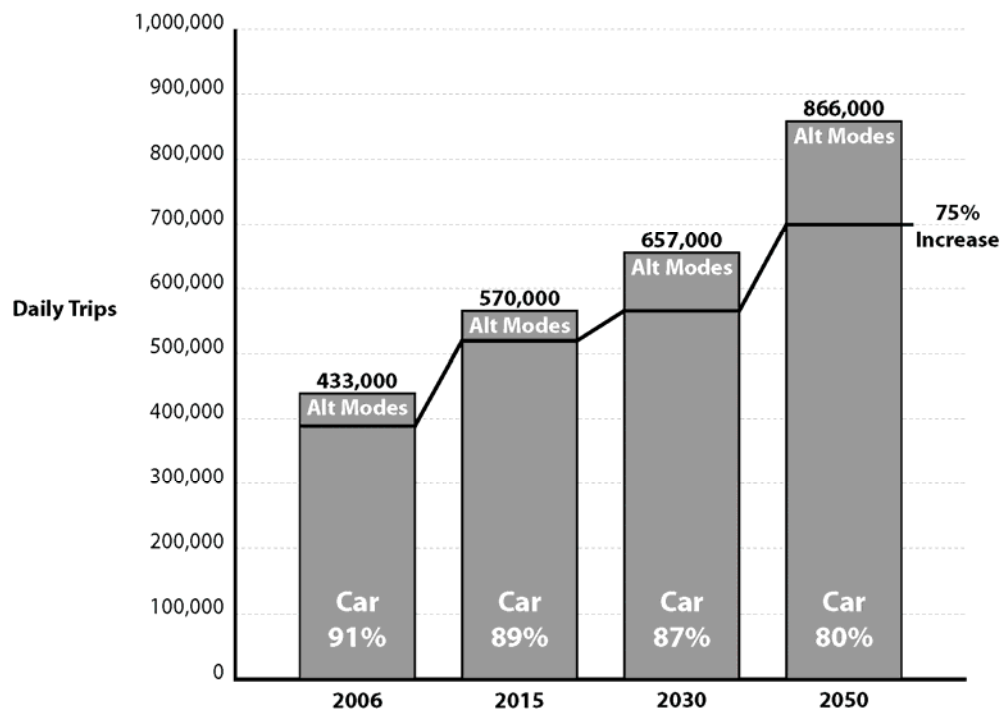


Table 1-2: Target Mode Shares by Trip Location

	2006		2030		2050	
	Daily Trips	Mode Split	Daily Trips	Mode Split	Daily Trips	Mode Split
Internal Trips						
Car	148,330	91%	185,472	84%	231,460	71%
Transit	3,260	2%	6,624	3%	19,560	6%
Bike	3,260	2%	8,832	4%	9,560	6%
Walk	8,150	5%	19,872	9%	55,420	17%
Total	163,000	100%	220,800	100%	326,000	100%
External Trips						
Car	245,700	91%	383,680	88%	459,000	85%
Transit	13,500	5%	30,520	7%	48,600	9%
Bike	5,400	2%	13,080	3%	21,600	4%
Walk	5,400	2%	8,720	2%	10,800	2%
Total	270,000	100%	436,000	100%	540,000	100%
Total Trips						
Car	394,030	91%	569,152	87%	690,460	80%
Transit	16,760	4%	37,144	6%	68,160	8%
Bike	8,660	2%	21,912	3%	41,160	5%
Walk	13,550	3%	28,592	4%	66,220	8%
Total	433,000	100%	656,800	100%	866,000	100%

Figure 1-8: Forecast Increase in Car Trips Downtown



Recommended travel mode targets for the downtown are designed to reduce the percentage of trips by car from its current 91 percent to 87 percent by 2030 and to 80 percent by 2050, resulting in a reduction of almost 100,000 daily vehicle trips downtown in 2050. Daily mode targets are as follows:

- Car (currently 91%) – 80% by 2050
- Transit (currently 4%) – 8% by 2050
- Bike (currently 2%) – 5% by 2050
- Walk (currently 3%) – 7% by 2050

Interim travel mode targets for 2030 are recommended as follows:

- Car 87%
- Transit 6%
- Bike 3%
- Walk 4%

Without sufficient time for land use changes to occur it will be difficult to substantially increase walking and bicycling percentages and this is the reason that the interim targets for these modes are relatively modest. Walking in particular requires increase densities and more synergistic land use development patterns to capture higher percentages of trips.

RECOMMENDATIONS

Downtown is located at the heart of the region's transportation network – both highway and transit. Recent growth/development patterns and projected growth patterns, however, are oriented to the periphery of the region. At some point in the future, regional congestion could point toward a more intense use of downtown and a stronger role in the region. Achievement of the Central Area Community Plan's vision will require stronger land use policies to become reality. The downtown transportation system needs to anticipate and accommodate the desired downtown growth. With the exception of the Fulton Mall, most of the more recent plans within the downtown area are consistent with and complementary to the Central Area Community Plan.

- 1-1 The Central Area Community Plan continues to be a good comprehensive plan for the downtown area. Compromises, however, have been made to the Plan's circulation network, which warrant remediation.
- 1-2 Achievement of the Plan's vision will require aggressive economic development measures to make it more attractive to developers and the marketplace versus fringe development in the region.
- 1-3 Jump starting the desired revitalization of the downtown will necessitate "critical mass" livable community type of development.
- 1-4 The Fulton Mall should be the heart of the downtown's retail and cultural activity and also its "soul".
- 1-5 Greater emphasis should be directed towards revitalization efforts at and around the Fulton Mall to achieve the vision of the Central Area Community Plan.
- 1-6 The recommended travel mode split targets for 2030 and 2050 should form the policy base for transportation planning for the downtown with an emphasis on reducing the auto mode share and increasing use of transit, pedestrians and bicycle modes.
- 1-7 A complementary set of travel mode targets should be established for the COFCG Region to help improve air quality and livability as well as to help minimize regional traffic congestion and impacts of single-occupant vehicles.

Key DTIS Issues

- **Transportation Management Strategic Policy** - What are and will be the demands for access to downtown by mode and if mode choice targets are desired what measures might be needed to achieve these targets? What targets are realistic and achievable?
- **Traffic Circulation** - What are the conceptual level alternatives to the current predominantly one way street system including the interface with the Fulton Mall?
- **Fulton Mall** - What are the alternative transportation uses of the Fulton Mall?
- **Transit** - What are the options for accommodating FAX bus services downtown? What is the functional need for a downtown transfer center and where should it be located? Possible high capacity and fixed guideway transit service options?
- **Parking** - How much parking is needed and what are the supply options (short and long term parking purposes)? Mix of public versus private supply? Shared versus exclusive facilities? Fringe intercept versus dispersed or core area?
- **Wayfinding** - What are the wayfinding strategies for multimodal patrons and how might the structure of downtown and its transportation system simplify wayfinding?
- **Pedestrian and Bicycle** - What are the pedestrian and bicycle network concepts and how would these integrate with traffic and transit network options?
- **High Speed Rail Station** - What are the alignment and station options for high speed rail service and how do these options relate to other modes? Might a “what if” approach to HSR make sense for Downtown?
- **Rail Consolidation** - What are the rail consolidation implications for Downtown?

REPORT ORGANIZATION

The report is organized as follows:

Chapter 2 – Railroad Element

Chapter 3 – Traffic Access and Circulation Element

Chapter 4 – Public Transit Element

Chapter 5 – Parking Element

Chapter 6 – Pedestrian Element

Chapter 7 – Bike Element

Chapter 8 – Fulton Mall Element

Chapter 9 – Wayfinding Element

The DTIS’s organizational structure by modal element is intended to facilitate the document’s eventual use. All of the modal elements are closely interwoven. The sequence of presentation also does not suggest a hierarchy of modes.

CHAPTER 2 - RAILROAD ELEMENT

There are two major railroad issues that have a major influence on downtown development and the downtown multimodal transportation network.

1. The Railroad Consolidation Plan which would move BNSF freight trains and Amtrak passenger trains onto the UPRR corridor through Downtown and free the BNSF right-of-way for other uses.
2. The California High Speed Rail (HSR) Plan which would establish high speed (200 mph) passenger rail service between Los Angeles and San Diego in Southern California and San Francisco, San Jose and Sacramento in Northern California.

The City of Fresno does not have control over decisions on either of these potential projects and neither is currently funded. Thus, both of these important projects are major unknowns at this point in time and both have huge implications on the downtown. For these reasons, railroad issues are addressed first in this report before other downtown transportation modes. It is unlikely that either of these two important rail projects will be completed for the near-term planning horizon (2010), but one or both could be in place by the mid-term (2030) or long-term (2050) planning horizon for the DTIS.

This chapter provides an overview of the current settings, issues and needs, and recommendations as it relates to the railroad condition in Downtown. Six critical aspects will be covered in these sections and include the following:

1. Rail consolidation issues;
2. High speed rail issues;
3. Future railroad scenarios;
4. Grade separation issues;
5. Railroad quiet zone issues; and
6. Passenger station location issues.

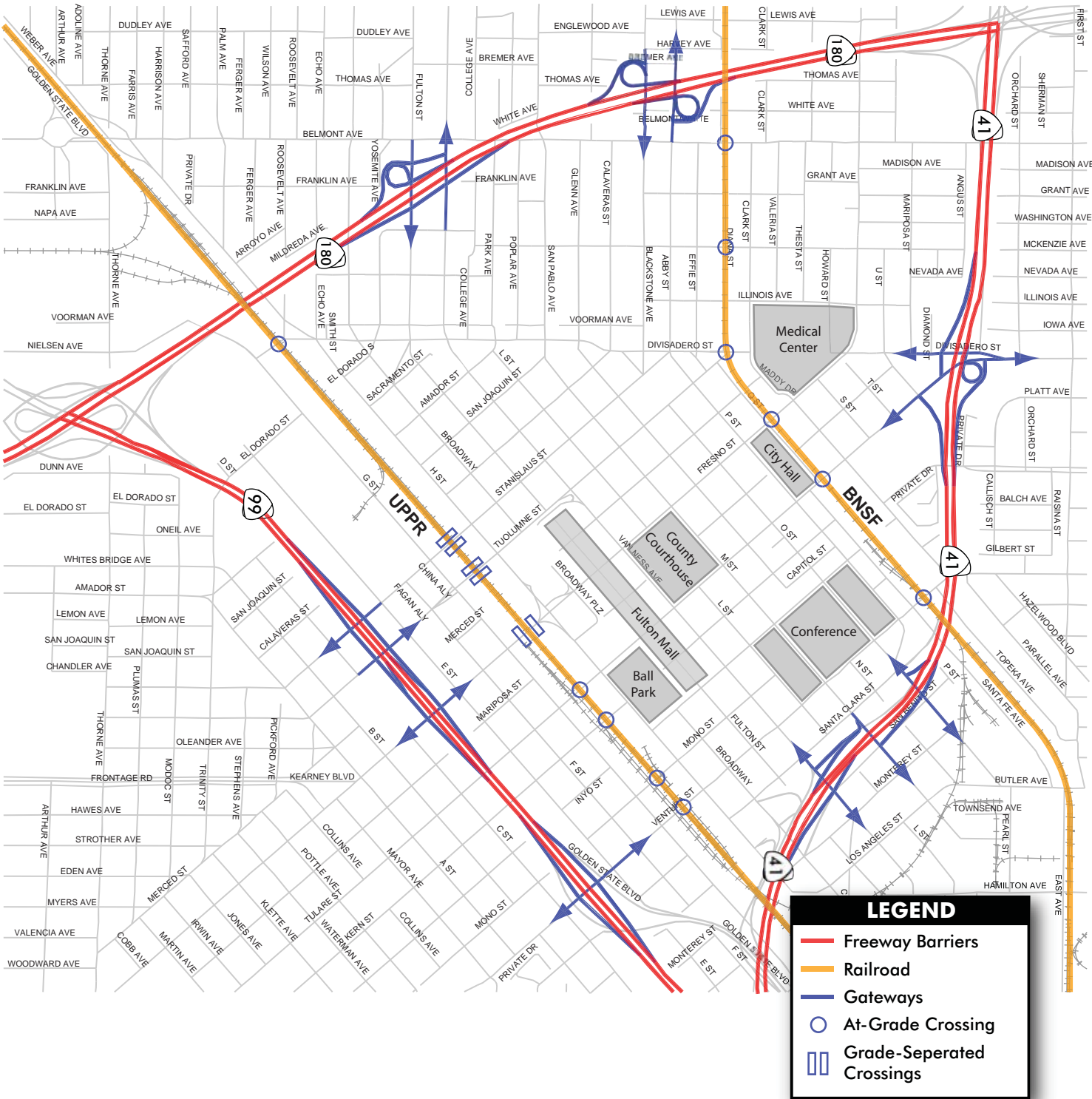
CURRENT SETTING

Today, trains operate through the downtown area along two different corridors, BNSF and UPRR. The BNSF is a single track facility that bisects the downtown. The UPRR is a double track facility which runs near the southeast edge of Downtown, largely paralleling Highway 99. Key features of each corridor are as follows: (See Figure 2-1)

BNSF Rail Corridor

1. 30 daily freight trains
2. 12 daily Amtrak trains serving 700 daily boardings and alightings
3. Six at-grade crossings Downtown
4. McKenzie Avenue and Belmont Avenue are the most dangerous
5. Noisy train horns
6. Freight customers are located just south of Downtown

FRESNO DOWNTOWN TRANSPORTATION PLAN



UPRR Rail Corridor

1. 20 daily freight trains
2. Five at-grade crossings
3. Two roadway over-crossings
4. One roadway under-crossing
5. Noisy train horns
6. Freight customers & track connections north and south of Downtown

The BNSF and UPRR railroad corridors that traverse Downtown allow for direct passenger rail service to the downtown core, but generally increase safety risks, delay traffic, increase noise and create barriers in the downtown. Resolution of these problems will require partnerships with the two railroads and with the California High Speed Rail Authority, which is planning for high speed passenger rail service to the downtown. Opportunities to eliminate at-grade street crossings and minimize noise impacts are discussed in this section.

ISSUES AND NEEDS

Rail Consolidation Issues

Rail lines through the Downtown, and elsewhere in the city, create a number of problems. The rail traffic results in traffic safety and traffic delay problems at street crossings as well as noise impacts. The traffic delays impact FAX bus schedule reliability as well as traffic. While there are rail freight customers along these lines in the city, few if any are located in the downtown area. To minimize traffic safety and delay concerns as well as noise concerns, the city has been planning the consolidation of BNSF and Amtrak trains onto the UPRR corridor. Approval by both railroads and assembling funding are essential to accomplish the desired consolidation. Unlike high speed rail, the freight consolidation effort will largely need to rely on local funding. It might be possible to piggyback the rail consolidation onto the high speed rail project, if the two projects are complementary. If they compete for the limited right-of-way within the UPRR corridor, high speed rail could not be expected to help fund the rail consolidation project. Key features of the consolidation plans as it relates to Downtown are:

- Divert BNSF and Amtrak trains to the UPRR corridor near Herndon and Calwa;
- Need third freight track and perhaps a fourth in UPRR right-of-way;
- Requires minimum of 100 feet of right-of-way for three/four track facility;
- 2001 cost estimates ranged from \$277 to \$319 million;
- Relocate Amtrak service & establish new station (probably need added station tracks);
- Grade separate Tulare Street (under), Ventura Street (over) and El Dorado Street (under);
- Ventura Street would become disconnected from G and H Streets; and
- Close crossings at G, Kern and Mono Streets.

The consolidation of trains onto the UPRR corridor would require grade separations of all of its traffic crossings. This would also eliminate the need for BNSF trains to sound horns passing through Downtown.

Both the BNSF and the UPRR want to traverse the downtown area as fast as possible with minimal at-grade crossings. They also have strong interest continuing to serve customers in the vicinity of Downtown and to make connections to their freight yards – Calwa for BNSF and UPRR (between Ashland and Clinton Streets).

Once rail traffic has been shifted away from the BNSF corridor to the UPRR corridor, opportunities arise for the reuse of the BNSF corridor, including a multi-use pedestrian and bicycle trail or a possible transit corridor.

High Speed Rail Issues

The California High Speed Rail Authority is moving forward with detailed preliminary engineering and environmental studies of the corridor through Fresno. The initial cost of building the California high speed rail system was \$34 billion. This cost today is probably more than \$60 billion. It will take time to complete the statewide system, but the high speed rail service would definitely benefit the city, especially if its preferred station site is located Downtown. These uncertainties are all very important for the future of Downtown. Completion of the high speed rail system would seem to be a key foundation for implementing the San Joaquin Valley Blueprint Plan. Key features of the current high speed rail plan are as follows (See Figure 2-2):

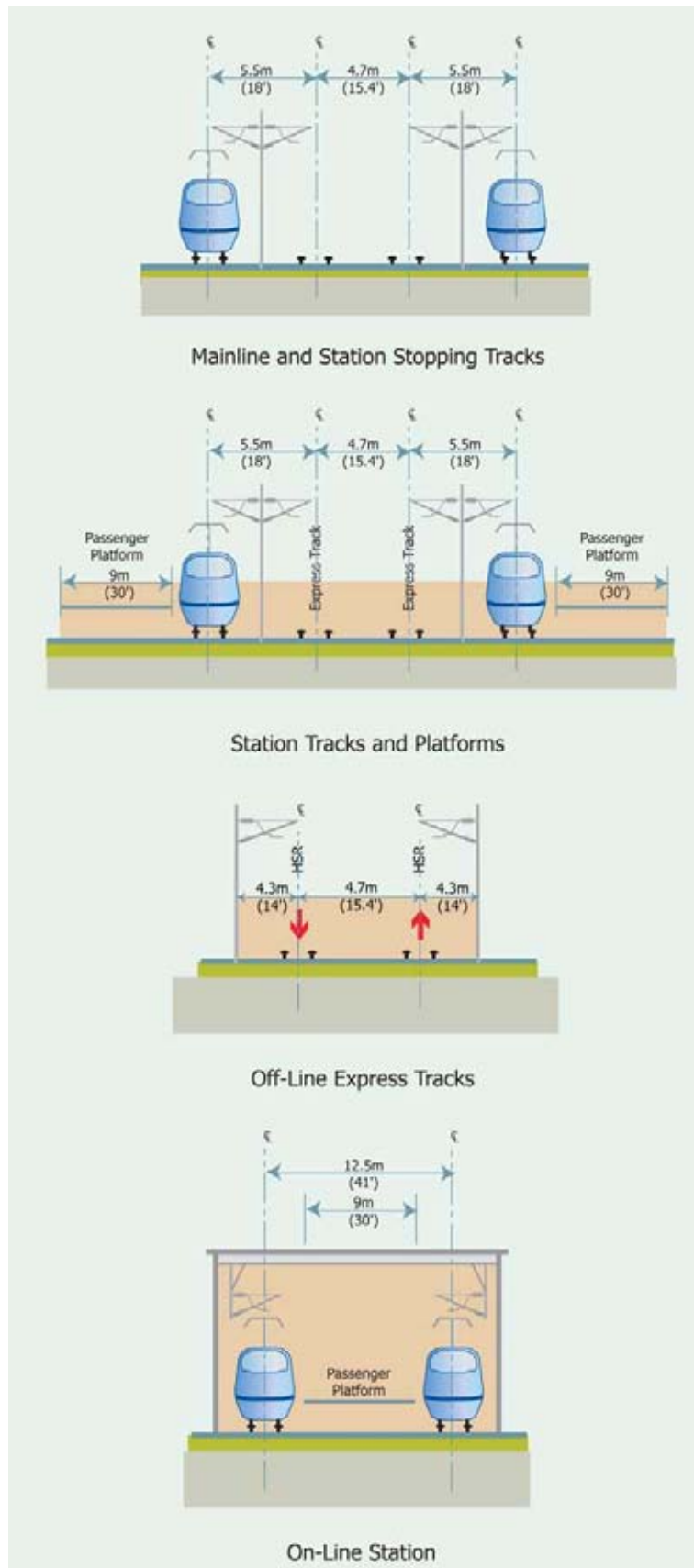
- Downtown station site location – near Fresno Street from Tuolumne to Kern Streets;
- Concept is aerial structures north and south of Downtown and at-grade Downtown;
- 70 to 90 daily high speed trains, with half of these stopping in Fresno (is a bypass track needed?);
- Elimination of all at-grade crossings for high speed rail service;
- Two track station cross section would need 70 feet of right-of-way;
- Four track station cross section would need 110 to 120 feet at stations;
- Station platforms about 1,300 feet long;
- Station siding tracks three miles in length;
- Nearest stations at Bakersfield and Merced; and
- 6,800 daily passenger boardings and alightings forecasted.

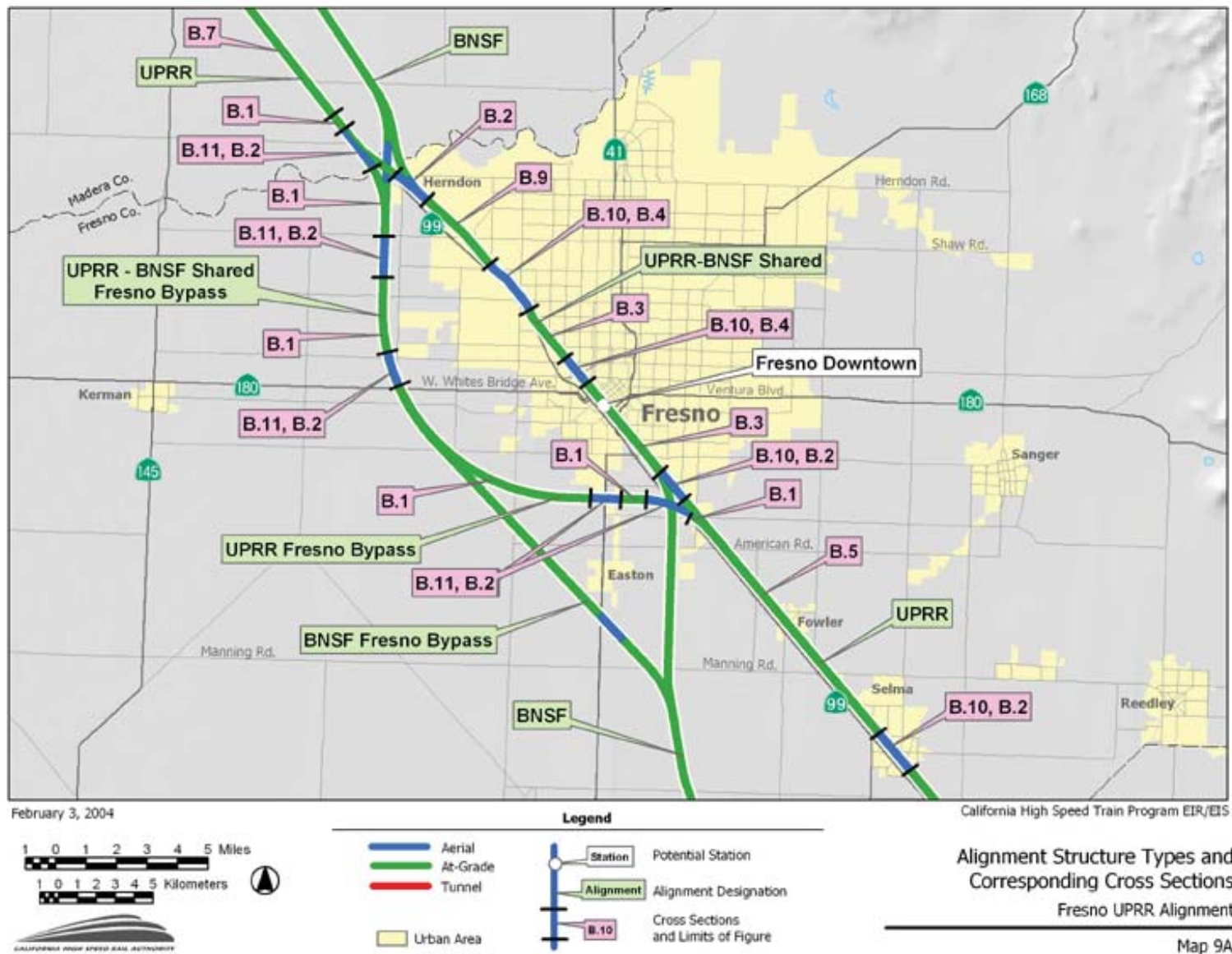
The high speed rail plan is silent regarding the local rail consolidation plans, but they both will compete for the same right-of-way in the UPRR corridor.

While a preference for a downtown station site has been accepted, further planning efforts might lead to the adoption of a remote station site located west of Downtown. From the perspective of downtown passenger rail service, high speed rail is a greater priority than freight rail service.

One of the high speed rail alignments through Fresno is near Grantland Avenue, which passes about six to seven miles west of Downtown (the airport is located less than six miles from Downtown). A station located along this remote high speed rail alignment would need to be connected to Downtown via a high quality connector. This remote station would not strengthen the downtown (See Figure 2-3).

Development of a high speed rail station in Downtown would have a major impact on development opportunities near the station site. This placement would also require the provision of a large amount of parking near the high speed rail station.





Future Railroad Scenarios

There appear to be four basic scenarios for future rail services including the following:

Scenario 1 - No Consolidation or HSR Possible Improvement Issues

- Swap Mono and Kern for Inyo Street UPRR crossing
- Selective BNSF grade separations
- Selective UPRR grade separations
- Relocate Amtrak service to UPRR

Scenario 2 - Consolidation without HSR Possible Improvement Issues

- How best to use BNSF right-of-way
- Restore pedestrian/bike and road linkages
- Sites for relocation of Amtrak station

Scenario 3 - HSR without Consolidation Possible Improvement Issues

- Station site location
- Scenarios for San Joaquin service and relocation to UPRR
- Two track HSR with all trains stopping
- Patron parking

Scenario 4 - Consolidation with HSR Possible Improvement Issues

- Adjacent vs stacked tracks
- Strategies to minimize barrier effect
- Push all freight to the west and use downtown tracks only for HSR
- Station parking

With all of these major unknowns the best strategy would be to assume the worse case (Scenario 1) and work towards the vision of the best case (Scenario 4).

Railroad Grade Separation Issues

Currently, there are no grade separations of the BNSF (Amtrak) railroad tracks through Downtown, except for the freeway crossings. The UPRR railroad tracks have three grade-separated crossings – Stanislaus Street and Tuolumne Street over-crossings of the tracks and the Fresno Street under-crossing of the tracks. Figure 2-1 shows the locations of at-grade rail crossings in the downtown area. Grade-separated crossings provide significant safety benefits and are strongly favored by the railroads. They are particularly needed for high speed and high volume rail mainline tracks. Grade separation also eliminates the need for sounding train horns. Although they are expensive to construct and tend to increase the barrier effect of the railroads for pedestrian and bicycle modes, they are very beneficial for automobile traffic and transit as they eliminate delays at the rail crossing points.

UPRR Corridor

Complete grade separation of the UPRR rail corridor will be required to support either the introduction of high speed rail passenger service or consolidation of freight rail traffic onto the UPRR corridor. This scenario would probably include the reconstruction of the Fresno Street under-crossing since the railroad cross section would be much wider than the current two track cross section.

With high speed passenger rail service or rail consolidation, current crossings at G Street, Tulare Street and Ventura Avenue would need to be grade-separated and the Fresno under-crossing would most likely need to be rebuilt for the wider railroad cross section.

Approximately 26 feet of vertical clearance is required over the railroad tracks. Allowing for the depth of the bridge structure will generally put the height of roadway surface at about 30 feet above top of rail. Only about 16 feet of clearance is needed for roadways under passing railroad tracks. Allowing for depth of railroad bridge structure this generally puts the roadway surface about 20 feet under the top of rail. These vertical clearances need to cover the entire width of the railroad right-of-way (high speed rail may allow for lesser vertical clearances).

The distance between G Street and H Street is approximately 600 feet and the distance between F Street and Broadway (Stanislaus Street and Tuolumne Street over-crossing lengths) is about 1,400 feet. The shorter length of the Fresno Street under-crossing is accomplished over the 600 feet distance between G and H Streets. Over the 600 foot distance between G and H Streets accommodating a 100 foot wide railroad right-of-way would leave 500 feet for the vertical transitions for the roadway. With a 200 foot wide railroad right-of-way, the transition lengths would be 100 feet shorter. As shown in Figure 2-4, transitioning 30 feet above top of rail between G and H Streets would require more than a 12 percent grade for a 100 foot wide railroad cross section and more than a 15 percent grade for a 200 foot wide railroad cross section. Figure 2-4 illustrates the profiles for an under-crossing and for an over-crossing of the railroad. Transitioning 20 feet below the railroad tracks for an under-crossing would require a minimum grade of more than 8 percent for a 100 foot wide railroad cross section and more than a 10 percent for a 200 foot railroad cross section. These minimum grade calculations do not account for distances required for vertical curve transitions and for level approaches to intersections at each end of the grade separation. These grades are too steep to accommodate ADA compliant sidewalks adjacent to the roadway. It is possible with the underpass option to tier the sidewalk (and bicycle path) five feet higher than the roadway to achieve ADA compliance.

Over-crossings of railroad tracks are generally the least expensive to construct, result in the least disruptions to rail operations during construction and are often perceived to be safer and more comfortable by pedestrians than under-crossings. Under-crossings of railroad tracks are generally more expensive, entail greater construction unknowns and result in less visual impacts than over-crossings. Since they involve less change in vertical elevation, some pedestrians also prefer them.

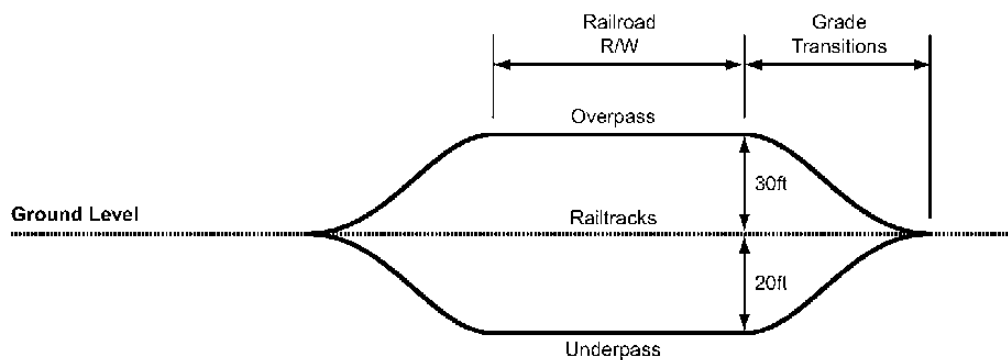
Between F Street and Broadway (span of the current Stanislaus Street and Tuolumne Street over-crossings) accommodating a 100 foot wide railroad cross section would leave 1,200 feet for vertical transitions for the roadway. A 200 foot wide railroad corridor would leave only 1,100 feet for the roadway transitions. More than a five percent grade would be required for a roadway overpass of a 100 foot wide rail cross section and more than a three percent grade would be required for an underpass of the rail tracks. With a 200 foot wide railroad cross section, more than a six percent grade would be required for the overpass and more than a four percent grade would be required for an underpass.

This simplistic analysis suggests that any future at-grade crossings of the UPRR corridor should be underpasses and should span between Broadway and F Streets similar to the current Stanislaus Street and Tuolumne Street railroad over-crossings. These grade separations will not be very pedestrian-friendly facilities. The Broadway to F Street spans will also further disconnect H Street and G Street from the downtown circulation network. With the fragmentation of Broadway, H Street has become a very important element of the downtown circulation system.

The increased barrier effect of the longer railroad crossings and the disconnection of G and H Streets from the downtown circulation network would be major problems. A costly alternative would be to depress the railroad and leave the street crossings at-grade. It might be favored by UPRR and might work best for the California High Speed Rail Authority (CHSRA). The cities of Reno and Charlotte have both depressed railroads in their downtown areas. Figure 2-5 illustrates a possible cross section for a trench solution. UPRR freight operations could be maintained during construction of the trench by excavating the area adjacent to G Street as shown in Figure 2-5. Once the freight railroads have been shifted to the trench location, the area beneath the current UPRR tracks could be

excavated for high speed passenger train use. The trench would need to be about 30 feet deep. Once the trench excavation has been completed, the Stanislaus Street and Tuolumne Street over-crossings could be brought down to grade. It is likely that the current G Street crossing and the Ventura Street crossings would need to be lifted five or ten feet to facilitate the transition of the tracks back to grade for the California and White Bridges branch rail line connections. Some rail customers might be lost due to the trench operation. The area between Tulare and Fresno Streets over the trench could be bridged over and used for the high speed rail station and other civic/commercial uses. The cover over the trench could even be extended pass the baseball stadium and help to connect Chinatown with the downtown core. While the trench approach appears to be a good railroad and economic development solution it would be disruptive to construct as it will require carefully staging to maintain traffic crossings. The footings for the Tuolumne Street and Stanislaus Street bridge piers would need special attention in the trench construction.

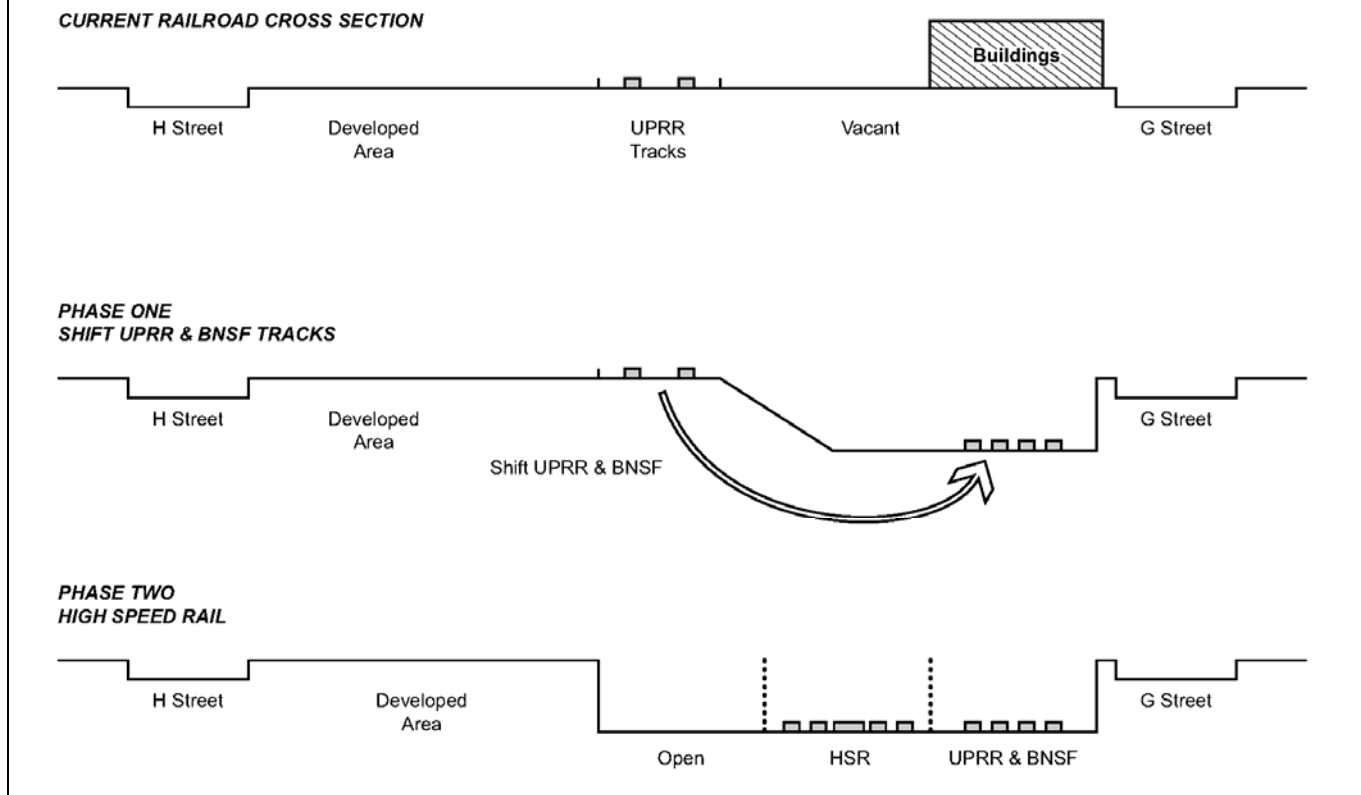
Figure 2-4: Transition Grades for Rail Grade Separations



G to H Street 600ft	Required Grades
OVERPASS	
Rail R/W 100ft	12%+
Rail R/W 200ft	15%+
UNDEPASS	
Rail R/W 100ft	8%+
Rail R/W 200ft	10%+

F Street to Broadway 1,300ft	Required Grades
OVERPASS	
Rail R/W 100ft	5%+
Rail R/W 200ft	6%+
UNDEPASS	
Rail R/W 100ft	3%+
Rail R/W 200ft	4%+

Figure 2-5: Concept to Trench Railroad Services



BNSF Corridor

All of the current street crossings of the BNSF corridor are at-grade as shown in Figure 2-1. In the Downtown area there are six at-grade traffic crossings and one pedestrian only at-grade crossing. The at-grade crossings are located at:

1. Belmont Avenue;
2. McKenzie Avenue;
3. Divisadero Street;
4. Fresno Street;
5. Tulare Street; and
6. Ventura Street.

Nearby at-grade crossings are located at:

- Church Avenue;
- California Avenue;
- Hamilton Avenue;
- Butler Avenue;
- Webster/Olive Avenue;
- Hammond Avenue; and
- Blackstone Avenue.

The crossings south of Downtown are primarily in an industrial developed area. An at-grade pedestrian only crossing is also located at Mariposa Street.

If rail service continues in this corridor good cases can be made to grade separate most of these crossings. Ventura Street and Blackstone Avenue are both potential BRT corridors, where schedule adherence will be important to operations. Fresno Street and Divisadero Street are both key access streets to the Regional Medical Complex (emergency vehicle access) and Tulare Street is an important freeway access street. Key distances for BNSF at-grade crossings Downtown include the following:

- Clark/Maddy Street to Effie Street (Belmont, McKenzie and Divisadero crossings) – 625 feet
- P Street to R Street (Fresno Street crossing) – 740 feet
- Santa Fe to BNSF centerline (Amtrak Station crossing) – 175 feet
- Santa Fe to Topeka Street (Ventura Street crossing) – 525 feet



These distances are generally too short to construct an overpass without disconnecting local streets and impacting property access. The 620 foot long underpass of the UPRR tracks on Fresno Street provides a good example of a minimal length grade separation. Construction of an under-crossing might be possible between R and P Streets. Ventura Street, Tulare Street and Fresno Street crossing appear to offer the most merit to grade separate should BNSF service continue in this corridor. The Fresno Street crossing probably would be the simplest to grade separate as it has little property access needs between P and R Streets. The few driveways between R and P Streets would need to be closed and access re-oriented. BNSF would want the sidewalks depressed as well to eliminate all at-grade conflicts. Further discussions would be needed to determine if the sidewalks could remain at-grade. As such it would not need to provide local access parallel to the under-crossing and therefore the available right-of-way could all be used for the under-crossing. Fresno Street also has the advantage of having a grade separated crossing for the UPRR tracks (both Ventura and Tulare are at-grade).

Railroad Quiet Zone Issues

Noise is a negative impact associated with at-grade crossings of railroad tracks. Regulations require that trains sound their horn when approaching an at-grade crossing and railroad crossing protection bells sound when trains are approaching. It is not possible to eliminate the crossing bells, but new regulations now allow for quieter wayside horns to be used at traffic crossings and for railroads to not sound their train horns. Thus there appears to be little that can be done to eliminate the at-grade crossings, but some measures could be implemented at a modest cost to reduce train noise at crossings. These measures could be applied to both the UPRR and the BNSF corridors, but seem most appropriate for the BNSF corridor.

In late 2003, the **Federal Railroad Administration (FRA)** published an interim rule requiring that locomotive horns be sounded when approaching public highway-rail grade crossings. The rule contained an exception to permit designation of “quiet zones” where horns would not have to be used. The quiet zones could only be established where risk is sufficiently low or where approved safety measures compensate for the absence of a warning by the locomotive horn. After a review and comment period, FRA issued final rules for quiet zones in August, 2006.

By definition, a quiet zone must cover at least one-half mile along a railroad line, encompassing all the crossings within the zone. At a minimum, each grade crossing must be protected by flashing lights, bells, automatic gates and advance warning signs placed along the roadway prior to the crossing. Different safety measures may apply to each crossing, but the quiet zone as a whole must not exceed a specific risk index or threshold. The risk index (a numerical rating between zero and one) is determined by FRA and may be revised annually.

Quiet Zone Establishment

Quiet zones may be established by the public authority (city, county, or state) having jurisdiction over traffic enforcement by either local agency designation or FRA review and designation.

Local Agency Designation

The local public authority may designate quiet zones when the safety measures at each grade crossing comply fully with one or more FRA “pre-approved” sets of measures (termed ***Supplemental Safety Measures or SSMs***) that have been determined to provide sufficient risk reduction. The SSMs must be sufficient to reduce the quiet zone risk index below the Nationwide Significant Risk Threshold, or below the Risk Index with Horns. The approved safety measures include:

- (a) Installation of four-quadrant gates with constant warning time devices and power out indicators. Gates must meet prescribed requirements to extend across the entire roadway span (Figure 2-6).
- (b) Installation of two-quadrant gates with constant warning time devices and power out indicators, and with median dividers or similar roadway channelization to preclude vehicles crossing the center of the road to drive around lowered gates (Figure 2-7).
- (c) Temporary or permanent closure of a grade crossing. Temporary closing allows closing during night hours so a locomotive horn does not need to be used, but requires use of the horn during daytime hours when the grade crossing is in use.



Four Quadrant Gates

Pros

- Full closure of crossing for vehicles and pedestrians
- No access impacts to local businesses or residents
- Can be used adjacent to parallel roadway

Cons

- Higher implementation and maintenance costs
- Requires coordination with railroad
- Vehicle detection issue

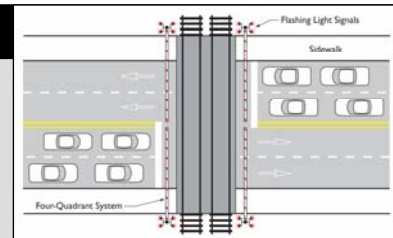


Figure 2-6: Four Quadrant Gates

Automatic Gates Plus Non-Mountable Medians

Pros

- Full closure of crossing for vehicles
- Lowest implementation and maintenance costs
- Minimal railroad coordination required

Cons

- Local access issues
- Minimum median length and width requirements
- Does not affect pedestrians

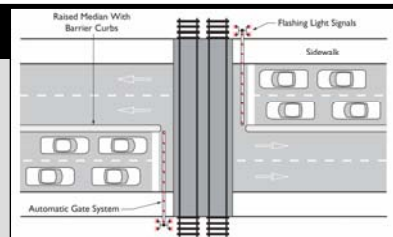


Figure 2-7: Automatic Gates Plus Non-Mountable Medians

Additional SSM Engineering Measures

- Modified four-quadrant gate
- Longer gate arm
- Alternative median configuration
- Shorter channelization



Figure 2-8: Additional SSM Engineering Measures

Additional SSM Non-Engineering Measures

- Education campaign
- Enforcement programs



Figure 2-9: Additional SSM Non-Engineering Measures

FRA Review and Designation

At the request of the local public authority, the FRA may designate quiet zones in areas having safety measures other than FRA's pre-approved measures. The local public authority must form a diagnostic team to evaluate each crossing and recommend actions sufficient to determine risk. In addition, the community must undertake periodic monitoring and reporting to ensure that risk levels remain acceptable. FRA provides an on-line calculating program to aid in determining the reduction in risk levels that the safety measures provide. Safety measures may include combinations of the following:

- (a) Four-Quadrant or two-quadrant gates that do not meet the strict SSM standards that apply to locally designated quiet zones;
- (b) Additional non-engineering *Alternative Safety Measures (ASMs)* such as programmed enforcement, public education, and photo enforcement. Periodic monitoring and reporting is required; and
- (c) Additional engineering ASMs including any measures not specified. An example of an engineering ASM would be adjustment of crossing geometry or sight distances to reduce risk. Periodic monitoring and reporting is required.

For both methods of establishing a quiet zone, some common steps apply:

1. The local public authority must provide notice to the railroad, state agencies, law enforcement, private crossing owners and other interested parties describing the safety measures to be employed and affording the public an opportunity to comment; and
2. The local public authority and/or the railroad must provide updated information for FRA's grade crossing inventory.

Once the local public authority decides to establish a quiet zone (or alternatively the FRA approves a quiet zone), the public authority must notify the railroad and other agencies of the effective date, and must periodically reaffirm that all requirements are met. Should the agency ultimately determine that a quiet zone no longer serves its purpose or that it does not meet the basic requirements, it may terminate the quiet zone.

Any local public authority considering establishment of a quiet zone is encouraged to work informally with both the affected railroad company, and with the FRA, prior to initiating the formal steps necessary to designate a quiet zone.

Other Provisions Related to Quiet Zones

A number of other important aspects of FRA's quiet zone regulations relate to:

- Private Grade Crossings;
- Periodic Updates;
- FRA Reviews;
- Acceptable Gate Standards for SSM Status; and
- Complete Quiet Zone Regulations.

Private Grade Crossings - Private grade crossings are not subject to FRA rules that horns be sounded, but they may be included along with nearby public crossings in a quiet zone. If a private crossing within a quiet zone permits access to the public, or provides access to active industrial or commercial sites, a diagnostic team must evaluate the crossing and any recommendations of the diagnostic team must be observed. Interested state agencies and the railroad involved should be included on the diagnostic team. Private crossings must also be marked by a crossbuck and stop sign, and be provided with advance warning signs.

Periodic Updates - For quiet zones with SSMs, the local public authority must affirm to FRA that the quiet zone continues to meet the applicable requirements on a five year review basis. For quiet zones with ASMs as approved by FRA, the authority must affirm the requirements on a three year basis.

FRA Reviews - FRA will periodically calculate the Quiet Zone Risk Index and compare it to the Nationwide Significant Risk Threshold. If the risk index for the zone exceeds the threshold, the local public authority will be notified to terminate the quiet zone, or to implement such additional measures required to maintain a risk index below the threshold level in order to retain the quiet zone.

Acceptable Gate Standards for SSM Status - Four quadrant gates must span all highway approaches and exit lanes on both sides of the crossing in a manner to prevent the highway user from circumventing the gates by moving into the oncoming traffic lane to cross the tracks. Four quadrant gates with traffic channelization of at least 60 feet qualify for higher effectiveness ratings. Gaps between lowered gates must not exceed two feet, and gaps between a gate and a channelization device must not exceed one foot. Standard gates must be supplemented by medians or channelization that extends 100 feet from the gate arm, or at least 60 feet if there is an intersection within 100 feet of the gate.

Complete Quiet Zone Regulations - Quiet zone administrative procedures, minimum requirements, and reporting and record keeping requirements are detailed in the Code of Federal Regulations at 49 CFR Part 222. A local public authority considering establishment of a quiet zone should consult these provisions for a complete understanding of the process and related requirements.

Wayside Horns

Ground mounted wayside horns are an alternative to sounding of locomotive horns at-grade crossings. This technology involves installation of horns at the crossing, generally directing the sound outward along the vehicular path rather than lengthwise along the railroad alignment. The horns sound automatically as a train approaches, eliminating the need to sound the locomotive horn. While these horns do not create “quiet” circumstances, they are generally less objectionable because the horn sound is concentrated where it is needed most – to be heard by an approaching motorist. A crossing with wayside horns may be included with other crossings in a quiet zone, but the risk calculation for the zone is based on the other crossings and not the crossing with the wayside horn. It needs to be understood, that the train engineer has the discretion to sound the train horn regardless of wayside safety measures. With all of the pedestrian crossings Downtown, wayside horns might not provide the full degree of safety sought by train engineers and the railroads. Even the replacement of train horns with wayside horns during the late hours (few pedestrians) might prove to be beneficial.



Station Location Issues

The current Amtrak station near City Hall is very attractive and functional. The location of the track switch near the depot building, however, requires Amtrak San Joaquin passenger trains to stop near the freight building, rather than in front of the station depot building. This station site is not consistent with the long-term plans for rail consolidation or high speed rail, since passenger trains will be operating on the UPRR tracks. Thus, a key question asks where along the UPRR corridor is the best location for a high speed rail station. This station could serve the envisioned 200 mph trains or even high speed “lite” trains (about 120 mph - San Joaquin Baby Bullets).

The stations for high speed rail are planned to have 1,300 foot passenger platforms. With a forecast for 6,800 daily passenger movements (boardings and alightings), between 500 and 1,000 patron parking spaces would be indicated. These are envisioned to be paid parking facilities, so a management plan would be needed to keep patrons from using nearby free spaces downtown.

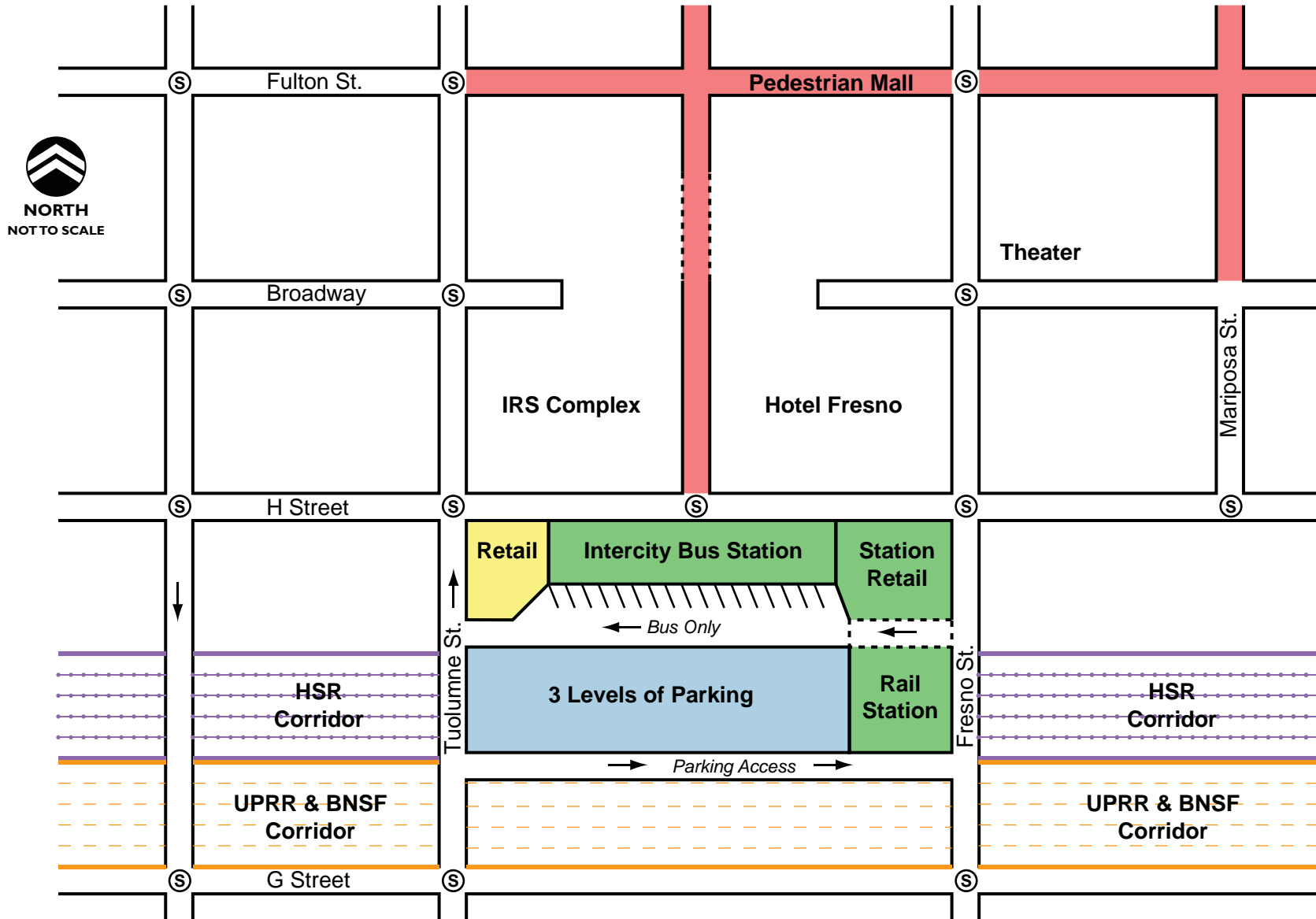
Other possible high speed rail station sites would include near the northern end of the city (Herndon Avenue) or on a westside rail bypass alignment (SR-180). These two non-downtown sites would likely exhibit similar access and economic impacts as the Fresno Airport. Virtually all patrons would arrive by car, and the land use impacts would be more campus automobile oriented, rather than center city oriented. A downtown passenger rail station site would be nested in a pedestrian oriented setting near/at the focus of the regions transit service. It would be proximate to the convention center, civic center office destinations and provide good synergy with hotel, office, retail and residential economic development goals. Since the Downtown is also at the center of the region's freeway network, this site would have excellent access by car and regional buses.

High speed rail service and any consolidated freight rail service would need to be grade-separated passing through Downtown. As discussed earlier, the strategy that minimizes barrier impacts on the Downtown is the trenched approach. Transitions into and out of the trench would not necessarily need to be at the same location, but co-locating the trench portals for both services would minimize barrier impacts on Downtown. South of Downtown a branch rail connection exists near East California Avenue. North of Downtown a branch track connection exists near SR-180. The distance between these two branch track connections is about 11,000 feet, with Fresno Street being midway.

Since the entire section of the UPRR and high speed rail tracks Downtown would be grade-separated, finding a clear section for a 1,300 foot passenger platform would not be a critical factor for the location of the station. The key factors seem to be the placement near patron destinations, ease of traffic access, site area for station, opportunities for parking and joint development and the desire for UPRR to be at-grade for branch track connections north and south of Downtown. Fresno Street and Tulare Street are core area streets near the convention center and government offices. The Tuolumne and Stanislaus one-way couplet would provide good traffic access. These considerations suggest that the best location for a passenger rail station along the UPRR track would be between Tuolumne Street and Mariposa Streets. Almost 5,000 feet of track length would be available to transition 30 feet down on both sides of the station (0.6 percent average grade).

Figure 2-10 illustrates how a high speed rail station might be developed between Fresno Street and Tuolumne Street with high speed passenger rail and UPRR/BNSF freight rail both trenched through Downtown. As shown in the station concept, the main lobby area would be at the corner of Fresno Street and H Street. This gateway lobby would be a logical location for support retail uses. The concept envisions a multimodal station lobby with two wings. One wing (optional) would serve Greyhound and feeder buses and the other would serve high speed rail passengers. A three level parking structure would be constructed over the high speed rail tracks to accommodate about 1,000 cars. No air rights construction is envisioned over the diesel freight rail tracks, but the railroads might entertain minor construction at Fresno Street to better connect the station with areas to the west of the tracks (Chinatown). Provision of vertical circulation between the parking garage and the high speed rail platform is suggested. The new bus station will allow the buses to connect seamlessly with the trains and will open the current Greyhound Station for stadium-oriented commercial development. The circulation aisle adjacent to the freight rail right-of-way is designed to facilitate circulation as well as to separate parking structure access from bus circulation traffic. Taxis passenger loading are suggested along the H Street curb frontage.

The concept also envisions a retail air rights development over the freight tracks to enhance the pedestrian link to Chinatown. Air rights development of the rail trench might also be considered between Fresno and Tulare Streets. It should be noted that trenching the railroad tracks allows for Stanislaus and Tuolumne Streets to operate at-grade and thus reconnect with G and H Streets and with other downtown streets.



RECOMMENDATIONS

It seems clear is that these unknowns must be dealt with as important “what ifs” and the city needs to communicate to the California High Speed Rail Authority its position regarding a downtown station and its integration into the downtown transportation network. Might the high speed rail effort also provide the funding for relocating freight operations to the west side of Downtown? If so, it is important to protect rights of way for this option and alert the community of this vision.

What is strongly suggested by these major unknowns is that the Chinatown Area redevelopment efforts be deferred until the HSR and rail consolidation rights of way needs are better defined. This will also protect the opportunity to design the development in this area to maximize its potential benefit from the high speed rail station location.

As it is unlikely that either the rail consolidation or passenger high speed rail projects will be fully implemented before 2020, benefits associated with grade separation of key crossings should be explored. Key questions to be asked include the following:

1. Which current at-grade crossings are physically feasible to grade separate and how might these investments relate to long term high speed rail and rail consolidation plans?
2. How might the San Joaquin services be upgraded?

2-1 Rail Consolidation Implementation

Implementation of the rail consolidation concept should be piggybacked with high speed rail development planning and funding. Consolidation of BNSF rail traffic onto the UPRR corridor makes sense and is consistent with current plans. Aspects of the consolidation include:

- Good for the region, the city and the Downtown;
- Benefits safety, reduces noise and eliminates circulation/activity barriers;
- Provides right-of-way opportunities for multi-use trail or public transit; and
- It will not be easy or inexpensive.

2-2 High Speed Rail Implementation

With the projected growth in the San Joaquin Valley, development of high speed rail is needed and should be supported. The best means of traversing the downtown area would be in a trench shared with the freight railroads. The trench concept should be communicated to the California High Speed Rail Authority and its consultants as the locally preferred concept. Key points include the following:

- Good for the region and the city;
- Downtown station site is consistent with smart growth principles;
- Due to expense it would be good to partner high speed rail with rail consolidation effort;
- Preserve right-of-way for station site, rail corridor and the approaches to/from Downtown; and
- Preserve station area right-of-way to fully support and exploit economic benefits of high speed rail.

2-3 High Speed Rail Station Strategy

The most promising location for a high speed rail station for Fresno is in the downtown between Tuolumne and Fresno Streets. This station location concept should be forwarded to the California High Speed Rail Authority as the preferred location. The best station concept and the lowest costs concept would be for the Fresno Station to have no passing tracks with all trains stopping in Fresno. Fresno is one of the busiest stations in California and thus logical for all trains to stop at its stations.

2-4 Amtrak's San Joaquin Upgrades

Amtrak's San Joaquin rail service is an important gateway to the city. Efforts should continue towards upgrading these services as an interim measure until high speed rail becomes a reality. Fresno should work with Caltrans to identify attractive investments to upgrade the current service - whether this is a "baby bullet train" or just increased service, speed and reliability. Key points include the following:

- In the near term, will continue to be passenger rail gateway to Downtown; and
- Even without high speed rail upgraded San Joaquin's service could operate on the UPRR tracks and the flexibility to accommodate this shift needs to be protected.

2-5 Railroad Quiet Zones

While implementing a railroad quiet zone will be challenging, it would make the downtown more attractive for new residential development. The Federal Railroad Administration has recently adopted rules that allow communities to reduce train noise impacts. A pre-feasibility study is recommended to better determine how viable a quiet zone would be for the downtown segment of the BNSF corridor. This study should focus on the feasibility of achieving a safe corridor more so than completion of the FRA quiet zone application. If it looks feasible, a formal application should then be pursued. Key points relevant to Downtown Fresno include the following:

- Need one- half mile of improvements along the tracks to qualify;
- No guarantee that quiet benefits will be achieved if accidents occur after implementation; and
- Challenging to accomplish in urban setting with unrestricted pedestrian crossings.

2-6 Grade Separations

Grade separation investment on either the BNSF or UPRR corridors should await decisions regarding high speed rail and rail consolidation. Grade separations for the UPRR crossings could be wasted if high speed rail designs prove to conflict with these investments. Similarly, if rail consolidation moves forward, rail grade separation investments for the BNSF corridor would be wasted. The most promising grade separation location for the BNSF appears to be the Fresno Street crossing. More detailed engineering studies are needed to confirm this assessment.

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CHAPTER 3 - TRAFFIC, ACCESS and CIRCULATION ELEMENT

Convenient traffic access and circulation is critically important to the livability and the economic success of the downtown. In addition to accommodating private vehicle traffic, the street system also functions as the support framework for bus services, goods movement, and bicycle and pedestrian travel in the downtown area.

CURRENT SETTING

The existing traffic network is not user friendly and suffers from a number of network and local intersection deficiencies. Much of the original grid system has been compromised by closures to create superblock developments and by barriers imposed by the freeways and railroad. Currently, the street system carries only moderate traffic volumes and even with these network deficiencies does not experience significant congestion. Under future traffic conditions, however, this may change.

The Central Area Community Plan's concept for traffic circulation in the downtown area is shown in Figure 3-1. This concept envisioned one-way streets as a way of facilitating downtown traffic movement after the closure of Fulton Street and its conversion into a pedestrian mall. Four of the one-way traffic couplets remain from this plan:

1. Stanislaus Street and Tuolumne Street
2. Blackstone Avenue/Abby Street
3. North Fulton Street and Van Ness Avenue
4. P Street and M Street

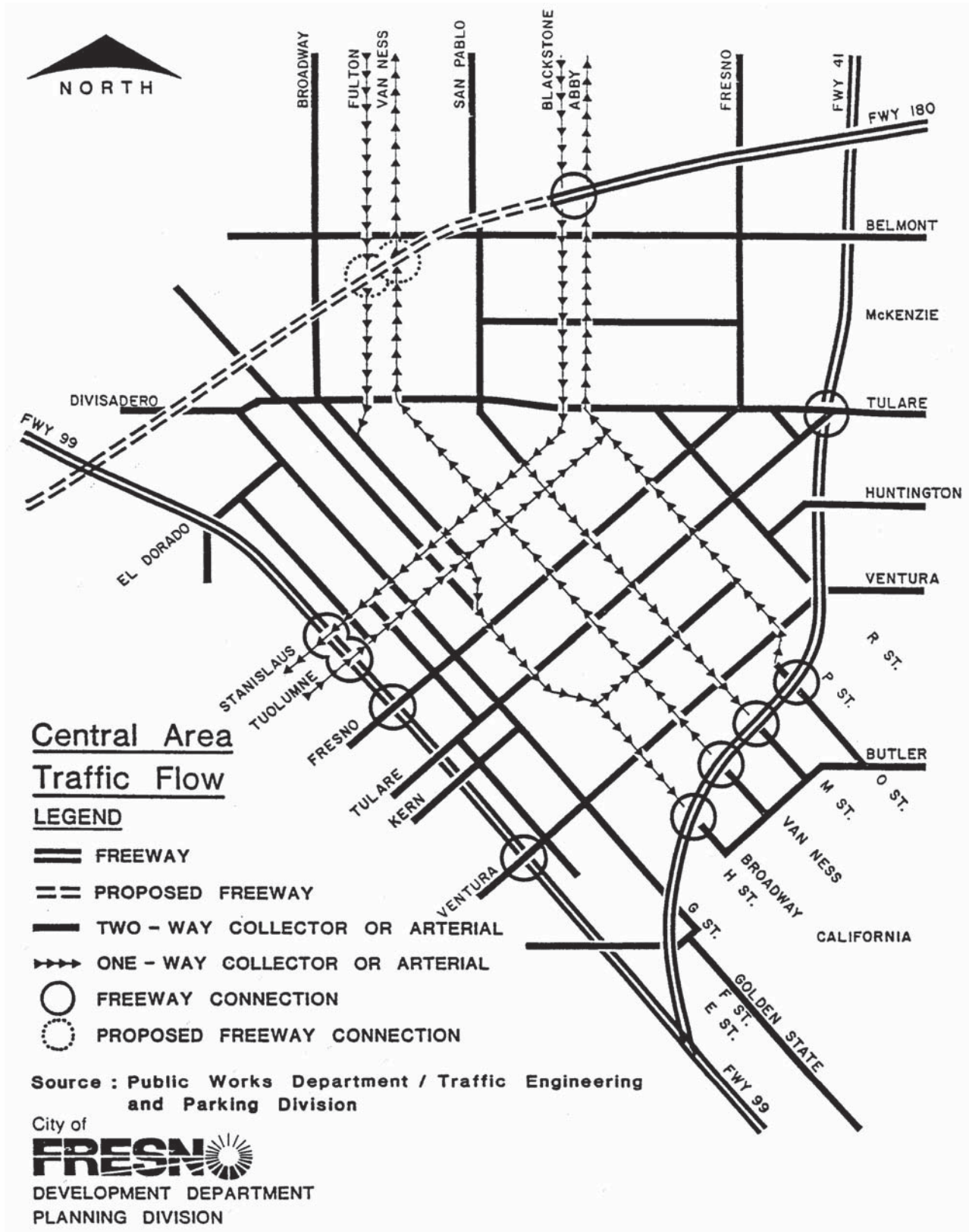
Some changes have been made to the circulation network that was envisioned by the Central Area Community Plan due to later development decisions. For example, the one-way couplet of Van Ness Avenue and Broadway has been replaced with a two-way Van Ness Avenue and a fragmented Broadway. In the core area of downtown, Broadway has essentially been converted into short discontinuous streets between Tuolumne Street and Ventura Avenue. Figure 3-2 describes the 1989 circulation plan around the Fulton Mall. The Broadway "diagonals" have been eliminated from the envisioned circulation network.

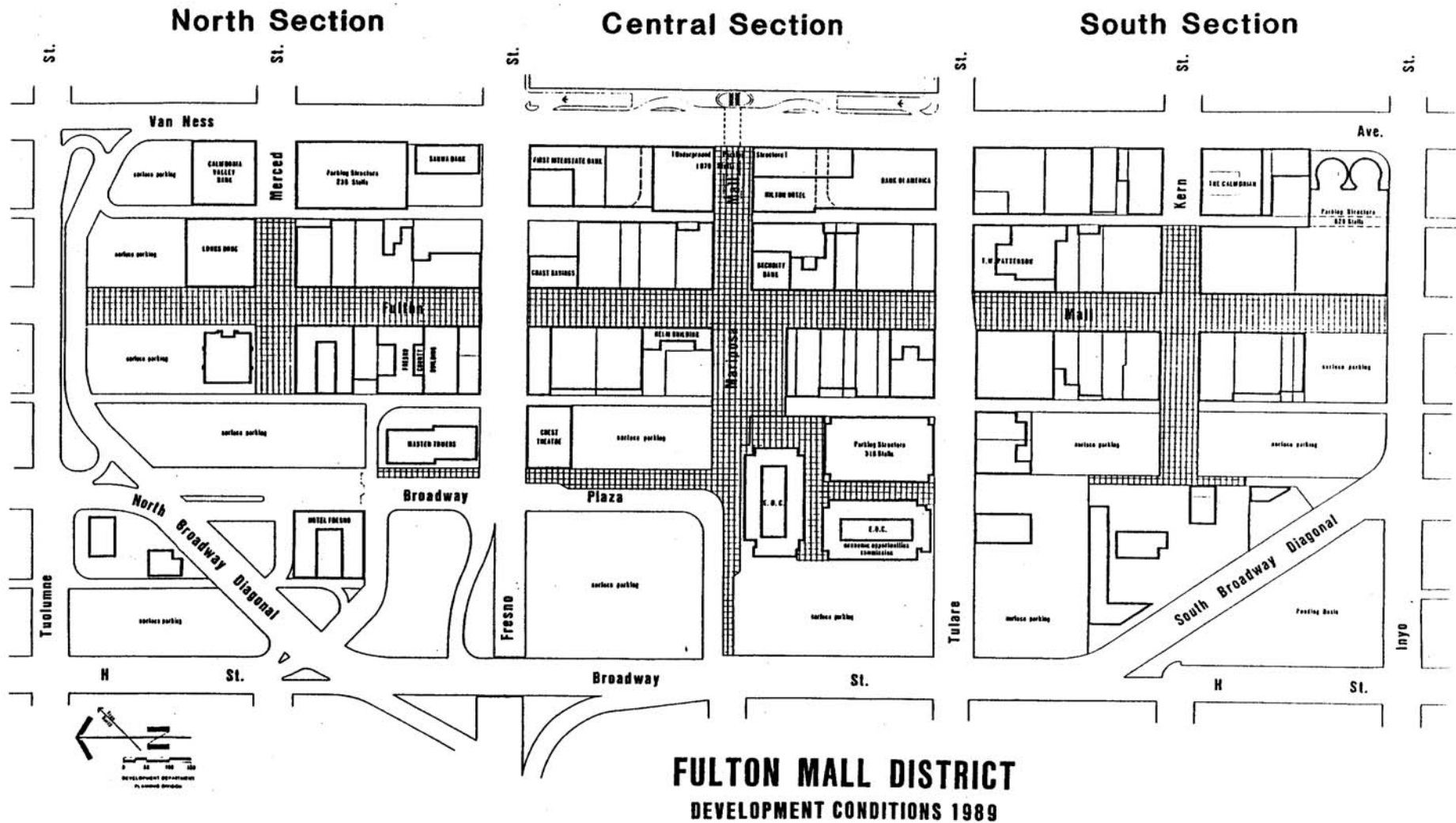
The existing features and weaknesses in the downtown traffic circulation system are listed below and explained in more detail on the following pages.

Network Deficiencies

- Awkward **street grid interfaces** between the original diagonal street grid in the downtown core and the more recent north-south street orientation for the areas adjacent to the core.
- Discontinuities in the street grids due to **railroad barriers**.
- Discontinuities in the street grids due to **development related barriers**.
- Awkward **one-way to two-way street transitions**.
- **Atypical one-way street spacing** between P and M one-way couplet streets.
- Weak **hierarchy of streets**.
- Ineffective **wayfinding** system.

Street Grid Interfaces - Along the seams where the differently oriented grid street networks interface (primarily along Divisadero Street), it is unclear which traffic lanes to use. It is very easy for motorists to become disoriented and lost. The SR-41 interchange at Tulare Avenue and Divisadero Street is particularly confusing.





Source: City of Fresno, *Central Area Community Plan*, 1989

Railroad Barriers - The BNSF railroad corridor limits the number of street crossings and train movements create delays for buses and cars. Except for the two freeway over-crossings, all six of the streets that cross the BNSF are at-grade. A pedestrian only at-grade crossing exists at City Hall. These at-grade crossings pose accident risks, traffic delays and increases in train noise (horns). Of the ten crossings of the UPRR tracks, five are at-grade:

- Ventura Avenue
- Mono Street
- Kern Street
- Tulare Street,
- Divisadero Street

The Fresno Street crossing passes under the tracks and the crossings at Stanislaus Street, Tuolumne Street, SR-180 and SR-41 overpass the rail tracks.

Development Related Barriers - The following developments have led to disruptions in the grid street system in Downtown:

- The Community Regional Medical Center has truncated Divisadero Street.
- No signage is provided to guide motorist from one side of Divisadero Street to the other side.
- The Cesar Chavez Adult Education Center has truncated O Street.
- The convention center complex has blocked Mono Street.
- The Mall has closed Fulton Street.
- The IRS complex has blocked Broadway's connection to Fresno Street.
- Kern Street has been closed for the pedestrian path between O Street and M Street.

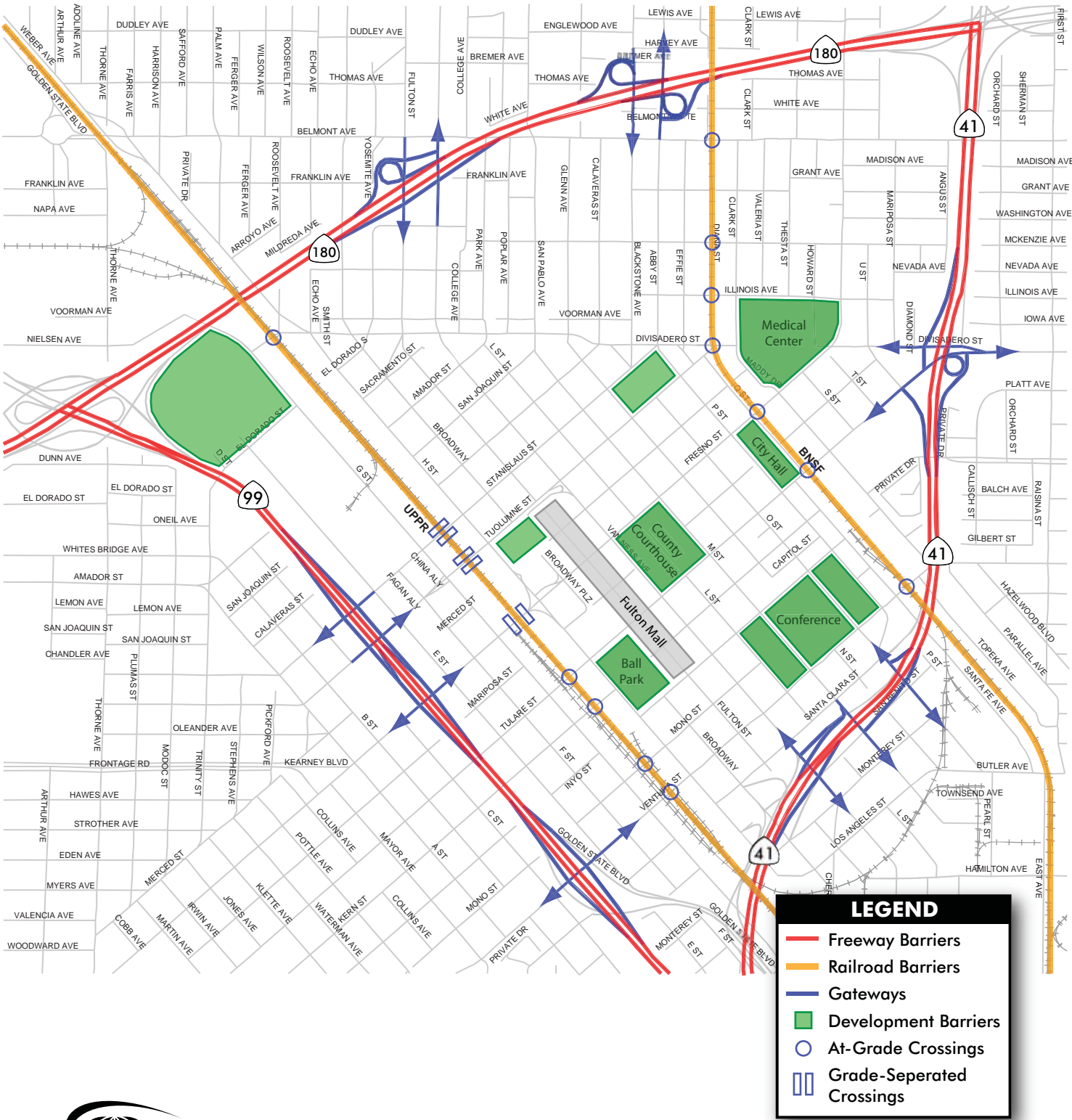
Proposals have been tabled for several other closures. These discontinuities in the street grid tend to confuse motorists and increase turning movements. Traffic turning movements adversely impact system capacity, increase traffic delays, increase accident risks and increase conflicts with pedestrians. Street closures have resulted in a wide gap between Van Ness Avenue and H Street where there are no longer parallel streets (Fulton Street and Broadway both closed). Figure 3-3 shows the key locations where developments have interrupted the street circulation system.

One-way Streets Transitions - One-way street systems maximize traffic capacity and also minimize the number of potential traffic stops. Increased capacity is achieved by eliminating left turning conflicts. The number of stops is reduced through the ability to more efficiently time traffic lights to provide progression in the one direction traffic is traveling. The most common difficulty with one-way streets is where they transition into two-way streets. The Fulton Street to Broadway transition is a case in point.

Atypical One-Way Street Spacings - Most one-way street pairs are located one block apart, which tends to minimize out-of-direction travel and simplifies the understanding of traffic patterns for motorists. The P and M Streets one-way couplet is separate by three blocks. With O Street providing some local circulation between the two one-way pair streets, the main problem seems to be motorist understanding of the street traffic pattern.

Hierarchy of Streets - It is difficult to distinguish visually which streets in downtown are major traffic carriers and which are local access and circulation streets. The City's General Plan street classification system tends to focus on suburban street categories – arterial, collector, scenic drive and super arterial. Typologies for urban downtown streets are not currently established.

FRESNO DOWNTOWN TRANSPORTATION PLAN



Wayfinding - With the meshing of the different street grid orientations, the discontinuous street grid and the mixed use of one-way streets, motorist confusion becomes a major design challenge. From a network perspective better signage is needed to major downtown destinations, to the freeway access points and to better inform motorists at atypical intersections. Often the signage only advises which lane turns left, goes straight or turns right; without advising the destination or the street name for each movement.

Intersection Deficiencies

- **Disconnection of major streets.**
- The elimination of the **Broadway Diagonal** has not been completed and the results are confusing.
- **Divisadero intersections** are confusing.
- **Street signage** is weak.

Street Disconnections - Because of the distances required to overpass or underpass the UPRR tracks some streets are not directly connected to G and to H Streets. Stanislaus and Tuolumne Streets cross over G and H Streets and require connecting traffic to have a prior knowledge of this configuration and to make a few extra turns to make the connection. Signage for these connections is not provided. The Fresno Street link to H Street is partial and not effectively signed.

Broadway Diagonal - When the IRS complex was developed, the Broadway Diagonal was blocked off but not removed. The remnants of the Diagonal between Broadway and Van Ness Avenue confuse motorists and are visually blighting. The intersection of Broadway Plaza with Fresno Street is also confusing.

Divisadero Intersections - Divisadero Street intersections with H Street, North Fulton Street, Maddy Drive, Fresno Street and Tulare Street are all atypical designs, which confuse motorists. The junction of the Blackstone Avenue/Abby Street couplet with O and P Streets and with Stanislaus and Tuolumne Streets at Divisadero Street is very confusing.

Street Signs - Many of the street name signs are very small and are obstructed visually by trees. Unlike suburban intersections, advance signing is very limited.

Figure 3-4 highlights the areas downtown where disorientation and confusion is greatest.

Future Issues and Options

Review of COG's traffic demand forecast indicates that the total number of daily trips beginning or ending in downtown is projected to increase from 328,000 in 2006 to 482,000 in 2030 (47 percent increase). No increase is envisioned in the freeway access interchange or local street capacity. Thus, nearly a 50 percent increase in trips will need to be accommodated on the current street system. A review of the downtown distribution of locations by planning districts where traffic is currently and is projected to be located and the travel mode targets is presented in Chapter 1, Table 1-2.

The Mall District is shown to be one of the least growth planning districts according to the COGFC traffic model. While the model only generalizes growth in the downtown, it is worrisome that it shows only modest growth in the Mall District. Cordon daily traffic volumes are projected to increase 61 percent between 2006 and 2030 with the greatest increase anticipated for the SR-99 and SR-180 cordons. Review of the forecast daily volumes for freeway ramps serving the downtown identified only a few freeway ramps projected to serve more than 1,000 daily vehicle trips. These high volume ramps are SR-99's Fresno Street northbound off ramp and southbound on ramp, SR-41's southbound off ramp at Van Ness Avenue and SR-41's Tulare street northbound on ramp and southbound off ramp.

FRESNO DOWNTOWN TRANSPORTATION PLAN



Some localized congestion might be expected near these ramps during peak commute hours and peak event traffic periods. COG's traffic forecast show a 61 percent increase in traffic within the region. In essence, traffic growth in the region is forecast to be 50 percent higher than traffic growth downtown. The greatest freeway traffic problems will likely be on the freeways themselves, rather than the interchange ramps.

The only committed changes to the transportation system are understood to be the reconfiguration of the SR-41 freeway ramps and the closure of Mariposa Street between N and O Streets for a pedestrian mall (Eaton Plaza). As discussed in Chapter 2, consolidation of rail services and the implementation of high speed rail service would require grade-separation or closure of at-grade crossings along the UPRR corridor. Some discussion has also occurred regarding closure of G Street at Kern Street as part of the Chinatown redevelopment project. Elimination of the O to P Street diagonal connector has been mentioned to facilitate development of the parcel. Lastly, as part of the Vision 2010 Plan, a loop circulation concept was suggested (Figure 3-5).

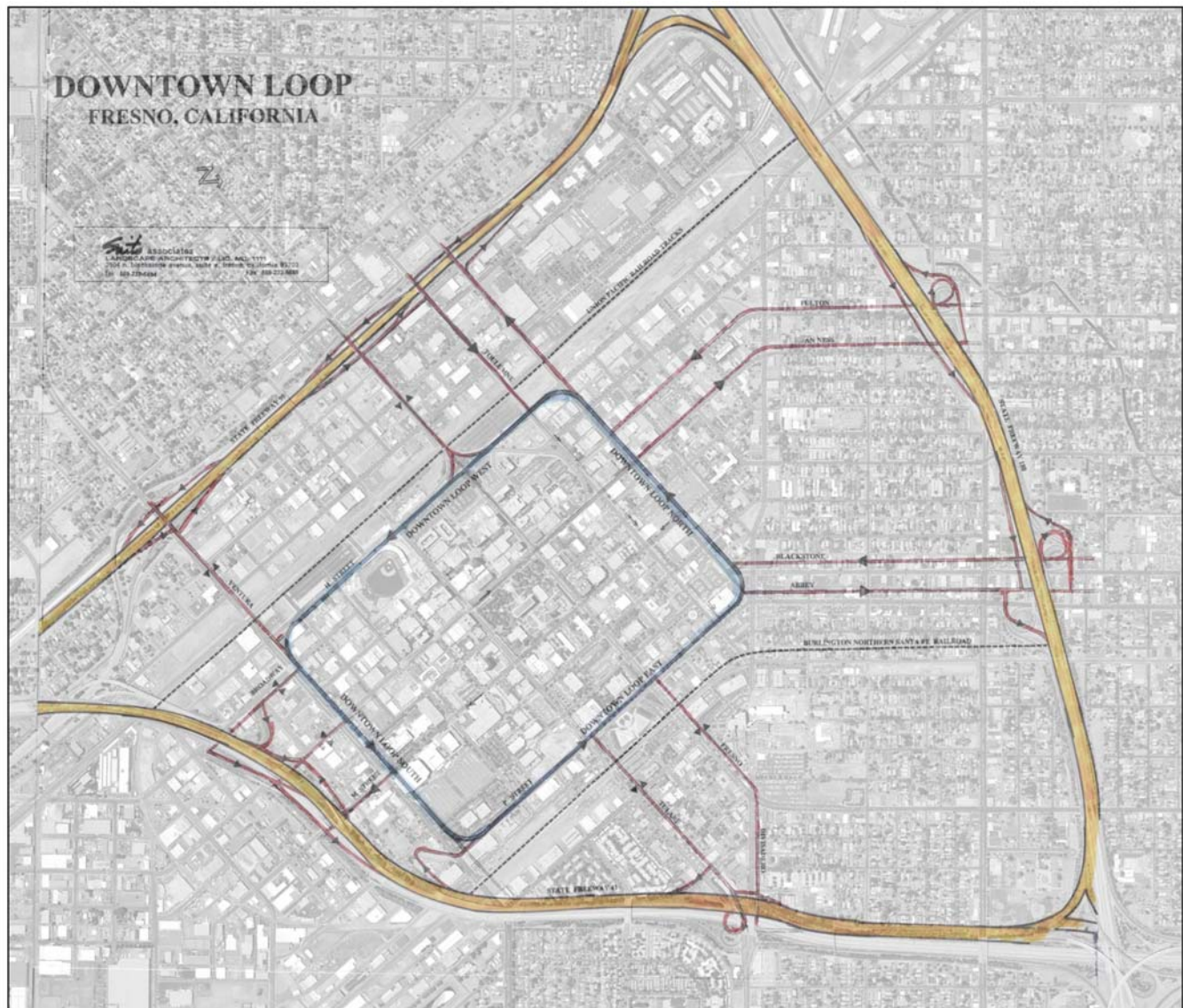


Figure 3-5: Planned Downtown Traffic Circulation Loop

Source: *Downtown Vision*, an Advisory Report submitted by the Infrastructure Committee Group, 2003

ISSUES AND NEEDS

There are a number of potential changes to the downtown circulation system that were evaluated to improve existing and future traffic circulation and access. The results of the evaluation are included below. The issues include the following:

- Defining a **hierarchy of streets** in the downtown
- **Traffic management strategies**
- Opportunities for **mending the current circulation network**
- Assessment of the **2010 Vision Loop Road Concept**
- Pros and cons **of one-way versus two-way traffic circulation**

Opportunities for grade-separated railroad crossings and improvement of wayfinding were also considered and are addressed in Chapter 2 and Chapter 9, respectively.

Hierarchy of Streets

There are two basic concepts for downtown street hierarchies. One concept designates all streets to be the same level of importance and disperses traffic uniformly on all streets. The other concept designates some streets for regional traffic, some streets for circulation and some streets for access needs. As a number of blocks in downtown Fresno have been closed to traffic and some streets are no longer continuous, the dispersion concept no longer seems applicable. By designating a hierarchy of streets, it will facilitate provision of wayfinding signage and other cues (lighting, landscaping etc.). Larger street name signs can highlight major cross streets. Sidewalk extensions (bulb-outs) is another measure that can be used to help motorist distinguish major from minor streets. By choking the street width at intersections the major streets look minor.

The City's 2025 General Plan identifies most of the streets in the Downtown area as *Collector Streets*. Exceptions to this classification are:

- Belmont Avenue – classified as an **Arterial Street**
- Abby Street/Blackstone Avenue – classified as **Scenic Arterial Streets**

Downtown streets that are not on the major streets map include:

- E and F Streets
- Fulton Street
- Calaveras Street
- Maddy Drive
- San Joaquin Street

Pending decisions on one-way streets, the recommended street hierarchy for the downtown area is illustrated on Figure 3-6 and includes:

Principal Streets (Regional Access)

- | | | |
|---------------------------------------|----------------------------------|--|
| • Belmont Street | • M Street | • Tuolumne Street |
| • Divisadero Street | • P Street/Abby Street | • U Street (bet Divisadero and Tulare) |
| • Fresno Street | • O Street Link to P Street | • Van Ness Avenue |
| • Fulton Street (north of Divisadero) | • R Street | • Ventura Street |
| • G Street | • Stanislaus St./Blackstone Ave. | |
| • H Street | • Tulare Street | |

Major Streets (Downtown Circulation)

- Broadway
- Calaveras St (H to Van Ness Ave.)
- E Street
- F Street
- Fulton Street
- Inyo Street
- Illinois Avenue
- L Street
- Los Angeles St./Butler Ave.
- Maddy Drive/Clark St.
- McKenzie Street
- N Street
- O Street
- S Street
- Sacramento Street
- San Joaquin Street
- San Pablo Street

Local Streets

The remainder of the streets in Downtown serve local access. These minor streets would be oriented towards pedestrian use, but would also provide on-street parking. The downtown already has a number of pedestrian only block segments, and the most balanced use for these remaining minor access streets would be as Kern Street type local access multimodal streets.

Traffic Management Strategies

The following strategies are suggested as opportunities to use traffic controls to manage traffic flow.

Speeds

It should be noted that high volume streets do not need to be high speed streets. Traffic signal timings can in fact be used to slow speeds on major streets.

Left Turn Signal Phases

Most cars, buses, pedestrians and bicyclists make through movements at signalized intersections. Time allocated to left run signal phases tends not to benefit pedestrian and bus passengers. As such, provision of left turn phases and the amount of time given to these minor movement signal phases should be minimal. The allocation of signal green time should be based on minimizing person delay, rather than vehicle delay.

Signal Cycle Lengths

The term signal cycle length refers to the time required to go through all of the signal phases. Short traffic signal cycle lengths generally minimize delays to pedestrians, bicyclists and bus passengers. Cycle lengths can be minimized by minimizing the number of signal phases.

Mending the Current Circulation Network

Figure 3-4 identifies locations where the current circulation system is confusing. Much of this confusion is the result of changes that have been made based on the Center City Area Circulation Plan that have resulted in discontinuities in the network. Divisadero Street, which is the seam between the downtown grid street network and the citywide grid street network, is a major cause of confusion. The failure to replace the Broadway Diagonal's circulation function on the west side of the Mall has also adversely impacted circulation and led to some confusion. In summary the problems with the current circulation systems primarily relate to a discontinuous street system, the Divisadero Street seam along the interface of two grid street networks and weak wayfinding signage. Simplifying the seam along Divisadero Street appears to be relatively simple and is explained in detailed below. Better connecting and upgrading H Street could help replace the former Broadway circulation link on the west side of the Mall.

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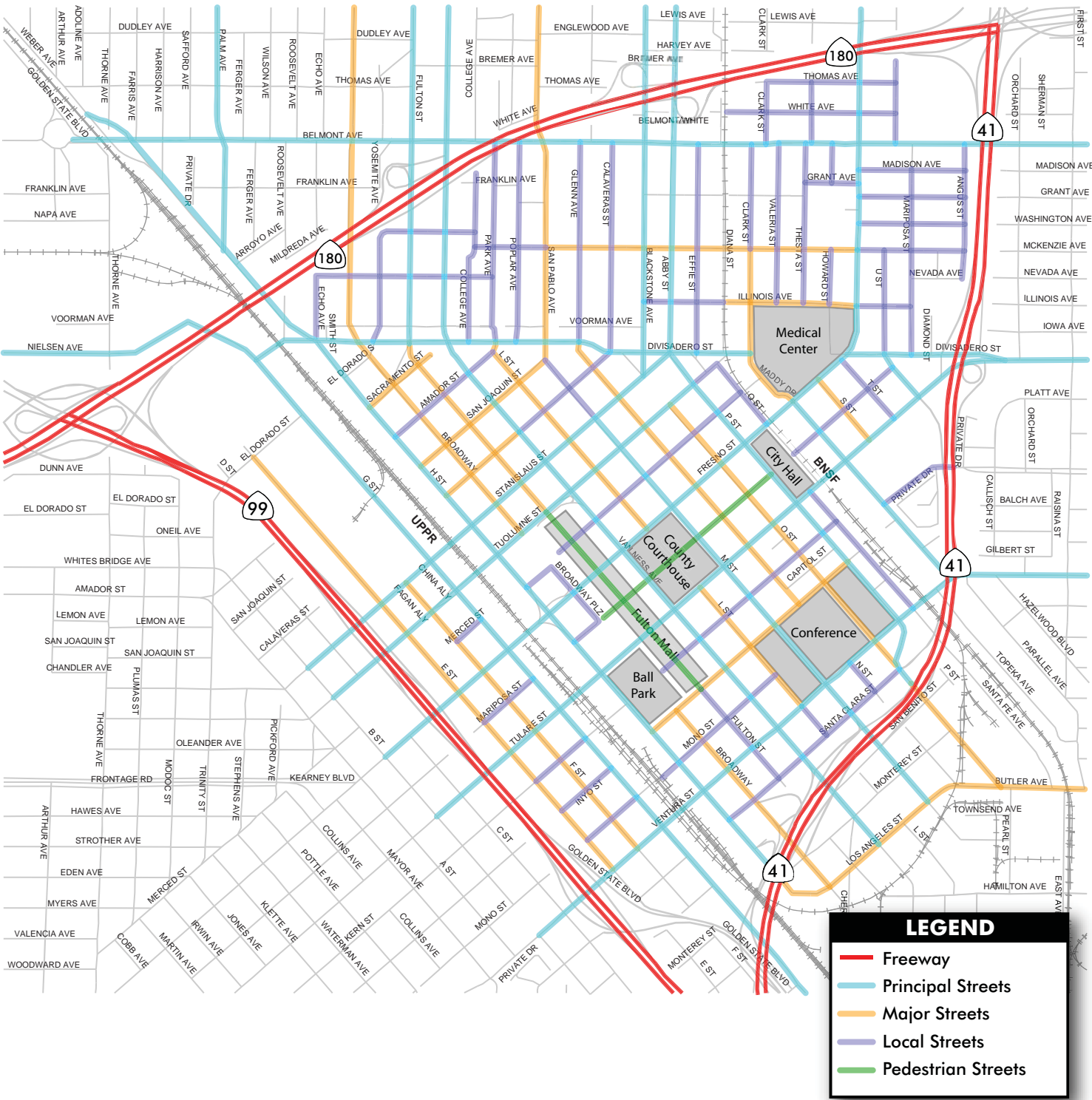


Figure 3-6
RECOMMENDED STREET HIERARCHY
100576/BASE - 09/10/07

Simplifying the Grid Street Network Seam along Divisadero Street

The transition across the seam between the two street grids is more confusing than it needs to be. The change of direction is a little confusing, but at some intersections there are several choices that motorists must make and the signage does not inform these choices. In addition to strengthening signage, the following measures are recommended to simply traversing the seam.

1. Eliminate a turn choice at the P Street and Divisadero Street intersection by closing Stanislaus Street between P and O Streets. Traffic approaching Divisadero Street on P Street would be confronted with a conventional four leg intersection. Signage would be very simple. A pedestrian path would need to be retained on this closed block to allow bus patrons from the Regional Medical Center to directly reach the Stanislaus Street bus stop at the Caesar Chavez School. Figure 3-7 illustrates this simplification. To accomplish this, the block of Divisadero between Blackstone and Abby Streets would need to be re-striped. Observations suggest one through lane in each direction, one full length left turn lane in each direction and a split left turn lane for each direction for the block between Blackstone and Abby Streets. The two left turn lanes would help accommodate the heavy left turn movements, particularly the Divisadero to Abby heavy movement. Consideration should also be given to cul-de-sacing O Street to eliminate a turn conflict at the Blackstone and Stanislaus intersection.

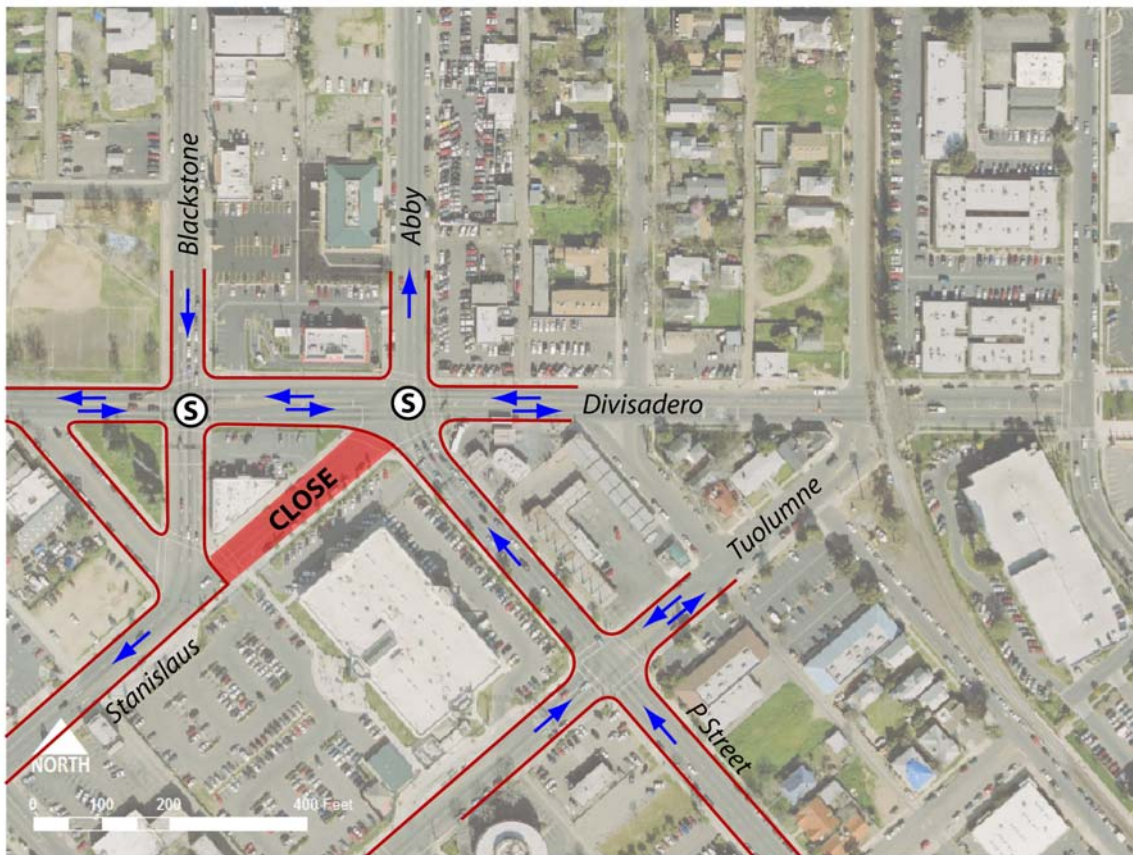


Figure 3-7: Divisadero Street & P Street

2. Consider physically prohibiting the traffic entry to Echo Street at Divisadero Street and H Street intersection. Removal of this departure leg of the intersection would help to simplify it. Access to this area is possible from Broadway.

3. Reroute eastbound traffic on Divisadero Street approaching the SR-41 interchange to use U Street and Tulare Street (see Figure 3-8). This would simplify the eastbound diverge on Tulare Street at the SR-41 interchange, reduce the number of traffic signal phases and allow northbound SR -41 off-ramp traffic to turn left onto either Tulare Street or Divisadero Street (new). This reroute would not increase the volume of freeway ramp traffic but it would shift more of the northbound on-ramp traffic to the loop ramp. The traffic model projects a 21 percent increase in daily traffic volume for the northbound SR-41 ramps at Tulare Street. This change involves very complex freeway weaving issues and merits further study to determine its merit. It would slightly improve weaving between Tulare and SR-180 in the northbound direction, but capacity of the loop on-ramp to accommodate the added traffic is uncertain. Caltrans has expressed concerns with this concept.

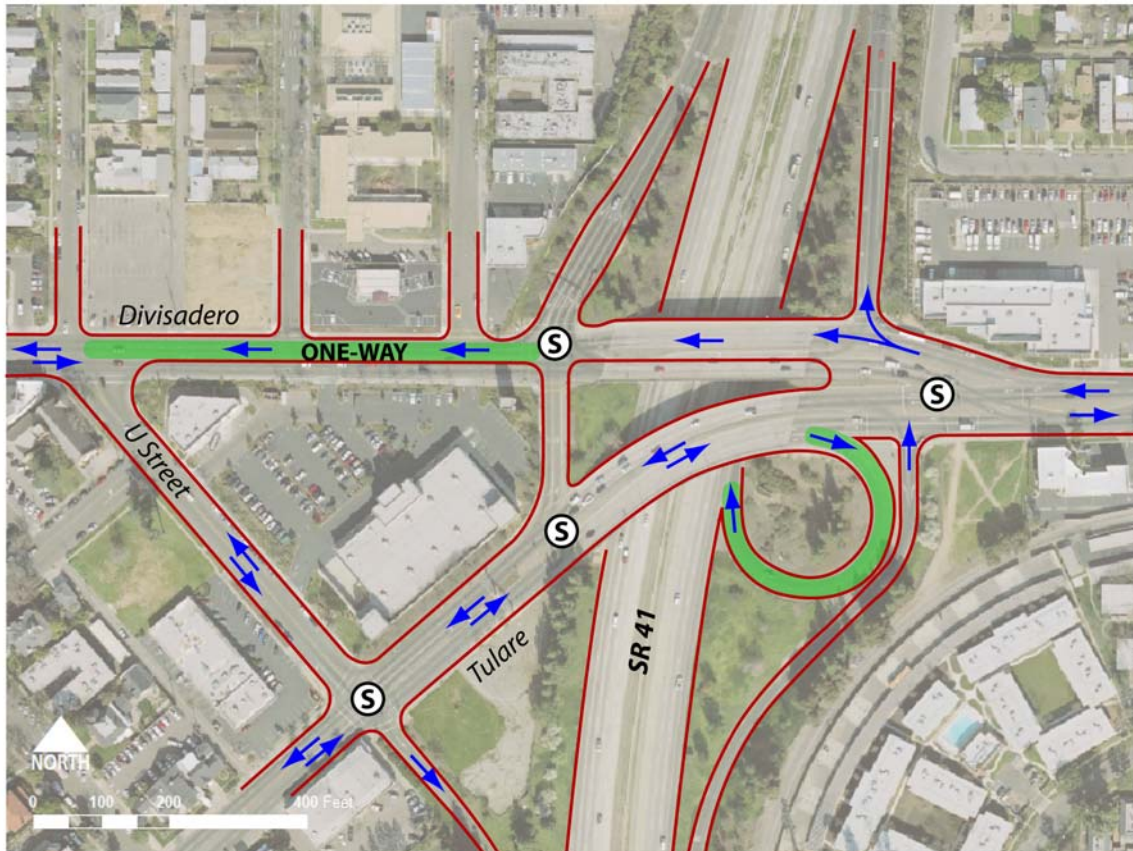


Figure 3-8: Tulare Street & Highway 41 Interchange

4. Wayfinding is needed to direct motorists how to connect between the two halves of Divisadero Street. In the eastbound direction Fresno Street to P Street seems a viable and simple path. In the westbound direction the best option is not as clear, but Maddy Drive is probably it. Failure to provide any signage (current situation) leads to the worse possible result – confused motorists. These confused motorists are already using Maddy Drive, but their confusion increases the risk of traffic accidents.
5. Reconnecting truncated streets appears to be difficult. No easy physical means seems to exist to reconnect Broadway or Fulton Streets between Tuolumne and Inyo Streets, with the exception of opening the Fulton Mall to traffic. The reopening of the Fulton Mall to traffic is discussed in Chapter 8. Broadway is blocked by the baseball stadium. The only means of reconnecting N Street appears to be a tunnel or overpass of the convention center truck docks. This would be costly, unsightly and would create a barrier for pedestrian and other crossings along the grade separation segment. Reconnecting O Street near Divisadero might be possible, if the Cesar Chavez Adult Education School would accept construction of a parking deck to replace lost parking. Circulation benefits associated with the reconnection of O Street are mixed. It would

provide a simple link paralleling P Street for inbound traffic on Blackstone to access the City Hall Area. By locating another traffic decision-point close to the Divisadero “seam”, the reopening probably would also add to confusion and probably increase accidents.

H Street Strengthening

With the truncation of Broadway and closure of Fulton Street, the only option for improved access and circulation in the corridor bounded by the Mall and the UPRR tracks is to strengthen H Street. Figure 3-9 describes how H Street could be better connected to the downtown street network. Measures should include:

1. Improved northern linkages to the nearby Fulton Street/Van Ness Avenue one-way couplet and to Broadway;
2. New central segment linkages to the Stanislaus/Tuolumne one-way couplet;
3. Improved southern linkages to SR-41 and to Butler Street;
4. Simplify the Broadway Diagonal intersection to restore H Street as the principal traffic movement; and
5. Improved connection to Fresno Street.

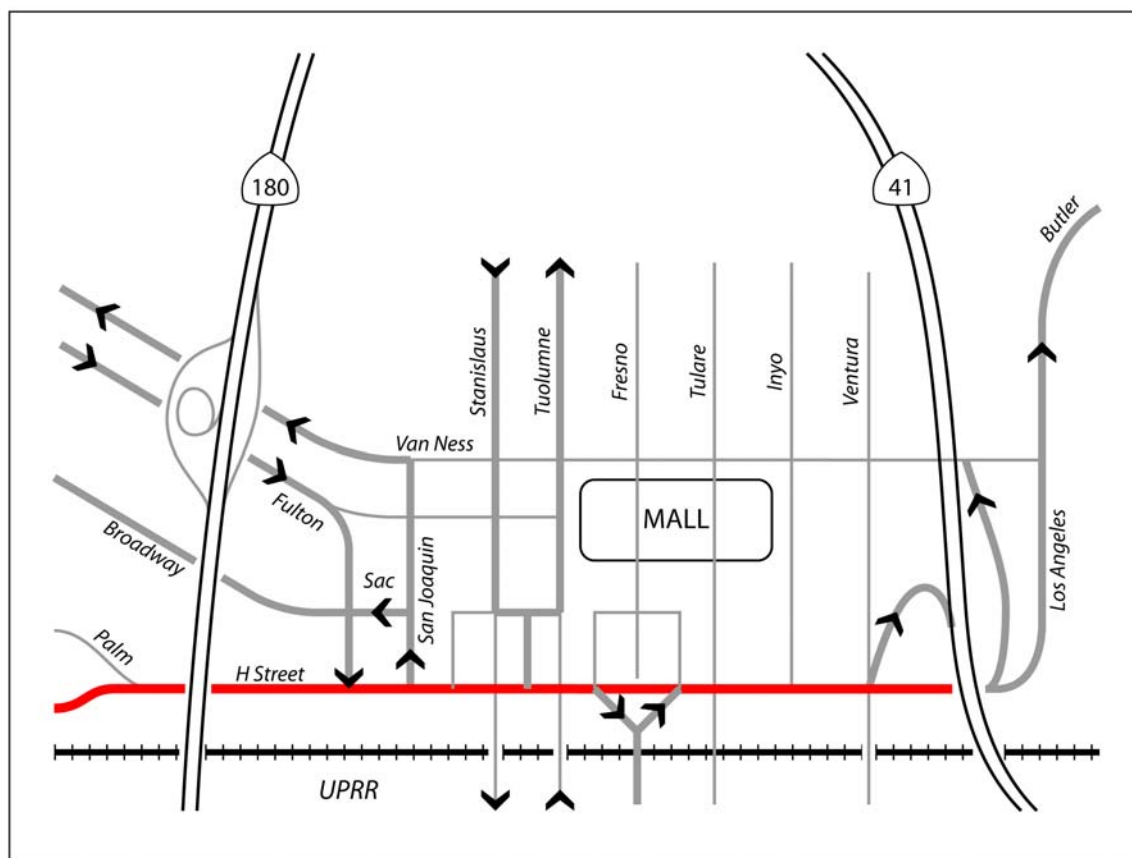


Figure 3-9: H Street Concept

The northern end connections to the Fulton Street/Van Ness Avenue couplet and to Broadway should be strengthened by removal of the current diagonal, and upgrading the Sacramento and San Joaquin Streets with signage and traffic control to facilitate simple paths. Figure 3-10 describes this concept. San Joaquin Street seems a better street for the connection than Amador Street, which has angle parking. Maintenance of the current Fulton Street connection to Van Ness Avenue at Tuolumne Street is needed, since most motorists recognize these two streets as part of a former one-way traffic couplet.



Figure 3-10: H Street - Northern Linkages

Figures 3-11 and 3-12 describe the concept for improving the connection between H Street and the Stanislaus/Tuolumne couplet. A new link would be built between H Street and Broadway to accommodate most of the traffic to/from H Street. Upgrading Calaveras Street is suggested as the best means of improving the connection between H Street north and Stanislaus Street. All of the connection paths would be supported by very simple directional signage.

Figure 3-13 describes the concept for improving H Street's connections to SR-41 and to Butler Street (via Los Angeles Street). Aside from signage and minor traffic control measures, this concept involves developing the link between the south end of H Street and Butler Street as a public street.

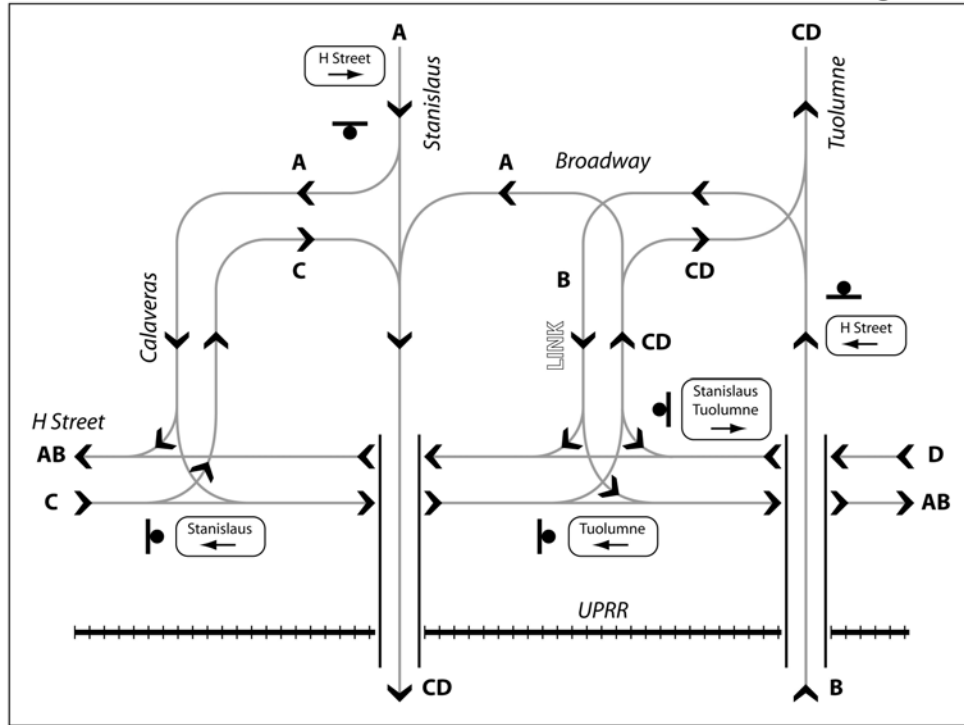


Figure 3-11: H Street Connections to Stanislaus Street and Tuolumne Street

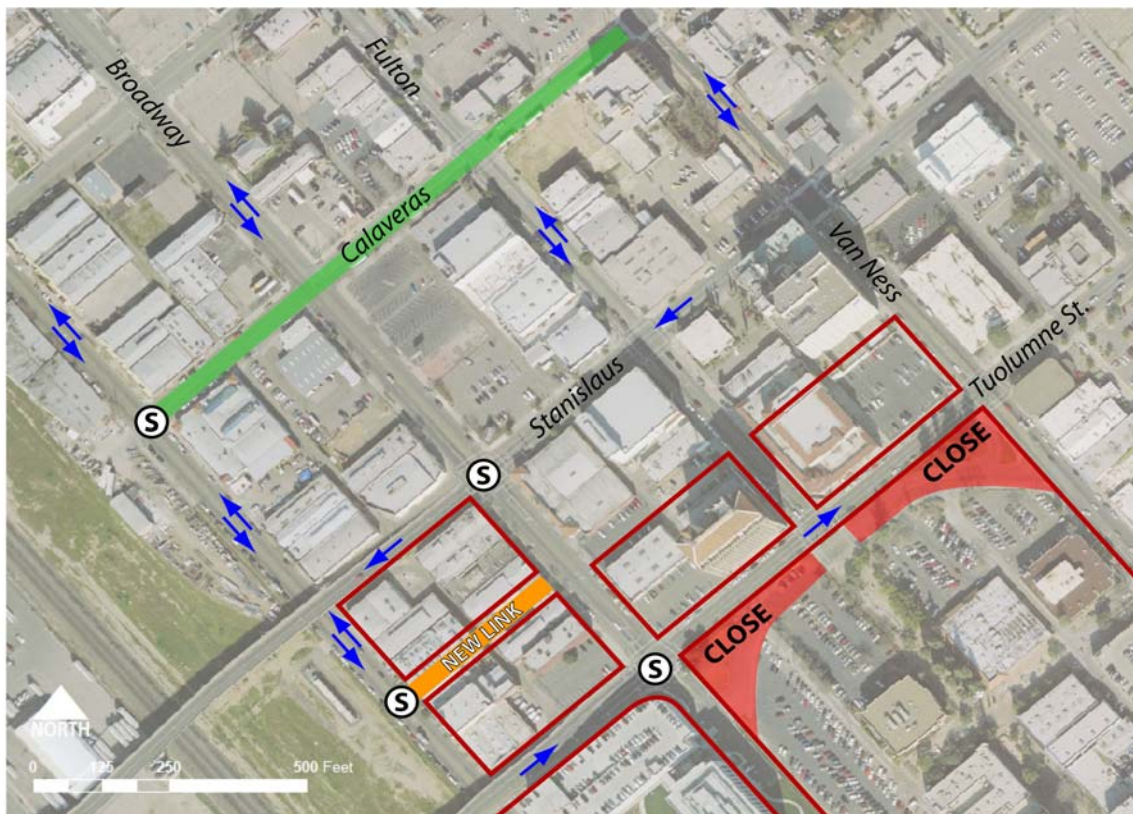


Figure 3-12: Stanislaus Street & Tuolumne Street.

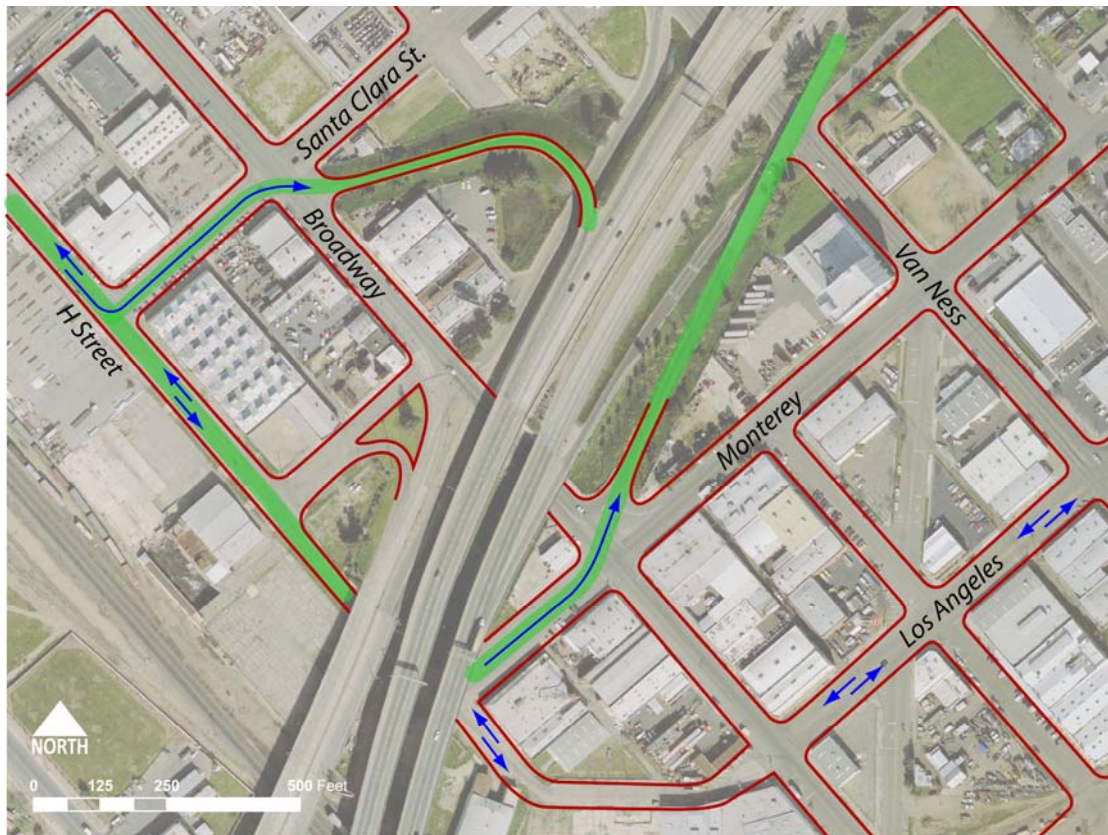


Figure 3-13: H Street - Southern Linkages.

As noted above, when the Broadway Diagonal was closed to facilitate development of the IRS Building, the Diagonal's remnants have disorient and confused motorists. Mending this problem would entail:

1. Reconstructing the H Street intersection with the diagonal into a conventional intersection; and
2. Eliminating the confusing remnant elements between Broadway and Van Ness Avenue.

The present connection between Fresno Street and the Broadway Plaza includes a confusing right turn channel that leads motorists towards H Street rather than westbound on Fresno Street. The simple fix is to eliminate the right turn channel from Broadway Plaza (Figure 3-14).

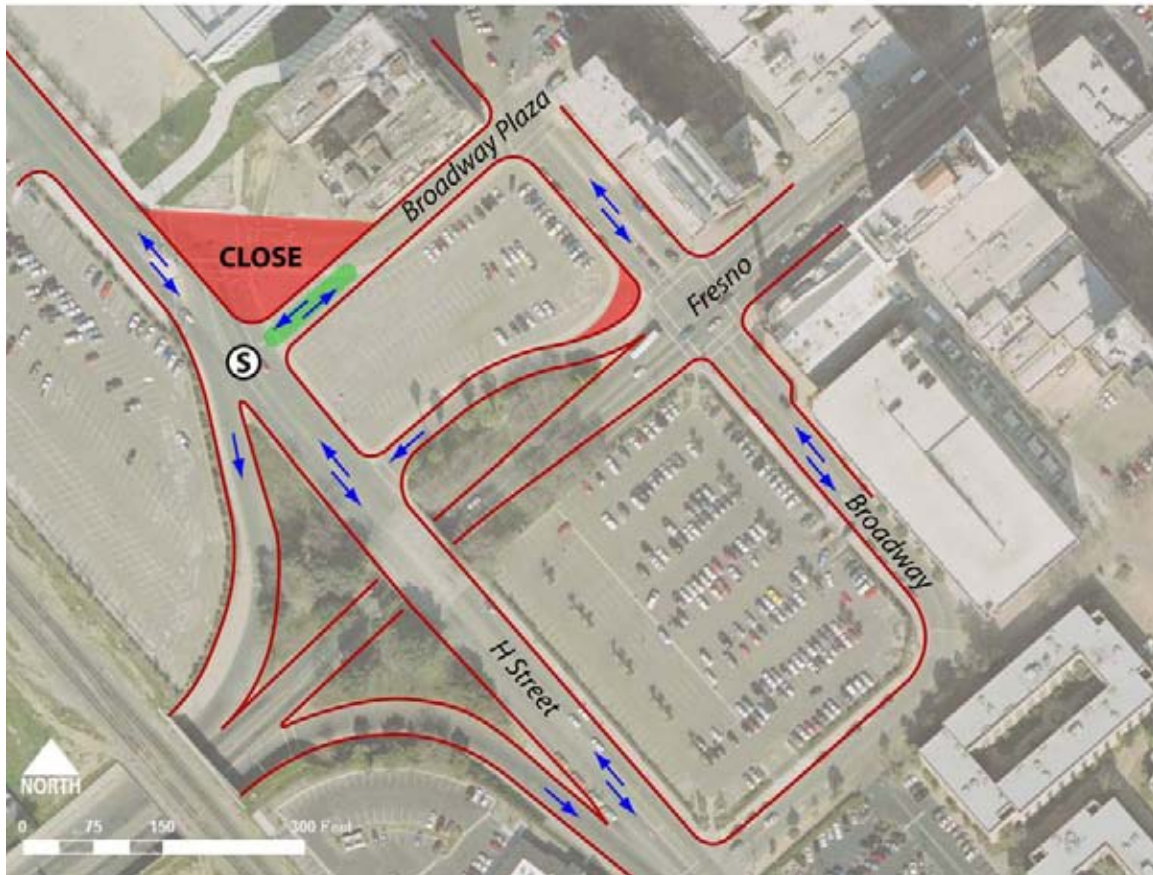


Figure 3-14: H Street & Fresno Street.

Van Ness Avenue between Fresno and Tulare Streets

The normal downtown pedestrian crossing interval of every block (480 feet) is broken along Van Ness Avenue at perhaps its highest demand location (between Fresno and Tulare Streets). Signalized crossings are provided at Inyo, Kern, Tulare, Fresno, Merced, Tuolumne, Stanislaus and Calaveras, but not at Mariposa Street. A pedestrian subway is provided at Mariposa Street, rather than a standard surface level signalized crossing. The pedestrian subway facilitates provision of the current transit hub and coordinates with the underground parking garage access. Establishment of an at-grade pedestrian crossing at Mariposa Street would provide a more convenient pedestrian crossing and would allow the eastbound curb to be used for loading FAX buses. As a traffic clamed street segment, this crossing could operate as a signalized crossing or possibly a simple crosswalk. The block between Fresno and Tulare Streets is not a high speed traffic facility. Figure 3-15 illustrates the concept. Consideration should be given to restoring the sidewalk edge on the Court House side adjacent to Van Ness Avenue.

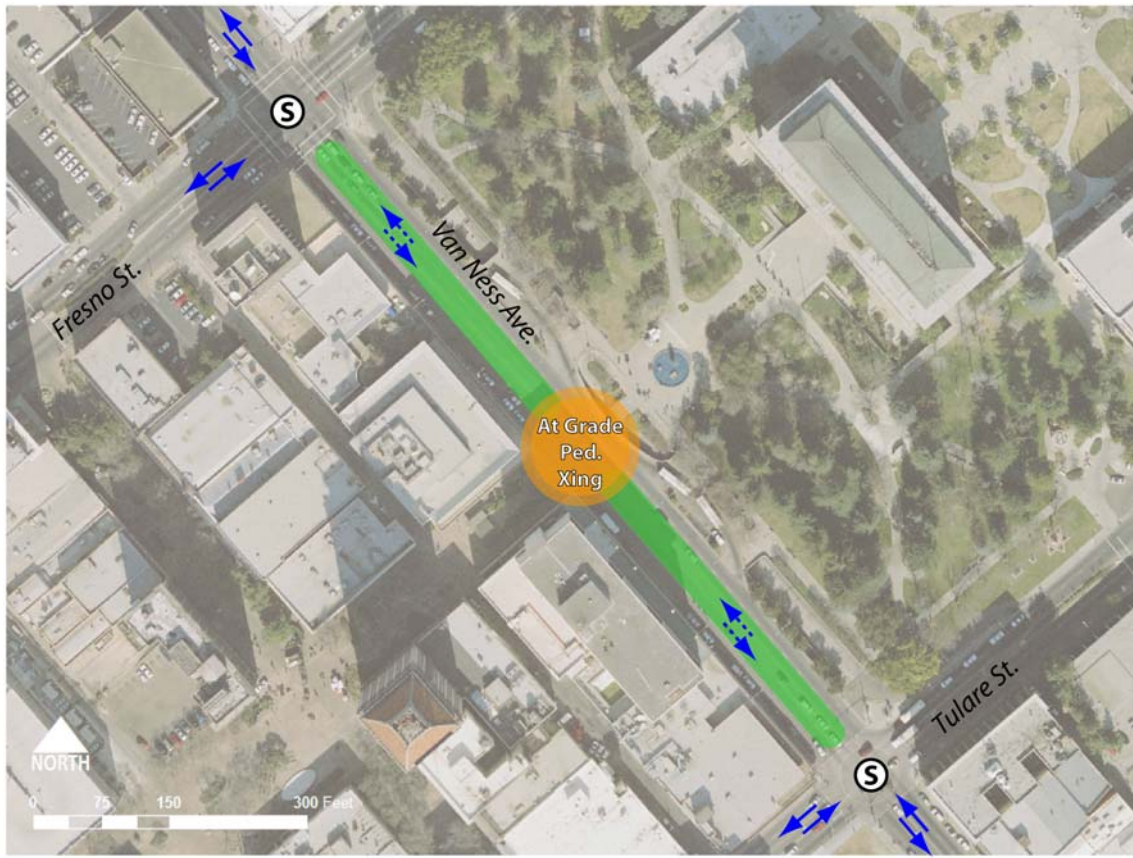


Figure 3-15: Van Ness Avenue between Fresno and Tulare Streets.

Roles of E, F and G Streets

West of the UPRR tracks three major streets provide north-south circulation; E, F and G Streets. G Street is closest to the railroad tracks but the Stanislaus Street/Tuolumne Street over-crossings both cross over G Street and fail to provide direct connections. As such, this street is somewhat disconnected from the downtown street network. F Street does have connections to the Stanislaus/Tuolumne one-way couplet, but it does not continue north of Stanislaus Street. E Street is very close to the Highway 99 freeway. Thus, none of the three provide a continuous linkage. Because of this it is important that the east-west streets be protected to provide the necessary mobility to move between E, F and G Streets.

2010 Vision Loop Road Concept

The 2025 General Plan for the City of Fresno includes as one of its Centre City implementation policies “Support and implement the Vision 2010 Downtown Fresno Action Strategy of March 2002.” The Downtown Vision 2010 states “A large deterrent to Downtown development is the lack of a congruent traffic plan that facilitates the movement of traffic through the Downtown area”. Figure 3-5 describes the 2010 Vision Loop Circulation Plan. It attempts to provide a simple one-way loop circulation system around the downtown core. Principal access to the loop would be as follows:

- From Highway 41 via Fresno Street, Tulare Street, P Street, M Street and Van Ness Avenue, and Broadway;
- From Highway 99 via Ventura Avenue, Fresno Street, Tuolumne/Stanislaus Streets (but not Tulare); and
- From Highway 180 via Blackstone Avenue/Abby Street and Fulton Street/Van Ness Avenue.

The counterclockwise one-way loop would consist of P Street, Stanislaus Street, H Street and Ventura Street. Traffic desiring to go in the clockwise direction would need to utilize other streets. The concept is understood to maintain Tulare Street, Fresno Street, Tuolumne Street, M Street and Van Ness Avenue and Fulton Street, but to close other minor streets to traffic. It is unclear if Tuolumne Street and M Streets would continue to be one-way streets or would be converted to two direction traffic operations. The Loop Plan was developed in 2002 and a number of changes to the circulation network have subsequently occurred.

Functionally, the Loop Road Concept appears to suffer from a number of problems:

1. If Ventura Street is converted to one-way northbound operations, how would traffic travel in the southbound direction in this corridor? Most one-way systems have a paired street which operates in the opposite direction of travel. These two streets are often referred to as one-way couplets. If Inyo Street is retained and operated as a one-way southbound street this would address this weakness, but it would also seem to be in conflict with the loop road objective of minimizing traffic on downtown streets. As an example, how would traffic coming from the Fairgrounds area reach California Avenue? At present they make this connection directly on Ventura Street. It is very unlikely that they would travel all the way around the loop to make this connection.
2. Similarly the one-way H Street in the concept does not have an opposite direction paired street. This would seem to put added pressure on Van Ness Avenue. It is doubtful that motorists will go all the way around the loop to make this linkage.
3. The Loop Road Concept identified the connection between Stanislaus Street and H Street as a required improvement as well as the connection from H Street to Ventura.
4. The loop road concept might look simple on a map, but motorists will find it more confusing than the current circulation system and few motorists will want to travel around the loop.
5. One advantage offered by this loop road concept is that it would work well with event activities at the stadium.

Pros and Cons of One-way versus Two-way Traffic Circulation

The benefits and disadvantages of one-way versus two-way streets have been extensively debated within the traffic engineering community and within the general community. The traffic planning community tends to like one-way streets although there continues to be some debate. The planning community tends to slightly favor one-way streets, particularly if speeds are controlled, block lengths are short and pavement space can be reallocated for pedestrians and bicyclists. The retail community tends to favor two-way streets for address-finding reasons more so than visibility. These representations are generalizations. The benefits largely are defined by the multimodal transportation and community planning objectives, functional requirements and traffic circulation resources.

Overall there has been a trend in the past ten years to convert one-way streets back into two direction streets. This re-conversion appears to be primarily driven by merchants and commercial interests, more than by traffic or even planning interests.

Commercial Objectives

Most downtown business interests favor transportation systems that maximize convenient access, particularly foot traffic pass their business. In addition to avoidance of congestion and easy parking, merchants want customers to be able to easily find their store. On a two-way street, customers knowing that a business is located at 500 Van Ness Avenue simply drive down Van Ness Avenue until they find the address. If Van Ness Avenue were a one-way street they might need to drive down the parallel couplet street and guess at what street to turn in order to reach the desired business. For one-way streets that serve primarily government or even office corridors this “*findability*” is less important than for retail businesses. It also tends to be less important if parking is area oriented, rather immediately in front of the store.

Multimodal Transportation and Community Planning Objectives

It is useful to approach this discussion from the individual perspectives of pedestrians, bicyclists, bus riders and operators, truck/service vehicle drivers, motorists and the neighborhood stakeholders.

Pedestrians – One-way streets provide a number of benefits for pedestrians. As sidewalks provide two-directional travel, one-way streets do not add to pedestrian walking distances. By eliminating left turn conflicts with opposing traffic, one-way streets facilitate short traffic signal cycle lengths (minimizes delay for street crossings), reduces the required width of the street crossings (no left turn pockets) and improves safety by eliminating multi conflict traffic conflicts at crosswalks (turning vehicles only need to watch for pedestrians, rather than for gaps in opposing traffic and pedestrians). Thus from the viewpoint of pedestrians, one-way streets are attractive. High traffic speeds are a key pedestrian safety concern, but one-way streets actually allow traffic signals to control speeds.

Bicyclists – In theory one-way streets should increase travel distances for bicyclists. Block lengths are short and in practice many bicyclists travel contra-flow on the street or sidewalks for these short distances. The avoidance of minor movement left turn phases and the need for left turn pockets should also benefit cyclists. The simple two phase signals could even be timed for bicycle speed progression, rather than for car speeds. Perhaps most importantly the high efficiency of one-way travel might allow right-of-way to be designated for bike lanes.

Transit Riders and Buses – The Downtown area has relatively short block lengths, which minimize transit stop access walk distances for buses operating on adjacent parallel one-way streets. One-way streets are generally less desirable for bus passengers as they tend to increase bus stop access efforts, but with the short block spacing in the downtown area, this would not be a negative factor. Short two phase traffic signal cycles would benefit bus running times and the one-way street operation also makes turning large vehicles easier.

Trucks and Service Vehicles – One-way streets tend to be better for trucks and service vehicles as they generally provide more lanes for traffic to bypass double parked trucks and they make turning large vehicles easier.

Parking – Most motorists prefer to parallel park on two-way streets since the normal practice is to parallel park on the right side of the road. Parallel parking on the left side of the street is in many ways easier, but it is a less practiced maneuver. To the extent that street right-of-way can be more efficiently reallocated and allow for angle parking, one-way circulation would be more attractive to parkers.

Traffic Circulation – One-way streets are more attractive to most motorists as they tend to minimize traffic conflicts (left turns) and minimize stop delay at traffic signals (shorter signal cycles and coordinated signal progression). It should be noted that coordinated traffic signal timing to minimize stop delays (progression timing) does not inherently need to increase speeds. In fact, signal timing progression strategies can be used to control traffic speeds. A key traffic circulation issue regarding one-way streets is the transition from one-way to two-way.

Implementation - Conversion of a street system from one-way to two-way operations and visa versa is not cheap. Pavement striping, signal displays and detectors, traffic and parking signage, and parking meters all need to be reoriented. If freeway interchanges are designed to support one-way traffic circulation on local streets, modification of the freeway interchanges can be very costly and difficult.

Urban Design and Commercial Considerations – Numerous studies have attempted to define the commercial implications of one-way versus two-way traffic operations on businesses. Results have been mixed, suggesting that many factors are important to business success aside for traffic operations. There is clearly a public perception, however, that one-way streets are a highway capacity solution, rather than a livability solution. One-way street tend to be very visible traffic features (why else would one have one-way streets?). As indicated above there are many non traffic benefits associated with one-way streets and there are many good examples of successful one-way livable streets.

Implications for Downtown Fresno

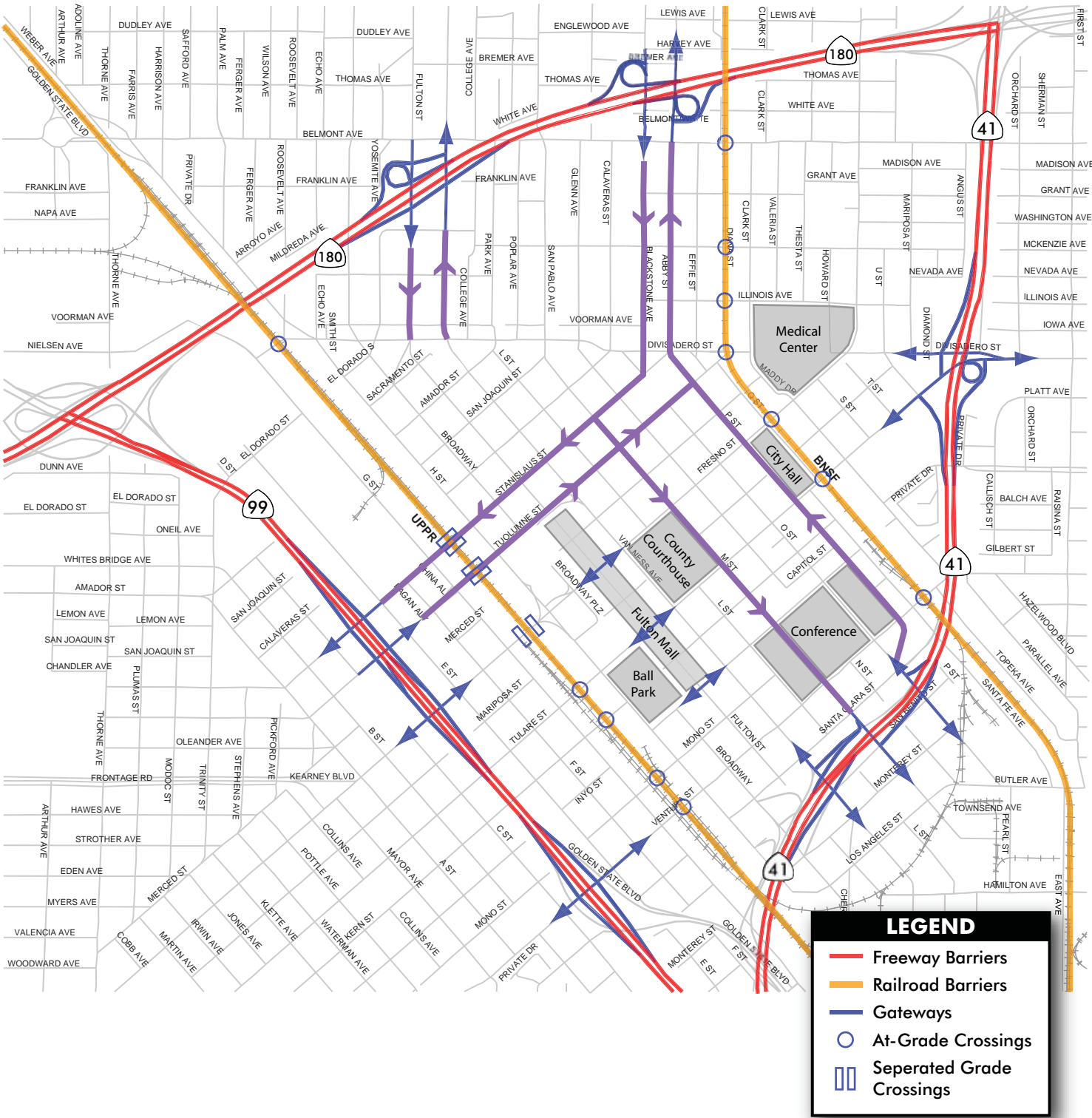
The interface between one-way and two-way streets and other elements of the circulation network is very important. The transitions need to be intuitively simple. In Downtown Fresno the one-way street transitions are simple, with the exception of the terminus of the Fulton/Van Ness couplet near Divisadero Street. The Fulton Street and Van Ness Avenue simple transition was lost when Van Ness Avenue was converted into a two-way street and Broadway was chopped up.

The interface between the downtown street system and the three perimeter freeway access points is also an important consideration. As shown in Figure 3-16, the Highway 180 interchanges are designed to serve the one-way traffic couplets of Fulton/Van Ness Avenue and Blackstone Avenue/Abby Street. It would be difficult and very expensive to change these interchanges to serve two-way traffic streets. The Highway 99 interchanges are a little more flexible, but serve the Tuolumne/Stanslaus couplet very well. Highway 41's interchanges include braided ramps to minimize weaving movements. These interchanges support the current traffic operations very well, but probably could support the conversion of M and P streets to two-way operations. Some freeway access capacity would likely be lost for the M Street access and the intersection of O and P Streets would become more complicated and confusing.

As shown in Figure 3-16, the current one-way system provides high capacity access to all three perimeter freeways. Wayfinding could be designed to communicate this simple freeway access concept. Figure 3-16 also suggests that the Fulton/Van Ness one-way couplet needs to be better connected into the downtown circulation network. Should they connect into two-way Van Ness Avenue, to two-way H Street, or some other streets? It seems clear that westbound Van Ness Avenue should connect into northbound Van Ness Avenue. Southbound Fulton Street, however, could easily connect to either a one-way eastbound Fulton Street to Stanislaus/Tuolumne or via Sacramento Street to H Street.

Downtown Fresno's blocks are relatively short and pedestrian friendly (400 feet by 480 feet street centerlines). To the extent that one-way pairs can be provided on adjacent streets, one-way street should function very well. This is true for Stanislaus and Tuolumne Streets, but not for M and P Streets. It is true however that most of the uses along M and P streets are governmental, rather than retail. Thus to the extent that wayfinding and street hierarchy can be effectively provided, the M and P couplet seems to be a good concept. The challenge therefore seems to be can the street hierarchy and wayfinding be provided to support the M and P Street one-way couplet. Retention of the diagonal connector between O and P Streets helps to minimize confusion.

FRESNO DOWNTOWN TRANSPORTATION PLAN



RECOMMENDATIONS

Projected future growth in traffic to/from and within the downtown indicates an increased need to accommodate more of these trips by walking, bicycling, transit and higher occupancy vehicle use. Main line freeways and freeway access points will become increasingly congested. Recommended traffic measures include the following:

- 3.1. Adopt and implement travel mode split targets as described in Chapter 1 which call for a reduction in the auto mode share and an increase in transit, bicycle and pedestrian modes.
- 3.2. Adopt the recommended street hierarchy that is shown in Figure 3-6 and deploy visual cues to multimodal users to simplify wayfinding in the downtown.
- 3.3. Consider amending CEQA development impact intersection LOS threshold from the current level D to a reduced level of F+. LOS D or better is currently defined as average vehicle delay of 55 seconds or better. In the downtown area a standard of 65 seconds or better (LOS E is 80 seconds or better) might be adopted. By minimizing minor movement left-turn phases and signal phase time allocations and keeping the signal cycle length short, vehicle delays can actually be reduced. Further in the downtown, the traffic engineering LOS definitions should be converted to person-delay rather than vehicle-delay. Each bus should be treated as having 40 passengers in person delay calculations. Alternatively, core downtown development LOS thresholds for significance could be defined as LOS F, effectively exempting them from CEQA mitigation measures.
- 3.4. Do not further fragment the downtown circulation system with street traffic closures, instead use the Kern Street concept on minor streets to balance street parking and lower traffic speeds.
- 3.5. Deploy traffic control measures to recognize pedestrian, bicycle and public transit use as well as general traffic. Short two phase signal cycles, minimal use of left turn signal phases and signal timing to manage speeds are effective multimodal traffic control strategies that support multimodal circulation.
- 3.6. Traffic generation related to land use is strongly linked to the amount of parking that is provided. This is true of suburban and downtown development projects. For the downtown area, traffic impact fees might be waived for residential and retail projects because of the reduced infrastructure requirement for these developments. For office uses, the fees could be linked to whether the project includes on-site exclusive parking or if parking is shared with surrounding land uses.
- 3.7. Retain the remaining one-way streets supported with wayfinding improvements and traffic calming measures to control speeds.
- 3.8. Should the HSR project move forward with the trenched concept, opportunities to reconnect downtown streets should be further explored, particularly Inyo Street.
- 3.9. Work with Caltrans to determine how best to simplify the Tulare SR-41 interchange.
- 3.10. Consider the following street improvements to simplify and facilitate circulation.
 - o Simplify Broadway Plaza's intersections with H Street and with Fresno Street as described in this chapter.
 - o Reconnect H Street and strengthen it as the major downtown street between Van Ness Avenue and the UPRR corridor.
 - o Close Echo Street as a mean of simplifying the H Street/Divisadero intersection.
 - o Study the closure of Stanislaus between Divisadero and Blackstone as a means of simplifying the P/Divisadero intersection.
 - o Retain the O to P Street Diagonal near SR-41 to simplify downtown access.
 - o Keep all blocks of E, F and G Streets open on the west side of the UPRR corridor to maintain circulation convenience
 - o Change the one-way traffic pattern to two-way traffic on N Street between Tulare and Mariposa Streets
 - o Create an at-grade signalized pedestrian crossing on Van Ness at Mariposa. This change will require some physical changes on the Courthouse side of the street.

CHAPTER 4 - PUBLIC TRANSIT ELEMENT

Previous planning efforts for Downtown Fresno envisioned an expanded role for public transit. To maximize its full potential, public transit needs to be integrated with pedestrian, parking and other transportation policies and facilities and coordinated with surrounding land uses. Public transit in a downtown setting has three traditional roles. First, it serves as the gateway into the region for regional trips. Secondly, it provides access into the downtown from other parts of the city. Lastly, public transit provides circulation within the downtown, minimizing the use of private cars for short distance trips.

CURRENT SETTING

Approximately four percent of all trips to, from and within Downtown are estimated to be by public transit today. The majority of these trips are made using the city's local bus system, Fresno Area Express (FAX). This analysis to follow in this chapter focuses primarily on this fixed-route bus service.

Aside from FAX, regional intercity bus and rail services are available. Greyhound provides intercity bus service from its base on H Street near Tulare Street. As noted in Chapter 2, Amtrak's San Joaquin passenger rail service stops in Downtown at its station near City Hall. Other public transit services include: Fresno County Rural Transit agency's Southeast and Westside bus routes. The Southeast bus route links Downtown with Kingsburg, Selma and Fowler. The Westside bus route links Downtown with Firebaugh, Mendota and Kerman.

Network

FAX network of bus routes is shown in Figure 4-1. Of the 20 routes FAX operates, 12 serve Downtown. One of the 12 downtown FAX bus routes is a cross-town (Belmont Avenue) and does not serve the Downtown Transit Center. Another of the 12 downtown bus routes (Route 4) is a shuttle loop route and also does not link with the Downtown Transit Center.

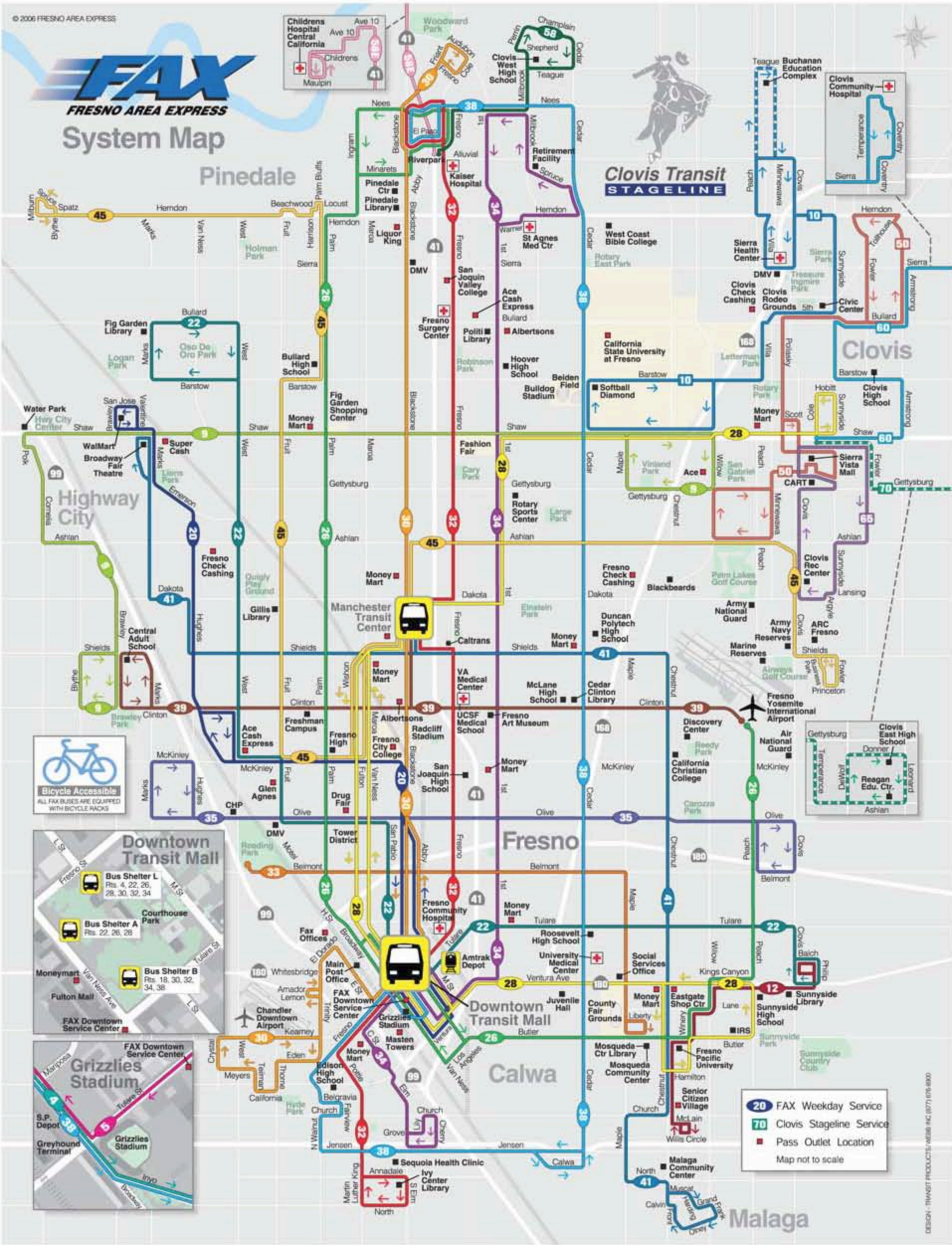
The structure of FAX's route network is grid-like which simplifies passenger understanding of the service and tends to maximize opportunities to transfer between bus routes. Many communities operate this type of bus route network. What is unusual about the Fresno bus network is that the downtown is not near the center of FAX's service. As development has continued to spread northward, the downtown transit hub has slid towards the edge of the FAX service network.

FAX buses serve 16 of the 24 gateway paths into/out of Downtown. The only gateway paths not served by FAX are: Broadway (north and south gateways), Huntington Boulevard, O Street, H Street (south), Golden State Boulevard, and the Highway 99 crossings at Ventura Avenue, Tulare Street, Tuolumne Street, and El Dorado Street. All of the FAX routes to West Fresno enter and leave Downtown via Fresno Street.

Service

FAX bus service operates seven days a week from generally 6 am to 10 pm. On weekdays, service frequencies on the bus routes is generally 30 minutes, with buses on routes 28 and 30 operating on 15 minute headways. Uniform headways make it easier for passengers to remember the schedules and facilitates coordination of schedule pulses for bus routes to allow passengers to transfer between lines. On weekends, the service frequencies for routes 28 and 30 increase to 30 minutes and the headways for routes 20, 22 and 26 increase to between 45 and 60 minutes.

FRESNO DOWNTOWN TRANSPORTATION PLAN



Source: Fresno Area Express Schedule Guide, 2006

Railroad Conflicts

At-grade railroad crossings adversely impact FAX's ability to operate reliably on schedule. One of the reasons why all FAX buses cross the UPRR tracks at Fresno Street to/from West Fresno is to avoid delay and safety risk at the Ventura Avenue and Tulare Street at-grade crossing points. None of the BNSF crossings are grade-separated, so all buses that cross the BNSF can be delayed by trains. Route 26 crosses the BNSF at Butler Avenue, Routes 28 and 34 cross at Ventura Avenue, Route 22 crosses at Tulare Street and cross-town Route 33 crosses at Belmont Avenue.

Circulator

FAX operates one circulator in Downtown, Route 4 (Figure 4-2). The keys to successful circulators are frequent service, convenient access and reliability. Speed for short distance trips tends not to be very important. Route 4 operates as a large one-way clockwise loop route (Fresno Street, O Street, Inyo Street, and H Street) on ten minute headways from 6:30 am to 6:15 pm on weekdays. Route 4 serves about 300 daily passenger trips.

FAX recently ceased operation of the Midday Trolley which was a free fare, ten minute frequency service that operated only during the weekday lunch hours. Its length was constrained by vehicle and cost resources. Many of the potential trips served by this short route were walk-able. Neither of these two shuttle routes directly links the IRS and Regional Medical Center employment centers with the downtown retail areas.

As background, Figure 4-3 describes where streetcars historically ran.

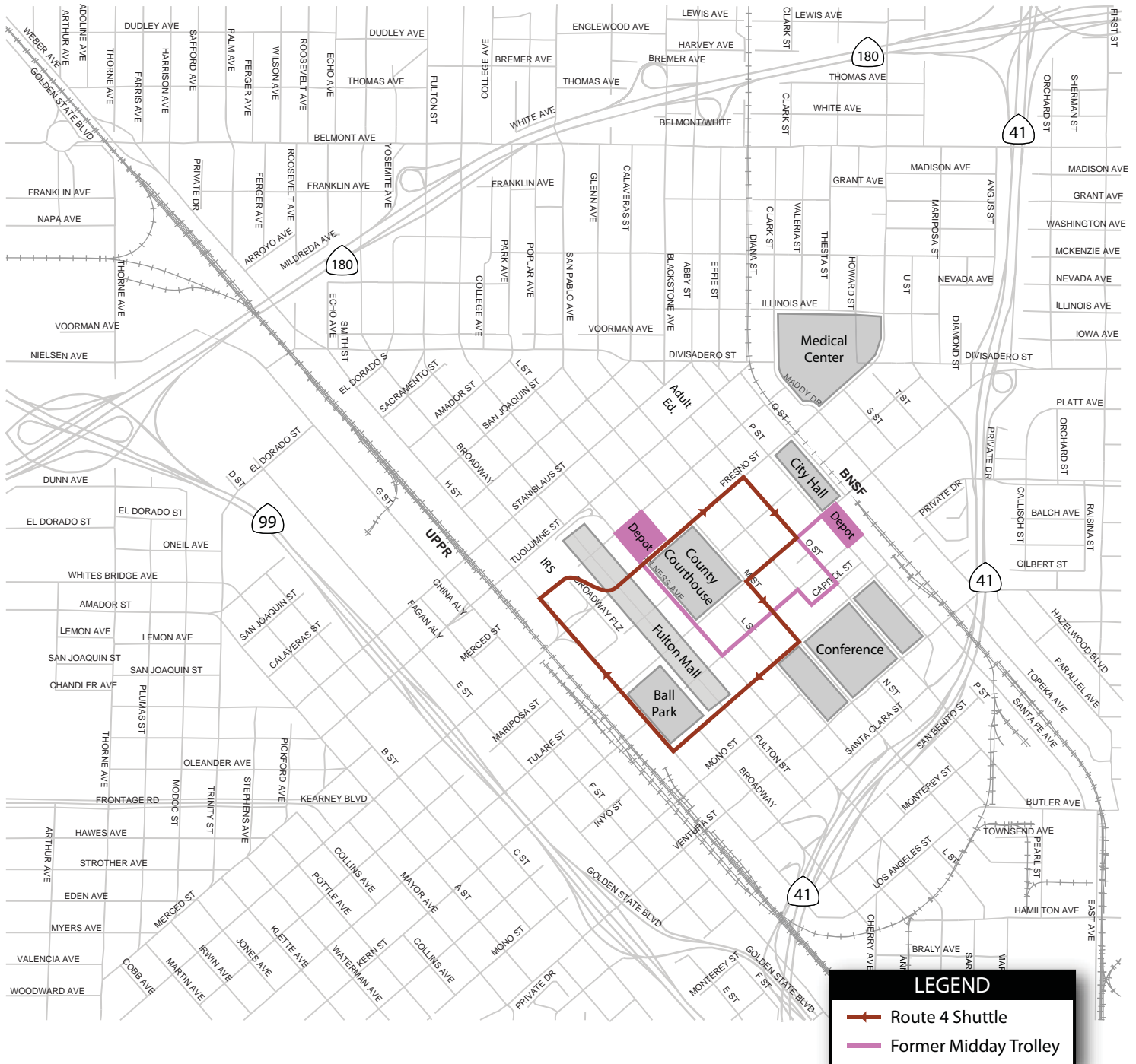
Downtown Hub

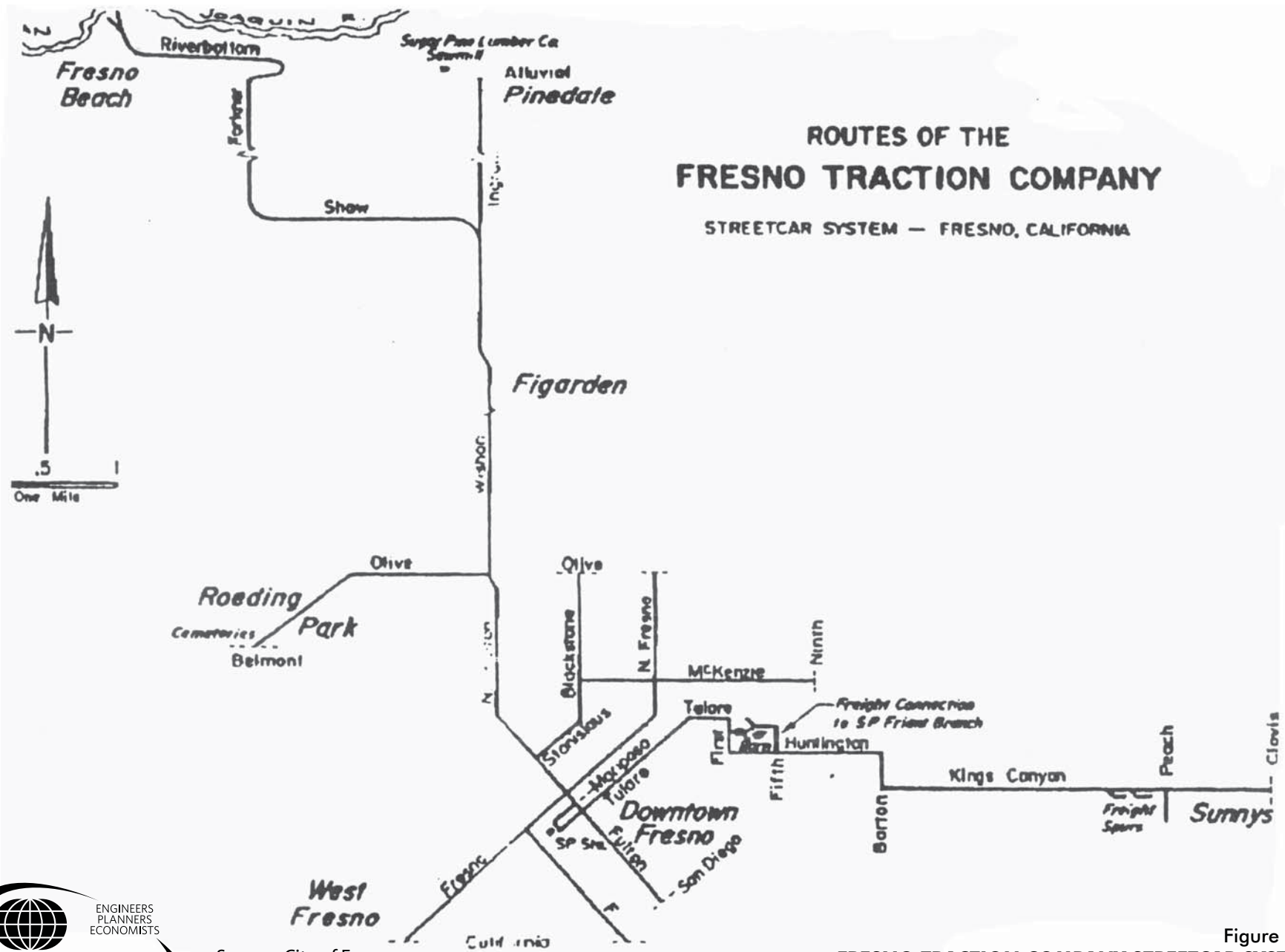
FAX's downtown service operates from its Courthouse Square Transit Center. The transit center consists of three discrete shelter areas, Shelter L on Fresno Street and Shelters A and B on Van Ness Street. Figure 4-4 describes its layout and which buses are assigned to each of the three shelter stops. In general bus routes are assigned to the shelters based upon their direction of travel. For example all of the buses bound for West Fresno are assigned to Shelter A. The one-way street pattern and discontinuities in the street network increase the number of turns buses need to make in the downtown area. Since buses can only access the three shelters in one direction of travel, some buses are required to make several turns to approach and depart the shelters.

The fragmented three-shelter design of the current transit center is confusing to passengers and impairs efficient transfer movements. Ideally, a passenger transfer center should focus its design efforts on security issues, minimizing transfer walking distances/times and providing transparent lines of sight to assist with wayfinding and bus transfer activity. The current three shelter design does not accomplish these basic design objectives. FAX's schedule pulse has buses stopping at the Downtown Transit Center for a maximum of five minutes. As three minutes late is considered allowable schedule adherence, often buses are only stopped for two minutes at the transit center. Bus delays experienced at the at-grade railroad crossings further complicate the three minute normal tolerance for schedule reliability. Within the two to five minute coordinated dwell time for buses, passengers must de-board, walk and board their transfer bus. Since the current walk time between Shelter B and Shelter L is more than two minutes, most of these transfer passengers will likely miss their transfer bus.



NORTH
NOT TO SCALE





Source: City of Fresno

Figure 4-3
FRESNO TRACTION COMPANY STREETCAR SYSTEM

100576/BASE - 12/19/06

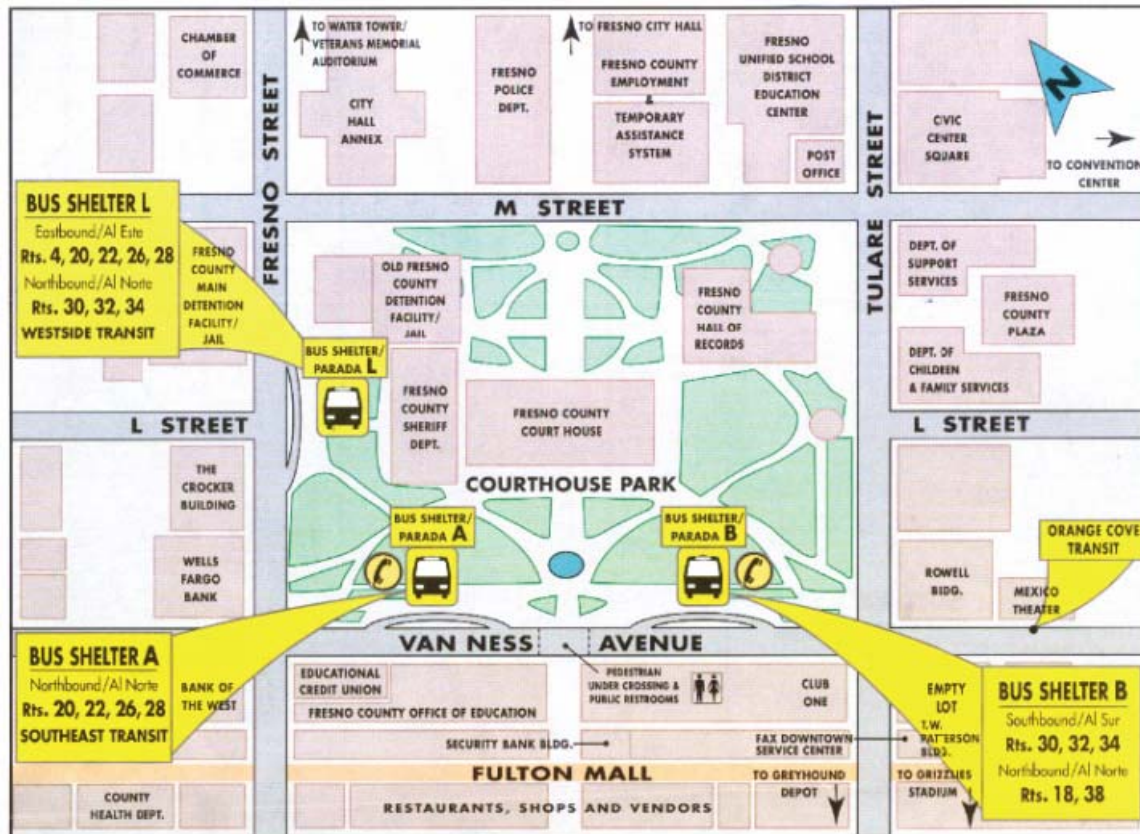


Figure 4-4: Downtown Hub - Bus Shelters
Source: Fresno Area Express Schedule Guide, 2006

The transit center's design also fails to adequately address a number of other issues:

- **Security.** The transfer walk connections are not well lighted and raise security concerns during evening hours.
- **Weather.** The longer walks are also a greater problem during rainy weather.
- **Wayfinding.** The fragmented transit center design complicates wayfinding for passengers. This is particularly problematic for transfer buses that must quickly get to their next bus.
- **Pedestrian Access.** Pedestrian access to the current transit center is poor. The parking garage ramps separate pedestrians from the security of street frontage visibility.

Review of FAX's published schedule reveals that full pulsed operations are not scheduled. Figure 4-5 shows the scheduled bus arrival times for each shelter for a weekday between (7:55 am) and (9:55 am). The maximum number of buses scheduled to be present at any one time during this two hour period are four for Shelter L, three for Shelter A and three for Shelter B. The maximum number of total buses that are present at any single time for all three shelters is eight buses over this two hour period.

One positive regarding the current transit center location is that it is centrally located within the downtown core. Almost all of the major downtown destinations are within five blocks from the transit center. The regional medical center is one of the few destinations that is not located within a short walk of the transit center. The regional medical center is about a 0.6 mile walk or 15 minute walk from the transit hub. FAX Route 32, which links the medical center with the transit hub, operates on 30 minute headways. Both Van Ness and Fresno Streets also run continuously through the downtown area and help to minimize bus turning movements.

ISSUES AND NEEDS

Transit Capacity

During weekday commute peak hours, FAX currently operates 38 peak direction buses per hour to/from the Downtown Transit Center. This translates to about a 1,700 passenger-per-hour capacity, based on a load of 45 passengers per bus. Forecast daily trips to, from and within Downtown by all modes of travel is for a 52 percent increase between 2006 and 2030, based on planned development. This would suggest that transit capacity would need to increase by 50 percent just to keep pace with this estimated demand. Some of today's current capacity is unused and might be available to accommodate a portion of the projected demand increase. It is also true that as development density in the downtown area increases, a high proportion of trips will be captured by public transit. The targeted transit capture rate of 6 percent by 2030, combined with the increase in the total trips by all modes, would result in a 120 percent increase in the number of transit trips to, from and within Downtown. By 2050 the number of trips served by transit to, from and within Downtown is targeted to increase fourfold from today's usage. This increased capacity could come in a variety of forms including increasing the frequency of service on existing bus routes, deploying larger buses (articulated buses), and/or introducing new bus routes.

As discussed in Chapter 1, there is a desire to reduce the proportion of future auto trips by car for environmental, highway/interchange capacity and livability reasons. Thus the challenge is not to accommodate a mere 50 percent proportional growth increase in usage, but rather to target a 50 percent higher capture rate by transit. This would translate to a more than doubling of transit trips to, from and within Downtown. From today's base of about 17,000 daily transit trips, 2015 would experience an increase to 28,000 daily transit trips, 2030 would increase to 37,000 daily transit trips and 2050 to 68,000 daily transit trips! These projections represent a minimal vision for development and transit service growth in the downtown area. The alternative would be continued dependence on highways for downtown access and a major allocation of downtown land for parking.

FRESNO DOWNTOWN TRANSIT CENTER OPERATIONS																										
BUS ARRIVAL TIMES AT THE DOWNTOWN TRANSIT CENTER 7:55 to 9:55am (minutes after the hour)																										
	55	0	5	10	15	20	25	30	35	40	45	50	55	0	5	10	15	20	25	30	35	40	45	50	Total	
SHELTER L																										
Route 4 DT Circulator																									12	
Route 20 Hughes (depart)																									4	
Route 22 E. Tulare																									4	
Route 26 Peach Ave																									4	
Route 28 Ventura																									8	
Route 30 Pinedale																									8	
Route 32 N. Fresno																									4	
Route 34 NE Fresno																									4	
Westside Transit																									1	
Subtotal L buses	2	1	1	4	3	2	2	1	1	4	2	2	2	1	1	4	2	2	2	1	1	4	2	2	49	
SHELTER A																										
Route 20 Hughes (arrive)																									4	
Route 22 West Ave.																									4	
Route 26 Palm																									4	
Route 28 CSUF																									8	
Southeast Transit																									1	
Subtotal A buses	2	0	0	3	0	0	2	0	0	3	0	0	2	0	0	3	1	0	2	0	0	3	0	0	21	
SHELTER B																										
Route 30 W. Fresno																									8	
Route 32 West Fresno																									4	
Soute 34 West Fresno																									4	
Route 38 N. Cedar																									4	
Subtotal B buses	0	3	0	1	1	0	0	3	0	1	1	0	0	3	0	1	1	0	0	3	0	1	1	0	20	
TOTAL STOPS	4	4	1	8	4	2	4	4	1	8	3	2	4	4	1	8	4	2	4	4	1	8	3	2	90	
5 minute dwelltimes																										

Figure 4-5
DOWNTOWN TRANSIT CENTER OPERATIONS

100576/BASE - 12/19/06

High-Capacity Transit

Long range planning has identified three potential downtown corridors for some form of bus rapid transit (BRT) or light rail transit (LRT). These corridors are the Ventura Corridor, the Blackstone-Abby Corridor and the Cedar Corridor. The Cedar Corridor could be a branch of the Ventura Corridor. Implementation of any of these high-capacity transit projects would have downtown traffic and terminus implications. Another issue would be interlining BRT services in the downtown area and thereby minimize bus turn-a-round parking in the central area. The BNSF at-grade crossing with Ventura Avenue and Blackstone-Abby also would become an increasing problem for BRT service in these corridors.

The most recent long range transit planning efforts have not identified the BNSF corridor as a potential future high-capacity BRT or LRT corridor. If the BNSF trains are relocated to the UPRR corridor, the future use of this right-of-way corridor becomes an issue. It is understood that many residents want to see the corridor used for a multi-purpose trail and not for transit use.

Both BRT and LRT systems can operate in exclusive or shared traffic modes. The only exclusive right-of-way alignment in Downtown might be the BNSF corridor. Use of the Fulton Mall for transit might also be a possibility. BRT and LRT can also operate in exclusive lanes on public streets or share traffic lanes with general traffic. A principal difference between BRT and LRT is the flexibility of the modes. BRT buses can easily enter and leave the transit right-of-way while LRT is restricted to a fixed rail alignment.

The two main regional corridors entering and leaving Downtown that are being considered for BRT are the Ventura and Blackstone-Abby corridors. The Blackstone-Abby regional corridor, however, could also be access via Van Ness and Fulton to City College. In the long-range future, the BNSF corridor (which crosses the Blackstone-Abby corridor near City College) could be used as a high-capacity transit link through Downtown. Specific details, including rights-of-way, etc., will be worked out in the planning efforts for these two regional corridors. Downtown land use in the Blackstone-Abby corridor should be closely linked to decisions on high-capacity transit service investments.

Service frequencies are likely to be 10 minutes or better for BRT and 10 to 15 minutes for LRT. The best downtown alignment for BRT services seems to be Van Ness Avenue, which is near the center of Downtown and is at the heart of other bus services. Formalizing bus lanes on Van Ness Avenue might be desirable to support a higher quality of bus service. Other options include N Street, M Street, and H Street. N street is too remote from the Fulton Mall. Use of M Street would further confuse the circulation system and is also not close to the Fulton Mall. H Street is on the edge of the downtown core and therefore not very attractive. Some signal preference at the Van Ness-Ventura intersection should be considered to facilitate the BRT left turn movement. In the near-term, routing Ventura BRT service through Downtown to Van Ness/Fulton and to City College and Manchester Center looks attractive (former streetcar route). At the time economic development of the Blackstone-Abby area of the downtown begins to happen, the northern link of the BRT service might be shifted or shared with Blackstone-Abby corridor. Again the details of the BRT and LRT (or streetcar) options will be addressed in other more focused planning studies.

Downtown Transit Center

The Downtown Transit Center provides a number of functions. For passengers, the centralized location provides a comfortable, secure place to transfer between lines and due to its central location it also provides a convenient place to start and end trips to Downtown. The current FAX route structure reduces the need for transfers for most trips to the downtown area. This structure also simplifies operations for the bus operator.

The 2001 Long Range Transit Plan suggests that relocating the Downtown Transit Center to M Street might be beneficial.

There are a number of issues surrounding the Downtown Transit Center that should be addressed in future planning efforts for the facility. The two most important questions are; *What the desired role is for a transit center in Downtown?* and *Where should it be located?* Once these questions are addressed, a number of other issues arise, including the following:

- Is it desirable for 15 buses to converge at the same time at the transit center (simultaneous pulse)?
- Do all the passenger transfers need to occur at one location?
- Can a horizontal elevator like the Denver Bus Mall improve passenger service or would it complicate use of FAX service?
- How do the unknowns regarding Amtrak's future HSR station influence Downtown Transit Center location decisions?
- What might be done to upgrade the current courthouse facilities?

The principles for locating and designing a passenger transfer centers are based on addressing the needs of the consumers (passengers), considering the needs of transit service providers, considering "good neighbor" relationships with adjacent land uses and recognizing implementation opportunities and difficulties.

- For passengers starting and ending their trip in Downtown the key objective is "location, location and location." Convenience and secure access are also important. For transferring passengers the key concerns are convenient connections, security and reliable connections.
- For bus operators, the objectives tend to include efficient routings and the availability of support facilities for bus drivers (including end of run layover locations).
- For neighboring communities, passenger access is generally welcomed, but noise, bus parking and loiters are unwelcome.
- In terms of ease of implementation, status quo is generally the easiest.

The key unknown is the future location of Fresno's rail station.

Downtown Circulator

The Central Area Community Plan suggested establishment of a downtown circulator system. It outlined four short, one-direction loop routes within the downtown area. The circulator is to connect trip destinations that are longer than accepted threshold distances for walking within the downtown area. This basic function can be provided either as a separate system or as part of FAX's normal service. As a separate function, it has its own distinct route, vehicles (typically, but not always) and free or low-cost fares. With through routed bus services establishment of free fare zones is quite complicated. Sometimes it is possible to restructure regular bus services to provide all the circulator linkages and, along with a free fare ride zones, provide a de facto circulator function.

Lastly, a "horizontal elevator" type frequent shuttle (similar to Denver's bus mall) can link different areas of Downtown. Trips shorter than a ten minute walk (2,000 feet) are difficult to capture with shuttles unless they operate at five minute headways or shorter. Perhaps one of the most successful downtown shuttles at capturing short distance trips is the Denver Mall shuttle, which operates two minute service frequencies (every other signal cycle) over its 20 city-block 7,000 foot length. Generally speaking, to serve trips of less than a ten minute walk the shuttle, frequencies must be very short and the intervals between shuttle arrivals must be very uniform.

Intelligent Transportation Systems (ITS)

ITS can help improve public transit services in a variety of ways. They can provide buses priorities at traffic signals and advise passengers of the actual arrival times for their buses at major bus stops. The GPS systems used for the real-time passenger information systems can also allow transit systems to better manage and supervise their service.

The most controversial applications of ITS tend to be traffic signal priority treatments. Deployment of real-time passenger information at all downtown FAX stops is suggested, along with signal preferences along Van Ness Avenue and Fresno Street. The real-time information displays can communicate to passengers the actual arrival sequence of buses and help them position themselves at the correct boarding position in advance of the bus arrival. Avoidance of left turn phases (except at bus left turn locations) is also suggested. Left turn movements are generally not beneficial to pedestrians, bicyclists and transit riders.

Encouragement of prepaid fares at the Downtown Transit Center is recommended to reduce boarding times, increase bus processing capacities and speed operations. This could be accomplished with discounted token sales machines (FAX currently sells discounted tokens so this should not be a major problem). When inflation causes base adult fares to increase above the current \$1, the prepaid fares will prove much more helpful.

Downtown Area FAX Transit Facilities and Development Standards

FAX has a set of service area-wide standards for bus stops and facilities which it adopted in December 2005. A review of these standards suggests the following modifications:

- Bus stop spacing - change from every block to every other block in the CBD. Downtown blocks are short and every other block spacing would provide the desired level of passenger convenience.
- Farside stop location – added increased support for traffic signal preferences for transit (extension of green times) to the favoring features.
- Nearside stop location – remove increased right turn efficiency as a favoring feature.
- Bus stop amenities – add shade trees (see Figure 4-6), real-time bus arrival information, lean-on railings and pedestrian level lighting to the stop features. All downtown bus stops should have these features. Observations clearly indicate the FAX passengers value shade at bus stops, as they are often found waiting under trees rather than at the stop itself.
- ADA compliance – All FAX bus stops should be ADA compliant (see Figure 4-7) which illustrates good practice.
- Bus turnouts – Bus turnouts should not be provided in Downtown, except for the Courthouse Transit Center and end of line layover locations. Turnouts are appropriate for high-speed streets, not downtown streets.
- Bus bulbs –Bus bulbs are recommended for consideration at all farside stops in the downtown area. A length of 80 feet is suggested for the bus bulbs, which are simple sidewalk extension into the area normally used for curb parking. They increase the area available for shelters and pedestrian waiting and also eliminate the time required for buses to re-enter traffic from bus stops. Since the bus stops are in the rightmost traffic lane, they are already in the traffic stream and experience no delay re-entering the traffic flow.

Passenger Access

Pedestrian access to bus stops is critically important to increasing ridership. Improving pedestrian access involves a combination of enhanced security, reduced traffic barriers, provision of direct links to bus stops and the provision of a more vibrant street environment for pedestrians. Good example, are the connections from the Regional Medical Center to FAX Route 22 Tulare and to FAX Routes 20 Hughes and 30 Blackstone. These major FAX bus service corridors are located about one-quarter mile from the Regional Medical Center. The pedestrian links to these corridors are not very inviting, particularly after dark. The lighting on R Street could be improved (pedestrian level rather than highway level lighting) and the outbound bus stop could be relocated nearer to the R Street intersection. The street cross section use might even be made more pedestrian friendly. The connection to the Blackstone corridor includes a crossing of the BNSF tracks, several small intersections and the high traffic volume P Street/Divisadero intersection. Lighting could be improved as could the street environment.

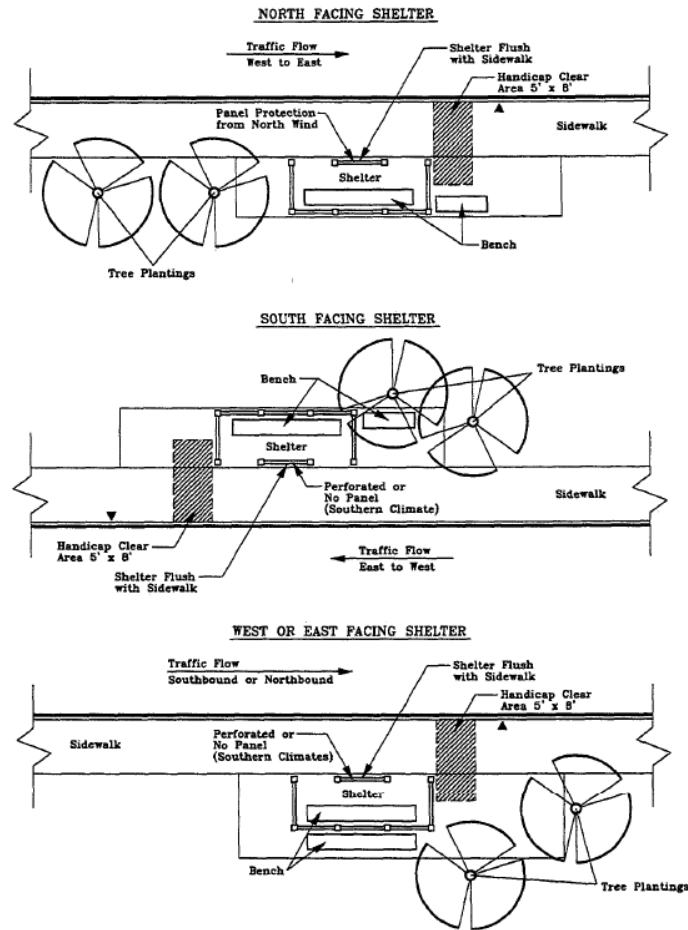


Figure 4-6: Accessible Bus Stop Pad and Shelter - Minimum Dimensions
 Source: TCRP Report 19 - Guidelines for the Location and Design of Bus Stops (Part C, Page 66)

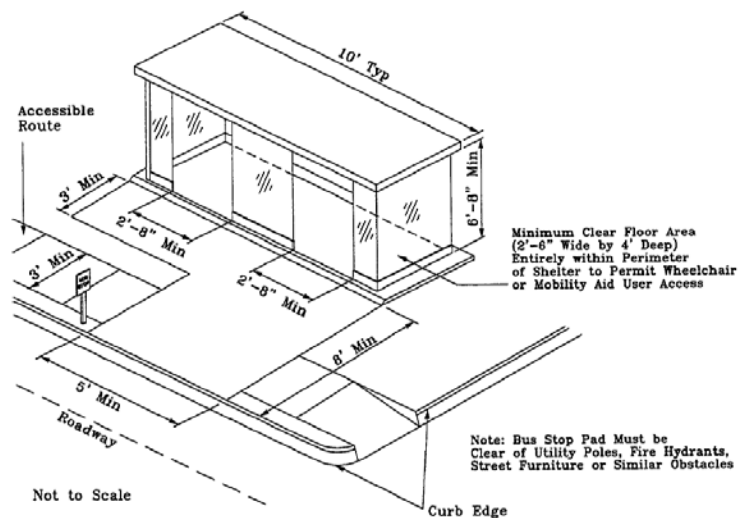


Figure 4-7: Accessible Bus Stop Pad and Shelter - Minimum Dimensions
 Source: TCRP Report 19 - Guidelines for the Location and Design of Bus Stops (Part C, Page 62)

RECOMMENDATIONS

4-1 Identify a Future Target Mode Share for Transit

The city should define a target mode share to guide multimodal policy and facility planning. This mode share will allow a future transit capacity to be estimated to determine where investments in transit should occur. Using the mode shares suggested in Chapter One, Table 1-2, the targeted increased capture rate for transit is six percent by 2030 and eight percent by 2050. Achievement of the targeted mode captures by transit will require an upgrade to the current bus services to make them attractive to “choice riders.” It will also involve complementary changes to parking policies.

4-2 Identify Routing, Operating Policies, and the Appropriate Mode of Transit to Improve the Effectiveness of the Downtown Circulator

The circulator function can be provided using low floor buses, clean fuel (and even battery buses similar to those used in Santa Barbara – Figure 4-8), replica trolleys, historic streetcars and a wide variety of other modes. Investment in streetcar shuttles like Portland’s modern system, or replica historic systems used in Memphis, Tampa and Kenosha tend to be integrated elements of comprehensive economic development plans. They cost about \$20 million per mile to construct.



Figure 4-8: Santa Barbara Open Air and Battery Powered Downtown Shuttle

The most promising concept for a near-term downtown circulator appears to be a one-way loop similar to FAX’s Route 4. It would operate in a clockwise direction linking the regional medical center, City Hall, Amtrak Station, Convention Center complex, south end of the Mall, ballpark (and parking), central part of Mall, IRS complex and Cesar Chavez Adult Education Center. Its routing would be via Maddy Drive, R Street, Tulare Street, Santa Fe Street, Inyo Street, H Street, Mariposa Street, Broadway Plaza, Tuolumne Street and Divisadero. It would have two crossings of the BNSF tracks and require operating two shuttle buses to provide a ten minute frequency service. Installation of train approaching detectors at nearby rail crossings could help minimize schedule reliability problems associated with the at-grade rail crossings. As it accomplishes most of the functions of the current Route 4, it would replace Route 4. The concept attempts to link outlying employment and destination sites with the downtown core. The routing is simple and easy for occasional users to understand. Trip destinations within the core are short distance walk trips and would not likely use the shuttle. The loop provides transfer connections to buses operating

on Van Ness Avenue and also on Fresno Street, which both link to the downtown core and transit center. The concept does require an exclusive shuttle link between Merced Street and Tuolumne Street connecting with the IRS parking garage access road. Alternatively, the shuttle could stay on H Street to Tuolumne Street.

In the longer term, if BNSF trains are relocated to the UPRR corridor, shuttle connection could be developed to connect Manchester Center, City College, the Tower District, Regional Medical Center and Cesar Chavez Adult Education Center, City Hall, Federal Courthouse, County Courthouse, the Mall and a future high-speed rail station. The shuttle would use the BNSF right-of-way north of Tulare Street and continue via Mariposa Street to the high-speed rail station on H Street. The Mariposa Street link would involve integrating the shuttle with the pedestrian corridor including passage through the Courthouse arcade. The potential for a historic streetcar service also merits consideration.

4-3 Identify Possible Upgrades to the Current Downtown Transfer Center

In the immediate near-term, upgrading the current Courthouse Transit Center makes the most sense. It has serious deficiencies including, security, passenger amenities and safe pedestrian links between the three shelter stops. Improvements should include improved lighting along paths connecting the three shelter loading areas, improved wayfinding and construction of sidewalks along Van Ness Avenue adjacent to the garage parking ramps. Improved visibility from the street to these sidewalks should increase the sense of safety for pedestrians. At present, the area between the garage entries and the street is developed with a ten foot planting for trees. These trees would need to be removed for construction of the sidewalks.

It also appears possible to shorten the barrier impact of the garage entry/exit portals by capping the ground level above the lowest ends of the portals. The vertical clearance in the garage is six feet, nine inches and the portal coverings therefore only need to clear this height. Thus resultant configuration would leave only the short section between Shelters A and B without a sidewalk along the edge of Van Ness Avenue. Completing the sidewalk edge will require modification to the pedestrian underpass portal on the Courthouse side. The current four foot buffer between the curbline and the pedestrian underpass portal wall would need to be increased to ten feet to complete the sidewalk along Van Ness Avenue. If construction permits, pushing the pedestrian underpass portal back 18 feet would allow buses to load on this segment as well as Shelters A and B. The six foot change looks easy to accomplish, whereas the 18 foot change would probably require the complete reconstruction of the pedestrian portal.

4-4 Identify Alternative Locations and Concepts for the Downtown Transit Center

While near-term solutions favor upgrading the current Downtown Transit Facility, mid-term and long-term planning strategies should identify and evaluate alternative site locations. The decision to move away from the current Downtown Transit Center location is contingent upon a number of unpredictable factors including the future structure of bus operations and the presence of high-speed rail in Fresno.

In the mid-term, Van Ness Avenue appears to offer the most passenger-friendly downtown transit stop. Bus stops could be established on both sides the street with a new Mariposa Street crosswalk allowing for transfer movements. The street cross-section is generally five lanes with the lane nearest to the Mall used for parking and loading. By re-striping the street for a bus loading lane, two southbound lanes, two northbound lanes and using the current bus pullouts for continued loading of buses, buses could load passengers on both curb frontages. One traffic lane in each direction would function as de facto bus lanes. Left turns from Van Ness Avenue would be banned at Tulare Street and Fresno Street (except buses). These changes would maintain the current traffic capacity of Van Ness Avenue, but would eliminate the Van Ness Avenue left turn movements. The bus operating plan for this concept would not pulse buses or dwell buses along the curb for more than two minutes. End of line layovers would be eliminated at the transit center by interlining all bus routes. Shelter L would also be shifted closer to Van Ness Avenue and a farside bus stop would be developed for westbound buses on Fresno Street. This would eliminate

some bus turning movements Downtown (all West Fresno buses would travel through the intersection on Fresno Street without turning to/from Van Ness Avenue).

In the long-term, the new high-speed rail multimodal station along the UPRR corridor might favor shifting the FAX hub the new station site. Current experience suggests that few rail passengers use bus transit for access to rail stations. Shuttles and circulator services tend to be more widely used. As such, the FAX downtown hub should probably stay at its current central location and the multimodal station used only for end of line transit bus layovers.

A fundamental question related to these downtown transit hub concepts is the impact of not hubbing FAX buses Downtown. As reported earlier, only a partial pulse operation is currently operated. Of the total 18 possible buses at the transit center, a maximum of eight are present at any given time, with typical conditions resulting in only four buses. The long walking distances between passenger boarding shelters makes the current pulse unfeasible for some transferring passengers. As such, the elimination of the pulse operation should have minimal impacts. It would allow the three West Fresno bus routes to be better coordinated and not run “nose to tail” in a bunch. Under the current operations plan these three bus routes operate eight buses an hour to West Fresno from Shelter B. Every 30 minutes route 32 and 34 buses leave shelter B for West Fresno and ten minutes later a Route 38 bus leaves from Shelter B for West Fresno, leaving a 20 minute gap for the next West Fresno bus. Mitigating the elimination of the downtown partial pulse operation would be increased bus service frequencies associated with a higher volume of future service to meet patronage demands (shorter wait times). The volume of buses to Downtown during the peak commute hour should increase from the current 38 buses to about 70 buses in 2030 and 150 buses in 2050. The elimination of the courthouse pulse operation would also provide greater scheduling flexibility and slightly increase operating efficiencies. Other mitigation measures would be to strengthen the pulse at Manchester Center and increase the frequencies of service between Downtown and the Manchester Center.

4-5 Identify Appropriate Transit Preferential Treatments and their Location Downtown

A key to the success in increasing transit use in Downtown can be achieved through transit priority treatments. These strategies place transit atop of the roadway hierarchy along specific corridors to improve the capacity, reliability, and overall convenience of transit use. Preferential treatments that should be explored include traffic signal priority technology, queue jump lanes, bus stop loading within the travel lane, and bus only left turn movements. Longer term treatments should consider dedicated transit-only lanes.

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CHAPTER 5 - PARKING ELEMENT

Parking is an essential element to both economic and livability objectives. In many cities, the provision of convenient, free parking is seen as essential to support downtown retail and attract office employment and residential development in Downtown. However, too much parking as well as poorly designed and located parking facilities detract from efforts to achieve the ‘critical mass’ needed for a vibrant and livable community. It should be noted that parking needs and conditions ought to be considered for both the downtown as a whole and for sub-areas within the downtown. In practice, people rarely want to walk more than a few blocks from their parking spot to their destination; however, they are often willing to walk longer distances if the environment is designed with pedestrian amenities such as generous sidewalks and crosswalks, street furniture and landscaping. It is also important to recognize that there are many differences between residential parking needs and parking needs associated with other land uses.

CURRENT SETTING

Current plans and data were reviewed to define the existing policies, demands and utilization features for parking in the downtown area. The Central Area Community Plan’s parking policy looks to develop “on” and “off” street parking that is adequate, safe and convenient to accommodate the requirements of the activity centers. It has seven implementing actions:

1. Establish a Comprehensive Master Parking Plan and Management Program;
2. Consolidate the Central Area into one parking district;
3. Encourage development of a comprehensive program to operate public and private parking facilities which provide a safe and secure environment;
4. Provide incentives to encourage creative alternatives to parking problems (e.g. paying employees not to drive);
5. Encourage development of structures which integrate parking with other uses, such as commercial uses at street level;
6. Encourage development of new parking structures, where appropriate, to meet the changing needs of the Central Area; and
7. Develop standards to allow for less costly development of temporary (with time certain) surface parking on underutilized or undeveloped properties.

Generally speaking, none of these seven implementing actions have been completed.

Parking Development Requirements

In addition to the Central Area Community Plan, several documents were evaluated to assess the parking and development requirements and policies for the City of Fresno. These included the 2025 General Plan and the Fresno Municipal Code. The parking related policies in the 2025 General Plan provide limited guidance with potential for broad interpretation given the proper enforcement framework. These include:

- Activity Centers (C4d): Activity centers should provide for mixed uses and shared parking facilities;
- Mixed Uses (C8f): Mixed-use zoning regulations should allow for flexibility in parking requirements; and
- Parking (E9x): Evaluate a maximum parking requirement, and reduction schedule for viable transit corridors.

The intention of these policies is to support mixed-use business districts while promoting transit use. However, they appear to lack the accompanying/parallel enforcement ordinances in the municipal code via the City Council adopted ordinance.

Since the Central Area Community Plan was published, none of the implementation actions have been carried out even though this document remains the preferred vision for the downtown area. To be effective, the policies would require accompanying/parallel regulatory enforcement mechanisms in the municipal code via City Council adopted ordinance.

Non- Residential Use Off- Street Parking Space Requirements - Development requirements for parking are outlined in great detail in chapter (12-306) of the municipal code for the downtown. The main zoning districts and related requirements for the downtown include:¹

- Civic Center District (C-C): one square foot of parking/one square foot of building space;
- Central Trading District (C-4): one square foot of parking/one square foot of building space, except for exempt business districts²;
- Commercial and Light Manufacturing (C-M): See C-6, one square foot of parking/one square foot of building space, except for exempt business districts³;
- Civic Center Area Modifying District (C4-CCO): Special Use District. Use more restrictive of two districts, in this case one square foot of parking/one square foot of building space; and
- Light Manufacturing District (M-1): See C-6, one square foot of parking/one square foot of building space, except for exempt business districts.⁴

Exempt Parking Areas - According to the City of Fresno Planning Department there are two parking exempt areas in the downtown, the Central Business Parking Exempt District and the West Fresno Business Exempt District which are shown in Figure 5-1. As outlined, these areas are not required to provide off-street parking as described in the municipal code chapter 12-306. Aside from outlining the boundaries of the exempt areas, there have been no details provided from the City regarding the restrictions or requirements for administrating these districts. The boundaries also do not seem to be consistent with the downtown core boundaries (Figure 1-1) or the downtown land use boundaries (Figure 1-2).

Except for the parking exempt areas, which most likely are regulated via the Municipal Code, the parking requirements for land uses in the downtown provide little consideration for actual parking demand. There is no consideration for transit adjacency. The parking exempt ordinance should be clearly outlined to include activity centers, mixed-use zoning and transit (and transit adjacent) corridors.

Proximity - Fresno's General Provisions for non-residential off-street parking states that off-street parking must be provided on the same lot with the building or on lots immediately contiguous to the building. It is unclear if this general provision applies to the downtown area. In many ways it is undesirable for downtown commercial buildings to have on-site parking.

Residential Parking Requirements - The off-street parking minimum requirements for residential uses are quite modest and consistent with smart growth planning. Unlike commercial parking, residential users tend to be very insistent on dedicated on site spaces for parking.

¹ The provisions of the general conditions in Chapter 12-306-I for all of the zoning districts apply.

² See Chapter 12-220 of Fresno Municipal Code for detailed exceptions.

³ See Chapter 12-224 of Fresno Municipal Code for detailed exceptions.

⁴ See Chapter 12-226 of Fresno Municipal Code for detailed exceptions.



Parking Manual - The city has an adopted “Parking Manual.” It was adopted in 1987 and needs to be reviewed regarding recent ADA requirements. The manual does not discuss the placement of parking on the site relative to the street frontage. Current downtown planning industry preferences discourage street frontage location of parking and favor rear site parking.

Parking Demand, Supply and Utilization

A parking inventory and utilization study was conducted for the **downtown core area** in 2002 by Walker Parking Consultants. Parking occupancy was studied in four distinct sub-areas of the downtown; the Fulton Mall, the Government/Civic Center, the Ballpark and the Convention Center. Additional parking supply since the 2002 study includes 1969 spaces in the Convention Center parking garage, Merchants and EFG lots as well as the addition of 457 new parking meters (157 new and 300 replaced from vandalism). A map of the downtown public parking facilities is shown in Figure 5-2 and the downtown parking inventory is summarized in Table 5-1. The study did not include the predominately residential areas of downtown or the Regional Medical Center.

Table 5-1: Downtown Parking Inventory

	2002 ⁵	Change from 2002 ⁶	Total in 2006
Off-Street			
Public Lot	2,295	1,969	4,264
Public Garage	2,282	0	2,282
Private Lot	13,855	0	13,855
Private Garage	1,737	0	1,737
On-Street			
Metered	1,332	457	1,789
Non-Metered	4,599	0	4,599
Other	416	0	416
Total	26,516	2,426	28,944

Sources: Walker Parking Consultants, 2002. City of Fresno, 2006.

The large private garage located on Broadway Plaza near Mariposa Street only serves long-term permit users. This is a downtown transportation concern for two reasons. First, it is in a prime location to serve short-term Mall parkers and secondly, the exterior is a blank wall that lacks pedestrian level activity interest. With the current surplus of parking in the downtown, the permit-only user restriction is not a big problem today. In future years when demands increase, the parking user restriction will become more of an issue. Dedication of parking spaces for government office workers at the north end of the Mall also seems inconsistent with the highest and best use of these spaces in the future as Mall short-term parking demands increase.

The overall occupancy rates for the downtown in 2002 were found to be at 51 percent, well below the normal practical operating capacity of 85 percent usage.⁷ This indicates that Downtown Fresno has (suffers from) an abundance of underutilized parking. The city should consider taking measures either to reduce or reallocate existing supply through infill/redevelopment opportunities or revisit existing development requirements to avoid increasing the parking supply. Parking utilization data was collected for the four Downtown sub-areas and is presented in Tables 5-2 and 5-3.

⁵ Fresno Downtown Parking Study, 2002.

⁶ Parking inventory update, Fresno Parking Manager, September 2006.

⁷ According to Weant and Levinson's Parking (1991), peak parking demands should represent the “85 percentile” of demand values or that, on average, the demand should be exceeded by only 15 percent of the time (i.e. practical capacity). Therefore, the minimum zoning requirements should be set at around five to ten percent more than the peak demands.



Source: Downtown Parking Map, City of Fresno



Table 5-2: Downtown Fresno Overall Peak Occupancies 11 AM

	Total Inv.	Weekday	% Occupied	Weekend	% Occupied
Off-Street	20,169	10,935	54%	3,117	15%
On-Street	6,347	2,550	40%	1,324	21%
Total	26,516	13,485	51%	4,441	17%

Source: Walker Parking Consultants, 2002.

Table 5-3: Occupancy Summary for Downtown Sub-areas

	Total Inv.	11am Occupancy	% Occupied	5PM Occupancy	% Occupied
Fulton Mall	6,246	3,697	59%	--	--
Government Buildings	5,174	3,516	68%	--	--
Ball Park	7,735	--	--	1,503	19%
Convention Center ⁸	--	--	53%	--	--

Source: Walker Parking Consultants, 2002.

Current operational data indicates the locations with the highest demand are in the areas of the Federal courthouse and Fulton Mall (lot numbers 2, 4, and 8). The remaining lots and parking garages have observed utilization rates far lower than practical capacity (85 percent). This indicates that there is a significant amount of parking supply available to potential users that should be considered before additional parking is required and/or built for new or redevelopment projects. Furthermore a system of wayfinding to direct users to existing unused parking would help to better utilize existing supplies. Current operator provided occupancy data is provided in Table 5-4.

Table 5-4: Public Parking Facility Occupancies (2006)

ACE Lot No.	Name	Stalls	Occupancy	Monthly/Transient
4300	Tulare Garage (Garage #4)	320	80%	M&T
4301	Spiral Garage (Garage #7)	591	50%	M&T
4302	Van Ness Underground Garage (Garage #8)	942	80-100%	M&T
4305	Diagonal Lot (Lot #2)	204	80-100%	M&T
4308	Stadium Lot	522	40%	M&T
4309	Boxcar Lot	542	60-70%	M&T
4310	Promenade Lot	674	40%	Not Open (irregular)
4311	Convention Center Garage Event	1552		Not Open (irregular)
	Event		10-15%	
	Non-Event		25-75%	
4313	Merchant Lot	311	70%	M&T

Source: ACE Parking, October 2006.

Parking Pricing

The Colliers' sixth annual North American Parking Rate Survey (2006) of 59 North American cities shows that over the past 12 months, the cost of parking increased by 4.4 percent (monthly rates) in response to an overall improved business climate (demand for office space and strong retail spending).⁹

However, while the average North American city's parking rate has been rising for the past three years, Fresno's rate has not changed in six years. According to Fresno's parking manager, the city has so far been unwilling to approve a parking rate increase, despite the economic indicators and recommendations from the Department of Public Works

⁸ Peak occupancy in sub-area prior to construction of convention center (11AM).

⁹ Sixth Annual North American Parking Rate Survey, Colliers International, 2006.

as to the need to support and fund existing facilities for operation, maintenance and significant debt services. Furthermore, the Collier study showed that Fresno has the 5th lowest monthly parking rate of the 59 North American cities surveyed (based on Fresno's highest monthly rate of \$55), indicating room for an increase. The five least expensive parking downtowns in the U.S. are (median monthly unreserved rates):

- Phoenix -- \$35.00 per month;
- Walnut Creek, CA -- \$35.00 per month;
- Bakersfield, CA -- \$40.00 per month;
- Reno, NV -- \$45.00 per month; and
- Fresno, CA -- \$55.00 per month.

Downtown parking fees, time limits and hours of enforcement are assigned according to event and non-event and on-street versus off-street locations. Fees collected from parking operations are placed in a parking meter fund used for operation and maintenance costs of the parking district. Table 5-5 summarizes the parking fees and regulations for Downtown Fresno. The \$15 month parking cost for the City Hall lot is quite inexpensive. As a point of comparison, FAX's monthly transit pass is \$35.

Table 5-5: Downtown Fresno Parking Fees and Regulations

Type	Hrs of Enforcement		Transient Fee	Monthly Fee
<i>Event</i>				
Meters	6am to 10pm	2 hrs (6am - 6pm) 4 hrs (6pm-10pm)	\$0.60/hour	--
Lots/Garages	6am to 10pm	No limit	\$7/convention center, \$5/other facilities	City Hall lot: \$15/month Lots: \$35/month Garages: \$55/month
<i>Non-Event</i>				
Meters	6am to 6pm	2 hours	\$0.60/hour	--
Lots/Garages	6am to 6pm	No limit	\$7/day, \$1/hour	City Hall lot: \$15/month Lots: \$35/month Garages: \$55/month

Source: City of Fresno, 2006.

Notes:

1. Monthly permit holders are allowed to park in metered spaces.
2. All meters, lots and garages are free on holidays and weekends, except for events.

Overall parking demands in the downtown are substantially less than the amount of existing parking supply. Parking needs tend to be very localized, but even when considered at a small area level, parking supplies exceed demands in all but a few spots. An over supply of parking is as much a problem as not enough parking, in that it leads to a negative image of the downtown's vitality.

While the policies and recommendations in the 2025 General Plan and Central Area Community Plan encourage the construction of parking garages to help address the parking needs of the downtown, the City is currently saddled with the debt service from their most recent parking facilities which will take until 2012 to pay off according to the parking manager. This in concert with the low average utilization for off-street parking eliminates the need for such facilities in the downtown at this time. The City might better focus efforts on improving the environment around the existing on and off-street facilities to help increase existing facilities' utilization. The City currently has no parking design standards in place regarding the location of or design of parking facilities (such as requiring off-street parking in the rear of buildings), the treatment of streetscapes, pedestrian environments and/or transit corridors.

The Central Area Community Plan does have one implementation action recommending parking garages with ground floor retail (TRA 4-5).

According to the city's parking manager, there is already pressure for new parking facilities while the current facilities are underutilized. Currently these include:

- A new parking garage planned for Armenian Town (1,400 spaces);
- The County Library which will be built in 5-7 years is lobbying for a parking garage; and
- A parking facility will be requested in the northwest portion of downtown when the county takes over the federal courthouse facility.

Typically redevelopment projects in Fresno are built with on-site parking without regard to parking demand and supply of the surrounding area. If a redevelopment project were part of the comprehensive downtown parking plan, the entire site could be used for retail, office or other primary land uses and parking could be located in a central or satellite location to serve several destinations as demand required.

ISSUES AND NEEDS

The vision for Downtown's future is for substantial growth and increased vibrancy, both of which will boost the demand for parking. Parking policies and programs need to be defined to guide the development of a comprehensive parking management strategy for Downtown Fresno. Such a strategy will include policies and programs to consolidate parking, facilitate shared parking programs and those that work to increase the utilization of the current facilities, rather than merely increasing existing supply. The following issues were identified for investigation:

1. What level of parking convenience should be provided?
2. What pricing policy should be adopted?
3. How much parking is needed to support the planned development growth?
4. Where parking should be provided?
5. How much of this parking should be dedicated versus shared parking?
6. How much of the parking should be privately versus publicly provided?
7. What share of the parking should be on-street – what type?
8. What land banking strategy (if any) would facilitate phased increases to parking supply?
9. What ITS smart parking strategies have promising roles for the downtown?
10. What parking design standards should be implemented for Downtown?
11. How can wayfinding and signage make parking easier to use?

Level of Convenience

Parking convenience is determined primarily by:

- Availability of parking;
- Distance from desired destination; and
- Ease of parking.

Availability of Parking

When most parking spaces are occupied, increased effort is required by motorists to find an open space. Thus, most parking systems are planned to provide some proportion of the total number of parking spaces to be open. The "effective capacities" that are used to size parking facilities generally ranges from 80 percent to 95 percent of the total number of spaces. The greater the proportion of spaces planned to be open for use, the higher the convenience (level of service) is for parkers, as it minimizes search efforts. When all parking spaces are full,

motorist looking to park must cruise around their desired block until a space opens up. This is the lowest level of parking level of service and convenience. For captive parkers (employees and students) a lowered level of service is generally planned than for retail shoppers that have a choice of destinations and might go elsewhere if parking is difficult to find. Convenient parking is important to support weak office and retail markets. As the downtown becomes more pedestrian oriented, vibrant and urbanized, the level of service for parking can be allowed to slide lower. Table 5-6 suggests basic planning guidelines for “spare” spaces by land use types.

Table 5-6 Proposed Parking Utilization Planning Guidelines

Land Use	Year 2010	Year 2030	Year 2050
Office	85%	90%	95%
Retail	80%	80%	85%
Restaurant (Lunch)	85%	90%	90%
Restaurant (Dinner)	80%	80%	85%
Hotel	90%	90%	95%
Residential	90%	90%	95%

Another factor to consider in setting parking level of service policies is that small lots tend to be less efficiently used than large lots. Smaller, more fragmented parking supplies therefore require more empty spaces to provide the same level of parking search convenience. This relationship generally argues for fewer but larger parking facilities. Some of this inefficiency can be overcome with state of the art parking monitoring and information systems. For example, at the 90 percent capacity utilization level a 40 space lot would have 4 empty spaces and a 200 space lot would have 20 empty spaces available on average for searching parkers. As these are averages, there will be times when all spaces will be used. The likelihood of the four available spaces in the small lot all being fully occupied is higher than the 20 empty spaces in the large lot being full. This capacity failure is partially due to localized demand conditions and partly due to statistical reasons. Whatever the failure cause, parkers likely will more often be frustrated finding spaces in the smaller lots.

Distance from Desired Destination

In an economically vibrant downtown, motorists are more willing to walk longer distances from their parking space to their destination. This is particularly true of long term employee parking, but even special event parkers are willing to tolerate longer walking distances. Shoppers and diners tend to insist on short walks to/from parking. A factor in the distance parkers are willing to walk include the trip purpose, length of parking stay, cost of parking, mobility features of the parkers, weather, security and features of the pedestrian system. Downtown blocks are about 450 in length (centerline to centerline). While most motorists will want to park within a block of their destination, a two block walk should be acceptable in the future. A three block walk is probably all that most motorists might accept, except for special events or for price discounted spaces for commuters. For planning purposes a three block maximum walk is suggested for long-term office parking and two blocks for retail and restaurants. Hotel and residential parking should be provided on-site.

Ease of Parking

As discussed in the city’s parking manual, the dimensions for parking stalls and circulation aisles influences the ease of parking. Width stalls and circulation aisle facilitate parking maneuvers. Larger dimensions, however, reduce the number of spaces that can be provided on a given size site and increase the development cost per parking space. For the more intensely used downtown areas, allowance of 8.5 foot stall width would seem reasonable, particularly for garage structures. Eight foot wide stalls seem reasonable for long-term commuter oriented parking facilities. Parking lots can be developed with more generously sized stall widths and then later converted to narrower stall widths, if landscaping and lighting fixtures are judiciously located in the first phase of development.

Pricing

Charging for parking is used for two different, but important purposes:

- Recover/finance the cost of constructing the parking; and
- Managing limited parking supply.

Cost Recovery - Prices are charged for parking in order to recovery the cost of providing the parking. Parking is not inexpensive to provide, although it is common to bury the cost in leases, particularly in the suburbs. On an annual basis it cost about \$600 to provide a surface lot space and between \$1800 to provide a parking structure space. These annual costs include about \$250 per space for each surface space and \$500 for each garage space to cover operating and maintenance costs. The remainder of the annual costs per space relate to coverage of construction costs. Thus, about \$2.50 daily in revenue is needed to cover the cost for each surface space and about \$7.50 is required in parking fees to cover the cost for each space in a parking structure. Some demand is price inelastic and will remain at almost any pricing level. Most of the inelasticity is explained by some users not paying the true cost of parking (bundled in the office lease and offered to users free). At the other end of the spectrum, free parking tends to dramatically increase demands.

In general, the long-term commuter parking downtown should always be greater than the cost of a monthly FAX bus pass, which currently stands at \$35. Rather than blaming parking pricing on public transit, it is better to base it on full cost recovery for providing the parking stalls. As noted earlier, a surface stall cost about \$2.50 daily to provide and a parking structure space cost about \$7.50 daily to provide. These daily rates translate into \$50 a month for surface spaces and \$150 per month for garage spaces.

Supply Management - The second reason to charge for parking is to promote maximum benefit for the limited number of spaces (managing limited supply). If there is more parking supply than demand in some locations, this strategy becomes irrelevant. This oversupply situation currently exists in most parts of the downtown. Thus supply management pricing should be used primarily to maximize the use of on-street parking for short-term parking and to encourage remote lot use in the few areas in the downtown that have parking shortages. To reduce enforcement and collection cost in the near-term, some of the metered areas downtown might be converted to 90 minute free parking. The same is true of some of the short-term lots that are used by shoppers. Downtown competes with regional commercial areas which provide free parking to customers. As long as Downtown has an over supply of parking, it should minimize operating and maintenance cost and should provide short-term parking free of charge.

As demand rises in the future, pricing will become a more effective supply management tool and will help to cover the cost of providing parking. When parking occupancies are less than 70 percent prices should be low, but as the demand begins to reach the policy level parking utilization prices should be increased to dampen demand.

Much of the downtown parking demand relates to office workers. On weekends and weekday evenings parking supply for office workers can be made available for restaurant and entertainment patron parking either free of charge or at a simple nominal rate of one dollar (all day on weekends or all evenings). During these off peak demand times, the added cost for providing the parking is virtually nothing. The cost of providing the parking is based on the peak commuter demand periods and peak users could logically be expected to pay the full cost for the parking. Desirably, parking lots should not close after workers go home and on weekends.

Parking Supply

How much parking is needed and how much should be provided? The amount of demand is determined by the amount and intensity of activity (development) and its pricing. How much parking should be supplied is influenced by many factors including transportation policy and ease of providing the parking. As mentioned earlier, significant differences exist for residential parking, short-term commercial parking and long-term commuter parking. The special event venues and the potential high speed rail station parking needs also merit special consideration.

The Fresno County Council of Governments (COG) projected 49 percent job growth from 2006 to 2030 for Downtown Fresno.¹⁰ Based on current occupancies and ITE parking generation rates for the employment categories provided and adjusted for peak hour and urban locations, Wilbur Smith Associates (WSA) estimates a parking demand growth of 25 to 32 percent for the downtown core area depending on the levels of supply added.¹¹ This is a corresponding increase in parking demand from 51 to approximately 76 to 83 percent based on job growth forecasted for downtown Transportation Analysis Zones (TAZs). This leaves demand well within current supplies for the twenty-five year planning horizon. Job growth and corresponding parking demand is summarized in Table 5-7.

Table 5-7. 2030 Projected Job Growth and Commuter Parking Demand

Year	Jobs	Parking Demand	Parking Supply	Utilization
2006	26,797	13,430	26,516	51%
2030	39,917	21,995	26,516	83%

Source: Fresno COG, 2006. WSA, 2006.

This generalized assessment for commuter parking in the core of Downtown suggests that adequate parking will likely exist through 2030, and that addition of parking for commuters in the downtown core will not be needed. If development occurs at a higher intensity, additional parking might be required for office workers. Parking resources will need to be shared with retail and other users of Downtown. This suggests that the city needs to closely monitor parking demands as well as its parking supply. Key supply and demand issues include:

- How much parking will be needed to support the new high speed rail station and how will it be coordinated with other parking in the area?
- How will the demand/supply for parking balance with the limited freeway and major streets access to the downtown in future years?
- How will parking demand relationships to land use change in future years as mixed land use, pedestrian/bicycle/transit use increases and car ownership patterns shift? Will they shift?
- How would “unbundling” parking from lease and ownership costs, impact parking demands?
- How might shared use parking impact total parking demands?

At the present time there are no estimates of the amount of build-out development parking demands to guide the construction of a strategic parking plan for Downtown. The COFCG traffic model provides estimates for vehicle trips in future years, but these are based on generalized growth assumptions for the downtown rather than a more specific build-out plan.

High Speed Rail Station - About 1,000 parking spaces will likely be needed to support the planned high speed rail service in Fresno. Finding space to put these parking spaces will be difficult unless placed within the railroad corridor. Typically ten acres of land would be required for a surface lot holding 1,000 spaces. It is anticipated that fees will be higher for the rail station parking and a supply management strategy will be needed to prevent rail patrons from using regular downtown parking supplies.

Demand Constraints - A few of the freeway ramps serving Downtown are already beginning to reach capacity. Some capacity enhancements, flattening of the commute peaks and increased use of arterial streets for downtown access will support increased vehicle trips Downtown. When traffic access capacity to Downtown is reached,

¹⁰ 2006 existing and 2030 job growth projections were provided by the Fresno COG for Fresno downtown Travel Analysis Zones (TAZs).

¹¹ The 25 percent projection was based on the addition of 2429 parking spaces since the 2002 Walker Parking study. The 32 percent projection was based on no change in parking inventory since 2002.

growth in parking demands will flatten. Generally, measures are found to increase access capacities or to spread the demand peaks and therefore access capacity rarely becomes a factor sizing parking needs.

Changing Demand Relationships - Current parking demand relationships to land uses in the downtown will change over time. If the current rate is 3.0 spaces per 1,000 gross feet for office uses, the mode capture targets that are recommended in Chapter 1 (ten percent reduction in car use for travel to/from and within Downtown) should reduce the ratio to 2.7 spaces. Reducing the level of service for searching, would cut this rate to about 2.5 spaces per 1,000 gross square feet. Full cost recovery pricing for commuter parking and peak sharing of spaces would reduce this ratio further. Some of these changes will occur over a long period of time. The bottom line is that current ratios downtown will continue to decline. Off site parking zoning requirements should reflect this trend. Over provision of off site parking invariably leads to discounted pricing to maximize parking revenues – attracting car use.

Bundling Parking - Virtually all parking in suburban locations is offered to tenants and customers free. The true cost of providing the parking is bundled into the lease agreement. In the downtown core, much of the parking is not free, but most spaces are not priced to cover the full cost of providing the parking spaces. The subsidized parking encourages car use. Bundling parking with housing costs has also been shown to significantly increase the total cost of housing. While asking businesses to unbundled parking costs might seem like an added cost to employees and customers, it can reduce lease costs and help the businesses to provide more competitive, lower cost services.

Shared Use Parking - Shared use of parking resources by different users can substantially reduce parking needs. Figures 5-3 and 5-4 describe the peak parking profiles by land use type for weekday and weekend, respectively. These graphs show the percent of peak demand for each land use, not necessarily the relative magnitudes of parking demands for each land use type. It clearly shows that residential and hotel land uses have offset peaking features for office and retail uses.

Figure 5-3: Fresno Downtown Weekday Parking Demand

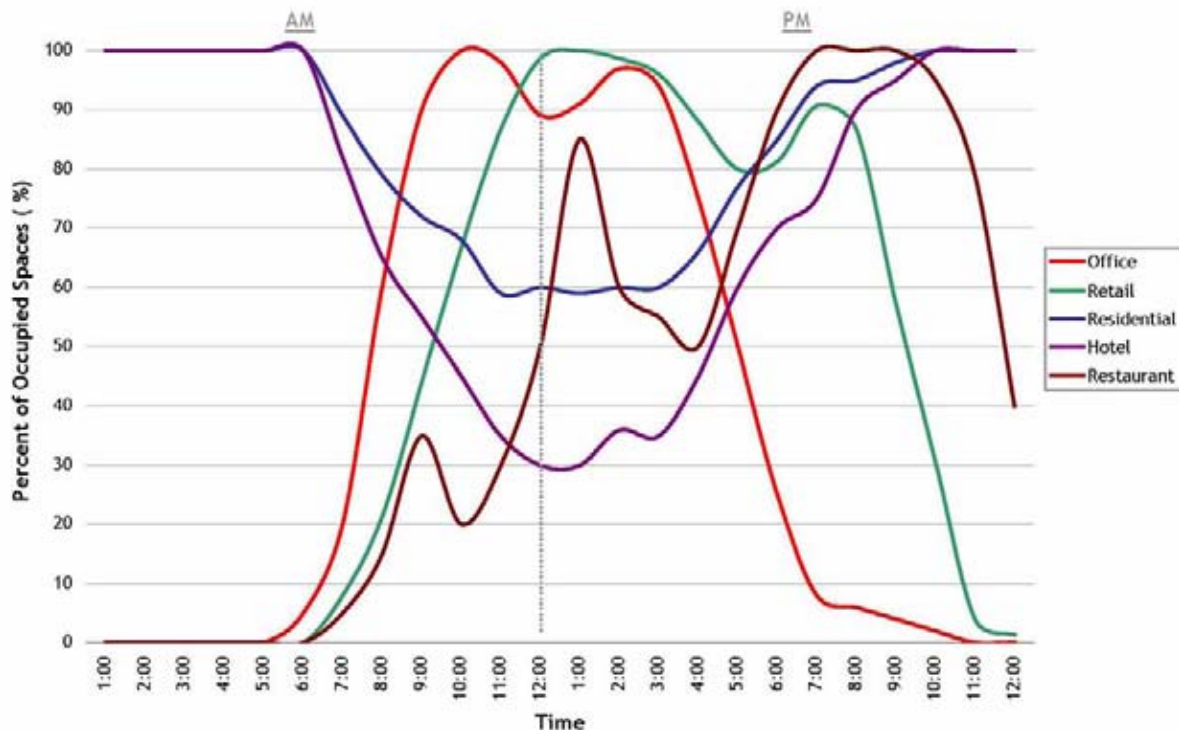
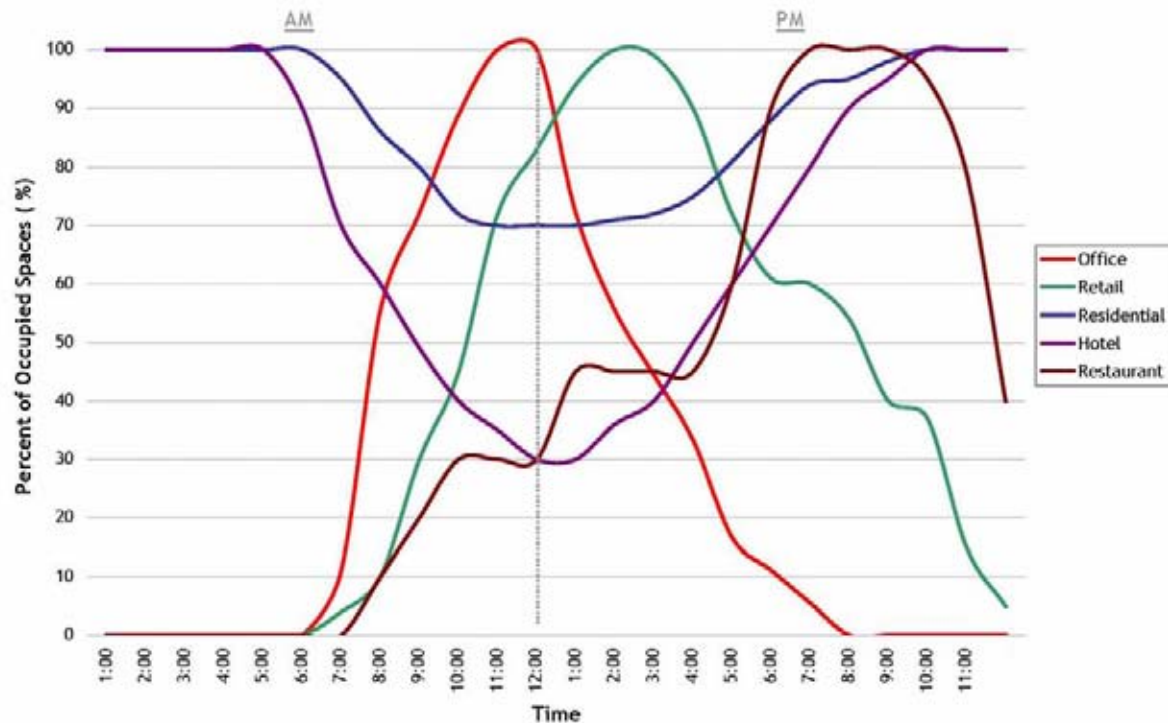


Figure 5-4: Fresno Downtown Weekend Parking Demand



Parking Location

Principles for downtown parking facility locations include the following:

- Convenience to parking demand generators;
- Minimization of parking access traffic conflicts with pedestrians, bicyclist and transit movements; and
- Maximum utilization of current parking resource investments (garages).

Convenience to Parking Demand Generators - In the core area of Downtown bounded by SR-41, BNSF, Stanislaus Street and the UPRR parking demands should be met on an “area basis,” rather than an “address basis.” For other areas of the downtown an address-based parking strategy makes the most sense. An area-based parking plan does not attempt to provide parking adjacent to each individual address in Downtown. Rather it treats the downtown as several campuses and attempt to provide parking near, but not at each desired address. This approach tends to reduce the number of required parking spaces due to size efficiencies of the parking facilities. It also promotes pedestrian traffic that is important to sustaining the vibrancy of the downtown sidewalks and retail. Area-based parking, however, needs to be provided in a manner that will serve and adapt to the fluctuations in parking demands over the day, over the week and for special events.

Minimization of Access Conflicts – The major entry ways into the downtown core are the Stanislaus/Tuolumne one way couplet, Fresno Street, Tulare Street, Ventura Street, the P/M Streets one way couplet and Van Ness Street. Van Ness Street, Fresno Street and Tulare Street all penetrate the core of the downtown. To the extent possible traffic destined to parking structures should be located on the other major access streets, which serve the edges of the downtown core. Locating new parking garages and lots in the Stanislaus/Tuolumne corridor, the Inyo/Ventura corridor, the Broadway Plaza/UPRR corridor and in the BNSF to O Street corridor would minimize traffic conflicts with pedestrians in the downtown. This strategy would place parking within two blocks of virtually all downtown

core blocks. Location of future parking structures in these perimeter corridors would need to be carefully designed to prevent a wall of parking from separating adjacent blocks from the downtown core. Figure 5-5 illustrates a perimeter parking strategy and how it might relate to a shuttle bus service.

Utilization of Current Parking Investments - What seems clear is that the investments that have been made in parking structures will be maintained and that some of the current surface lots will either be developed for other higher intensity uses or upgraded to parking structures. As discussed earlier in the chapter, the city has already invested in several parking structures in the perimeter corridors as well as several garages in the downtown core itself. The latter include the Tulare garage, Spiral garage, Van Ness garage, and the Mall underground garage. The private IRS garage and permit only garage on Broadway Plaza near Mariposa also are located in the downtown core itself. These resources will be part of the downtown's future parking system. Opening the permit only garage for short-term shopper use is a possibility as parking gets tighter in the future.

Dedicated Versus Common Parking

Should downtown parking be provided on-site for each development or is it better to have developments share common parking areas? Except for shopping centers in the suburbs most parking is provided on-site for each development. This somewhat reflects the more fragmented nature of developments in the suburbs versus downtown development. It also tends to be easier to accommodate small scale development parking needs in small on-site lots. Provision of on-site parking becomes increasingly difficult especially compared to garages, which tend to be more efficient at larger scales. Factors important to this issue include the following:

- Preferences of parking users;
- Cost effectiveness of providing required parking;
- Consistency with urban design and synergy objectives and
- Ease of implementation.

User Preferences – From the perspective of parkers dedicated parking on-site has the advantage of proximity to desired destination. Its disadvantages include the need for non-regular users to seek out their eligibility to use the parking and the increased likelihood of not finding an available space in these smaller facilities. The disadvantages tend to be a greater problem for occasional users than for commuters. Because the dedicated parking tends to be more expensive to provide, parking fees would be higher, if the fees were based on full cost recovery. Some added degree of security is provided by dedicated parking facilities. This is particularly important to residential parking needs.

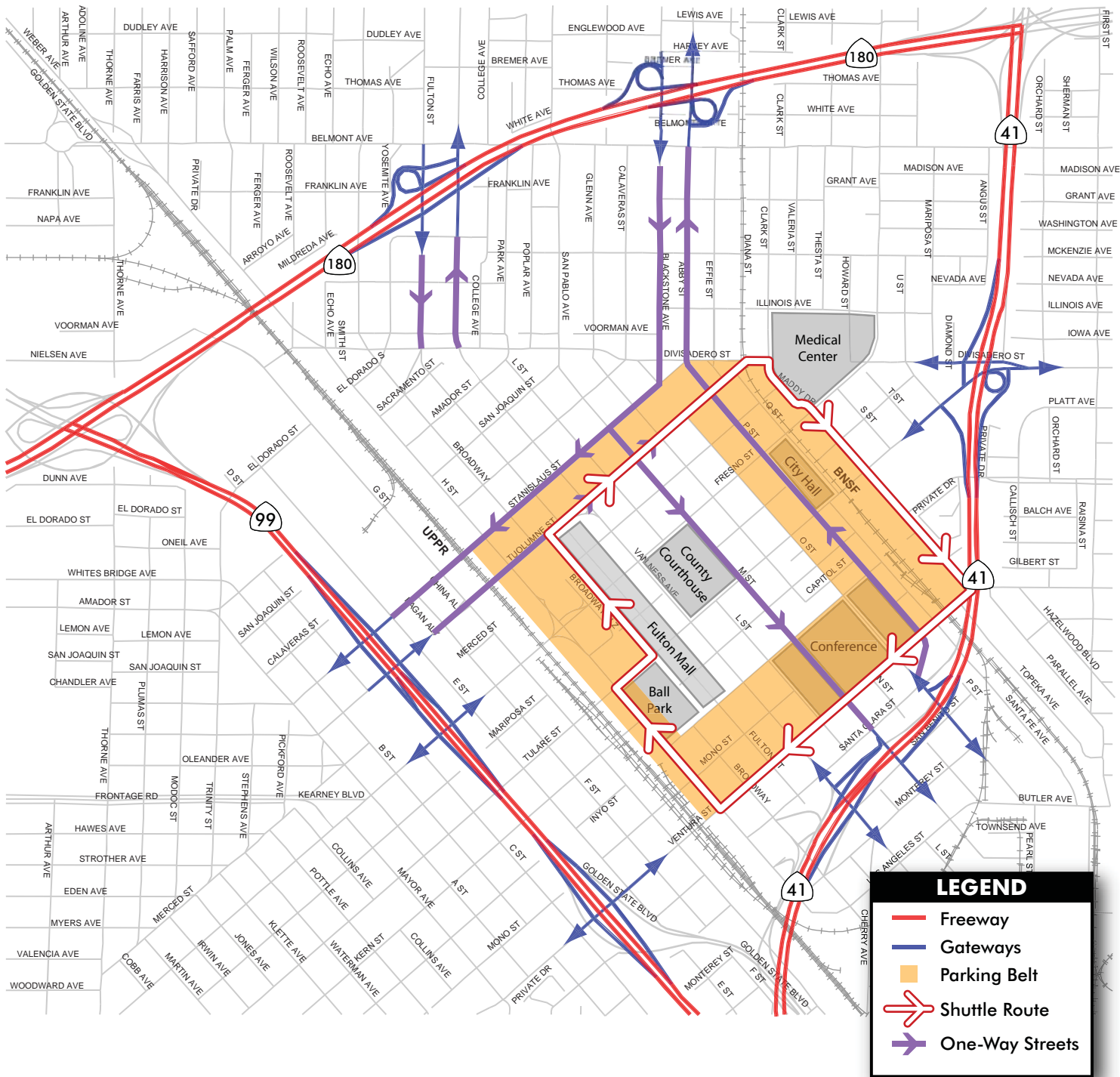
Cost Effectiveness - Larger parking facilities tend to be more efficient to provide and to manage than many smaller sites. The common use parking facilities therefore tend to be less expensive than many smaller facilities. In addition to economy of scale development cost benefits, common use parking facilities tend to minimize the number of spaces that need to be provided. Common use parking facilities better provide for offset peak demand sharing generator uses; declining parking space needs over time for land uses (increased use of alternative modes); and provide greater flexibility to accommodate changing uses of buildings over time. Bottom line is that fewer spaces need to be provided to meet demands and these spaces can be more economically provided.

Downtown Urban Design and Synergy - Synergy involves the beneficial interactions of people. In a downtown setting, sidewalks are the venue for most of this interaction. Strategies that promote people to walk one or several blocks increase the overall synergy in the downtown and strengthen the viability of retail businesses. Development plans that have dedicated on-site parking and employee cafeterias poorly support downtown retail and have minimal synergistic benefits to the ambiance of downtown areas. Thus, common use parking facilities are more consistent with the desired synergy for the downtown. Common use parking facilities also minimize fragmentation of downtown pedestrian corridors and are consistent with urban design objectives. Bottom line is that common use parking facilities are “good neighbors” compared to dedicated facilities.

FRESNO DOWNTOWN TRANSPORTATION PLAN



NORTH
NOT TO SCALE



Ease of Implementation – Provision of dedicated parking facilities is the easiest for the city. It does not require the city to have a comprehensive parking program nor involve any financial involvement in providing the parking. Developers generally believe that buildings with dedicated parking (typically with parking bundled free into the lease) are most attractive to tenants. Providing dedicated parking on-site for small downtown parcels will become increasingly difficult and developers will increasingly accept the common use parking facility solution.

Privately Provided Versus Publicly Provided Parking

Privately provided parking, whether it is dedicated to a specific building or is common use, is easiest for the city to provide. The city has no need to acquire sites, no need to develop financing, no need to operate and maintain the parking and only has to approve private proposals. For publicly provided parking facilities the city must define and acquire site locations, develop designs and oversee construction. They also must provide funding to build the facility, which generally involves bonding based on a parking district based revenue stream.

The benefits of providing downtown parking facilities publicly primarily relate to increased control of how much and where the parking is provided, usage policies, and pricing policies. There are still tendencies to price publicly provided parking to discount user fees to maximize revenue, rather than to ensure full recovery of the cost of providing the parking. This highlights the importance of not over providing parking.

On Versus Off-Street Parking

This issue is relatively simple. After subtracting out curb lengths required for fire hydrants, curb-cuts, bus stops and truck loading areas, the remaining curb space should be allocated for short-term curb parking. Curb parking provides an effective buffer between traffic and pedestrian spaces. A few blocks downtown, however, need to fully utilize street rights of way for transit, traffic and sidewalk bulbouts/landscaping. These blocks include the sections of:

- Fresno Street between UPRR and Divisadero Street;
- Tulare Street between UPRR and Divisadero Street; and
- Van Ness Street between Stanislaus Street and Ventura Street.

Parking demands that cannot be met by on-street spaces need to be provided in off-street facilities. If angle parking is used, it is important to allow for double parked trucks to load and unload without blocking traffic circulation. Typically this means a minimum 45 feet of curb to curb width for single side 60 degree angle parking and the circulation aisle or 70 feet for double sided 60 degree angle parking with a circulation aisle.

Land Banking

Parking demands will be increasing over time. The most efficient and convenient parking system could be designed with “Monday morning quarterbacking” type knowledge of the markets. Unfortunately, the benefit of this perspective is not available to communities. Communities, however, can estimate their build-out development parking needs based on the land use vision for their downtowns and then define strategic parking development plans based on the amount and locations of these parking estimated demands. Sites are “reserved” for future parking garages. Often the interim use of these sites is for surface parking. The key to this strategy is the ability to approximate future parking demands by location areas of the downtown based on the downtown growth vision for Downtown.

ITS Parking

There are many uses of technology for improving the user experience and managing parking resources. Electronic displays can be provided along key approach routes to Downtown and even on the web for motorists to find the most convenient and low cost parking. Parking fees can even be collected electronically by cell phones or by the

internet. Technology can help monitor parking use and availability and SMART parking meters can zero out time when vehicles leave spaces early.

Parking Facility Design

For surface parking it is desirable to locate these lots in the rear of buildings rather than between the street and the building. This placement is more pedestrian-friendly. Where possible the design should allow for off peak use for basketball or other recreational activities. This requires that attention be given to placement of lighting fixtures, drainage inlets, landscaping and curb features.

Design considerations for parking structures include their size, height, footprint, access and circulation features. In general, garages with fewer than 800 spaces function well with just a single interior ramping system. Larger garages sometimes need more than one interior ramping system and their driveway access capacities with the public streets become more challenging. The most common type of a garage is a “sloping floor” design similar to the Tulare Garage. The minimum footprint for these garages is generally 140 feet by 300 feet. A 220 foot width is desired when ground floor retail is included in the garage design. This width allows for three parking aisles, the center of which can be used for the sloping floor ramps leaving the outer parking aisle level and able to accommodate retail uses. In the downtown area, ground floor retail should be provided along all pedestrian corridors. Some communities mandate 60 to 70 percent of ground floor street frontage of parking garages be available for retail uses.

Wayfinding

For non-commuters who are unfamiliar with parking Downtown, it is confusing to determine where to park and how much the parking will cost. There are few “P” directional signs to guide parkers to facilities and it is virtually impossible to find out the cost of parking without entering the facility. Exterior signage at the parking facility assists and informs motorists when making parking decisions, thus reducing the confusion and frustration. Examples of this signage are shown below in Figure 5.6. With the current conditions in Downtown it is generally safe to expect open spaces in each parking facility, but as the current surplus declines in the future this will not be the case.

Figure 5-6: Examples of Parking Signage Indicating Price



RECOMMENDATIONS

This study supports the development of a comprehensive parking plan for Downtown as recommended in the Central Area Community Plan. Adoption of a set of parking planning principles is suggested to guide the development of the comprehensive parking plan. These principles are as follows:

All of the Downtown

- 5-1. Parking policies should support transportation demand management strategies to minimize auto travel to the downtown area, particularly journey to work trips, and to lessen the demand for parking such as parking pricing and unbundling;
- 5-2. Do not over supply parking. Excess supply reduces the effectiveness of strategies to reduce the demand for parking (i.e. reduce the use of single-occupant vehicles and promote alternative modes) and to finance the cost of providing and operating parking facilities;
- 5-3. Maximize utilization of current parking investments with pricing and time-limit strategies;
- 5-4. Adopt the LOS suggested guidelines for effective capacity;
- 5-5. Adopt the suggested guidelines for walking distances;
- 5-6. Adopt policies to discourage the bundling of parking costs into property lease and ownership costs in favor of full cost recovery pricing;
- 5-7. Adopt policies that reflect shared use benefits in calculation of parking demands;
- 5-8. Future parking for new residential developments should allow for some of the total demand to be met with on-street parking; and
- 5-9. On-street parking should be maintained to provide for short-term parking needs and as buffers between traffic and pedestrians.

Downtown Core Area

- 5-10. With the exception of interim land banking uses, all future parking in the downtown core area should be in parking structures or underground;
- 5-11. New parking structures for downtown should be located along the perimeter of the downtown core and connected to the downtown circular shuttle;
- 5-12. New parking structures shall include retail and other active land uses on the ground level along pedestrian corridors;
- 5-13. Within the downtown core, non residential off-site parking should be area-based, rather than address-based and the requirement for on-site or contiguous parking should be eliminated; and
- 5-14. Future non residential parking facilities in the downtown core should be publicly provided and open to the general public (common use facilities).

Parking Plan Content

The recommended parking master plan for the downtown area should include the following elements:

- 5-15.** Set of planning principles (see above for recommendations);
- 5-16.** Estimate of parking needs related to build out of the downtown core, including estimates for ballpark and high speed rail special generators. This will require close coordination with the Planning Department and Redevelopment Agency for definition of build-out growth. It will also require the definition of the downtown core area parking boundaries;
- 5-17.** Master plan for the location of future parking facilities associated with build-out development along with a phasing implementation plan and a basis for establishment of a parking finance district;
- 5-18.** Management framework to finance, develop and operate the downtown core parking system – suggested to consist of a single parking district encompassing the downtown core;
- 5-19.** A coordination plan providing context between the downtown core area parking, other downtown parking facilities and parking policies within the city;
- 5-20.** Update of the city's 1987 Parking Manual;
- 5-21.** Strategy for integrating private parking facilities into the downtown core area master plan; and
- 5-22.** Wayfinding and information program for parking facilities including parking maps.

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CHAPTER 6 - PEDESTRIAN ELEMENT

Background planning efforts for the City of Fresno and the Downtown in particular have identified the importance of a walkable downtown both for the ability to support a vibrant economy as well as for the ability to attract residents, visitors, businesses and employment to the urban core. The goal for the future of Downtown Fresno includes providing a sense of place with a blend of work, living and leisure opportunities. Walkability is a key component of the smart growth development envisioned for Downtown as well as important to the viability of transit. While pedestrian facilities are a key element of the walkable community, decisions made for traffic, transit, bicycle, parking and land (re)development will also play a fundamental role. The following discussion of pedestrian travel in Downtown Fresno includes a description of existing conditions for walking, review of existing plans and policies, assessment of pedestrian needs and outline of recommendations to meet these needs.

A key strength of downtown relative to suburban areas is the pedestrian oriented environment. In the downtown, destinations are located conveniently nearby within walking distances and away from intimidating high speed and high volume traffic. The mixing of people at walking speeds affords the opportunity to experience the density of activities that the downtown has to offer. Full exploitation of the synergy available in downtown is best achieved by maximizing pedestrian activity. A good pedestrian environment is key to the strength of the downtown and enhancement of the pedestrian facilities and experience are fundamental strategies to make downtown more attractive to residents, workers and shoppers.

For those that enjoy living, shopping and working in a pedestrian environment, downtown Fresno could offer this option. Vibrant downtowns with lively sidewalk activities therefore begin with downtown-oriented land use and development strategies. For example, offices that have self contained parking and cafeterias do little to generate pedestrian activity on downtown streets and do little to support restaurants and other retail activity. In some ways these offices experience the negatives of a downtown location (parking and traffic congestion) but fail to reap the synergistic benefits of a downtown location. Future development in the downtown should encourage streetside activity and discourage projects that do not connect with the streets and activities of downtown.

CURRENT SETTING

Walking is included in every trip whether the walk is from a parking space to the restaurant, from the bus to the workplace or from home to the store. National studies¹ on the characteristics of walking trips have determined that walkers are generally motivated by exercise and enjoyment. The average walking trip is 1.2 miles in length (about 20 minutes walking time); recreational trips are generally longer and utilitarian trips are most often shorter in length. The reasons for not walking include trip distance, convenience of carrying things, time and fear of crime. Utilitarian walking is more prevalent among urban residents living in high density districts, such as downtowns. Attractive walking environments (sidewalks, trees, landscaping, lighting and items of interest) are more appealing and may encourage more frequent and longer walking trips.

Downtown Fresno has the basic elements to be a good, walkable community. The terrain is flat and the climate is generally mild. Unlike most areas where harsh winter weather may discourage walking, the high temperatures of Fresno in the summer are a greater deterrent to walking or other outdoor activities. Most of the roadways in Downtown have sidewalks on both sides of the street; they vary in width but are generally in good condition. Short block lengths are typical for Downtown except where roads have been closed for superblock development. In addition, there are several pedestrian malls in Downtown: Fulton Mall, Mariposa Mall and several blocks of Kern Street adjacent to the Federal Courthouse. Streetscape treatments with street trees, planter boxes and travel lane

¹ National Survey of Pedestrian & Bicyclist Attitudes and Behaviors-Highlights Report, U.S. Department of Transportation National Highway Traffic Safety Administration and the Bureau of Transportation Statistics, 2002 and National Walking and Bicycling Study, Case Study #1, U.S. Department of Transportation Federal Highway Administration, 2002.

reductions have been installed on Kern Street southwest of the pedestrian mall and on Van Ness north of Tuolumne Street. The Van Ness installation was done as part of the Cultural Arts District Streetscape Project.

City policy supports multi-modal transportation as stated in the 2025 Fresno General Plan goal to “Coordinate land uses and circulation systems to promote a viable and integrated multi-modal transportation network.” Walking is certainly an important component of any multi-modal transportation network. More specifically, the Central Area Community Plan calls for a “comprehensive pedestrian system for the Central Area that provides visual and physical amenities to link activity centers and districts.”

ISSUES AND NEEDS

The evaluation of the pedestrian environment in Downtown Fresno has revealed many issues related to the pedestrian environment. These issues focus on wayfinding, safety, barriers, amenities/convenience, maintenance and ADA compliance.

Wayfinding

The lack of wayfinding, particularly at entrances to Downtown, is not specific to pedestrians although taking a wrong turn is more of an inconvenience to a person on foot. Because of the juxtaposition of the street grid layouts between the Downtown core and surrounding city, there are several forks along the routes into Downtown, particularly along Divisadero (Photo 1). Without signage, it is difficult to know which fork to take. Added to this are the detours caused by street closures.

Improved wayfinding signage would assist pedestrians in finding their way through the downtown and to their destinations especially at complex intersections and other decision points. In addition, signage should identify alternative pedestrian pathways around or through barriers. Downtown maps including key destinations, ‘you are here’ locations, and walking times would help orient pedestrians, particularly less frequent visitors. The same wayfinding signage may be used for pedestrian, bicycle and motor vehicle traffic; however, pedestrians, and to some extent bicyclists, require that signage be available at more frequent intervals, at a height easily seen by pedestrians, and include more detailed information than is necessary for a driver. Wayfinding for pedestrians should include the following:

- Direction to key destinations (Photos 2 & 3);
- Distance (for pedestrians, distance measured in time is more useful);
- Direction to pedestrian shortcuts including destination;
- Direction to amenities;
- Maps with ‘You are Here’ location (Photo 3); and
- Ample lighting so signage and maps are visible at night.



Photo 1: Leaving Downtown on P Street at Stanislaus Street and Divisadero.



Photo 2: Wayfinding at County Courthouse.



Photo 3: (left) FAX Trolley stop map, (right) Wayfinding in San Francisco.

Safety

Safety is a key concern for pedestrians. Protection from vehicle traffic and personal security concerns, especially at night, are major considerations for pedestrians. Lighting is a key factor in judging whether or not a location is safe. Although most streets in Downtown Fresno have street lights, these lights are infrequent and are generally not at the proper scale to provide appropriate lighting for pedestrians. In addition, many of the store fronts and buildings are vacant; consequently, no additional lighting is available from these sources (Photo 4).

Many of the sidewalks in Downtown are located directly adjacent to the street (Photo 5); consequently there is limited buffering by trees or other landscaping to separate pedestrians from traffic. This is a particular concern where on-street parking is not allowed, such as on Tulare Street.

Many of the crosswalks, both at midblock and intersection locations, are poorly marked. Instead of using standard high reflective paint or tape, some crosswalks use special paving materials (i.e. bricks, adobe pavers, concrete pavers) to denote the crosswalk. This differentiation is often subtle especially as paving materials fade over time causing the crosswalks to be difficult to see at night. Even the reflective paint or tapes will lose their distinction over time if not adequately maintained. The midblock crossing of O Street by Kern Street Mall (Photo 6) and intersection of L Street with Fresno Street adjacent to the Downtown Transit Center (Photo 7) are examples of this discrepancy.

Bicyclists on sidewalks pose another safety hazard for pedestrians. While bicyclists are not legally allowed to use the sidewalk in Downtown, they do so frequently; this prohibition is seemingly not enforced.

It will be key to provide additional pedestrian-level lighting along streets and on pedestrian-only paths in order to improve pedestrian safety downtown. Particular attention should be paid to lighting along vacant buildings and storefronts. Buffers between pedestrian paths and travel lanes would enhance the pedestrian environment. On streets with sidewalks adjacent to the curb, it is preferable to have a parking lane between the sidewalk and moving vehicles. Pedestrian crossings at intersections and midblock locations should be highly visible to motorists, especially at night. Improvements to bicycle facilities and enforcement of sidewalk prohibitions would encourage bicyclists to use the street and thereby lessen this pedestrian hazard.



Photo 4: Lack of storefronts or other activity on the street. Note that the sidewalk is directly adjacent to the street.



Photo 5: Sidewalk adjacent to street on Divisadero.



Photo 6: Midblock pedestrian crossing of O Street at Kern Street Mall.

Barriers

Barriers created by street closures can be a security issue and inconvenience for pedestrians (Photo 8). They often require pedestrians to travel several blocks out of their way thus increasing the time required to walk to their destination. While pedestrian-only shortcuts through superblocks are helpful, they can be somewhat deserted at night. Many of the superblocks, such as the County Courthouse, are surrounded by park. Although these open spaces can be used as short cuts during the day and offer a pleasant opportunity for sitting and enjoying the day, they are often foreboding at night. Freeways and railroad tracks can create significant barriers to traffic and especially to pedestrians. Crossing points are limited and, with fewer opportunities for access, traffic volumes are considerably higher on these roadways. Because of the cost of construction for bridges or underpasses, the widths are often constrained and sidewalks are often narrow and adjacent to the roadway. Crossing of the Union Pacific Railroad tracks at Stanislaus, Tuolumne, and Divisadero Streets are good examples of less than pedestrian-friendly overpasses (Photo 9). Lastly, crossing freeway ramps is always a hazard for pedestrians. Motorists are either intent on speeding up to merge with freeway traffic or are concentrating on re-entering street traffic. Many freeway on/off-ramps have large radius curves to accommodate higher traffic speeds and are often not signalized.

While it may not be possible to completely remove some existing barriers, the addition of new barriers can be avoided. For pedestrian and traffic considerations, future street closures should not be considered. If a street closure is unavoidable, a safe and convenient pedestrian pathway through the complex should be provided. Existing barriers can be mitigated with the following:

- Well-marked and well-lit pathways through the superblocks.
- Safe pedestrian walkways on bridges and along underpasses with lighting, barriers from traffic.
- Separate pedestrian crossings of railroad tracks and freeways.
- Enhanced pedestrian crossings at freeway ramps using traffic and speed controls, lighting, signage and/or pavement markings and avoiding large radius turns in these locations. Future widening of freeway over-crossings and under-crossing should also consider providing more than Caltrans minimum widths for these crossing near the downtown.



Photo 7: Pedestrian crossing of Fresno Street at L Street adjacent to Downtown Transit Center.



Photo 8: Lack of pedestrian connection between Fulton Mall and IRS Building. Note that pedestrians must walk through a parking lot and get through a chain link fence.

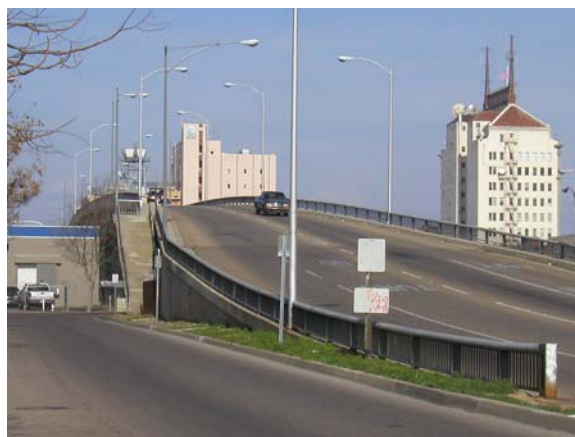


Photo 9: Pedestrian stairs to sidewalk on Stanislaus Street.

Amenities/Convenience

Another key factor in the decision to walk is the level of comfort or convenience provided by the walking environment. As previously mentioned, Downtown Fresno is flat and topography is not a concern for walkers. However, the high summer temperatures can be unpleasant especially when exacerbated by the tendency of asphalt and concrete to absorb heat. Unfortunately, the area lacks trees and vegetation along downtown streets to provide shade and reduce the absorption of heat (Photos 10 and 11).

Much of the downtown still maintains the short block lengths of the original street grid. However, many of these blocks have been combined into superblock developments often without pedestrian shortcuts or pathways such as at the medical center complex on Divisadero and Fulton Street (Photo 12). Pedestrian travel is slow and provides ample time to 'stop and smell the roses'. However, if there are no roses or other street level activities of interest, walking can be tedious. Much of the street level development in Downtown Fresno is vacant, oriented towards parking rather than the street or setback a considerable distance from the street. (Photo 13) This lack of activity discourages strolling, eliminates opportunities for browsing in shops and discourages walking along the street.

The pedestrian environment can be greatly improved in Downtown Fresno with the addition of shade and/or vegetation planting to mitigate high summer temperatures. Shade can be provided with trees, awnings or canopies. Whatever vegetation is added along the street or pedestrian zone must be kept trimmed back from the pathway and signage. In addition, vegetation should be low enough or high enough to not pose a security hazard. Shade trees in the right-of-way should be placed to shade pedestrians, rather than traffic. For example, trees along the side of the street are more effective shade producers for pedestrians than trees in a center median. One of the benefits of pedestrian travel is that it offers the walker the opportunity to view his or her surroundings at a leisurely pace. Shop windows, public art, and landscaping provide interest; sidewalk cafes and outdoor seating areas provide places to meet friends or enjoy a sunny afternoon. Street activity will attract more users and therefore more potential patrons of stores and restaurants. Although the design of the street infrastructure (i.e. wide sidewalks, tree plantings, seating areas, buffers from traffic, low traffic volumes and speeds) will be a factor in developing a vibrant pedestrian-friendly Downtown, the choice of land uses and architectural standards for future development will have an even greater impact on its future.



Photo 10: Fulton Street looking towards Fulton Mall.



Photo 11: North end of Kern Mall. Note lack of shade trees.



Photo 12: Barrier formed by Medical Center.

Providing public restrooms is expensive and a major security issue. Suburban shopping centers, airports and other businesses have found that they are essential expenses, but downtowns tend to avoid them. Public restrooms are expensive to provide and maintain and can be abused by vagrants. Pedestrians in a downtown setting need these public conveniences, and with an aging population and a population with more children, the need to provide safe and convenient public restrooms is a growing one. The greatest need for a public facility seems to be on the Mall near Mariposa (bus riders could also benefit). For security reasons, the restrooms should be restricted to 9am through 8pm. Subsidy payment should be considered to cover costs of partial attendant oversight of the public restroom.



Photo 13: Parking garage on Kern Street. Note lack of street side retail or other activity.

Maintenance

Pedestrian facilities in Downtown are often kept in poor condition (Photo 14). The sidewalks are dirty and overhanging vegetation often blocks the sidewalk and surrounding signage. Many of the crosswalks are faded and difficult to see, especially at night. In addition, there is often excessive street furniture (trash cans, planters, etc) that limit the effective width of the sidewalk (Photo 15).



Photo 14: Note poor condition of sidewalk on Kern Street.

There is nothing less appealing to a pedestrian than to have to avoid messes on the sidewalk, broken pavement and overhanging vegetation. The investment in pedestrian facilities and amenities should include maintenance to keep sidewalks, seating areas and landscaping in good and usable condition. Although street furniture is often an amenity for pedestrians, placement of these items must be evaluated to insure that sidewalk width is not compromised. In high traffic areas of Downtown, an eight to 12-foot sidewalk should be maintained².

ADA Facilities

Most of the sidewalks and intersections have ADA ramps and adequate widths to accommodate wheelchairs and other ADA requirements. Many of the existing ramps are located at the corner and no longer meet ADA requirements. Current guidelines dictate that ramps be perpendicular to the street and located to guide users to the crosswalk not into traffic. Part of any new development or redevelopment of streets or pedestrian facilities should include accommodation for ADA access which includes not only consideration of ramps but also the location of street furniture, signal controls and utility poles.



Photo 15: Sidewalk narrowed by street furniture on Van Ness Street.

² Guide for the Planning, Design, and Operation of Pedestrian Facilities, 1st Edition, American Association of State Highway and Transportation Officials, 2004.

RECOMMENDATIONS

Walkability is a necessity for a successful and vibrant downtown both for the ability to support a vibrant economy as well as for the ability to attract residents, visitors, businesses and employment to the urban core. To increase the downtown walking mode share, as discussed in Chapter 1, from the existing 3 percent of trips to 4 percent in Year 2030 and 8 percent in Year 2050, will require two steps. Step 1 is to increase the population that lives and works within the average walking distance of each other. Step 2 is to provide an attractive, safe and convenient walking environment to encourage these trips to be made on foot. The following recommendations are presented as opportunities to increase the pedestrian mode share in Downtown Fresno.

Goals and Objectives

The following goals and objectives are recommended to provide guidance in the effort to improve the walking environment in Downtown.

Pedestrian Travel Goal: To provide the means to support walking as an alternative mode of transportation for work, errand and recreational trips.

Objective 1: Safety and Access – Create a street environment that strives to ensure pedestrian safety and unrestricted access.

Objective 2: Streetscapes and Land Use – Provide pedestrian amenities that enhance public spaces and promote land uses that support the development densities needed to make walking a viable transportation alternative in the downtown.

Objective 3: Education – Educate citizens, community groups, business associations and developers on the safety, health and benefits of a walkable downtown.

6-1 New Pedestrian Crossing of Van Ness Street at Mariposa

The normal downtown pedestrian crossing interval of every block (480 feet) is not maintained along Van Ness Street at perhaps its highest demand location (between Fresno and Tulare Streets). At all other intersections (Inyo, Kern, Tulare, Fresno, Merced, Tuolumne, Stanislaus and Calaveras), at-grade signalized crossings are provided; at Mariposa Street, pedestrian access across Van Ness is available via a pedestrian subway that provides connection to the Downtown Transit Center and the underground parking garage. An at-grade pedestrian crossing at this location would provide a more convenient pedestrian crossing and would allow the eastbound curb to be used for loading FAX buses. This block of Van Ness between Fresno and Tulare Streets does not carry high speed traffic; this crossing could operate as a signalized crossing or possibly as a simple crosswalk. Consideration should be given to restoring the sidewalk edge on the Court House side adjacent to Van Ness Street. The concept is illustrated in Chapter 3, Figure 3-14.

6-2 Improved Pedestrian Crossings

Midblock Crossings

There are many pedestrian midblock crossings in Downtown Fresno at the intersection of the street grid with pedestrian malls and superblocks. A few of these (Photos 6 and 7) were discussed earlier in this chapter. These crossings can be enhanced with various treatments to increase visibility and safety for pedestrians. It is recommended that a Pedestrian Crossing (Photo 16) sign be used in advance of the crossing. The same sign can be used at the crosswalk in conjunction with a diagonal downward pointing arrow. In addition, an In-Street Yield to Pedestrian sign can be used in the crosswalk itself (Photos 17 and 18).

Crosswalks with special pavement treatments are used to supplement the design theme of a pedestrian zone. Unfortunately, these treatments may not always afford the visibility needed for a midblock crossing. As previously discussed, the lack of crosswalk definition for the crossing of O Street at the Kern Street Mall (Photo 6) is an example. As shown in Photo 19, the special crosswalk treatment can be made more visible with the use of reflective striping at the edge of the crosswalk without losing the design context.

Countdown Signals

These signals (Photo 20) are used at signalized intersections to provide pedestrians with more information regarding available time to cross the street. In studies of the use of the countdown signals³, it was found that pedestrians did not understand the meaning of the 'flashing hand' or 'don't walk' phase of the signal. With the countdown signals, pedestrians felt that they better understood the meaning of the pedestrian signals and that they could make better decisions about crossing the street. The countdown signals were also found to discourage some pedestrians from crossing the street when limited time was available or encourage others to accelerate their pace when time was running out.



W11-2



R1-6

Photo 16 (left): Pedestrian Crossing sign.
Photo 17 (right): In-street Yield to Pedestrians sign.



Photo 18: Midblock crossing with In-street Yield to Pedestrians sign.



Photo 19: Reflective edges for crosswalk with pavement treatment.

³ Pedestrian Countdown Signals, Case Study No. 62, City of Monterey.

6-3 Mariposa Mall

While Mariposa Mall provides an important pedestrian link between many of the key destinations in downtown (such as Fulton Mall, County Courthouse, library, Eaton Plaza, Veterans Memorial Auditorium, State and Federal Buildings, and City Hall), the Mall lacks continuity and wayfinding between destinations (Photo 21). Parts of the Mall are pedestrian-only and other sections are open to traffic (Photos 22 and 23). While this does add to the disjointed feeling, the mixture of pedestrian paths and streets carrying traffic does not preclude the opportunity to create a sense of place and connection for the Mariposa Mall. Options for improvement include the following:

- A unique name to distinguish it from the Fulton Mall might serve to give the Mariposa Mall its own identity. One suggestion is *Paseo de la Mariposa*.
- Banners and other design features to give the Mall a unique branding much like what has been done for Fulton Mall (Photo 24). This branding will also help connect the paths and streets into one continuous connection. A design motif centered on butterflies would be appropriate (*mariposa* is Spanish for butterfly).
- Wayfinding to provide direction and visual connection between the streets and destinations connected by the Mall.



Photo 20: Pedestrian count-down signal.



Photo 21: Mariposa Mall.



Photo 22: Mariposa Mall looking towards the County Courthouse.



Photo 23: Mariposa Mall looking towards City Hall.

6-4 Pedestrian Audit/Pedestrian Plan

There has been considerable interest over the past several years in improving quality of life in our communities. Key to this discussion is walkability. Pedestrian plans are being prepared by cities and states to guide these improvements in a logical and comprehensive manner. Unfortunately, sometimes these improvements, particularly streetscapes or traffic calming, are designed and implemented without regard to other roadway users. In order to avoid this pitfall, it is recommended that a Pedestrian Plan be prepared for the downtown and included as part of a comprehensive downtown plan or as a stand-alone document. Because issues affecting pedestrian travel may be beyond the scope of a pedestrian plan alone, i.e. traffic speeds, development densities, transit connections, etc., it is preferable to have the pedestrian environment addressed as part of a comprehensive downtown plan. The plan would address 1) Remediation of existing barriers and gaps in the pedestrian environment, and 2) Development standards/guidelines for a good pedestrian environment to evaluate future development and redevelopment projects. Some of the issues to be addressed include the following:

- Traffic Speeds
- Pedestrian Exposure
- Safe/Attractive Pedestrian Environment

Traffic Speeds

Traffic speed has a significant impact on pedestrian safety. Traffic calming measures are being used by many communities to reduce traffic speeds and divert non-local traffic to the arterial and collector streets. Much of the traffic calming toolbox is appropriate for residential or local streets and would not be appropriate to the downtown. Techniques that are appropriate for Downtown Fresno include the following:

- Use of traffic signal coordination to reduce travel speed
- Use of speed trailers to remind motorists of posted speed limits (Photo 25)
- Use of raised crosswalks or raised intersections at non-signalized intersections or midblock crossings (Photo 26)
- Red light running is an associated speeding hazard and red light camera enforcement has proven to be an effective pedestrian safety program



Photo 24: Banners used in Fulton Mall.



Photo 25: Speed trailer for speed reduction campaign.



Photo 26: Raised T-Intersection.

Pedestrian Exposure

The length of time a pedestrian is exposed to traffic, i.e. the time it takes to cross the street, is a factor of how quickly a pedestrian walks and the distance from curb-to-curb. While it is not possible to make people walk faster, it is possible to reduce the crossing distance. A shorter crossing distance will also allow the pedestrian signal phase to be reduced and potentially improve the intersection operation of all users. Techniques to reduce crossing distance include:

- Lane reduction/narrowing (Photo 27) of travel lanes may not reduce the actual pavement crossing distance but will reduce the exposure to total number of traffic lanes. Bike lanes are often an added benefit of a lane reduction. Narrowing of traffic lanes can serve to reduce travel speeds and may also provide the needed road width for bike lanes, center median and/or pedestrian refuge islands.
- Bulbouts (Photo 28) reduce the walking distance by extending out the curb. Of course, the width of a bulbout will depend upon the specific road design but is generally the width of the on-street parking lane.
- Medians/pedestrian refuges (Photo 29) offer a safe haven for a pedestrian at either a signalized or unsignalized crossing.



Photo 27: Lane reduction to accommodate bike lanes and center turn lane.



Photo 28: Bulbouts used to reduce crossing distance at midblock crossing.



Photo 29: Pedestrian refuges at unsignalized intersection.

Safe/Attractive Pedestrian Environment

The pedestrian environment includes the area of the street that extends from the face of the building to the face of the curb. This area, usually known as the sidewalk, accommodates the business and social activities of the street and functions as a 'public space.' The design of the sidewalk is often addressed in four distinct zones (Photo 30)⁴.

1. "Edge Zone—area between the face of curb and the furnishing zone, an area of required clearance between parked vehicles or traveled way and appurtenances or landscaping.
2. Furnishings Zone—area of the roadside that provides a buffer between pedestrians and vehicles, which contains landscaping, public street furniture, transit stops, public signage, utilities, etc.
3. Throughway Zone—walking zone that must remain clear, both horizontally and vertically, for the movement of pedestrians.
4. Frontage Zone—distance between the throughway and the building front or private property line that is used to buffer pedestrians from window shoppers, appurtenances and doorways. It contains private street furniture, private signage, merchandise displays, etc. and can also be used for street cafes. This zone is sometimes referred to as the "shy" zone.

Appropriate sidewalk width will vary depending upon existence of on-street parking, traffic volumes and speeds, pedestrian volumes and potential activities generated by adjacent land uses (plazas, seating areas, outdoor dining, etc). In all circumstances, a clear pedestrian pathway (or throughway) should be provided that is for pedestrian travel only and is clear of obstacles. The minimum width in constrained conditions is 6 feet in commercial areas. For areas with higher pedestrian volumes, a width of six to 10 feet is recommended. Note that this width is for pedestrian travel only and does not include width necessary for landscaping, street furniture or other buffers. Other considerations for the pedestrian environment are discussed below.

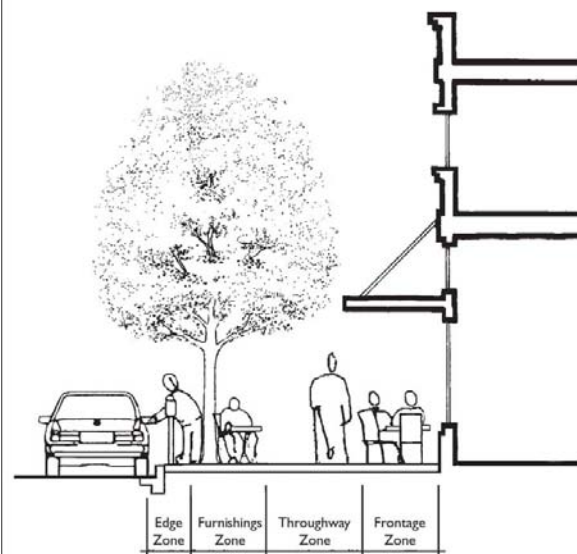


Photo 30: Roadside zones.
Source: Community, Design + Architecture

⁴ Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities, Institute of Transportation Engineers, 2006

Security is a key concern for pedestrians. Especially at night and for women, the fear of crime will deter one from walking. It is not possible to insure that a place is completely safe but there are measures that can be taken to improve safety. A key element for a safe street is activity. We are more likely to walk on a street that has pedestrian and vehicle traffic, active storefronts and good lighting.

Lighting must be adequate to provide pedestrians some measure of comfort and visibility. Lighting must also clearly identify potential hazards, such as stairs, and can be used to illuminate items of interest on the street.

Street activity is a significant factor in the decision to walk or drive. An active streetscape (Photo 31) can be created in part through design. However, it is also a function of land use and development densities (Photo 32). In fact, the more people walk in a neighborhood, the more attractive walking becomes.

The pedestrian plan should encourage street activity including sidewalk-oriented events and dining. As shown in Photos 33 and 34, narrow sidewalks do not have to limit street activity. The City of Mountain View allows shop owners to use the parking in front of their establishment for alternative activities, such as bicycle parking and al fresco dining.

Another aspect of street activity is encouraging office buildings to orient towards the street rather than parking lots. The building's connection to the street should be strong and provide good pedestrian access for employees to walk to restaurants and other downtown locations.



Photo 31: Pedestrian plaza design.



Photo 32: Active downtown commercial district.



Photo 33: Bicycle parking instead of car parking in Downtown Mountain View.



Photo 34: Outdoor dining instead of car parking in Downtown Mountain View.

Street trees are an important amenity in Downtown Fresno. Although there are some streets with good tree cover or other overhangs providing shade, there are many streets without any shade for pedestrians. Comfort is an important aspect of the decision to walk; because of high summer temperatures, shade is crucial whether provided by trees or awnings. A street tree program or ordinance should be included in further planning for the downtown.

Public restrooms are an important amenity that is often overlooked (Photo 35). Although many of the businesses and offices in downtown will have restrooms available for workers and patrons, the casual visitor may not always have access to these facilities. Restrooms provided in parking garages and other public spaces are often difficult to find and not well-maintained. Public restrooms are always provided in indoor shopping malls; it is important that outdoor spaces, such as Fulton Mall, include restrooms to encourage people to visit and enjoy the space. A good location for public facilities would be near the Fulton and Mariposa Malls.



Photo 35: Public restroom at Palo Alto Transit Center also includes location for posting local maps.

6-5 Wayfinding Program

A wayfinding signage and downtown map program would help all road users to enter/exit and travel through the Downtown. For pedestrians, this should include posted maps with destinations, street names and 'you are here' indications (Photo 36). More information about wayfinding can be found in Chapter 9.

6-6 Complete Streets Policy

Adopt a 'Complete Streets' policy for Downtown Fresno to address the issues related to both transportation and land use that affect the operation of the street and pedestrian environment. 'Complete Streets' are designed and operated to enable safe access for all users, not just motor vehicle traffic.

A process for the evaluation of pedestrian enhancements as a condition of project approval should be included as part of the Complete Streets Policy.



Photo 36: Pedestrian wayfinding map.

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CHAPTER 7 - BICYCLE ELEMENT

With current pressure to reduce energy consumption and vehicle impacts on air quality, bicycling is gaining recognition as a viable alternative to the automobile. According to the National Personal Transportation Survey¹, more than half of commute trips and three-quarters of shopping trips are less than five miles in length. In fact, 40 percent of all trips are less than two miles. This represents a significant number of trips that are feasible within the range of bicycling. City policy supports multi-modal transportation as stated in the 2025 Fresno General Plan goal to “Coordinate land uses and circulation systems to promote a viable and integrated multi-modal transportation network.” Bicycle transportation is certainly an important component of any multi-modal transportation network. More specifically, the Central Area Community Plan calls for a “comprehensive bikeway system to link activity centers and districts” including development standards for the inclusion of bikeways on public and private rights-of-way and facilities for secure bicycle parking. The following discussion of bicycle transportation in Downtown Fresno includes a description of existing conditions for bicycling, review of existing plans and policies, assessment of bicycling needs and outline of recommendations to meet these needs.

CURRENT SETTING

Downtown Fresno has the basic elements of a good bicycling community. The terrain is flat and the climate is generally mild. Unlike most areas where winter rains and cold temperatures may discourage bicycling, the high summer temperatures are a great deterrent to bicycling and other outdoor activities. Currently, many of the streets leading to Downtown (First, Elm, California, Church and Kearney Streets) have bike lanes or are signed as bike routes. Recently, the first bike lanes in downtown were installed on H Street. All Fresno Area Express (FAX) buses are equipped with front-mounted bicycle racks with the capacity to carry two bicycles. Amtrak San Joaquin trains are equipped with bicycle racks in many of the cars; bicycles can be carried on Greyhound only when boxed as luggage. Bicycles cannot be ridden on the sidewalks in the downtown although this prohibition is not strictly enforced; the prohibition against bicycle riding on Fulton Mall is enforced.

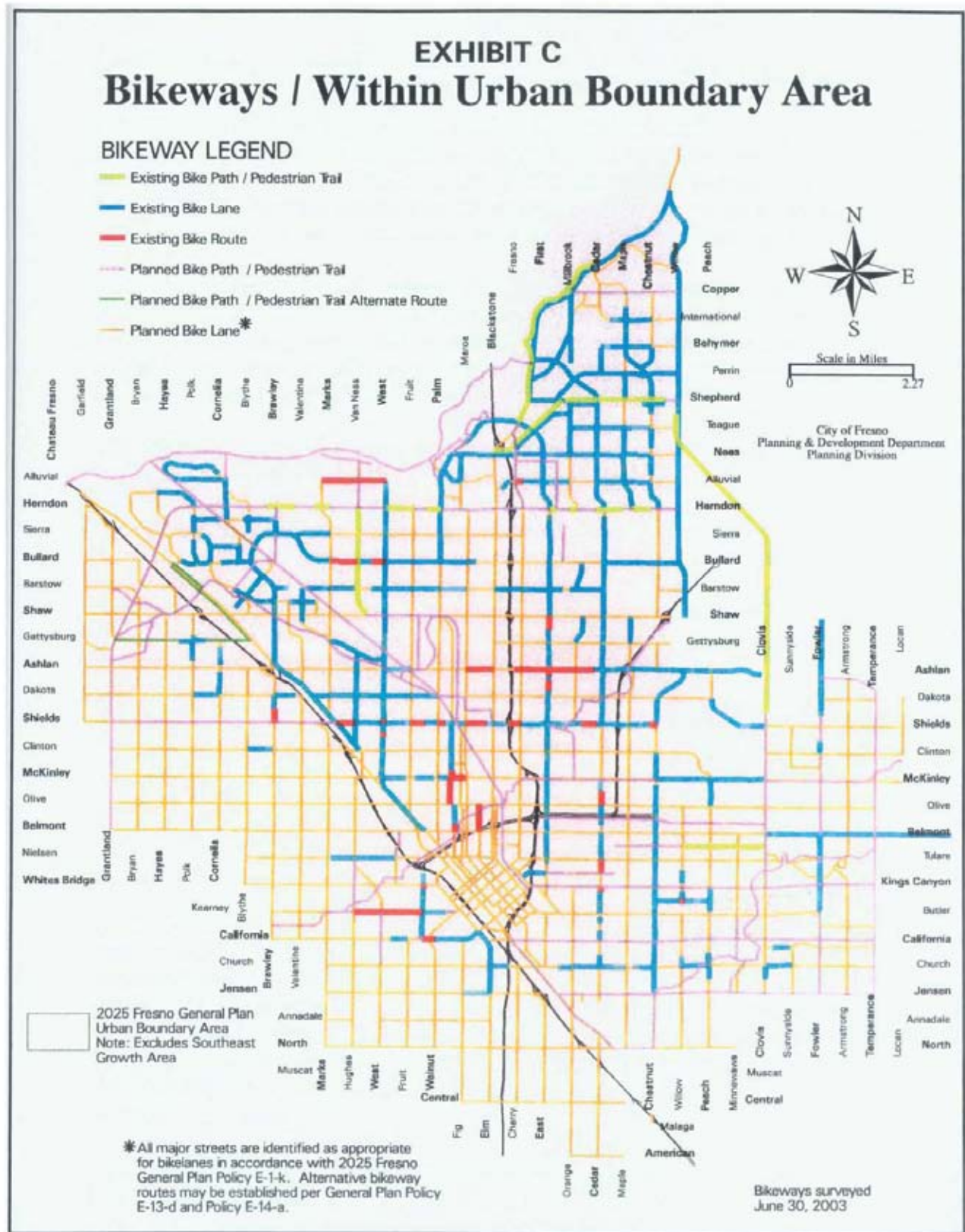
Bicycle parking in Downtown is limited although Fresno City Hall, the Federal Courthouse and Convention Center do have bike racks. The City has a bicycle parking stall policy for non-residential land uses that requires the total number of bicycle parking stalls of a given development be equal to 10 percent of the required number of vehicle parking stalls up to a total of 10 bicycle parking stalls.

A *Bicycle Transportation Plan for the City of Fresno* was adopted in December 2003. The purpose of this plan was two-fold: 1) To describe the existing bicycle transportation system and facilities and 2) To describe the planned bicycle transportation system that is intended to promote increased bicycle travel in the future. The plan is expected to be implemented by Year 2025 but does identify the high priority projects for the short-term. The plan also addresses the requirements to be eligible for funding from the State Bicycle Transportation Account. Many of the city’s major streets are currently developed with bike lanes to facilitate the implementation of additional lanes. The Public Works Department has an active program to stripe streets as part of its ongoing street repaving operation. When bike lanes are not feasible, it is the city’s policy to sign the street as a bike route. Specific to the downtown, most of the arterial and collector streets are identified for future bike lanes. The bicycle network as identified in the *Bicycle Transportation Plan* is shown in Figure 7-1.

The prioritized bicycle project list focuses on the completion of existing bikeway corridors by filling the gaps in existing facilities. The selected corridors are major, long distance transportation routes that link residential areas to schools, shopping, employment and Downtown. The projects of most significance to Downtown include:

- First Street
- Belmont Avenue
- Ventura Avenue
- Jensen Avenue
- Palm Avenue
- Church Avenue
- Fresno Street
- West Avenue

¹ National Personal Transportation Survey data, 1990.



ISSUES AND NEEDS

The initial evaluation of bicycling in the Downtown has identified several key issues of most concern to bicyclists including the following:

- **Access to Downtown** - Bicyclists want to access Downtown from all directions. Because of the many street closures, there are limited routes that connect Downtown to the suburbs.
- **Downtown Streets** - Once in the Downtown, the bicyclists must carve out space for themselves on the road as best they can. There are no specific bike lanes or bike routes in the Downtown. Sharing the road can be a challenge.
- **Bicycle Parking** - Although some bicycle parking does exist in the Downtown, it is limited. Secure bicycle parking is needed for visitors and employees.

Access to Downtown

Bicyclists want to access Downtown from all directions. Because of the many street closures, there are limited routes that connect Downtown to the suburbs. Unfortunately, these routes are also those most used by motorists; consequently they are heavily traveled and their use poses a challenge to bicyclists in sharing the road. Specific entries into the Downtown at the intersections with Highways 99, 41 and 180 can also be difficult. The many on/off ramps as well as under/overpasses are a challenge to bicyclists. A particular hazard is found on Tulare where Tulare splits with Divisadero at the same point that it crosses over Highway 41. Crossings of railroad tracks can also be hazardous although many of the at-grade track crossings have been improved with concrete pads that deter the formation of pot holes and gaps around the rails; these treatments reduce the hazard for bicyclists. The bridges on Stanislaus and Tuolumne Streets over the tracks are very narrow, steep and a significant hazard for bicyclists and even pedestrians. The UPRR underpass at Fresno Street is wide and well-paved although the hill might be a challenge to those more accustomed to the flats of Fresno.

As discussed in Chapters 6 and 9, the lack of wayfinding, especially at key decision points and road merges, is an issue for bicyclists. Bicyclists can easily find themselves on the wrong street with no idea how to get back to where they want to be. Highway directional signs are posted at many of these decisions points; these can mislead one in thinking that they are on-ramps only when in fact they are also provide access into Downtown.

Potential bicycle access routes to Downtown were evaluated to determine their suitability for designated bicycle facilities. These potential entry points, shown on Figure 7-2, were selected for their connectivity to existing/future bikeways and their convenience to destinations in Downtown. This analysis was conducted by bicycle to provide assessment of these potential routes from the point of view of the expected user, the bicyclist. Traffic volumes and speeds, potential for bike lanes, barriers or hazards, and connectivity were considered.

Barriers to Bicycle Travel - After initial review, several routes were eliminated as shown on Figure 7-3. These include:

- Tulare Street to northeast (Photo 1) – Although Tulare Street provides a good connection to bike lanes on First Street, this route entails passing through a complex intersection at the Tulare/Divisadero/Highway 41 interchange.



Photo 1: Tulare/Divisadero/Highway 41 interchange.

- M Street to southeast – This portion of M Street is one-way outbound from Downtown and so does not provide access for inbound trips.
- Fresno Street to west – The underpass of the railroad tracks on this segment of Fresno Street could be perceived as a barrier by many cyclists although the curb lane is wide and pavement condition is good.
- Tuolumne and Stanislaus Streets to the west (Photo 2) – The bridges over the railroad tracks on these two streets are steep, narrow and not suitable for bicycles. Using the sidewalk requires carrying a bicycle up several flights of stairs. However, if the railroad is trenched at some point in the future to accommodate high speed rail, both streets would provide convenient bicycle access into Downtown.

Access from First Street - First Street provides an important connection between Downtown and northern Fresno. In addition, it has bike lanes along most of its length. Two connections from First Street to the downtown were reviewed.

- Belmont Avenue/Fresno Street (Photo 3) – This route provides a good connection from First Street and the northern Fresno suburbs to the heart of Downtown. The overpass of Highway 41 is bike-friendly. It may be possible to add bike lanes or restripe for wide curb lanes on Belmont Avenue.
- Huntington Blvd (Photo 4) – This route is part of the existing bikeway network with bike lanes on Huntington Blvd from First Street to R Street. This roadway provides an easy crossing of Highway 41 but unfortunately Huntington ends at R Street and does not cross the BNSF railroad tracks. Bicyclists must either use Tulare Street or Ventura Street to get further into Downtown.



Photo 2: Stanislaus Street railroad overpass.

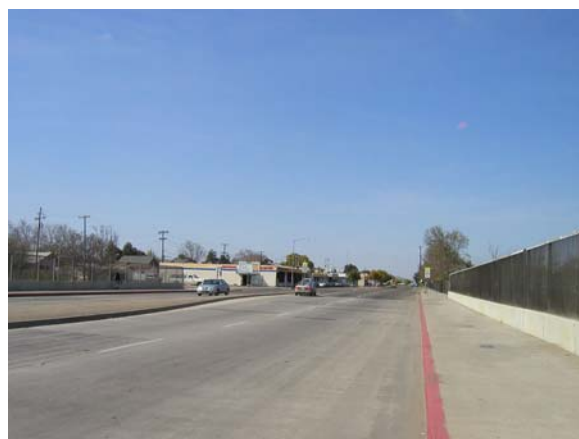


Photo 3: Belmont Avenue crossing of Highway 41.



Photo 4: Huntington Blvd to Highway 41 crossing.

Access from Southeast - From this direction, Van Ness Avenue and O Street were reviewed. The findings include:

- Van Ness Avenue (Photo 5) – This street has two lanes in each direction on the approach to Downtown. Inbound of the Highway 41 underpass, Van Ness is reduced to one travel lane in each direction plus a two-way center turn lane. At the next block (Ventura Street) the street width narrows while keeping the same cross-section. There are few on/off ramps at the highway interchange. Although Van Ness can provide a good connection to the center of Downtown, it does carry significant traffic including buses. In fact, almost all the bus routes that serve Downtown travel, in part, on Van Ness particularly between Tulare and Fresno Streets.
- O Street (Photo 6) – O Street carries significantly less bus traffic than Van Ness and may have the potential to restripe for bike lanes or wide curb lanes along sections of the roadway. The underpass with Highway 41 is simple with few on/off ramps. In addition, O Street provides a good connection to the heart of Downtown.



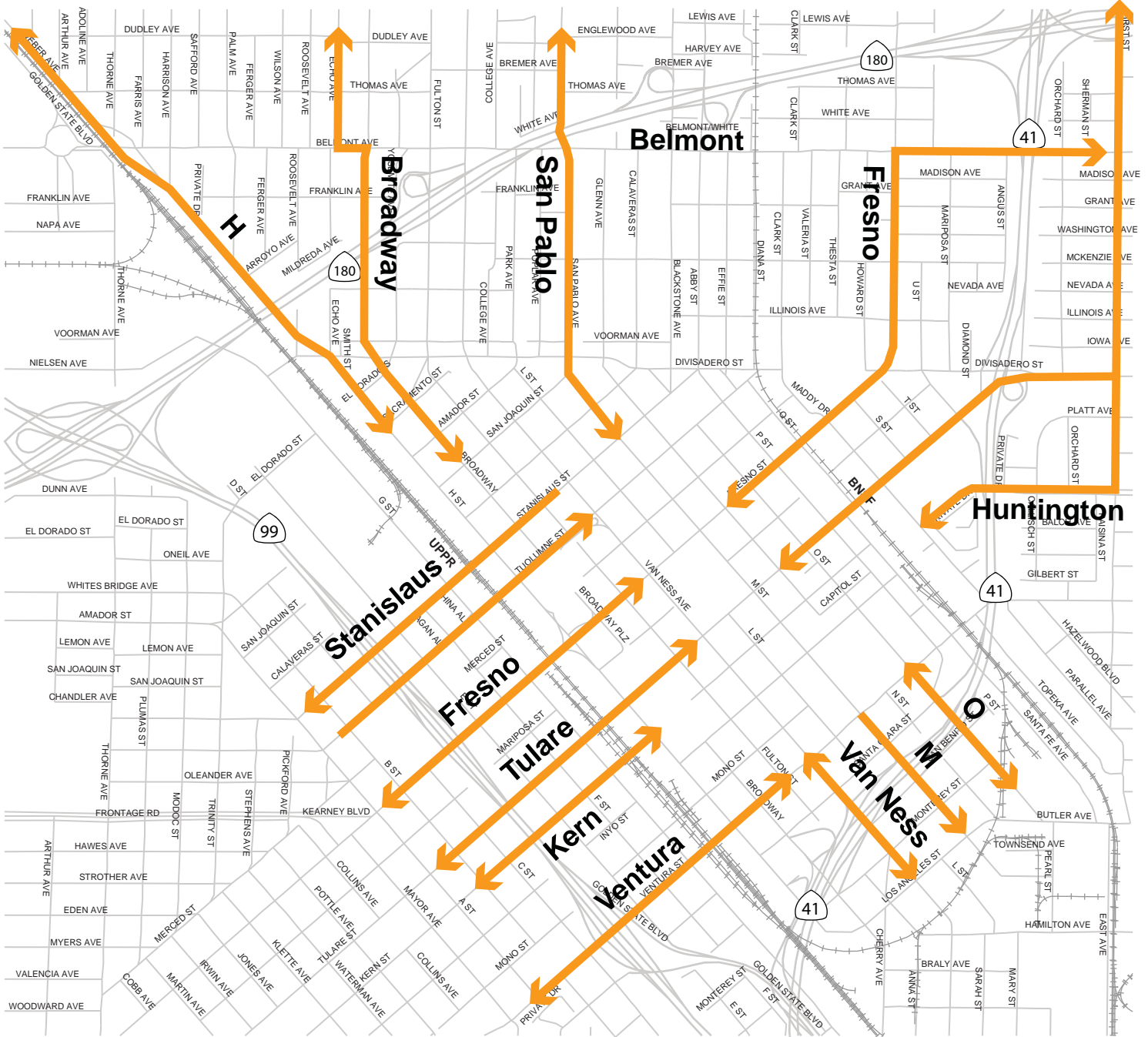
Photo 5: Van Ness Avenue at entry to Downtown.



Photo 6: O Street at entry to Downtown.



NORTH
NOT TO SCALE



LEGEND

Major Routes for Bicycling



NORTH
NOT TO SCALE



LEGEND

Major Routes for Bicycling

Barriers

Not Recommended

Access from West - From initial review, Stanislaus, Tuolumne and Fresno Streets were eliminated from consideration; Stanislaus and Tuolumne for the steep overpass across the UPRR railroad tracks and Fresno for the underpass of the tracks. The remaining streets were reviewed for potential bicycle entries into Downtown.

- Tulare Street (Photo 7) – This roadway has a good crossing at both Highway 99 (no on/off ramps) and the UPRR railroad tracks. It provides a convenient connection to the heart of Downtown. However, it does carry heavy traffic especially north of Van Ness Avenue. There are also several bus routes that use that section of Tulare Street.
- Ventura Street (Photo 8) – This street has on/off ramps at the interchange with Highway 99; although freeway ramps are often a hazard for bicyclists, the design of these ramps minimizes the conflicts. Ventura does appear to carry significant traffic with a high ratio of trucks. In addition, traffic travels at relatively high speeds compared to other streets. Ventura does not connect to the center of Downtown and might not be the first choice for most bicycle commuters.
- Kern Street (Photo 9) – This street is relatively quiet compared to others and has no on/off ramps to Hwy 99. Unfortunately, Kern Street is blocked by the stadium between H Street and Fulton Mall. However, this entry could be useful in combination with Inyo Street to access destinations in Downtown via lower volume streets.



Photo 7: Tulare Street looking to Downtown across Highway 99.



Photo 8: Ventura Street looking towards Downtown.



Photo 9: Kern Street towards the Stadium.

Access from North - The streets that were surveyed for bicycle access from the north include the following:

- H Street (Photo 10) - This roadway provides a connection to existing bicycle lanes on West/H Street from the north to Downtown. H Street is also proposed for bike lanes in the near future. Unfortunately, H Street does not lead into the center of Downtown and has a confusing intersection with Divisadero.
- Broadway (Photo 11) – Broadway provides a more central connection to Downtown Fresno than does H Street. In addition, the underpass of Highway 180 and intersection with Divisadero are straightforward and easy to navigate. North of Divisadero, Broadway is a low traffic residential street but, unfortunately, Broadway is also discontinuous being blocked between Tuolumne and Inyo Streets by the IRS complex and the Stadium.
- San Pablo/M Street (Photos 12 & 13) – Like Broadway, San Pablo is a pleasant residential street with a good crossing of Highway 180 and Divisadero. Just south of Divisadero, it turns into M Street and provides access to the heart of Downtown. The one drawback to this route is that M Street becomes one-way east of Tuolumne. However, this route could be used for a bicycle route in conjunction with O Street.



Photo 10: H Street approach to Divisadero westbound.



Photo 11: Broadway crossing of Divisadero.



Photo 12: San Pablo west of Divisadero.



Photo 13: M Street into Downtown.

Downtown Streets

Once Downtown, bicyclists must carve out space for themselves on the road as best they can. There are no specific bike lanes or bike routes in Downtown. Sharing the road can be a challenge. Many streets are blocked and traffic tends to migrate towards the streets that provide continuous access. Unfortunately those are also the streets that are most in demand by bicyclists. The needs of the various road users (cars, bicycles, pedestrians, transit) are often in conflict. For example, the center median which may be installed to provide left-turn pockets, a landscape buffer between traffic directions, or a refuge for pedestrians crossing wide streets also reduces the curb-to-curb width of the street and may preclude the option of adding bike lanes. Similarly, efforts to reduce road width with intersection bulbouts making it safer for pedestrians to cross the street will also constrain the lane widths and make it more hazardous for bicyclists. On-street parking is a convenience for motorists and is seen as a necessity for merchants; from the bicyclist's point of view, this same on-street parking may be better used to provide bike lanes or wide curb lanes especially when adequate off-street parking is available.

Bicycling in Downtown is further hampered by the lack of bicycle-sensitive loop detectors at actuated traffic signals. Although most signals appear to be pre-timed, there are some actuated signals especially for the protected left-turn phase. At locations where bicycle-sensitive loop detectors do exist, appropriate loop detector pavement markings should be used to guide the bicyclist of the location to activate the sensors. As a pedestrian zone, Fulton Mall is not open to bicycle traffic. This prohibition is enforced. Because of street closures and heavy traffic on surrounding streets, there are no good alternatives to the Fulton Mall for bicyclists.

There are many practices in use today to better accommodate bicyclists on our streets. These practices strive to improve safety and mobility for bicyclists and to smooth the operation of these streets for all road users. Some of these are MUTCD accepted standards and have been in use for many years like bike lanes or share-the-road signage. Other practices such as 'Sharrows' or blue bike lanes are relatively recent innovations and have had limited use. These techniques primarily involve engineering or, in some cases, re-engineering of the roadway. Additional benefits can also be realized through enforcement, education and encouragement (promotion) of bicycle use to increase the bicycle mode share and, accordingly, reduce motor vehicle traffic volumes. The following discussion describes some of the most popular techniques for bikeway treatments, signage, pavement markings and traffic calming.

Bikeway Treatments

There are three typical classifications of bikeways in use today. These include the following:

- Class 1: Bike Paths** (Photo 14) – These are pathways, often referred to as mixed-use trails, completely separated from motor vehicle traffic for the exclusive use of non-motorized travel. They are typically shared by cyclists, pedestrians, joggers, rollerbladers, skateboarders, etc. and are often considered more as recreational facilities rather than commuter routes. These bikeways are very much preferred by less experienced cyclists or families with small children. Unfortunately the Class 1 Path requires significant right-of-way that is not usually available in a downtown. The future consolidation of the railroads and the subsequent abandoning of the BNSF would, however, provide an excellent opportunity for a Class 1 Bike Path to and through the downtown. Although the path itself provides a safe bicycling environment, the intersection of the Class 1 Path with cross streets must be carefully designed and engineered to not put trail users at risk when making these crossings. The crossings at Ventura, Tulare, Fresno, Divisadero and Belmont could be particularly hazardous. Another use of Class 1 Paths in Downtown Fresno would include development of bicycle/pedestrian shortcuts through the large blocks created by road closures.



Photo 14: Class 1 Bike Path.



Photo 15: Class 2 Bike Lane.

- Class 2: Bike Lanes** (Photo 15) – Bike lanes are a standard treatment for the accommodation of bicycles on our streets. In fact, Fresno has bike lanes on some of its streets. A bike lane includes a striped lane for the exclusive use of bicycles. Specific bike route signage and pavement markings are also used to further define the facility. The bike lane is located to the right of motor vehicle traffic either between the rightmost travel lane and the parking lane or adjacent to the curb if on-street parking is not permitted. Adequate road width lane must be available to implement bike lanes requiring a minimum of five feet for bike lanes adjacent to curb parking and a minimum of four feet (measured from the outside edge of gutter, not the curb) where there is no on-street parking. Generally, travel lane width or number of travel lanes must be reduced to accommodate bike lanes; the feasibility of removing travel lanes will be dependent upon existing and future traffic volumes.

There are drawbacks to bike lanes. Bicyclists, especially less-experienced cyclists, may have a false sense of security because they 'are in a bike lane' and thus be less likely to ride defensively. Also, in some hazardous situations, such as where poor pavement conditions can unseat a bicyclist or at right-turn only lanes, a cyclist may become 'trapped' in the lane. Bike lanes also may increase the chances of 'dooring' collisions (when a cyclist is hit by opening the door of a parked car). In general, however, bike lanes are considered beneficial. They give cyclists a bit more room on the road to ease the sharing with other traffic and alert motorists to where bicyclists most likely will be riding. The addition of the striping also narrows the travel lane and can reduce travel speeds.

- **Class 3: Bike Routes** (Photo 16) – Bike routes are implemented with signage only and, as such, are the most flexible and economical of the bikeway treatments. Because of this, streets are often signed as bike routes without attention to other needed improvements, i.e. bicycle-safe drainage grates, good pavement. However, if the bike route designation is used appropriately, it can have significant benefits to bicyclists including:

1. The opportunity for bicycle facilities on streets that are not wide enough to accommodate bike lanes;
2. A focus for the city's bicycle improvement dollars by providing improvements that will benefit bicyclists (safe drainage grates, good paving, bicycle-detection signals, and destination, directional and distance signage);
3. Filling a short gap in a bike lane for a several block section where width is not available for bike lanes;
4. Use on residential streets which may not warrant the expense or right-of-way of a bike lane based upon traffic volumes but provides an alternative to an arterial with access to a specific destination; or
5. As an interim short-term solution until funds are available in the future to stripe bike lanes.

There are various types of signage, pavement markings or designs that are commonly used in conjunction with bike routes. The use of 'Share the Road' signs, 'Bicycle Allowed Use of Full Lane' signs and 'Sharrow' markings are discussed on the following pages. When width is not available for bike lanes, wide curb lanes can provide a few extra feet in the travel lane that is shared by bicycles and cars. This is generally accomplished by reducing the width of inside lanes. Even a few feet in width will improve safety in sharing the road.

The Bicycle Boulevard is a recent design for bike routes (Photo 17). The concept behind a bike boulevard is a shared facility, generally located on a residential or low-volume collector street that uses traffic calming, signage and pavement markings to provide a safer environment for the mixing of bicycle and motor vehicle traffic. Through traffic and/or cross traffic may be discouraged or restricted with stop signs, speed controls and diverters.



Photo 16: Class 3 Bike Route.



Photo 17: Class 3 Bike Boulevard.

Signage and Pavement Markings

Signage and pavement markings provide warning, direction and guidance to bicyclists and motorists. The following discussion describes signs and pavements markings that may be considered for use in Downtown Fresno. They are appropriate for use on roadways with bike lanes, bike routes or roadways with no designated bikeway facilities. These signs and pavement markings are outlined in the FHWA Manual on Uniform Traffic Control Devices (MUTCD) and the MUTCD California Supplement (which takes precedence over regulations in the federal document).

Class 2 Bike Lanes - Bike lanes are designated with striping, signage and pavement markings. Bike lane (R81) signs are used to regulate bicycle and motor vehicle traffic. They should be placed at the beginning of each bike lane and at each major intersection or change in direction (Photo 18). In addition to signage, bike lanes are identified with striping and bike lane pavement markings (Photo 19). The markings should be placed at the far side of each intersection and at other locations as needed.

Colored bike lanes are being used to emphasize the pathway recommended for bicyclists. Because of the cost of installation and maintenance of the colored lanes, they are generally used only to draw attention to hazardous situations such as ramp crossings (Photo 20).

Class 3 Bike Routes - Bike routes are identified with signage only. Bike route guide (D11-1) signs (Photo 21) should be provided at decision points along designated bicycle routes and repeated at regular intervals, particularly at directional changes. Bike route signs can also be used with supplemental directional, destination and distance placards. In California, alternative signage can be provided with the Bicycle Route Number Marker (SG45). These are typically used where a numerical designation for the bike route is desired. Currently, these signs are being used to designate both bike lanes and bike routes and are customized with city logos (Photos 22 and 23).



Caltrans R-81

Photo 18: Bike Lane Sign.



Photo 19: Bike Lane Pavement Marking.



Photo 20: Blue Bike Lane.



Photo 21: Bike Route Sign.

Share the Road Treatments - Share the road signs can be used in situations where there is a need to warn motorists to watch for bicyclists particularly on bike routes or roadways without bikeway designations. The Share the Road (W16-1) plaque may be used in conjunction with the W11-1 sign (Photo 24) and may be found in combination with other bicycle route signage (Photo 25). A “Bicycle Allowed Use of Full Lane” sign (Photo 26), citing the California Vehicle Code, is being used in San Francisco as an alternative to Share the Road signs. In California, a Shared Road Pavement Marking, commonly referred to as ‘sharrow’ (Photo 27), may be used to assist bicyclists with positioning on a roadway and to alert road users of the location a bicyclist may occupy within the traveled way. The sharrow should only be used on a Class 3 Bike Route or roadway with no bikeway designation which has on-street parallel parking. The sharrow was originally devised to keep bicyclists outside the ‘door zone’ and reduce the number of collisions caused by car doors being opened in the path of cyclists. However, there currently is interest in changing the parking requirement for use of sharrows as it is felt that the sharrow is effective in promoting safer road sharing in other situations such as Tulare Street in Downtown Fresno.



Photo 22 (left): SG45 in Oakland.



Photo 23: (right) SG45 in San Francisco.



Photo 24: Share the Road Sign.



Photo 25: Share the Road Sign.



Photo 26: Bicycle Allowed Use of Full Lane Sign.

Guide Signs - Guide signs provide destination, direction and distance information related to a designated bicycle facility. They may be stand-alone signs (Photo 28) or added to other bike lane/bike route signage (Photo 29).



Photo 27: Sharrow Pavement Marking.



Photo 28: Bike Boulevard Guide Sign.



Photo 29: Guide Sign for Bike Route with Destinations.

Miscellaneous - Railroad tracks can be a particular hazard to bicyclists. Although most of the railroad crossings in Downtown Fresno have been improved, warning signs (Photo 30) can be beneficial to remind cyclists of the danger associated with tracks. Bicyclists in Downtown are often seen riding on the sidewalk. Although this practice is against city code, enforcement is lax and, therefore, the practice continues. Signage informing bicyclists of this prohibition (Photo 31) may be effective in curtailing this behavior. For signals with bicycle-sensitive actuation, a Bicycle Detector Symbol should be placed on the pavement indicating the optimum position for a bicyclist to actuate the signal (Photo 32).



Photo 30: Railroad Track Warning Sign.

Traffic Calming

Traffic calming is used to modify traffic patterns to create a more pedestrian and bicycle-friendly roadway. This is most often achieved by slowing down traffic and/or by diverting traffic to alternative roadways. As discussed above, a Bicycle Boulevard is an example of traffic calming. A discussion of the traffic calming measures related to pedestrians can be found in the Recommendations section of Chapter 6 of this report. The techniques recommended for slowing traffic speeds are most related to bicycle travel in Downtown Fresno.

Slower traffic travel speeds provide a more compatible environment for sharing the road. In addition, lane reduction projects (also known as ‘road diets’) can provide the road width needed for bike lanes as shown in the ‘Before’ and ‘After’ illustrations below (Photos 33 and 34). Other traffic calming measures, such as speed humps, bulbouts, traffic circles, traffic control devices, and diagonal on-street parking can impact both the safety and convenience of bicycle travel. However, they can also be detrimental to cyclists if not designed properly. For example, bulbouts can reduce road width in spot locations requiring removal of the bike lane for a short distance or causing bikes and cars to share a narrower travel lane. Speed humps can also be a nuisance or hazard to bicyclists. These and other impacts on bicycle travel should be assessed before these measures are implemented.



Photo 31: Sign Prohibiting Bicycling on Sidewalk.



Photo 32: Bicycle Detector Symbol for Bicycle-Sensitive Loop Detector at Traffic Signal.

Before: 4-lane roadway with 60' curb-to-curb width

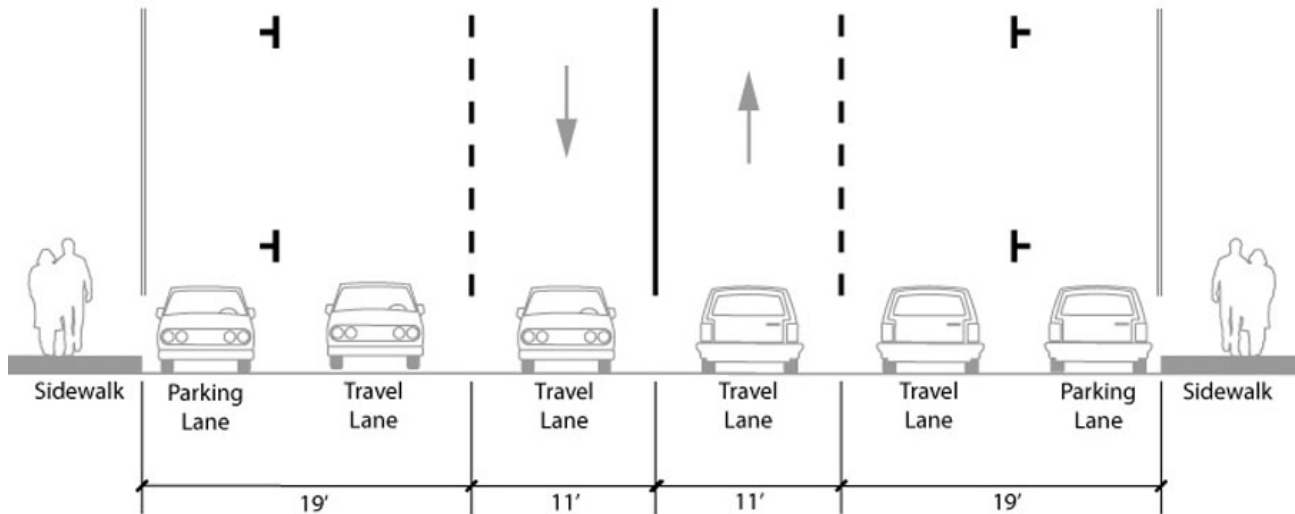


Photo 33: BEFORE - 4-Lane Roadway with 60-Foot Curb-To-Curb Width.

After: 2-lane roadway with shared left-turn lane and bike lanes

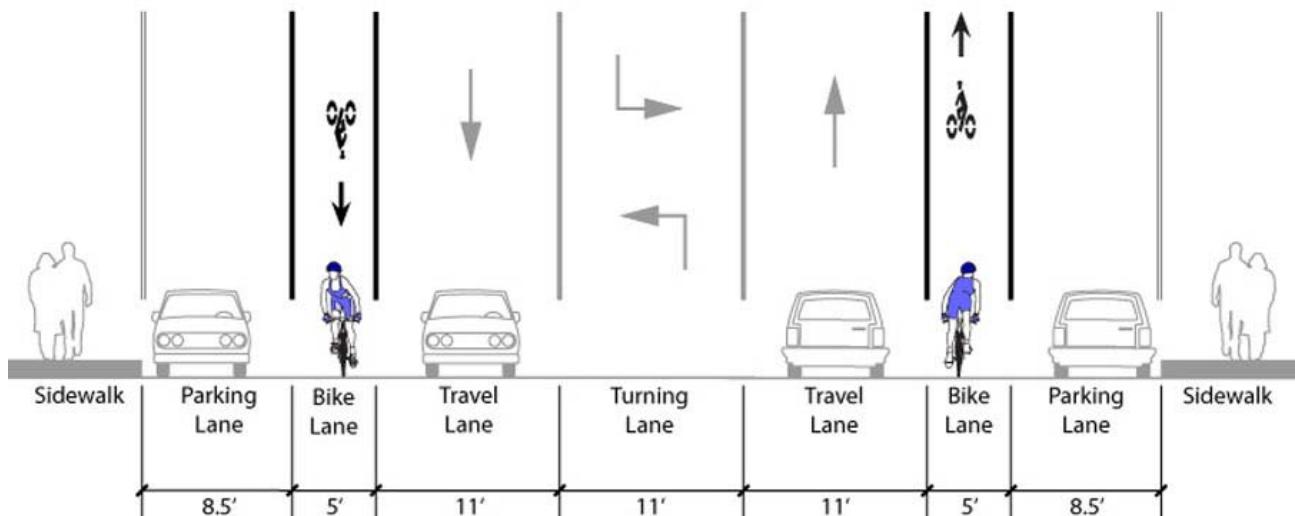


Photo 34: AFTER - 2-Lane Roadway with Two-Way Center Left-Turn Lanes and Bike Lanes.

Bicycle Parking

Although some bicycle parking does exist in Downtown, it is limited. Even Fulton Mall, which prohibits bicycle riding, does not offer many bicycle racks for those wishing to park and walk the mall. Bicyclists will not park far from their destination and will not leave their bicycles in a secluded location. Instead they will choose to lock their bikes to trees, signs or parking meters near the entrance to their destination or in active locations. The Fresno city code does require bicycle parking for certain land uses. However, these requirements do not specify the type of parking to be provided, i.e. bicycle racks, lockers or other type of facilities.

To encourage bicycling, secure bicycle parking is needed for both visitors and employees. Bicycle parking facilities are described in two classes: Class 1 for long-term parking and Class 2 for short-term parking

Class 1 Bicycle Parking is generally preferred by employees or others who will be parking for a whole day or multiple days. Class 1 parking should protect the entire bicycle and its components from theft, vandalism and inclement weather. This type of parking is generally found at employment centers, transit stations or schools. The types of Class 1 facilities currently in use include the following:

- Bicycle lockers (Photo 35) –Lockers can be rented to individual users for their exclusive use or can be shared by multiple users through electronic locker (eLocker) technology. To use an eLocker, the bicyclist must sign up for a Smart Card which will give them access to any available locker. The bicycle is secured and retrieved with a personal pin number. With the eLocker technology, it is often possible to reserve a locker in advance and also to charge an hourly fee for use of the locker. When parking fees are applied, they are usually minimal totaling less than \$1/day. There are other design variations of the bike locker concept on the market today including:
 - Bike lid (Photo 36)
 - Bike tree (Photo 37)
- BikeStation (Photo 38) – The BikeStation is a relatively new concept providing attended, valet bicycle parking. They are usually found at transit stations or other central high demand locations. Although BikeStations provide very secure bicycle parking, the cost of staffing the facility can be prohibitive; however, operating costs can be offset when combined with a bike shop offering sales and repair services.



Photo 35: Electronic Bicycle Lockers (eLockers).



Photo 36: Bike Lid Bicycle Parking System.



Photo 37: Bike Tree Bicycle Parking System.

- Bicycle cage (Photo 39) – A bicycle cage is a completely enclosed and locked room used exclusively for bicycle parking. The bicycle cage is generally found at employment centers, schools or large residential complexes. A user must apply for a key or card key to gain access to the cage.
- Parking in offices – Secure bicycle parking can be provided inexpensively for employees by allowing bicycles to be brought into offices. Of course, this policy will require approval by the building owner and will only be possible if adequate space is available for bicycle storage within the office.

Class 2 Bicycle Parking consists of a bike rack to which the frame and at least one wheel can be secured with a user-provided U-lock or padlock and cable. This type of parking is appropriate for short-term parking such as at shopping areas, libraries and other locations where the typical parking duration is about two hours. Security for bike racks is enhanced when racks are located in heavy traffic pedestrian areas or under the watchful eye of a transit station or auto parking facility attendant. Under those conditions, bike racks may be appropriate for longer duration bicycle parking.

Bicycle racks come in many different designs and styles. The inverted U-rack, for 2 bikes, (Photo 40) and the wave or ribbon rack, for 3+ bikes depending on the number of humps, (Photo 41) are very popular designs. It is also possible to get custom designs to fit the theme of a location (Photo 42).



Photo 38: Bike Station at Downtown Berkeley BART Station.



Photo 39: Bicycle Cage at Downtown Oakland City Offices.



Photo 40: Inverted U-rack with room for 2 bicycles.



Photo 41: Wave Racks at BART Station.



Photo 42: Custom Designed Bike Rack.

RECOMMENDATIONS

There are many opportunities for improving bicycle travel to and within Downtown Fresno. Because bicycles are vehicles and have the same rights and privileges afforded to the automobile (California Vehicle Code 21200), bicycle travel should be part of all planning and development efforts for the downtown. With current concerns over energy consumption, pollution and impacts of traffic on quality of life, the bicycle has emerged as a viable alternative to the automobile. Studies² have shown that there is considerable latent demand for bicycling in the United States. The reasons most often cited for not bicycling are safety, lack of routes and weather. The main disincentives for specifically not commuting by bicycle are distance, safety and lack of showers and secure parking facilities. While perhaps little can be done to address weather issues, there are measures that the City of Fresno can take to release the latent demand and to meet the future bicycle mode share goals discussed in Chapter 1. The following recommendations are presented as opportunities to increasing the bicycle mode share in Downtown Fresno.

Goals and Objectives

The following goals and objectives are recommended to provide guidance in the effort to improve conditions for bicyclists in Downtown. They are designed to help the City increase the existing bicycle mode share of 2% to meet the bicycle trip mode share goals of 3 percent for Year 2030 and 5 percent for Year 2050. These goals and objectives are consistent with previous planning documents related to bicycling including:

- Central Area Community Plan – Transportation and Parking Goal to “Provide a balanced, effective, comprehensive transportation system to accommodate growth and enhance the vitality and livability of the Central Area.”
- 2025 Fresno General Plan – Goal 6 to “Coordinate land uses and circulation systems to promote a viable and integrated multi-modal transportation system.”

The bicycle transportation goals and objectives for the Downtown Transportation & Infrastructure Study are outlined below.

Bicycle Transportation Goal: To provide the means to support bicycling as an alternative mode of transportation for work, errand and recreational trips.

Objective 1: Physical Infrastructure - Establish and maintain a continuous and easily accessible network of designated bikeways and other roadway improvements into and through the downtown that will facilitate bicycling as both a viable transportation alternative and a recreational activity.

Objective 2: Education/Encouragement/Enforcement – Improve safety for bicyclists in the downtown by educating all Fresno residents about bicycle safety, through programs to increase public awareness on the benefits of bicycling, and by enforcing bicycle and motorist laws and regulations affecting bicycle safety.

Objective 3: Bicycle Parking/Support Facilities – Provide bicycle convenient and secure bicycle parking facilities at shopping, employment and transit destinations in the downtown to meet the need for both long-term and short-term parking. Provide other support facilities, such as showers and storage lockers, to encourage commuting by bicycle.

² National Walking and Bicycling Study, U.S. Department of Transportation Federal Highway Administration, 1994; Harris poll data published by Bicycling Magazine, April 1991 and by Rodale Press, 1992; and University of North Carolina Highway Research Center, A Compendium of Available Bicycle and Pedestrian Trip Generation Data in the United States (for the FHWA), October 1994.

7-1 Downtown Bicycle Network

A bicycle network for the downtown should be developed to provide the means for prioritizing future improvements. A preliminary network is presented in Figure 7-4. This network includes those routes that provide the access through Downtown and connectivity to the citywide network. Where possible, these routes should be developed with bike lanes. At minimum, they should be designated as bike routes with appropriate signage and pavement markings as discussed above. Note that the designation of a bicycle network in Downtown does not preclude providing for safe and convenient bicycle access on all streets in the downtown.

7-2 Bicycle Parking

Convenient and secure bicycle parking is a key factor in the decision of whether or not to bicycle. As previously discussed, there are many different types of bicycle parking facilities available to choose from. The difficulty lies in determining the appropriate type of parking for the expected users and selecting the best location.

- a. **Bicycle Parking Supply** – Bicycle parking should be provided for all destinations in the downtown including City Hall, Federal Building, IRS Building, Convention Center, Stadium, Central Library, Medical Center, parks, shopping areas, schools, and transit connections. This bicycle parking should include a mix of short-term parking (racks) and long-term parking (lockers, bike cages, etc) for employees. A downtown bicycle parking inventory is needed to identify the location and type of parking available in the downtown with this information being used to create a map for potential users; this map could be made available on-line, distributed at bike shops, city and county offices and other employment centers and posted on the street as part of a wayfinding program. This inventory can also be used to monitor the supply of the bicycle parking to insure that adequate capacity is available during peak periods and as demand grows. Additional bicycle parking could be provided through a City-sponsored program to install bicycle parking facilities at the request of businesses, employers and residents could be implemented.
- b. **Bicycle Parking Policy/Ordinance** – Fresno's existing bicycle parking policy does not consider the need for long-term vs. short-term bicycle parking and only addresses requirements for parking at non-governmental and non-residential land uses. One way to ensure that bicycle parking is installed where needed is to require it to be installed by property owners or developers. With the rate of new development in Fresno, it is recommended that the City consider adopting a bicycle parking ordinance that targets different uses and requires both long-term and short-term parking. A sample parking ordinance, recommended by the League of American Bicyclists, is included in Appendix A. While this ordinance may be more detailed than what is needed in Fresno, bicycle parking requirements should be considered for new commercial buildings, existing buildings undergoing major renovations, building change of use, city-owned and leased buildings, and public and privately owned parking lots/garages.

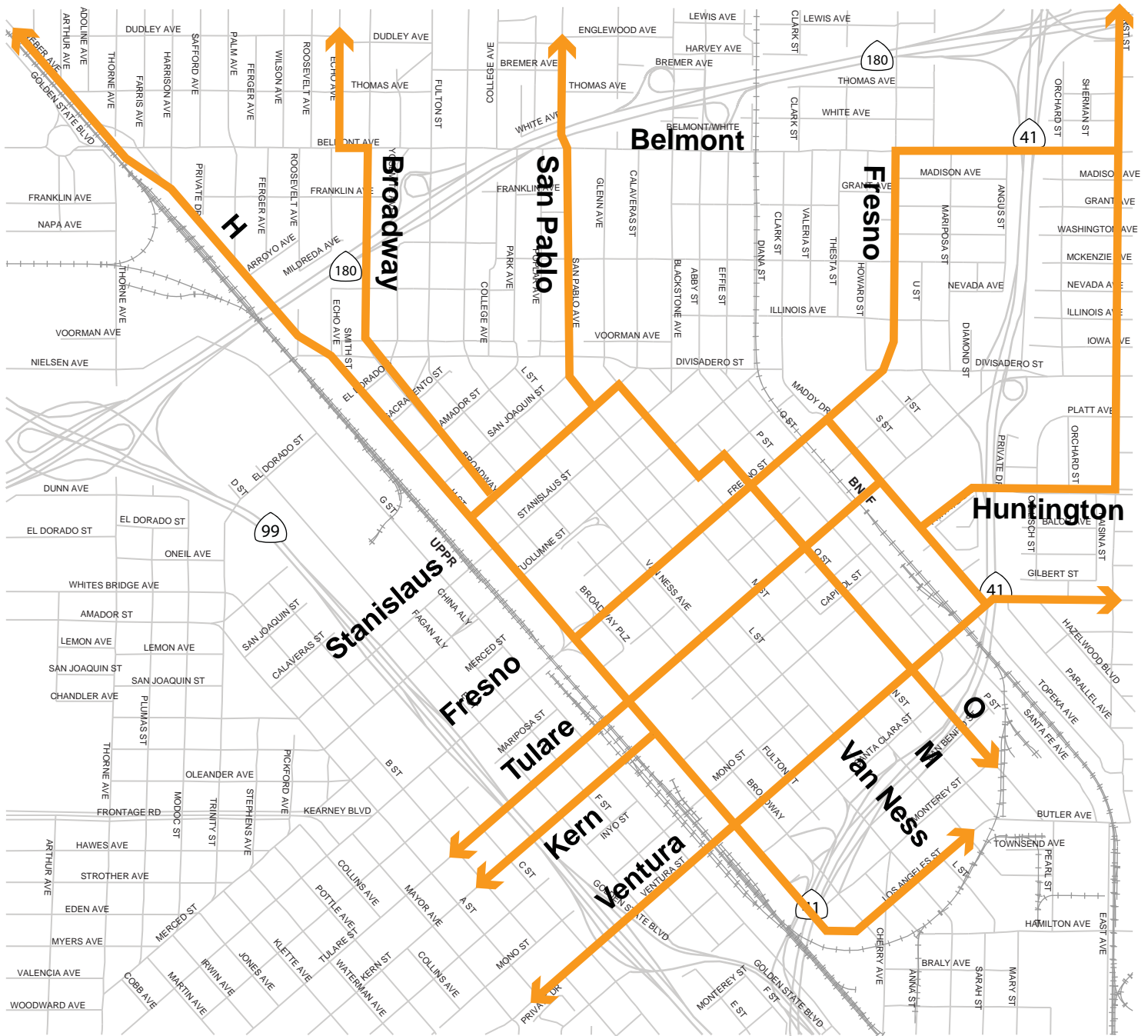
7-3 Showers and Storage Lockers

The lack of showers and storage locker facilities was one of the most cited reasons for not commuting by bicycle (along with distance and safety)³. To fill this need, it is recommended that Fresno encourage the inclusion of employee shower and locker facilities in the design and construction of new or redeveloped office and industrial complexes.

³ National Walking and Bicycling Study, Case Study #1, U.S. Department of Transportation Federal Highway Administration, 2002



NORTH
NOT TO SCALE



LEGEND

Routes Recommended for Bikeways

7-4 Education and Enforcement Programs

Bicycle education and enforcement of the rules of the road is critical for encouraging bicycling and promoting bicycle safety. These programs should be directed at both bicyclists and motorists. Unfortunately, too many bicyclists in the United States lack the basic skills or knowledge to safely ride a bicycle in traffic. They are often unaware of their responsibilities as a road user, i.e. the need to stop at traffic signals or ride in the direction of traffic. Bicycle education programs are designed to increase bicycle safety by improving the ability of cyclists to ride with traffic as well as by heightening motorist awareness. Enforcement is an integral part of the education process and is effective in reinforcing the rules of the road related to bicycling. Enforcement should be directed at both bicyclists and motorists.

The difficulties faced in developing education and enforcement programs stem from the wide range of age groups and road users that require this education and the necessity of tailoring the programs for each one. For example, young children should be taught the basic rules of the road in conjunction with hands-on bicycling instruction. Adult bicyclists benefit most from a program designed to impart the responsibilities of bicycle riding by both demonstrating how to safely share the road with motor vehicle traffic and providing tips on the benefits and methods of bicycle commuting. Motorists should be taught how to safely share the road with bicyclists and law enforcement officials need to learn how best to approach an offender (either bicyclist or motorist) and what violations should be earmarked for enforcement.

Attempts by a community to provide all of these programs can definitely put stress on a system that is already overloaded; money and staffing are in short supply in every jurisdiction. Many of the policy decisions to be made, especially related to enforcement, extend beyond just the borders of Downtown. For these reasons, Fresno must explore all possible avenues in designing and implementing a bicycle education and enforcement strategy. Public agencies such as city planning, public works, police, public health, community development and school districts must be brought into the effort. Community and civic organizations, employers, local businesses and cycling clubs should also be tapped as resources. Some of the most successful programs are the result of coalitions of public agencies and private groups working together toward a common goal. Appendix B includes model bicycle education programs which have been developed for use in communities throughout the country. Resources for program materials and assistance are also provided.

7-5 Promotion Programs

Bicycle promotion programs are intended to increase the community's awareness of the benefits of bicycling and can also serve to improve safety for bicyclists. The three main components of a bicycle promotion program are:

- **Identify benefits of bicycle commuting** - Bicycle commuting is an enjoyable, low cost and healthy alternative to the traditional motorized commute. Bicycle commuting reduces the costs of commuting to the employee, improves health through exercise, saves time for the employees during the actual commute, and can replace time and money spent in lengthy workouts in a gym. Bicycle commuting also does not consume fossil fuels or pollute the air.
- **Provide an incentive to use bicycle commuting** - Many cities or employers use monetary or other incentives to lure the prospective participant out of his/her single-occupant-vehicle and into a carpool or transit. These programs should be expanded to include incentives for bicycle commuting.
- **Support and applaud bicycle commuting** - Endorsement of bicycle commuting by those in charge is a significant aspect of a promotion program. Prospective bicycle commuters are more apt to try out this underutilized mode if it is accepted and supported by elected officials and city department heads. Endorsement from "the people in charge" of city government will go a long way towards persuading individuals to bicycle commute, and companies to establish bicycle commute programs of their own.

Possible programs and activities, which are appropriate for a bicycle promotion program in Fresno, are outlined in Appendix B. Programs focused on encouraging employees to bicycle are often adopted by city governments as an example to other employers within their jurisdiction. Some activities can be implemented in conjunction with other community groups and thereby minimize the cost to the city. The programs described in the appendix include possible employee programs as well as activities aimed at the general population.

7-6 Wayfinding Program

A wayfinding signage and downtown map program would help all road users to enter/exit and travel through the downtown including bicyclists. Additional information on wayfinding in the downtown is included in Chapter 9.

7-7 Complete Streets Policy

Adopt a ‘Complete Streets’ policy for Downtown Fresno to address the issues related to both transportation and land use that affect the operation of the street and bicycling environment. ‘Complete Streets’ are designed and operated to enable safe access for all users, not just motor vehicle traffic.

CHAPTER 8 - FULTON MALL ELEMENT

For the past three decades, Fresno has undertaken various efforts to revitalize the downtown and the Fulton Mall area. Numerous studies and community discussions have included recommendations regarding the Mall itself ranging from reopening the Mall to general traffic to retaining the Mall in its current form. This chapter describes the current Mall setting, discusses future options and presents a recommended strategy for Mall investment.

CURRENT SETTING

The most recent statement of community intent is reflected in the October, 2006 Fulton Mall Report which was prepared by the Fulton Mall Working Group composed of City staff and business and community leaders with community input. A key finding of the Report was that “most of the participants in the study’s outreach efforts want to keep the Fulton Mall primarily as a pedestrian mall.” However, the study also stated that “before any decision can be made concerning vehicle traffic on the Mall, the Working Group strongly supports the completion of a traffic engineering study as part of the Downtown Transportation Plan.”

This Downtown Transportation and Infrastructure Study seeks to assess opportunities to strengthen and revitalize downtown through changes to the circulation and transportation network. While a detailed traffic engineering study is beyond the scope of this study, it does evaluate whether changes in the circulation system of the downtown and the Mall could stimulate revitalization or provide a clear basis for change. Three options pertaining to the configuration of the Mall include the following:

1. Keep the Mall closed to general vehicular traffic (the existing condition) and refurbish it as needed;
2. Completely reopen the Mall to general vehicular traffic while maintaining the maximum pedestrian sidewalk space; and
3. Partially open the Mall to general traffic or to some subset of vehicle types (e.g., transit, bicycles and/or taxis).

In summary, this chapter concludes that there are highly successful examples of downtown pedestrian environments of all three configurations. In every example, it is clear that the success of a retail environment is dependent upon achieving a “critical mass” of activity and pedestrian population that supports businesses. This critical mass can be achieved in a variety of ways, including transportation-related changes such as noted in options 2 and 3 above. But transportation actions alone are insufficient to assure success and therefore do not, by themselves, provide a conclusive basis for determining whether the Fulton Mall should remain closed to general traffic or modified in some manner.

The discussion that follows identifies the Mall’s current strengths and weaknesses, discusses four examples of downtown pedestrian environments and the factors that contribute to their success, and suggests recommendations for possible transportation-related improvements to the Mall area under each of the three options described above that may warrant further discussion and study.

ISSUES AND NEEDS

The first downtown pedestrian mall in the United States was built in Kalamazoo, Michigan in 1959. The impetus behind this and the construction of many other downtown pedestrian malls throughout the country (more than 200 were ultimately built) was an attempt to thwart the flight of economic and community activity from previously vital downtowns to the suburbs as cities, and most particularly the farthest reaches of urbanized areas, were rapidly expanding. From the 1950s through the 1970s, it was felt that replicating the fundamental character of suburban shopping malls – pedestrian-only zones, cars limited to the periphery, easy parking, and amenities such as plantings, water features and public art – would prove to be an effective way to compete with suburban malls and revitalize sagging downtowns.

However, by the 1980s it became clear that such strategies were generally not successful and since then many downtown pedestrian malls have been redesigned and/or removed. The total pedestrianization of multiple blocks of a downtown typically has not been as successful as hoped in attracting diverse retail back to the downtown. Potential visitors perceive that access to stores in a downtown mall is not convenient and public parking may be more difficult to find, especially as compared to a suburban shopping mall. Many businesses find that the lack of drive-by traffic and storefront parking, without the volumes of pedestrians found in a suburban mall, make it more difficult to thrive. Without vehicular traffic passing by, pedestrian malls can seem to be less safe than their privately-managed suburban counterparts. Perhaps most significantly, many of these downtowns have continued to decline and the pedestrian malls by themselves have not helped to reverse this trend. In short, most downtowns with a pedestrian-only mall have experienced profound difficulty in creating the critical mass of pedestrian activity that is needed to support downtown retail businesses.

Fresno was an early leader in creating a downtown pedestrian mall, and its experience has been similar to the situation described above. In response to the gradual post-World War II decline of the downtown, Fulton Street was identified as a central focus of the Central City Master Plan, which had been prepared with the assistance of architect and urbanist Victor Gruen and his firm, Gruen Associates, in 1958. An expanded plan, prepared in 1963, recommended creation of a pedestrian “core superblock.” Fulton Street was subsequently closed to traffic in 1964, creating Fulton Mall, one of the first downtown malls in the country. Designed by the landscape architecture and planning firm Eckbo, Dean, Austin and Williams in collaboration with Gruen Associates, the Mall included sculptures, a clock tower, fountains, and abundant plantings. However, despite the creation of the Fulton Mall with its innovative design ideas, the downtown continued its economic decline.

Fulton Mall Today

Despite the economic problems of the downtown, Fulton Mall has significant strengths that are evident more than 40 years after it was built. These include the following:

- An attractive pedestrian environment with mature trees and other plantings, unique water features and public art, and numerous places to sit.
- A unique design unlike that of any other city in the Central Valley.
- Pedestrian activity during the daytime hours, particularly in the blocks between Inyo and Fresno Streets. Users include families with children.
- Chukchansi Ballpark, the County Courthouse and other regional attractors nearby.
- A strong Latino business environment, which could potentially be capitalized on and expanded.
- Economic development activities on and near the Mall, including the South Stadium project, Virginia Hotel project and Eaton Plaza.
- Plentiful amounts of parking within a convenient walk of the Mall.
- Good local and regional vehicular access to the downtown area.
- A strategic location in the civic and cultural heart of the region.
- A modest number of events and promotions, such as Fulton Mall Thursdays.
- Presence of many unique historic buildings.

Fulton Mall Images - Strengths



Photo 1: Families with children frequent the Mall in daytime hours.



Photo 2: Mature trees provide shade.



Photo 3: Water features of unique design provide both visual interest and a sense of cool relief on hot summer days.



Photo 4: A noteworthy collection of public art is found throughout the Mall.



Photo 5: County offices and other regional attractors are very near the Mall.



Photo 6: The Mall provides abundant places to sit and relax, surrounded by a variety of amenities.

Despite its strengths, there are a number of significant weaknesses that the Fulton Mall exhibits. Many of these observations are not new and have been the subject of previous discussion. These include the following:

- The Mall appears rundown and dated. All cities, particularly their retail areas, must renovate themselves periodically and this includes public spaces as well as private properties. This does not necessarily mean that wholesale redevelopment is required. Fulton Mall suffers from inadequate maintenance, vegetation that is overgrown and aging, and deteriorating features such as the fountains and paving surfaces. Updated lighting is also needed.
- Fulton Mall is not easily visible from surrounding streets. The overgrown and poorly maintained vegetation impedes visibility of businesses, activities and other pedestrians.
- The Mall can be difficult for potential users to find. The poor visibility noted above impedes pedestrian access, wayfinding is unclear, and pedestrian and bicycle routes do not lead to or focus on the Mall.
- There is little nighttime activity on the Mall, which discourages pedestrian use. Few restaurants operate in the evenings and the Ballpark is the only major destination with evening events.
- Some of the newer office building in downtown have their own cafeterias and on site parking which discourages their workers from patronizing and interacting with retail businesses located on the Mall.
- The Mall does not have a strong relationship to some of its most important surrounding/adjoining uses that could help to activate it. Clear connections to the Ballpark do not exist and linkage to other major destinations in downtown such as the County Building, City Hall, IRS Building and Water Tower are not obvious. Better pedestrian, bicycle and transit connections to key destinations could help bring more activity to the Mall.
- Related to the above, the Mall functions somewhat as a cul-de-sac, particularly in the east-west direction. Most of the activity generators in the downtown (such as the County offices, Library, Transit Center, Metropolitan Museum) are located on the east side of the Mall. With the exception of the Ballpark, no major activities are located on the west to serve as potential anchors for cross-mall pedestrian traffic.
- Empty storefronts and buildings with solid, blank walls along the Mall are unattractive and convey a negative image. Many of these are in historic buildings, which are costly to seismically upgrade. These dead spots on the Mall need to fill their windows and storefronts with some form of interest – art etc.
- The Mall does not have a high level of pedestrian activity throughout its length and throughout the day and evening. This critical mass is essential to provide patrons for shops, restaurants and other businesses.
- The Mall lacks an attractive public restroom facility equal to those that are provided by suburban shopping centers.

The bottom line is that the Fulton Mall currently is not a signature address for retail, office or residential activities. It is becoming increasingly unique and historic and has the potential to either become a signature address in its current form or to become increasingly a downtown dinosaur element. Some action appears needed to energize the Mall in either its current form or in a new form.

Fulton Mall Images - Weaknesses



Photo 7: The Mall and abutting uses do not capitalize on the relationship to major regional attractors such as the Ballpark.



Photo 8: Blank walls and unattractive storefronts are discouraging to pedestrians.



Photo 9: Direct routes to the Mall provide no clear wayfinding, sense of direction or celebration of the Mall as a destination.



Photo 10: Access to parking from surrounding streets is unclear and pedestrian routes from parking to the Mall are unpleasant.



Photos 11 and 12: The Mall appears rundown and dated. At a minimum, improved maintenance, new plantings, renovation of built elements is needed. Improved lighting and signage in both the public right-of way and adjacent buildings would enliven the area at night and make it feel more vibrant as an up-to-date retail environment.

Case Studies

As part of this Downtown Transportation and Infrastructure Study, a review was conducted of several current and former downtown pedestrian malls around the country. The focus of the review was to understand the transportation and circulation characteristics of these places and actions that may have been taken, over time, to improve or strengthen the mall within its downtown setting.

Available information from these and many other examples make it clear that elements other than transportation are critical to success: land use (such as plentiful housing on or near the pedestrian mall or major activity generators, such as a university nearby); aggressive marketing, special events and programming; and the actions of Business Improvement Districts, such as maintenance. Nonetheless, the transportation and circulation aspects of these malls can provide us with an important perspective on the future of Fulton Mall.

Fully Pedestrian Malls

Pearl Street Mall, Boulder, Colorado

Pearl Street is one of the few and best examples in the country of a thriving pedestrian-only downtown mall. Opened in 1977, it is only four blocks long. Nearby City-owned parking garages with free weekend parking contribute to its success. Close to the University of Colorado campus and with a relatively affluent local population, the mall is an attractive public urban space that includes national retailers such as the Gap, Banana Republic, and Abercrombie and Fitch. Protected historic buildings, brick walkways, shade and landscaping provide a unique character. A local Business Improvement District and the City support maintenance and promote monthly events.

Several transportation-related features contribute to the success of the Pearl Street Mall. Notably, Pearl Street is directly linked to the regional highway system via the Pearl Street Parkway, which connects to the regional Foothill Parkway via a full diamond interchange. Direct access and wayfinding to the Mall by auto is very clear.

In addition, the variety and strength of transit access to downtown Boulder and the Pearl Street Mall have contributed greatly to strong retail, hospitality, office, and residential demand and staved off competition from more auto-accessible strip malls.

A Community Transit Network of frequently running but small (only 20-40 passengers) buses offers flexible transit options around Pearl Street. For example, the SKIP bus goes down the main North-South route (Broadway) every six minutes during peak hours and every 15 minutes on weekends. The HOP bus goes down East-West route every 10 minutes during peak hours and slightly less on weekends. The Network also consists of the JUMP, BOUND, and STAMPEDE buses, each with a particular route. Boulder also has Nextbus service displaying real time arrivals for the next bus.

In addition, the City provides bike racks on all Pearl Street intersections, bike racks on buses, and designated bike paths or bike lanes connecting Pearl Street directly to the city as a whole.

Other successful fully pedestrian malls include:

- Third Street Promenade, Santa Monica
- Ithaca Commons, Ithaca, New York
- Church Street Marketplace, Burlington, Vermont
- Downtown Mall, Charlottesville, Virginia
- Pedestrian Mall, Iowa City, Iowa
- Cooper Avenue Mall, Aspen, Colorado
- Old Town, Pasadena, California
- Lincoln Road, Miami Beach, Florida.

Partial Pedestrian Malls with Limited Traffic Access

State Street, Madison, Wisconsin

This is an example of a mall that is partially pedestrian-only (two blocks) and partly multi-modal (six blocks that are open to pedestrians, buses, taxis, delivery and service vehicles, and bicycles but not to general traffic). Opened in 1982, at eight blocks in length it is two blocks longer than Fulton Mall. The University of Wisconsin and the State Capitol building at either end of the mall are major destinations or anchors. Additional non-student downtown housing is nearby. Thus students, downtown residents and city workers stimulate around-the-clock activity. Programmed events include weekly free concerts and farmers markets.

Other successful partial pedestrian malls include:

- 16th Street Mall; Denver, Colorado (bus and pedestrian only)
- Transit Mall; Portland, Oregon (transit only)
- Pacific Garden Mall; Santa Cruz, California (one way one lane traffic with some parking)
- Nicollet Mall; Minneapolis, Minnesota (transit and bicycle only)

Pedestrian Malls that have been Open to General Traffic

State Street, Chicago, Illinois

Although this street is of a much grander scale than Fulton Street or most other downtown pedestrian malls, it nonetheless has important characteristics that make it of interest. Nine blocks of State Street were closed to traffic in 1979 making it one of the longest pedestrian malls in the country. However, the closure cut it off from the Loop and the rest of downtown and, as a result, businesses immediately noted a loss of customers. The lack of autos and “eyes on the street” also led to a perception of public safety problems. State Street was fully renovated and reopened to vehicular traffic in 1996. Since the reopening to general traffic, sidewalks have become crowded again and the area is once again an active retail district.

The width of the public circulation areas is an important factor in successful retail design and suburban-style malls are carefully designed to achieve optimum widths. It has been suggested that the great width of State Street made it difficult to fill with a critical mass of activity if dependent on pedestrians only. This is an important factor to consider in the case of the Fulton Mall as well, which has a relatively wide right-of-way.

Main Street, Tulsa, Oklahoma

Main Street in Tulsa is one of the most recent examples in the U.S. of a downtown pedestrian mall that was recently completely reopened to general traffic. In many ways it is also perhaps one of the most comparable to Fulton Mall; the mall is located in a city with a metropolitan population of 900,000, compared to Fresno’s 1,000,000, and is in the heart of a major agricultural region. Closed to traffic in the late 1970’s, Main Street was originally part of a major urban renewal project aimed at reversing downtown Tulsa’s decline by linking two superblock projects: Civic Center and Williams Center. These projects demolished housing and offices, and their superblock configuration made downtown driving difficult. Following construction of the mall, the downtown continued its decline. Today, after reopening of the mall to general traffic in 2002, the Tulsa Downtown Unlimited organization reports that stores are happy with reopening of the street to traffic, that some new businesses are opening, and a new loft housing project is underway.

There are many other downtown malls that were unsuccessful and were subsequently substantially modified to accommodate general vehicular traffic, including malls in the following cities:

- | | | |
|---------------------------|------------------------------|------------------------------|
| • Allentown, Pennsylvania | • Galveston, Texas | • Philadelphia, Pennsylvania |
| • Baltimore, Maryland | • Greenville, North Carolina | • Vicksburg, Mississippi |
| • Danville, Illinois | • Greenville, South Carolina | • Waco, Texas |
| • Decatur, Illinois | • Helena, Montana | • West Chester, Pennsylvania |
| • Elgin, Illinois | • Little Rock, Arkansas | |
| • Eugene, Oregon | • Louisville, Kentucky | |

Pearl Street Images (Boulder, CO)



Photos 12 and 13: Numerous dining establishments with outdoor seating add to the vitality of the Mall.



Photo 13: The unique historic character of the buildings along the Mall is preserved and enhanced, distinguishing it from other retail locations in the region.



Photo 14: Activities are constantly programmed on the Mall.

State Street Images (Madison, WI)



Photos 15 and 16: University of Wisconsin Library Mall is fully pedestrian and anchors the State Street Mall at its western end (700 and 800 blocks).



Photos 17 and 18: The portion of the mall that is closed to vehicular traffic contains numerous vendors and food kiosks located down the center of the mall.



Photos 19 and 20: The 100 block through the 600 block portions of the Mall nearest the State Capitol are open to limited vehicular traffic (transit, taxis, bicycles, and service vehicles) only.

State Street Images (Chicago, Ill)



Photo 21: State Street with elevated rail tracks in the background. The Red Line runs beneath the street. The historic Chicago Theater (live theater and concerts) is visible on the right.



Photo 22: Marshall Field's Department Store anchors the street.



Photo 23: The pedestrian-only mall was reopened to general traffic despite the presence of the Red Line subway beneath State Street, and the elevated Loop transit system surrounding State Street.

Main Street Images (Tulsa, Ok)



Photo 24: The re-opening of Main Street is recent and many buildings remain vacant. The potential economic impact of the reopening of the Mall to general traffic is not yet known.



Photo 25: The scale of downtown Tulsa and the opportunity for re-use of historic structures is similar to that of downtown Fresno.



Photo 26: Like Fresno, downtown Tulsa is surrounded by a ring of major highways. However, unlike Boulder, there is no direct link between the loop of the regional roadway network and Main Street.

Experience Summary

The case studies of the various pedestrian malls around the country, both successful and unsuccessful, provide insight regarding potential strategies for Fulton Mall.

1. There is inconclusive evidence that a mall must be open to general vehicular traffic to succeed. However, the preponderance of evidence indicates a greater likelihood of success when a pedestrian mall has been “reopened”, partially or fully, to general traffic. As has been noted, some streets in downtown Fresno that carry general traffic also continue to struggle economically and that traffic is not a panacea for the Mall’s success.
2. Successful pedestrian malls tend to have the following transportation/circulation characteristics:
 - Convenient access from the local circulation system including easy access by transit, auto, bicycle and walking, and excellent wayfinding including signage and information to direct users to and around the mall.
 - A high level of pedestrian activity during the day and nighttime often associated with cineplex, entertainment and marquee land use attractions.
 - Most experience indicates that reopening pedestrian-only malls to limited or general vehicular traffic can boost business for local retailers by providing them with better access and more visibility and thus more potential customers.
3. Successful pedestrian malls often have the following non-transportation characteristics:
 - A mix of uses including retail, employment and residential on, and directly adjacent to, the mall.
 - Unique uses that lend the area a special identity – perhaps a Little Mexico with best Mexican regional restaurants providing a critical mass attraction.
 - Major activity generators or “anchors” at both ends and surrounding the mall.
 - A range of highly attended programmed activities and events.
4. Reopening a downtown pedestrian-only mall to limited or general vehicular traffic will not necessarily create a more vibrant downtown by itself. It must be part of a comprehensive revitalization strategy, which typically includes efforts such as:
 - Building housing in and near the downtown area.
 - Developing complementary retail and entertainment venues.
 - Capitalizing on the unique historic and cultural context and “sense-of-place” of the area.
 - Programming events and activities regularly to attract a diverse cross-section of the community to visit the area.

Option 1: Retain the Current Configuration as a Pedestrian-only Mall.

Advantages:

- This approach protects a distinctive cultural landscape designed by an important 20th Century landscape architect and retains the Mall’s unique image from that era.
- With a pedestrian-only configuration potential conflicts with vehicles are avoided.
- The mall would continue to function as an important green open space like a downtown park in the center city.
- Since little or no construction would be required, there would be little if any disruption to existing businesses and events.
- As this option requires little in the way of construction costs, public monies could be directed towards freshening the Mall and economic incentives to attract desired developers.

Disadvantages:

- Access to and visibility of Fulton Mall activities and attractions is limited.
- Retention of the mall impedes connectivity on the west side of the mall.
- This option does not directly encourage the updating and renovation of the mall to “freshen” the landscape and materials, however funds saved could be used for these purposes.
- While all of the options require a variety of actions, achieving “critical mass” under this option will likely require much stronger additional efforts than Options 2 or 3.

Option 2: Open Fulton Mall to General Vehicular Traffic

This option represents a major reworking of the mall by reconfiguring it to once again allow general vehicular traffic along the entire 6-block length. There are many potential variants of this approach, some of which were described in the “Fulton Street Revitalization Plan” prepared for the Fresno Redevelopment Agency Board in February 2002. Variable elements could include the amount, location and type of on-street parking, variable sidewalk widths, location of public gathering spaces and amenities, number of lanes (which could vary from one to four), and direction of travel (one-way/two-way). As with State Street, Chicago and many other examples throughout the country, a very attractive and successful pedestrian environment can be created with widened sidewalks, plantings and pedestrian amenities. Some of the original mall features could be retained in this option.

Advantages:

- The visibility of businesses and events on Fulton Mall is increased significantly by vehicular drive-by traffic and parking (if provided).
- The perception of public safety is increased due to having both vehicular and pedestrian activity and therefore “eyes on the street” at all times of the day and night, which may make the Mall a more attractive destination.
- The continuity of the street grid is improved thus facilitating all modes of movement throughout the downtown.
- A significant redesign of the mall provides an opportunity to update the pedestrian environment with amenities found in successful contemporary downtown retail environments.
- Better transit service might be possible if Fulton Street is available for vehicular movement.

Disadvantages:

- With the reintroduction of a vehicular right-of-way into the mall, some or all of the pedestrian environment of walkways, landscaping and other amenities would be lost.
- Reconstruction of the Mall would result in major disruptions to current businesses on the Mall.
- The historic nature of the Mall would be lost to downtown.

Option 3: Partial Opening to Vehicles

Between the previous two options lies an intermediate approach of providing limited vehicular access to Fulton Mall. This can be accomplished by opening only a few blocks of the mall to traffic, for instance Tuolumne to Fresno, Fresno to Tulare, or Tulare to Inyo; allowing only limited types of vehicles (e.g., buses or a trolley-type shuttle); or allowing only partial access to the entire mall by limiting the opening to one lane or one direction of traffic flow. Another option would be to allow some traffic use, except during the midday on weekdays and on weekend days. One lane of vehicular travel may even be possible with only minor modification of the Mall since a wide lane is already incorporated into the design to accommodate emergency vehicles.

This option has the potential to achieve significant improvements for the business environment of the street while retaining much of the original design concept.

Advantages:

- Could largely retain the special image and heritage of the Fulton Mall, depending upon extent and type of opening and design solution.
- Reduces the extent of the pedestrian-only area and thus the challenges of creating a critical mass of activity in the absence of directly adjacent vehicle traffic and parking.
- Provides greater visibility for businesses and events by allowing vehicular access to portions of Fulton Street.

Disadvantages:

- Some loss of pedestrian and site amenities due to the imposition of a vehicular travelway in the overall right-of-way.
- Confusing to motorists who may be unclear as to which vehicles are allowed in the vehicular right-of-way.
- Construction impacts on Mall businesses

Summary Assessment of Options

All three of the options described above are, of themselves, transportation-related actions. Of the three options, national experience suggests that Option 2, Opening Fulton Mall to General Vehicular Traffic, is most likely to help revitalize Fulton Street as an activity center and the heart of the downtown. However, there are a variety of other community-related values that must be considered in determining the outcome of the Fulton Mall.

The examples and discussion above demonstrate that the success of a downtown pedestrian environment is heavily dependent upon ensuring that a critical mass of activity occurs throughout the day and evening to allow restaurants, retail and other businesses to thrive. To help create this critical mass of activity, a focus of integrated and coordinated transportation functions can help. In most cases, although not all, introducing some level of vehicular circulation, and sometimes parking, to a downtown pedestrian-only mall has been a necessary component of the mall's reinvigoration and in some cases to the revitalization of the downtown as a whole. If the community decides not to retain the Fulton Mall in its current form, then experience indicates that a re-doubling of efforts to focus transportation-related facilities in other ways to directly serve the Mall is essential.

Transportation-related improvements and focus will not, however, revitalize the Mall or the downtown. More important is the introduction of nearby residents and major destinations such as entertainment venues or major employers nearby.

While the evidence from around the country indicates greater success when the primary street(s) of downtown are open to general traffic, such transportation-related actions are not the only determinant of economic success. Experience indicates that other factors are equally or more important. In the case of Fulton Mall, the community must proactively decide a preferred direction and take a variety of strong actions to implement that direction. Development of a critical mass of activity is needed to re-establish a signature address to attract the desired heart and soul of downtown at the Mall.

RECOMMENDATIONS

There is a tendency to view the Mall issue in today's context and not to think forward to its 2030 and 2050 context in the downtown. However, it is very important to consider the future context of the Mall when considering recommended changes. This does not mean that investments should not be made to the Mall until 2030 or 2050, but that the nature of downtown will be different in these future years and many of the businesses that now operate on the Mall might no longer be in operation. The future downtown is likely to be more pedestrian oriented, bicycle oriented and transit oriented than the current downtown.

Within this changed context, what vision will be best for the Mall and its role in the downtown setting? These are very difficult and complex questions. To a large extent, the economic, land use and transportation answers will be determined by arising development opportunities which advance the comprehensive vision for downtown expressed in the Central Area Community Plan. In the near-term, freshening the Mall and implementing other measures to make it more attractive makes the most sense.

Aggressive efforts to attract desired development along and around the Mall should continue to be pursued. It appears that a critical mass development may be needed to jump start the desired revitalization. If a potential project, offering the desired critical mass development, depends on reopening the Mall in some form, this option should be entertained by the City. In short, opening the Mall to traffic should not be advanced solely as a transportation project; there is no strong reason based on transportation to reopen the Mall. From an economic standpoint, opening the Mall to traffic by itself is unlikely to attract the needed critical mass development to revive the downtown and the Mall; in fact, opening the Mall today might prove to be in conflict with and hamper a critical mass development opportunity in the future.

Having concluded that piece-meal incremental development is unlikely to succeed in bringing back the vitality of the Mall, one of the future development strengths of the Mall is that there are few major constraints to inhibit a critical mass size development along the Mall. There are, however, some transportation principles that need to be protected when considering a future development proposal for the Mall. These include the following:

1. Maintain the continuity of the downtown traffic circulation network (i.e. no closures of major streets).
2. Maintain the pedestrian circulation network.

Recommendations for the Fulton Mall are:

- 8-1** Fulton Street is not a critical component of the traffic and transit circulation network in downtown; therefore, transportation should not drive decisions on the future of the Mall. Economic development opportunities and cultural factors should be the principal determinants of the Mall's future configuration.
- 8-2** Efforts are needed immediately to upgrade the Mall environment. These efforts should include freshening of the streetscape and urban design, upgrading wayfinding, improved lighting, providing an attractive and convenient public restroom, and installing of public art or other elements into vacant storefronts.
- 8-3** Event scheduling on the Mall should be strengthened.
- 8-4** Visibility of the Mall from major traffic cross streets (Tuolumne, Fresno, Tulare and Inyo) should be emphasized. This could include sidewalk bulbouts, banners and/or marquee features.
- 8-5** Major 'critical mass' project developers should be advised that the city is open to development proposals that may include changes to the use and configuration of the Mall which are consistent with the general vision set forth for downtown in the Central Community Area Plan. This partnering flexibility should include openness regarding the use of historic buildings and the transportation network. This flexibility should not commit the city to undesirable compromises, but should form the start of discussions for the desired critical mass development which is needed to jump start revitalization of the Mall.

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CHAPTER 9 - WAYFINDING

There has been considerable discussion in previous chapters about the difficulties traveling to, from and within Downtown Fresno. In these chapters, recommendations have been made to simplify the downtown network. To supplement these improvements, good wayfinding can provide the needed information for travelers to deal with the irregular grid system, discontinuous streets, fragmented parking resources and difficulty in finding wanted destinations. Good wayfinding is particularly important for infrequent visitors who are unfamiliar with the downtown.

CURRENT SETTING

The mode of travel is an important consideration when evaluating and designing a wayfinding program. Those traveling by car, by transit, by bike or on foot have differing needs from signage. Good wayfinding starts with designing a simple downtown and multimodal transportation network which is supplemented by clear and information signage.

The Central Area Community Plan recognized the importance of wayfinding and included a policy to address the need for signage:

“Develop high quality public informational, directional and street signage which emphasizes safety, legibility, clarity, and displays appropriate graphic and theme design.”

Six implementation actions were prescribed:

- 3-1. Develop a comprehensive public informational and directional signage plan including guidelines for public right-of-way signage to be used for motorist and pedestrian orientation to, within and out of parking areas, activity centers and public facilities.
- 3-2. Coordinate the design and placement of public right-of-way signage with other public agencies and property owners such as Caltrans.
- 3-3. Develop theme-oriented signage which by its graphic art provides orientation and identification of special districts, activity centers or cultural facilities.
- 3-4. Redesign, remodel, create and install more legible and appropriately located signage to provide better circulation safety, direction and orientation.
- 3-5. Refurbish or replace existing public signage and ensure its maintenance on an on-going basis.
- 3-6. Incorporate standard international symbol signage throughout the Central Area to accommodate the multinational character of the community and its visitors.

These six implementation actions have yet been fully realized; the need for good wayfinding in Downtown Fresno still exists.

ISSUES AND NEEDS

Because the downtown functions as the government center of the City and County of Fresno, it attracts numerous visitors, especially during the weekday. Many are unfamiliar with the entry and exit routes, direction of one-way traffic flows, and locations of off-street parking facilities, transit services, bicycle routes and pedestrian pathways. The difficulty of traveling to/from and within Downtown is complicated by the different street grids, circulation discontinuities, and the irregular freeway ramp system. As noted in Chapter 3's discussion of traffic issues, the discontinuity of downtown streets frustrates all road users alike (motorists, bicyclists, transit riders and pedestrians).

The most effective way to approach the discussion of wayfinding is to view it from the perspectives of the many roadway user groups:

- Motorists;
- Parkers;
- Transit Riders;
- Bicyclists; and
- Pedestrians.

Motorists

Entering, exiting and driving within Downtown can be difficult especially for those who are unfamiliar with the street network. Most cars and trucks will access Downtown from one of the surrounding freeways. For those traveling at high freeway speeds and also at the speeds used on major arterials, wayfinding should provide simple directions and be located well in advance of the decision point needed to access Downtown.

Entering Downtown – Most motorists to Downtown are destined to the civic center, Fulton Mall, ballpark, rail station, conference/convention center, and medical center. The major access routes to these and other destinations in Downtown are:

- | | |
|----------------------------------|----------------------------------|
| • Highway 99 (north and south) | • Fulton Street (west) |
| • Highway 41 (north) | • H Street (north and south) |
| • Highway 180 (east and west) | • Tulare Street (east and west) |
| • Blackstone Avenue (north) | • Tuolumne Street (west) |
| • Fresno Street (north and west) | • Ventura Street (east and west) |

Review of signage along these entry routes found that:

- Freeway signage is relatively good with the exception of 1) SR-180 westbound which lacks signage to direct drivers to SR-41 for access to downtown; and 2) SR-41 southbound which lacks signage indicating that Van Ness Avenue is the last downtown exit. SR-41 affords the best access to the major downtown destinations, particularly from SR-180 westbound.
- The Blackstone Avenue approach to Downtown becomes confusing at Divisadero Street where the street grid changes orientation and where Blackstone Avenue transitions into Stanislaus Street. The transition intersection was recently simplified when O Street was eliminated from the intersection, as part of the Cesar Chavez Education complex development. The overhead lane traffic arrow signage does not include destination information making it difficult to know the correct lane (i.e. take the bend to the right for Downtown). Renaming Stanislaus Street as Blackstone Avenue perhaps might help minimize confusion. The configuration on P Street at Divisadero for exiting traffic is similar and is illustrated in Photo 1.

- Tulare Street has two approaches to Downtown. The western approach (eastbound direction) that crosses the UPRR tracks at-grade is quite simple, but wayfinding signs for the convention/conference center, City Hall and train station would be helpful for this eastbound approach to Downtown (Photo 2). The westbound approach that crosses SR-41 at the Divisadero Street intersection is extremely confusing (Photo 3). More advance signage is needed to advise motorists to use the right lanes for access to Divisadero Street, the Medical Center and SR-41 northbound. People who are bound for Downtown, SR-41 southbound and Tulare Street should be advised to use the left lanes. The advance signage to this approach should begin immediately after crossing First Street.
- Fresno Street has two approaches to Downtown. The southbound approach is very simple and needs minimal directional signage until it reaches Divisadero Street. At this point, the street grid changes orientation; the through traffic lanes should be signed for Downtown and the left turn lanes should be signed for Tulare Street and SR-41. Advance signage would be helpful to minimize confusion. The eastbound approach of Fresno Street that crosses under the UPRR tracks can be confusing at the point where H Street splits off from Fresno Street. More advance signage would be helpful approaching the G Street intersection to sort traffic into their proper lanes.
- Fulton Street has one major access approach into the downtown from the east. This route would be simplified with the proposed elimination of the diagonal to Broadway. Signage to H Street and at the Tuolumne Street intersection is needed to direct motorists to the desired locations in Downtown. It is likely that most of the motorists using this approach will residents of Fresno and therefore should generally be familiar with Downtown.
- H Street has two approaches to Downtown. Approaches from the north and south are generally simple and signage needs are also simple. The exception is at the Divisadero Street intersection where better advance signage is needed to advise motorists where to turn for G Street, to proceed for H Street and access to Downtown and to turn left for Divisadero Street (Photo 4). Traffic counts probably should be conducted to confirm that the current approach lane markings are the most efficient. Confusion also arises for motorists when they try to transition onto Fresno Street, and Tuolumne and Stanislaus Streets. Better cross street signage is needed for H Street.
- Tuolumne Street has a single approach to Downtown from the SR-99 freeway. The access is simple, except for the connection to G Street which runs under the railroad overpass (Photo 5). Tuolumne Street probably should be signed as the primary access from SR-99 to the civic center and Ventura Street should be signed as the primary access into Downtown for the convention center area. Locals may ignore this signage for their favorite alternate route, but it will help to minimize traffic on Tulare and Fresno Streets in the core of Downtown.
- Ventura Street has two access points to Downtown. The westbound approach from the Kings Canyon corridor and the eastbound approach across the UPRR tracks are both simple and require little signage. However, destination signage is needed to help motorists find their desired cross streets; in addition, the intersection of Ventura at R Street is confusing and lacks sufficient advance notice signage.



Photo 1: Leaving Downtown on P Street at Stanislaus Street and Divisadero.



Photo 2: Tulare Street looking to Downtown across Highway 99.



Photo 3: Tulare/Divisadero/Highway 41 interchange.



Photo 4: H Street approach to Divisadero westbound.



Photo 5: Tuolumne overpass of the railroad with G Street at-grade.

Exiting Downtown – Exiting Downtown generally means finding the desired freeway ramp or path to Abby Street. Currently, there are few freeway guide signs to assist motorists in leaving Downtown. Locals will know the best path, so the key wayfinding challenge is to provide simple routes for non-locals. This could be accomplished by pushing motorists to either SR-99 or to SR 41. SR-99 exiting traffic should be signed to Stanislaus or Ventura Streets in an effort to minimize traffic on Tulare and Fresno Streets (also to simplify paths). Traffic for SR-41 should be signed to use the Tulare Street, M Street or H Street ramps depending on proximity to these ramps. For traffic exiting to Abby Street, signing for direction to Tuolumne Street or P Street would be the simplest. It might be appropriate to rename Tuolumne Street to Abby or vice versa to provide a clear access route.

Traveling within Downtown – The difficulties experienced while traveling within Downtown relate to the discontinuous street network and lack of destination signage. Remediation of the street network discontinuities (including the one block of N Street that is one-way), better destination signage, better signage to parking and street address information would all be helpful. Destination signage would include signage to major buildings like City Hall, Federal Courthouse, convention center and stadium. Signage of this type should be bold enough to be seen by passing traffic and should be encouraged throughout the downtown. Address signage can be simply accommodated by including block address numbers in the street signs (e.g. 300 with an arrow indicating direction). More prominent display of building addresses on the building itself also would be helpful. Signage for parking is discussed below.

Access to Parking

Current off-street parking resources are fragmented; it is difficult to find the location of these facilities, verify if they are open to the public and determine the cost of parking. The perimeter common use parking program recommended in Chapter 5 will help to simplify the search for the most convenient available parking for a specific. As part of this program or other wayfinding improvements, it is necessary to include signage to direct users to parking facilities (Photo 6) and to prominently display the parking rate schedule so that parking fees information is available before entering the parking facility (Photo 7). Free parking periods, such as late night or weekend hours, should also be posted.



Photo 6: Signage directing to entrance of parking lot in San Francisco.



Photo 7: Very visible posting of special hours at parking garage. Other rates could be more visible.

Transit Riders

Bus riders need to know locations of stops, route destinations, route frequencies and actual bus arrival/departure times. Currently, bus stops in Downtown Fresno are not very visible and many do not have route maps or schedules posted at shelters or near the stop. Nextbus arrival information is only available at the courthouse transit shelters. The technology for Nextbus arrival information is getting better and less expensive which will allow the technology to be used at more locations.

Pedestrians

The lack of wayfinding, particularly at entrances to the downtown, is not specific to pedestrians although taking a wrong turn is more of an inconvenience to a person on foot. Because of the juxtaposition of the street grid layouts between the downtown core and surrounding city, there are several forks along the routes into Downtown, particularly along Divisadero. As discussed above for entering motorists, it is often difficult to know which fork to take. Added to this are the detours caused by street closures.

Improved wayfinding signage would assist pedestrians in finding their way through the downtown and to their destinations especially at complex intersections and other decision points. In addition, signage should identify alternative pedestrian pathways around or through barriers. Downtown maps including key destinations, 'you are here' locations, and walking times would help orient pedestrians, particularly less frequent visitors. The same wayfinding signage may be used for pedestrian, bicycle and motor vehicle traffic; however, pedestrians, and to some extent bicyclists, require that signage be available at more frequent intervals, at a height easily seen by pedestrians, and include more detailed information than is necessary for a driver. Wayfinding for pedestrians should include:

- Direction to key destinations (Photos 8 and 9);
- Distance (for pedestrians, distance measured in time is more useful-Photo 10);
- Direction to pedestrian shortcuts including destination;
- Direction to amenities;
- Maps with 'You are Here' location (Photos 11 and 12); and
- Ample lighting so signage and maps are visible at night.

Bicyclists

As discussed above in relation to motorists and pedestrians, the lack of wayfinding, especially at key decision points and road merges, is also an issue for bicyclists. The placement of advance warning signs should be adequate to allow bicyclists to safely merge for left-turns or to avoid right-turn only lanes. Bicyclists can easily find themselves on the wrong street causing them to travel many blocks out of their way or encourage them to ride on the sidewalk or against the traffic flow to get back to where they want to be. Highway directional signs are posted at many of these decisions points especially at interchanges with SR-41; these can mislead one in thinking that they are on-ramps only when in fact they are also provide access into Downtown.

A wayfinding signage and downtown map program would help all road users to enter/exit and travel through the downtown including bicyclists. Signs should provide destination and distance information (Photos 13 and 14) as well as the location of bicycle parking locations (Photo 15).



Photo 8: Wayfinding at County Courthouse.



Photo 9: (left) FAX Trolley stop map, (right) Wayfinding in San Francisco.



Photo 10: Signage including distance to destination (Atlanta Airport). Walking time would also be helpful.



Photo 11: Kiosk in Downtown Minneapolis showing destinations.



Photo 12: Pedestrian wayfinding map.



Photo 13: Bike Boulevard Guide Sign.



Photo 14: Guide Sign for Bike Route with destinations.



Photo 15: Sign showing location of bicycle parking.

RECOMMENDATIONS

A five element wayfinding plan is recommended consisting of:

- 9-1. Making the downtown simpler to understand;
- 9-2. Improved traffic and parking signage;
- 9-3. Improved transit signage;
- 9-4. Improved pedestrian signage; and
- 9-5. Improved signage for bicyclists.

9-1 Simplifying Downtown

Perhaps the most effective means of strengthening wayfinding downtown is to make access to/from Downtown and movement within Downtown easier. This simplification minimizes the need for complex wayfinding programs and increases effectiveness of basic wayfinding measures. The preceding chapters of this report identify a wide range of elements that are currently confusing to downtown circulation. Confusion is clearly a major issue for people not familiar with the downtown. This chapter more specifically describes a number of wayfinding problems and potential improvement opportunities. The transportation network can be made simple by mending the discontinuities in the network, better organization of parking destinations (perimeter belt concept), and the establishment of a stronger more recognizable hierarchy of street using urban design measures. Specifically by:

- a. Implementing the street network simplifications that are described in Chapter 3, which include reconnecting H Street, converting the one block of one-way N Street to two-way operation, fixing channelizations for remnants of the Broadway Loop removal, and simplifying intersections along the Divisadero Street seam;
- b. Using urban design and signage to define a user-oriented hierarchy of downtown streets. Size of cross street signs, lighting and streetscape are amongst the tools that might be used; and
- c. Organizing destinations (parking) of motorists in an easy to understand framework as was discussed in Chapter 5.

9-2 Traffic and Parking Signage

Implement the remedial signing measures that were discussed earlier in this chapter for traffic access, egress and internal circulation along with improving parking signage. Specifically:

- a. Strategically attempt to encourage access and egress traffic to minimize use of Van Ness Street, Tulare Street and Fresno Street via directional signage to/from freeway gateways that push unfamiliar motorists to perimeter streets (Tuolumne, Stanislaus, H Street, M and P Street and Ventura Street);
- b. Sign SR-180 westbound traffic to Downtown via SR-41;
- c. Indicate that Van Ness Street is the last southbound exit to Downtown on SR-41;
- d. Add street names to overhead lane designation signs to complement movement arrows;
- e. Change the name of Stanislaus Street to Blackstone Avenue to improve continuity;
- f. Add advance signage to the Tulare Street's westbound approach to the SR-41 northbound ramp intersection, perhaps including pavement markings;
- g. Add advance signage to Fresno Street's eastbound approach to G Street regarding the split for H Street and Fresno Street;
- h. Implement signage to support H Street's reconnection to the downtown network near Tuolumne and Stanislaus Streets;
- i. Improve the signage at H Street and Divisadero Street intersection;
- j. Consider renaming Tuolumne Street to Abby Street for naming continuity;

- k. Improve signage at Ventura and R Street intersection;
- l. Provide signage directing motorists how best to connect to the other half of Divisadero Street that is currently blocked by the Medical Center (this traffic might not be desired, but they should not just be abandoned);
- m. Consider a requirement that requires parking lots and garages to clearly identify their rates to passing motorists in order to allow them to make informed parking decisions; and
- n. Use of color coded major generator signs within the downtown area to sort motorists, pedestrians and bicyclists to their desired destinations. These major generators are seen to include ballpark, train station, conference/arena facilities, city hall and the Fulton Mall.

9-3 Transit Signage

Increase the visibility of downtown bus stops by using bolded stop flags, more shelters and increased lighting. Include transit coverage maps and schedules at all bus stops and local area maps posted in Downtown. Also expedite the implementation of a next-bus type of real-time bus arrival time system for downtown stops.

9-4 Pedestrian Signage

Almost all trips beginning or ending in the downtown involve some amount of pedestrian travel; consequently, signage for pedestrian movement is very important. Wayfinding must comply with ADA requirements and desirably would minimize the number of new signage poles that must be installed (which only would add to sidewalk clutter). Wayfinding improvements for pedestrians should include:

- a. Installation of “you are here map” kiosks at key points in the downtown area. These can be triangular, two-sided boards or even tubular. The maps should show all key destinations, parking locations, transit routes and stops, pedestrian pathways through large developments; bikeways and location of bicycle parking;
- b. Directional signage (including distance and walking times) to key destinations leading from parking areas, bus stops and other key locations where people may begin their walking trip;
- c. Signage to public restrooms and other amenities;
- d. The range of block number addresses should be included on cross street signage;
- e. Prominent display of building address numbers; and
- f. Prominent display of the building name (e.g. Federal Courthouse etc.).

9-5 Bicyclist Signage

A wayfinding signage and downtown map program would help all road users to enter/exit and travel through the downtown including bicyclists. Wayfinding specific to bicyclists should include:

- a. Signage to bicycle parking facilities;
- b. Location of bicycle paths, lanes, routes and shortcuts through large developments on “you are here” maps located in Downtown;
- c. Signage to shortcuts through large developments that are accessible to bicyclists;
- d. Signage for bicycle facilities should include destination and distance information; and
- e. Advance warning signs at complex intersections to include destination and street directions.

Appendix A

SAMPLE BICYCLE PARKING ORDINANCE

BICYCLE PARKING REQUIREMENT RECOMMENDATIONS	
Use	Required Number of Bicycle Spaces ⁽¹⁾⁽²⁾
Residential (such as apartments & townhouses)	
③ General, multi-dwelling	1 Class I/3 units + 1 Class II/15 units.
③ Primarily for students & low-income families, multi-dwelling	1 Class I/2 units + 1 Class II/15 units
③ Primarily for residents 62 and older, multi-dwelling	1 Class I/30 units + 1 Class II/30 units
Schools	
③ Elementary, middle & high schools	1 Class I/30 employees ⁽³⁾ + 1 spot/12 students (50% Class I and 50% Class II)
③ Colleges - Student residences	1 Class I/4.5 beds + 1 Class I/30 employees
③ Academic buildings and other university facilities	1 Class I/30 employees + 1 spot/9 student seats (25% Class I and 75% Class II)
Park-and-Ride Lots/Parking Garages	7% of auto parking (75% Class I & 25% Class II)
Transit Centers	5% of daily boardings (75% Class I and 25% Class II)
Cultural/Recreational (includes libraries, theaters, museums, & religious institutions)	1 Class I/30 employees + (1 Class II 1500 sq. ft. or 1 Class II/60 seats (whichever is greater)
Parks/Recreational Fields	1 Class I/30 employees + 1 Class II/9 users during peak daylight times of peak season
Retail Sales/Shopping Center/ Financial Institutions/ Supermarkets	1 Class I/30 employees + 1 Class II/6000 sq. ft.
Office Buildings/Offices	1/6000 sq. ft. (75% Class I & 25% Class II)
Hotels/Motels/Bed-&-Breakfasts	1 Class I/30 rooms + 1 Class I/30 employees
Hospitals	1 Class I/30 employees + 1 Class II/45 beds
Restaurants	1 Class I/30 employees + 1 Class II/3000 sq. ft.
Industrial	1 Class I/30 employees or 1 Class I/15,000 sq. ft. (whichever is greater) + 1 Class II/15,000 sq. ft.
Day Care Facilities	1 Class I/30 employees + 1 Class II/75 children
Auto-Oriented Services	1 Class I/30 employees
Other Uses	Same as most similar use listed
Notes (1) For cities with less than 2% bicycle commuter rate. Pro-rate for cities with higher commute rates. (2) The minimum number of required Class II Bicycle parking spaces is 4, except when the code would require 1 or less in which case 2 bicycle spaces must be provided. (3) Employees = maximum number of employees on duty at any one time. <i>Source: League of American Bicyclists, 1994.</i>	

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Appendix B

BICYCLE EDUCATION/PROMOTION PROGRAMS

ABOUT BICYCLE EDUCATION/PROMOTION

The California Vehicle Code gives bicycle operators the same rights and duties as motor vehicle operators; in California as in all states, bicyclists are drivers. *Riding* a bicycle, something most people can learn by themselves, involves knowing bicycle handling characteristics and one's own capabilities. *Driving* a bicycle competently on streets requires, in addition, knowing how all traffic operates and how to become part of the traffic stream based on your speed and destination. Unlike balancing and braking, these skills do not come automatically - they must be taught. The payoff is potentially large: many cycling educators believe that because safe and legal bicycle driving follows the same "rules of the road" as motor vehicle driving, teaching children how to drive bicycles will make them better motor vehicle drivers when they are older.

Unfortunately, too many bicyclists in the United States lack the basic skills or knowledge to safely drive a bicycle in traffic. Many people are simply afraid of bicycling on streets because they do not grasp that the underlying principles are the same as for driving a car, except that bicycles are thinner and generally slower.

Bicycle education programs are designed to improve cyclists' ability to operate with traffic. The challenges of helping people develop this skill and knowledge stems from the wide range of age groups that require this training and the need to tailor programs to each one. Other cycling-related education and promotion is designed to raise awareness among motorists, parents and child care providers, law enforcement personnel, and the community at large. More details on the many types of target audiences and appropriate programs are described below.

DELIVERY FORMATS

We classify bicycle safety education programs as *informational*, such as posters, brochures, videos, and classroom presentations, or *hands-on*, such as off-street practice and escorted on-street training rides. Informational programs are intended to develop awareness and provide knowledge. Hands-on programs are designed to change behavior and/or develop skills. *Comprehensive* programs employ both presentation and practice. Finally, there are *Promotion* programs which are intended more for encouragement than education.

Informational Programs

Classroom Presentations - Although they must practice on a bicycle before becoming competent, children can learn the basic rules of the road in a classroom or assembly environment. In many cities this is the only "cycling education" offered, if any. Because school years are almost entirely pre-allocated and because few districts have in-house personnel trained as bicycle driving educators, a one-hour presentation once every year or two is all that many children receive. In many communities, these presentations are delivered by police officers as part of a 'Bike Rodeo' program provided to elementary schools and service organizations. In addition, traffic violators under the age of 13 may be required to attend a Bicycle Safety Program sponsored by the local police department or service group.

Youth "Diversion" Programs - City police departments often offer remedial classes for youths stopped for illegal cycling (typically wrong-way or stop sign/signal violations). These are often taught on a Saturday by police personnel, sometimes by a bicycle-mounted patrol officer.

Warning Stops - Police officers may stop cyclists who are behaving improperly or whose bicycle lacks required equipment such as lights. If an officer is properly prepared, these stops are opportunities for behavior-targeted

education. Violation-specific handouts, ideally available in each language spoken in a jurisdiction, can help to reinforce each message. Bike shops sometimes work with law enforcement to add coupons to these handouts, good for discounts on helmets, lights, locks, and accessories.

“Good Driving” Stops and Rewards - Some police departments make “good bicycle driving” stops of youths, rewarding proper bicycle driver behavior with coupons for attractions and restaurants. Such programs are usually pre-announced to the community and coupled with other educational outreach and promotion.

Videos - Hundreds of general-audience bicycling videos are available but most feature races, athletic training, off-road biking, or bicycle maintenance. Some, often produced by alternative-transportation programs, combine bicycle commuting information with a bit of education. Only a few bike videos teach bicycle driving, and not all do so competently.

Bike Maps - A bicycle route map is one of the items most frequently requested by commuter and recreational cyclists. The purpose of a bike map is to show cyclists routes they would otherwise have to discover by trial and error or by driving, with information as to facility type (e.g. bike lane, route, or path) and traffic level. Many city and county bicycle route maps include detailed bicycle driver information, typically on the back.

Some cities have gone beyond the traditional folding paper map by publishing their maps in the local telephone book. Other maps are available on the internet. Costs for printing maps are often subsidized by incorporating advertising for local businesses.

Hands-on Programs

Physical Education and After-school Events - The class-time-availability obstacle can be avoided if cycling is made part of the curriculum - often as part of physical education or sports. Programs offered this way often depend on the initiative of a particular teacher who is also a cyclist. Children leaving campus for instructional purposes during school hours are typically required to be under the supervision of a certified teacher, which limits the use of volunteer cycling instructors. Liability concerns in some districts may prohibit off-campus travel even for instructional purposes.

Bike Rodeos - A bicycle rodeo is an outdoor, on-bike event, which may be offered during school or on a weekend day. Rodeos are usually set up in a parking lot and typically include helmet fitting, equipment safety checks, and several on-bike "skill stations" such as slaloms, spiral courses, and "slowest finisher wins" races. Most of these on-bike activities test handling skills but not driving skills; if any driving material is included it may be as a short video.

"Roadshow" Setups - Some school districts, counties, and states bring fully equipped youth cycling setups to their schools and cities. Trained instructors arrive with a trailer stocked with helmets and fully-maintained children's bicycles, which means that parents need not have purchased these items nor ensured that their child's bike is in working order. Such setups can of course be used as the basis for off-street-only or on-street education.

Bike Club Rides and Classes - Most recreational bicycle clubs have scheduled rides. Adult and teen cyclists can gain on-street experience in a group setting on these rides, though there is no guarantee that the ride leader or participants understand the principles of safe and legal bicycle driving. Several ride leaders of local clubs have, however, taken Effective Cycling or other classes.

Youth "Earn A Bike" and bike repair programs - Many organizations around the country have created programs which offer disadvantaged youths the opportunity to "earn a bike" by learning repair skills and using them to fix up donated or abandoned bicycles. These programs help give kids an alternative to gang activity and petty crime, and an opportunity to learn useful work skills. They do not typically include bicycle driver education instruction, but are a potential channel for it. Related options include after-school and drop-in bike repair clinics. The Youth Bicycle Education Network (YBEN) is a national resource group for such operations. (www.yben.org)

"Trips for Kids" Programs - Organized rides for children, usually of middle school age or above, can provide a teaching opportunity. This Marin County-based non-profit organization provides materials, moral support and inspiration to help disadvantaged youths discover the joys of mountain biking.

Police Cyclist Training - Bicycle-mounted patrol forces now number in the hundreds across the country; Police Cyclist training is offered by two organizations; one is IPMBA, the International Police Mountain Bike Association. Such training may encompass an entire week, and is equivalent to an Effective Cycling course combined with high-performance maneuvering and police techniques such as pursuit, rapid dismounting, situation control, and disarming of offenders.

Promotional Programs

Helmet Giveaways - Many public health agencies and city police departments offer free or discounted helmets to children and parents, often at bicycle rodeos. Another strategy is to offer free helmets as an incentive to sit through a bicycle safety presentation.

National Bike Month / Bike To Work [School] Day - The month of May is National Bike Month, during which Americans are encouraged to ride a bike at least once. The third week is typically when cities and other jurisdictions hold Bike To Work Day promotions, often on Tuesday. In recent years this promotion has been expanded to Bike To School Day as well. California's statewide Bike To Work Day promotion is coordinated by the California Bicycle Coalition (CBC), based in Sacramento (www.calbike.org).

Walk Our Children To School Day - The growing movement to restore and improve pedestrian safety and "walkability" in neighborhoods and cities has spawned a worldwide event devoted to encouraging parents to walk with their children to school. International Walk To School Day occurs in October. For information contact <http://www.walktoschool-usa.org>.

Street Fairs with Attended Bike Parking - Bicycle transportation advocacy groups work with event promoters to offer free guarded bicycle parking at street fairs and athletic events. These groups usually offer informational pamphlets about bicycle driving and safety at their tables. For how-to information contact East Bay Bicycle Coalition at <http://www.ebbc.org>.

"Charity" Rides - Many charity campaigns have organized walking and cycling events to raise funds through mileage-based pledges. These events are so far untapped as opportunities for street cycling education, but could provide an opportunity if pamphlets or other materials were supplied to the organizers.

TARGET AUDIENCES

Target audiences are divided into cyclists and non-cyclists, and subdivide cyclists by age level because of the diverse readiness levels involved.

Audience: Child Cyclists

Children begin to bicycle by learning *handling skills*: balancing, steering, braking, turning, safe starting and stopping. Many kids quickly become competent bicycle *riders*, but until about third grade (age 9 or 10) they are not ready to become independent bicycle *drivers* on the street; they lack the attention span, peripheral vision, and understanding of consequences required to operate in traffic. They can, however, learn essential "pre-driving" skills such as checking over each shoulder while steering straight. They can also experience cycling on the street with parents in well-controlled situations.

By third grade most children are ready to learn to bicycle on two-lane residential streets on pre-selected routes to and from school. They should be taught the basic rules of the road in conjunction with hands-on (on-bike) instruction. By the end of fifth grade they are typically ready to learn the skills required for longer trips to middle school, involving distances up to two miles, four lane streets with moderate traffic, and busier intersections. The middle school transition provides a "teachable moment" for this knowledge. By seventh grade, most children can be taught to safely handle most streets and traffic flows.

Programs directed at children are best handled by schools or day care centers, but are often compromised by the time constraints of school curriculum and the unfamiliarity of instructors with sound bicycle driving principles. "Citation alternative" classes provide an "after the fact" way to reach youths who are using bicycles but not following the rules of the road.

Bicycle Helmets

Bicyclists under the age of 18 are required by California state law to be wearing a properly fitted and fastened bicycle helmet. Before 1994 when this law went into effect, over 25% of bicycle accidents involved head injuries. Of these, more than one-half were life-threatening. Many communities have developed special programs to encourage the purchase and use of bicycle helmets. Helmet companies and bicycle shops have offered discounts for community and school programs to provide helmets at little or no cost.

Audience: Adult Cyclists

Few materials and programs exist that focus on the adult rider, with the exception of *Bike Ed*. Most adult bicyclists have not had any formal bicycle education in childhood outside of learning the basic mechanical skills. At the same time, there are misconceptions, myths and outdated advice that further challenge adult bicyclists' safety. For instance, some believe a bicyclist should ride facing traffic, and many bicyclists bike at night without the required headlights and reflectors. Bicycle education programs developed for the adult cyclist need to educate cyclists about bicyclists' rights and responsibilities on the road and techniques for sharing the road with motorists. In addition, publicizing typical behaviors that cause accidents help bicyclists avoid common crashes.

Most unsafe bicycle riding occurs simply because the violator does not know the laws. Educating non-English-speaking cyclists poses an additional barrier. The American Automobile Association (AAA) has numerous brochures in English and Spanish on the vehicle codes. Recently, the City of Half Moon Bay implemented an aggressive program to educate their Latino/Hispanic communities in response to several bicycle accidents and three fatalities. Spanish-speaking police officers stop cyclists who are riding on the wrong side of the road or at night without a light. Instead of issuing a citation, the officer explains the relevant laws to the cyclist, distributes information brochures in the cyclist's native language and, when the cyclist is riding at night without a light, gives them a free light and tells them how to use it correctly. This form of education works because it addresses the problem directly and, in the case of the free lights, the recipient is excited about receiving free equipment. In

addition, the Half Moon Bay Police Department also works through employers. Spanish-speaking police officers give bicycle-safety presentations at large nurseries that have a number of Spanish-speaking employees.

The *Bike Ed* course by the League of American Bicyclists (LAB) would serve the public need for cycling education and can be offered at work sites, bike shops, bike clubs, schools, churches and community centers. Promotional events also provide an opportunity to enhance bicycle education and encourage motorists to share the road. While it is often difficult to get adults to attend classes, community events such as charity bike rides, bike fairs and bicycle rodeos are useful in attracting adults and families in more recreational surroundings. Since most adult cyclists are also motorists, they can also be reached through programs discussed in the next section.

Table B - 1: Bicycle Education Programs for Cyclists

Audience	Relevant Bicycling Knowledge and Skills
Child cyclists, Grades K-2	Pedestrian skills: stopping, looking, crossing, waiting, alertness Helmet use and promotion (all ages) Basic bicycle control and handling (mounting, dismounting, balancing, starting, stopping, turning, braking) "Pre-driving" skills: Shoulder checks, driveway "rideout" hazard, eye contact
Child cyclists, Grades 3-5	<i>Opportunity: Start of 3rd grade, when most children can be taught to safely bike to elementary school along quiet neighborhood streets.</i> Rules of the Road: Riding on the right, yielding, stop signs and signals, shoulder checks, lateral position changes, safe turns at intersections. Conspicuity, hand signals. School commutes on prearranged routes
Child cyclists, Grades 6-8	<i>Opportunity: Summer transition between 5th and 6th grade, when most children are ready to learn the additional skills for commuting to middle school on routes that involve somewhat busier streets.</i> Intermediate Rules of the Road: Positioning at intersections by destination, where to ride on busier streets. Emergency braking and obstacle avoidance. Compliance with Vehicle Code regulations
Child cyclists, High school	Compliance with Vehicle Code regulations including equipment Encouragement of bicycle use as a practical transport mode for work and errand-running trips
Adult cyclists	Compliance with Vehicle Code regulations including equipment Knowledge of real and perceived safety hazards and how to reduce risk Human performance and practical and enjoyable cycling Where and how to ride on various types of streets and lane widths. Local route and bike/transit options

Audience: Motorists

Motorists are probably the most difficult group to reach with bicycle education. Existing motorist-oriented programs typically reach their intended audience only at specific points. Some amount of bicycle education is distributed during driver education courses, driver licensing exams and traffic schools for violators, but these events will only occur once every several years and are generally felt to be ineffective in changing driving behavior.

Public awareness campaigns are most useful for educating motorists on how to safely share the road with bicyclists, while at the same time reminding bicyclists of their rights and responsibilities. Media campaigns, community events and family activities can be useful in raising awareness regarding bicycle/motorist safety. For example, many cities distribute information on sharing the road with bicyclists in its utility bills. In addition, parents who attend bicycle education events with their children may learn something themselves about bicycle/motorist safety that can help to reinforce the safe-cycling of their children.

Audience: Law Enforcement Officials

The most common violations causing accidents are cycling on the wrong side of the road, failure to stop at stop signs and signals, cycling at night without lights, or behaving unpredictably while proceeding down the road. Consequently, enforcement should be viewed as an integral part of the bicycle education program and as the most effective way to reduce the frequency of bicycle/automobile accidents.

In order for a bicycle traffic enforcement program to work effectively, officers need education on how best to approach an offender and what violations should be earmarked for enforcement. Such training is available through the Office of Traffic Safety and is best if it is provided to the full police force. The bicycle fine structure should be reviewed periodically to ensure that fines are not excessive. Since 1994, with the passage of AB 669, cities have had the discretion to reduce fines for infractions of the vehicle code incurred by bicyclists. It has been found in cities throughout California that a reduced fine structure has simulated enforcement of bicycle violations.

Several local police department have recently implemented a program “Bicycle Diversion Training” to integrate bicycle safety education with citations. When given a ticket for illegal (unsafe) riding, a cyclist must attend safety training in lieu of paying a fine or appearing in court. This may be accompanied by a media campaign to inform residents that bicycling offenders will be cited. This program may target juvenile offenders or may also include adults. Juvenile offenders are required to attend a safety class with their parents, thereby providing the opportunity to educate both children and adults.

To enhance the observance of the traffic regulations by bicyclists, this plan encourages a Police Department bicycle patrol. Throughout the country, many cities have demonstrated the effectiveness of community-based policing utilizing bicycles in place of patrol cars. Clearly, an officer on a bicycle can speak with greater authority about unsafe cycling practices and code violations committed by bicyclists.

Table B - 2: Bicycle Education Programs for Non-Cyclists

Audience	Relevant Bicycling Knowledge and Skills, or Messages
Parents and child-care providers	Helmet fitting and adjustment Basic bicycle fit and safety check Knowledge of common child cyclist errors, on and off streets Knowledge of children's' limitations in perception, attention, and ability to understand situations
Motorists	Recognition of cyclists' right to use the road as drivers Understanding, anticipation and avoidance of common cyclist mistakes Understanding and avoidance of common motorist mistakes
Law Enforcement personnel	Recognition of cyclists' right to use the road as drivers Knowledge of Vehicle Code sections regarding cyclists, including often-misinterpreted provisions such as "as far to the right as practicable", legality of occupying a traffic lane, and vehicular left turns Knowledge of common motorist errors and violations which obstruct and endanger cyclists, especially right-of-way violations Knowledge of non-moving-violation issues related to cyclist safety, such as improper car parking, and obstruction of bike lanes
Community	Promotion of cycling as healthy and clean transportation. Acknowledgement of cycling as a first-class transportation mode, and of cyclists as bona-fide users of the public streets.

Audience: General Community Awareness

The following programs are designed to increase community awareness as to the benefits and opportunities for bicycling. Many of these programs are sponsored by employers and targeted to their employees. In many communities, the city government has taken the lead on providing programs as an example to other employers. Programs are designed to impart the following messages.

Identify Benefits of Bicycle Commuting

- **Map** - Publish a map of bikeways in Fresno and adjacent communities with safety information on bicycles and other needed equipment, where safe and secure bicycle parking is located, where bike shops are located, and the available transit-access options. (add to high priority projects)
- **Informational Materials** – Publish a “Bicycle Commute Info Newsletter” with information on bicycles and other needed equipment for bicycle commuting, safety and effective-cycling information and notices of upcoming bicycle events.
- **Bicycle Club** - Start a bicycle commuter club and information network to advise potential bicycle commuters of their best commute routes, to locate experienced bicycle commuters in their area (“Bicycle Buddies”) who are willing to assist and escort them during their first bicycle commutes, and to find out what events and activities are coming up.
- **Bicycle Safety Demonstrations** – Hold demonstrations during the lunch hour on safe-riding, how to bicycle commute, and bicycle repair. The City, local businesses, local bicycling clubs or advocacy groups can sponsor these events.

- **Bicycle Commute Competition** – Hold a competition between city departments and agencies to determine who has the most bicycle commuters during a week.
- **Media Campaigns** – Television and radio public service announcements can help reach a broad audience. A weekly bicycle newspaper column can discuss local bicycling news as well as advertise upcoming events.
- **Bicycle Hot Line** – Telephone Hot Line for reporting potholes, missing bike route signs or other bicycle-related hazards. The system could also be expanded to provide bicycle news on upcoming events. Also provide comparable service on the World Wide Web.
- **"Fresno Bicycle Safety Week"** – Develop a week-long event to promote the benefits of bicycling to a citywide audience. Include activities in the schools as part of the program. This event can culminate in a "Fresno Fun Ride", one evening bringing together all the participants.
- **City Bicycle Rides** - To maintain interest and attention on bike commuting after the "Bicycle Safety Week" is over, a monthly or quarterly City ride could be organized. These rides should be supervised and designed with clear safety guidelines and a pre-determined route. A Bike Day could be instituted once a month when everyone is encouraged to use a bicycle for that day's trips. Alternatively, a ride could be organized with a popular Fresno personality, like a writer or athlete.
- **Bike-To-Work and Walk-Your-Child-To-School events** – Plan bicycling and walking events that coincide with these national events.

Provide Incentives for Bicycle Commuting

- **Bikeways** - Implementation of the bicycle network in this Plan will be critical to a successful encouragement program. Bicycle route maps and identifiable route signage systems are also necessary to support the route network.
- **Parking** – Secure and protected long-term parking must be provided. Options include bicycle lockers, bicycle storage rooms, attendant parking or allowing bicycles into the workplace.
- **Cash Incentives** – There are many types of cash incentives which can be used to encourage bike commuting. The cost of these programs can be mitigated by soliciting sponsorships from stores, restaurants and other retailers. They include:
 - Cash dividends for each day of bicycling, similar to a transit subsidy;
 - Monthly drawings for prizes;
 - Mileage reimbursement for city business travel by bike; (policy in place)
 - Discount coupons or credit at bike stores, restaurants or other retail businesses;
 - Bike purchase financing;
 - Parking cash-out program.
- **Convenience Incentives** – One of the major obstacles to bicycle commuting is the perceived inconvenience factor. The following list of programs addresses these concerns.
 - 'Guaranteed Ride Home'
 - Fleet bicycles for business travel
 - Trial commute bikes
 - On-site bicycle repair kits
 - On-call bicycle repair services
 - Flex hours
 - Showers and locker rooms (or gym membership)
 - Relaxed dress codes

Support and Applaud Bicycle Commuting

- **"Ride with an Elected Official"** – Sponsor a ride for city employees with an elected official and/or department heads to demonstrate their support and enthusiasm for bicycle commuting. (add to high priority projects)
- **Special Programs** – Organize Fresno bicycle commute events for city employees to coincide with regional and national events such as Bike to Work Day, Beat the Backup Day, Earth Day and Transit Week.
- **'Dare to Spare the Air Campaigns'** - Continue and expand 'Dare to Spare the Air Day' programs to include more participation by employers with incentives to bicycle commute.
- **Bicycling Map** – Prepare a map of existing bikeways for distribution to the general public. Cost of this map can be offset by selling advertising to local bike shops, health clubs and other bicycle-friendly businesses. Include information on safe bicycling, rules of the road and tips for bicycle commuting.

The City of Fresno could encourage other Fresno employers to organize bicycle commute programs of their own. An employer resource kit could be provided to each interested employer. The kit could include:

- Text for a letter from the CEO/President explaining the Bicycle Commute Program and urging his/her employees to consider the bicycle when making commute choices.
- Articles about bicycling as a great commute alternative. These stories can be used in company newsletters, as all-staff memos, bulletin board fliers, or any other outreach method in place at the company.
- A list of programs and events for use in the company's program. The list will provide details of existing events as well as new programs that could be implemented. City-sponsored events should be included in this list.
- A resource list detailing sample bicycle promotion programs, resource centers for bicycle promotion assistance, and local bicycle clubs. This list will be invaluable for companies which may not be aware of the benefits of bicycle commuting.
- Route maps showing the best bike commute routes in Fresno to the particular employer's work site could be distributed and/or posted.
- Bicycle Safety and Road Sharing Brochures developed through the education program earlier in this chapter.
- Sample bicycle promotional items such as T-shirts, water bottles, etc.
- Listing of local bicycle stores where employees can find the correct equipment for their bicycle commute.

RESOURCES

Bicycle Education Videos

Chicagoland Bicycle Federation has a library of VHS tapes covering a variety of bicycling and walking subjects including child and youth bicycling safety, adult bicycling safety, bicycling encouragement, and motorists sharing the road. For information, go to <http://www.biketraffic.org/>.

Getting There By Bike (TRT 20 minutes, for adults and older-teens)

Pedal Smarts (TRT 15 minutes, for middle-school age)

The Bicycle Zone (TRT 12 minutes, for elementary age)

Jeanne LePage, a professional videographer who was formerly the bicycle coordinator at the University of California, Santa Cruz, created these three videos. The videos each present bicycle driving principles and helmet use, with running times and themes tailored for their respective age groups. All three are notable for their multicultural casts and a "What if Cars Didn't Follow Any Rules" cartoon segment. "Getting There" features actors of diverse ages including an older woman motorist character who offers both cyclist and motorist perspectives. The videos are available through Transit Media, 22-D Hollywood Ave, Ho-Ho-Kus, NJ 07423. Telephone: 800-343-5540.

Trucks and Bicycles: Sharing The Road (TRT 20 minutes, for adults, older teens, and professional drivers)

The American Trucking Association (ATA) created this excellent (but unfortunately out-of-print) video. Its narrator and main actor is a real-life bicycle racer and professional truck driver. The running time is split evenly into cyclist and trucker viewpoints; both segments offer technically sound driving, handling and passing tips. For more information go to <http://www.truckline.com>.

Curriculum and Programs to Buy

Effective Cycling curriculum developed by John Forester focuses on cycling in traffic, enjoying cycling and understanding and working for good cycling policy. For information go to <http://johnforester.com>.

League of American Bicyclists BikeEd program – Different courses to suit the needs of any and every group. Includes courses for introductory to advanced bicyclists, children, bike commuters, and motorists. Trained League Cycling Instructors (LCI) can be found throughout California.

<http://www.bikeleague.org/>

Canbike (Canada) – Developed by members of the Canadian Cycling Association using John Forester's book, Effective Cycling. Includes courses for adults, children and advanced bicyclists.

<http://www.canadian-cycling.com/English/programs/canbike/canintro.htm>

Contacts

National Center for Bicycling and Walking

<http://www.bikewalk.org>

Bicycle Safety Education Resource Center of Federal Highway Administration

<http://www.bicyclinginfo.org/ee/fhwa.html>

Youth Bicycle Education Network

<http://www.yben.org/>

International Bicycle Fund - A non-governmental, nonprofit, advocacy organization, promoting sustainable transport and international understanding. Major areas of activity are non-motorized urban planning, economic development, bike safety education, responsible travel and bicycle tourism, and cross-cultural, educational programs.
<http://www.ibike.org/>

Trips for Kids
<http://www.tripsforkids.org/>

International Police Mountain Bike Association
<http://ipmba.org>

Federal Highway Administration's Bicycle and Pedestrian Program Office – responsible for promoting bicycle and pedestrian transportation use and safety.
<http://www.fhwa.dot.gov/environment/bikeped/index.htm>

League of American Bicyclists (LAB) - The League of American Bicyclists is the oldest bicycling organization in the US. It works through its members to promote better education and better facilities for bicyclists
<http://www.bikeleague.org/index.cfm>

Pedestrian and Bicycle Information Center (PBIC) - The PBIC is a clearinghouse for information about health and safety, engineering, advocacy, education, enforcement and access and mobility.
<http://www.bicyclinginfo.org/>

ProBicycle - ProBicycle focuses on vehicular-style riding, education and training, and bicycle advocacy.
<http://probicycle.com/>

Association for Commuter Transportation – Association for professionals who specialize in commute options and solutions as well as organizations, businesses and individuals interested in creating a more workable transportation system.
<http://tmi.cob.fsu.edu/act/main.asp>

31 Ways You Can Promote Bicycling by Bicycle Alliance of Washington
<http://www.bicyclealliance.org/resources/promote.html>

Cascade Bicycle Club – Very active cycling club involved with education, advocacy and events.
www.cascade.org