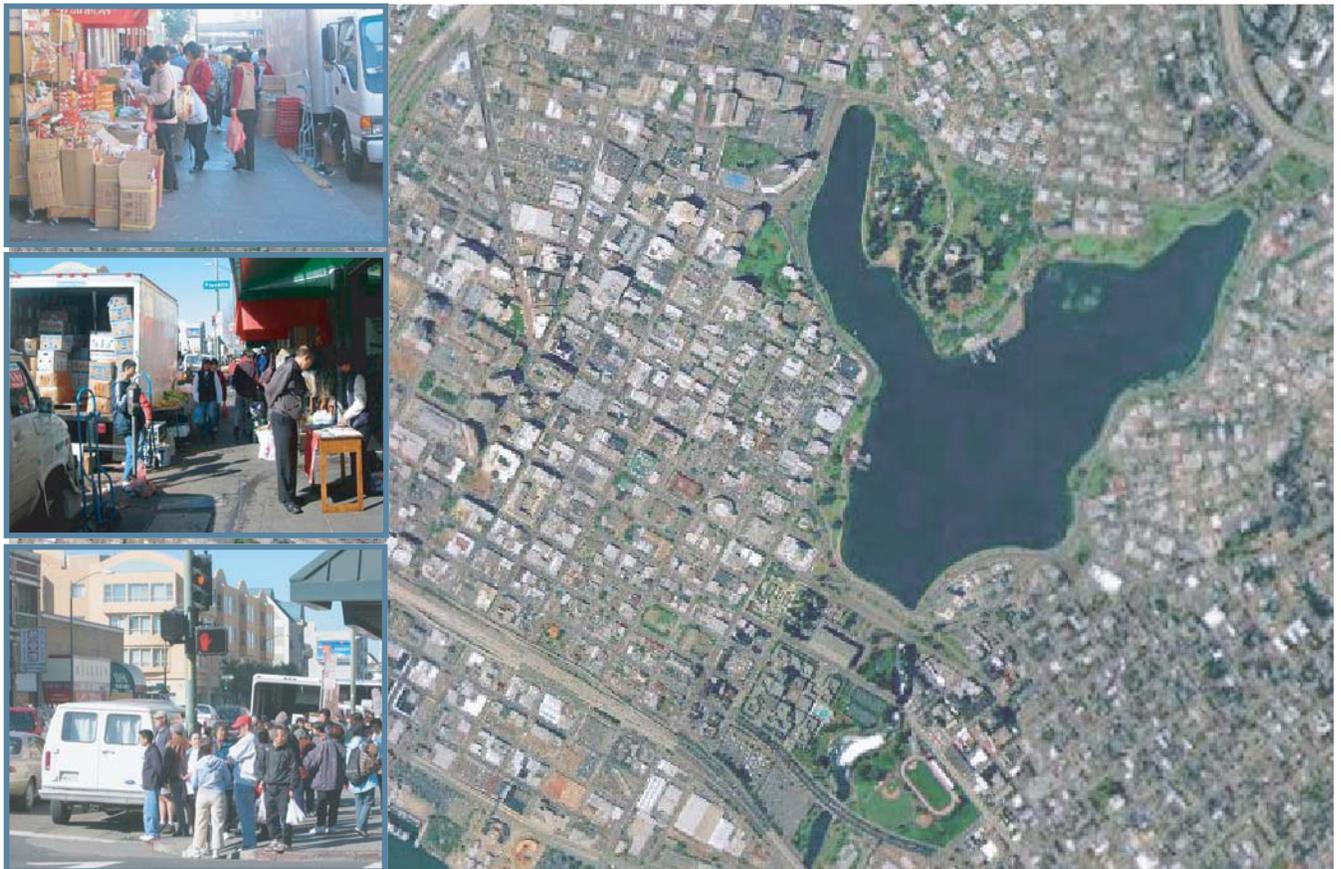


Revive Chinatown

Community Transportation Plan

Final Report

City of Oakland
Community and Economic Development Agency



Submitted by:

CHS Consulting Group

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TABLE OF CONTENTS

Executive Summary	1
1.0 Introduction	6
2.0 Planning Process.....	7
2.1 Public Outreach.....	7
2.1.1 Citizen Advisory Committee Meetings.....	7
2.1.2 General Community Meetings	7
2.1.3 Questionnaire Surveys	8
2.1.4 Focus Group Meetings	9
2.1.5 Stakeholder Workshops (Map Exercises)	9
2.1.6 Merchants Meetings.....	10
2.1.7 Design Charrette.....	10
2.2 Government Agency Coordination	10
2.2.1 Coordination with Lake Merritt BART Station Improvements Project.....	10
3.0 Existing Conditions	11
3.1 Project Area Description	11
3.1.1 Population Characteristics.....	11
3.1.2 Roadway and Circulation System	13
3.1.3 Public Transportation System	13
3.2 Policy Framework	17
3.2.1 Street Circulation System and Functional Classification.....	17
3.2.2 Pedestrian Circulation System	17
3.2.3 Bicycle Facilities.....	18
3.3 Traffic Conditions	18
3.3.1 Traffic Volumes	18
3.3.2 Through Traffic.....	21
3.3.3 Intersection Operating Conditions	21
3.4 Parking and Loading Conditions.....	26
3.4.1 Off-Street Parking Analysis	26
3.4.2 On-Street Parking and Loading Analysis.....	28
3.4.3 Double Parking Analysis.....	30
3.5 Pedestrian Conditions.....	31
3.5.1 Sidewalk/Crosswalk/Street Corner Operating Conditions.....	32
3.5.2 Collision Data.....	33
4.0 Project Alternatives	36
4.1 Definition of Project Alternatives	36
4.1.1 Alternative 1 – Basic Improvements.....	36
4.1.2 Alternative 2 – Basic Improvements plus Sidewalk Widening.....	38
4.1.3 Alternative 3 – Balanced Traffic Flow plus Sidewalk Widening	40
4.1.4 Alternative 4 – Balanced Traffic Flow without Sidewalk Widening.....	42
4.1.5 Alternative 5 – Balanced Traffic Flow with One-Way Webster Street	42
4.2 Traffic Analysis.....	45
4.2.1 Vehicular Volumes.....	45
4.2.2 Level of Service Analysis (LOS).....	51
4.3 Strategies to Improve Chinatown’s Image	53

4.4	Potential Streetscape Improvements	54
4.5	Streetscape Concept	55
4.5.1	Preferred Scheme – “Without Sidewalk Widening Option” (Option C)	56
4.5.2	Schemes Not Selected	57
4.5.3	Option “C”: Potential Benefits and Tradeoffs.....	60
5.0	Project Recommendations	63
5.1	Evaluation.....	63
5.2	Recommended Projects	63
5.2.1	Short-Term Improvement Projects.....	63
5.2.2	Mid-Term Improvement Projects.....	68
5.2.3	Long-Term Improvement Projects	69
6.0	Project Cost estimates.....	71
	Acknowledgement	74

LIST OF FIGURES

Figure 1	Study Area.....	12
Figure 2	Existing Lane Configuration.....	14
Figure 3	Existing Pedestrian Signal Heads and Crosswalks	15
Figure 4	Transit Services.....	16
Figure 5	Street Classification System.....	19
Figure 6	Pedestrian and Bicycle Routes.....	20
Figure 7	Existing PM Peak Hour Traffic Turning Movement Counts	22
Figure 8	Distribution of Webster and Posey Tube Traffic in Chinatown.....	23
Figure 9	Through Traffic Volumes in Oakland Chinatown	24
Figure 10	Off-Street Parking Supply by Type.....	27
Figure 11	On-Street Parking Supply by Type	29
Figure 12	Pedestrian Collision Data (1998-2002).....	35
Figure 13	Alternative 1 – Basic Improvements.....	37
Figure 14	Alternative 2 – Basic Improvements plus Sidewalk Widening.....	39
Figure 15	Alternative 3 – Balanced Traffic Flow plus Sidewalk Widening	41
Figure 16	Alternative 4 – Balanced Traffic Flow without Sidewalk Widening.....	43
Figure 17	Alternative 5 – Balanced Traffic Flow with One-Way Webster Street	44
Figure 18	Traffic Volumes for Alternative 1 – Basic Improvements.....	46
Figure 19	Traffic Volumes for Alternative 2 – Basic Improvements plus Sidewalk Widening	47
Figure 20	Traffic Volumes for Alternative 3 – Balanced Traffic Flow plus Sidewalk Widening ..	48
Figure 21	Traffic Volumes for Alternative 4 – Balanced Traffic Flow w/o Sidewalk Widening...	49
Figure 22	Traffic Volumes for Alternative 5 – Balanced Traffic Flow with One-Way Webster ...	50
Figure 23	Study Recommendations – Core Area Projects	65
Figure 24	Study Recommendations – Area-wide Projects.....	66

LIST OF TABLES

Table 1 - AC Transit Bus Line Frequencies	17
Table 2 - Intersection Level of Service: Existing Weekday PM Peak Hour.....	25
Table 3 - Weekday and Sunday Parking Supply and Usage by Space Type	28
Table 4 - Weekday and Sunday Double Parking by Vehicle Type	31
Table 5 - Pedestrian Collisions by Location and Severity	33
Table 6 - Pedestrian Collisions by Age Group	34
Table 7 – Existing Sidewalk Width and Number of Travel Lanes	38
Table 8 – Sidewalk Widths and Number of Travel Lanes for Alternative 2	38
Table 9 – Sidewalk Widths and Number of Travel Lanes for Alternative 3	40
Table 10 – Sidewalk Widths and Number of Travel Lanes for Alternative 4	42
Table 11 – Sidewalk Widths and Number of Travel Lanes for Alternative 5	45
Table 12 – Level of Service and Average Stop Delay (seconds per vehicle).....	51
Table 13 - Preliminary Cost Estimates for the Recommended Improvements.....	72

EXECUTIVE SUMMARY

The *Revive Chinatown Community Transportation Plan* was funded by a Caltrans environmental justice (EJ) planning grant and managed by the City of Oakland's Pedestrian Safety Project (OPSP). The plan addresses the core of Oakland Chinatown, bounded by 7th Street to the south, 10th Street to the north, Franklin Street to the west, and Harrison Street to the east. The plan has the following four goals:

- Create a pedestrian environment that is safe and accessible for people of all ages and abilities.
- Expand transportation choices for travel to and from Chinatown to encourage more visitors and shoppers.
- Improve the attractiveness of Chinatown's commercial district as a regional shopping destination.
- Involve the community in a process that unifies diverse groups and empowers them to seek long-term solutions to quality of life issues in Oakland Chinatown.

Community Outreach and the Planning Process

As an environmental justice planning process, this project had early and extensive community involvement. Asian Health Services (AHS) and the Oakland Chinatown Chamber of Commerce (OCCC) were community partners and closely involved in the initial grant application. Funded by the grant, they conducted extensive community outreach, reaching over 1,000 people through surveys, focus groups, and mapping exercises. Throughout, the Steering Committee (SC) provided overall direction for the plan through regular meetings involving the community partners, staff to Councilmembers Danny Wan and Henry Chang, Jr., and city staff. The Steering Committee also coordinated with BART staff on a separate EJ project aimed at improving pedestrian access to the Lake Merritt BART Station. The Technical Advisory Committee (TAC) aided in the analysis of existing conditions and the evaluation of alternatives. A Community Advisory Committee (CAC) composed of stakeholders reviewed possible alternatives and set priorities. Led by CHS Consulting, the consultant team made presentations to the SC, TAC, CAC, OCCC Board of Directors, AHS Board of Directors, and community leaders and groups. A design charrette was also conducted to solicit ideas from design professionals, students, and community members.

Key Issues

Transportation issues in Oakland Chinatown are complex and inter-related. Chinatown is a dense and lively residential and commercial district that is the cultural and business core for Asian communities in the East Bay. In addition to local congestion from people visiting the district, a significant amount of traffic uses key streets in the Chinatown core as through routes to Interstate 880 and the Webster and Posey Tubes.

- Pedestrian Safety and Access – Oakland Chinatown has high rates of pedestrian/motor vehicle collisions. The combination of high pedestrian volumes and extensive traffic create serious conflicts for this otherwise pedestrian-oriented district. The sidewalks of many blocks in the core do not have sufficient width to accommodate pedestrian flows and sidewalk shopping at the same time. These sidewalks are difficult to negotiate for people with walkers, carts, and shopping bags. The problem is especially prominent where merchant

displays encroach on the pedestrian right-of-way. Some street corners do not have enough space for people waiting to cross the street.

- Chinatown’s Appearance – Community members repeatedly expressed the importance of improving Chinatown’s image such that it can continue to compete as a regional shopping destination with newer, suburban-oriented Asian malls. Chinatown’s sidewalks, street lights, and other fixtures have not received the investment that is warranted by the levels of commercial and pedestrian activity in the district.
- Traffic Issues – Traffic volumes in Oakland Chinatown vary substantially. Webster and 8th Streets have significant traffic during the peak hours while 9th and Franklin Streets have low traffic volumes. The one-way street system creates a pattern of imbalanced traffic flow and an inefficient use of the available lanes. Additionally, this pattern funnels motor vehicles from 10th and Harrison Streets onto Webster, contributing to this street’s congestion. It also causes some drivers to circle around blocks to reach parking or their destinations, creating conflicts with crossing pedestrians.
- Parking Issues – Parking violations are frequent and include double parking, illegal parking in yellow and red zones, and exceeding posted time limits. Some merchants use curbside parking spaces for storage throughout the day. These violations contribute to double parking problems in an area with limited parking supply. Parking demand is the highest during weekend midday and weekend violations are substantially higher than on weekdays.

Proposed Improvements

This Project recommends the following improvements to address the key issues. The improvements were evaluated and selected based on the community-based planning process described above. These improvements are grouped into short-term, mid-term, and long-term projects.

Short-term Projects

Pedestrian Improvement Projects

- Install four scramble intersections at 8th/Franklin, 9th/Franklin, 9th/Webster, and 10th/Webster, including bilingual signage, and upgrade the signage at the existing scramble at 8th/Webster.
- Install bulb-outs at the five intersections with scramble signals.
- Increase the visibility of the scramble intersections with high-visibility or decorative crosswalks.
- Install pedestrian countdown signal heads at all intersections in the Chinatown core.
- Enhance the visibility of pedestrian crossings by installing continental-style crosswalks with advanced limit lines.
- Remove the pedestrian barrier at Webster and 10th Streets. The installation of the scramble signal would ensure pedestrian safety at this location.

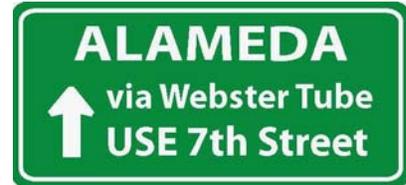


Streetscape Improvement Projects

- Install pedestrian-scale lighting along 8th Street between Franklin and Harrison Streets. This project is a near-term improvement to show the impact of installing pedestrian-scale lighting throughout the Chinatown core.

Traffic Circulation Improvement Projects

- Optimize traffic signal timing to reduce traffic congestion and improve traffic flow.
- Install a traffic signal at Franklin/7th. The City of Oakland has funded this project and the signal should be installed in the near future.
- Install signs along Brush Street, the I-980 frontage road, directing Alameda traffic to 5th and 7th Streets and thereby avoiding the Chinatown core.
- Convert 10th Street from one-way to two-way traffic flow. This change would reduce traffic on Webster Street.



Parking Management Program

- Modify on-street parking/loading spaces to reduce double parking:
 - Create truck loading zones in the core of Oakland Chinatown. These spaces would be for active truck loading only.
 - Install meters on truck loading zones with 30-minute time limits.
 - Designate the majority of on-street parking/loading spaces as truck loading zones for the morning hours. After that time, they would become short-term parking spaces (30-minute and one-hour meters) with some on-street loading spaces, depending on the needs of each block.
- Create diagonal parking on Franklin Street between 6th and 7th Streets and on 10th Street between Harrison and Madison Streets.
- Improve parking enforcement in Oakland Chinatown.
 - Use walking beats to police parking and double parking violations.
 - Give multiple tickets to vehicles parking in the same spots for long periods.



Mid-term Projects

Pedestrian Improvement Projects

- Eliminate sidewalk obstacles by replacing parking meters with central pay booths and by consolidating newspaper boxes in the core area.
- Through merchant education and city enforcement, ensure that sidewalk vendor stands leave a minimum of 7 feet of unobstructed sidewalk for pedestrian traffic.

Traffic Circulation Improvement Projects

- Consider converting the current one-way streets to two-way circulation in the area bounded by 14th Street, Broadway, I-880, and Oak Street. This project would reduce traffic congestion in Chinatown by better balancing traffic flow.



Streetscape Improvement Projects

- Add pedestrian amenities including banners, street trees, and street furniture and extend the pedestrian-scale lighting to additional blocks.

Parking Management Program

- To increase parking supply, consider the addition of diagonal parking on streets just outside of the Chinatown core.
- Provide better pedestrian linkages to the parking spaces under I-880 with improved signage, sidewalks, and lighting along Webster Street. Create a weekend park-and-ride shuttle bus, linking Oakland Chinatown with the 13th/Franklin parking garage.
- Create a parking signage program, similar to that in San Francisco along Kearny Street, using overhead signs to inform motorists where parking is available.



Long-term Projects

Pedestrian Improvement Projects

- Consider sidewalk widening on the less congested streets in the core like 9th and 10th Streets. For busier streets, sidewalk widening proposals would require additional study and discussion of the impacts to motor vehicle traffic.
- Long-term solutions to Webster Street's traffic congestion require a direct connection between I-880 and the Webster and Posey tubes. A subsequent study, the "I-880 Broadway/Jackson Interchange Improvement Project", will address regional access issues at this location.
- Consider the expansion of the proposed recommendations to areas east of the Chinatown core. This part of Oakland Chinatown is primarily a mix of residential and institutional uses. This area has same street width as the core but with lower traffic volumes. Diagonal parking could be expanded into this area to increase parking supply and calm traffic.

Implementation

These improvements, amounting to an estimated \$10 million of investment, provide a long-term vision for revitalizing Oakland Chinatown as a pedestrian-oriented district and a regional shopping destination. The Steering Committee will continue to meet to facilitate the following projects that are underway and to direct future planning efforts.

Projects Underway

- Traffic signal at 7th and Franklin Streets: This signal is funded through the Metropolitan Transportation Commission's Jobs/Housing Balance Program and is awaiting implementation.
- BART bilingual wayfinding signage: BART is developing pedestrian-oriented bilingual wayfinding signage to direct people between the Chinatown core, Lake Merritt BART station, 12th Street BART station, and major destinations both within and nearby Chinatown. BART is completing the sign's design and implementation plan while the City of Oakland is seeking funds for their manufacture and installation.
- 10th Street two-way conversion and diagonal parking: The City of Oakland is studying the feasibility of converting 10th Street between Webster and Madison Streets to two-way traffic flow. This project will also include the installation of diagonal parking on multiple blocks.
- Transportation for Livable Communities (TLC) application: In July 2004, the City of Oakland submitted a TLC application for approximately \$3 million to fund the near-term pedestrian improvements in the Chinatown core.
- Interstate 880 Broadway/Jackson Interchange Improvement Project: Long-term solutions to traffic congestion on Webster Street require a direct connection between Interstate 880 and the Webster and Posey Tubes. This study will address these regional access issues at this location.

Additional Planning Efforts

- Schools and senior centers: Additional planning is needed to formulate pedestrian safety improvements around Chinatown's schools and senior citizen facilities, including Lincoln Elementary School, the Hotel Oakland, and the Hong Lok Senior Center.
- Madison Square Park: This park is underused open space and may contribute to people's sense of insecurity when walking to and from the Lake Merritt BART station. Improvements to this park and the surrounding streetscape are an opportunity for better connecting the Chinatown core to the Lake Merritt BART station area.
- Interstate 880 underpass improvements: I-880 creates a barrier for pedestrians between Jack London Square and Oakland Chinatown. The two districts could be better connected with pedestrian improvements at the underpasses between Broadway and Oak Street. Opening Franklin Street under the freeway is another opportunity for connecting these districts.

1.0 INTRODUCTION

The “Revive Chinatown” Community Transportation Plan, funded by a Caltrans Environmental Justice Grant, was managed by the City of Oakland’s Pedestrian Safety Project (OPSP). Focusing on the core of Oakland Chinatown, the project has four goals:

- Create a pedestrian environment that is safe and accessible for people of all ages and abilities.
- Expand transportation choices for travel to and from Chinatown to encourage more visitors and shoppers.
- Improve the attractiveness of Chinatown’s commercial district as a regional shopping destination.
- Involve the community in a process that unifies diverse groups and empowers them to seek long-term solutions to quality of life issues in Oakland Chinatown.

The study boundary includes 7th Street to the south, 10th Street to the north, Franklin Street to the west and Harrison Street to the east. While the core of Oakland Chinatown is comprised of vibrant commercial streets with a mixture of retail, office, and residential buildings, its character is also heavily influenced by regional traffic to and from the Alameda tubes and I-880. Webster and 8th Streets, which form the central core of the district, are heavily congested during the peak commute hours, while other one-way streets in the area are lightly traveled.

The majority of sidewalks are generally sufficient to accommodate pedestrian circulation but there is congestion in the core areas. The sources of congestion – colorful outdoor vendor stands of produce and dried goods, people congregating on sidewalks to socialize, families waiting outside of restaurants for tables – are also the very reason local residents, visitors from the Bay Area, and tourists are attracted to Oakland Chinatown.

The transportation and quality of life issues in Oakland Chinatown are complex and interrelated. To improve pedestrian safety and access, larger regional transportation patterns must be taken into account. This study used a community planning process to improve Oakland Chinatown’s streets for all users in a holistic way.

2.0 PLANNING PROCESS

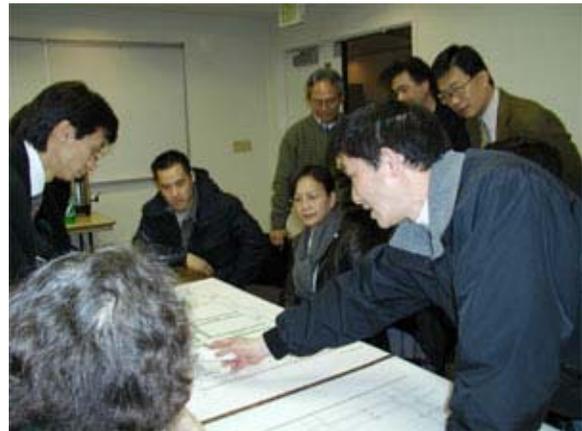
This planning project had extensive involvement from Chinatown community stakeholders throughout the process. The two community partners, the Oakland Chinatown Chamber of Commerce (OCCC) and Asian Health Services (AHS), began public outreach early in the process to determine the community's needs and concerns. A Community Advisory Committee (CAC) comprised of community stakeholders and interested members of the public set priorities and reviewed possible alternatives. The Technical Advisory Committee (TAC) and the Steering Committee (SC) aided the analysis of existing conditions and the evaluation of alternatives. Throughout the process, the consultant team made presentations to the CAC, TAC, SC, and the general public, as well as to community leaders and groups.

2.1 Public Outreach

The public outreach process involved a multi-pronged approach. OCCC and AHS staff conducted extensive community survey work including a questionnaire for employees, merchants, residents, and visitors (regulars and at the Chinatown Streetfest); mapping exercises with targeted community groups; and focus groups. The consultant assisted in the design of the survey instruments and questionnaires. Presentations were also made to the OCCC Board of Directors, a coalition of AHS stakeholders, and the AHS Board of Directors.

2.1.1 Citizen Advisory Committee Meetings

The Citizen Advisory Committee (CAC) consisted of a group of community stakeholders. Three CAC meetings, which were open to the public, were held in Oakland Chinatown. Attendance at the meetings ranged from 15 to 40 people. At the first meeting, an analysis of existing conditions was presented and specific project goals and objectives identified. The second meeting consisted of a presentation of potential strategies, followed by a break-out session to solicit input from meeting participants on a block-by-block basis. The last meeting addressed the technical evaluation of project alternatives, streetscape concepts, and selection of the preferred alternative.



2.1.2 General Community Meetings

One general community meeting was held at the end of the process to present study findings and recommendations. This event was widely publicized and attended by over 100 community members as well as elected officials and the press.



2.1.3 Questionnaire Surveys

OCCC and AHS jointly conducted questionnaire surveys targeted at merchants, employees, residents, and visitors. The surveys asked people where they live, how they travel to Chinatown, and transportation problems they encountered as well as demographic information. Surveys were administered over a span of a few weeks, as well as to visitors to the Chinatown Streetfest (held on August 24 and 25, 2003) who said they visited Chinatown at least once or twice per week.

Merchant surveys were focused on streets with frequent deliveries. Of the 83 merchants interviewed, most received between one and four deliveries per day (73 percent). Average delivery times for most merchants ranged from 10 to 30 minutes (91 percent). Most merchants drove alone (65 percent), and were thus often concerned with driving and parking in the area (15 percent with the cost of parking and 26 percent with traffic congestion). Of those who drove, most merchants parked in garages (84 percent). It should be noted that street parking in the area is generally limited to one-hour metered parking, with two-hour parking on the periphery.

Employee surveys (151 respondents) found that there was a higher level of concern about the cost of parking (49 percent) and traffic congestion (46 percent), but fewer drove alone (36 percent) and more carpooled (25 percent), rode public transportation (21 percent), or walked (15 percent). While the majority of drivers parked in garages (65 percent), a significant number parked on the street (35 percent).

The survey of residents of the City Center, Phoenix Plaza, and Pacific Renaissance Plaza housing complexes (100 respondents) showed that most do not own cars (74 percent) and many take public transportation or walk when traveling outside of Chinatown (68 percent). Almost all were concerned about the safety of walking and bicycling within Chinatown (98 percent).

Visitor surveys found that approximately a third come to Oakland Chinatown to shop or run errands (35 percent) and a quarter come to see friends or family. Of the 98 visitors surveyed, half carpooled while 24 percent drove alone, 15 percent rode the bus, 3 percent rode BART, and 6 percent walked. Drivers parked equally on the street and in garages. Most visitors stayed less than 4 hours (28 percent for 1 to 2 hours, 43 percent for 2.5 to 4 hours).

The Chinatown Streetfest survey of 225 frequent visitors found that they regularly used public transportation (24 percent on the bus and 19 percent on BART) while an equal number came by car (19 percent drove alone and 24 percent carpooled). Of those who drove, the majority parked on the street (62 percent).

While BART riders generally exited from the 12th Street Station, the majority of those who exited from Lake Merritt Station used either 8th or 9th Streets, depending on their destination.



2.1.4 Focus Group Meetings

Four two-hour-long focus groups were conducted to gather in-depth information on transportation issues from frequent Chinatown visitors. Two meetings were conducted in English, one in Vietnamese, and one in Cantonese for a total of 45 participants. Each focus group also used a survey to gather demographic information from the participants as well as details on their Chinatown travel patterns and experiences with BART.

Despite a wide range of responses, the focus groups had some common themes. People are concerned about the cleanliness of the streets and sidewalks, personal safety (especially after dark), crowded sidewalks, conflicts between pedestrians and cars, and the difficulty of parking. These concerns are often connected: for example, people tie the level of cleanliness and lighting to their perceptions of safety. Similarly, people are concerned about their personal safety when walking to transit or parking garages after dark. Regardless of how people get there, they usually walk from one destination to the next in Chinatown. Most people generally appreciate the variety of services but some like the bustle of street life while others feel there are too many people and cars. Some participants suggested new parking garages while others suggested transit-only streets, car-free days, and street closures for farmers markets. Common comments included the double parking problem; cars turning on red lights or running red lights; sidewalks that are crowded, cluttered, and uneven; and stoplights not giving pedestrians enough crossing time.



2.1.5 Stakeholder Workshops (Map Exercises)

AHS conducted stakeholder workshops based on a facilitated map exercise. Participants were given a map of Chinatown and an assortment of colored dots. They were asked to identify which intersections, in their experience, are the most dangerous in Chinatown and why. Participants were also asked to note the location of stops they use if they ride public transit. These facilitated exercises were conducted in groups at senior centers, churches, ESL classes, nail salons, and beauty schools between July and September 2003. 172 people participated, including speakers of English, Cantonese, Mandarin, Vietnamese, and Korean. The exercise took approximately 30 to 45 minutes to complete.



Most of the intersections were identified as dangerous by at least one respondent. Those identified as most dangerous included 7th and Harrison, 13th and Webster, 9th and Webster, 8th and Webster, and 8th and Harrison. Key issues included a lack of traffic signals, a lack of pedestrian signal heads, inadequate pedestrian crossing times, cars turning on red, cars blocking intersections, and speeding. Multiple people were concerned about children walking to and from school.

2.1.6 Merchants Meetings

Two sets of merchants meetings were held in Chinese (both Mandarin and Cantonese). Proposed project alternatives and technical analyses were presented at these two meetings and merchants were also asked to establish priorities for the use of limited on-street parking spaces.

2.1.7 Design Charrette

A one-day design charrette was held in March 2004 to solicit design and planning ideas from interested professionals, students, and community members. Two CDs were produced: one provides historical background and the other documents the charrette's outcomes.



2.2 Government Agency Coordination

The Technical Advisory Committee (TAC) and the Steering Committee (SC) were comprised of community and agency stakeholders. Members of the TAC included representatives from the City of Oakland's Community and Economic Development Agency (CEDA), Oakland Pedestrian Safety Project (OPSP), the Public Works Agency, the City of Alameda, AC Transit, BART, and a community advocate hired by the Chamber and AHS. Members of the SC include City Council members Danny Wan and Henry Chang, their staff, and representatives from CEDA, OPSP, AHS, and the Oakland Chinatown Chamber of Commerce. The two City Council members and their staff were active participants throughout the process. At the first TAC meeting, the team presented existing conditions data. The second meeting introduced different strategies and alternatives for review, and the third presented a technical evaluation of project alternatives. The Steering Committee began meeting upon the award of the Caltrans environmental justice grant and will continue to meet to facilitate the implementation of the plan.

2.2.1 Coordination with Lake Merritt BART Station Improvements Project

BART had a separate Environmental Justice Grant project that was conducted concurrently with the Revive Chinatown project. The BART project was focused on potential improvements to the Lake Merritt Station. The two projects coordinated efforts on the surveys and focus group meetings. BART staff also attended the Technical Advisory Committee meetings. The key link between these two projects is pedestrian access between Oakland Chinatown and the Lake Merritt BART Station.

3.0 EXISTING CONDITIONS

3.1 Project Area Description

This study focuses on the core of Oakland Chinatown which is roughly bounded by Franklin and Harrison Streets to the west and east and 7th and 10th Streets to the south and north (Figure 1). Most of the commercial activity in Chinatown occurs within the core area, while residences and a few educational, religious, and health institutions are located on the perimeter of the core. Within the core, there are three large, mixed-use complexes: Pacific Renaissance Plaza on 9th Street between Franklin and Webster, City Center on 8th Street between Franklin and Webster, and Phoenix Plaza on Webster Street between 7th and 8th Streets. Other blocks within the core consist of smaller-scale buildings with groceries and retail shops on the ground floor and residences and offices above. Other activity generators include the Asian Health Services clinic on 8th at Webster, the Asian Resource Center on 8th at Harrison, the CCUMC Nursery School on 8th at Harrison, a public library within the Pacific Renaissance Plaza, and the Chinatown Community Center on 9th at Harrison. A major parking garage is located in the Pacific Renaissance Plaza and a number of smaller parking lots are scattered within the core. All streets in the core have metered, curbside parking.

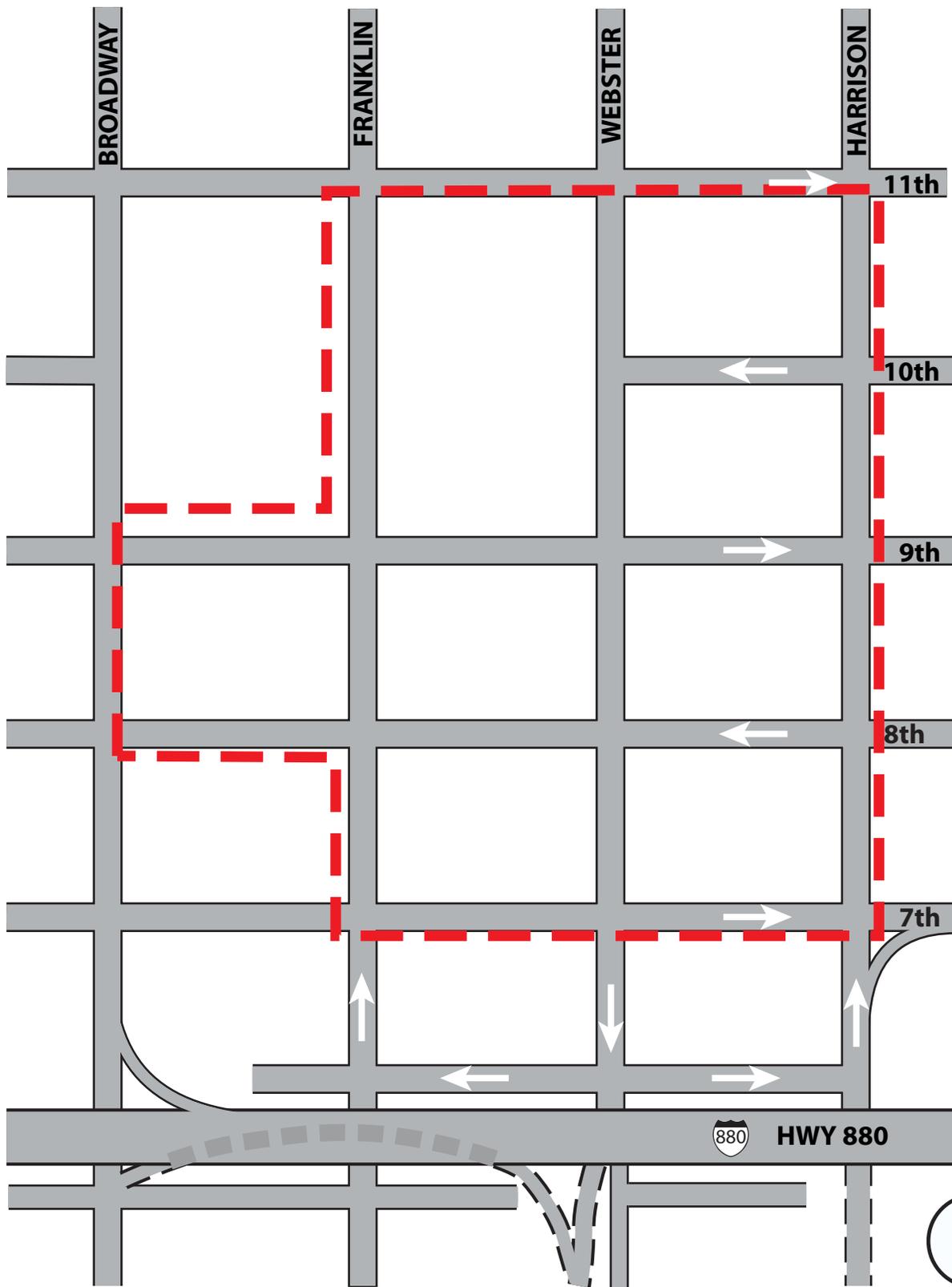
The center of downtown Oakland is located to the northwest of Oakland Chinatown. Immediately to the west is the Old Oakland district and immediately to the east is a residential area with some commercial and institutional uses. The area to the north consists mostly of commercial uses and I-880 forms the southern boundary of the study area.

3.1.1 Population Characteristics

Chinatown has a high percentage of elderly residents, many of whom speak little or no English. In 2000, approximately 37 percent of all residents living in the greater Chinatown area (between 6th and 14th Streets from Broadway to Alice Street, and between 6th and 12th Streets from Alice Street to Oak Street) were older than 65, compared to approximately 12 and 13 percent in Oakland and the Bay Area, respectively. About 20 percent were older than 75, compared to 5 percent in both Oakland and the Bay Area. Within the Chinatown area, there is a particularly high concentration of elderly between 7th and 12th from Broadway to Webster. In these blocks, approximately 43 percent were older than 61, and 23 percent were older than 75. Of those Chinatown residents 65 years old or older, 77 percent speak an Asian language but little or no English.

Because of its proximity to downtown Oakland and other commercial areas, many residents walk to work (39 percent). This percentage far exceeds figures for Oakland and the Bay Area (3.7 and 3.3 percent, respectively). Approximately 9 percent took AC Transit, and another 9 percent took BART. In all, 57 percent of all residents walk at some point during their trip to work (including walkers and those who take public transit). Comparatively few residents drive to work: 27 percent drove alone and 12 percent carpooled.

While there are low levels of home ownership (23 percent of residents are homeowners), there is a fairly stable population. In 2000, 57 percent of all residents lived in the same house as they had in 1995. (These figures are from the 2000 U.S. Census for Tracts 4030 and 4033, Block Group 2.)



3.1.2 Roadway and Circulation System

Oakland Chinatown streets are in a regular grid pattern with 280-foot long blocks in the north-south direction and 380-foot blocks in the east-west direction (Figure 2). All of the east-west (numbered) streets in Oakland Chinatown are one-way streets. The two north-south streets in the core of Oakland Chinatown, Franklin and Webster, are also one-way streets. Harrison Street is a one-way street within the core Chinatown area but becomes a two-way street north of 10th Street. Street widths are generally 56 feet, with some narrower (51 feet) and some wider (60 feet). All streets in Oakland Chinatown have sidewalks. Most streets have 12-foot wide sidewalks, except Franklin (13 feet wide) and 7th Street (11 feet wide).

All intersections within the study area are signalized, except for the intersection of 7th and Franklin Streets which is controlled by a stop sign on Franklin Street. Most of the other intersections within the core of Oakland Chinatown have pedestrian signal heads, as shown in Figure 3. In the study area, one intersection has pedestrian countdown signals: 9th and Franklin Streets. There are some locations where pedestrian signal heads are partly or fully missing, although pedestrian crosswalks exist at all intersections. Some of the pedestrian signal heads are missing at the intersections of 9th/Webster Streets, Broadway/8th Street, Broadway/9th Street, and Franklin/11th Streets. All intersections have curb ramps although a number do not meet current design standards for width and slope. According to the ADA (Americans with Disabilities Act) regulations, all curb ramps should be oriented to direct pedestrians to the opposite corner and to provide a direct connection between the sidewalk through zone and the crosswalk. This orientation is not met in most of the intersections, as the curb ramps generally direct pedestrians to the center of the intersection. This situation can create a potentially hazardous situation for disabled persons, and the upgrading of these ramps is desirable at all locations.

3.1.3 Public Transportation System

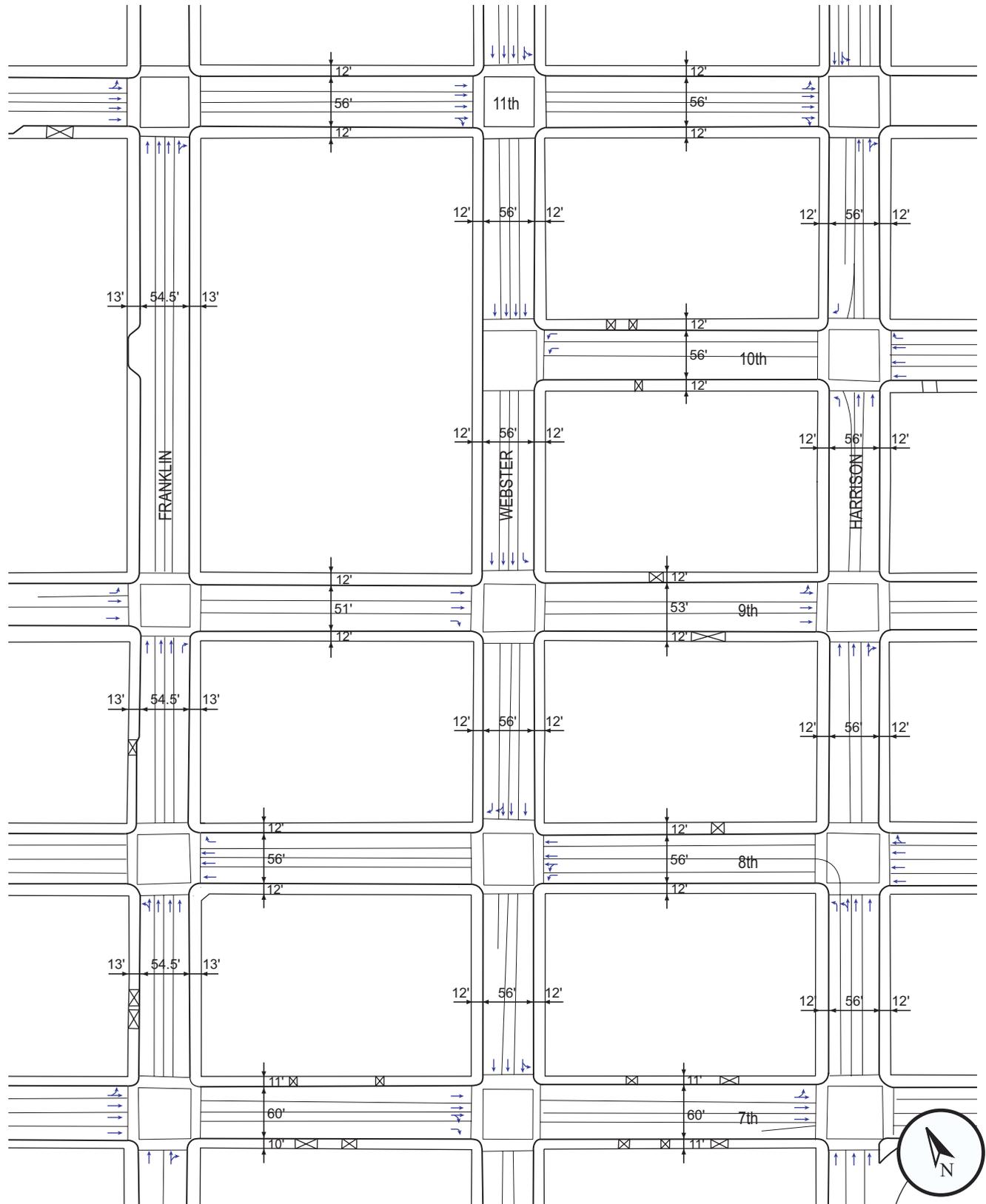
Oakland Chinatown has the best public transportation of any community in the East Bay. The 12th Street and Lake Merritt BART stations are each approximately a third of a mile from the center of Chinatown. Most of the major AC Transit bus lines have stops at the edge of the Chinatown core. Figure 4 presents existing BART and AC Transit routes and station locations.

3.1.3.1 Bay Area Rapid Transit (BART)

Two BART stations are each approximately 0.3 miles from the center of Chinatown. The 12th Street/City Center Station provides access to the Richmond, Pittsburgh/Bay Point, and San Francisco lines. The Lake Merritt Station provides access to the Fremont and Dublin/Pleasanton lines. The Chinatown Chamber and AHS surveys show that most Chinatown employees (59%) use the Lake Merritt BART Station while most residents and visitors use the 12th Street Station.

3.1.3.2 AC Transit

Thirteen Alameda-Contra Costa Transit (AC Transit) bus lines serve the Chinatown area. Table 1 shows the PM peak frequency of these lines. Figure 4 shows the location of bus lines and stops in the study area. Most of these stops are identified by a sign with the AC Transit logo and line numbers but do not have benches or shelters. The only exception is the northbound bus stop at the far side of Broadway and 7th Street which has a shelter.



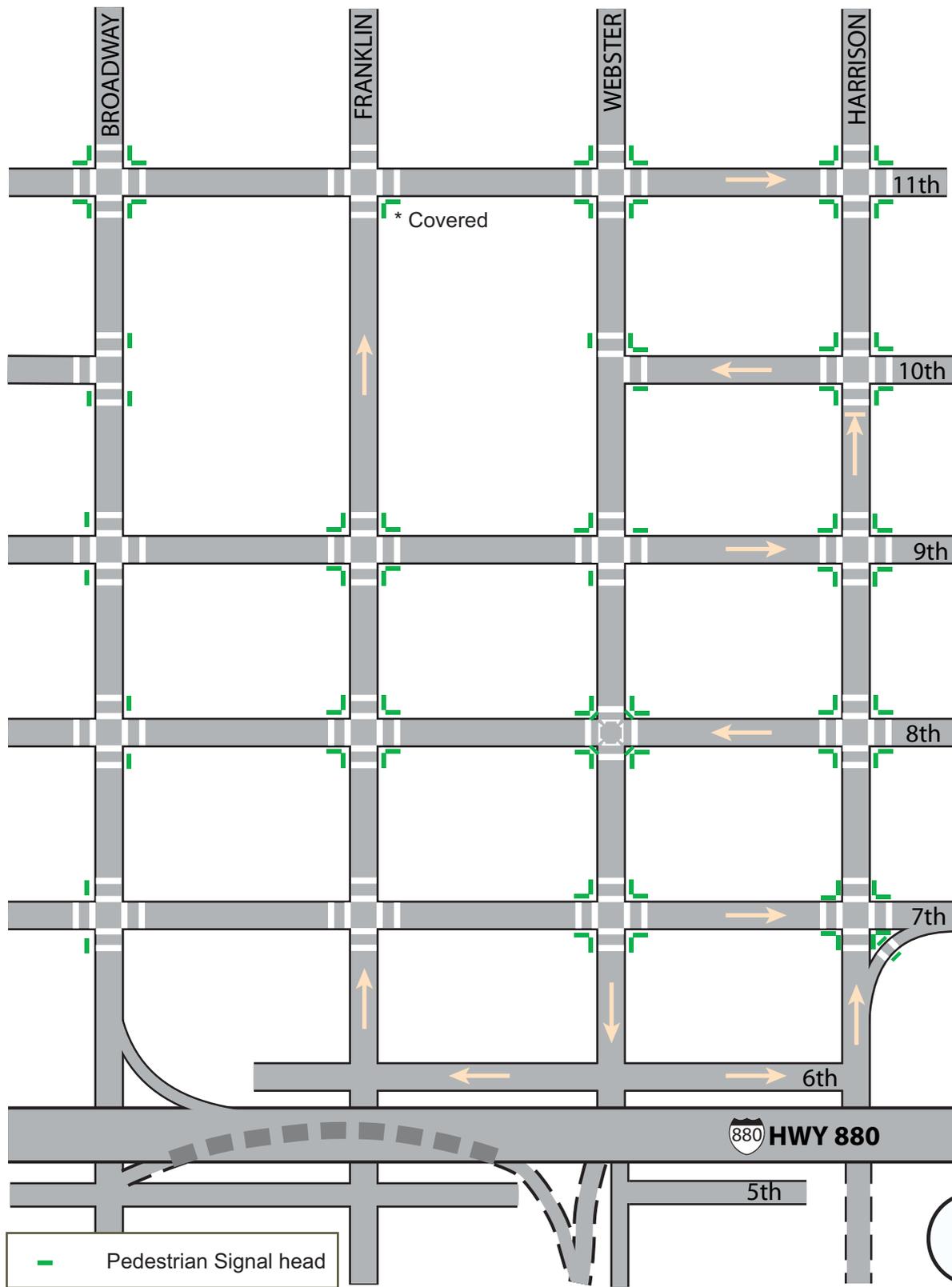


Figure 3
Existing Pedestrian Signal Heads and Crosswalks

Bus lines are generally located on the periphery of Chinatown. Due to the location of the routes, access to some bus stops requires crossing streets with high speed traffic, such as 7th and 11th Streets. Several seniors have indicated that pedestrian access and safety improvements to bus stops are needed.

Table 1 - AC Transit Bus Line Frequencies

Route	PM Peak Frequency
11 Harrison – Piedmont/Fruitvale Avenue	20 min.
15 Martin Luther King Jr. – El Cerrito Bart/Montclair	15 min.
19 Hollis – Berkeley Bart/Fruitvale Bart	30 min.
36X – Kaiser Center/Hayward	WB: 2 buses in AM; EB: 2 buses in PM.
40/40L/43 Telegraph – El Cerrito/Bay Fair	5 to 10 mins
50 Hegenberger – Fruitvale Bart/Alameda	30 min.
51 Broadway – Berkeley/Oakland/Alameda	8 min.
62 San Antonio – Wood St/Fruitvale Bart/Alameda	15 min.
72/72M San Pablo – Richmond/Downtown Oakland	15 min.
72R San Pablo Rapid– San Pablo/Downtown Oakland	12 min.
82/82L International – Hayward BART/Downtown Oakland	5 to 7 mins.
314 West Oakland Shopper – Alameda Senior Shuttle	WB: 2 buses per week; EB: 2 buses per week
O Santa Clara – Castro Street Shuttle (Transbay)	20 min.

Source: AC Transit

3.2 Policy Framework

This plan acknowledges the policy framework that has been adopted by the City of Oakland as documented in the *City of Oakland General Plan* (1998), the *City of Oakland Pedestrian Master Plan* (2002), and the *City of Oakland Bicycle Master Plan* (1999).

3.2.1 Street Circulation System and Functional Classification

Most of the streets within Oakland Chinatown are classified by the Oakland Public Works Agency as arterial streets which serve regional and inter-district traffic and have higher vehicular carrying capacities. Arterial streets include 7th Street, 8th Street, 11th Street, 12th Street, Broadway, Franklin Street, Webster Street, and Harrison Street. Tenth Street is a collector street, which means that it connects arterial and local streets and is capable of serving moderate traffic volumes. However, in the core of Chinatown, 10th Street is dead-ended at Webster Street by the Pacific Renaissance Plaza. For practical purposes, 10th Street is treated as a local street within the core. Both 6th and 9th Streets are designated as local streets, which are intended to provide access to adjacent properties. Figure 5 shows the functional classification of the streets within the study area.

3.2.2 Pedestrian Circulation System

All streets in Oakland Chinatown have sidewalks on both sides of the street. The *Oakland Pedestrian Master Plan* designates all streets in Chinatown as part of the downtown pedestrian district. For prioritization purposes, the Plan also designates Broadway, 8th, and 9th Streets as

Primary Pedestrian Routes and Webster Street as a Secondary Pedestrian Route. Figure 6 shows designated pedestrian routes and bikeways within the Chinatown core.

3.2.3 Bicycle Facilities

The City of Oakland's *Bicycle Master Plan* (1999) is the governing planning document for new bicycle facilities in the city. The plan identifies 7th Street, 8th Street, and Broadway between 6th and 7th Streets for proposed bicycle lanes (Class II bikeways). The Broadway corridor north of 7th Street is a special study area for proposed bikeways. The designation of pedestrian routes and bikeways within the core Chinatown area is shown in Figure 6. This figure also shows the location of bicycle racks in the core Chinatown area. A number of racks are provided on the west side of Harrison Street between 8th and 9th Streets with other racks scattered throughout the study area.

3.3 Traffic Conditions

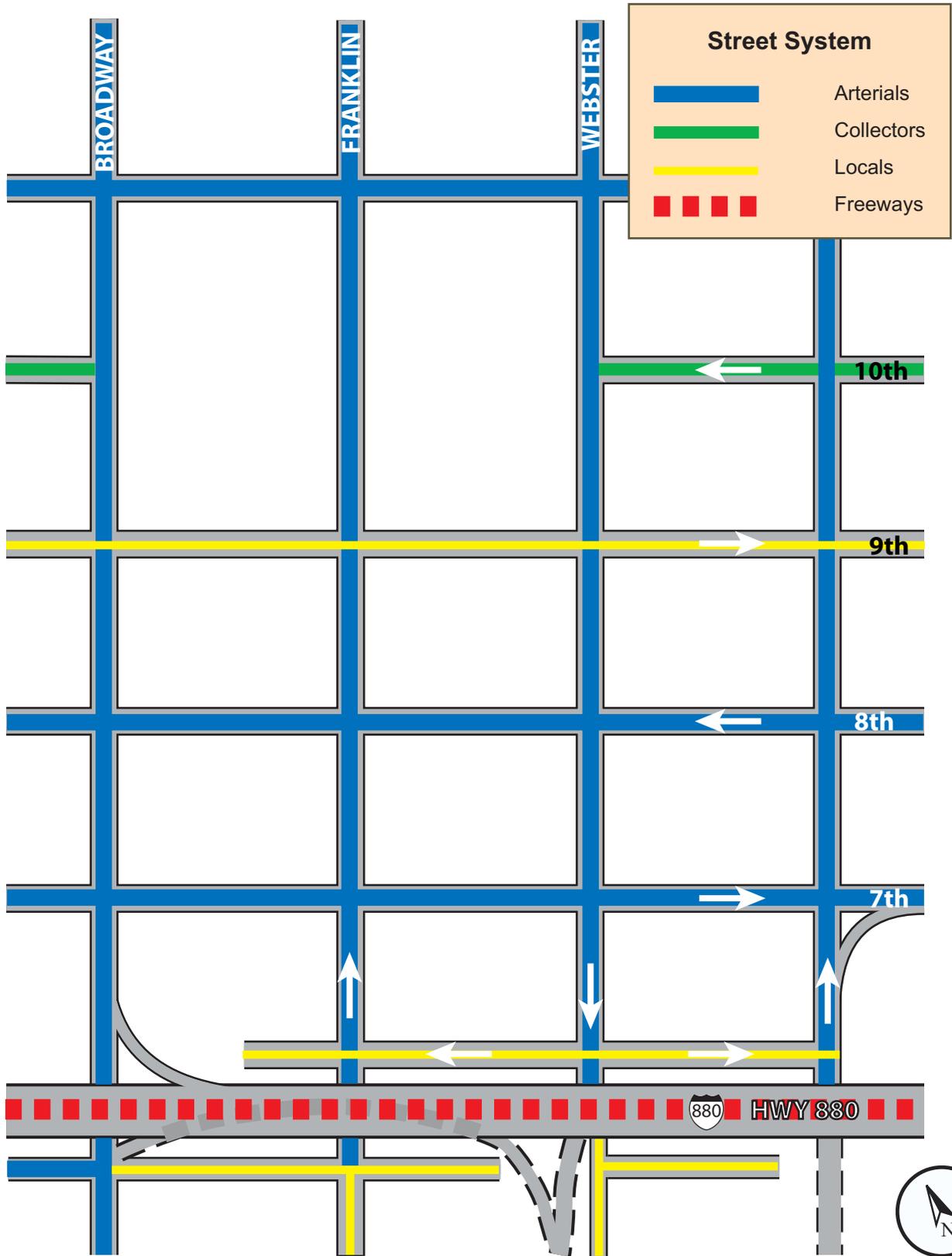
Traffic analyses based on traffic counts, video images, and field observations found that traffic congestion is caused by two types of problems:

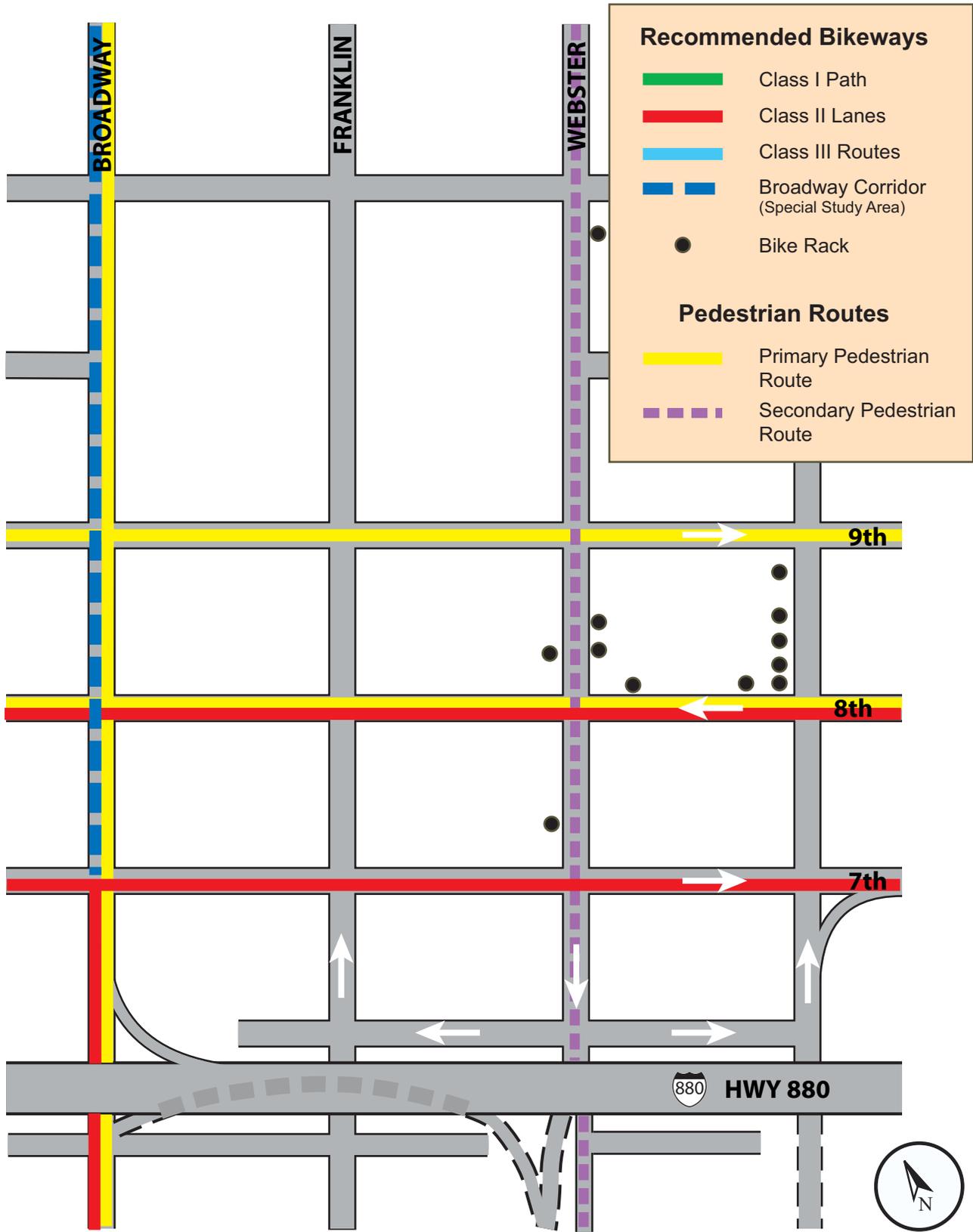
- Heavy traffic along Webster and Seventh Streets is caused by trips to and from the City of Alameda.
- Localized traffic congestion is caused primarily by double parking and the one-way street pattern. The one-way street pattern causes drivers to circle blocks to find parking or reach their destinations. In turn, these turning vehicles cause conflicts with crossing pedestrians and create delays at several core area intersections.

Traffic conditions were analyzed in terms of intersection operations and the impacts of the through traffic on congestion in Oakland Chinatown. Traffic volumes for the study intersections were obtained from the *Downtown Transportation and Parking Plan*, *Central Business District Traffic Signal Re-timing Project*, and *Alameda Point General Plan Amendment EIR*. To better understand the dynamic of traffic flow and to identify the trip origins and destinations with the study area, video images were collected from three locations on October 22, 2003 between 4:00 PM to 5:00 PM. Three cameras were used: at the northwest corner of Harrison Street and 7th Street to capture vehicles on Harrison Street; at the northeast corner of 8th Street and Franklin Street to capture 8th Street; and at the northeast corner of 9th Street and Webster Street to capture Webster Street.

3.3.1 Traffic Volumes

Traffic volumes along Chinatown's core streets are unevenly distributed. Traffic volumes and congestion are concentrated on a few streets, such as 8th and Webster Streets, while other streets have relatively low traffic volumes. Figure 7 presents turning movement volumes for the study intersections. Overall, the Chinatown core has more travel lanes than are needed to accommodate existing traffic volumes.





There are approximately 1,800 and 1,750 vehicles traveling in the northbound and southbound directions, respectively, during the PM peak hour along Franklin, Webster, and Harrison Streets. This volume equates to a need of approximately 5 travel lanes in the northbound direction and in the southbound direction. There are currently 6 to 8 lanes in the northbound direction and 5 to 6 lanes in the southbound direction along these three streets. There are approximately 1,550 and 1,200 vehicles traveling in the eastbound and westbound directions, respectively, during the PM peak hour along 7th, 8th, 9th, and 10th Streets. This volume equates to a need of approximately 4 travel lanes in the eastbound and 3 lanes in the westbound directions. Currently there are 7 lanes in the eastbound and westbound directions along these four streets.

3.3.2 Through Traffic

Through traffic is a longtime issue for the Oakland Chinatown community. Most of the complaints focus on the access to and from Webster and Posey tubes. Figures 8 and 9 show the tube traffic contribution to total traffic in Oakland Chinatown. During the PM peak hour, most of the traffic along Webster Street is through traffic going to the Webster tube (82 percent between 7th and 8th Streets and 55 percent between 8th and 9th Streets). Similarly, most of the traffic on Harrison Street is exiting from the Posey tube (82 percent between 7th and 8th Streets and 65 percent between 8th and 9th Streets). Additionally, almost half (47 percent) of the total traffic on 8th Street between Webster and Harrison Streets is Alameda traffic.

The key reasons for the concentration of through traffic on these streets are 1) approximately two thirds of all vehicles traveling in the Webster tube use Seventh/Webster intersection for access and the remaining one-third use Fifth/Broadway intersection, and 2) the existing one-way street pattern in Oakland Chinatown forces Alameda bound traffic to use these streets.

3.3.3 Intersection Operating Conditions

Traffic operating characteristics of intersections are described by the concept of level of service (LOS). LOS is a quantitative description of an intersection's performance based on the average delay per vehicle. Intersection LOS ranges from A, which indicates free flow or excellent conditions with short delays, to F, which indicates congested or overloaded conditions with extremely long delays. LOS A, B, C, and D are considered excellent to satisfactory service levels, while LOS E is undesirable and LOS F is unacceptable. LOS is the most commonly used method by local jurisdictions to assess intersection operating conditions. However, LOS should not be the only performance measure to explain traffic operating conditions in Oakland Chinatown. It is equally important to review the lane usage and signal operations as well as considerations that remain more difficult to quantify like pedestrian safety, business impacts, and the overall appeal of the street environment in determining intersection configuration.

Intersection LOS was evaluated using the *2000 Highway Capacity Manual* operations methodology. This method determines the capacity for each lane group approaching the intersection. LOS is based on average stopped delay per vehicle (in seconds) for the various movements within the intersection. Adjustments were made to the intersection analysis to reflect the impact of location specific conditions such as heavy pedestrian volumes, delays due to bus stops, and narrow lane widths. The level of service analysis was performed using SYNCHRO and the entire network was also simulated using the traffic simulation model SIMTRAFFIC. Table 2 presents the LOS and delay data for the study intersections.

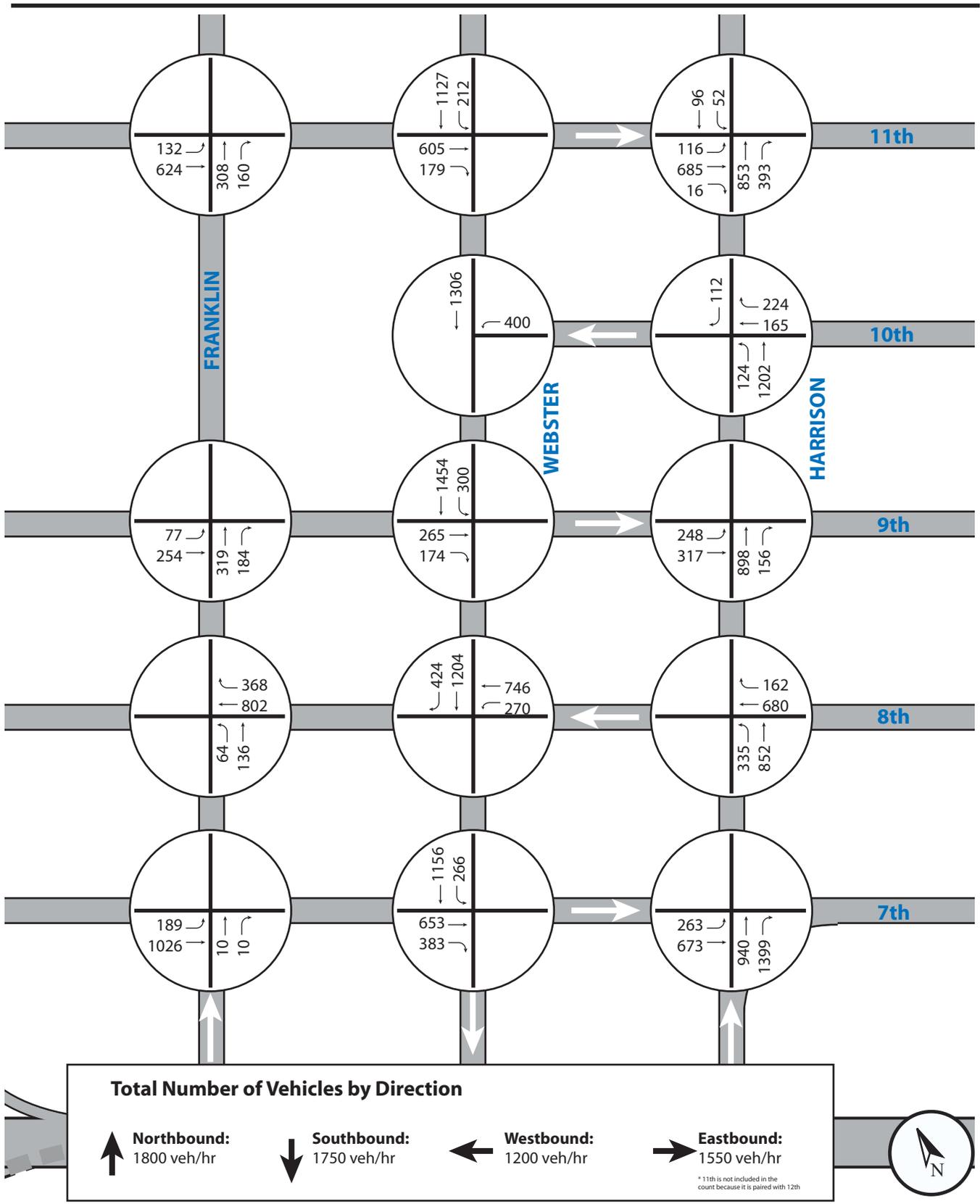


Figure 7
Existing PM Peak Hour Traffic Turning Movements

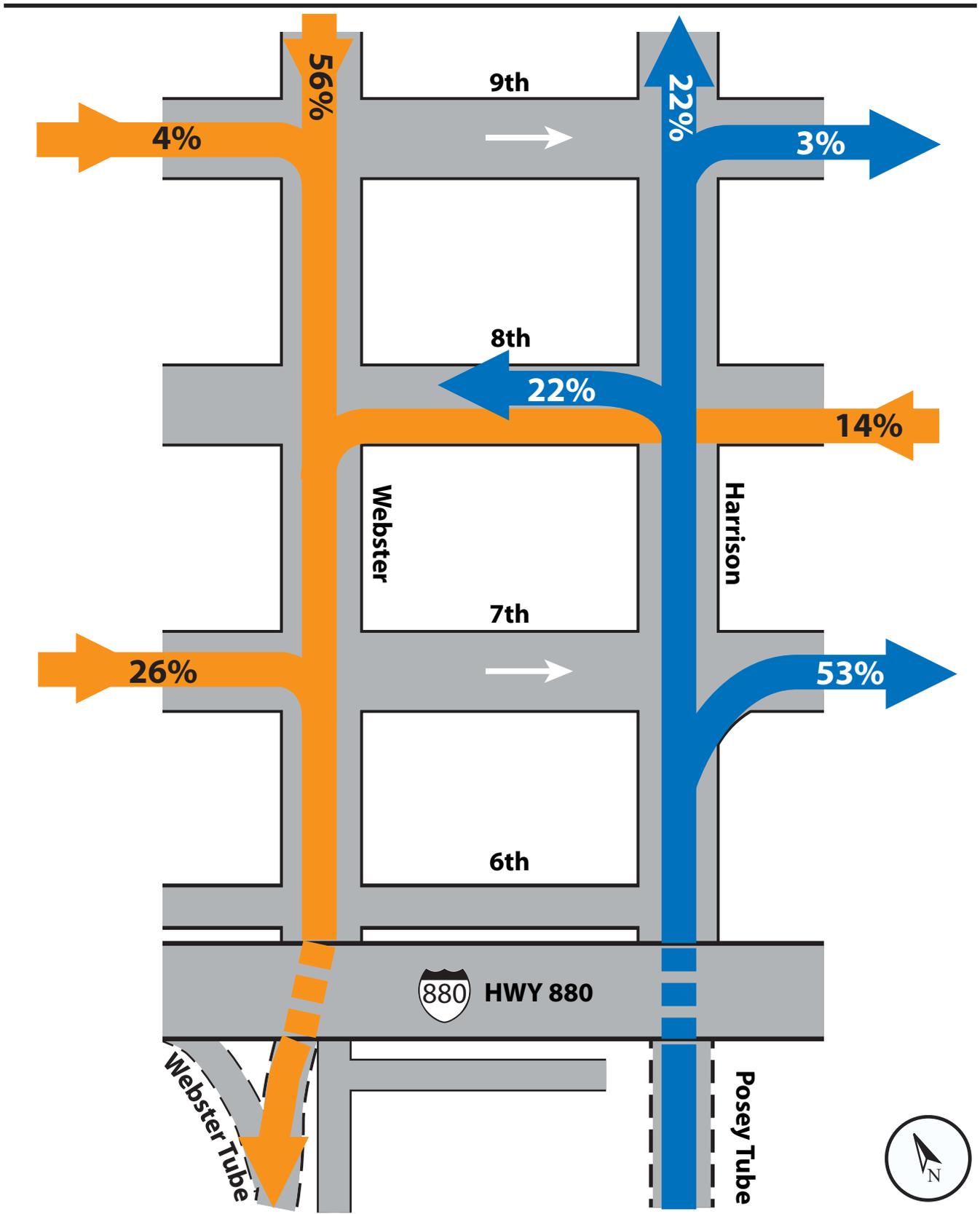


Figure 8
Webster and Posey Tube Traffic Distribution Pattern

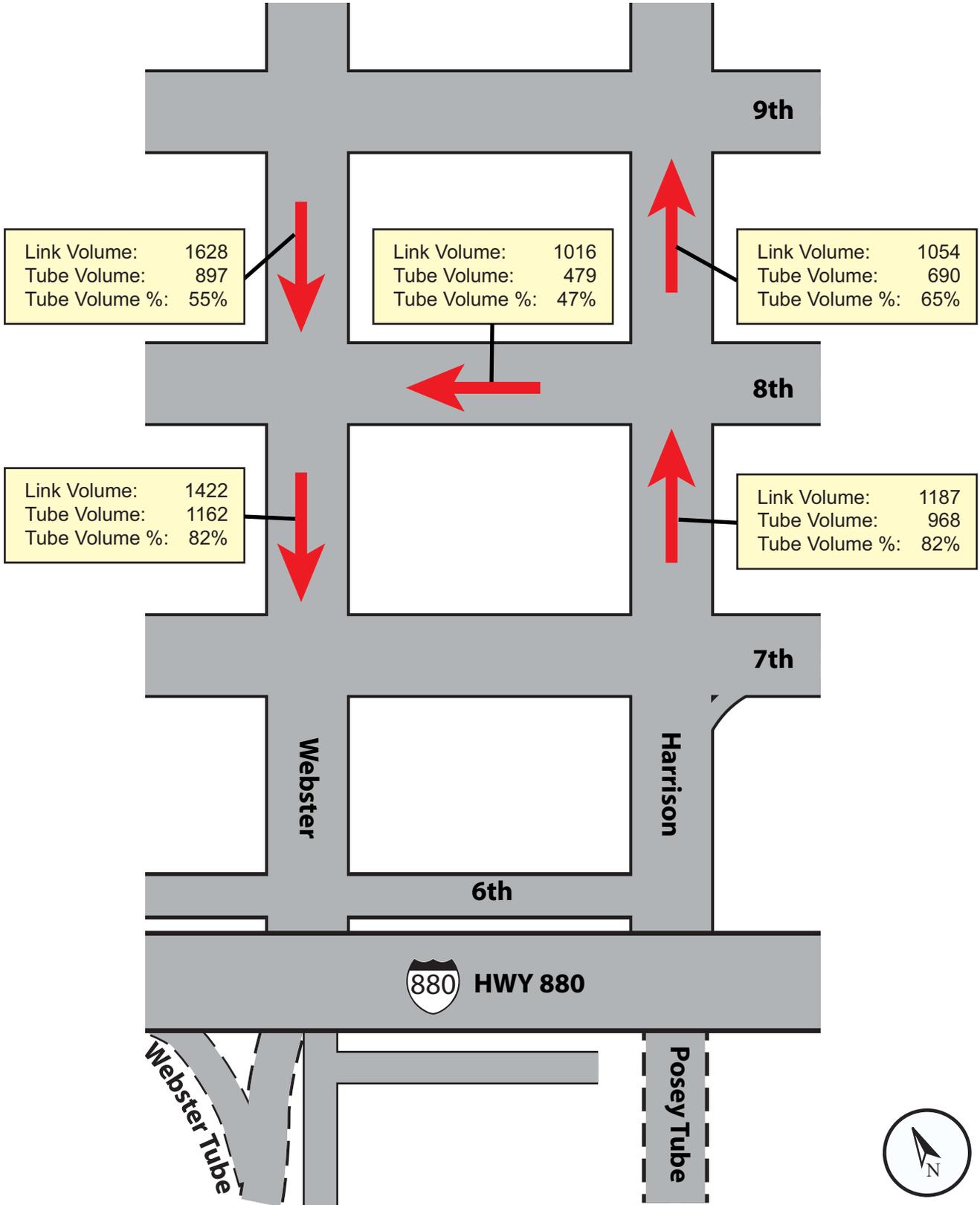


Figure 9
Estimated Alameda Traffic in Oakland Chinatown

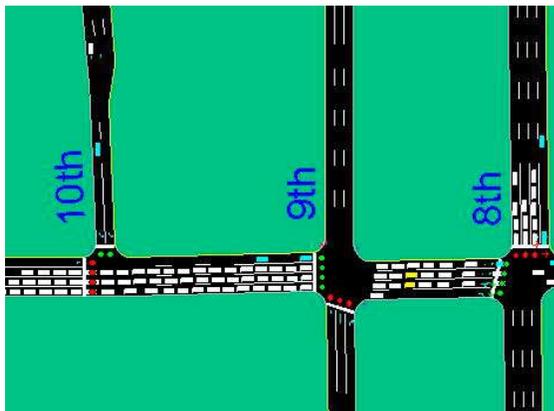
Table 2 - Intersection Level of Service: Existing Weekday PM Peak Hour

Intersection	Delay (sec./veh.)	LOS
Franklin Street/7 th Street	30.4	D
Franklin Street/8 th Street	42.8	D
Franklin Street/9 th Street	12.8	B
Franklin Street/11 th Street	7.7	A
Webster Street/7 th Street	13.1	B
Webster Street/8 th Street	65.6	E
Webster Street/9 th Street	13.8	B
Webster Street/10 th Street	5.2	A
Webster Street/11 th Street	9.3	A
Harrison Street/7 th Street	12.2	B
Harrison Street/8 th Street	8.4	A
Harrison Street/9 th Street	8.4	A
Harrison Street/10 th Street	12.6	B
Harrison Street/11 th Street	26.7	C

Source: CHS Consulting

Notes: 1. Delay values are not actually measured in the field, but are estimated based on calculations of existing traffic volumes.

Table 2 shows that all study intersections operate at an acceptable LOS of D or better, except for the intersection at 8th and Webster Streets (LOS E). Although the overall level of service for most of the intersections shows an acceptable condition, severe traffic delay and queuing were observed along Webster Street during the PM peak period. This is primarily caused by the high traffic volume, current signal offset design, and imbalanced lane utilization.



SIMTRAFFIC Image



Video Image of Webster Street

Both the video images and the simulation model runs show that southbound traffic on Webster Street backs up from 8th Street to beyond the 11th Street intersection. The southbound approach operates at a LOS E. The results shown by the model may demonstrate a better operating condition because it does not recognize the lane preference and skewed lane utilization.

Field observations show that traffic conditions in the core of Oakland Chinatown reach congested levels only during the PM peak period and sometimes during the weekend midday period. Traffic volumes are generally moderate and intersection delays are usually minor during other times of the day. Localized traffic congestion and delays do occur and are usually caused by double parked vehicles or right turn/left turn vehicles at intersections. Localized congestion is concentrated at the four core intersections, Webster and 8th, Webster and 9th, Franklin and 8th, and Franklin and 9th.

Webster Street and 8th Street have moderately high traffic volumes throughout the day, especially during the PM peak hour. Northbound traffic exiting from the Posey tube in Alameda and continuing eastbound on 7th Street creates high traffic volumes and long vehicle queuing along 7th Street, especially during the AM peak hour.

3.4 Parking and Loading Conditions

Parking is a key transportation issue for Oakland Chinatown. General concerns expressed by the community include the lack of parking and the need for additional parking facilities. There is a high incidence of double parking by both commercial and private vehicles, private vehicles parking in loading and red zones, and parking durations exceeding time limits.

On-street parking data were collected for the core area between 7th and 10th Streets, and Franklin and Harrison Streets (with 9th Street surveys extended to Broadway) between August 5, 2003 and August 17, 2003. They included on-street parking supply, occupancy, and duration by type of spaces and vehicles on three weekdays (Tuesday, Wednesday, and Thursday), and two Sundays, from 10:00 AM to 4:00 PM. Double parking locations, duration, and vehicle type were collected for the same time periods. Off-street parking data were collected between August 5, 2003 and August 10, 2003. They include an inventory of off-street parking facilities and midday occupancy for weekdays and Sunday (10:00 AM to 1:00 PM).

3.4.1 Off-Street Parking Analysis

There are 34 off-street parking garages and lots in the study area (Figure 10) of which 17 are publicly accessible. There are a total of 665 public parking spaces in the core of Oakland Chinatown. Facilities reserved for residential parking and employee parking are noted on Figure 10, but not included in the total counts. However, facilities reserved for specific businesses were included. In the immediate vicinity of the core of Oakland Chinatown, there are an additional 2,919 public parking spaces.

Most of the parking spaces charge two to three dollars per hour for short-term parking, except the Pacific Renaissance Plaza building which charges one dollar per hour. Parking at some off-street facilities is actually cheaper than parking at metered spaces on the street.

Within the core, facilities were about 50 percent full on weekdays and 85 percent full on Sundays. It should be noted that the Pacific Renaissance Plaza garage accounts for 87 percent of core spaces. Facilities outside of the core are primarily used by downtown employees; on weekdays, occupancy rates were around 70 percent while Sunday occupancy rates were only 12 percent. Regardless of the cheaper parking fees and relatively low occupancy rates at Renaissance Plaza garage during weekdays, the high incidence of double parking and people circulating blocks to find on-street parking suggests that people are looking for free and/or convenient parking near their destinations.

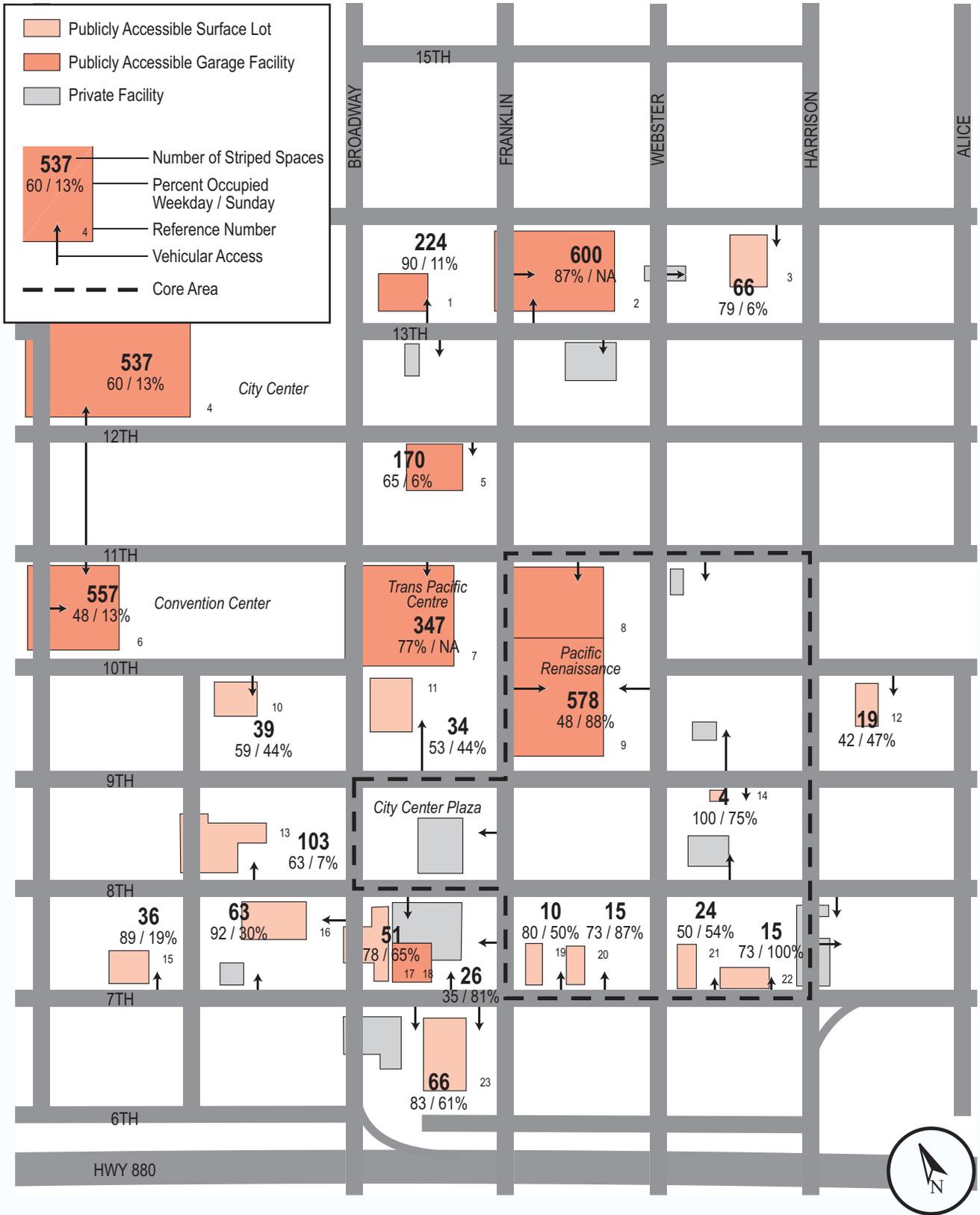
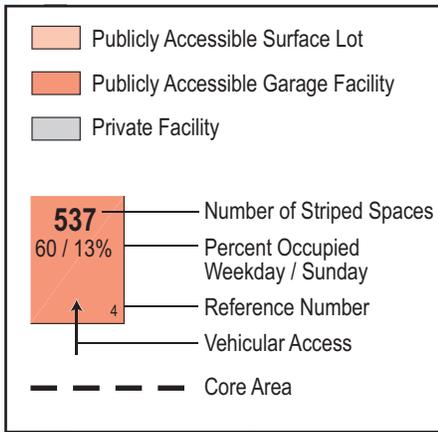


Figure 10
Existing Off Street Parking Locations and Occupancy

Several major parking facilities in the vicinity of Oakland Chinatown are not open on weekends or have very low occupancy. There may be an opportunity to better utilize these facilities to meet the parking demand in Oakland Chinatown.

3.4.2 On-Street Parking and Loading Analysis

In general, on-street parking in the study area is fully occupied throughout the day, both on weekdays and weekends. Table 3 presents a summary of parking survey data. On weekdays, drivers generally adhere to time limits. Average parking durations are much longer on Sunday, with many more “long-term” parkers, due to a lack of enforcement. Restrictions on white zones are also generally disregarded on Sundays. The number of vehicles parking in red zones is 60 percent higher than on weekdays, and average durations 55 percent longer. Parking in red zones often decreases visibility of pedestrians at intersections. Sunday violations therefore pose a greater threat to public safety due to the increased number of pedestrians and vehicles in the area.

Table 3 - Weekday and Sunday Parking Supply and Usage by Space Type

Type	Supply	Occupancy		Average Parking Duration ¹		Long-Term Occupancy ²	
		Weekday	Sunday	Weekday	Sunday	Weekday	Sunday
Metered							
30-Minute	35	93%	98%	0:32	1:38	6%	34%
1-Hour	119	92%	99%	0:41	1:50	6%	50%
2-Hour	21	94%	100%	0:45	3:36	19%	76%
Yellow (Commercial Loading)	42	77%	97%	0:38	1:31	19%	36%
White (Passenger Loading)	9	47%	86%	0:09	0:46	0%	14%
Red (Clear Zone)	-	13%	27%	0:11	0:17	-	-
Blue (Handicapped Parking)	1	87%	97%	0:45	1:27	-	-
Police	1	6%	57%	0:06	0:16	-	-
No Restriction	3	99%	99%	4:48	2:32	66%	66%

Source: CHS Consulting

- Notes: 1. Format of duration is in hours:minutes.
2. Spaces occupied by one car for more than 5 out of the 6 hours surveyed.

Commercial loading zones, or yellow zones, are scattered throughout the area, usually in front of grocery stores and restaurants (Figure 11). The numbers in Table 3 reflect the behavior of all vehicles, even though non-commercial vehicles are prohibited from parking in yellow spaces. On weekdays, about 85 percent of the vehicles using yellow zones are non-commercial vehicles. Of the total time yellow zones are occupied, 82 percent is by a non-commercial vehicle. On Sundays, the demand for yellow zones by commercial vehicles is substantially lower; almost all vehicles observed in yellow zones were non-commercial vehicles.

3.4.3 Double Parking Analysis

Double parking is a major problem in the core, as shown in Table 4. Both commercial and non-commercial vehicles were observed double parking. Double parking by non-commercial vehicles is exacerbated on Sundays with the increased incidence of vehicles parking all day long in on-street spaces. While the California Vehicle Code allows commercial vehicles to double park for active delivery if there is no yellow zone available, double parking impedes traffic flow and poses a safety hazard to drivers, pedestrians, and delivery people.



Commercial vehicle double parking is generally limited to weekdays. Few commercial vehicles were observed on Sunday (less than 2 percent of all vehicles, parked or double parked). While weekday commercial vehicle double parking occurs throughout the day, it is heaviest during morning hours. Field observations showed an extremely high incidence of commercial vehicle double parking in the early morning hours (8:00 AM to 9:30 AM). Additionally, some blocks with high concentrations of retail uses do not have yellow zones, including the east side of Webster Street between 9th and 10th, the south side of 9th Street between Webster and Harrison, and the north side of 7th Street between Webster and Harrison. A spatial analysis of blocks showed that these areas had high levels of commercial double parking. Other areas with heavy double parking included the south side of 10th Street between Webster and Harrison, the north side of 8th Street between Franklin and Webster, and the west side of Webster Street between 7th and 8th.



Finally, many of the yellow zones are occupied by non-commercial vehicles during the day, further decreasing the availability for commercial vehicles.

Table 4 - Weekday and Sunday Double Parking by Vehicle Type

Vehicle Type	Double Parked Vehicles (% of Total Observed)		% of All Double Parked Vehicles		% of Total Double Parking Time		Average Duration	
	Weekday	Sunday	Weekday	Sunday	Weekday	Sunday	Weekday	Sunday
Commercial	66%	64%	18%	2%	39%	4%	10 min	9 min
Non-Commercial	27%	59%	82%	98%	61%	96%	3 min	4 min
Total	33%	59%	100%	100%	100%	100%	4 min	4 min

Source: CHS Consulting

3.5 Pedestrian Conditions

Sidewalks in the Chinatown core are often congested from sidewalk displays of produce and merchandise as well as from families or groups congregating on the sidewalks. Additionally, people frequently use walkers or shopping carts that require additional space. All of these “causes” of congestion are what make Oakland Chinatown an interesting and vibrant district.

Pedestrian collision rates are extremely high and were higher during the 1998-2002 period than the 1996-2000 period. The number of collisions was higher during the PM peak hour and over 50 percent of these collisions involved people 50 years and older. The 7th and Franklin Street intersection had the highest number of pedestrian collisions among all intersections within Oakland Chinatown, matching the intersection with the highest number of collisions in the entire City of Oakland during 1996-2000 period.

The City of Oakland recently installed a pedestrian scramble signal and modified crosswalk markings at the intersection of 8th and Webster Streets. Signage for the scramble intersection is limited to “no turn on red” signs. An evaluation of the scramble intersection found that the scramble phasing improved pedestrian safety by reducing conflicts and crossing violations.¹ However, the impact on vehicular traffic was not identified and further study is warranted to better understand the scramble systems’ overall value to the community.

The crosswalk on the south side of the 10th/Webster intersection was recently eliminated to avoid conflicts between turning vehicles and crossing pedestrians. To prevent pedestrians from crossing, a guardrail with a “no pedestrian crossing” sign was installed at this location. Field observations and surveys showed pedestrian crossings at this location in spite of the barrier.



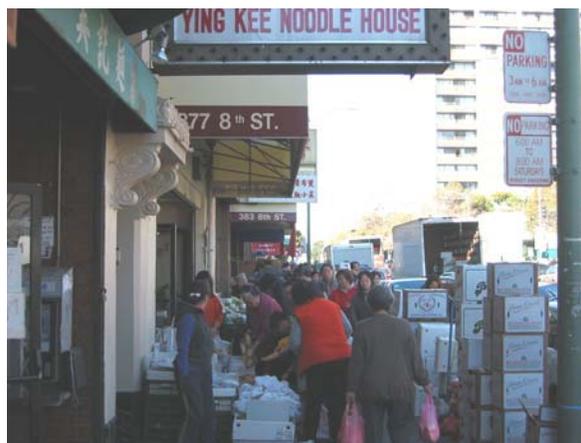
Modifications at 10th/Webster Streets

¹ Allyson K. Bechtel and David R. Ragland. 2003. *Oakland Chinatown Pedestrian Scramble: An Evaluation*. Traffic Safety Center, University of California, Berkeley.

Crosswalk and street corner counts were performed on weekdays and Sundays for three intersections where pedestrian volumes are generally the highest: 10th/Webster Streets, 9th/Webster Streets, and 8th/Franklin Streets. Weekday and Sunday mid-block pedestrian counts were conducted on 8th Street, between Franklin and Harrison Streets.

3.5.1 Sidewalk/Crosswalk/Street Corner Operating Conditions

Pedestrian volumes in the core area are moderate to high during the peak period between 11:00 AM to 2:00 PM, especially on Sundays. This includes Webster Street between 7th and 10th Streets, Franklin Street between 8th and 9th Streets and 8th Street between Webster and Franklin Streets. Other streets in Oakland Chinatown have low to moderately high pedestrian volumes.



Existing Sidewalk Condition

Effective sidewalk widths (clear walkways for pedestrian circulation) are narrowed at several locations due to the presence of merchandise displays on the sidewalk, shoppers milling in front of those displays, street furniture, parking meters, active loading and unloading, and street lighting and traffic sign poles. In the most congested areas, the effective sidewalk width is as narrow as two feet.

Vendor displays occur generally in front of grocery and produce markets. These stores are mostly concentrated along 8th Street (from Franklin to Harrison Streets) and Webster Street (from 7th to 9th Streets). Some vendor displays occupy approximately 25 percent of the sidewalk width, while others occupy up to 75 percent of the sidewalk width, leaving an effective width of two feet for pedestrian movement. Some storeowners also use on-street parking spaces for temporary storage of boxes and pallets, causing pedestrian, parking, and traffic circulation impacts.

Pedestrian Level of Service (LOS) analyses were conducted, using the method established in the *Highway Capacity Manual*, for all of the corners of 10th and Webster Streets, 9th and Webster Streets, and 8th and Franklin Streets. The LOS of each corner is based on the available square feet per person waiting at the corner immediately prior to the green pedestrian phase. All of the corners operate at LOS C or better. In other words, the corner space is sufficient to accommodate the number of pedestrians waiting to cross the street and turning the corner. It is noted that during certain phases there is a surge in pedestrian volumes and level of service analysis provides only an average value. It is acknowledged that the intersection of Webster and 8th Streets, as a scrambled intersection (where there is a pedestrian-only phase in the signal timing), is expected to have a higher concentration of pedestrians on corners. Field observations show that corners are often quite crowded with pedestrians who are waiting to cross getting forced into the street.

Pedestrian Level of Service analyses for crosswalks were also conducted for the studied intersections. All operate at a LOS B or better condition. This indicates that the crosswalks are sufficiently wide and that pedestrians are able to move freely across them. The LOS of the scramble

intersection at 8th/Webster Street was not analyzed. However, given the fact that the entire intersection area is available to pedestrians, the pedestrian crossing area in the scramble intersections is expected to easily accommodate all of the pedestrians.

Mid-block Level of Service analyses were performed on 8th Street between Franklin and Harrison Streets where pedestrian activity is the highest in Oakland Chinatown. Where no vendor displays are present (effective walkway width of about 7 feet), the sidewalk LOS is B. At certain locations where vendor displays occupy approximately 75 percent of the entire sidewalk, (effective walkway width of about two feet), sidewalk LOS is reduced to an unacceptable LOS E.

3.5.2 Collision Data

Vehicle and pedestrian collision data for a five-year period between 1998 and 2002 were reviewed for the intersections within the study area. Table 5 summarizes the collisions by location and severity and Figure 12 shows their locations

Table 5 - Pedestrian Collisions by Location and Severity

Intersection	Number of Collisions (1998 to 2002)			
	Collision	Fatal	Injury	Non-Injury
7th St. Franklin St.	11	0	10	1
7th St. Webster St.	3	0	1	2
7th St. Harrison St.	2	0	2	0
8th St. Franklin St.	5	0	2	3
8th St. Webster St.	5	1	3	1
8th St. Harrison St.	1	0	1	0
9th St. Franklin St.	1	0	1	0
9th St. Webster St.	5	0	5	0
9th St. Harrison St.	3	0	2	1
10th St. Webster St.	4	0	4	0
10th St. Harrison St.	0	0	0	0
11th St. Franklin St.	5	0	3	2
11th St. Webster St.	2	0	1	1
11th St. Harrison St.	3	0	3	0
TOTAL	50	1	38	11

Source: SWITRS data

There were a total of 50 collisions involving pedestrians during the five years between 1998 and 2002. Of the 50 collisions, one resulted in a fatality, 38 in injuries, and 11 had no injuries. It should be noted the actual number of pedestrian collisions might be higher, because the data only includes reported collisions. Additionally, these data do not include fatalities caused by collision injuries that occurred after the time of the collision. Comparisons were also made with the pedestrian/vehicle collision data provided in the *Pedestrian Master Plan* for the five-year period between 1996 and 2000. The comparison is effectively between the periods 1996 to 1998 and 2000 to 2002.

The intersection with the highest number of collisions was Franklin and 7th Street, with 11 collisions over the five-year period between 1998 and 2002. This intersection was ranked 4th citywide in the *Oakland Pedestrian Master Plan*, with 9 collisions from 1996 to 2000. There is no citywide ranking available for the City of Oakland for the period between 1998 to 2002. However, the most dangerous intersection for pedestrians in the City of Oakland presented in the *Pedestrian Master Plan* also had 11 collisions within a five-year period (1996 to 2000).

The intersections of 8th/Franklin Streets, 8th/Webster Streets and 9th/Webster Streets all had five collisions from 1998 to 2002. These intersections were not included in the top ten lists presented in the *Pedestrian Master Plan*. For the top ten ranked collision streets by total number of collisions, Webster Street ranked 10th with 38 pedestrian/vehicle collisions over the five-year period from 1996 to 2000.

The greatest number of collisions in Oakland Chinatown occurred during the PM peak period between 4:00 PM and 6:00 PM. Over 50 percent of all pedestrian/vehicle collisions in Oakland Chinatown involved pedestrians 50 years and older and 40 percent of all pedestrian collisions involved pedestrians 61 years and older. (Note that 37 percent of all residents are over 61 years old.) Table 6 shows the collision breakdown by age group.

Table 6 - Pedestrian Collisions by Age Group

Age Group	Number of Pedestrian/Vehicle Collisions (1998 to 2000)	Percent of Total
0 – 10 years	2	4
11 – 20 years	1	2
21 – 30 years	4	8
31 – 40 years	5	10
41 – 50 years	8	16
51 – 60 years	6	12
61 – 70 years	10	20
Over 71 years	10	20
Unknown	4	8
TOTAL	50	100

Source: SWITRS data

Of the 14 intersections studied, 13 intersections had at least one pedestrian-related collision reported within the five-year period from 1998 to 2002. All five intersections on Webster Street had two or more reported collisions within the study period. Harrison Street at 10th Street was the only intersection that had no reported pedestrian/vehicle collisions.

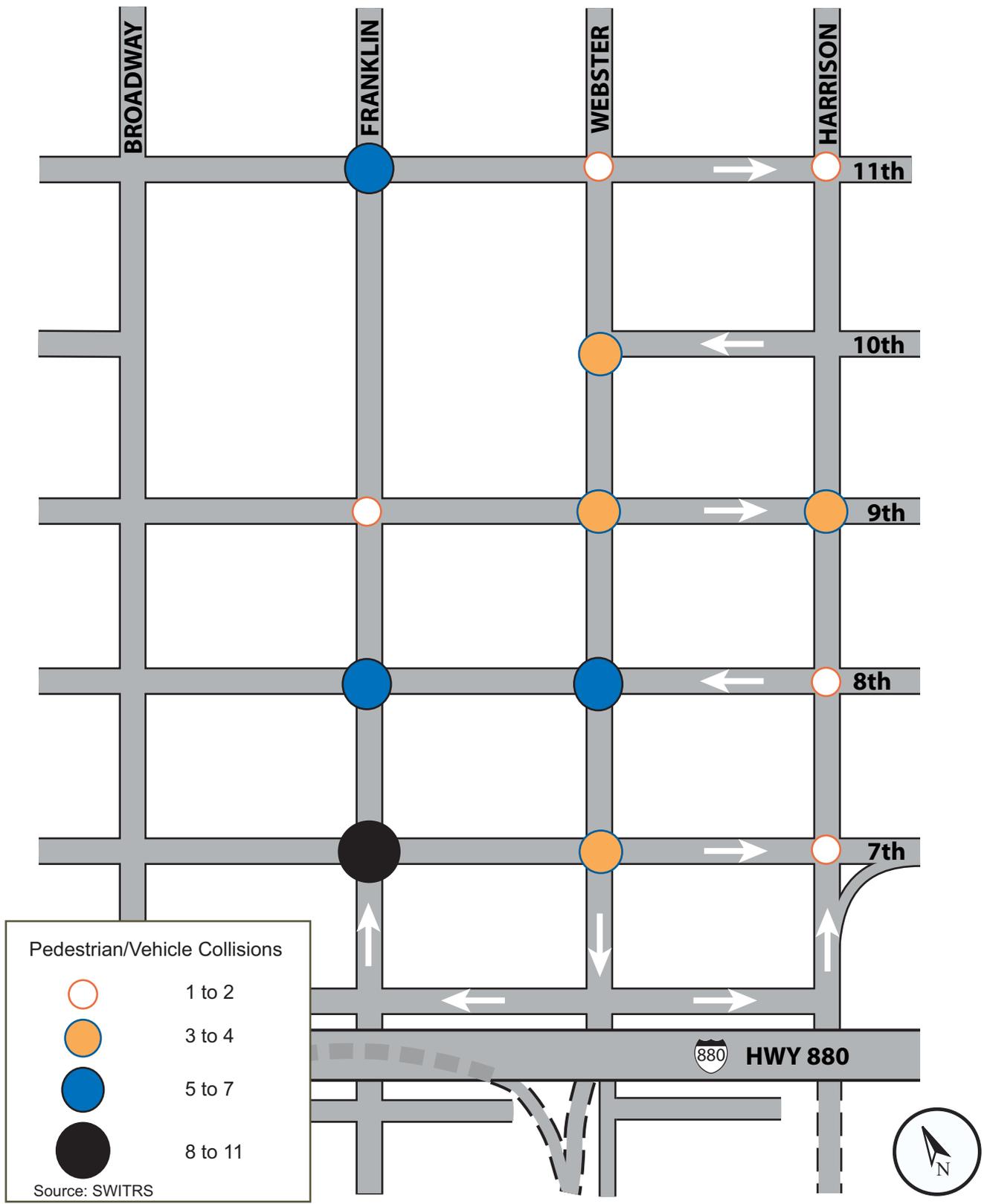


Figure 12
Pedestrian Collisions (1998-2002)

4.0 PROJECT ALTERNATIVES

Following the data collection and analysis phase, three “themes” were introduced to the community and subsequently used to develop project alternatives. The themes are:

- Theme 1 – Increase Short-Term On-Street Parking
- Theme 2 – Widen Sidewalks
- Theme 3 – Widen Sidewalks and Balance Traffic Flow

Five traffic circulation alternatives were identified and analyzed. These alternatives were identified to reflect different combinations of the three themes:

- Alternative #1 – Current circulation pattern with four additional scramble intersections
- Alternative #2 – Current circulation pattern with sidewalk widening
- Alternative #3 – Two-way street circulation with sidewalk widening
- Alternative #4 – Two-way street circulation without sidewalk widening
- Alternative #5 - Alternative #4, except Webster remains one-way southbound

4.1 Definition of Project Alternatives

This section defines the alternatives and states all assumptions made in the analysis. The following basic improvements are assumed for all alternatives:

- Corner bulb-outs at five core area intersections (8th/Franklin, 9th/Franklin, 8th/Webster, 9th/Webster, and 10th/Webster)
- Pedestrian scramble signals at four additional intersections, 8th/Franklin, 9th/Franklin, 9th/Webster, and 10th/Webster
- Diagonal parking along 10th Street between Webster and Harrison Streets and along Franklin Street between 6th and 7th Streets with a two-lane, two-way configuration
- Signalization of the 7th and Franklin intersection.
- Traffic signal cycle length unchanged (45 seconds for non-scramble intersections and 90 seconds for scramble intersections) but offsets adjusted to provide optimal synchronization of signal operations.

4.1.1 Alternative 1 – Basic Improvements

This alternative provides a metric with which the other alternatives are compared. It includes the five basic improvements (projects with consensus in Oakland Chinatown) as presented above.

Table 7 presents the street configurations, including sidewalk widths and number of lanes. Figure 13 presents the lane configuration for this alternative.

Legend

-  Diagonal Parking
-  Direction and number of lanes
-  Intersection Signalization
-  Corner Bulbout
- S** Pedestrian Scramble Signal

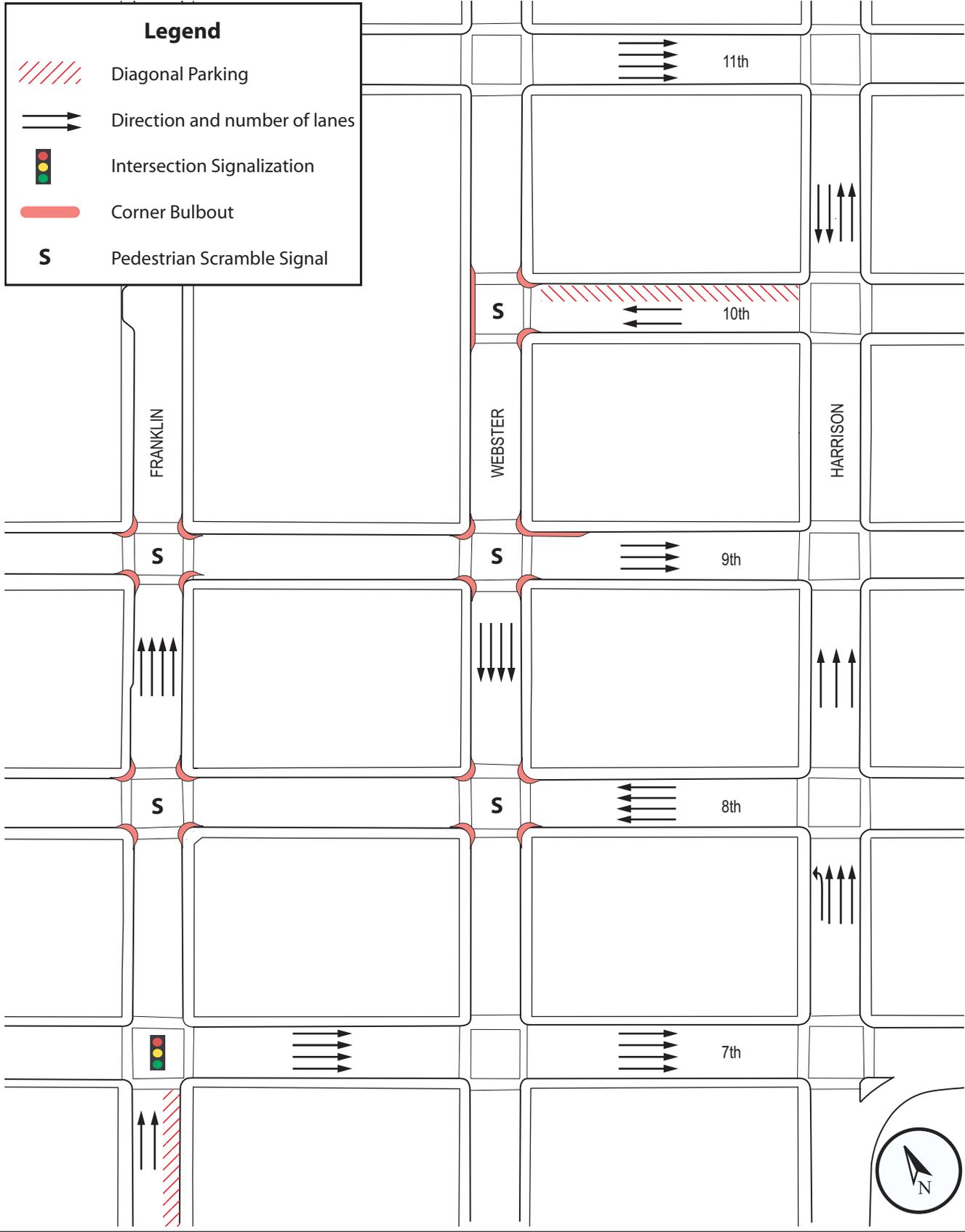


Figure 13
Baseline Conditions

Table 7 – Existing Sidewalk Width and Number of Travel Lanes

Street	Sidewalk Width (in feet)	Street Width (in feet)	Number of Lanes
Franklin Street	13	54.5	4
Webster Street	12	56	4
Harrison Street	12	56	3 to 4
7 th Street	10 to 11	60	4
8 th Street	12	56	4
9 th Street (Franklin to Webster)	12	51	3
9 th Street (Webster to Harrison)	12	53	3
10 th Street	12	56	3

4.1.2 Alternative 2 – Basic Improvements plus Sidewalk Widening

This alternative was developed to improve pedestrian activity in the Chinatown core. In addition to the five common elements above, it also includes the widening of sidewalks along Franklin and Webster Streets (between 8th and 10th Streets) and 8th and 9th Streets (between Franklin and Harrison Streets) by 2 to 4 feet (to total widths of 14 to 17 feet). This improvement would require the removal of one travel lane from Franklin, Webster, and 8th Streets in the Chinatown core. This alternative does not change traffic circulation patterns. Table 8 shows the sidewalk and roadway widths, and number of travel lanes for each street. Figure 14 presents the lane configuration for this alternative.

Table 8 – Sidewalk Widths and Number of Travel Lanes for Alternative 2

Street	Sidewalk Width (in feet)		Street Width (in feet)		Number of Lanes	
	Current	Proposed	Current	Proposed	Current	Proposed
Franklin Street	13	17	54.5	46.5	4	3
Webster Street	12	16	56	48	4	3
Harrison Street	12	12	56	56	3 to 4	3 to 4
7 th Street	10 to 11	10 to 11	60	60	4	4
8 th Street	12	16	56	48	4	3
9 th Street (Franklin to Webster)	12	14	51	47	3	3
9 th Street (Webster to Harrison)	12	15	53	47	3	3
10 th Street	12	12	56	56	3	2

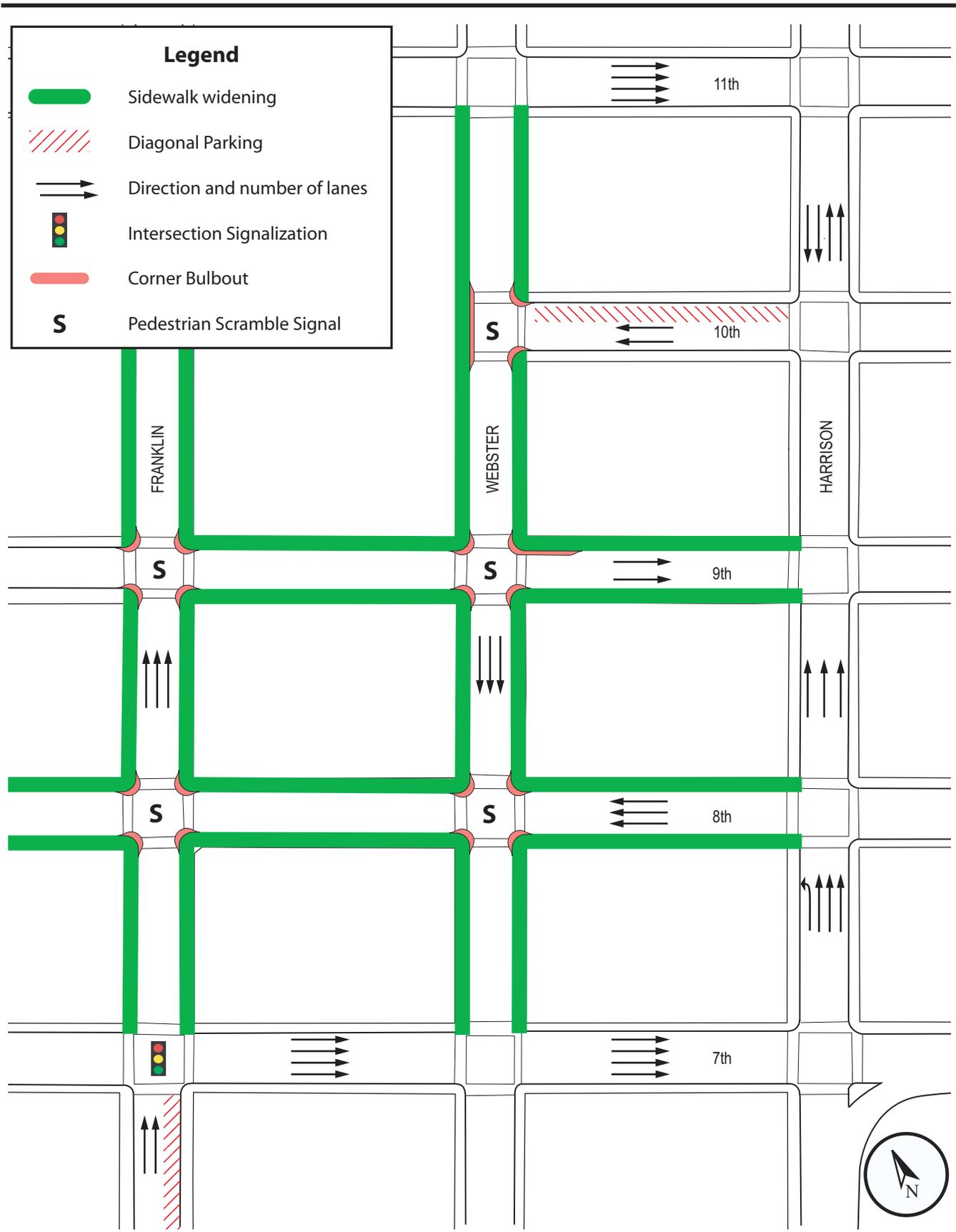


Figure 14
Baseline Conditions with Sidewalk Widening

4.1.3 Alternative 3 – Balanced Traffic Flow plus Sidewalk Widening

This alternative would balance traffic flow within the Chinatown core, reduce traffic congestion along Webster Street, and reduce pedestrian/vehicle conflicts. Similar to Alternative 2, it would also improve pedestrian activity in the core by widening sidewalks. This alternative would also change traffic circulation patterns from one-way to two-way within the area bounded by Broadway, 14th Street, I-880, and Oak Street. Sidewalk widening would require the reduction of one travel lane. Streets with wider sidewalks would have three lanes (two travel lanes in one direction and one travel lane in the opposite direction). Table 9 summarizes sidewalk widths and the number of travel lanes associated with this alternative. Figure 15 presents the lane configuration for this alternative.

As shown in Working Paper #1, there is a significant amount of unused capacity on 9th, 10th, and Franklin Streets. This alternative would balance the flow between streets in the core. By diverting traffic from Webster Street to streets with unused capacity, traffic congestion would be reduced along Webster Street. This alternative would allow vehicles bound for the Posey Tube from the west side of Broadway to use Franklin, and those from the Kaiser Center area and the Grand Avenue corridor to use Harrison.

In addition, two-way traffic circulation would allow for more efficient access to destinations, thus reducing the concentration of turning movements at certain key intersections.

Table 9 – Sidewalk Widths and Number of Travel Lanes for Alternative 3

Street	Sidewalk Width (in feet)		One-way to Two-way	Number of Lanes		
	Current	Proposed		Current	Proposed	WB/EB or NB/SB
Franklin Street	13	17	2	4	3	2 / 1
Webster Street	12	16	2	4	3	1 / 2
Harrison Street (7 th to 8 th)	12	12	2	4	4	3 / 1
Harrison Street (8 th to 11 th)	12	12	2	3 to 4	4	2 / 2
7 th Street	10 to 11	10 to 11	2	4	4	1 / 3
8 th Street	12	16	2	4	3	1 / 2
9 th Street	12	16	2	3	3	2 / 1
10 th Street	12	12	2	3	2	1 / 1

Legend

-  Sidewalk widening
-  Diagonal Parking
-  Direction and number of lanes
-  Intersection Signalization
-  Corner Bulbout
- S** Pedestrian Scramble Signal

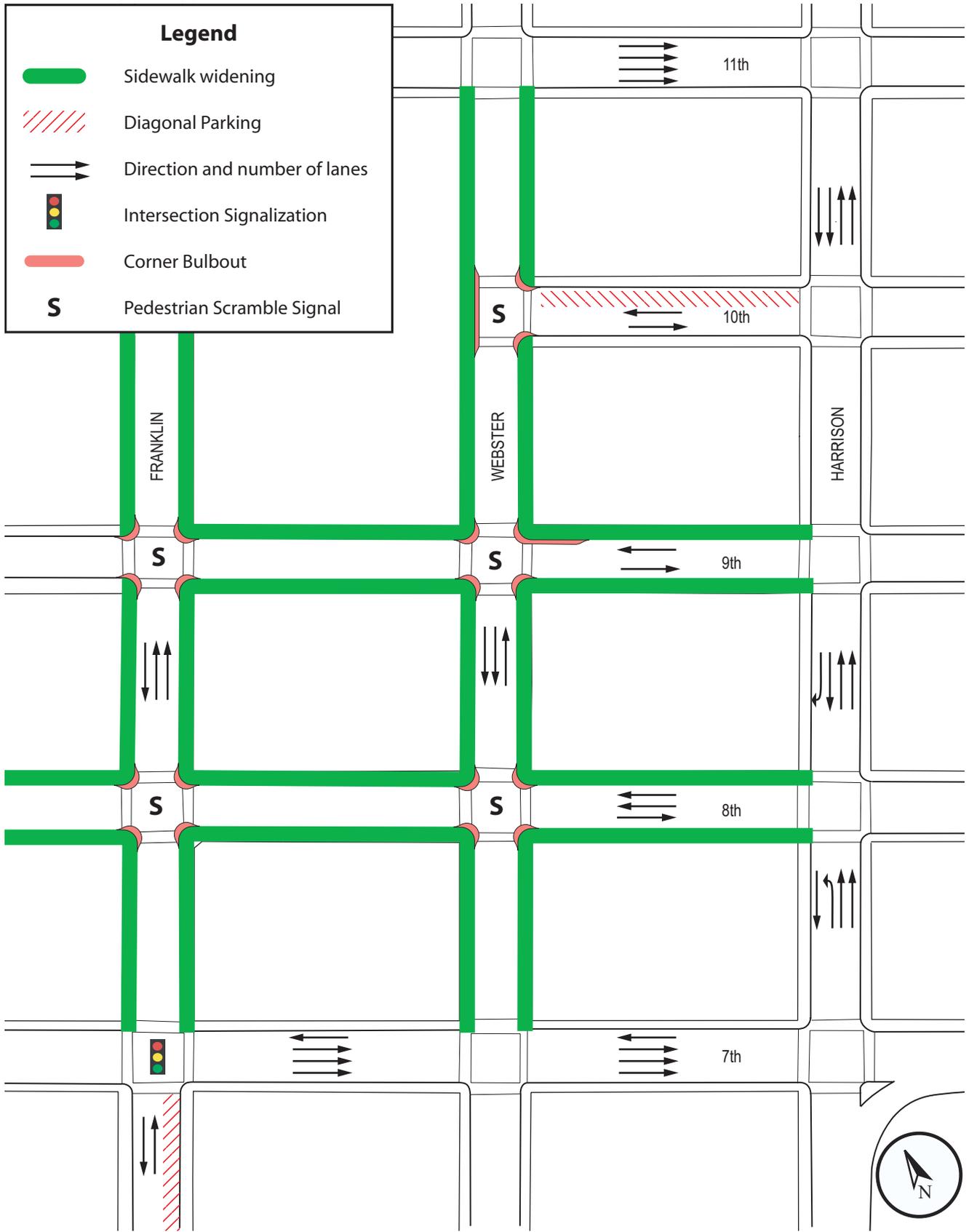


Figure 15
Two-Way Street with Sidewalk Widening

4.1.4 Alternative 4 – Balanced Traffic Flow without Sidewalk Widening

This alternative is similar to Alternative 3, except there is no sidewalk widening (or lane reduction). All streets are converted to two-way, with two lanes in each direction, except for Harrison Street south of 8th, which has three lanes in the northbound direction and one lane in the southbound direction; 7th Street, which has three lanes in the westbound direction and one lane in the eastbound direction; and 9th and 10th Streets, which both have one lane in each direction.

Table 10 summarizes the sidewalk widths and the number of travel lanes associated with this alternative. Figure 16 presents the lane configuration for this alternative.

Table 10 – Sidewalk Widths and Number of Travel Lanes for Alternative 4

Street	Sidewalk Width (in feet)		One-way to Two-way	Number of Lanes		
	Current	Proposed		Current	Proposed	WB/EB or NB/SB
Franklin Street	13	13	2	4	4	2 / 2
Webster Street	12	12	2	4	4	2 / 2
Harrison Street (7 th to 8 th)	12	12	2	4	4	3 / 1
Harrison Street (8 th to 11 th)	12	12	2	4	4	2 / 2
7 th Street	10 to 11	10 to 11	2	4	4	1 / 3
8 th Street	12	12	2	4	4	2 / 2
9 th Street	12	16	2	3	2	1 / 1
10 th Street	12	12	2	3	2	1 / 1

4.1.5 Alternative 5 – Balanced Traffic Flow with One-Way Webster Street

This alternative is similar to Alternative 4 except Webster Street remains one-way in the southbound direction. All other streets are converted to two-way, generally with two lanes in each direction. No sidewalks are widened. This alternative was proposed to address a concern that any lane reduction on Webster Street would increase traffic congestion. Table 11 summarizes sidewalk widths and the number of travel lanes associated with this alternative. Figure 17 presents the lane configuration for this alternative.

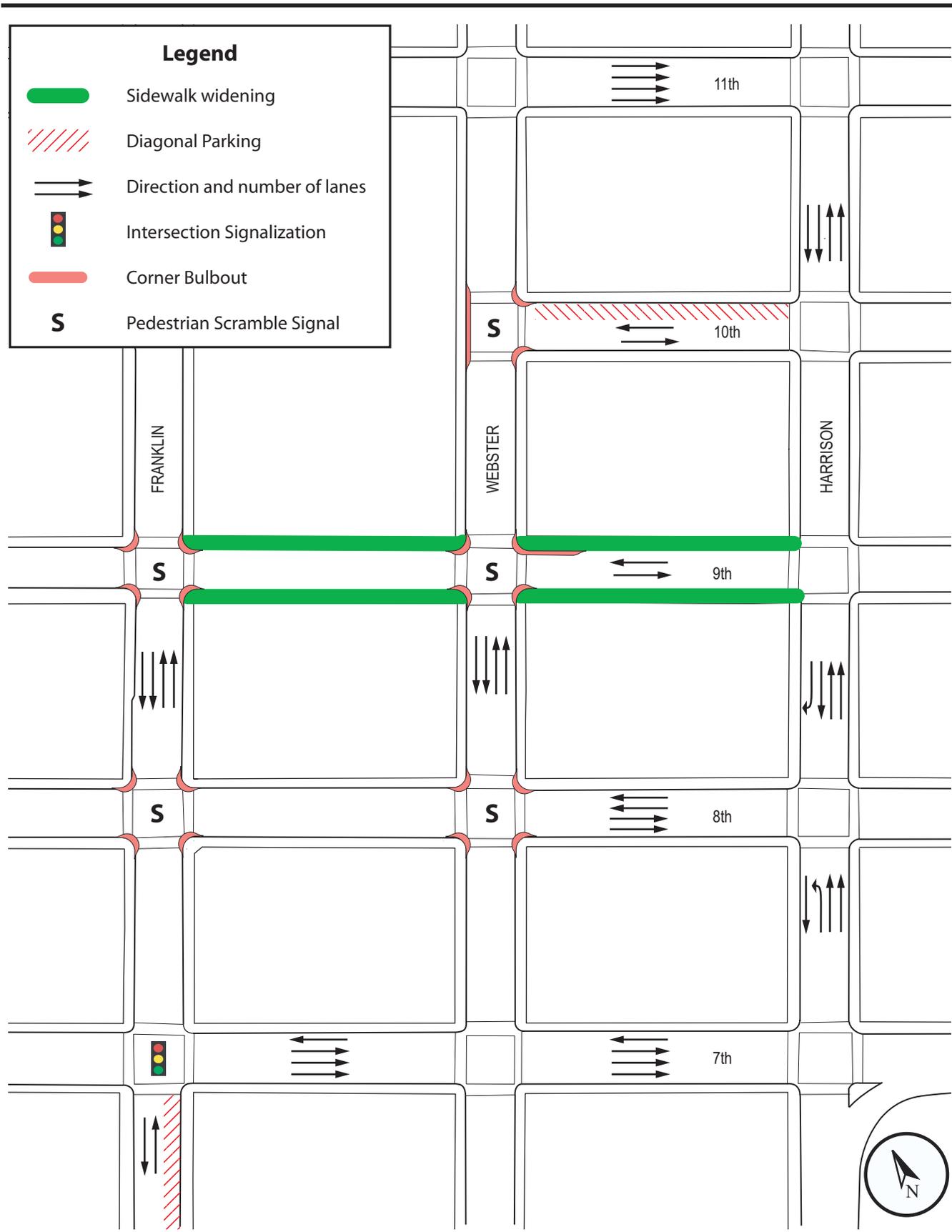


Figure 16
Two-Way Street without Sidewalk Widening

Legend

-  Sidewalk widening
-  Diagonal Parking
-  Direction and number of lanes
-  Intersection Signalization
-  Corner Bulbout
- S** Pedestrian Scramble Signal

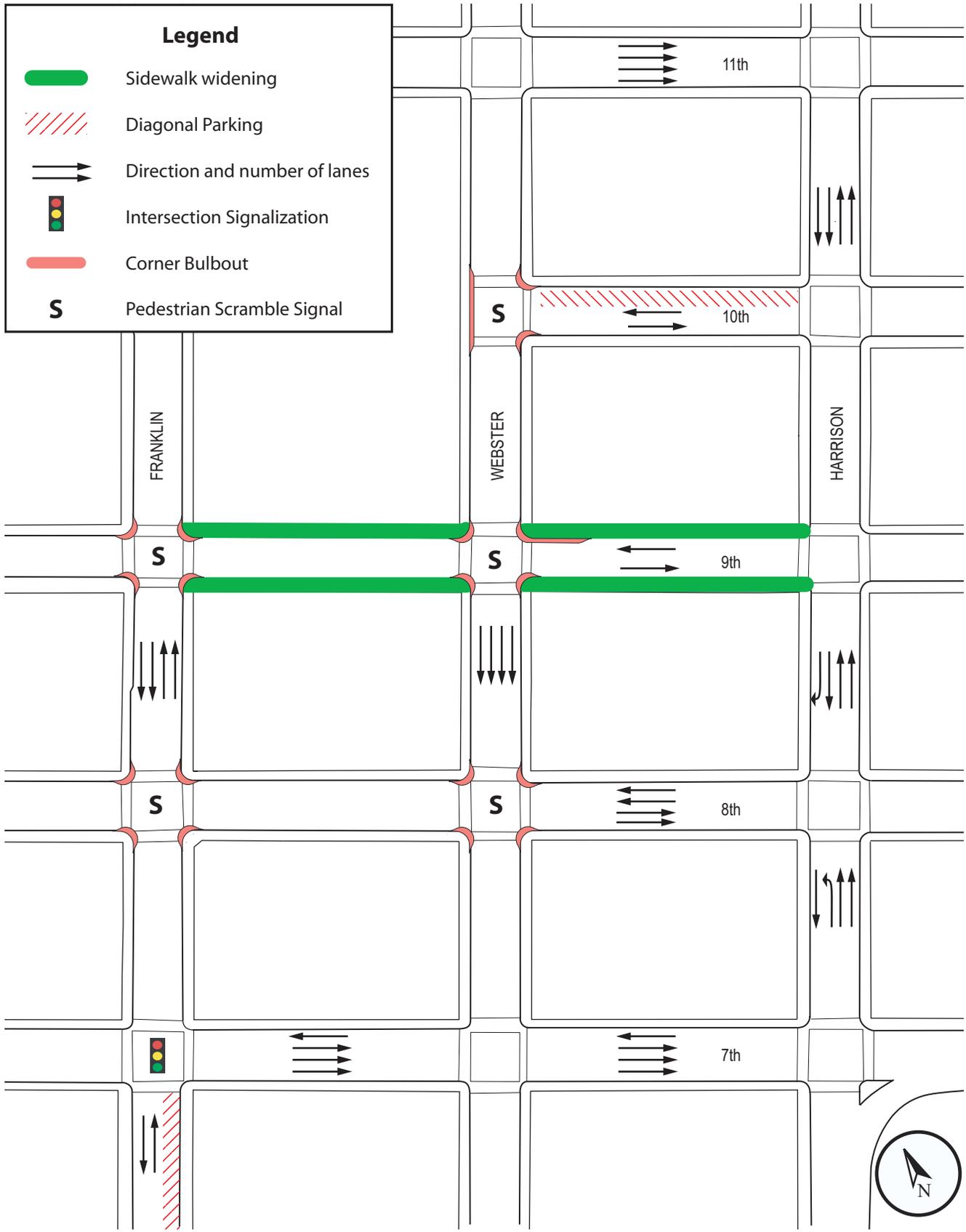


Figure 17
Two-Way Street with One-Way Webster

Table 11 – Sidewalk Widths and Number of Travel Lanes for Alternative 5

Street	Sidewalk Width (in feet)		One-way to Two-way	Number of Lanes		
	Current	Proposed		Current	Proposed	WB/EB or NB/SB
Franklin Street	13	13	2	4	4	2 / 2
Webster Street	12	12	1	4	4	0 / 4
Harrison Street (7 th to 8 th)	12	12	2	4	4	3 / 1
Harrison Street (8 th to 11 th)	12	12	2	4	4	2 / 2
7 th Street	10 to 11	10 to –11	2	4	4	1 / 3
8 th Street	12	12	2	4	4	2 / 2
9 th Street	12	16	2	3	2	1 / 1
10 th Street	12	12	2	3	2	1 / 1

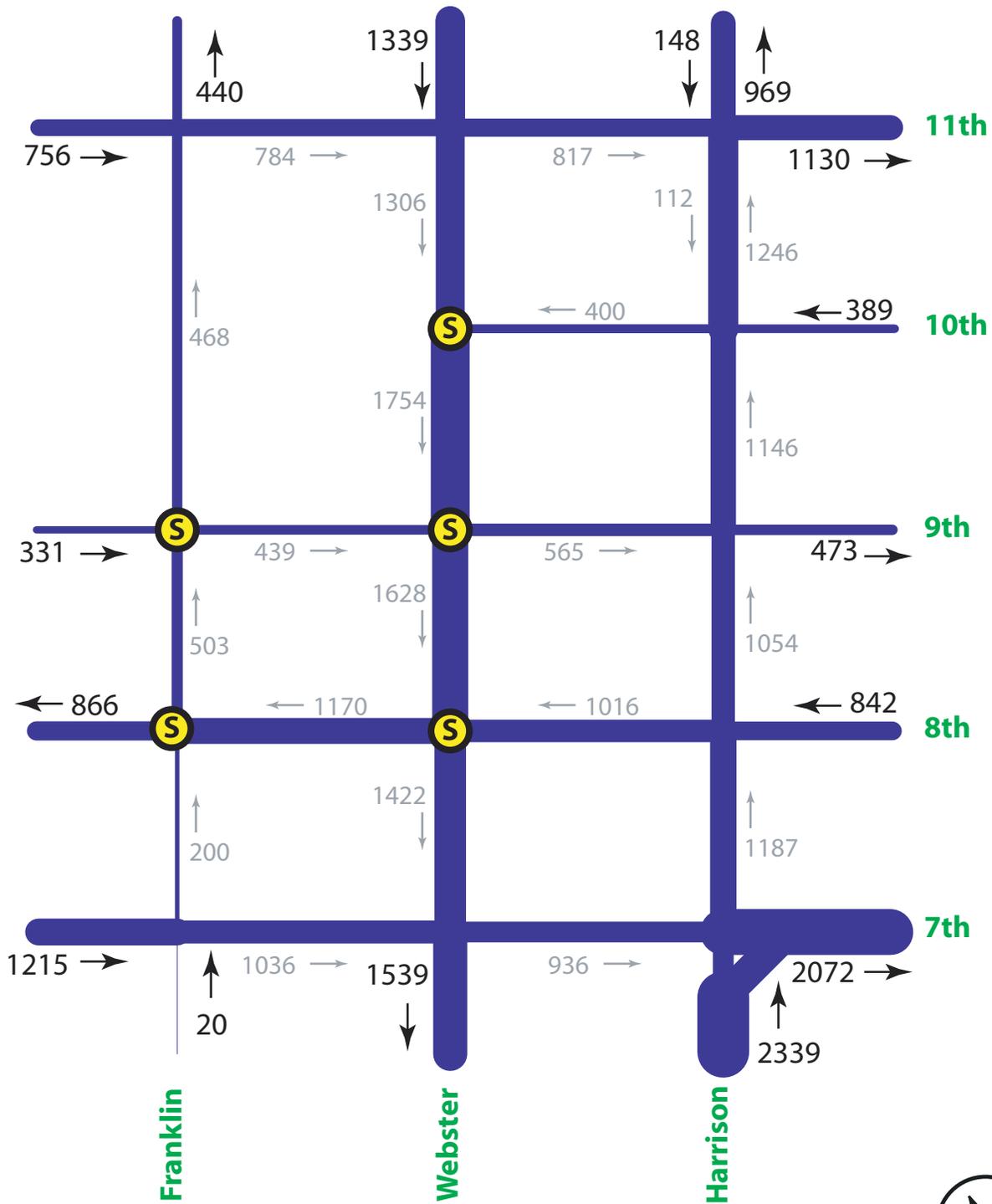
4.2 Traffic Analysis

Traffic analysis was performed using the SYNCHRO simulation software for the PM peak hour only. No analysis of future forecasts was conducted. Because Chinatown is a major retail shopping district, the PM peak hour generally represents the worst case condition during a typical weekday. SYNCHRO analysis was performed for the existing conditions with changes in roadway geometries as shown in each alternative. It should also be noted that this analysis assumed optimal signal synchronization. It did not assume potential double parking on the streets for the following two reasons:

- While double parking is prevalent in Oakland Chinatown, it would be speculative to estimate the number of vehicles that would double park, on a specific side of a specific block, and for a specific duration during the PM peak hour.
- Enforcement of illegal parking is an integral part of the project recommendations. While 100 percent compliance may not be achieved, a substantial reduction in double parking is anticipated as part of this project implementation, especially during the PM peak hour. If only incidental, short-duration double parking is occurring in Oakland Chinatown, the net additional affect on traffic operations would be insignificant.

4.2.1 Vehicular Volumes

Traffic volumes were obtained from several existing sources and balanced for the network to ensure a balance between the numbers of vehicles exiting the upstream and entering the downstream intersections. Traffic volumes for Alternatives 2, 3, 4, and 5 were adjusted from Alternative 1 by running the Alameda County Travel Forecasting Model with the proposed roadway geometry for each alternative. Figures 18 to 22 show the distribution of vehicles for each scenario during the peak hour (5:00 PM to 6:00 PM).

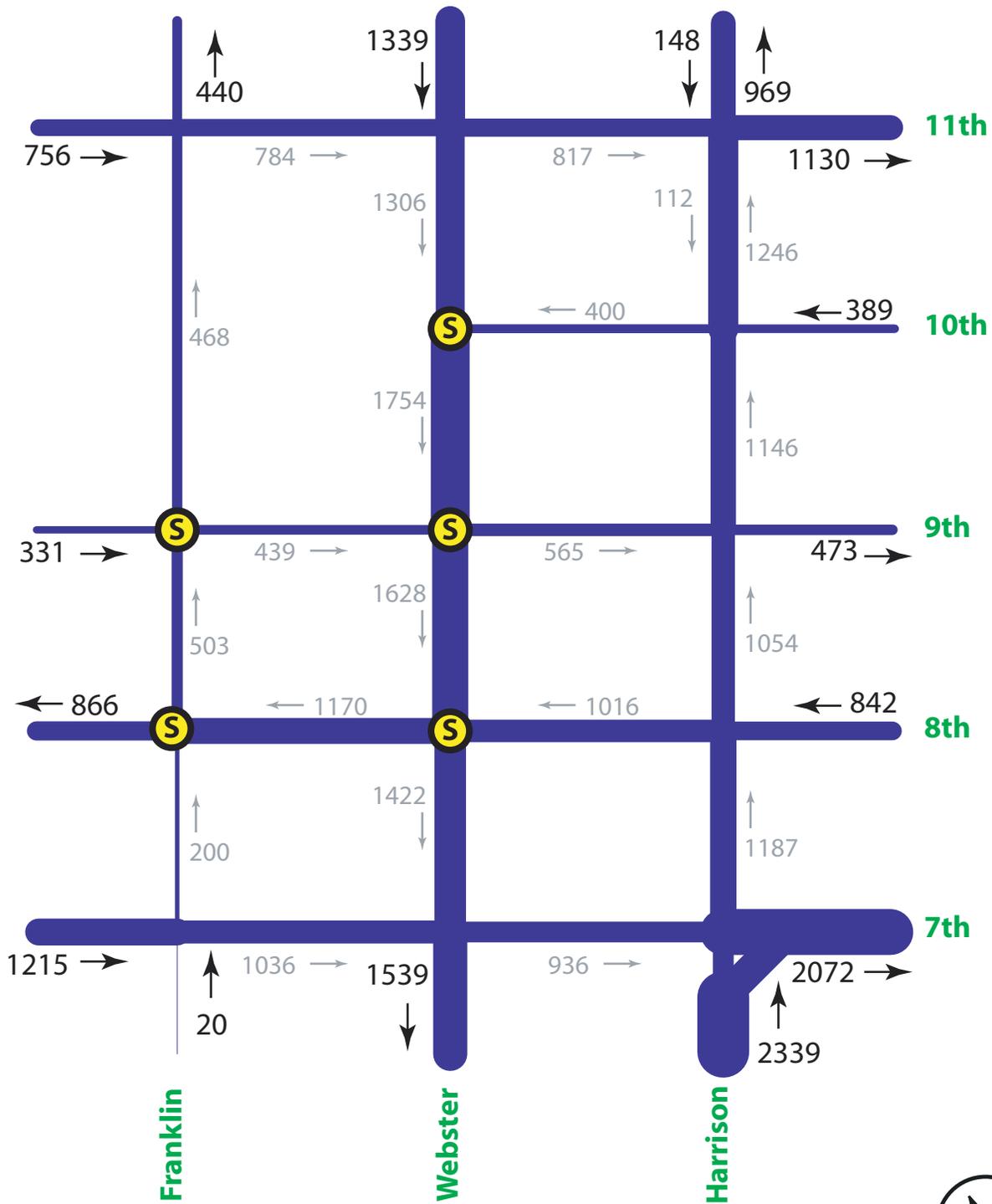


 Pedestrian scramble signal



CHS Consulting Group

Figure 18
Traffic Volumes - Current circulation pattern with four additional scramble intersections

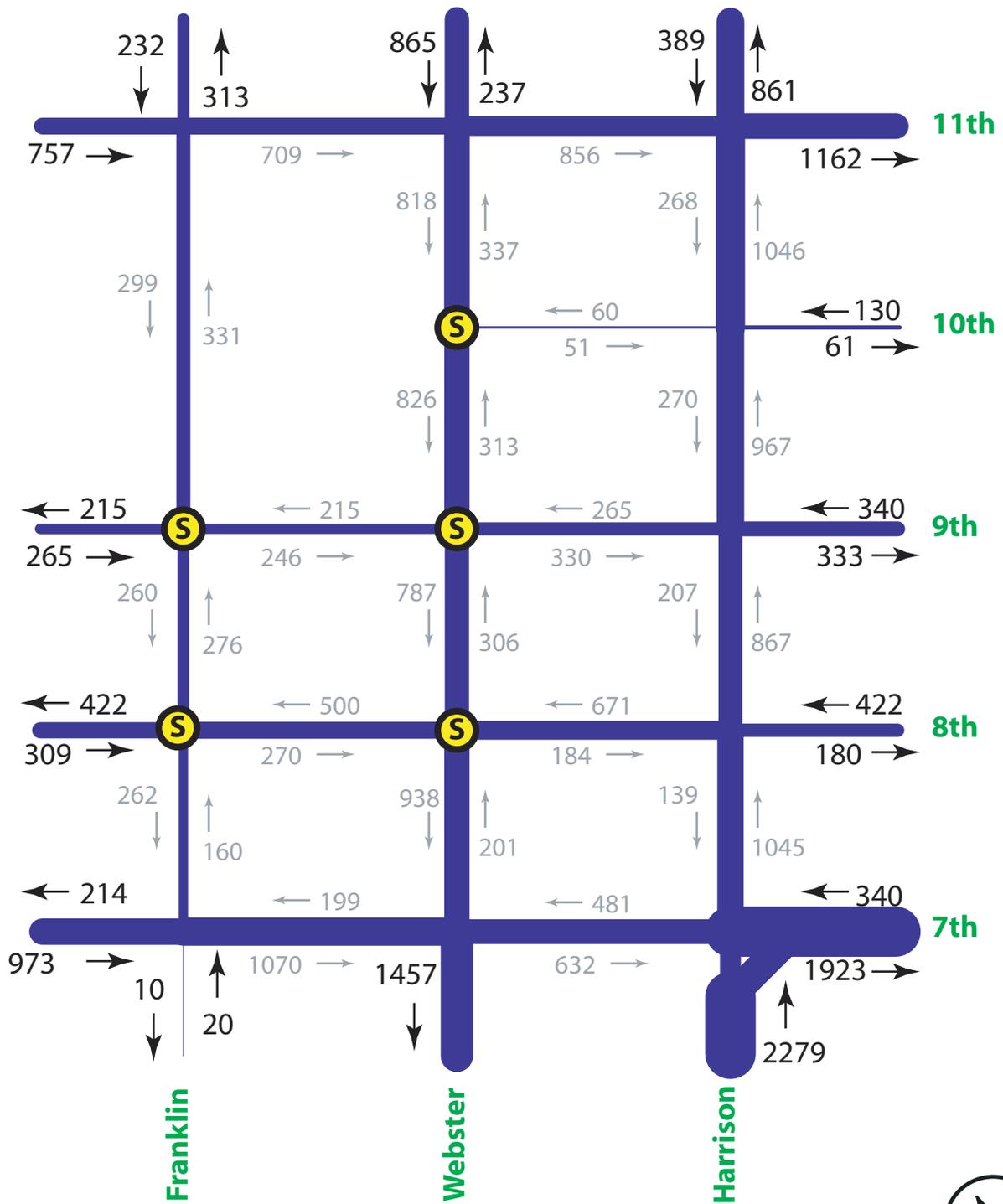


S Pedestrian scramble signal



CHS Consulting Group

Figure 19
Traffic Volumes - Current circulation pattern with sidewalk widening

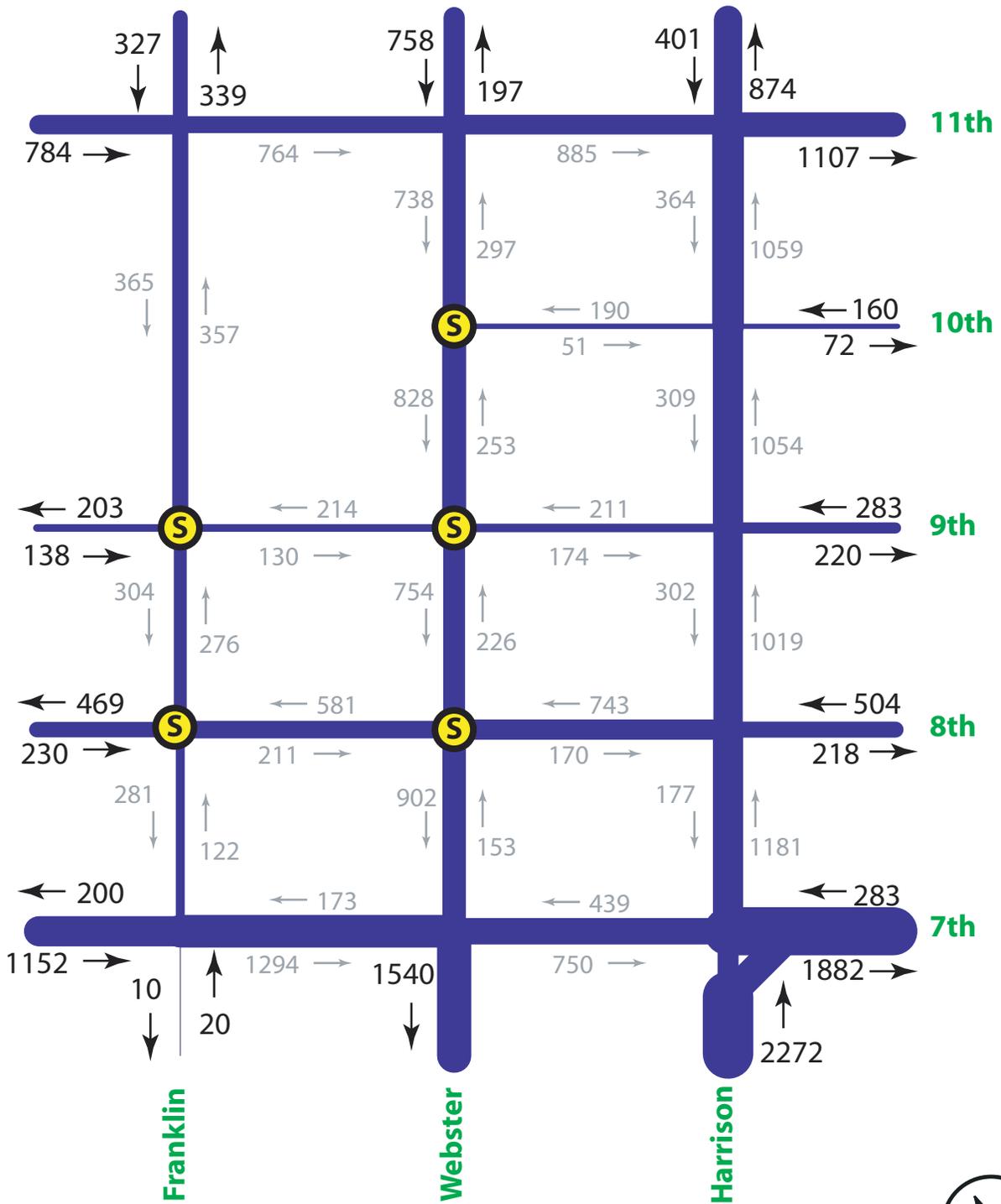


S Pedestrian scramble signal



CHS Consulting Group

Figure 20
Traffic Volumes - Two-way street circulation
with sidewalk widening

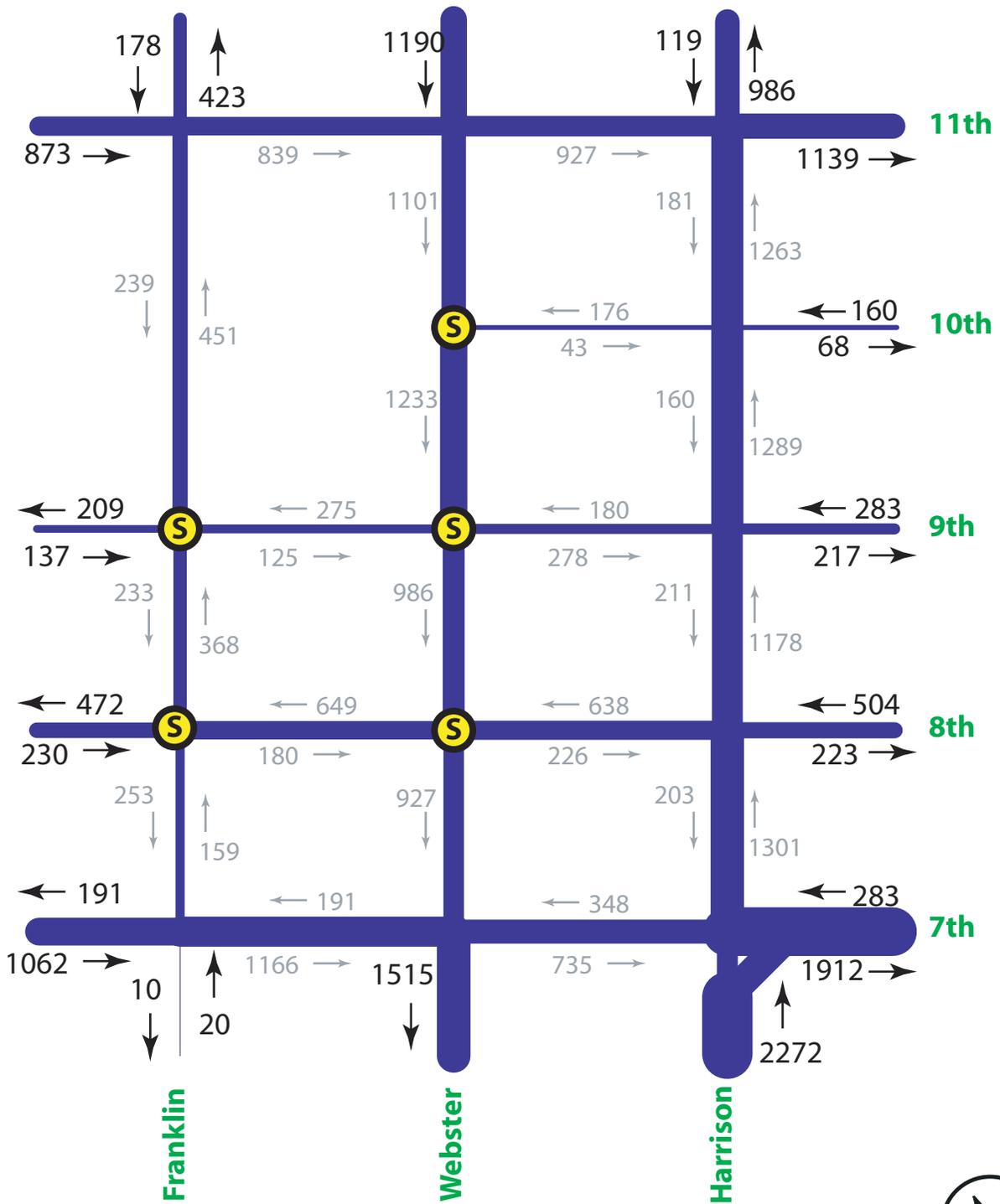


 Pedestrian scramble signal



CHS Consulting Group

Figure 21
Traffic Volumes - Two-way street circulation
without sidewalk widening



S Pedestrian scramble signal



CHS Consulting Group

Figure 22
Traffic Volumes - Two-way street circulation with sidewalk widening (Webster one-way)

4.2.2 Level of Service Analysis (LOS)

Table 6 presents the PM peak hour intersection Level of Service (LOS). While LOS should not be used as the only factor to determine intersection impacts, it is commonly used to illustrate these impacts. For the purpose of this project, LOS is one factor used to evaluate street circulation options. LOS is a quantitative description of an intersection's performance based on the average delay per vehicle. Intersection LOS ranges from A, which indicates free flow or excellent conditions with short delays, to F, which indicates congested or overloaded conditions with extremely long delays. LOS A, B, C, and D are considered excellent to satisfactory service levels, while LOS E is undesirable and LOS F is unacceptable.

Table 12 – Level of Service and Average Stop Delay (seconds per vehicle)

Intersection	Existing	1: Basic Improvements	2: Basic + Sidewalk Widening	3: Balanced Flow + Sidewalk Widening	4: Balanced Flow Only	5: Balanced Flow + One-Way Webster
7th & Franklin	A 1.8	A 1.8	A 8.9	A 9.7	B 10.4	B 10.8
7th & Webster	B 11.5	B 10.3	A 5.6	B 19.7	C 34.6	C 19.0
7th & Harrison	A 9.2	A 9.2	B 10.2	A 9.0	B 10.8	B 17.0
8th & Franklin	A 8.1	A 9.5	A 6.8	B 20.0	B 10.0	B 12.6
8th & Webster	E 76.9	D 48	E 69.4	E (D) 67.2 (44.6)	E (D) 79.7 (46.5)	D 40.1
8th & Harrison	A 7.7	A 7.7	A 6.6	A 5.3	A 5.7	A 7.3
9th & Franklin	A 6.5	B 16.9	B 14.3	C 22.0	C 25.3	C 20.6
9th & Webster	B 17.5	D 42.2	B 12.1	E (D) 64.4 (52.3)	C 24.9	B 15.7
9th & Harrison	A 6.6	A 5.0	A 3.3	A 6.6	B 14.6	D 36.4
10th & Webster	A 4.4	C 21.7	B 12.7	B 14.3	B 17.4	B 18.9
10th & Harrison	A 9.7	A 9.7	B 10.1	A 8.8	B 12	E 79.8
11th & Franklin	A 5.3	A 5.5	A 4.3	A 7.5	A 6.7	A 7.1
11th & Webster	A 7.8	A 7.6	A 8.3	A 8.9	A 6.9	A 6.1
11th & Harrison	C 23.8	C 23.2	C 20.8	A 5.3	A 4.9	C 21.5

Footnote: LOS and average signal delay in the parenthesis are after recommended signal timing and phasing modifications.

Table 12 shows the following findings:

Basic Improvements (Alternative 1) – LOS would remain the same after the addition of pedestrian scramble signals at four intersections. This alternative would have no significant impacts on LOS. With the optimization of signal operations along Webster Street, traffic congestion and queuing along this street would be reduced. Current congestion at the intersection of 8th and Webster is caused by two factors: a change from a 45-second cycle length to a 90-second cycle length and an imbalanced use of the four southbound lanes. Currently, two cycle lengths of traffic from the upstream intersection at 9th queue at 8th. By installing pedestrian scramble systems at 9th and 10th Streets, the transition from a 45-second cycle to a 90-second cycle would be shifted to the intersection at 10th Street, instead of 8th Street. Since the southbound volumes at this intersection are lower than those at 8th, the impact on the upstream intersections would not be as severe as those currently at 8th. Consequently, all intersections would operate at LOS D or better conditions.

Basic Improvements plus Sidewalk Widening (Alternative 2) – This alternative would reduce the number of traffic lanes by one on street segments with sidewalk widening. Since most of the intersections have ample excess capacity to handle additional vehicles, the only intersection that would be affected would be the intersection of 8th and Webster. This impact cannot be redressed through signal timing changes.

Balanced Traffic Flow plus Sidewalk Widening (Alternative 3) - This alternative would disperse traffic from Webster to Franklin and Harrison Streets. Consequently, LOS and delays along these two streets would increase, but would still operate with acceptable LOS (LOS C or better). The intersections of 8th/Webster and 9th/Webster would deteriorate to LOS E (due to a reduction in lanes). Impacts at these two intersections could be reduced by modifying the signal phasing to “protected/permitted” for the westbound approach and to “permitted” for the eastbound approach and 8 seconds for the protected phase. With this improvement, both of these intersections would operate at LOS D.

Balanced Traffic Flow without Sidewalk Widening (Alternative 4) – As in Alternative 3, traffic would be dispersed from Webster to Franklin and Harrison Streets. Because the number of travel lanes would not be reduced, only the intersection of 8th/Webster needs signal phasing modifications. With a signal modification similar to that presented in Alternative 3, this intersection would operate at LOS D.

Balanced Traffic Flow with One-Way Webster Street (Alternative 5) – This alternative was developed to ensure ample capacity for southbound traffic on Webster Street. However, because northbound capacities would be severely reduced, the 10th/Harrison Street intersection would operate at LOS E. There is no improvement that would reduce the impacts for this alternative.

Additional LOS analysis was also performed for the intersections along the perimeter of the study area to evaluate the impact of changing from a one-way to two-way system. Using available traffic data, intersections in the area bounded by Broadway, 14th Street, I-880, and Oak Street were

analyzed. For these selected intersections, the change from a one-way to two-way system within the recommended area would not cause negative traffic impacts.

Summary of Traffic Analysis

The traffic analysis shows that Alternatives 1 (basic improvements), 3 (balanced traffic flow with sidewalk widening), and 4 (balanced traffic flow without sidewalk widening) are all feasible strategies. Alternatives 2 (basic improvements plus sidewalk widening) and 5 (balanced traffic flow with one-way Webster Street) would have traffic impacts. It should be noted that, according to the LOS analysis, Alternative 2 (basic improvements plus sidewalk widening), performs comparably to the existing conditions. While this alternative may be technically feasible, it did not receive further study because of community concern over the possible congestion caused by reducing the number of travel lanes.

4.3 Strategies to Improve Chinatown's Image

The third goal of this project is to improve the attractiveness of Oakland Chinatown. Oakland Chinatown has faced strong competition from suburban Asian malls. The new shopping malls are typically anchored by a large Asian supermarket (such as Lion or Ranch 99), and offer free and well-lit parking along with the cleanliness and order of centrally managed developments. Some (such as Milpitas Square) offer decorative fountains, seating, and other attractive amenities for families as well. Since Oakland Chinatown's environs are mostly built out and large free parking lots cannot be provided, it must compete for outside customers (or new customers) on what makes it different and unique – its cultural ambiance and its authentic urban setting, as well as its variety of shopping and dining offerings. At present, however, the quality of Chinatown's outdoor street settings – particularly for potential dinner trade restaurant customers – weakens its natural assets and hurts its economic competitiveness.

Streetscape improvements are tools to create identity, improve appearances, and enhance pedestrian safety and access. It usually includes the “humanizing” components of street design, such as the provision of improved street lighting, designing and specifying the material, color and pattern of proposed paving enhancements, and the use of street furnishings and street trees. Key streetscape problems in Oakland Chinatown include:

- Dim, orange-yellow sodium street lighting, which could detract from the sense of personal safety at night and the potential for a robust dinner trade. During the day, the “cobrahead” streetlights project the look of a freeway rather than a pedestrian-oriented district.
- On its congested sidewalks, Chinatown's pedestrians often have difficulty moving between vending displays and stacked curbside boxes from truck unloading. To many, the sidewalk displays are part of what makes Chinatown interesting and authentic. Though regulations limit sidewalk displays within a confined “encroachment” area, there are no sidewalk markings to aid compliance. The sidewalk surfaces themselves look worn and tired.
- Chinatown's sidewalk corners are congested during hours of peak pedestrian activity as people gather and wait for traffic lights to change. There is little or no room for seating or

greenery, despite a relatively high proportion of seniors and families that spend time in Chinatown. A hodge-podge of newspaper racks – of uncoordinated shapes and colors – is found on many corners. The new “scramble” intersection is popular but the minimal diagonal crosswalk pavement markings are barely noticeable.

Improving Chinatown’s streetscape is a means to enhance its economic competitiveness as a shopping and dining district. In recent years, both suburban and urban districts around the Bay Area including Albany, Berkeley, Burlingame, San Mateo, Palo Alto, and Mountain View have undertaken streetscape improvement projects for their shopping and dining streets with positive results. Improvements would also enhance everyday life for Chinatown’s residents and strengthen community pride.

4.4 Potential Streetscape Improvements

Typical street blocks in Oakland Chinatown are 280 feet in length for the north-south blocks and 380 feet in length for the east-west blocks. The typical street right-of-way width is 80 feet. Given these block sizes, the streetscape recommendations for Chinatown were developed for a prototypical block, as the actual extent of project area(s) was not determined. In practice, these streetscape recommendations for the prototypical block will be applied (and adjusted as necessary) to the blocks included within a given improvement area. Some streetscape modifications may be needed in order to allow for unique site conditions like entrances (i.e. edges of the project) and special activity locations.

The streetscape concept is composed of the following streetscape elements:

Paving: Paving treatments vary in different locations along the street block, as follows:

- **Mid-block sidewalk paving:** Colored and decoratively scored concrete, organized in two different patterns and colors along the sidewalk to indicate “zones” of primary pedestrian passageway, curbside loading, and building-side encroachment for vending or other permitted outdoor activity use. Width of paving “zones” varies by option.
- **Paving at expanded sidewalk corners (“bulb-outs”):** Colored and decoratively scored concrete, to match or complement the central “corridor” of the mid-block sidewalk paving.
- **Intersection paving (two options):** A lower-cost option uses thermoplastic striping or “Streetprint” (textured and colored stamped asphalt) to mark both the diagonal and the perpendicular pedestrian crosswalk areas. A higher cost option uses decorative concrete paving at the crosswalk.

Street Lighting: Pedestrian height (11’ to 13’ height of light source) decorative streetlights are recommended to increase illumination on the sidewalks. Spacing of lights should be approximately 40 feet on center; 50 feet on center is acceptable if a lower-cost, reduced-impact spacing is necessary. Streetlights should use a warm-white metal halide lamp (the Sylvania MP150 is recommended) with a 2900 degrees Kelvin (or 3,000 if 2,900 is not available) color temperature lamp. A 15,000-hour lamp life is recommended; 10,000 hours is the default if the longer-lived bulbs are not available. Streetlight luminaries should be deeply recessed, “sharp cutoff” types; luminaries are recommended to have prismatic diffusers (borosilicate glass is best) if recessed types are not used. House-side

shields should be specified for locations where the streetlight luminaries may inadvertently cast light on the windows of residences or restaurants. The City of Oakland Public Works Agency has established standards for street lighting in Oakland. Improvements to Chinatown’s lighting should consider these standards and the recommended guidelines presented above.

Some people desire a Chinese-styled visual character for the streetlights (perhaps in order to emulate San Francisco’s or Vancouver’s Chinese-styled streetlights). However, some prefab, non-custom Chinese-styled versions may result in a nonspecific theme-park interpretation of the Chinese or Asian style. Oakland Chinatown’s unique identity can be symbolized by the use of a customized catalog streetlight that is sympathetic in style to traditional Chinatown architecture and storefront character. For instance, a version of the Lake Merritt decorative post-top streetlight, painted special colors for Chinatown, may serve this purpose.

Traffic signal poles: A cast decorative base may be added to existing traffic poles, matching new streetlights as closely as possible.

Street Trees: Deciduous tree species should be carefully selected to provide visibility between street and storefront. While spacing varies by option, the trees should have flush-mounted grates and matching guards.

Furnishings: Street furnishings may be considered for the additional space provided at intersections by the sidewalk bulb-outs in order to provide pedestrian amenities. The most expensive and desirable furnishings recommended for the retail/restaurant area are architectural kiosks which display a map and directory of Chinatown businesses on one side and a controlled, changeable display panel for community events posters on the other side to provide guidance to new visitors and customers. Such kiosks would be most effective as custom “street architecture” that represents the desired visual character for the district. However, such custom components are expensive with the most attractive costing upwards of \$30,000 apiece. Less costly but still attractive versions may be possible.

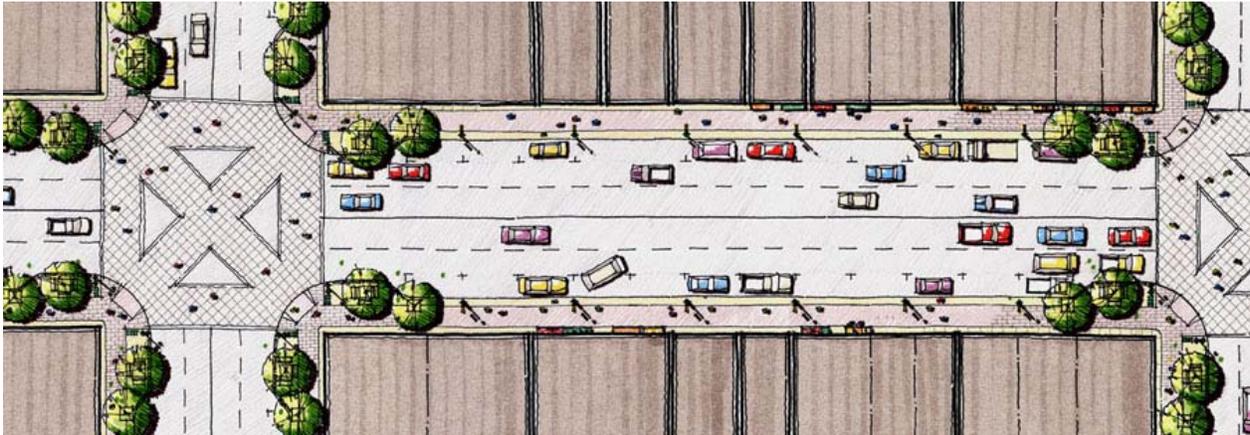
Other furnishing components that may be considered for the additional space at bulb-outs are seating, game tables (i.e. possibly Chinese chess for seniors), and trash and recycling receptacles. These components would best be made out of the most durable, low maintenance materials (painted or stainless metals).

4.5 Streetscape Concept

Two general options were developed by the consultant team and reviewed by City Staff and community leaders: one with “sidewalk widening” and the other one “without sidewalk widening”. The “with sidewalk widening option” has two sub-options (Option A with street trees and Option B without street trees), both of which were rejected by the Chinatown community due to concerns over traffic lane reductions. These two options are presented for consideration in less congested areas like 9th and 10th Streets.

The concept for Option C – “without sidewalk widening” – is presented below. The block is depicted in plan view to illustrate the overall composition along its length and to show the proposed location of streetscape elements. The block is shown in cross-section to illustrate the configuration of the street elements within the right-of-way, across a typical street, from building to building.

4.5.1 Preferred Scheme – “Without Sidewalk Widening Option” (Option C)



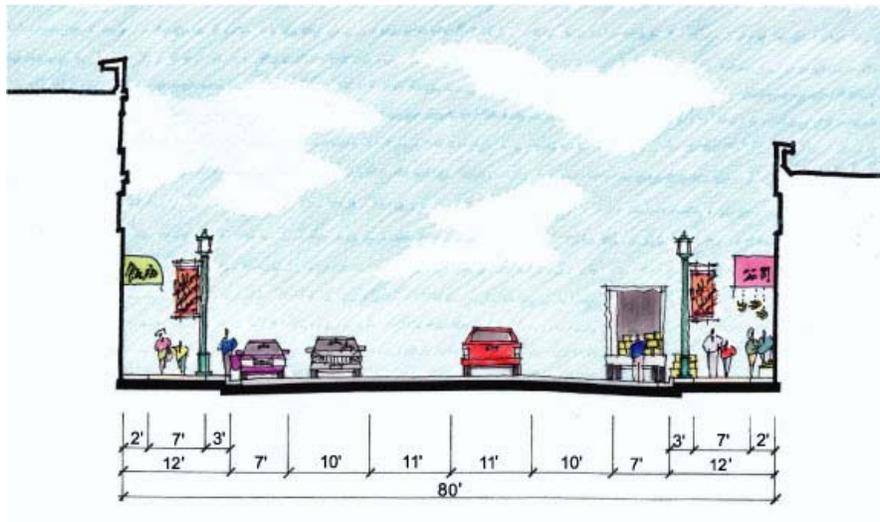
Option “C”: Plan view

Option “C” is based on a 4-lane roadway with on-street parking on each side of the street. The pedestrian realm consists of a 12-foot sidewalk.

Intersection improvements would include a marked pedestrian crosswalk (using either the lower cost or higher cost versions detailed above), new decorative bases for traffic poles and expanded sidewalk areas or “bulb-outs” at corners. Intersection bulb-outs would be planted with four deciduous trees at each corner. Intersection bulb outs would also include furnishings as described above.

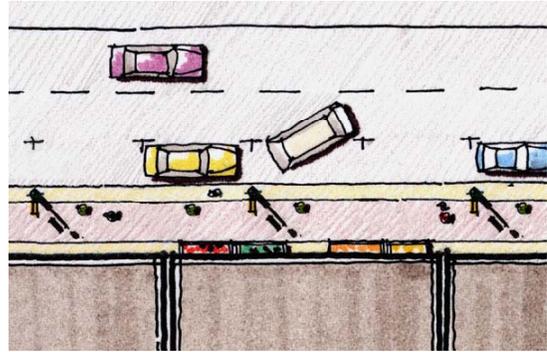


Option “C”: Intersection improvements



Option “C”: Section view

Midblock sidewalk improvements would include new paving in one pattern for a 2-foot width along the curbside (to be consistent with the existing City ordinance) and a 3-foot width along the building edge, and new paving in an alternate pattern along the 7-foot central portion of the sidewalk. Street lighting would occur along the typical mid-block sidewalk along the curb line.



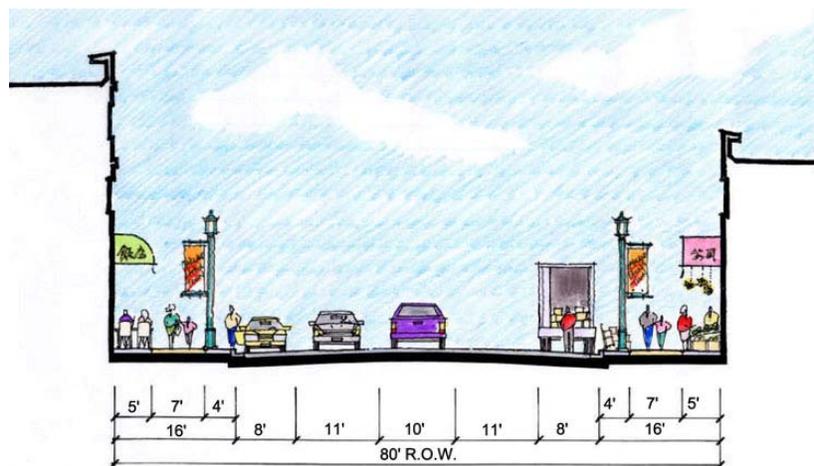
Option “C”: Midblock sidewalk improvements

4.5.2 Schemes Not Selected

Option “A” – “With Sidewalk Widening and Street Trees”



Option “A”: Plan view



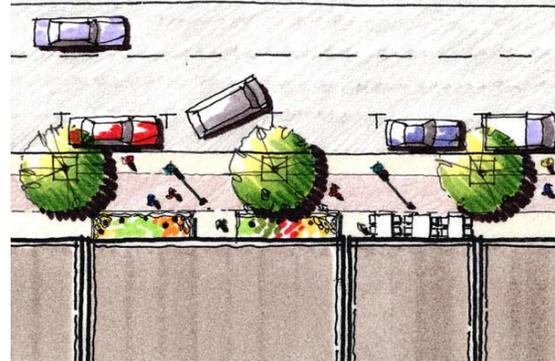
Option “A”: Section view

Option “A” is based on a 3-lane roadway with on-street parking on each side of the street. This reduction in lanes allows for a wider sidewalk at 16 feet wide, which in turn permits a more generous pedestrian realm with space for additional plantings. Therefore, Option “A” includes the planting of deciduous trees regularly spaced at 40 feet on center along the midblock sidewalk, with no trees at intersection bulb outs. Street lighting is then centered between these trees along the sidewalk.



Option “A”: Intersection improvements

Midblock sidewalk improvements would include new paving in one pattern for a 4-foot width along the curbside and a 5-foot width along the building edge, and new paving in an alternate pattern along the 7-foot central portion of the sidewalk. All other intersection and crosswalk improvements as well as the addition of bulb-outs and street furniture are the same as described in Option “C”.

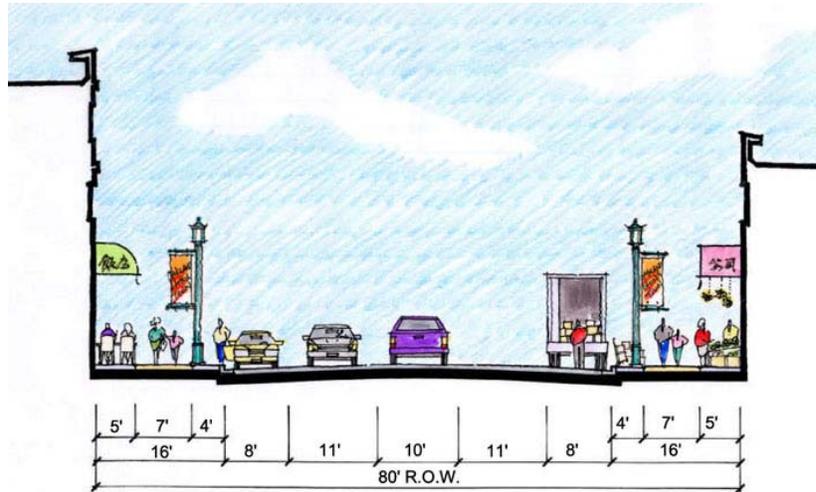


Option “A”: Midblock sidewalk improvements

Option “B” – “With Sidewalk Widening and Limited Street Trees”



Option “B”: Plan view



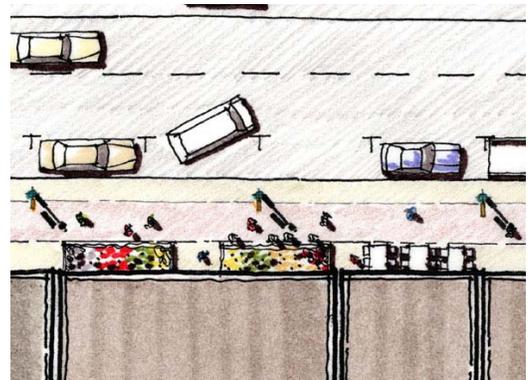
Option “B”: Section view

Option “B” is also based on a 3-lane roadway with an on-street parking lane on each side of the street and a 16-foot sidewalk. The sidewalk does not contain any plantings of street trees, but instead maintains the typical sidewalk treatment described in Option “C”, with street lighting along the curb line.



Option “B”: Intersection improvements

Mid-block sidewalk improvements include the same paving patterns and widths described above in Option “A”, and all other intersection and crosswalk improvements as well as bulb-outs and street furniture remain the same as described in Option “C”.



Option “B”: Midblock sidewalk improvement

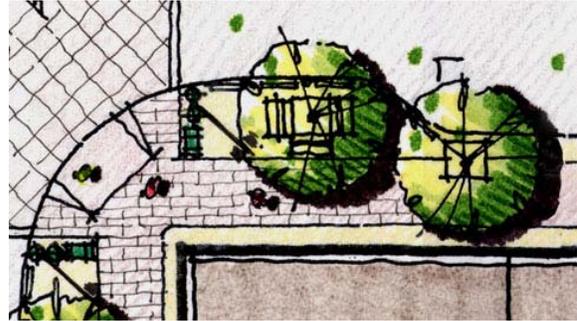
4.5.3 Option “C”: Potential Benefits and Tradeoffs

The preferred streetscape concept scheme, Option “C”, has potential benefits and tradeoffs. These benefits and tradeoffs of the streetscape’s basic features are described below:

Intersection sidewalk improvements:

1. Expanded sidewalk corners (“bulb-outs”)

Benefit – Safety and comfort. The expanded sidewalk area reduces curb-to-curb intersection crossing distances making the intersection easier to cross, especially for seniors and children. It also enhances driver/pedestrian visibility. The expanded sidewalk area provides more room on corners for pedestrians waiting to cross and for sidewalk activities.



Option “C”: Expanded Sidewalk corners or “bulb outs”

Tradeoff – Potential restriction of corner turning movements, especially for larger vehicles. And there is a potential loss of one or two curbside parking spaces per block.

2. Potential sidewalk amenities on bulb-outs
 - a. Street trees at corner bulb-outs

Benefit – Adds greenery and visual softening, similar to other Oakland neighborhoods. Also provides shade for the pedestrians waiting at crosswalk.

Tradeoff – Irrigation and maintenance required; slight potential for partial view obstruction of some business signs. (Street trees have not been successful in Chinatown in the past for these reasons).

- b. Street furnishings and amenities such as (but not limited to):
 - 1) Kiosks with business directory and controlled community events display
 - 2) Consolidated news racks
 - 3) Trash and recycling receptacles
 - 4) Seating
 - 5) Game tables (if protected and made comfortable by walls or other means)

Benefit – Kiosks provide guidance for tourists, diners, and customers to businesses and community events. Consolidated newsracks eliminate newsrack clutter and obstruction on corners. Seating and other furnishings provide seating and amenities for seniors and families.

Tradeoff – Maintenance required – without maintenance and cleaning, amenities may appear “abused” and send the wrong message; pedestrian traffic may be too substantial to provide extra room for many amenities.

3. Enhanced intersection diagonal crosswalk pavement markings

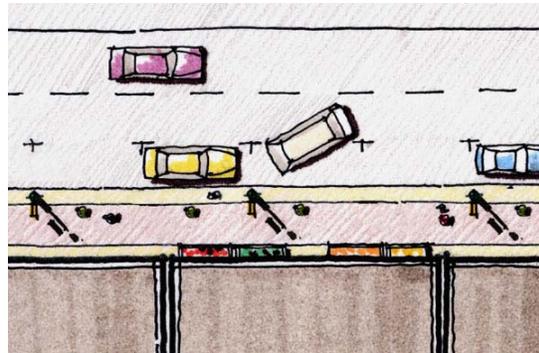
Benefit – High visibility markings facilitates easy use of diagonal crossing. Lower-cost versions such as thermoplastic striping or “Streetprint” installs quickly.

Tradeoff – If a lower-cost version such as “Streetprint” is used, periodic re-application may be required, and wear will be visible in the period immediately prior to that point. If higher-cost decorative concrete paving version is used, pavement will be relatively high in cost compared to its visual impact.

Midblock sidewalk improvements:

1. Replacement of cobrahead fixtures with improved pedestrian-height lighting with warm-white metal halide lamps (instead of yellow, high-pressure sodium lamps); provide additional roadway-height luminaire heads where necessary (at corners).

Benefit - Higher lighting levels create feeling of safety. High quality fixtures and poles create a more attractive environment; while removal of cobrahead fixtures reduces inappropriate utilitarian appearance. Taller and more frequent poles allow for display of banners. Decorative poles can be selected and/or styled to support a Chinatown street aesthetic and district identity.



Tradeoff – Slightly reduced efficiency (lumens per watt) of metal halide source, compared with high-pressure sodium. Slightly shorter bulb life (15,000 hours metal halide vs. 20,000 hours sodium) leads to more frequent bulb replacement and somewhat higher maintenance costs.

2. Replacement of curbs and installation of decorative sidewalk paving to indicate “zones” of primary pedestrian passageway, curbside loading, and building-side encroachment zone for vending or other permitted outdoor activity use.

Benefit - New curbs and paving replacing worn curbs and paving would substantially freshen the appearance of district; presence of “lines” denoting approved vending display encroachment areas would assist in enforcement.

Tradeoff – Installation will be relatively high cost, due to high square footage of sidewalk area; also businesses will be disrupted during construction.

3 No street trees on mid-block sidewalk.

Benefit – No street trees ensures unobstructed views to businesses and eliminates the need for irrigation and maintenance.

Tradeoff – No street trees provides less amenity and buffer for pedestrians.

5.0 PROJECT RECOMMENDATIONS

A set of project recommendations was identified and order-of-magnitude cost estimates provided. The project alternatives were screened and then sorted out in terms of phasing of these projects.

5.1 Evaluation

Initially, the proposed alternatives were going to be evaluated based on the goals established in Task 1 by the community. However, the evaluation process was led fully by the community groups and consensus was gradually established during a series of meetings with the community and city staff. First and foremost, the community is in total support of the proposed pedestrian-related improvements such as adding scramble intersections and enhancing them with larger and bilingual signs, more visible pavement markings, pedestrian signal heads and countdown timers, and corner bulb-outs.

With respect to traffic circulation alternatives, the community was concerned about any reduction of travel lanes. Therefore, the two alternatives (Alternative 2 and 3) with sidewalk widening were dropped from consideration. Alternative 1 (basic improvements) has complete support from the community. Alternative 4 was chosen as the preferred alternative for more detailed technical analysis. Implementation of this alternative would require the preparation of a CEQA (California Environmental Quality Act) document. As part of the CEQA process, the City of Oakland Public Works Agency would request a complete analysis of all the intersections along the perimeter of the recommended area for circulation changes.

5.2 Recommended Projects

This section presents the recommended improvements by phase. There are three phases, short-term, mid-term, and long-term. Short-term improvement projects are those that have total consensus from the Chinatown community and could potentially be funded with a grant from the Metropolitan Transportation Commission's Transportation for Livable Communities (TLC) program. The TLC projects have limited funding sources; therefore, projects that would generate the highest benefits should be included in the first application. Mid-term projects are those that have general consensus from the Chinatown community, however, no immediate funding sources are available and additional City approval is required, such as a CEQA environmental document. Long-term projects are those that would have potential benefits to Chinatown traffic circulation, but no general consensus can be established at the present time. Additional outreach would be needed for these projects. Figures 23 and 24 illustrate project recommendations

5.2.1 Short-Term Improvement Projects

5.2.1.1 Pedestrian Improvement Projects

Short-term pedestrian improvement projects include:

1. Improve signage for the scramble intersection. This would include larger signs and bilingual signs.

- Remove the pedestrian barrier at Webster and 10th Streets. The recommended scramble system would facilitate this removal.
- Expand the pedestrian scramble signals to four additional intersections: 8th/Franklin, 9th/Franklin, 9th/Webster, and 10th/Webster. This project would improve pedestrian safety by separating pedestrian and vehicular movements and reducing pedestrian/vehicle conflicts.



- Install bilingual wayfinding signage to direct pedestrians between the Chinatown core, Lake Merritt BART station, and 12th Street BART station. This signage could also include directions to other key destinations like the Pacific Renaissance Plaza. (This near-term improvement was developed in coordination with BART’s environmental justice planning process at the Lake Merritt station.)

- Bulb out street corners at the five core area intersections. This project would expand the area for pedestrians waiting to cross at intersections, as well as reduce pedestrian crossing distances and times.

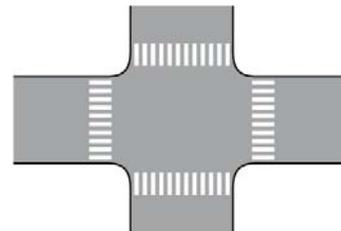


- Increase the visibility of scramble intersections with distinctive pavement markings. Depending on funding availability, either colored concrete, colored asphalt, or thermoplastic tape could be used. This project would further increase the visibility of the scramble intersections and reduce vehicle encroachment into intersections.

- Install pedestrian countdown signal heads at the eleven core area intersections. There will be eight signal heads per intersection. At the five intersections with pedestrian scramble phases 12 signal heads per intersection are required. This project would provide information to pedestrians on the available crossing time.



- Install high-visibility pedestrian crosswalks throughout the Chinatown core. The recommended marking pattern is continental-style striping (consisting of broad stripes parallel to the center line) plus advance limit lines. Thermoplastic tape is the recommended striping material.



Legend

-  Diagonal Parking
-  Direction and number of lanes
-  Intersection Signalization
-  Corner Bulbout
-  Pedestrian Scramble Signal, Countdown Pedestrian Signal Head, Improved Signage, Bi-lingual Sign, and Highted Crossing

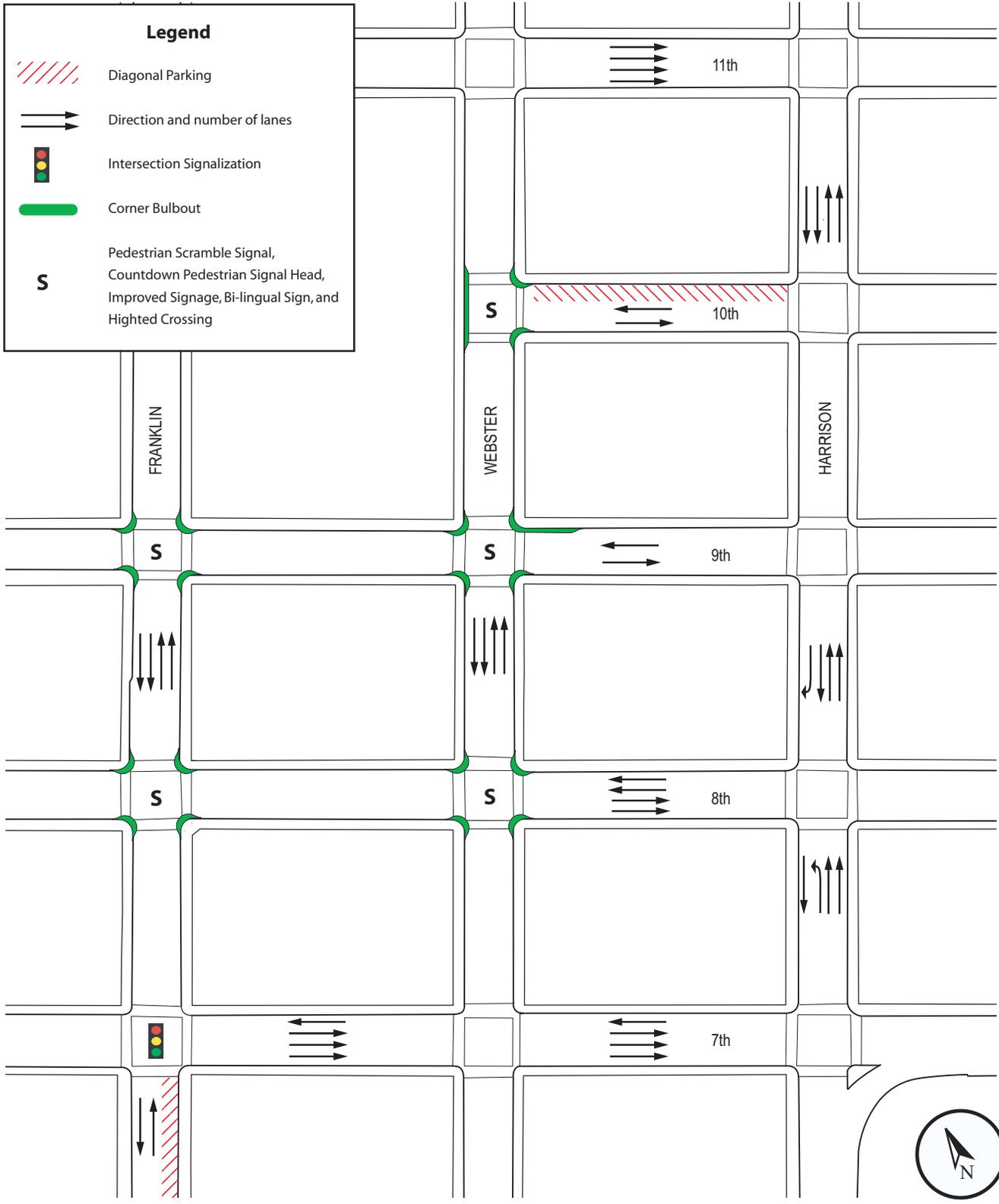
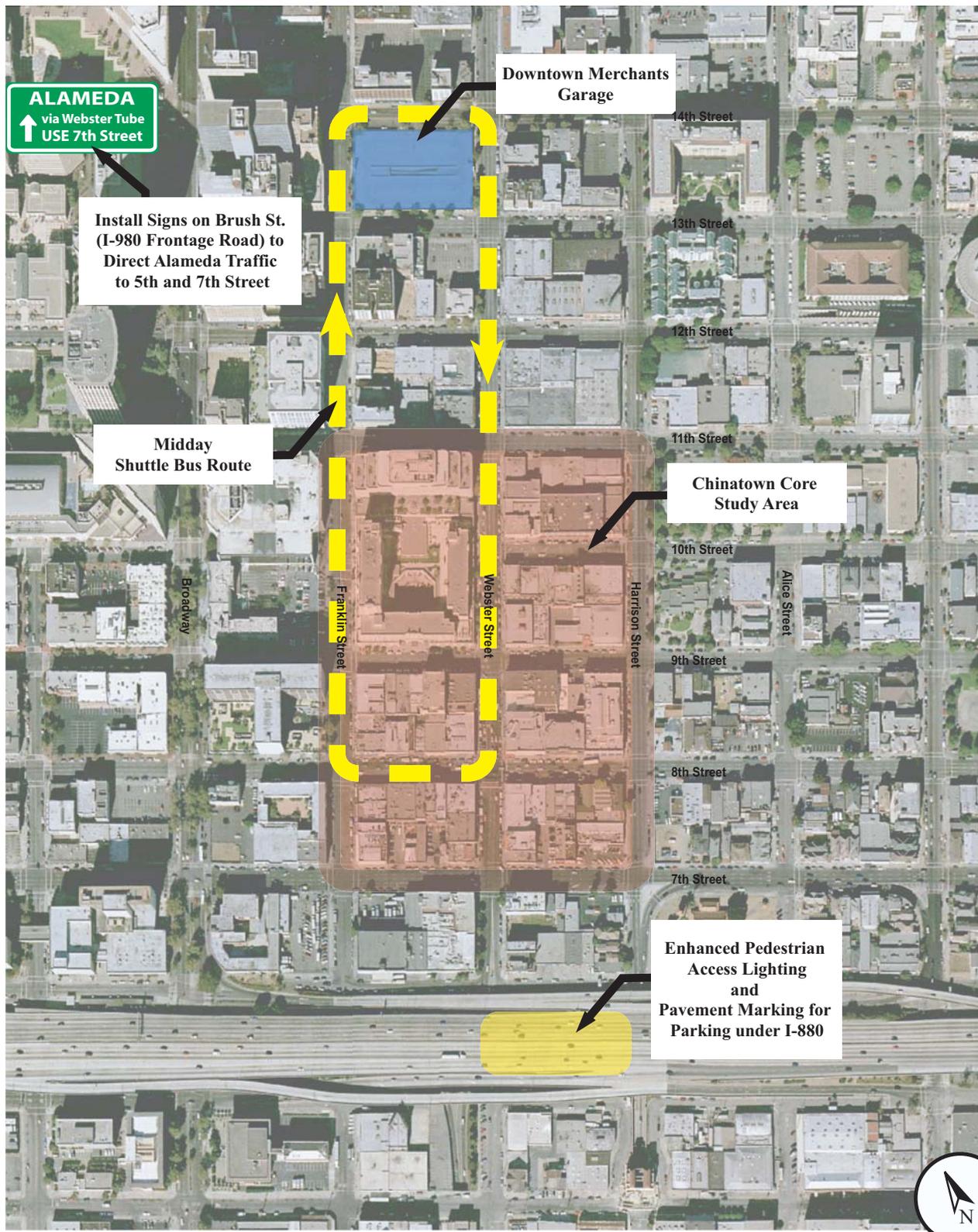


Figure 23
Recommended Chinatown Core Area Improvements

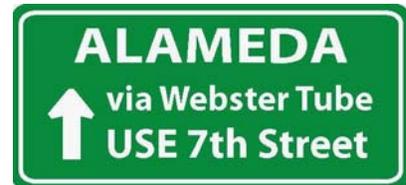


5.2.1.2 Streetscape Improvement Projects

1. Short-term streetscape improvements would focus on the installation of pedestrian-scale lighting. Additional amenities will be implemented in the later phases. This project would create visual identity, improve the sense of security and safety, and make Chinatown more attractive. The initial phase should focus on lighting improvements along 8th Street in the core of Chinatown, possibly extending to the Lake Merritt BART Station.

5.2.1.3 Circulation Improvement Projects

1. Modify signal offsets between upstream and downstream intersections. This improvement in combination with the reduction of pedestrian crossing times (through the installation of corner bulb-outs) would allow more signal time for vehicular movements, thus, reduce congestion and improve traffic flow.
2. Install a traffic signal at 7th and Franklin Streets. This project would reduce the high number of pedestrian/vehicle collisions at this location. It should be noted that the City of Oakland has funded this project and installation of a traffic signal should be implemented in the near future.
3. Install signs along the I-980 frontage road (Brush Street) to direct Alameda traffic to 5th and 7th Streets instead of through the core of Chinatown. This project would reduce traffic volumes along Webster Street and throughout the core.
4. Convert 10th Street from one-way to two-way. This project together with the proposed diagonal parking on 10th Street (see below – Parking Management Program #2) would potentially reduce traffic in the core.



5.2.1.4 Parking Management Program

1. Modify existing on-street parking/loading spaces to reduce double parking.
 - Create metered truck loading zones in the core of Oakland Chinatown. These spaces would be for active truck loading only and have 30-minute limits.
 - Designate the great majority of the on-street parking/loading spaces for truck loading only before 10:00 or 10:30 AM. After that time, they should be mostly short-term parking spaces (30-minute and one-hour meters) with some on-street loading spaces, depending on the needs in each block.



- 2, Create diagonal parking to increase parking supply and to calm traffic.
 - Create diagonal parking on Franklin Street between 6th and 7th Streets.
 - Create diagonal parking on 10th Street from Harrison Street to Madison Street.

5.2.1.5 *Parking Enforcement Program*

- 1 Increase the effectiveness of parking enforcement in Oakland Chinatown by:
 - Using walking beats for parking and double parking violations.
 - Giving multiple tickets for vehicles parking in the same spots for long periods.

5.2.2 *Mid-Term Improvement Projects*

5.2.2.1 *Pedestrian Improvement Projects*

- 1 Reduce sidewalk obstacles by replacing parking meters with central pay booths and consolidating newsstands in the core area. This project would reduce the number of sidewalk obstacles and increase effective sidewalk widths, facilitating pedestrian movement.



- 2 Ensure that sidewalk vendor stands do not block sidewalks (minimum 7-foot clear zone). A minimum width of seven feet must be maintained along sidewalks, clear of any obstacles, to allow smooth pedestrian movement, especially on heavily traveled sidewalks in the core. Merchant education and city enforcement are needed for this project. The 7-foot clear zone could be painted a different color to better delineate pedestrian circulation space vs. merchants vending display space.

5.2.2.2 *Traffic Circulation Improvement Projects*

Consider conversion from one-way to two-way circulation in an area bounded by 14th Street, Broadway, I-880, and Oak Street. This project would reduce traffic congestion

along Webster Street. However, implementation of this project would require a CEQA document. The City of Oakland Public Works Agency would also require more detailed operations analysis and safety analysis.

5.2.2.3 Streetscape Improvement Projects

The mid-term improvement projects would focus on pedestrian amenities such as banners, street trees, and street furniture. These improvements should be made along the core area streets as well as along the routes (8th or 9th Streets) to the Lake Merritt BART Station.

5.2.2.4 Parking Management Program

- 1 Create diagonal parking to increase parking supply and to calm traffic.
 - Consider the creation of additional diagonal parking on the streets just outside of the Chinatown core.
- 2 Create better linkages of existing parking resources.
 - Provide better pedestrian linkages to the parking spaces under I-880: signage, sidewalk, and lighting improvements along Webster Street, and better pavement in the parking lot.
 - Create a shuttle bus linking Oakland Chinatown with the 13th/Franklin parking garage during weekend midday, similar to the San Francisco Chinatown Park-n-Ride shuttle.
- 3 Create better signage for the existing parking resources.
 - Create a master parking signage program, similar to that implemented in San Francisco along Kearny Street. Use overhead signs to inform motorists on the location of parking facilities and the availability of parking spaces in each facility. This project would require a longer lead-time and higher budget to implement.



5.2.3 Long-Term Improvement Projects

There are several projects recommended for long-term consideration. These projects would require additional technical work, community outreach, and government processes and approvals. Both the City of Oakland and the Chinatown community should include these projects on its list for future consideration. It is recommended that the Steering Committee continue meeting on a regular basis to monitor the progress of the short-term and mid-term projects and to advocate for long-term projects.

- 1 Consider widening sidewalks in the core, particularly along 9th and 10th Streets. This alternative would facilitate pedestrian activity and increase pedestrian amenities in the core of Chinatown. However, the Chinatown community has expressed significant

concerns about the viability of sidewalk widening because of potential traffic impacts from eliminating a travel lane, particularly because of double-parked vehicles. Additional outreach effort is needed if sidewalk widening is pursued.

- 2 Consider the installation of bikeways on 9th Street. If 9th Street were to become a two-way street, it would provide improved bicycle access through Chinatown, better linking West Oakland to the Lake Merritt BART station and Laney College. Because of double parking in the Chinatown core, the recommended treatment from Broadway to Harrison is share-the-lane signs and street stencils. On either side of the Chinatown core, bicycle lanes are recommended. This recommendation was presented to the CAC, the community partners suggested that additional outreach and analysis would be needed for this recommendation.
- 3 Long-term solutions to the Webster Street traffic congestion issue require a direct connection between I-880 and the Webster and Posey Tubes. This issue is outside the scope of services of this project. A subsequent study – “I-880 Broadway/Jackson Interchange Improvement Project” – will address regional access issues at this location.
- 4 Consider the expansion of the proposed recommendations to areas east of the Chinatown core. This area of Chinatown has a mixture of residential and institutional uses. It has the same street widths but with lower traffic volumes. Diagonal parking could potentially be expanded to this area to increase parking supply and calm traffic. In addition, community groups expressed concern over safe student crossings at several schools in the area and senior citizen crossings on the edge of this study, both of which were outside the scope of services for this project.
- 5 Consider Sunday enforcement in the core. Survey data indicates that there is significantly more double parking and localized traffic congestion on Sunday. Data also show that the on-street parking duration is significantly longer on Sunday. The possibility of Sunday parking enforcement in the Chinatown core was considered but rejected by the Steering Committee at this time.

6.0 PROJECT COST ESTIMATES

Table 13 presents the preliminary cost estimates for each of the proposed improvements within the study area. The cost estimates are order of magnitude estimates only that are subject to refinement during the design phase. The total cost for all improvements is approximately \$10 million.

Table 13 - Preliminary Cost Estimates for the Recommended Improvements

“Revive Chinatown” Community Transportation Plan Cost Estimates						
Summary of Cost						
Item Number	Item Description	Quantity	Unit	Price /Unit	Extension	Remarks
1	Corner Bulb-outs	20	Each	\$100,650	\$2,013,000	Price/Unit is cost per quadrant of intersection.
2	AC Bus Bulbs	0	Each	\$131,405	\$0	FTB indicated that no concrete work was required for Bus Bulbs (only amenities to be planned).
3	AC Bus Amenities	5	Each	\$32,076	\$160,000	Price/stop includes all amenities. Bus Shelter assumed to be City supplied, ad maintained.
4	Sidewalk Widening					
	- 9th South Side	326	LF	\$614	\$200,000	Between Franklin & Webster
	- 9th North & South Side	652	LF	\$614	\$401,000	Between Webster & Harrison
	- 10th East & West Side	652	LF	\$614	\$401,000	Between Webster & Harrison
5A	Decorative Pavement	5	Each	\$191,618	\$958,000	Price/Unit is cost per intersection.
5B	Thermoplastic Striping Grid	5	Each	\$4,374	\$22,000	Price/Unit is cost per intersection.
6	Pedestrian Scale Lighting	1	LS	\$2,279,935	\$2,280,000	
7	Street Trees on Sidewalks	1	LS	\$624,024	\$624,000	Assumed 4 trees per bulb-out
8	Signing/ Striping Improvements	1	LS	\$252,270	\$252,000	
9	Signal Improvements	1	LS	\$1,360,800	\$1,361,000	Each Signal replaced due to inadequate existing signal equipment (controller, lack of attenuation, etc.)
10	Diagonal Parking	1	LS	\$2,106	\$2,000	
11	Not Used	0	Each		\$0	
12A	Pedestrian Signal Heads/Count-down Timers Scramble Intersections	5	Each	\$20,995	\$105,000	Assumed 12 timers per intersection, Price/Unit is cost per intersection.

(Table 7 – Continued)

Item Number	Item Description	Quantity	Unit	Price/Unit	Extension	Remarks
12B	Pedestrian Signal Heads/Countdown Timers Non-Scramble Intersections	9	Each	\$13,219	\$119,000	Assumed 8 timers per intersection, Price/Unit is cost per intersection.
13	Crosswalk Striping (Thermoplastic)	1	LS	\$42,104	\$42,000	
14	Parking Meter Kiosks	1	LS	\$328,050	\$328,000	Includes direct AC power.
15	Meters at Yellow Zones	34	Each	\$8,586	\$292,000	Assumed two zones/block in Chinatown core.
16	Street Furniture	8	Block	\$23,328	\$187,000	
17	Bilingual Signs	1	LS	\$24,300	\$24,000	Three signs per intersection quadrant.
18	Remove and Replace Signage (Webster Street)	1	LS	\$64,800	\$65,000	Alameda Wayfinding Signs
19-A	Shuttle Bus Capital Improvements	1	LS	\$24,300	\$24,000	Signage & Advertising Costs
19-B	Shuttle Bus Operations	48	day	\$500	\$24,000	6-Month Trial Cost
20	Parking Signs	1	LS	\$25,920	\$26,000	Signing on Webster Street (Parking wayfinding)
21	BART Bilingual Wayfinding Signs	1	LS	\$15,000	\$15,000	Pedestrian-oriented signage
Premium Alternative Total					\$10,607,000	All items included except for Item 5B.
Low Cost Alternative Total					\$9,671,000	All items included except for Item 5A.

ACKNOWLEDGEMENT

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