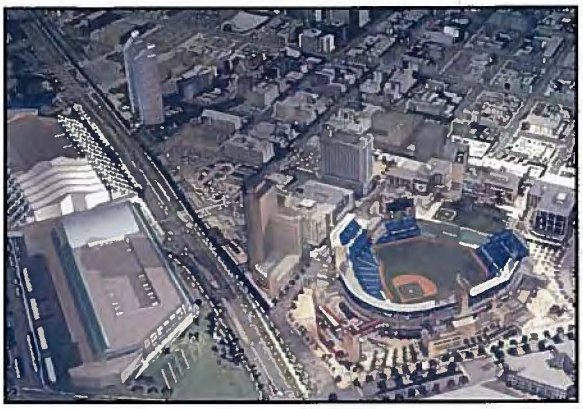


DRAFT

Environmental Impact Report for the San Diego Downtown Community Plan, Centre City Planned District Ordinance, and Redevelopment Plan for the Centre City Project Area

SCH NO. 2003041001

Centre City Development Corporation

30 YEARS OF DEFINING MOMENTS 1975 – 2005

VOLUME 2
Technical Reports
JULY 2005

TABLE OF CONTENTS

Downtown Community Plan

EIR Transportation, Circulation and Access Study

(Project Number: X4310-043)

Prepared by:

WILSON &COMPANY
701 B Street
Suite 1220
San Diego, CA 92101

Prepared for:

Centre City Development Corporation
225 Broadway, Suite 1100
San Diego, CA 92101

Project Design Consultants
701 B Street, Suite 800
San Diego, CA 92101

June 30, 2005

THIS PAGE INTENTIONALLY LEFT BLANK

Table of Contents

Table of Contents (continued)

List of Tables

Table of Contents (continued)

Table of Contents (continued)

Section **Page**

List of Figures

1.0 Introduction

This report documents the various transportation (traffic, transit, non-motorized, and parking) analyses conducted in support of the Environmental Impact Report (EIR) for the Centre City Development Corporation's (CCDC) *Downtown Community Plan* update. A Master Environmental Impact Report for the Downtown Community was completed in 1992.

The purpose of this Transportation, Circulation, and Access Study is to document the various technical analyses and resulting impacts on transportation systems in the downtown area, with build-out of land uses and circulation system modifications as assumed in the proposed Downtown Community Plan. This study assesses traffic, transit, pedestrian and bicycle facilities, as well as parking requirements associated with the proposed Plan, and identifies projected Level of Service (LOS) on the study area's freeways, ramps, and intersections. Locations where performance levels fall below acceptable LOS standards are noted and mitigation measures are recommended as required to address identified deficiencies. Forecast traffic conditions and peak hour LOS were analyzed utilizing the San Diego Association of Government's (SANDAG) Regional Transportation Model, and detailed computer-based intersection operational analyses using the SYNCHRO software.

1.1 Study Area and Context

The Downtown Community Plan study area includes all streets and freeways in the Centre City community planning area as well as those streets that connect the downtown area with the larger San Diego region. **Figure 1-1** illustrates the regional location of the downtown area. The downtown study area encompasses 1,445 acres and is generally bound by Laurel Street to the north, I-5 to the east, Sigsbee and Beardsley Street to the south, and the San Diego Bay to the west, as identified in **Figure 1-2**.

Downtown San Diego is a major activity center for retail, commercial, office, visitor, recreation, marina and residential uses. It is served by two light rail transit lines, Amtrak service, three major freeways, commuter rail service, and numerous express and local bus lines.

The Downtown Community Plan is a key document in guiding and providing a vision for future growth and development of the downtown area. The Downtown Community Plan envisions downtown as a multi-use regional center, with strong employment and residential components. Neighborhoods will include mixed-use centers, parks and open spaces, and a variety of amenities to support active urban lifestyles.

THIS PAGE INTENTIONALLY LEFT BLANK

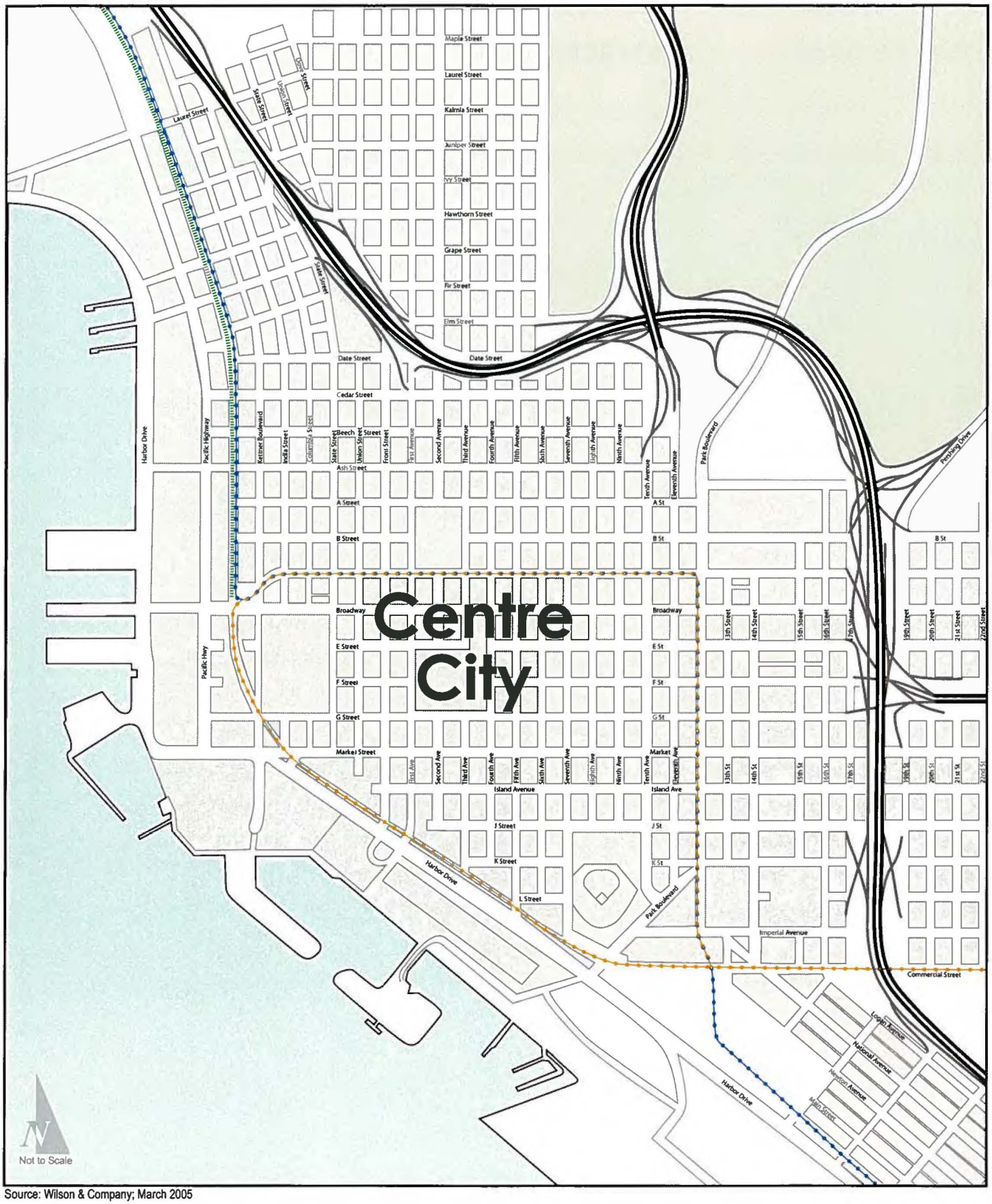
Source: US Geological Survey, 30 meter Digital Elevation Model; Wilson & Company; March 2005

Downtown Community Plan

WILSON &COMPANY EIR Transportation, Circulation, and Access Study

Figure 1-1
Regional Location

THIS PAGE INTENTIONALLY LEFT BLANK



Source: Wilson & Company; March 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 1-2
Downtown Study Area

THIS PAGE INTENTIONALLY LEFT BLANK

The following eleven neighborhoods comprise the Downtown Community Plan study area as shown in **Figure 1-3**:

- Ballpark
- Bayside
- Civic Center
- College
- Columbia
- Convention Center
- Cortez
- East Village
- Horton Plaza / Gaslamp
- Little Italy
- Marina

Promoting alternative transportation modes is a key goal of the proposed Downtown Community Plan. The arrangement of land use and the development intensities are intended to encourage walking, bicycling, as well as increased transit utilization.

1.2 Existing and Future Development Potential

This study assesses transportation network performance under existing land use and transportation system conditions, as well as under future year land use conditions as specified in the proposed Downtown Community Plan. The previous Community Plan (1992 MEIR) is evaluated as a No Project alternative.

Population and employment, as well as land use characteristics for the Existing, No Project, and the proposed Downtown Community Plan scenarios are displayed in **Table 1.1**.

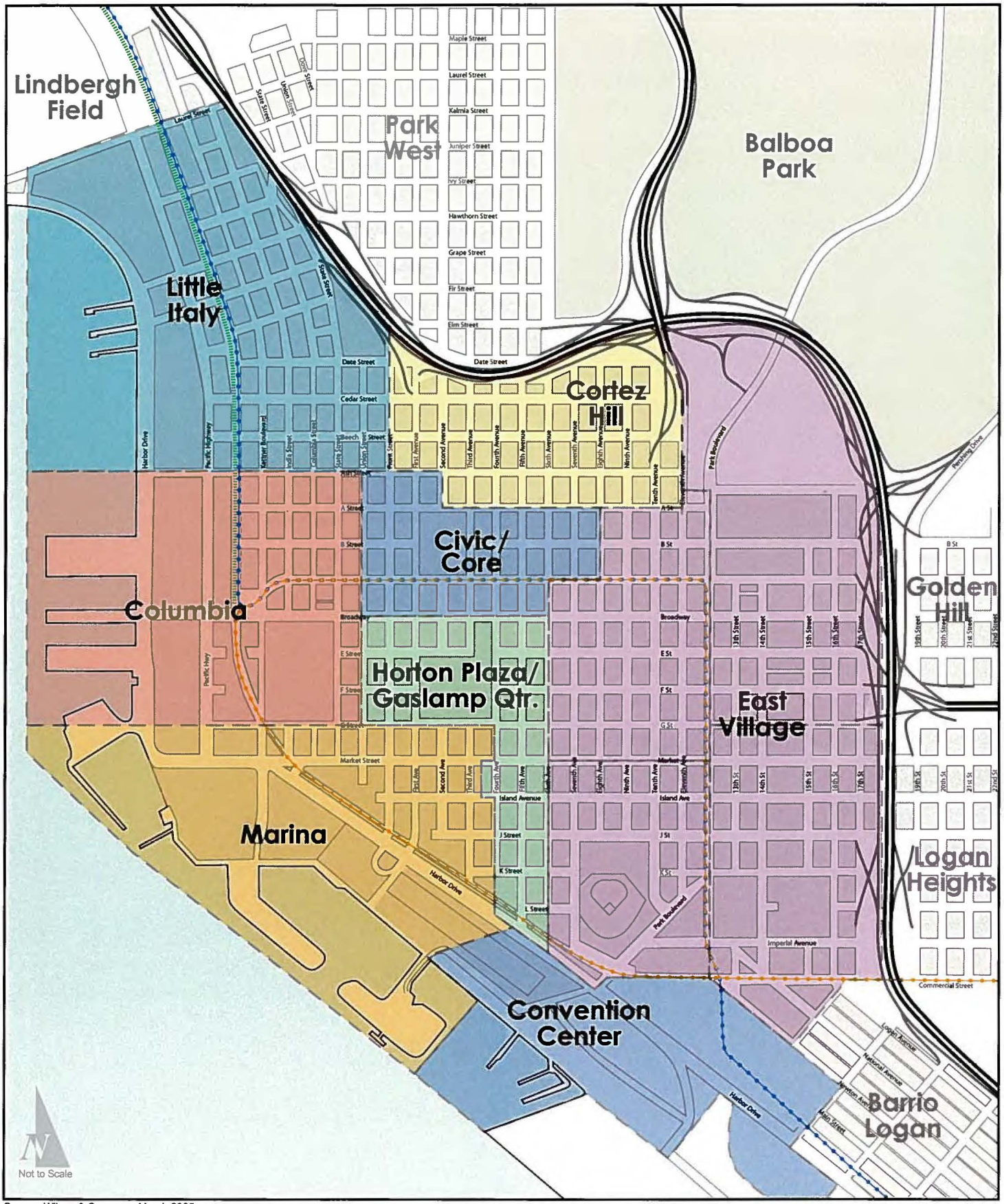
Table 1.1
Existing and Future Year Study Scenarios

Land Use / Demographic Category	Existing	No Project	Proposed Plan
Population[1]	27,500	48,000	88,900
Employment	74,500	117,000	164,900
Residential (units)	14,600	30,700	53,000
Office (s.f)	13,144,000	20,700,000	29,157,000
Retail (s.f.)	2,658,000	4,300,000	5,801,000
Hotel Rooms	8,800	15,600	20,200

Source: CCDC, Downtown Community Plan, June 2005

As shown, population, employment and land uses are projected to increase under the proposed Downtown Community Plan, with downtown residential population levels approaching 89,000 and employment reaching approximately 165,000. The No Project alternative would result in build-out population and employment levels approximately 45% and 30% lower, respectively, than the proposed Plan.

THIS PAGE INTENTIONALLY LEFT BLANK



Source: Wilson & Company; March 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 1-3
Downtown Neighborhoods

THIS PAGE INTENTIONALLY LEFT BLANK

1.3 Report Organization

Following this introductory chapter, the remaining chapters of this technical report are organized as follows:

- **Chapter 2.0 – Methodologies and Standards** discusses the various analysis methodologies which were employed to assess the performance of the transportation system under existing, No Project, and proposed Downtown Community Plan conditions;
- **Chapter 3.0 – Existing Conditions** presents an assessment of existing traffic conditions, including performance of downtown freeway segments, ramps and major street intersections;
- **Chapter 4.0 – Downtown Community Plan Traffic Assessment** discusses future year traffic conditions, impacts and mitigation requirements associated with the proposed Downtown Community Plan. A comparison with the No Project (1992 MEIR) conditions is provided to assist in understanding the impacts and benefits associated with the proposed Downtown Community Plan;
- **Chapter 5.0 – Transit Access and Circulation Assessment** discusses transit service and access requirements under the proposed Downtown Community Plan;
- **Chapter 6.0 – Non-Motorized Transportation Access and Circulation Assessment** discusses non-motorized (walk, bicycle, and pedicab) travel and access requirements associated with the proposed Downtown Community Plan;
- **Chapter 7.0 – Parking Assessment** provides an analysis of future parking needs with build-out of the proposed Downtown Community Plan; and
- **Chapter 8.0 – Summary of Plan Impacts and Mitigation Measures** provides a summary of transportation impacts and mitigation requirements associated with the proposed Downtown Community Plan.

THIS PAGE INTENTIONALLY LEFT BLANK

2.0 Methodologies and Standards

This chapter defines the methodologies and standards utilized in the analysis of the downtown transportation system for the proposed *Downtown Community Plan.* The focus is on traffic operations, with identification of impacts to transit, pedestrian, bicycle and parking facilities, as well. This chapter identifies performance thresholds, i.e. criteria which were used to assess the significance of potential impacts on traffic, transit, bicycle, and pedestrian facilities, as well as parking requirements.

2.1 Traffic Level of Service Definitions

The concept of Level of Service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. **Table 2.1** describes generalized definitions of urban transportation systems at LOS A through F.

Table 2.1
Level of Service Definitions

LOS	Congestion/Delay	Traffic Flow Quality
A	None	Low volumes, high speeds; Speed not restricted by other vehicles; All signal cycles clear with no vehicles waiting through more than one signal.
B	None	Operating speeds beginning to be affected by other traffic; Less than 10% of signal cycles have vehicles waiting through more than one signal cycle.
C	None to minimal	Operating speed and maneuverability closely controlled by other traffic; Between 10% and 30% of signal cycles have vehicles waiting through more than one signal cycle.
D	Minimal to substantial	Tolerable operating speeds; Between 30% and 70% of signal cycles have vehicles waiting through more than one signal cycle.
E	Significant	Capacity; Maximum traffic volume an intersection can accommodate; 70% to 100% of signal cycles have vehicles waiting through more than one signal cycle.
F	Considerable	Long queues of traffic; unstable flows; travel speeds can drop to zero.

Source: Highway Capacity Manual 2000

2.2 Freeway Segment and Ramp Level of Service

The analysis considers operations on the major freeway segments feeding and traversing the downtown, including I-5, SR-163, and SR-94. Capacity and operational considerations on freeway on- and off-ramps serving the downtown are a major focus of the analysis. The following sections describe the analysis methodologies for freeway segments and ramps.

Freeway Segment Level of Service

Freeway LOS and performance levels are based on procedures developed by Caltrans District 11, which in turn are based on methods described in the 2000 *Highway Capacity Manual (HCM)*.

The procedure for calculating freeway LOS involves estimating a peak hour volume to capacity (V/C) ratio. Peak hour volumes are estimated from the application of design hour ("K"), directional ("D") and truck ("T") factors to Average Daily Traffic (ADT) volumes. The truck factors (percent trucks) were obtained from the most recent Caltrans data.

The resulting V/C ratio is then compared with accepted ranges of V/C values corresponding to the various Levels of Service, as shown in **Table 2.2**. The corresponding LOS represents an approximation of existing or forecast freeway operating conditions during the peak hour. Freeway LOS is calculated separately for each direction. LOS E or better is considered the maximum acceptable threshold for peak hour freeway operations.

Table 2.2
Freeway Segment Level of Service Definitions

LOS	V/C	Congestion/Delay	Traffic Description
A	≤0.41	None	Free flow.
B	0.42-0.62	None	Free to stable flow, light to moderate volumes.
C	0.63-0.80	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
D	0.81-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
E	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
F	>1.00	Considerable; 0-1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.

Source: Wilson & Company; February 2005

Freeway Ramp Level of Service

Two separate methods were used to evaluate the performance of ramps within the Downtown Community Plan study area: volume/capacity analysis and metered on-ramp analysis as discussed below.

Volume/Capacity (V/C) Analysis

The V/C analysis is based on a comparison of each ramp's estimated capacity with its peak hour traffic volumes. The typical capacity of an on- or off-ramp is 1,200 passenger cars per hour per lane. Therefore, a one-lane ramp carrying 960 vehicles during the peak hour would be operating at 80% of capacity. A V/C ratio greater than 1.0 corresponds to unacceptable Level of Service F. A peak hour LOS of E or better is considered acceptable for on- and off-ramps serving the downtown area.

Metered On-Ramp Analysis (Caltrans District 11 Methodology)

Currently, only a few on-ramps within the downtown study area are metered. However, in the future Caltrans plans to implement ramp metering at all freeway on-ramps in the downtown study area. The metered on-ramp operations analysis is based on a comparison of peak hour volumes with peak hour flow rates. Consistent with SANDAG's long range forecasting assumptions and procedures, a future year peak hour metered flow rate of 750 vehicles per hour was assumed for all downtown freeway on-ramps. Any excess demand over this assumed flow rate was identified, along with an estimate of resulting delay and extent of traffic queuing.

2.3 Intersection Level of Service

Level of Service for signalized intersections is defined in terms of vehicle delay. **Table 2.3** displays LOS criteria for signalized intersections.

Table 2.3
Peak Hour Intersection Level of Service Definitions

Average Stopped Delay Per Vehicle (seconds / vehicle)	LOS Characteristics
≤ 10	**LOS A** describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
> 10 – 20	**LOS B** describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
> 20 – 35	**LOS C** describes operations with higher delays which may result from fair progression and/or longer cycles lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping
> 35 – 55	**LOS D** describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
> 55 – 80	**LOS E** is considered to be the limit of acceptable delay. Individual cycle failures are frequent occurrences.
> 80	**LOS F** describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

Source: 2000 Highway Capacity Manual

Consistent with previous traffic studies in the downtown study area, LOS E is the maximum acceptable threshold for downtown intersections under peak hour conditions.

2.4 Significance Criteria

For the purposes of this EIR analysis, threshold criteria for each transportation system component have been identified to assist in the identification of significant project-related impacts associated with the proposed Downtown Community Plan, as follows.

Traffic

The primary criteria utilized to define traffic impact significance is the number of transportation facilities projected to operate at LOS F under future conditions. The number of freeway segments, freeway ramps, and intersections projected to operate at LOS F under build-out of the proposed Downtown Community Plan are enumerated as follows:

- **Direct** project-related traffic impacts would result when build-out of the proposed Downtown Community Plan causes a facility operating at acceptable LOS under existing conditions to degrade to substandard LOS F.
- **Cumulatively** significant traffic impacts would result at locations where build-out of the proposed Downtown Community Plan would contribute to substandard (LOS F) traffic operations on facilities that currently operate at LOS F under existing conditions.

Transit

For the purpose of this study, potential impacts relating to transit would be considered significant if one or more of the following were to occur:

- The capacity and service capabilities of existing and planned transit services would be exceeded under cumulative build-out conditions.
- Key features of planned and assumed transit services were to result in the service degradation of and/or conflicts with other transportation operations in the downtown area, including adjacent roadway and pedestrian facilities.

Significant project-related transit impacts would result when build-out of the proposed Downtown Community Plan would result in substandard operations and capacity related impacts on identified transit services and/or results in conflicts with other transportation operations.

Non-Motorized Circulation (Pedestrian, Bicycle, and Pedicab)

Pedestrian, bicycle and pedicab circulation is significantly impacted when these facilities are determined to be inadequate to handle demands, due to either limited capacity or potential conflicts with other travel modes, such as vehicular traffic and the Trolley.

Significant project-related pedestrian, bicycle and/or pedicab impacts would occur when build-out of the proposed Downtown Community Plan would result in pedestrian, bicycle and pedicab capacity limitations and/or conflicts with other transportation modes.

Parking

Parking impacts are considered significant if the projected demand for parking would exceed the projected available parking supply. This in turn could lead to parking impacts

in surrounding residential neighborhoods, as people seek parking outside of downtown due to limited parking availability.

Significant project-related parking impacts would occur when build-out of the proposed Downtown Community Plan results in projected parking shortages in the downtown area and/or parking impacts on surrounding residential neighborhoods.

2.5 Traffic Modeling and Travel Forecasting Procedures

This section outlines the key assumptions and methods employed to develop daily and peak hour travel forecasts, as well as to estimate LOS for the major downtown transportation facilities, including freeways, freeway ramps, and intersections.

Land Use and Roadway Network Assumptions

The following land use and network assumptions were utilized in this study:

- **Downtown Community Plan**
  - Downtown Community Plan preferred plan land uses (*Downtown Community Plan*, June 2005)

    For estimating the transportation impacts, the analysis used a buildout traffic volume that would be generated by a realistic rather than maximum buildout of the land use type and intensity possible under the proposed Plans and Ordinances.

    The projected buildout under the proposed Community Plan was derived by CCDC's planning consultant, Dyett & Bahtia, by synthesizing information about existing conditions and development projects in the "pipeline" with potential future growth calculations including density bonus provisions in the proposed Plans and Ordinances. Potential growth was calculated from the application of assumed average intensities to vacant parcels and sites with infill potential. These assumptions were developed while taking into account maximum FAR allowed by the Community Plan, context and compatibility with existing development, and economic and other trends. Potential density bonuses achieved through State affordable housing regulations were not factored in. However, it is not anticipated that these bonus provisions would represent a substantial number of residential units.

    The resulting buildout projection, which is approximately 80% of the worst-case maximum exclusive of State affordable housing bonus programs, provides a reasonable distribution of potential future growth with respect to allowable FAR ranges, land use types, and projected market potential.

- SANDAG Regional Transportation Plan *Revenue Constrained* Transportation Network (Roadway and Transit Networks) plus downtown roadway network modifications, as identified in the proposed Downtown Community Plan. These are discussed further in Chapter 4.0.

➢ **No Project**

- 1992 MEIR/*Centre City Community Plan* future land uses and roadway network assumptions
- SANDAG Regional Transportation Plan (RTP) 2030 *Revenue Constrained* Transportation Network (Roadway and Transit Networks)

Since the analyses were initiated prior to the voter approval of the Transnet extension in November 2004, the SANDAG RTP *Revenue Constrained* roadway network was utilized to represent the worst case scenario in terms of future roadway capacity.

Development of Forecast Travel Volumes

The SANDAG Regional Transportation Model was utilized to prepare future year build-out traffic forecasts for both the proposed Downtown Community Plan and the No Project alternative. Peak hour traffic volumes were developed from the transportation model output via the following key steps:

1. **Development and application of growth factors to existing peak hour intersection turn movements and freeway on/off ramp peak hour volumes.**

   Growth factors were derived from the SANDAG Transportation Model by comparing modeled "existing" and modeled "future year" peak hour traffic. Growth factors from the modeling were then applied to existing peak hour traffic data to derive future year peak hour volumes.

   For intersections, growth factors were applied by intersection leg, and then iteratively processed via the NCHRP (National Cooperative Highway Research Program) 255 Turn Movement Process, which considers the variations in growth by approach leg to develop an estimate of future year turn movements reflecting potential new/changed travel patterns relative to existing conditions. For freeway ramps, the growth factors were applied directly to existing AM and PM peak hour ramp volumes to derive future year ramp volumes.

2. **Review and refinement of future year peak hour traffic volumes.**

   This included a number of manual adjustment steps to ensure reasonability of the future year forecasts, including:

   - Reconciliation of results determined to be unreasonable, accounting for areas where the base year transportation model was found to over/under estimate traffic volumes.

- Balancing between adjacent intersections, accounting for traffic sinks and sources (driveways, parking structures, etc.)
- Balancing between freeway ramp on/off volumes and the various receiving and contributing surface streets.

Peak Hour Intersection Analysis

The process described above provided AM and PM peak hour intersection volumes for analysis via the SYNCHRO software (v.6) network simulation model. Measures of effectiveness are determined in SYNCHRO by measuring and averaging travel characteristics of individual simulated vehicles as they travel through the roadway network.

The primary measure of effectiveness for purposes of intersection analysis is the total control delay. The average control delay by approach was used to determine an equivalent average control delay for the intersection by calculating a weighted average delay of all links approaching a particular intersection. This produces a calculated result that is comparable to the average control delay per vehicle used to define intersection Level of Service in the Highway Capacity Manual (HCM 2000).

SYNCHRO is capable of accurately modeling the flow of traffic through a network of intersections, and accounting for the impacts of adjacent intersection operations. It is also capable of incorporating the impacts of adjacent at-grade rail crossings on intersection operations. This is particularly useful in analyzing signals in a network, where traffic flow is significantly affected by signal coordination and/or vehicle spillback from adjacent intersections. Since these above characteristics are prevalent in the downtown area, the SYNCHRO software provided the appropriate tool for assessing downtown peak hour intersection operations.

THIS PAGE INTENTIONALLY LEFT BLANK

3.0 Existing Conditions

This chapter presents the results of the Existing Conditions traffic analyses, including current travel demand characteristics and an assessment of existing Level of Service (LOS) on study area freeway segments, freeway ramps, and intersections.

3.1 Travel Demand Characteristics

Existing Year 2000 land use characteristics for the downtown study area are presented in **Table 3.1**.

Table 3.1
Existing Year 2000
Land Uses

Land Use Type	Quantity
Residential (units)	14,600
Office (s.f)	13,144,000
Retail (s.f.)	2,658,000
Hotel Rooms	8,800

Source: *Downtown Community Plan*, June 2005

Table 3.2 displays Year 2000 daily person trips within (originating in and/or destined to) the downtown area, by residential and non-residential land use categories. Approximately 1.23 million person trips currently occur in the downtown area on a daily basis, with about 85% of those trips generated by non-residential land uses.

Table 3.2
Existing Year 2000
Daily Person Trips

Land Use	Person Trips
Residential	185,970
Non-Residential	1,040,490
Total	1,226,460

Source: SANDAG, December 2004

Table 3.3 summarizes the estimated mode share of downtown trips under existing conditions.

Table 3.3
Existing Downtown Mode Share

	Trips		Percent	
	Peak[2]	Daily	Peak[2]	Daily
SOV[1]	203,400	609,100	51.9%	49.6%
Carpool	101,000	371,600	25.8%	30.2%
Transit	30,900	53,600	7.9%	4.3%
Non-Motorized	56,100	142,200	14.3%	15.6%
Total	391,400	1,226,500	100.0%	100.0%

Source: SANDAG, December 2004

Notes:
1. SOV = Single Occupant Vehicle
2. Peak = Peak Travel Period of 6:00am – 9:00am and 4:00pm – 7:00pm.

As shown above, automobile modes (SOV and carpool) currently carry the largest share (79.8%) of downtown total daily trips, followed by non-motorized modes at 15.6% and transit at 4.3%.

Table 3.4 displays Year 2000 daily and peak period vehicle trips in the downtown study area. Approximately one-third of the daily vehicle trips currently occur during the peak periods (6:00 to 9:00 AM and 4:00 to 7:00 PM).

Table 3.4
Existing Year 2000
Daily Vehicle Trips

	Vehicle Trips
Peak Periods	242,780
Daily	727,335

Source: SANDAG, December 2004

Table 3.5 displays Year 2000 vehicle-miles-traveled (VMT) on downtown surface streets. Approximately 40% of total daily VMT in the downtown area occurs during the peak travel periods.

Table 3.5
Existing Year 2000
Daily Vehicle-Miles-Traveled(VMT) on Downtown Surface Streets

	Downtown VMT
Peak Periods	156,140
Daily	383,330

Source: SANDAG, December 2004

3.2 Existing Roadway Network

This section describes the downtown study area roadway network including freeways, major arterials and collectors. The downtown street pattern is comprised of a grid network with several one-way roadways in both the north-south and east-west directions. **Figure 3-1** displays the downtown study area existing roadway network.

Roadways

A simplified functional roadway classification system based upon relative traffic volume and function has been developed by the City of San Diego for the current downtown street system. Downtown roadways are divided into six categories: freeway, primary arterial, major street, collector street, business street and local street. Street classifications and examples of characteristic streets are discussed below.

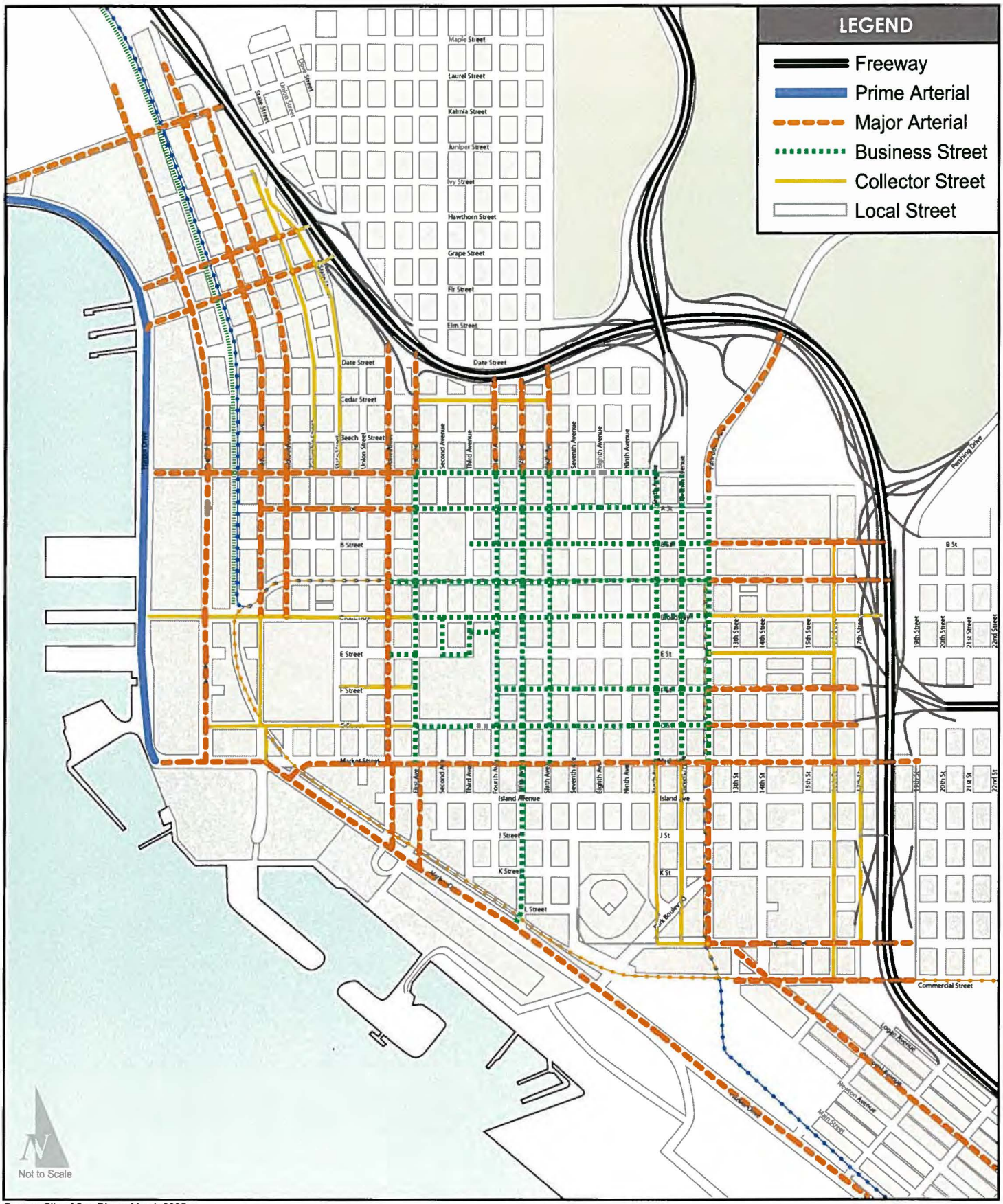
Freeways – Freeways serve through traffic and are fully access controlled by grade separations, interchanges and ramp connections. Freeways are typically maintained by the state (Caltrans) and constructed to state criteria. Freeways vary in width from four (4) to eight (8) or more lanes. Regional access to the downtown study area is provided by I-5, SR-163, and SR-94. I-5 is a north/south freeway serving coastal cities in San Diego County and running northward to Orange and Los Angeles counties and beyond. SR-163 is also a north/south freeway running from I-15 in the north, to 10th and 11th Streets in downtown San Diego. SR-163 provides access to I-8, I-805 and I-15, as well as to SR-52. SR-94 is an east-west freeway running from downtown San Diego eastward through southeastern San Diego and terminating at I-8 in eastern San Diego County.

Prime Arterials – A prime arterial carries heavy vehicular traffic, relatively low pedestrian traffic, and moderate bicycle and transit traffic. It has a raised center median, bicycle lanes, street trees, traffic safety street lighting, sidewalks, and very restricted access to abutting properties. It may include overhead or underground utilities. Only Harbor Drive, north of Market Street, is classified as a six-lane primary arterial.

Major Arterials – Major streets provide a network of roadway access to primary arterials and the freeway system. They also provide access to abutting commercial and industrial properties. They carry moderate to heavy traffic volumes, low to high pedestrian and bicycle movements, and moderate to high transit movements. Major streets have raised center median, street trees, traffic safety street lighting, and sidewalks. The major street right-of-way may include landscaping, pedestrian-scale lighting, overhead or underground utilities, on-street parking and/or bike lanes. Examples of major streets in the downtown area include Pacific Highway, Kettner Boulevard, Front Street, Fifth Avenue, Market Street and Ash Street.

Collector Streets – Collector streets primarily provide connections between local/ collector streets and streets of higher classification. The collector street provides access to abutting property and carries low to moderate traffic volumes, low to heavy pedestrian volumes, moderate to heavy bicycle volumes, and low to moderate transit movements. Collector streets have on-street parking, street trees, traffic safety street lighting, and

THIS PAGE INTENTIONALLY LEFT BLANK



Source: City of San Diego; March 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study
WILSON & COMPANY

Figure 3-1
Downtown Roadway Classifications
Existing Conditions

THIS PAGE INTENTIONALLY LEFT BLANK

sidewalks. They may also include landscaping, pedestrian scale lighting and overhead or underground utilities. Collector streets in the downtown study area include Columbia Street, State Street, 10th Avenue and 11th Avenue.

Business Streets – Business streets are usually two, three or four lane facilities located within the Central Business District (CBD). Their primary purpose is to carry through traffic and to provide access to abutting property. Business streets function as either one- or two-way facilities. The business street is unique in that it carries a high volume of traffic at low travel speeds (given the short spacing of traffic signals at each block). Business streets generally have on-street parking, street trees, street lighting, and sidewalks. They may include landscaping, pedestrian-scale lighting and overhead or underground utilities. A large majority of downtown roadways are classified as business streets.

Local Streets – Local streets primarily provide direct access to abutting property. They carry low traffic volumes, low to heavy pedestrian volumes, and low to moderate bicycle volumes. Local streets have on-street parking, street trees, traffic safety street lighting, and sidewalks. They may include landscaping, pedestrian-scale lighting and overhead or underground utilities. Examples of the local streets in the downtown include Seventh Avenue, Ninth Avenue, K Street, 14th Street, Island Avenue, Beech Street and Ivy Street.

Appendix A presents a summary of existing roadway width, directional flow, classification, and number of lanes for the existing downtown roadway network.

Signalized Intersections

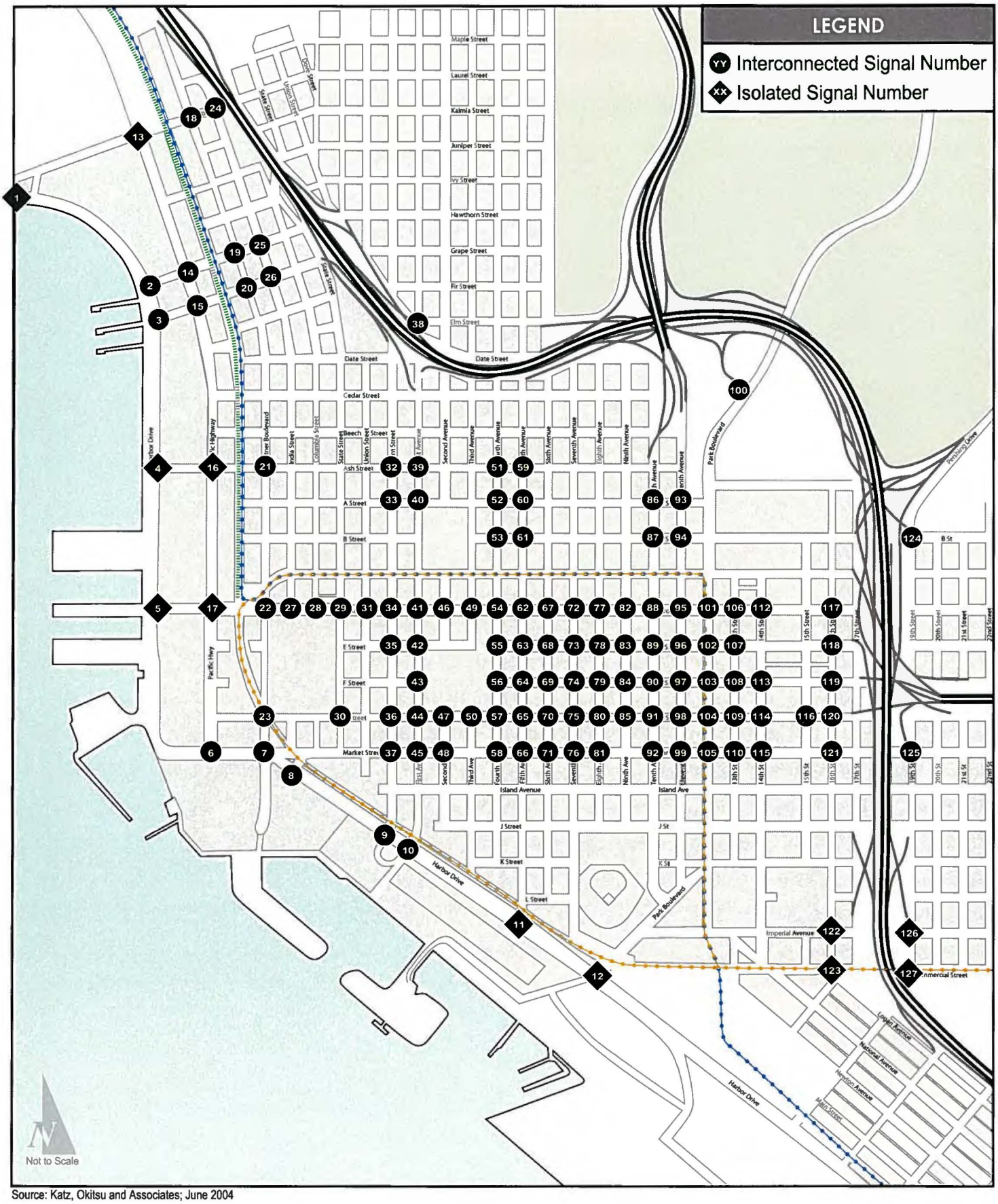
Traffic signals assign right-of-way for motorists, pedestrians and Trolley vehicles at the intersection of streets. For the purposes of analyzing existing downtown traffic conditions, 127 signalized intersections were evaluated. **Figure 3-2** shows the location of the analyzed signalized intersections under existing conditions.

The majority of downtown signalized intersections are incorporated into a coordinated and interconnected traffic system through a master controller, enabling synchronized operation along major corridors. Intersections along Pacific Highway, Harbor Drive, Imperial Avenue, and Commercial Street are currently not part of this coordinated system.

3.3 Existing Traffic Volumes

Figures 3-3 and **3-4** illustrate Year 2002 ADT volumes for north-south and east-west roadways, respectively. The heaviest traveled streets in the north-south direction are Harbor Drive, Pacific Highway, Park Boulevard and First Avenue. The heaviest traveled streets in the east-west direction are F Street, Grape Street, Hawthorn Street and Laurel Street. These roadways currently carry traffic volumes in excess of 20,000 vehicles per day.

THIS PAGE INTENTIONALLY LEFT BLANK



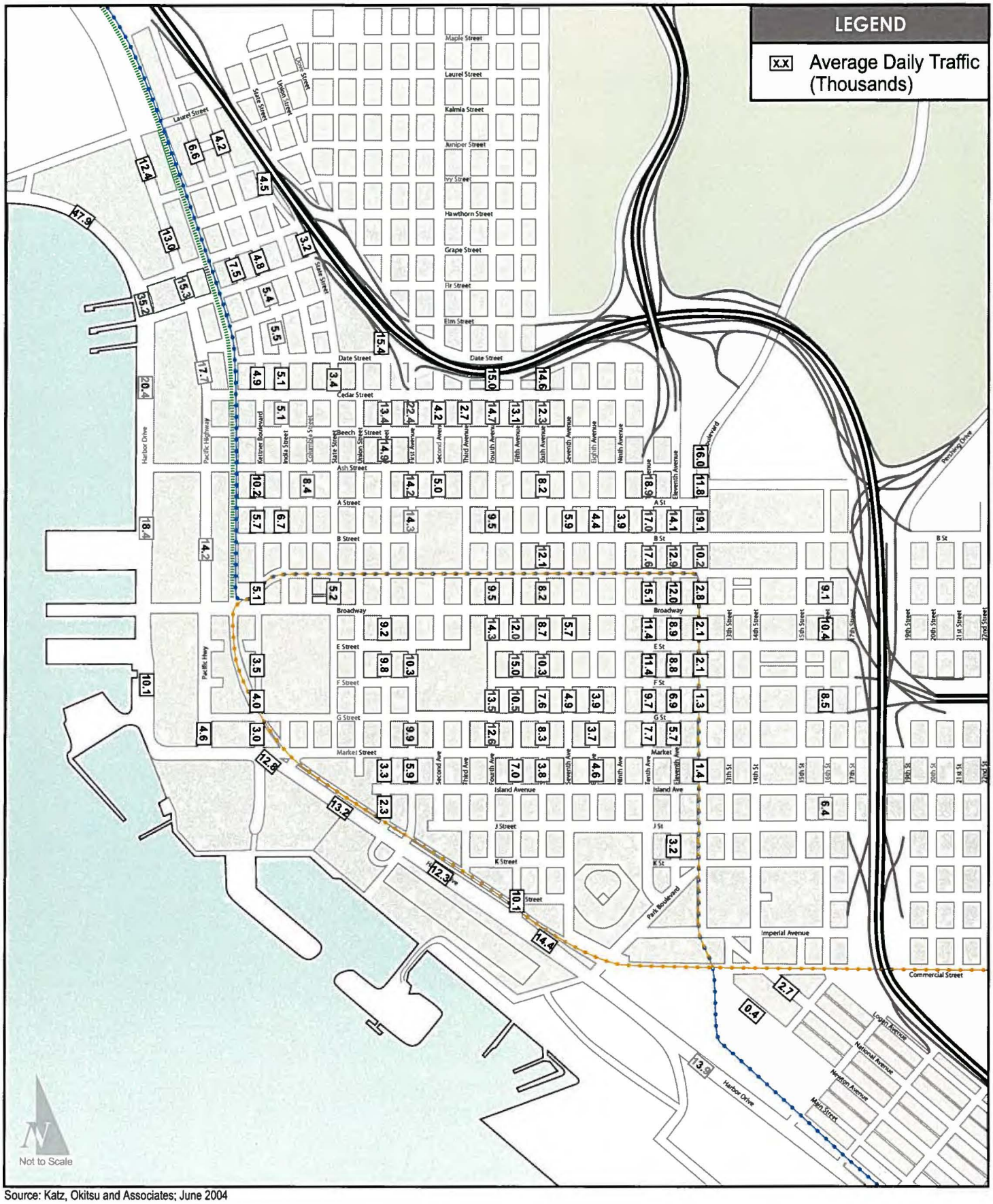
Source: Katz, Okitsu and Associates; June 2004

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 3-2
Downtown Traffic Signal Locations
Existing Conditions

THIS PAGE INTENTIONALLY LEFT BLANK

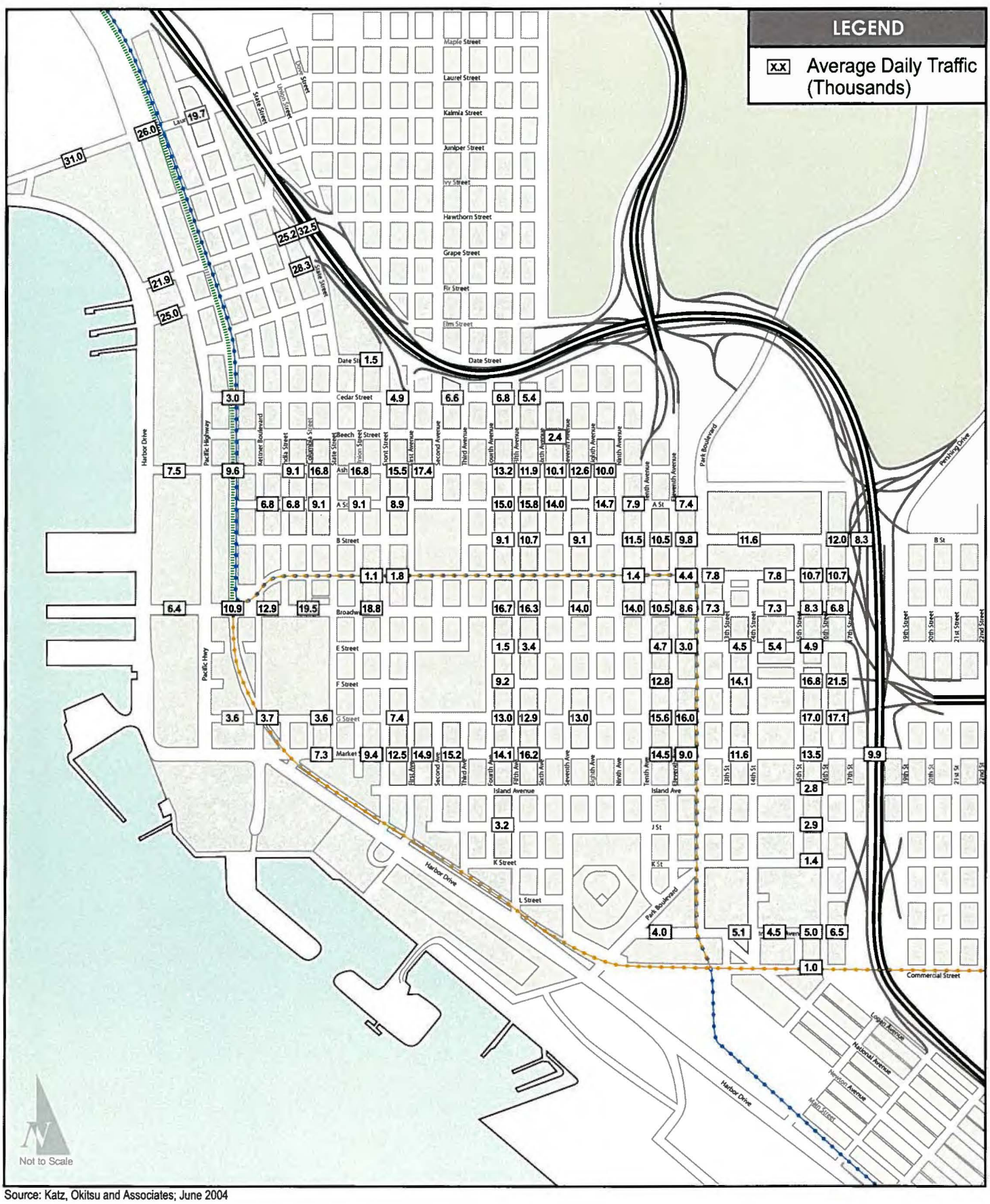


Source: Katz, Okitsu and Associates; June 2004

Downtown Community Plan
EIR Transportation, Circulation, and Access Study
WILSON & COMPANY

Figure 3-3
Downtown Traffic Volumes
North-South Streets
Existing Conditions

THIS PAGE INTENTIONALLY LEFT BLANK



Source: Katz, Okitsu and Associates; June 2004

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 3-4
Downtown Traffic Volumes
East-West Streets
Existing Conditions

THIS PAGE INTENTIONALLY LEFT BLANK

Several screenlines were established across the downtown roadway network to provide an understanding of the overall magnitude of vehicular traffic entering and leaving the downtown study area in the east-west and the north-south directions. A screenline is created by summing traffic volumes along parallel streets that accommodate vehicles traveling in the same general direction (north-south or east-west). **Tables 3.6A** and **3.6B** display an assessment of the existing travel flows in and out of the downtown based upon the established screenline locations. **Figures 3-5A** and **3-5B** display the screenline count locations for east-west and north-south traffic movements, respectively.

Table 3.6A
Existing Conditions
Downtown East-West Screenline Analysis

Screenline Number	Roadway	Segment	Existing
1a	Laurel St	Harbor Dr to Pacific Hwy	31,020
1b	Hawthorn St	Columbia St to State St	25,220
1c	Grape St	Columbia St to State St	28,300
Sub-Total			**84,540**
2a	Ash St	Sixth Ave to Seventh Ave	10,150
2b	A St	Sixth Ave to Seventh Ave	14,010
2c	B St	Sixth Ave to Seventh Ave	11,070
Sub-Total			**35,230**
3a	C St	15th St to 16th St	10,660
3b	Broadway	15th St to 16th St	8,250
3c	E St	15th St to 16th St	4,860
3d	F St	15th St to 16th St	16,840
3e	G St	15th St to 16th St	16,950
3f	Market St	15th St to 16th St	13,520
3g	Island Ave	15th St to 16th St	2,810
3h	J St	15th St to 16th St	2,930
3i	K St	15th St to 16th St	1,420
3j	Imperial Ave	15th St to 16th St	5,000
3k	Commercial Ave	15th St to 16th St	1,040
3l	National Ave	Commercial Ave to 16th St	2,750
Sub-Total			**87,030**
TOTAL (East-West)			**206,800**

Source: Katz, Okitsu & Associates, 2004

Table 3.6B
Existing Conditions
Downtown North- South Screenline Analysis

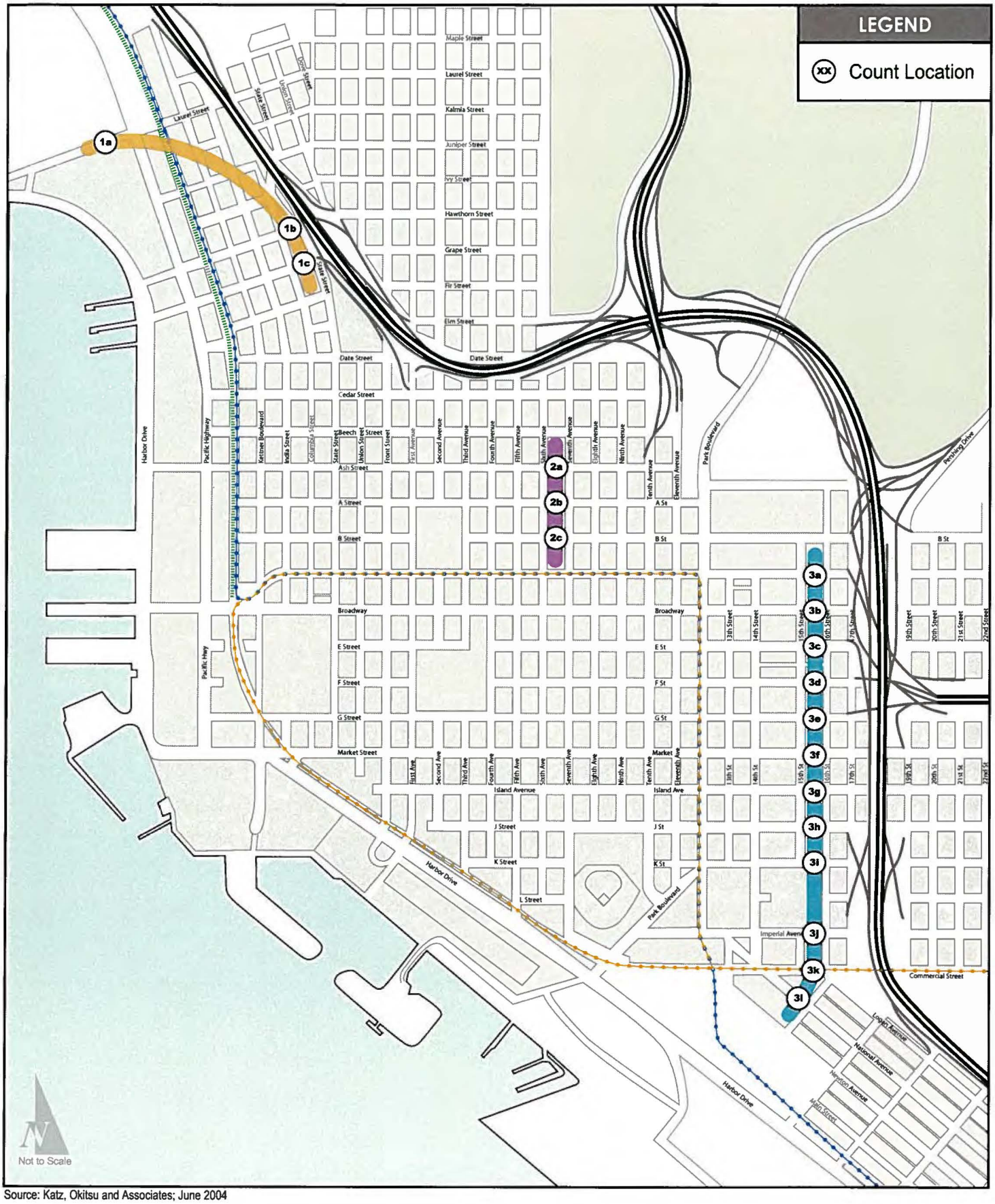
Screenline Number	Roadway	Segment	Existing
1a	N. Harbor Dr	Cedar St to Beech St	47,850
1b	Pacific Hwy	Cedar St to Beech St	12,360
1c	Kettner Blvd	Cedar St to Beech St	6,570
1d	India St	Cedar St to Beech St	4,230
1e	State St	Cedar St to Beech St	4,480
1f	First Ave	Cedar St to Beech St	22,370
1g	Second Ave	Cedar St to Beech St	4,170
1h	Third Ave	Cedar St to Beech St	2,670
1i	Fourth Ave	Cedar St to Beech St	14,690
1j	Fifth Ave	Cedar St to Beech St	13,130
1k	Sixth Ave	Cedar St to Beech St	12,350
Sub-Total			**144,870**
2a	Seventh Ave	A St to B St	5,910
2b	Eighth Ave	A St to B St	4,420
2c	Ninth Ave	A St to B St	3,880
2d	10th Ave	A St to B St	17,010
2e	11th Ave	A St to B St	14,140
2f	Park Blvd	A St to B St	19,090
2g	16th St	Broadway to E St	10,400
Sub-Total			**74,850**
TOTAL (North-South)			**219,720**

Source: Katz, Okitsu & Associates, 2004

As shown, the east-west screenline locations currently carry a total of about 207,000 ADT, while the north-south screenline locations carry approximately 220,000 ADT. Individual streets carrying high volumes include Laurel Street, Hawthorn Street and Grape Street, along with F Street, G Street, and Market Street in the east-west direction, and Harbor Drive, First Avenue, 10th Avenue, and Park Boulevard in the north-south direction.

3.4 Existing Peak Hour Freeway Segment and Ramp Performance

As stated previously, the downtown study area is served by three freeways (I-5, SR-94, and SR-163) providing access to the northern, southern, and eastern sections of the city and region. I-5 includes four (4) lanes in each direction, with auxillary lanes to assist in the merge and diverge of traffic at the ramp locations. SR-94 provides four (4) lanes in each direction while SR-163 provides two (2) lanes in each direction through Balboa Park.

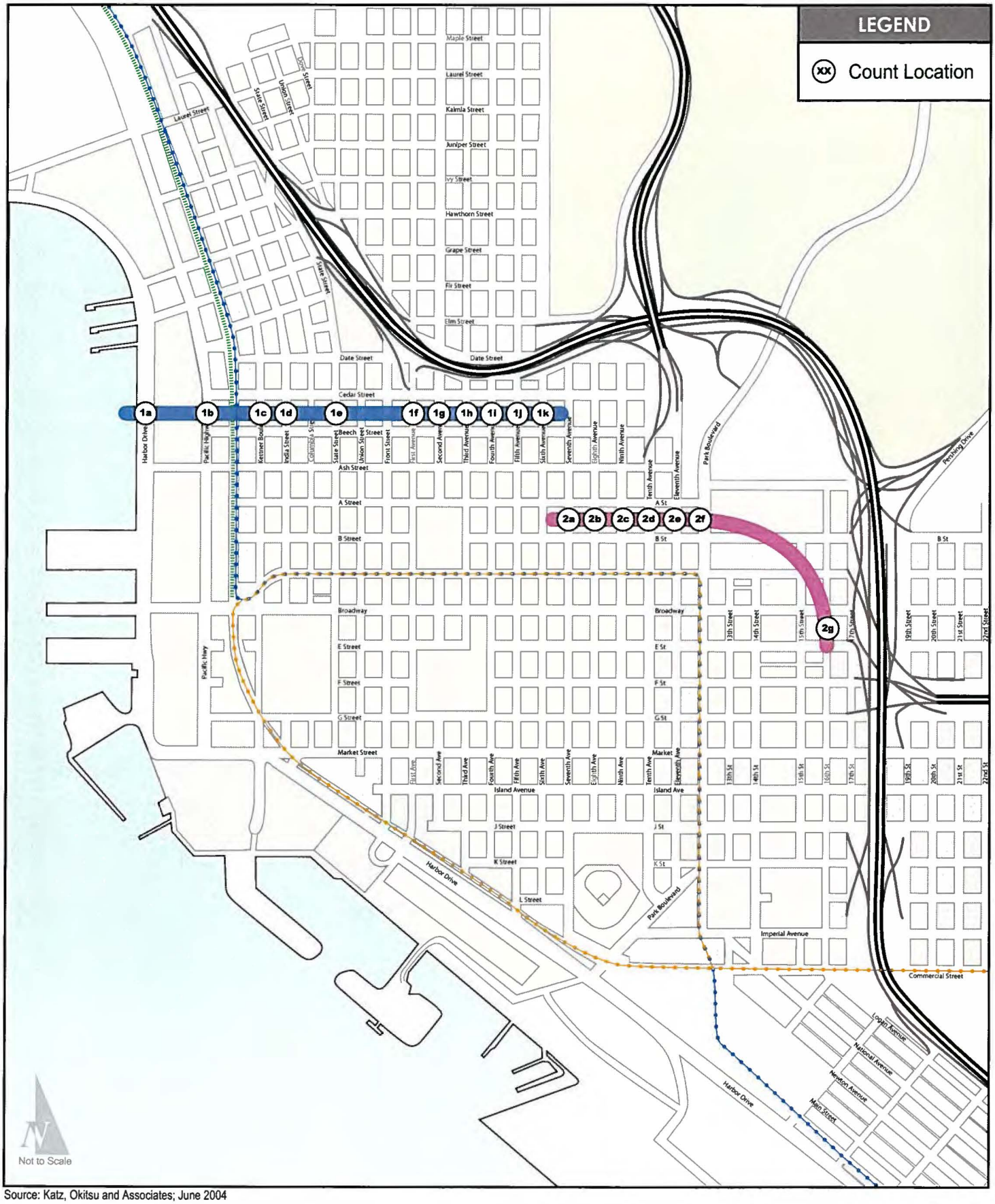


Source: Katz, Okitsu and Associates; June 2004

Downtown Community Plan
EIR Transportation, Circulation, and Access Study
WILSON & COMPANY

Figure 3-5A
East-West Screenline Locations
Existing Conditions

THIS PAGE INTENTIONALLY LEFT BLANK



Source: Katz, Okitsu and Associates; June 2004

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON &COMPANY

Figure 3-5B
North-South Screenline Locations
Existing Conditions

THIS PAGE INTENTIONALLY LEFT BLANK

Freeway Segment Analysis Results

Table 3.7 displays peak hour Level of Service (LOS) analysis results for study area freeway segments under existing conditions. As shown, freeway volumes on I-5 through the downtown area currently range from 160,000 to 220,000 ADT. Volumes on SR-94, just east of downtown approach 100,000 ADT; while SR-163, just north of downtown, currently carries approximately 101,000 ADT.

Due to high volumes and limited capacity, three (3) freeway segments currently operate at unacceptable LOS F during the AM and/or PM peak hours, as follows:

- I-5: SR-94 to Pershing Drive (southbound during the PM peak hour)
- I-5: Pershing Drive to SR-163 (southbound during the PM peak hour)
- SR-163: I-5 to Washington St (northbound during the PM peak hour; southbound in the AM peak hour)

Freeway Ramp Analysis Results

Table 3.8 lists the freeway ramps providing access to and from the downtown area, as well as existing LOS during the AM and PM peak hours. As shown, the following downtown freeway **on-ramps** are currently operating at LOS F during the AM and/or PM peak hours:

- I-5 Northbound On-Ramp @ B Street (AM peak hour)
- I-5 Northbound On-Ramp @ 11th Avenue (AM and PM peak hour)
- I-5 Northbound On-Ramp @ First Street (PM peak hour)
- I-5 Southbound On-Ramp @ Grape Street (PM peak hour)

The following downtown freeway **off-ramps** are currently operating at LOS F during the AM peak hour:

- I-5 Southbound Off-Ramp @ Cedar Street (AM peak hour)

All freeway **off-ramps** are currently operating at acceptable LOS during the PM peak hour.

Figures 3-6 and **3-7** display freeway segments and ramps, respectively, which are currently operating at substandard LOS F.

THIS PAGE INTENTIONALLY LEFT BLAN

Table 3.7
Existing Year 2000 Freeway Segment Performance
Downtown Study Area

Facility	Segment		Daily ADT	Peak Hour %		Direction	Lanes	Peak Hour Capacity	Direction Split		Truck Factor	Peak Hour Volume		V/C		LOS	
	From	To		AM	PM				AM	PM		AM	PM	AM	PM	AM	PM
I-5	SR-75	J St	179,000	0.076	0.078	NB	4L, 1A	9,200	0.624	0.448	0.98	8,662	6,383	0.94	0.69	E	C
						SB	4L, 1A	9,200	0.376	0.552	0.98	5,219	7,864	0.57	0.85	B	D
	J St	SR-94	178,000	0.076	0.078	NB	4L, 1A	9,200	0.624	0.448	0.98	8,614	6,347	0.94	0.69	E	C
						SB	4L, 1A	9,200	0.376	0.552	0.98	5,190	7,820	0.56	0.85	B	D
	SR-94	Pershing Dr	188,000	0.076	0.078	NB	4L, 2A	10,400	0.624	0.448	0.98	9,098	6,704	0.87	0.64	D	C
						SB	4L, 0A	8,000	0.376	0.552	0.98	5,482	8,260	0.69	1.03	C	**F**
	Pershing Dr	SR-163	205,000	0.076	0.078	NB	4L, 2A	10,400	0.624	0.448	0.98	9,920	7,310	0.95	0.70	E	C
						SB	4L, 0A	8,000	0.376	0.552	0.98	5,978	9,007	0.75	1.13	C	**F**
	SR-163	Sixth Ave	191,000	0.076	0.078	NB	4L, 2A	10,400	0.624	0.448	0.979	9,252	6,817	0.89	0.66	D	C
						SB	4L, 2A	10,400	0.376	0.552	0.979	5,575	8,400	0.54	0.81	B	D
	Sixth Ave	First Ave	202,000	0.076	0.082	NB	4L, 1A	9,200	0.516	0.51	0.979	8,092	8,629	0.88	0.94	D	E
						SB	5L, 1A	11,200	0.484	0.49	0.979	7,590	8,290	0.68	0.74	C	C
	First Ave	Hawthorn St	160,000	0.076	0.082	NB	4L, 1A	9,200	0.516	0.51	0.979	6,409	6,835	0.70	0.74	C	C
						SB	4L, 0A	8,000	0.484	0.49	0.979	6,012	6,567	0.75	0.82	C	D
SR-163	I-5	Washing-ton St	101,000	0.072	0.081	NB	2L, 0A	4,000	0.311	0.665	0.985	2,296	5,523	0.57	1.38	C	**F**
						SB	2L, 0A	4,000	0.689	0.335	0.985	5,087	2,782	1.27	0.70	**F**	C
SR-94	17th St	28th St	99,000	0.077	0.088	EB	4L, 0A	8,000	0.192	0.713	0.982	1,490	6,326	0.19	0.79	A	C
						WB	4L, 0A	8,000	0.808	0.287	0.982	6,272	2,546	0.78	0.32	C	A

Source: BRW/URS, Central Interstate 5 Corridor Study, October 2000; Wilson & Company, March 2005

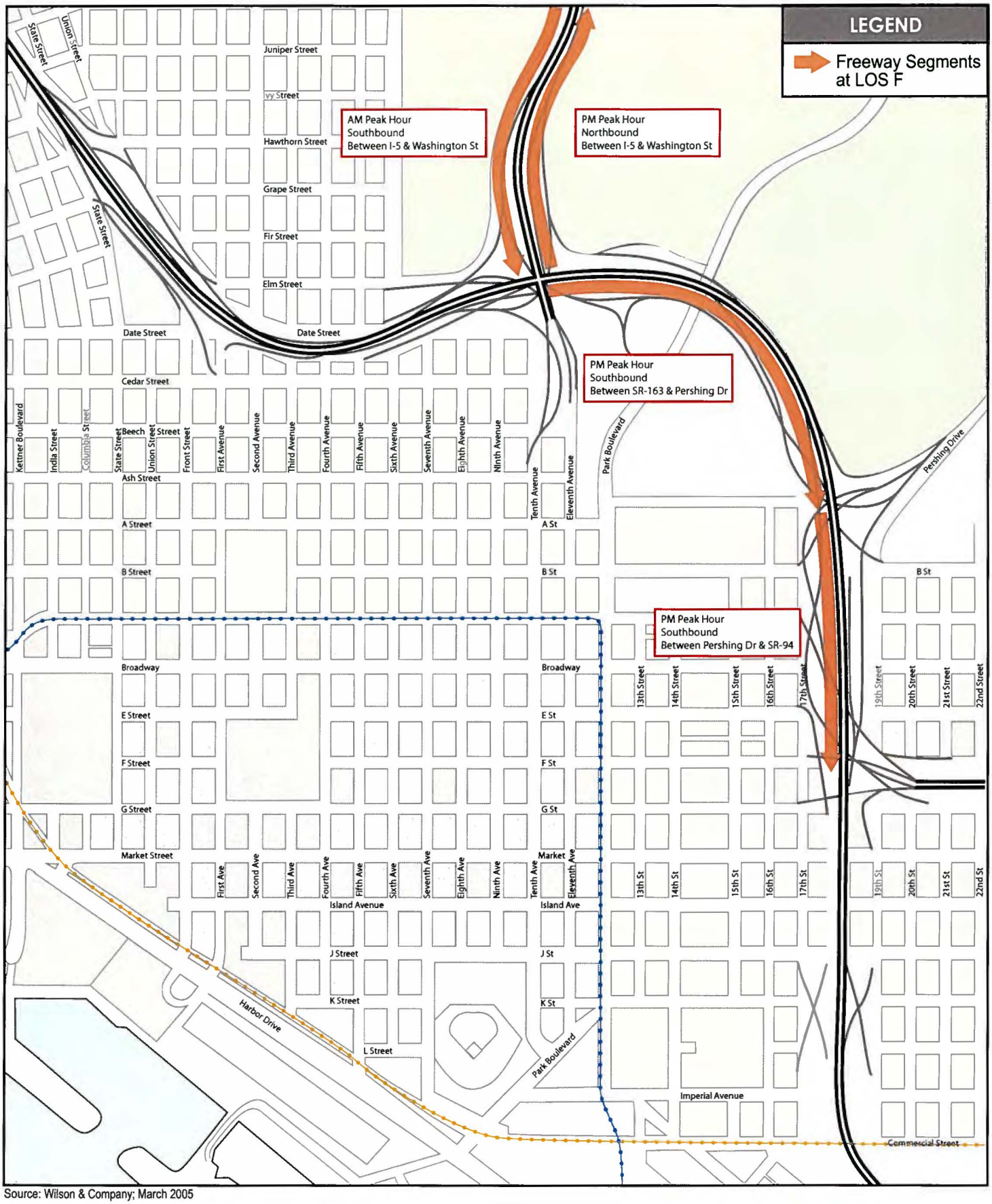
THIS PAGE INTENTIONALLY LEFT BLANK

Table 3.8
Existing Peak Hour Freeway Ramp Level of Service
Downtown Study Area

			Peak Hour Ramp Volume		Lanes	Peak Hour Capacity	V/C		LOS	
	From	To	AM	PM			AM	PM	AM	PM
NB On-Ramps	19th Street	NB I-5	580	850	1	1,200	0.48	0.71	B	C
	B Street	NB I-5	1,420	820	1	1,200	1.18	0.68	F	C
	11th Ave	NB I-5 / NB SR-163	3,270	3,020	2	2,400	1.36	1.26	F	F
	First Avenue	NB I-5	1,040	2,030	1	1,200	0.87	1.69	D	F
SB On-Ramps	Grape Street	SB I-5	1,050	1,660	1	1,200	0.88	1.38	D	F
	First Avenue	SB I-5	640	1,180	1	1,200	0.53	0.98	B	E
	Fifth Avenue	SB I-5	560	1,140	1	1,200	0.47	0.95	B	E
	Park Boulevard	SB I-5	270	210	1	1,200	0.23	0.18	A	A
	C St	SB I-5	320	490	1	1,200	0.27	0.41	A	A
	E Street	SB I-5	540	340	1	1,200	0.45	0.28	B	A
	J Street	SB I-5	260	410	1	1,200	0.22	0.34	A	A
EB On-Ramps	G St	EB SR-94	500	2,730	3	3,600	0.14	0.76	A	C
	19th St	EB SR-94	280	870	1	1,200	0.23	0.73	A	C
NB Off-Ramps	NB I-5	J Street	540	1,030	1	1,200	0.45	0.86	B	D
	NB I-5	B Street	960	670	1	1,200	0.80	0.56	C	B
	NB I-5	Sixth Avenue	1,330	1,200	2	2,400	0.55	0.50	B	B
SB Off-Ramps	SB I-5	Cedar Street	1,210	650	1	1,200	1.01	0.54	F	B
	SB I-5	Front Street	1,470	800	2	2,400	0.61	0.33	B	C
	SB I-5/SB SR-163	10th Ave	3,130	2,900	3	3,600	0.87	0.81	D	D
	SB I-5	B Street	360	430	1	1,200	0.30	0.36	A	B
	SB I-5	17th Street	370	560	1	1,200	0.31	0.47	A	B
	SR-163	Fourth Ave	420	800	1	1,200	0.35	0.67	A	C
	SR-163	Ash St	1,200	460	2	2,400	0.50	0.19	B	A
	SR-163	Park Blvd	330	230	1	1,200	0.28	0.19	A	A
WB Off-Ramps	SR-94	F St	3,450	1,050	3	3,600	0.96	0.29	E	A

Source: SANDAG; Wilson & Company, March 2005

THIS PAGE INTENTIONALLY LEFT BLANK



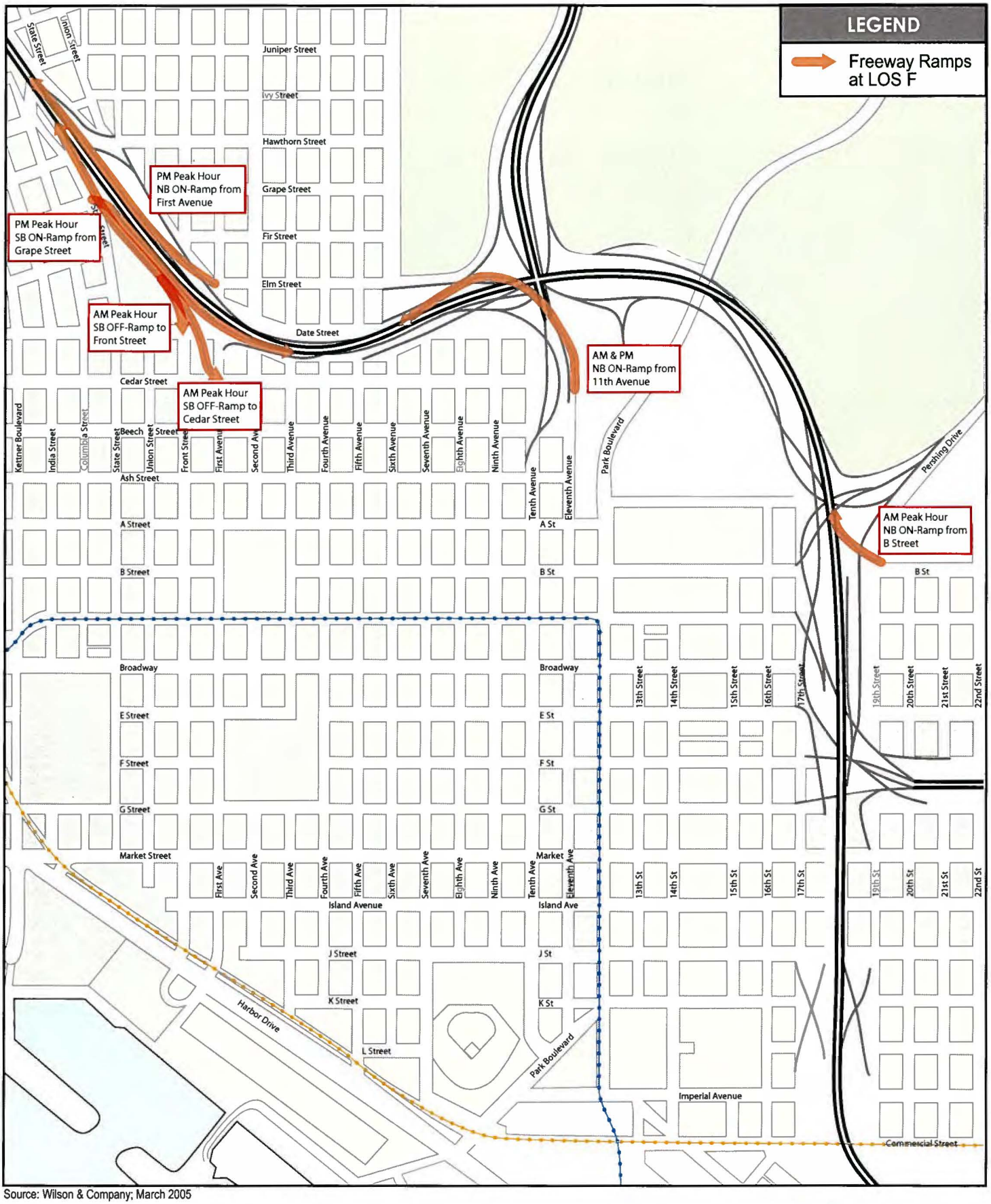
Source: Wilson & Company; March 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 3-6
Freeway Segments at LOS F
Existing Conditions

THIS PAGE INTENTIONALLY LEFT BLANK



Source: Wilson & Company; March 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 3-7
Freeway Ramps at LOS F
Existing Conditions

THIS PAGE INTENTIONALLY LEFT BLANK

Metered Freeway On-Ramp Analysis Results

Table 3.9 displays the analysis results of existing metered freeway on-ramps. There are currently only two metered freeway on-ramp locations in the downtown study area: southbound I-5 from Fifth Avenue and eastbound SR-94 from 19th Avenue.

Table 3.9
Existing Year 2000 I-5 On-Ramp Metering Analysis
Downtown Study Area

			Metering Rates		Peak Hour Ramp Volume		Excess Demand		Delay (Mintues)		Queue Length (Feet)		Queue Storage Location (feet)			
													On-Ramp		Arterial	
	From	To	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
I-5	Fifth Ave	SB I-5	*	864	560	1,140	*	276	*	9.0[1]	*	6,900[1]	*	402	*	6,498
SR -94	19th Ave	EB SR-94	*	698	280	870	*	172	*	14.8	*	4,300	*	650	*	3,650

Source: Wilson & Company; March, 2005

Notes:
1. Values reflect observed delay and queue length.
* Ramp is not metered.

As shown above, during the PM peak hour, the I-5 southbound on-ramp at Fifth Avenue currently generates long queues, backing up onto the local downtown roadway system. The SR-94 eastbound on-ramp at 19th Street also currently has back-ups, with queues also spilling onto the local roadway system.

Existing Peak Hour Intersection Performance

The flow of traffic within the relatively dense grid roadway network in the downtown is controlled by the performance of intersections, and specifically their operation during the peak hours. A total of 128 intersections were analyzed under existing conditions. As noted previously, the signalized intersections are interconnected via a master controller, which provides for good progression along major east-west and north-south corridors. Most signals in the downtown are currently operated with a cycle length of 70 seconds to facilitate this coordination.

Table 3.10 displays peak hour intersection delay and LOS analysis results. **Figures 3-8** and **3-9** graphically display the intersection analysis results for the existing AM and PM peak hours, respectively.

Table 3.10
Peak Hour Intersection Level of Service
Existing Conditions

No.	Intersection	AM Delay	AM LOS	PM Delay	PM LOS
1	Harbor Drive & Laurel Street	19.9	B	52.9	D
2	Hawthorn Street & Harbor Drive	6.4	A	6.7	A
3	Grape Street & Harbor Drive	24.2	C	78.5	E
4	Ash Street & Harbor Drive	11.2	B	19.8	B
5	Broadway & Harbor Drive	5.7	A	12.4	B
6	Harbor Drive & Pacific Highway	2.6	A	6.1	A
7	Harbor Drive & Kettner Boulevard	8.1	A	7.4	A
8	Harbor Drive & Market Street	6.6	A	18.7	B
9	Harbor Drive & Front St	12.9	B	8.2	A
10	Harbor Drive & First Avenue	2.4	A	6.9	A
11	Harbor Drive & Fifth Avenue	4.8	A	6.4	A
12	Eighth Avenue & Harbor Drive	8.1	A	8.1	A
13	Laurel Street & Pacific Highway	23.6	C	50.6	D
14	Hawthorn Street & Pacific Highway	9.2	A	11.1	B
15	Grape Street & Pacific Highway	9.0	A	18.0	B
16	Ash Street & Pacific Highway	10.0	A	22.8	C
17	Broadway & Pacific Highway	7.2	A	12.7	B
18	Laurel Street & Kettner Boulevard	9.2	A	11.4	B
19	Hawthorn Street & Kettner Boulevard	3.3	A	5.3	A
20	Grape Street & Kettner Boulevard	6.4	A	18.2	B
21	Ash Street & Kettner Boulevard	7.7	A	7.6	A
22	Broadway & Kettner Boulevard	4.3	A	4.6	A
23	G Street & Kettner Boulevard	3.8	A	4.3	A
24	Laurel Street & India Street	14.5	B	13.2	B
25	Hawthorn Street & India Street	11.2	B	9.1	A
26	Grape Street & India Street	4.9	A	13.2	B
27	Broadway & India Street	5.3	A	7.0	A
28	Broadway & Columbia Street	6.9	A	5.7	A
29	Broadway & State Street	6.3	A	6.2	A
30	G Street & State Street	12.0	B	6.6	A
31	Broadway & Union Street	5.7	A	5.0	A
32	Ash Street & Front Street	8.5	A	5.6	A
33	A Street & Front Street	12.2	B	8.1	A
34	Broadway & Front Street	10.3	B	12.0	B
35	E Street & Front Street	2.0	A	2.1	A
36	G Street & Front Street	4.4	A	6.1	A
37	Market Street & Front Street	8.2	A	9.9	A
38	Elm Street & First Avenue	4.7	A	Overflow	F
39	Ash Street & First Avenue	10.6	B	9.1	A
40	A Street & First Avenue	5.4	A	7.2	A
41	Broadway & First Avenue	9.4	A	11.8	B
42	E Street & First Avenue	6.4	A	4.0	A
43	F Street & First Avenue	9.0	A	8.2	A
44	G Street & First Avenue	9.3	A	9.6	A

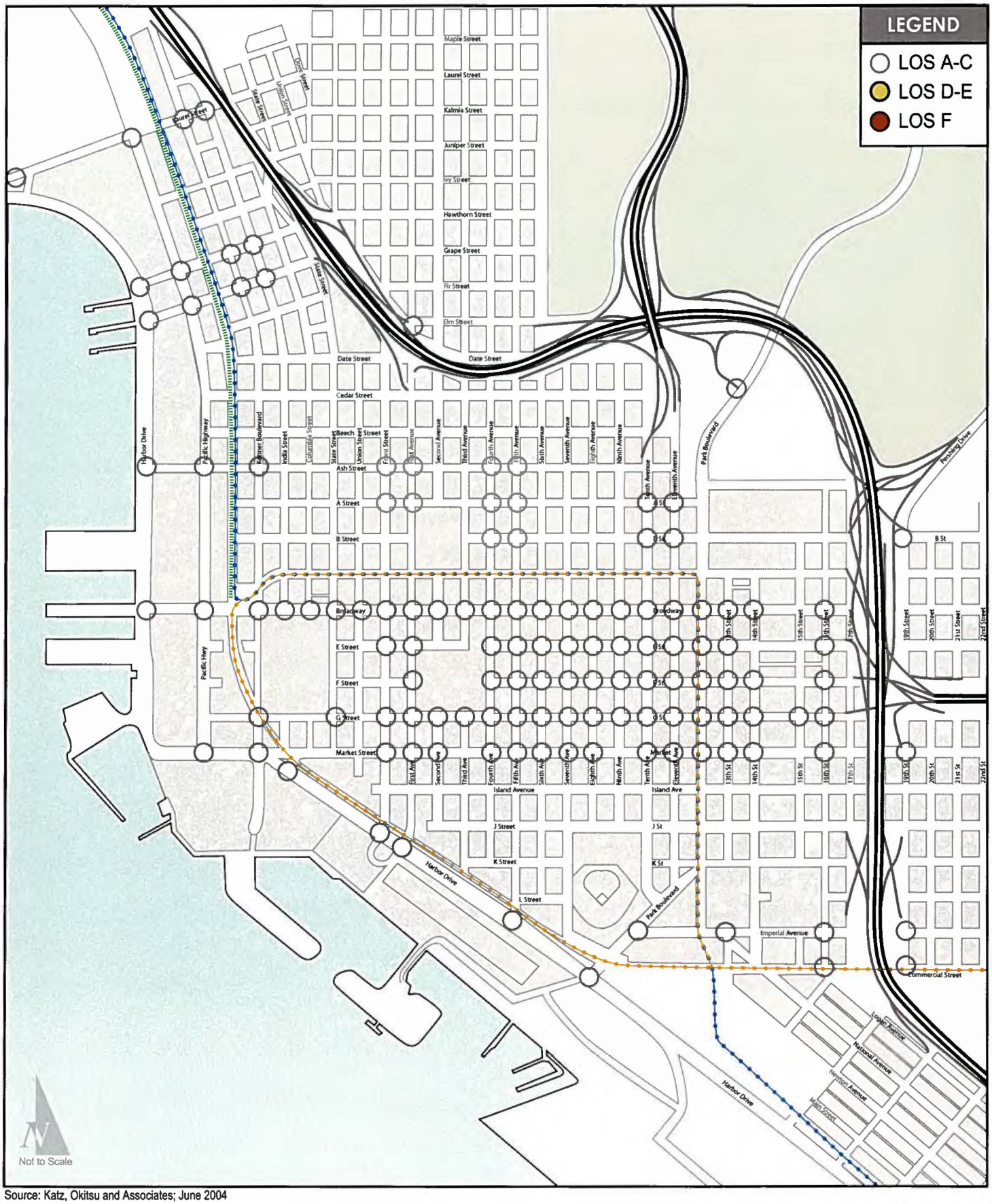
Table 3.10 (continued)
Peak Hour Intersection Level of Service
Existing Conditions

No.	Intersection	AM Delay	AM LOS	PM Delay	PM LOS
45	Market Street & First Avenue	3.4	A	5.3	A
46	Broadway & Second Avenue	4.8	A	9.3	A
47	G Street & Second Avenue	4.0	A	4.4	A
48	Market Street & Second Avenue	10.1	B	6.9	A
49	Broadway & Third Street	5.6	A	6.7	A
50	G Street & Third Street	4.3	A	3.6	A
51	Ash Street & Fourth Avenue	9.5	A	9.8	A
52	A Street & Fourth Avenue	5.4	A	18.2	B
53	B Street & Fourth Avenue	7.1	A	11.8	B
54	Broadway & Fourth Avenue	9.7	A	8.3	A
55	E Street & Fourth Avenue	6.8	A	36.9	D
56	F Street & Fourth Avenue	12.1	B	21.5	C
57	G Street & Fourth Avenue	8.3	A	3.7	A
58	Market Street & Fourth Avenue	2.1	A	3.7	A
59	Ash Street & Fifth Avenue	9.5	A	14.4	B
60	A Street & Fifth Avenue	10.6	B	12.5	B
61	B Street & Fifth Avenue	9.3	A	15.0	B
62	Broadway & Fifth Avenue	8.1	A	6.7	A
63	E Street & Fifth Avenue	11.6	B	5.4	A
64	F Street & Fifth Avenue	4.6	A	12.7	B
65	G Street & Fifth Avenue	8.2	A	9.3	A
66	Market Street & Fifth Avenue	5.8	A	5.5	A
67	Broadway & Sixth Avenue	0.2	A	0.0	A
68	E Street & Sixth Avenue	5.3	A	7.9	A
69	F Street & Sixth Avenue	2.0	A	3.6	A
70	G Street & Sixth Avenue	6.1	A	5.0	A
71	Market Street & Sixth Avenue	2.5	A	4.4	A
72	Broadway & Seventh Avenue	8.6	A	6.8	A
73	E Street & Seventh Avenue	15.0	B	8.3	A
74	F Street & Seventh Avenue	1.3	A	4.3	A
75	G Street & Seventh Avenue	5.3	A	5.1	A
76	Market Street & Seventh Avenue	3.2	A	5.3	A
77	Broadway & Eighth Avenue	6.8	A	6.1	A
78	E Street & Eighth Avenue	10.5	B	11.3	B
79	F Street & Eighth Avenue	3.0	A	6.1	A
80	G Street & Eighth Avenue	7.3	A	9.7	A
81	Market Street & Eighth Avenue	6.2	A	9.1	A
82	Broadway & Ninth Avenue	9.5	A	5.1	A
83	E Street & Ninth Avenue	10.6	B	6.0	A
84	F Street & Ninth Avenue	1.6	A	6.2	A
85	G Street & Ninth Avenue	4.3	A	2.1	A
86	A Street & 10th Avenue	11.9	B	30.4	C
87	B Street & 10th Avenue	5.2	A	18.7	B
88	Broadway & 10th Avenue	14.6	B	12.6	B
89	E Street & 10th Avenue	2.9	A	16.8	B

Table 3.10 (continued)
Peak Hour Intersection Level of Service
Existing Conditions

No.	Intersection	AM Delay	AM LOS	PM Delay	PM LOS
90	F Street & 10th Avenue	1.0	A	9.4	A
91	G Street & 10th Avenue	4.0	A	8.9	A
92	Market Street & 10th Avenue	3.5	A	4.2	A
93	A Street & 11th Avenue	8.5	A	10.6	B
94	B Street & 11th Avenue	12.0	B	13.3	B
95	Broadway & 11th Avenue	6.3	A	8.7	A
96	E Street & 11th Avenue	12.5	B	11.9	B
97	F Street & 11th Avenue	2.8	A	8.9	A
98	G Street & 11th Avenue	5.7	A	7.0	A
99	Market Street & 11th Avenue	8.2	A	10.3	B
100	Park Boulevard & I-5 SB	10.5	B	11.4	B
101	Broadway & Park Boulevard	7.1	A	5.9	A
102	E Street & Park Boulevard	8.9	A	5.8	A
103	F Street & Park Boulevard	4.5	A	4.9	A
104	G Street & Park Boulevard	17.4	B	25.9	C
105	Market Street & Park Boulevard	7.2	A	19.4	B
106	Broadway & 13th Street	7.0	A	6.5	A
107	E Street & 13th Street	17.6	B	22.0	C
108	F Street & 13th Street	2.2	A	2.4	A
109	G Street & 13th Street	2.9	A	5.0	A
110	Market Street & 13th Street	5.7	A	6.0	A
111	Imperial Avenue & Park Boulevard	7.1	A	6.9	A
112	Broadway & 14th Street	6.5	A	7.4	A
113	F Street & 14th Street	2.5	A	7.4	A
114	G Street & 14th Street	4.4	A	2.5	A
115	Market Street & 14th Street	7.0	A	9.4	A
116	G Street & 15th Street	4.0	A	3.6	A
117	Broadway & 16th Street	10.6	B	7.1	A
118	E Street & 16th Street	9.2	A	9.1	A
119	F Street & 16th Street	22.1	C	13.5	B
120	G Street & 16th Street	11.1	B	35.9	D
121	Market Street & 16th Street	10.1	B	11.4	B
122	Imperial Avenue & 16th Street	5.9	A	5.5	A
123	Commercial Street & 16th Street	6.1	A	6.6	A
124	B Street & 19th Avenue	6.4	A	NA	NA
125	Market Street & 19th Street	9.1	A	Overflow	F
126	Imperial Avenue & 19th Street	5.4	A	57.7	E
127	Commercial Avenue & 19th Street	7.1	A	7.8	A

Source: Katz, Okitsu & Associates, 2004

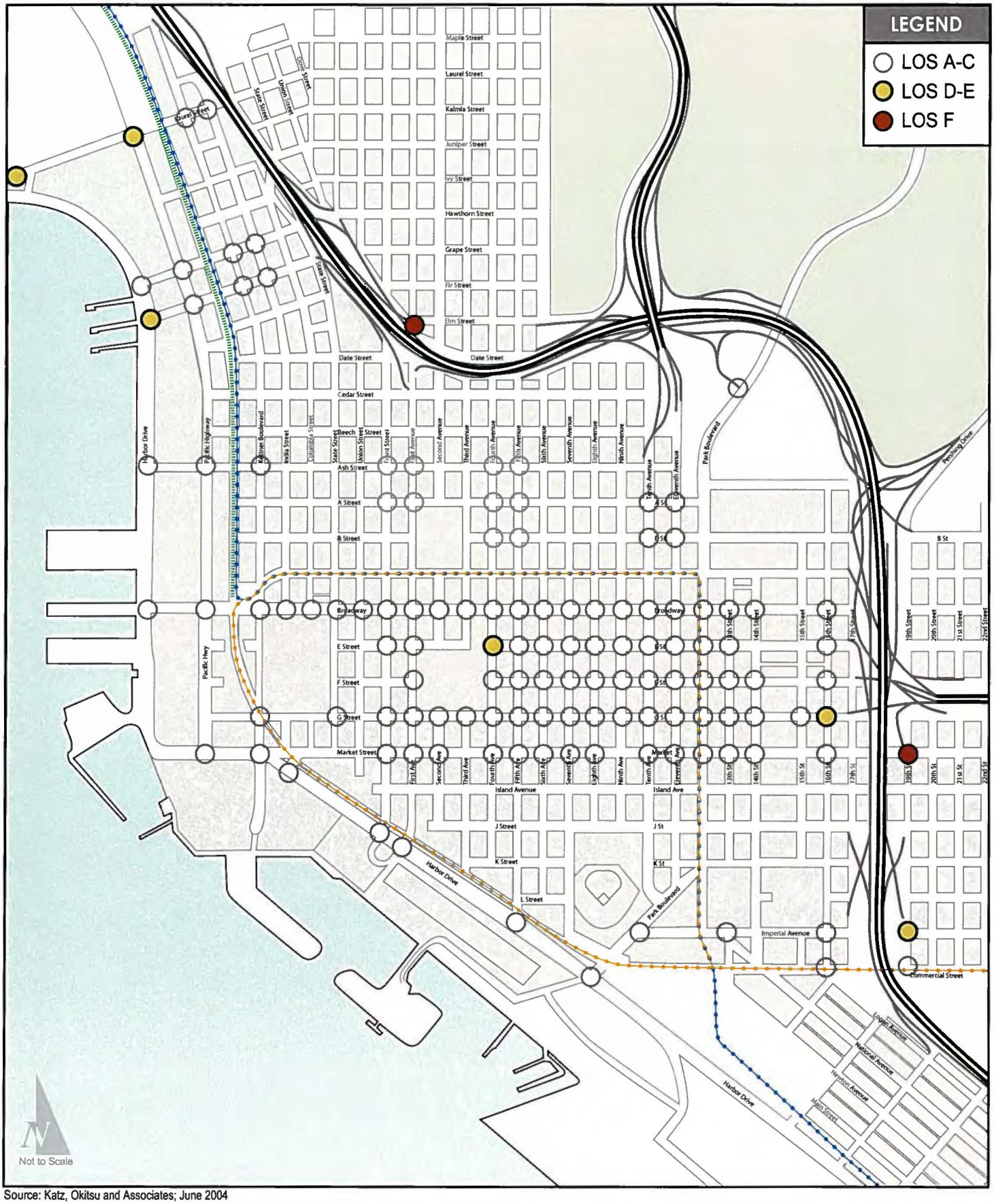


Source: Katz, Okitsu and Associates; June 2004

Downtown Community Plan
EIR Transportation, Circulation, and Access Study
WILSON & COMPANY

Figure 3-8
AM Peak Hour
Intersection Level of Service Analysis
Existing Conditions

THIS PAGE INTENTIONALLY LEFT BLANK



Source: Katz, Okitsu and Associates; June 2004

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 3-9
PM Peak Hour
Intersection Level of Service Analysis
Existing Conditions

THIS PAGE INTENTIONALLY LEFT BLANK

As shown, all intersections are currently operating at LOS C or better during the AM peak hour. Three (3) intersections are currently operating at LOS F during the PM peak hour, as follows:

- Harbor Drive / Market Street
- Elm Street / First Avenue
- Market Street / 19th Street

These results indicate that the downtown grid roadway network and the existing system of one-way streets do a relatively good job of serving and distributing existing traffic flows. The SYNCHRO analyses revealed good signal progression along the major east-west and north-south travel corridors. Problems tend to occur at the interface with the freeway system, typically at on-ramp locations due to closely spaced intersections along with limited ramp capacity and outdated/substandard freeway ramp designs. This along with freeway congestion can make merge movements onto the freeway from the on-ramps difficult during peak travel periods.

THIS PAGE INTENTIONALLY LEFT BLANK

4.0 Downtown Community Plan Traffic Assessment

This chapter summarizes traffic analysis results associated with build-out of the proposed Downtown Community Plan land uses. Traffic analysis results, including travel demand characteristics and an assessment of Level of Service (LOS) on study area freeway segments, freeway ramps, and intersections are presented. A comparison with No Project (1992 MEIR) conditions is also provided.

4.1 Land Use and Travel Demand Characteristics

Total build-out land uses as included in the proposed Downtown Community Plan are presented in **Table 4.1**. As discussed in Chapter 2.2, the land uses represent a realistic development intensity for downtown buildout.

Table 4.1
Proposed Downtown Community Plan
Build-out Land Uses

Land Use Type	Quantity
Residential (units)	53,100
Office (s.f)	29,821,000
Retail (s.f.)	6,070,000
Hotel Rooms	20,000

Source: Downtown Community Plan, June 2005

Table 4.2 displays daily person trips within (originating in and/or destined to) the downtown area, by residential and non-residential land use with build-out of the proposed Downtown Community Plan.

Table 4.2
Proposed Downtown Community Plan
Daily Person Trips

Land Use	Person Trips
Residential	479,780
Non-Residential	2,226,240
Total	2,706,020

Source: SANDAG, December 2004

As shown, 2.7 million person trips will be generated on a daily basis, an increase of 120% over existing conditions. Approximately 82% of the person trips are projected to be generated by non-residential land uses, a slightly lower percentage than existing conditions (85%).

Table 4.3 summarizes the projected mode share of downtown trips under build-out of the proposed Downtown Community Plan.

Table 4.3
Proposed Downtown Community Plan
Mode Share

	Trips		Percent	
	Peak[2]	**Daily**	**Peak[2]**	**Daily**
SOV[1]	421,640	1,207,230	45.9%	44.6%
Carpool	227,180	783,740	24.9%	29.0%
Transit	86,440	151,610	9.4%	5.6%
Non-Motorized	181,880	563,440	19.8%	20.8%
Total	919,140	2,706,020	100%	100%

Source: SANDAG, December 2004

Notes:
1. SOV = Single Occupant Vehicle
2. Peak = Peak Travel Period of 6:00am – 9:00am and 4:00pm – 7:00pm.

As shown, automobile modes (SOV and carpool) will continue to carry the largest share of total daily trips (approximately 74%), with transit serving 5.6% of daily trips, and over 20% of downtown trips served via non-motorized modes, including walk, bicycle, and pedicab.

Table 4.4 displays daily and peak period vehicle trips under build-out of the proposed Downtown Community Plan. Vehicle trips are projected to increase approximately 112% over existing levels. Similar to existing conditions, approximately one-third of the daily vehicle trips are projected to occur during the peak periods.

Table 4.4
Proposed Downtown Community Plan
Daily Vehicle Trips

	Vehicle Trips
Peak Periods	513,740
Daily	1,546,470

Source: SANDAG, December 2004

Table 4.5 displays vehicle-miles-traveled (VMT) on downtown surface streets under build-out of the proposed Downtown Community Plan. VMT levels on downtown streets are projected to increase by 125% over existing conditions. Approximately 35% of daily VMT on downtown surface streets is projected to occur during the peak periods, a slightly lower percentage than under existing conditions (40%).

Table 4.5
Proposed Downtown Community Plan
Vehicle-Miles-Traveled (VMT) on Downtown Surface Streets

	Daily VMT
Peak Periods	297,990
Daily	863,940

Source: SANDAG, December 2004

4.2 Downtown Internal vs. External Trip Making

The proportion of internal downtown work trips (both originating in and destined to the downtown) was reviewed under build-out Downtown Community Plan conditions as a measure of downtown job/housing balance. Generally, the higher the proportion of internal trips, the less the potential for impacts on the regional freeway system and other transportation facilities. As shown below in **Table 4.6**, the proportion of internal downtown work trips would increase from just over 5% under existing conditions to approximately 15% under build-out of the proposed Downtown Community Plan.

Table 4.6
Downtown Internal Work Trips

	Existing		Proposed Plan	
Work Trips	No.	Percent	No.	Percent
Internal	7,050	5.3%	38,100	14.4%
External	125,600	94.7%	227,700	85.6%
Total	132,650	100.0%	265,800	100.0%

Source: SANDAG, December 2004

4.3 Community Plan Roadway Network Characteristics

This section describes the future year roadway system as specified by the proposed Downtown Community Plan.

Proposed Roadway Classifications

A roadway classification scheme was developed as part of the proposed Downtown Community Plan. These roadway classifications are not currently depicted in the City of San Diego's street design manual, but are considered important for the implementation of the overall planning vision for the downtown area.

As detailed in the proposed Downtown Community Plan, the following roadway classifications were assigned to downtown roadways:

- **Boulevards** – Broad roadways that accommodate pedestrians and vehicular traffic and provide access to commercial uses. Traffic volumes are typically high, but speeds are moderate.

- **Green Streets** – Streets that link parks and other downtown amenities, and connect neighborhoods to the waterfront and Balboa Park. These streets typically include enhanced landscaping, including double rows of trees and expanded sidewalk widths, and provide for vehicular and transit access.

- **Residential Streets** – Streets that traverse neighborhoods and have residential orientation, with maximized on-street parking, including diagonal parking where feasible.

- **Main Streets** – Serve Neighborhood Centers and other major activity zones. Typically lined with commercial activity.

- **Multi-Function Streets** – Serves a variety of purposes, not falling within any of the other classifications.

Figure 4-1 displays the downtown roadway classifications under the proposed Downtown Community Plan.

Proposed Roadway Network Modifications

To support the proposed street classification system, several improvements and modifications to the existing downtown roadway network have been identified in conjunction with the proposed Downtown Community Plan, as listed in **Table 4.7** and displayed in **Figure 4-2**.

Some of the more significant street modifications proposed by the Downtown Community Plan include the following:

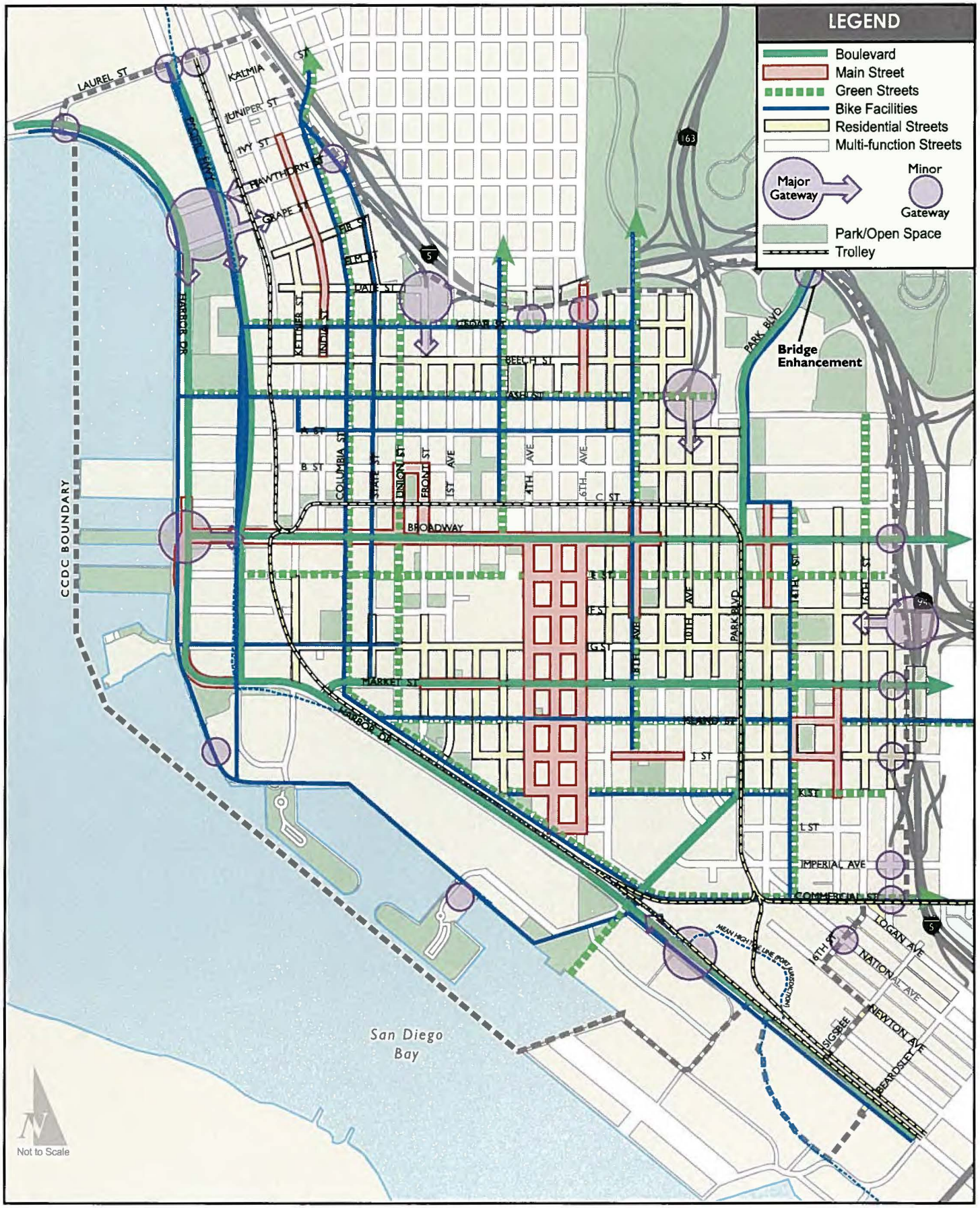
- Closure of the southbound I-5 off-ramp to Cedar Street and conversion of Cedar Street to 2-way traffic from Front Street to Fifth Avenue.

- Conversion of Columbia Street from 3-lanes to 2-lanes during off-peak travel periods.

- Closure of C Street between Columbia Street and Park Boulevard for purposes of implementing a transit-only facility. This along with the desire by SANDAG and MTS to extend the length of the Trolley platforms on C Street could potentially result in closure of both Second Avenue and Seventh Avenue at C Street. These street closures were analyzed as worst-case assumptions and will require further study. It is recognized that other options for accommodating 4-car trains through the downtown may exist, including closure of Trolley stations along C Street.

- Conversion of Sixth Avenue from one-way southbound (3-lanes) to 2-way (one lane each direction) from Elm Street to Ash Street.

- Conversion of Seventh Avenue, between Beech Street and B Street, from 3-lanes to 2-lanes (one-way northbound).

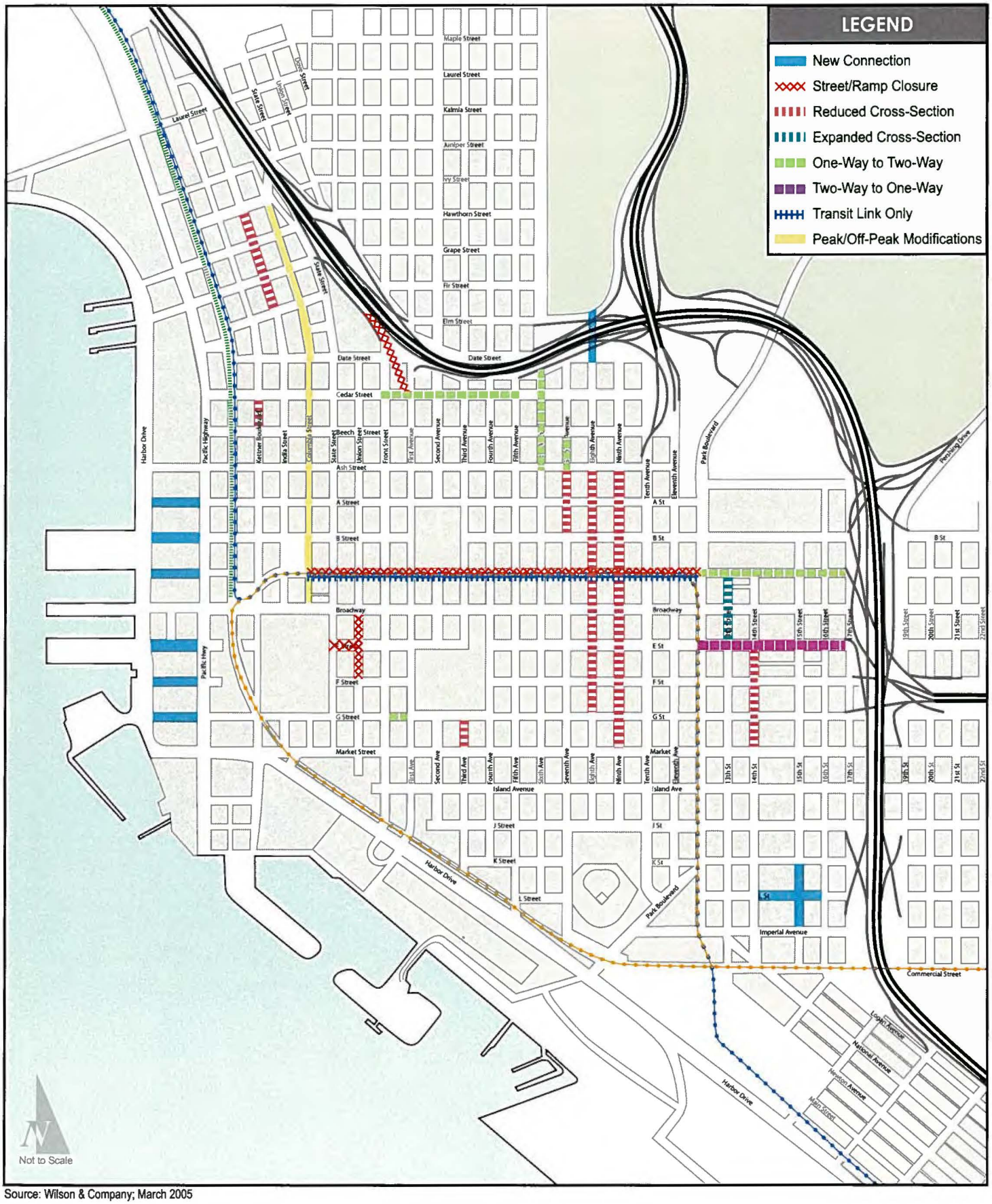


Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 4-1
Proposed Plan Roadway Classifications

THIS PAGE INTENTIONALLY LEFT BLANK



Source: Wilson & Company; March 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 4-2
Proposed Community Plan
Roadway Network Modifications

THIS PAGE INTENTIONALLY LEFT BLANK

Table 4.7
Downtown Community Plan
Proposed Roadway Network Modifications

Roadway	Segment	Existing Network	Proposed Plan Network	Purpose / Objectives
Cedar Street	Front St to Fifth Ave	Mostly one-way, 2 and 3 lanes; with one two-way, 3-lane section (Eastbound)	two-way, 2 lanes and removal of the off-ramp from I-5	• accommodate green street section • enhance connectivity in green street network • traffic calming • requires removal of the I-5 off-ramp to Cedar St
A Street	Harbor Dr to Pacific Highway	closed	two-way, 2-lane	• improve connectivity to waterfront
B Street	Harbor Dr to Pacific Highway	closed	two-way, 2-lane	• improve connectivity to waterfront
C Street	Harbor Dr to Pacific Highway	closed	two-way, 2-lane	• improve connectivity to waterfront
	Columbia St to Park Blvd	various: two-way, 2-lane; closed; one-way, 1-lane; one-way, 2-lane	Transit link only	• create consistency • closed to vehicular traffic • accommodate trolley, BRT, and/or downtown shuttles • complement westbound one-way traffic on B Street
	Park Blvd to I-5	one-way, 3-lane (Eastbound)	two-way, 2-lane	• increase access around City College • traffic calming in College neighborhood, and north end of 13th Street neighborhood center • accommodate streetscape improvements
E Street	Harbor Dr to Pacific Highway	closed	two-way, 2-lane	• improve connectivity to waterfront
	State St to Union St	two-way, 2-lane	closed	• per Federal Courts expansion
	Park Blvd to I-5	various: one-way, 2-lane; two-way, 4-lane; two-way, 2-lane; one-way, 1-lane	one-way, 3-lane (Eastbound)	• create consistency with western portion of street • complement F/G couplet, to carry increased amounts of traffic
F Street	Harbor Dr to Pacific Highway	closed	two-way, 2-lane	• improve connectivity to waterfront
G Street	Harbor Dr to Pacific Highway	closed	two-way, 2-lane	• improve connectivity to waterfront
	Front St to First Ave	one-way, 3-lanes (Eastbound)	two-way, 3-lane	• create consistency with western portion of street
L Street	14th St to 16th St	closed	two-way, 2-lane	• improve connectivity in Bayside • create finer-grained street grid
Kettner Street	Cedar St to Beech St	one-way, 3-lane (Southbound)	one-way, 2-lane	• accommodate residential street section • traffic calming • consistent with adjacent residential segment of KettnerSt, from Fir St to Cedar St

Table 4.7 (continued)
Downtown Community Plan
Proposed Roadway Network Modifications

Roadway	Segment	Existing Network	Proposed Plan Network	Purpose / Objectives
India Street	Ivy St to Fir St	one-way, 3-lane (Northbound)	one-way, 2-lane	• accommodate neighborhood center section • traffic calming consistent with adjacent neighborhood • center segment of India St, from Fir St to Beech St
Columbia Street	Ivy St to Broadway	one-way, 3-lane (Southbound)	2-lane off-peak/3-lane peak	• accommodate green street section • off-peak traffic calming • accommodate bikeway
Union	Broadway to F St	one-way, 2-Lanes (Northbound)	closed	• per Federal Courts expansion
Second Avenue	Broadway to C St	Two-way, 2-lane	Closed at C St.	• Extension of Civic Center Trolley Station to accommodate 4-car trains.
Third Avenue	G St to Market St	two-way, 3-lane	two-way, 2-lane	• accommodate diagonal parking • accommodate residential street section • traffic calming • consistent with two-way 2-lane traffic from Market St to K St
Sixth Avenue	I-5 to Ash St	one-way, 3-lane (Southbound)	two-way, 2-lane	• I-5 NB off-ramp at Sixth Ave currently provides free left-trun onto Sixth Ave; signal would have to be reconfigured • accommodate neighborhood center street section • traffic calming • consistent with traffic north of I-5 • provide retail-boosting north-bound turns from Ash St
Seventh Avenue	Beech St to Ash St	one-way, 3-lane (Northbound)	two-way, 2 lane	• Consistency with surrounding network
	Ash St to B St	one-way, 3-lane (Northbound)	one-way, 2-lane	• Accommodate residential street section • traffic calming • consistent with lanes on residential blocks from Date St to Beech St
	B St. to Broadway	One-way, 3-lane (Northbound)	Closed at C St.	• Accommodate 4-car Trolleys.
Eighth Avenue	Ash St to Broadway	one-way, 3-lane (Southbound)	one-way, 2-lane	• accommodate green street section • accommodate bikeway • accommodate neighborhood center section • consistent with segment from Date St to Ash St • traffic calming • improve connectivity from A St and B St
	Broadway to G St	one-way, 3-lane (Southbound	one-way, 2-lane	• accommodate green street section • accommodate bikeway • accommodate neighborhood center section • consistent with lanes from Date St to Ash St • traffic calming
	Date to Elm	Closed	Two-way, 2 lane	• New Connection to Balboa Park/I-5 Lid

Table 4.7 (continued)
Downtown Community Plan
Proposed Roadway Network Modifications

Roadway	Segment	Existing Network	Proposed Plan Network	Purpose / Objectives
Ninth Avenue	Ash St to Market St	one-way, 3-lane (Northbound)	one-way, 2-lane	• accommodate residential street section • consistent with lanes from Date St to AshSt • traffic calming
13th Street	C St to E St	two-way, 2-lane	two-way, 3-lane	• per Park-to-Bay Link
14th Street	E St to Market St	two-way, 3-lane	two-way, 2-lane	• accommodate green street section • accommodate bikeway • consistent with configuration from C St to E St; Market St to Imperial Ave • traffic calming
15th Street	K St to Imperial Ave	closed	two-way, 2-lane	• improve connectivity in Bayside • create finer-grained street grid
new grid	South of Harbor Dr, between Pacific Highway and Kettner St	none	grid of two-way, 2-lane streets extending to waterfront	• improve connectivity to waterfront • create access to redevelopment in police headquarters area

Source: CCDC; *Draft Downtown Community Plan*, 2004

- Extension of Eighth Avenue north across I-5 and linking with Balboa Park. To the south, Eighth Avenue would be converted from 3-lanes to 2-lanes (one-way southbound) between Ash Street and G Street.
- Conversion of Ninth Avenue, between Ash Street and Market Street, from 3-lanes to 2-lanes (one-way northbound).

4.4 Proposed Community Plan Daily Traffic Volumes

Tables 4.8A and **4.8B** display forecast traffic volume screenlines for east-west and north-south roadways, respectively with build-out of the proposed Downtown Community Plan. A comparison with existing screenline volumes is also provided.

As shown, compared with existing conditions, overall east-west movements increase by over 85% under build-out of the proposed Downtown Community Plan. Similarly, total north-south traffic movements under the proposed Downtown Community Plan are projected to increase by approximately 60% over existing conditions.

Table 4.8A
Proposed Downtown Community Plan
Summary of East-West Screenline Volumes

	Roadway	Segment	Existing	Proposed Plan
1a	Laurel St	Harbor Dr to Pacific Hwy	31,020	54,960
1b	Hawthorn St	Columbia St to State St	25,220	41,940
1c	Grape St	Columbia St to State St	28,300	51,820
		Sub-Total	**84,540**	**148,720**
2a	Ash St	Sixth Ave to Seventh Ave	10,150	14,210
2b	A St	Sixth Ave to Seventh Ave	14,010	20,160
2c	B St	Sixth Ave to Seventh Ave	11,070	19,900
		Sub-Total	**35,230**	**54,270**
3a	C St	15th St to 16th St	10,660	12,480
3b	Broadway	15th St to 16th St	8,250	9,680
3c	E St	15th St to 16th St	4,860	6,240
3d	F St	15th St to 16th St	16,840	31,370
3e	G St	15th St to 16th St	16,950	32,960
3f	Market St	15th St to 16th St	13,520	19,500
3g	Island Ave	15th St to 16th St	2,810	17,600
3h	J St	15th St to 16th St	2,930	12,340
3i	K St	15th St to 16th St	1,420	3,780
3j	Imperial Ave	15th St to 16th St	5,000	12,130
3k	Commercial Ave	15th St to 16th St	1,040	5,130
3l	National Ave	Commercial Ave to 16th St	2,750	17,730
		Sub-Total	**87,030**	**180,940**
TOTAL (East-West)			**206,800**	**383,930**

Source: SANDAG; Wilson & Company, April 2005

Table 4.8B
Proposed Downtown Community Plan
Summary of North-South Screenline Volumes

	Roadway	Segment	Existing	Preferred Plan
1a	N. Harbor	Cedar St to Beech St	47,850	35,270
1b	Pacific Hwy	Cedar St to Beech St	12,360	42,180
1c	Kettner Blvd	Cedar St to Beech St	6,570	13,370
1d	India St	Cedar St to Beech St	4,230	8,770
1e	State St	Cedar St to Beech St	4,480	8,620
1f	First Ave	Cedar St to Beech St	22,370	30,320
1g	Second Ave	Cedar St to Beech St	4,170	7,400
1h	Third Ave	Cedar St to Beech St	2,670	5,180
1i	Fourth Ave	Cedar St to Beech St	14,690	21,400
1j	Fifth Ave	Cedar St to Beech St	13,130	24,450
1k	Sixth Ave	Cedar St to Beech St	12,350	18,980
		Sub-Total	**144,870**	**215,940**
2a	Seventh	A St to B St	5,910	8,150
2b	Eighth Ave	A St to B St	4,420	23,150
2c	Ninth Ave	A St to B St	3,880	17,430
2d	10th Ave	A St to B St	17,010	21,640
2e	11th Ave	A St to B St	14,140	18,860
2f	12th Ave	A St to B St	19,090	25,930
2g	16th St	Broadway to E St	10,400	16,280
		Sub-Total	**74,850**	**131,440**
TOTAL (North-South)			**219,720**	**347,380**

Source: SANDAG; Wilson & Company, April 2005

4.5 Downtown Community Plan Traffic Operations

This section summarizes freeway segment, freeway ramp, and intersection Level of Service (LOS) analysis results under build-out of the proposed Downtown Community Plan.

Freeway Segment Performance

Consistent with the SANDAG RTP *Revenue Constrained* scenario, no new freeway improvements were assumed for the freeway segments serving the downtown study area.

Table 4.9 displays peak hour LOS analysis results for study area freeways segments under build-out of the proposed Downtown Community Plan.

As shown, freeway segment traffic volumes on I-5 would range from a low of 249,600 (north of SR-75) to a high of 308,400 (north of Sixth Avenue) under proposed Downtown Community Plan build-out conditions. Volumes on SR-163, just north of downtown

THIS PAGE INTENTIONALLY LEFT BLANK

Table 4.9
Proposed Downtown Community Plan
Peak Hour Freeway Segment Level of Service

Facility	Segment		Daily ADT	Peak Hour %		Direction	Lanes	Peak Hour Capacity	Direction Split		Truck	Peak Hour Volume		V/C		LOS	
	From	To		AM	PM				AM	PM	Factor	AM	PM	AM	PM	AM	PM
I-5	SR-75	J St	249,600	0.072	0.074	NB	4L, 1A	9,200	0.624	0.448	0.98	11,443	8,444	1.24	0.92	F	D
						SB	4L, 1A	9,200	0.376	0.552	0.98	6,895	10,404	0.75	1.13	C	F
	J St	SR-94	248,000	0.072	0.074	NB	4L, 1A	9,200	0.624	0.448	0.98	11,370	8,389	1.24	0.91	F	D
						SB	4L, 1A	9,200	0.376	0.552	0.98	6,851	10,337	0.74	1.12	C	F
	SR-94	Pershing Dr	265,000	0.072	0.074	NB	4L, 2A	10,400	0.624	0.448	0.98	12,149	8,965	1.17	0.86	F	D
						SB	4L, 0A	8,000	0.376	0.552	0.98	7,320	11,046	0.92	1.38	D	F
	Pershing Dr	SR-163	295,700	0.072	0.074	NB	4L, 2A	10,400	0.624	0.448	0.98	13,556	10,003	1.30	0.96	F	E
						SB	4L, 0A	8,000	0.376	0.552	0.98	8,169	12,325	1.02	1.54	F	F
	SR-163	Sixth Ave	291,000	0.072	0.074	NB	4L, 2A	10,400	0.624	0.448	0.979	13,354	9,854	1.28	0.95	F	E
						SB	4L, 2A	10,400	0.376	0.552	0.979	8,047	12,142	0.77	1.17	C	F
	Sixth Ave	First Ave	308,400	0.072	0.074	NB	4L, 1A	9,200	0.516	0.51	0.979	11,703	11,889	1.27	1.29	F	F
						SB	5L, 1A	11,200	0.484	0.49	0.979	10,978	11,422	0.98	1.02	E	F
	First Ave	Hawthorne St	254,600	0.072	0.074	NB	4L, 1A	9,200	0.516	0.51	0.979	9,662	9,815	1.05	1.07	F	F
						SB	4L, 0A	8,000	0.484	0.49	0.979	9,063	9,430	1.13	1.18	F	F
SR-163	I-5	Washington St	131,100	0.068	0.077	NB	2L, 0A	4,000	0.311	0.665	0.985	2,815	6,815	0.70	1.70	C	F
						SB	2L, 0A	4,000	0.689	0.335	0.985	6,236	3,433	1.56	0.86	F	D
SR-94	17th St	28th St	153,600	0.073	0.084	NB	4L, 0A	8,000	0.192	0.713	0.982	2,192	9,368	0.27	1.17	A	F
						SB	4L, 0A	8,000	0.808	0.287	0.982	9,226	3,771	1.15	0.47	F	B

Source: SANDAG; Wilson & Company; March, 2005

THIS PAGE INTENTIONALLY LEFT BLANK

would increase to 120,000 ADT, while volumes on SR-94, just east of downtown, would increase to 146,000 ADT.

Due to these forecast high traffic volumes, all freeway segments in the downtown study area are projected to operate at substandard LOS F under build-out of the Downtown Community Plan during either the AM and/or PM peak hours, as follows:

- I-5: SR-75 to J Street (NB – AM peak hour / SB – PM peak hour)
- I-5: J Street to SR-94 (NB – AM peak hour / SB – PM peak hour)
- I-5: SR-94 to Pershing Dr (NB – AM peak hour / SB – PM peak hour)
- I-5: Pershing Dr to SR-163 (NB – AM peak hour / SB – AM and PM peak hours)
- I-5: SR-163 to Sixth Avenue (NB – AM peak hour / SB – PM peak hour)
- I-5: Sixth Avenue to First Avenue (NB – PM peak hours / SB – PM peak hour)
- I-5: First Avenue to Hawthorn Street (NB – PM peak hour / SB – AM peak hour)
- SR-163: I-5 to Washington St (NB – AM and PM peak hours / SB – AM and PM peak hours)
- SR-94: 17th St to 28th St (EB – PM peak hour / WB – AM peak hour)

The following freeway segments, operating at substandard LOS F under build-out of the Downtown Community Plan, represent direct project-related significant impacts:

- I-5: SR-75 to J Street (NB – AM peak hour / SB – PM peak hour)
- I-5: J Street to SR-94 (NB – AM peak hour / SB – PM peak hour)
- I-5: SR-94 to Pershing Dr (NB – AM peak hour)
- I-5: Pershing Dr to SR-163 (NB – AM peak hour / SB – AM peak hour)
- I-5: SR-163 to Sixth Avenue (NB – AM peak hour / SB – PM peak hour)
- I-5: Sixth Avenue to First Avenue (NB – PM peak hours / SB – PM peak hour)
- I-5: First Avenue to Hawthorn Street (NB – PM peak hour / SB – AM peak hour)
- SR-163: I-5 to Washington St (NB – AM peak hour / SB –PM peak hour)
- SR-94: 17th St to 28th St (EB – PM peak hour / WB – AM peak hour)

The following freeway segments, operating at substandard LOS F under build-out of the Downtown Community Plan, represent cumulatively significant impacts:

- I-5: SR-94 to Pershing Dr (SB – PM peak hour)
- I-5: Pershing Dr to SR-163 (SB – PM peak hour)

- SR-163: I-5 to Washington St. (NB – PM peak hour / SB – AM peak hour)

Freeway Ramp Performance

Consistent with the SANDAG RTP *Revenue Constrained* scenario, no new freeway ramp improvements were assumed along the freeway system serving the downtown study area. Note that the southbound I-5 off-ramps to Cedar Street was assumed to be closed as proposed by the draft Downtown Community Plan.

Table 4.10 displays freeway ramp LOS analysis results for downtown study area on-ramps and off-ramps. As shown, the following **on-ramps** would operate at substandard LOS F under build-out of the proposed Downtown Community Plan during the AM and/or PM peak hours:

- I-5 NB On-Ramp @ 19th Street (PM peak hour)
- I-5 NB On-Ramp @ B Street (AM and PM peak hours)
- I-5 NB On-Ramp @ 11th Avenue (AM and PM peak hours)
- I-5 NB On-Ramp @ First Street (AM and PM peak hours)
- I-5 SB On-Ramp @ Grape Street (AM and PM peak hours)
- I-5 SB On-Ramp @ Fifth Avenue (PM peak hour)
- SR-94 EB On-Ramp @ G Street (PM peak hour)
- SR-94 EB On-Ramp @ 19th Street (AM and PM peak hours)

The following freeway on-ramps, operating at substandard LOS F under build-out of the Downtown Community Plan, represent direct project-related significant impacts:

- I-5 NB On-Ramp @ 19th Street (PM peak hour)
- I-5 NB On-Ramp @ B Street (PM peak hour)
- I-5 NB On-Ramp @ First Street (AM peak hour)
- I-5 SB On-Ramp @ Grape Street (AM peak hour)
- I-5 SB On-Ramp @ Fifth Avenue (PM peak hour)
- SR-94 EB On-Ramp @ G Street (PM peak hour)
- SR-94 EB On-Ramp @ 19th Street (AM and PM peak hours)

The following freeway on-ramps, operating at substandard LOS F under build-out of the Downtown Community Plan, represent cumulatively significant impacts:

- I-5 NB On-Ramp @ B Street (AM peak hour)
- I-5 NB On-Ramp @ 11th Avenue (AM and PM peak hours)
- I-5 NB On-Ramp @ First Street (PM peak hour)
- I-5 SB On-Ramp @ Grape Street (PM peak hour)

Table 4.10
Proposed Downtown Community Plan
Peak Hour Freeway Ramp Level of Service

			Peak Hour Ramp Volume		Lanes	Peak Hour Capacity Per Lane	V/C		LOS	
	From	To	AM	PM			AM	PM	AM	PM
NB On-Ramps	19th Street	NB I-5	900	1,290	1	1,200	0.75	1.08	C	F
	B Street	NB I-5	1,670	1,700	1	1,200	1.39	1.42	F	F
	11th Ave	NB I-5 / NB SR-163	4,640	4,230	2	2,400	1.93	1.76	F	F
	First Avenue	NB I-5	3,160	3,100	1	1,200	2.63	2.58	F	F
SB On-Ramps	Grape Street	SB I-5	2,000	4,070	1	1,200	1.67	3.39	F	F
	First Avenue	SB I-5	1,200	1,600	1	1,200	1.00	1.33	E	F
	Fifth Avenue	SB I-5	700	1,600	1	1,200	0.58	1.33	B	F
	Park Boulevard	SB I-5	560	950	1	1,200	0.47	0.79	B	C
SB On-Ramps	C St	SB I-5	960	1,020	1	1,200	0.80	0.85	C	D
	E Street	SB I-5	920	1,030	1	1,200	0.77	0.89	C	D
	J Street	SB I-5	920	700	1	1,200	0.77	0.58	C	B
EB On-Ramps	G St	EB SR-94	1,060	4,000	3	3,600	0.29	1.11	A	F
	19th St	EB SR-94	1,220	2,720	1	1,200	1.02	2.27	F	F
NB Off-Ramps	NB I-5	J Street	1,100	2,970	1	1,200	0.92	2.48	D	F
	NB I-5	B Street	1,330	1,200	1	1,200	0.55	1.00	B	E
	NB I-5	Sixth Avenue	2,190	2,400	2	2,400	0.91	1.00	D	E
SB Off-Ramps	SB I-5	Cedar Street[1]	na	na	na	na	na	na	na	na
	SB I-5	Front Street	4,260	2,320	2	2,400	1.78	0.97	F	E
	SB I-5/SB SR-163	10th Ave	3,490	3,480	3	3,600	0.97	0.97	E	E
	SB I-5	B Street	970	550	1	1,200	0.81	0.46	C	B
	SB I-5	17th Street	1,080	1,070	1	1,200	0.90	0.89	D	D
	SR-163	Fourth Ave	1,250	1,100	1	1,200	1.04	0.92	F	D
	SR-163	Ash St	2,290	2,200	2	2,400	0.95	0.92	E	D
	SR-163	Park Blvd	790	500	1	1,200	0.66	0.42	C	B
WB Off Ramps	SR-94	F St	4100	2900	3	3,600	1.14	0.81	F	D

Source: SANDAG, 2005; Wilson & Company

Notes:
1 The analysis assumed that the Cedar Street off-ramp would be closed.

The following **off-ramps** would operate at substandard LOS F under build-out of the proposed Downtown Community Plan during the AM and/or PM peak hours:

- I-5 SB Off-Ramp @ Front Street (AM peak hour)
- I-5 SB/SR-163 Off-Ramps @ 10th Avenue (AM peak hour)
- I-5 NB Off-Ramp @ J Street (PM peak hour)
- I-5 NB Off-Ramp@ B Street (AM peak hour)
- SR-163 SB Off-Ramp @ Fourth Avenue (AM peak hour)
- SR-94 WB Off-Ramp @ F Street (AM peak hour).

All of the above freeway ramps, operating at substandard LOS F under build-out of the proposed Downtown Community Plan, represent direct project-related significant impacts.

Figures 4-3 and **4-4** display freeway segments and ramps, respectively, which are projected to operate at substandard LOS F under build-out of the proposed Downtown Community Plan.

Closure of Cedar Street Off-Ramp

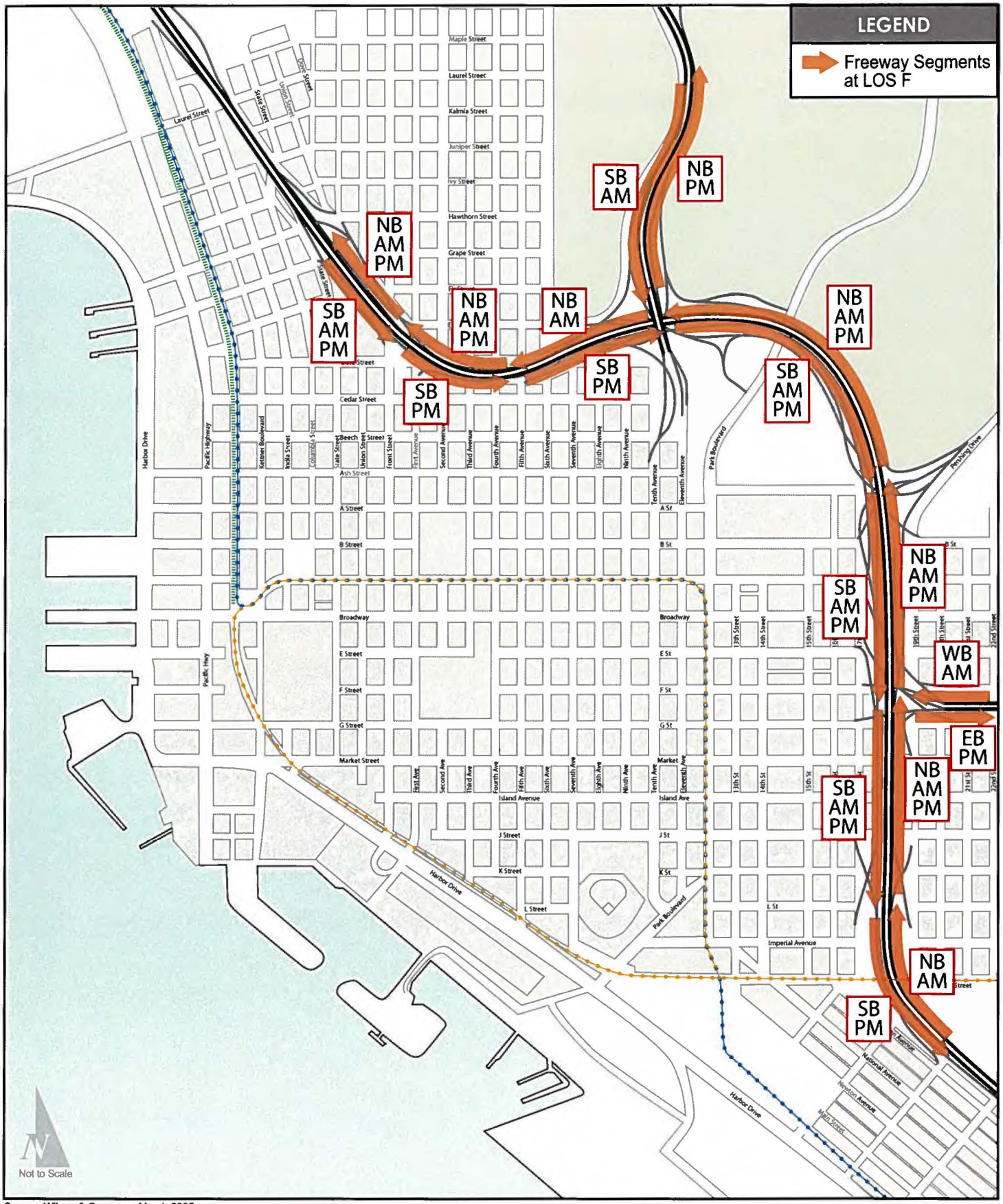
As noted, one of the street modifications proposed by the Downtown Community Plan is the closure of the southbound I-5 off-ramp to Cedar Street and conversion of Cedar Street to 2-way traffic. This ramp is currently operating a LOS F. Closure of the Cedar Street I-5 freeway off-ramp will cause an overall increase in traffic on other off-ramps serving the downtown area, particularly the off-ramp at Front Street and Tenth Avenue. Since a number of these ramps as projected to operate at substandard LOS F under build-out of proposed Downtown Community Plan, and since the closure of the Cedar Street off-ramp will cause additional use of these identified substandard ramps, the closure of the Cedar Street off-ramp from southbound I-5 is also identified as a direct project-related significant impact.

Analysis of Metered On-Ramps

Consistent with Caltrans policies and directions, it was assumed that all downtown freeway on-ramps would be metered under future build-out conditions. **Table 4.11** displays the results of the analysis of the metered freeway on-ramps under build-out of the proposed Downtown Community Plan. Estimated delays at the freeway on-ramps were categorized as follows:

- <15 minutes of delay
- >15 and <25
- >25 minutes

All delays greater than 15 minutes were identified as significant with the potential for traffic queuing and impacts to adjacent intersection and roadway traffic operations.



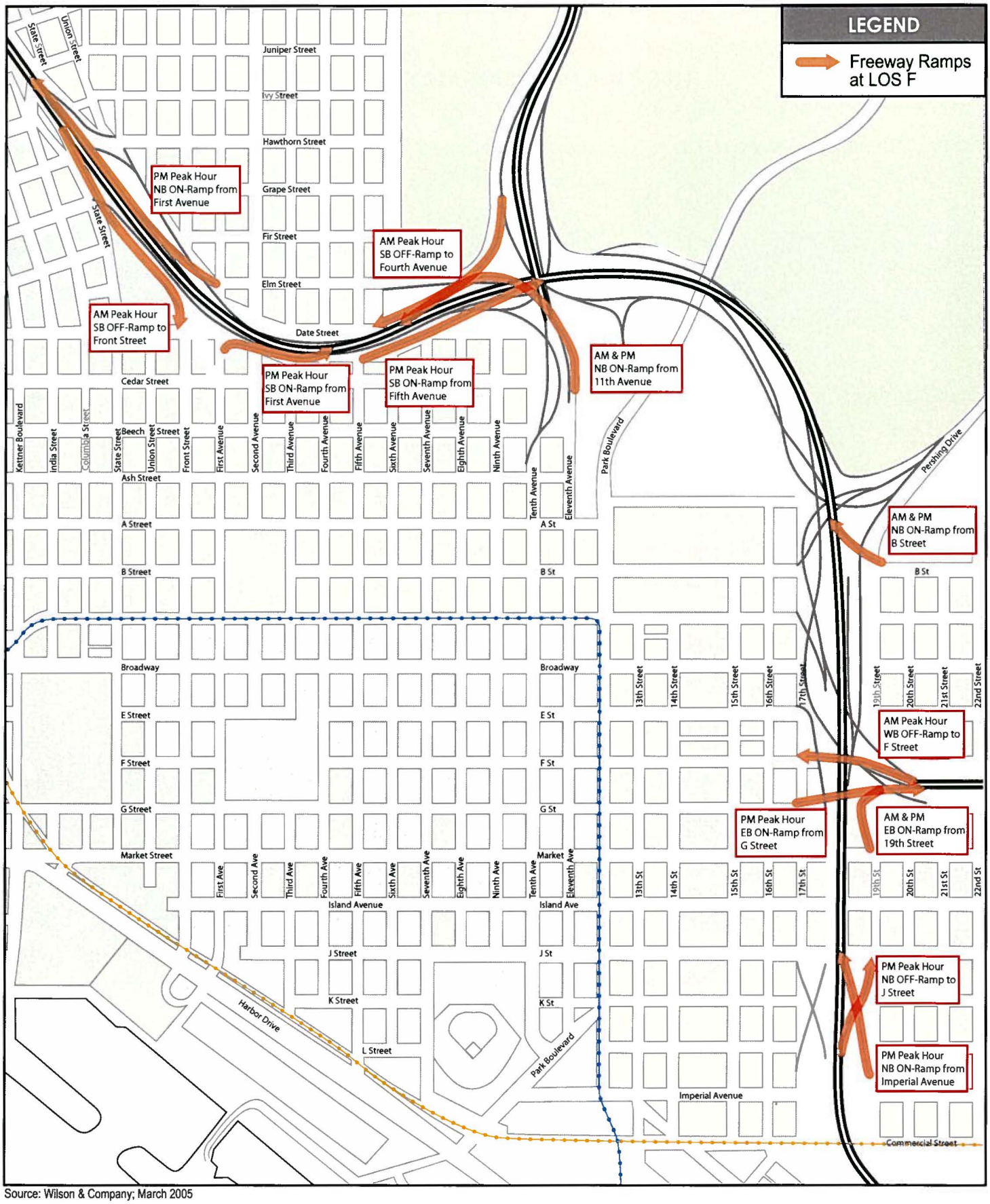
Source: Wilson & Company; March 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 4-3
Freeway Segments at LOS F
Build-out of Proposed Downtown Community Plan

THIS PAGE INTENTIONALLY LEFT BLANK



Source: Wilson & Company; March 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 4-4
Freeway Ramps at LOS F
Build-out of Proposed Downtown Community Plan

THIS PAGE INTENTIONALLY LEFT BLANK

Table 4.11
Proposed Downtown Community Plan
Metered Freeway On-Ramp Analysis

			Metering Rates[1]		Peak Hour Ramp Volume		Excess Demand		Delay (Mintues)	
	From	To	AM	PM	AM	PM	AM	PM	AM	PM
Freeway On-Ramp	19th Street	NB I-5	750	750	900	1,290	150	540	<15	>25
	B Street	NB I-5	1,420	750	1,670	1,700	250	950	<15	>25
	11th Avenue	NB I-5	1,733	1,178	2,460	1,650	727	472	15 - 25	15 - 25
	11th Avenue	NB SR-163	1,537	1,842	2,180	2,580	643	738	15 - 25	15 - 25
	First Avenue	NB I-5	1,040	2,030	3,160	3,100	2,120	1,070	>25	>25
	Grape Street	SB I-5	750	1,430	2,000	4,070	1,250	2,640	>25	>25
	First Avenue	SB I-5	750	1,180	1,200	1,600	450	420	>25	15 - 25
	Fifth Avenue	SB I-5	750	1,140	700	1,600	0	460	0	15 - 25
	Park Boulevard	SB I-5	1,440	1,530	560	950	0	0	0	0
	C Street	SB I-5	750	750	960	1,020	210	270	15-25	15 - 25
	E Street	SB I-5	750	750	920	1030	170	280	<15	15 - 25
	J Street	SB I-5	750	750	920	700	170	0	<15	0
	19th Street	EB SR-94	750	870	1,060	4,000	310	3,130	15 - 25	>25
	G Street	EB SR-94	750	2,730	1,220	2,720	470	0	>25	0

Source: Wilson & Company; March 2005

Notes:
1. Future metering rates were assumed to be the greater of either existing daily ramp volumes or the Caltrans' minimum ramp flow rate of 750 vehicles/hour.
2. Shaded cells represent excessive delays and significant cumulative impacts. (>15 minutes)

The following twelve (12) metered on-ramps are projected to operate with excessive delays and queues under build-out of the proposed Downtown Community Plan:

- I-5 NB On-ramp @ 19th Street (PM peak hour)
- I-5 NB On-ramp @ B Street (PM peak hour)
- I-5 NB On-ramp @ 11th Street (AM and PM peak hours)
- SR-163 NB On-ramp @ 11th Street (AM and PM peak hours)
- I-5 NB On-ramp @ First Avenue (AM and PM peak hours)
- I-5 SB On-ramp @ Grape Street (AM and PM peak hours)
- I-5 SB On-ramp @ First Avenue (AM and PM peak hours)
- I-5 SB On-ramp @ Fifth Avenue (PM peak hour)
- I-5 SB On-ramp @ C Street (AM and PM peak hours)
- I-5 SB On-ramp @ E Street (PM peak hour)
- SR-94 EB On-ramp @ 19th Street (AM and PM peak hours)

- SR-94 EB On-ramp @ G Street (AM peak hours)

Traffic queues at the above ramps will extend beyond the on-ramps themselves and potentially impact traffic operations at nearby intersections. In a number of locations, queues are projected to be quite significant. The impacts resulting from queuing at these freeway on-ramps represent direct project-related significant impacts.

Peak Hour Intersection Performance

Under future year build-out conditions, there will be approximately 275 signalized intersections in the downtown study area. Based upon analysis of future traffic operations, 62 downtown study area intersections are projected to operate at substandard LOS F under build-out of the Downtown Community Plan.

Table 4.12 displays the downtown study area intersections projected to operate at LOS F during the AM and/or PM peak hours along with projected average traffic delays under build-out of the proposed Downtown Community Plan. A brief description of the identified causes of the substandard intersection LOS is also provided. For the most part, substandard intersection LOS is associated with high volumes and limited capacity due to deficient intersection geometry and laneage.

As shown in Table 4.12, 15 intersections would operate at LOS F during both the AM and PM peak hours, 6 intersections would operate at LOS F only during the AM peak hour, and 41 intersections would operate at LOS F only during the PM peak hour. **Figure 4-5** displays the downtown study intersections projected to operate at LOS F during the AM and PM peak hours under the proposed Downtown Community Plan.

All of the identified downtown study area intersections, operating at substandard LOS F during peak hours under build-out of the Downtown Community Plan, represent direct project-related significant impacts, with the exception of the following locations which represent cumulatively significant impacts:

- First Ave/Elm Street (AM and PM peak hours)
- 19th Street/Market Street (PM peak hour)

Table 4.12
Proposed Downtown Community Plan
Downtown Intersections Operating at LOS F
Build-out Conditions

Intersection			Delay (seconds)		LOS		Cause of Failure	
No.	**N/S Street**	**E/W Street**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
1	Pacific Highway	Laurel St	66.4	220.9	E	F	N/A	RT Volumes, No Turn Lanes
2	Harbor Dr	Grape St	14.9	132.2	B	F	N/A	NB T, NB RT Volumes
3	Columbia St	Grape St	12.4	159.5	B	F	N/A	EB RT Volume, No Turn Lane
4	State St	Grape St	7.0	207.7	A	F	N/A	NB RT Volume
5	Fifth Ave	Grape St	5.0	94.9	A	F	N/A	EB LT Volume
6	First Ave	Elm St	87.4	83.3	F	F	NB Traffic heading to I-5 NB	NB Traffic heading to I-5 NB
7	Sixth Ave	Elm St	150.5	177.7	F	F	NB and WBL Volume	NB and WB LT Volume
8	Fourth Ave	Cedar St	103.5	35.9	F	D	SB/WB Volume - No Turn Lanes	N/A
9	Sixth Ave	Cedar St	498.1	>500.0	F	F	NB/SB Volume - No Turn Lanes	NB/SB Volume - No Turn Lanes
10	Park Blvd	I-5 SB On/Off	22.5	85.9	C	F	N/A	NB LT Turning Volume
11	Front St	Beech St	338.7	91.6	F	F	SB/WB Volume - No Turn Lanes	SB/WB Volume - No Turn Lanes
12	Front St	Ash St	87.0	17.8	F	B	SBR Volume	N/A
13	First Ave	Beech St	>500.0	>500.0	F	F	Overall Volumes	Overall Volumes
14	Fourth Ave	Beech St	94.20	132.60	F	F	Overall Volumes	Overall Volumes
15	Fifth Ave	Beech St	407.90	>500.0	F	F	Overall Volumes	Overall Volumes

Notes:
NB = northbound
SB = southbound
WB = westbound
EB = eastbound
RT = right turn
LT = left turn
T = through

Table 4.12 (continued)
Proposed Downtown Community Plan
Downtown Intersections Operating at LOS F
Build-out Conditions

Intersection			Delay (seconds)		LOS		Cause of Failure	
No.	**N/S Street**	**E/W Street**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
16	Sixth Ave	Beech St	>500.0	>500.0	F	F	Overall Volumes, No Turn Lanes	Overall Volumes, No Turn Lanes
17	Sixth Ave	Ash St	314.8	232.0	F	F	SB Volume	SB Volume
18	Harbor Dr	A St	12.40	>500.0	B	F	N/A	SB LT Volume, No Turn Lane
19	Eighth Ave	A St	8.3	124.6	A	F	N/A	EB RT, SB LT Volumes
20	Ninth Ave	A St	5.0	309.4	A	F	N/A	EB Volume
21	10th Ave	A St	199.3	435.9	F	F	N/A	SB Traffic
22	11th Ave	A St	161.3	280.4	F	F	NB Volume	NB Volume
23	Harbor Dr	B St	18.4	165.3	B	F	N/A	SB Volume
24	Harbor Dr	C St	89.0	21.8	F	C	SB Volume, No Turn Lane	N/A
25	Ninth Ave	B St	13.8	121.3	B	F	N/A	NB Volume
26	16th St	B St	155.7	208.3	F	F	WB Volume	N/A
27	15th St	C St	266.5	>500.0	F	F	N/A	EB Volume, No Turn Lane
28	16th St	C St	>500.0	>500.0	F	F	Overall Volume, No Turn Lanes	Overall Volume, No Turn Lanes
29	State St	Broadway	44.1	116.5	D	F	N/A	NB Volume
30	Eighth Ave	Broadway	13.4	93.5	B	F	N/A	SB Volume

Notes:
NB = northbound
SB = southbound
WB = westbound
EB = eastbound
RT = right turn
LT = left turn
T = through

Table 4.12 (continued)
Proposed Downtown Community Plan
Downtown Intersections Operating at LOS F
Build-out Conditions

Intersection			Delay (seconds)		LOS		Cause of Failure	
No.	**N/S Street**	**E/W Street**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
31	Ninth Ave	Broadway	8.6	107.2	A	F	N/A	NB Volume
32	Harbor Dr	E St	23.8	97.1	C	F	N/A	SB LT Volume, No Turn Lane
33	15th St	F St	175.4	19.8	F	B	WBR and SBR Volume	N/A
34	16th St	F St	300.2	96.0	F	F	WB and SB Volume, No Turn Lanes	WB and SB Volume, No Turn Lanes
35	State St	G St	24.1	188.8	C	F	N/A	NB/SB Volume, No Turn Lanes
36	Union St	G St	26.5	135.7	C	F	N/A	NB/SB Volume, No Turn Lanes
37	Eighth Ave	G St	10.6	113.6	B	F	N/A	SB Volume
38	Park Blvd	G St	11.5	93.9	B	F	N/A	EB Volume, No Turn Lanes
39	13th St	G St	12.6	105.7	B	F	N/A	EB Volume, No Turn Lanes
40	14th St	G St	7.1	126.2	A	F	N/A	Overall Volume, No Turn Lanes
41	16th St	G St	6.2	428.6	A	F	N/A	EB T Volume
42	17th St	G St	9.3	393.0	A	F	N/A	EB Volume
43	16th St	Market St	9.6	80.2	A	F	N/A	NB Volume
44	19th St	Market St	14.2	140.5	B	F	N/A	NB Volume

Notes:
NB = northbound
SB = southbound
WB = westbound
EB = eastbound
RT = right turn
LT = left turn
T = through

Table 4.12 (continued)
Proposed Downtown Community Plan
Downtown Intersections Operating at LOS F
Build-out Conditions

Intersection			Delay (seconds)		LOS		Cause of Failure	
No.	**N/S Street**	**E/W Street**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
45	13th St	Island St	13.7	232.2	B	F	N/A	Overall Volumes, No Turn Lanes
46	Eighth Ave	J St	129.2	9.2	F	A	EBL Volume	N/A
47	13th Ave	J St	11.5	81.1	B	F	N/A	Overall Volume, No Turn Lanes
48	19th St	J St	12.5	283.0	B	F	N/A	NB Volume
49	13th St	K St	11.4	212.0	B	F	N/A	Overall Volume, No Turn Lanes
50	14th St	K St	7.9	209.8	A	F	N/A	Overall Volume, No Turn Lanes
51	16th St	K St	56.3	98.9	E	F	N/A	NBL Volume
52	13th St	L St	186.5	281.3	F	F	Overall Volumes, No Turn Lanes	Overall Volume, No Turn Lanes
53	16th St	L St	455.7	511.9	F	F	Overall Volume, No Turn Lanes	Overall Volume, No Turn Lanes
54	13th St	Imperial Ave	21.4	251.6	B	F	N/A	NB/SB Volume, No Turn Lanes
55	16th St	Imperial Ave	86.8	254.4	F	F	N/A	Overall Volume, No Turn Lanes
56	19th St	Imperial Ave	22.6	133.0	B	F	N/A	Overall Volume, No Turn Lanes
57	Harbor Dr	Hawthorn St	99.0	31.6	F	C	WB Volume	N/A
58	Pacific Highway	Hawthorn St	217.1	30.8	F	C	WB Volume	N/A
59	Kettner Blvd	Hawthorn St	94.1	7.7	F	A	WB Volume	N/A

Notes:

NB = northbound
SB = southbound
WB = westbound
EB = eastbound

RT = right turn
LT = left turn
T = through

Table 4.12 (continued)
Proposed Downtown Community Plan
Downtown Intersections Operating at LOS F
Build-out Conditions

Intersection			Delay (seconds)		LOS		Cause of Failure	
No.	**N/S Street**	**E/W Street**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
60	India St	Hawthorn St	165.6	11.5	F	B	WB Volume	N/A
61	Columbia St	Hawthorn St	157.9	24.4	F	C	WB Volume	N/A
62	State St	Hawthorn St	196.4	25.2	F	C	WB Volume	N/A

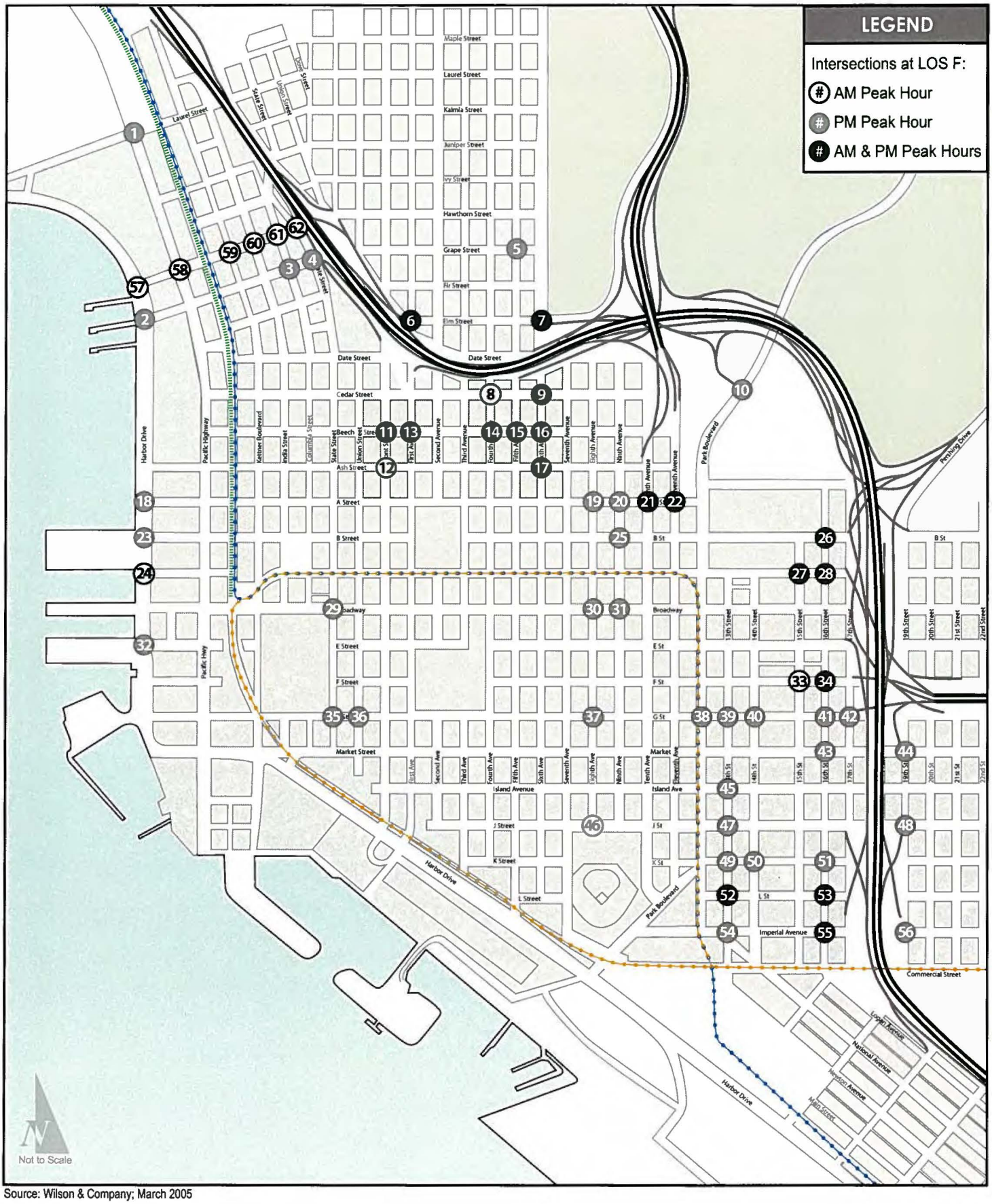
Source: Wilson & Company, April 2005

Notes:

NB = northbound
SB = southbound
WB = westbound
EB = eastbound

RT = right turn
LT = left turn
T = through

THIS PAGE INTENTIONALLY LEFT BLANK



Source: Wilson & Company; March 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 4-5
Intersections at LOS F
Build-out of Proposed Downtown Community Plan

THIS PAGE INTENTIONALLY LEFT BLANK

Potential For Impacts at Rail Crossings

Potential traffic impacts at downtown rail crossings relate to possible added traffic delays associated with Trolley and freight train movements at the following existing gated rail crossing locations:

- Park Boulevard;
- Fifth Avenue;
- First Avenue;
- Front Street; and
- Broadway.

Planned increases in Trolley service frequencies have the potential to cause added delays to downtown traffic volumes under build-out of the proposed Downtown Community Plan. In general, the delays are not anticipated to be significant. Gate down times are generally less than 20-30 seconds per Trolley crossing and periodic signal timing adjustments can minimize delays. At other non-gated Trolley crossings, the Trolley operates with the stream of traffic and under the control of the local signal systems and will have no associated impacts on traffic.

Freight train movements through the downtown can and do cause major disruptions, which would likely continue for the foreseeable future. Freight train movements generally occur during the late evening hours or mid-day and very infrequently occur during the peak travel periods. Other than the additional traffic volumes resulting from build-out of the proposed Downtown Community Plan, the Plan will have no directly associated impacts related to freight train movements through the downtown.

4.6 Analysis of Adjacent Neighborhood Roadway Segments

Build-out of the proposed Downtown Community Plan will likely cause traffic volumes increases in the adjacent neighborhoods, both east and north of downtown. **Table 4.13** displays roadway type, forecast ADT traffic volumes, and resulting roadway Level of Service (LOS) on key arterials to the east and north of downtown under existing and build-out of the proposed Downtown Community Plan.

Table 4.13
Proposed Downtown Community Plan
Adjacent Neighborhood Roadway Segments

Street	Segment	Street Classification	Existing		Proposed Plan	
			Volume	LOS	Volume	LOS
Broadway	East of 19th Street	4-Lane Major	4,800	A	10,600	A
	East of 25th Street	4-Lane Major	3,700	A	5,850	A
	East of 28th Street	4-Lane Major	3,300	A	6,860	A

Table 4.13 (continued)
Proposed Downtown Community Plan
Adjacent Neighborhood Roadway Segments

Street	Segment	Street Classification	Existing		Proposed Plan	
			Volume	LOS	Volume	LOS
Market Street	East of 19th Street	4-Lane Major	10,000	A	14,030	A
	East of 25th Street	4-Lane Major	7,900	A	15,900	B
	East of 28th Street	4-Lane Major	8,400	A	16,260	B
Imperial Avenue	East of 19th Street	2-Lane Collector (With Continuous Left Turn Lane)	6,900	B	11,950	D
	East of 25th Street	2-Lane Local	8,400	F	12,600	F
	East of 28th Street	2-Lane Collector	6,900	E	10,820	F
Commercial Street	East of 19th Street	2-Lane Local	1,900	A	6,320	D
	East of 25th Street	2-Lane Local	1,790	A	2,740	B
	East of 28th Street	2-Lane Local	1,200	A	1,550	B
National Avenue	South of Imperial Ave	4-Lane Collector	2,500	A	12,100	B
	South of Cesar Chavez Parkway	4-Lane Collector	4,100	A	5,800	A
	South of Sampson Street	4-Lane Collector	9,100	A	11,100	B
Harbor Drive	South of Park Boulevard	4-Lane Major	14,300	A	23,760	C
	South of Cesar Chavez Parkway	4-Lane Major	11,000	A	25,100	C
	South of Sampson Street	4-Lane Major	11,500	A	24,430	C
Cesar Chavez Parkway	North of Harbor Drive	2-Lane Major	8,100	C	11,500	D
	North of National Avenue	4-Lane Major	11,200	A	15,600	B
25th Street	North of Imperial Avenue	4-Lane Collector	9,200	A	15,100	C
	North of Market Street	4-Lane Collector	11,900	B	15,250	C
	North of Broadway	4-Lane Collector	10,200	B	14,800	C
28th Street	North of Harbor Drive	2-Lane Local	22,800	F	26,500	F
	North of National Avenue	2-Lane Local	7,600	F	8,860	F
	North of Imperial Avenue	2-Lane Local	8,400	F	9,880	F
	North of Market Street	2-Lane Local	9,100	F	11,750	F
	North of Broadway	2-Lane Local	9,900	F	12,500	F
Pershing Drive	North of Florida Drive	4-Lane Major	8,500	A	11,840	A
Florida Drive	North of Pershing Drive	4-Lane Major	22,900	C	32,300	D

Source: Wilson & Company, 2005

As shown in Table 4.13, forecast traffic volumes on adjacent neighborhood streets under build-out of the proposed Downtown Community Plan will increase over existing conditions anywhere between 50% to 100% or greater depending on the location. However, for the most part forecast volumes would remain within the range of acceptable capacities for each roadway type and no significant change or degradation in roadway LOS would result. A number of roadway segments in the adjacent neighborhoods would, however, operate at LOS F including:

- Imperial Ave, east of 25th St. to east of 28th St.
- 28th St., north of Harbor to north of Broadway

Both of these roadway segments are currently operating at LOS F under existing conditions.

These roadway segments, located in the neighborhoods adjacent to the downtown and identified as operating at LOS F under build-out of the proposed Downtown Community Plan, represent cumulatively significant impacts.

4.7 Traffic Impact and Mitigation Requirements

This section identifies the required roadway improvements that would be necessary to mitigate the identified cumulatively significant traffic impacts on the associated study area freeway segments, ramps, and intersections. Given the existing developed nature of the downtown area, the physical feasibility of implementing the identified mitigation measures was a key focus of the analysis.

Freeway Segments and Ramps

As discussed in Section 4.5, the proposed Downtown Community Plan will contribute to projected substandard traffic conditions on study area freeway segments (I-5, SR-163 and SR-94) and ramps serving the downtown area. Poor operations on the freeway mainlines are caused by high forecast traffic volumes and merge/diverse conflicts at the various on- and off-ramp locations. As a contributing factor to the forecast travel demands on the study area freeway facilities, the proposed Downtown Community Plan will result in both direct and cumulatively significant traffic impacts to these facilities.

As noted previously, the traffic analysis was conducted assuming the various roadway network assumptions included in the "Revenue Constrained" funding scenario of the SANDAG 2030 Regional Transportation Plan (RTP). This was intended at the time of the analysis to represent an appropriate worst-case scenario. Since passage of the Transnet funding program in November 2004, the SANDAG RTP "Mobility" scenario becomes the more realistic funding scenario for the region. This scenario includes implementation of High Occupancy Vehicle (HOV) lanes on I-5 through the downtown area, as well as on SR 94 serving the downtown to/from the east. These improvements will, in part, improve the capacity of the freeway system and resulting traffic operations, but will not specifically address freeway ramp operations and associated access requirements for the downtown area.

Previous SANDAG studies of the freeway system and the ramps serving the downtown area (Central I-5 Corridor Study and I-5 Freeway Deficiency Plan, December 2003) have identified the required freeway and ramp improvements that would be necessary to address projected longer range deficiencies. These included additional through lanes on I-5, supported by new auxiliary lanes and a modified system of ramps serving the downtown area. This study also confirmed that no feasible and acceptable improvement options are available to address projected deficiencies on SR-163, north of downtown. SANDAG, Caltrans and CCDC have recommended further study of the freeway improvement proposals identified in the Central I-5 Corridor Study to ensure proper consideration of all potential community and environmental impacts.

Subject to identification and regional acceptance of a feasible program to improve the freeway segments and ramps in the downtown area, the identified traffic impacts on study

area freeway segments and ramps associated with the proposed Downtown Community Plan will remain significant and unmitigated.

It is recommended that CCDC, along with Caltrans, SANDAG, and the City of San Diego continue to pursue and promote improvement of the I-5 freeway through the downtown area, the improvement of SR-94 to/from the east, as well as an improved system of freeway ramps serving the downtown area.

Near-Term Freeway Ramp Improvement Opportunities

Improvements to the downtown freeway ramps are limited by the amount of capacity on the ramps themselves and the downtown grid system to which they connect. Identified ramps that are projected to operate over capacity (LOS F in Table 4.10) under build-out of the proposed Downtown Community Plan were reviewed to assess the potential for increasing near-term ramp capacity. Ramp capacity can be increased by adding lanes to the ramp to accommodate the expected demand, with each lane of a ramp accommodating approximately 1,200 vehicles per hour.

In general, the addition of lanes to the ramps is restricted by two things:

1. The freeway and/or ramp facilities cannot accommodate either additional merging movements or the necessary entrance/exit lane configuration.
2. The on-street network cannot accommodate either the additional lane(s) feeding or exiting the ramp.

Table 4.14 summarizes the feasibility of adding additional lanes to the downtown study area ramps based on the preceding two restrictions.

Table 4.14
Proposed Downtown Community Plan
Freeway Ramp Improvement Opportunities

NB On-Ramps		Existing # of Lanes	Required # of Lanes	Feasibility
From	To			
19th Street	NB I-5	1	2	**Restricted by freeway lane availability**; NB I-5 has a limited ability to accommodate the additional merge points that would be needed to provide a safe entrance onto the freeway.
B Street	NB I-5	1	2	**Restricted by ramp lane availability;** the current ramp configuration merges with the SB Pershing Drive ramp to NB I-5. The existing configuration restricts the ability to add another lane and accommodate the additional merge points that would be needed to provide a safe entrance onto the freeway.
11th Avenue	NB I-5 / NB SR-163	2	4	**Restricted by freeway lane availability**; the need for additional lanes would be focused on the NB SR-163 movement from 11th Avenue; adding a lane to the NB ramp would move the bottle neck from its current location (current merge point) to a place further north (new merge point).
First Avenue	NB I-5	1	3	**Restricted by on-street lane availability**; the on-street network cannot accommodate the multi-lane (currently dual-right) turning movement required for this ramp; **Restricted by ramp lane availability;** The entrance ramp is restricted by the bridge width over the Hawthorne Street exit ramps from NB I-5. The facility would need t o undergo substantial modification to accommodate an additional lane of ramp traffic,; in addition, NB I-5 has a limited availability to accommodate the additional merge points that would be needed to provide a safe entrance onto the freeway.

Table 4.14 (continued)
Proposed Downtown Community Plan
Peak Hour Freeway Failing Ramps
Build-out Conditions

From	To			
SB On-Ramps				
Grape Street	SB I-5	1	4	**Restricted by on-street lane availability;** the on-street network cannot accommodate the multi-lane turning movement required to access this ramp; in addition, SB I-5 has a limited availability to accommodate the additional merge points that would be needed to provide a safe entrance onto the freeway.
First Avenue	SB I-5	1	2	**Restricted by freeway lane availability**; the ramp currently has a dual-lane entrance, however, the merge point is not carried onto the freeway and is considered a one-lane ramp; the two-lane ramp would need to be carried onto SB I-5, but SB I-5 has a limited availability to accommodate the additional merge points that would be needed to provide a safe entrance onto the freeway.
Fifth Avenue	SB I-5	1	2	**Restricted by ramp lane availability;** the on-street network currently accommodates the dual-lane turning movement required to access this ramp; however, the entrance ramp is restricted by the bridge width over the SR-163 ramps from SB I-5. The facility would need t o undergo substantial modification to accommodate an additional lane of ramp traffic. **Restricted by freeway lane availability**; the freeway to accommodate the additional merge points that would be needed to provide a safe entrance onto the freeway.
EB On-Ramps				
G Street	EB SR-94	3	4	**Restricted by freeway lane availability**; EB SR-94 has a limited ability to accommodate the additional merge points that would be needed to provide a safe entrance onto the freeway. In addition, the entrance ramp is restricted by the bridge width over I-5 out of San Diego. The facility would need t o undergo substantial modification to accommodate an additional lane of ramp traffic.
19th Street	EB SR-94	1	3	**Restricted by freeway lane availability**; EB SR-94 has a limited ability to accommodate the additional merge points that would be needed to provide a safe entrance onto the freeway. **Restricted by ramp lane availability;** the ramp is restricted in width by the proximity of the ramp to the existing development.
NB Off-Ramps				
NB I-5	J Street	1	3	**Restricted by freeway lane availability;** NB I-5 has a limited availability to accommodate additional exit lanes to the ramp. The additional ramp lanes would also require some modification to allow three lanes of inbound ramp traffic, including signalized control at the ramp intersection with J Street.
SB Off-Ramps				
SB I-5	Front Street	2	4	**Restricted by on-street lane availability;** the on-street network would require some modification to allow four lanes of inbound ramp traffic, including closing off the Date Street access to Front Street.
SR-163	Fourth Avenue	1	2	**Restricted by ramp lane availability;** the ramp is restricted in width by the proximity of the freeway to the south and the residential neighborhood to the north.
WB Off-Ramps				
SR-94	F Street	3	4	**Restricted by freeway lane availability;** the exiting freeway lanes (WB) are restricted by the bridge width over I-5 into San Diego. The facility would need t o undergo substantial modification to accommodate an additional lane of ramp traffic.

Source: Wilson & Company, May 2005

As shown above, there are limited opportunities to provide, on an individual ramp basis, the additional capacity required to adequately serve future demands.

Reverse Commute Effects

The increase in residential development in the downtown area as currently occurring and as will further occur under the proposed Downtown Community Plan has the potential to increase the "reverse commute". The normal commute is characterized by the downtown serving as an employment center with workers commuting from outlying suburban

residential land uses. Under this scenario, the work/peak hour commute is inbound to the downtown in the morning and outbound in the evening. With increased downtown residential development, outbound trips from the downtown in the morning and inbound in the evening are anticipated to increase, a reverse of the normal commuting pattern. Implications from a transportation perspective include increased demands on traditionally non-peak directional transit routes (e.g. northbound Coaster in the AM and southbound in the PM) and increasing demands on freeway on-/off-ramps (downtown freeway on-ramps in the AM and downtown off-ramps in the PM.). It is anticipated that the overall effects of an increasing reverse commute will be beneficial in terms of balancing peak hour demands on key freeway ramps serving the downtown.

Downtown Intersections

Table 4.15 displays the downtown study area intersections which have been identified as being significantly impacted by projected traffic related to the build-out of the proposed Downtown Community Plan. The table also identifies the necessary improvements to the intersection geometry / laneage that would be required in order for the intersection to operate at acceptable LOS E or better and to mitigate the traffic impacts associated with the proposed Downtown Community Plan. The table also addresses the feasibility of the identified mitigation measures.

At a number of intersection locations, the physical right-of-way would not enable the implementation of additional through traffic or turn lanes. In other locations, restriping and/or removal of parking will enable implementation of the required improvements. In those intersection locations where the required mitigation measures are not feasible, the identified significant traffic impacts will remain significant and unmitigated.

In addition to the above considerations, subsequent and further review of the identified mitigation measures may find specific measures to be incompatible with other goals and policies of the Downtown Community Plan, including the desire to improve and enhance the downtown pedestrian environment. These issues will need to be addressed as part of CCDC's on-going monitoring of the Plan's mitigation requirements.

Table 4.15
Proposed Downtown Community Plan
Intersection Mitigation Requirements

Intersection			LOS			
No.	N/S Street	E/W Street	AM	PM	Required Mitigation	Feasible?
1	Pacific Highway	Laurel St	E	F	Separate NB RT	Y
2	Harbor Dr	Grape St	B	F	Add NB Shared Thru-Right	Y
3	Columbia St	Grape St	B	F	Add EB T; Separate EB RT	N
4	State St	Grape St	A	F	Add EB T	Y
5	Fifth Ave	Grape St	A	F	Separate EB LT	Y
6	First Ave	Elm St	F	F	Convert NB Thru-Left to NB left only	Y
7	Sixth Ave	Elm St	F	F	Provide 2 WB LT, 2 WB Thru, 1 WB RT; Provide NB/SB @ 2 Lanes with Shared Turns	Y
8	Fourth Ave	Cedar St	F	D	Add SB LT, WB LT	Y
9	Sixth Ave	Cedar St	F	F	Separate WB LT and EB LT; Provide NB @ 2 Thru Lanes w/Shared Turns; Provide SB LT, 2 SB Thru, SB RT	N
10	Park Blvd	I-5 SB On/Off	C	F	Add NB LT	Y
11	Front St	Beech St	F	F	Add SB T, WB T, EB T	Y
12	Front St	Ash St	F	B	Add SB RT	Y
13	First Ave	Beech St	F	F	Add NB T, WB T, EB T; Separate NB R	N
14	Fourth Ave	Beech St	F	F	Add WB T, EB T	Y

Notes:

NB = northbound
SB = southbound
WB = westbound
EB = eastbound

RT = right turn
LT = left turn
T = through

Table 4.15 (continued)
Proposed Downtown Community Plan
Intersection Mitigation Requirements

Intersection			LOS			
No.	N/S Street	E/W Street	AM	PM	Required Mitigation	Feasible?
15	Fifth Ave	Beech St	F	F	Add WB T, EB T	Y
16	Sixth Ave	Beech St	F	F	Add WB T, EB T; Provide NB @ 2 Lanes w/Shared Turns; Provide SB @ 2 Thru Lanes w/Shared Left and Separate Right	N
17	Sixth Ave	Ash St	F	F	Provide 2 SB RT and 2 SB T	N
18	Harbor Dr	A St	B	F	Provide SB LT	Y
19	Eighth Ave	A St	A	F	Add SB LT	Y
20	Ninth Ave	A St	A	F	Separate EB LT; Provide 2 NB T, NB Thru-right, NB RT	N
21	10th Ave	A St	F	F	Add 2 EB T, Separate EB RT; Add SB T, Separate SB LT	N
22	11th Ave	A St	F	F	Separate EB LT; Add NB T, Separate NB RT	N
23	Harbor Dr	B St	B	F	Provide SB LT	Y
24	Harbor Dr	C St	F	C	Provide SB LT	Y
25	Ninth Ave	B St	B	F	Provide 3 NB T w/ Shared Left	Y
26	16th St	B St	F	F	Separate NB LT; Add WB T, Separate WB LT	Y
27	15th St	C St	F	F	Provide 2 EB T w/Shared Turns	Y
28	16th St	C St	F	F	Provide 2 EB T w/Shared Right, Separate EB LT, WB LT; Add NB T, Separate NB LT, SB LT	Y

Notes:

NB = northbound
SB = southbound
WB = westbound
EB = eastbound

RT = right turn
LT = left turn
T = through

Table 4.15 (continued)
Proposed Downtown Community Plan
Intersection Mitigation Requirements

Intersection			LOS			
No.	N/S Street	E/W Street	AM	PM	Required Mitigation	Feasible?
29	State St	Broadway	D	F	Separate NB LT	Y
30	Eighth Ave	Broadway	B	F	Provide 3 SB T w/ Shared Turns	Y
31	Ninth Ave	Broadway	A	F	Provide 3 NB T w/ Shared Turns	Y
32	Harbor Dr	E St	C	F	Provide SB LT	Y
33	15th St	F St	F	B	Separate WB LT, WB RT	N
34	16th St	F St	F	F	Separate NB LT, SB LT; Add WB T, Separate WB LT, WB RT	N
35	State St	G St	C	F	Separate NB LT, SB LT	Y
36	Union St	G St	C	F	Separate NB LT, SB LT	Y
37	Eighth Ave	G St	B	F	Add SB T	Y
38	Park Blvd	G St	B	F	Add EB T	Y
39	13th St	G St	B	F	Add EB T, Separate EB LT; SB LT	N
40	14th St	G St	A	F	Add EB T; Separate SB LT, NB RT	Y
41	16th St	G St	A	F	Add EB T	Y
42	17th St	G St	A	F	Add EB T	Y
43	16th St	Market St	A	F	Separate NB LT, NB RT	Y

Notes:

NB = northbound
SB = southbound
WB = westbound
EB = eastbound

RT = right turn
LT = left turn
T = through

Table 4.15 (continued)
Proposed Downtown Community Plan
Intersection Mitigation Requirements

Intersection			LOS			
No.	N/S Street	E/W Street	AM	PM	Required Mitigation	Feasible?
44	19th St	Market St	B	F	Convert NB LT to Shared NB Thru-Left	Y
45	13th St	Island St	B	F	Separate NB LT, SB LT	Y
46	Eighth Ave	J St	F	A	Separate EB LT	Y
47	13th St	J St	B	F	Separate SB LT, NB LT	Y
48	19th St	J St	B	F	Add NB T	Y
49	13th St	K St	B	F	Separate SB LT, NB LT	Y
50	14th St	K St	A	F	Separate EB LT, WB LT, SB LT, NB LT	Y
51	16th St	K St	E	F	Separate SB LT, NB LT	Y
52	13th St	L St	F	F	Provide 2 NB T, NB RT; Provide EB LT, EB RT, Provide SB Thru-Left	Y
53	16th St	L St	F	F	Separate EB LT, WB LT, SB LT, NB LT	Y
54	13th St	Imperial Ave	B	F	Provide NB LT, NB T, NB Thru-Right; Provide SB LT, SB T, SB Thru-Right	Y
55	16th St	Imperial Ave	F	F	Separate NB LT, SB LT	Y
56	19th St	Imperial Ave	B	F	Separate EB LT, Add EB LT	Y
57	Harbor Dr	Hawthorn St	F	C	Add Shared WB Left-Right	Y
58	Pacific Highway	Hawthorn St	F	C	Add WB T, Separate WB LT	N

Notes:

NB = northbound
SB = southbound
WB = westbound
EB = eastbound

RT = right turn
LT = left turn
T = through

Table 4.15 (continued)
Proposed Downtown Community Plan
Intersection Mitigation Requirements

Intersection			LOS			
No.	N/S Street	E/W Street	AM	PM	Required Mitigation	Feasible?
59	Kettner Blvd	Hawthorn St	F	A	Add WB T	Y
60	India St	Hawthorn St	F	B	Add WB T	Y
61	Columbia St	Hawthorn St	F	C	Add WB T	Y
62	State St	Hawthorn St	F	C	Add WB T	Y

Source: Wilson & Company, March 2005

Notes:

NB = northbound
SB = southbound
WB = westbound
EB = eastbound

RT = right turn
LT = left turn
T = through

As shown above, based upon physical limitations, the identified mitigation measures would be feasible at 50 of the impacted intersections and infeasible at 12 of the impacted intersection locations. As noted previously, subsequent review may find further intersection mitigations to be infeasible due to conflicts with other prescribed goals and policies of the Downtown Community Plan.

Appendix C includes graphics displaying existing/assumed intersection geometry and required mitigation for each of the impacted intersections identified above.

Table 4.16 displays the intersection LOS before and after mitigation for the impacted intersections. As noted previously, at those intersections locations where the required mitigation measures were found to be physically infeasible, the identified traffic impacts will remain significant and unmitigated.

Table 4.16
Proposed Downtown Community Plan
Mitigated Peak Hour Intersection Level of Service

Intersection			Before Mitigation				After Mitigation			
			Delay		LOS		Delay		Mitigated LOS	
No.	N/S Street	E/W Street	AM	PM	AM	PM	AM	PM	AM	PM
1	Pacific Highway	Laurel St	66.4	220.9	E	F	53.6	52.4	D	D
2	Harbor Dr	Grape St	14.9	132.2	B	F	8.3	74.6	A	E
3	Columbia St	Grape St	12.4	159.5	B	F	Not Feasible/No Change	Not Feasible/No Change	B	F
4	State St	Grape St	7.0	207.7	A	F	4.5	66.9	A	E
5	Fifth Ave	Grape St	5.0	94.9	A	F	4.2	18.8	A	B
6	First Ave	Elm St	87.4	83.3	F	F	69.5	60.5	E	E
7	Sixth Ave	Elm St	150.5	177.7	F	F	16.8	23.6	B	C
8	Fourth Ave	Cedar St	103.5	35.9	F	D	38.7	24.8	D	C
9	Sixth Ave	Cedar St	498.1	>500.0	F	F	Not Feasible/No Change	Not Feasible/No Change	F	F
10	Park Blvd	I-5 SB On/Off	22.5	85.9	C	F	15.3	15.9	B	B
11	Front St	Beech St	338.7	91.6	F	F	21.2	15.3	C	B
12	Front St	Ash St	87.0	17.8	F	B	45.9	6.2	D	A
13	First Ave	Beech St	>500.0	>500.0	F	F	Not Feasible/No Change	Not Feasible/No Change	F	F
14	Fourth Ave	Beech St	94.2	132.6	F	F	8.2	13.9	A	B
15	Fifth Ave	Beech St	407.9	>500.0	F	F	10.2	78.9	B	E
16	Sixth Ave	Beech St	>500.0	>500.0	F	F	Not Feasible/No Change	Not Feasible/No Change	F	F

Table 4.16 (continued)
Proposed Downtown Community Plan
Mitigated Peak Hour Intersection Level of Service

Intersection			Before Mitigation				After Mitigation			
			Delay		LOS		Delay		Mitigated LOS	
No.	N/S Street	E/W Street	AM	PM	AM	PM	AM	PM	AM	PM
17	Sixth Ave	Ash St	314.8	232.0	F	F	Not Feasible/No Change	Not Feasible/No Change	F	F
18	Harbor Dr	A St	12.4	>500.0	B	F	10.0	78.8	B	E
19	Eighth Ave	A St	8.3	124.6	A	F	7.6	33.8	A	C
20	Ninth Ave	A St	5.0	309.4	A	F	Not Feasible/No Change	Not Feasible/No Change	A	F
21	10th Ave	A St	199.3	435.9	F	F	Not Feasible/No Change	Not Feasible/No Change	F	F
22	11th Ave	A St	161.3	280.4	F	F	Not Feasible/No Change	Not Feasible/No Change	F	F
23	Harbor Dr	B St	18.4	165.3	B	F	11.8	76.6	B	E
24	Harbor Dr	C St	89.0	21.8	F	C	19.9	18.5	B	B
25	Ninth Ave	B St	13.8	121.3	B	F	12.0	23.1	B	C
26	16th St	B St	155.7	208.3	F	F	64.7	30.6	E	C
27	15th St	C St	266.5	>500.0	F	F	4.8	14.3	A	B
28	16th St	C St	>500.0	>500.0	F	F	64.6	70.0	E	E
29	State St	Broadway	44.1	116.5	D	F	70.2	78.9	E	E
30	Eighth Ave	Broadway	13.4	93.5	B	F	11.8	35.8	B	D
31	Ninth Ave	Broadway	8.6	107.2	A	F	8.3	35.4	A	D

Table 4.16 (continued)
Proposed Downtown Community Plan
Mitigated Peak Hour Intersection Level of Service

Intersection			Before Mitigation				After Mitigation			
			Delay		LOS		Delay		Mitigated LOS	
No.	N/S Street	E/W Street	AM	PM	AM	PM	AM	PM	AM	PM
32	Harbor Dr	E St	23.8	97.1	C	F	10.3	13.1	B	B
33	15th St	F St	175.4	19.8	F	B	Not Feasible/No Change	Not Feasible/No Change	F	B
34	16th St	F St	300.2	96.0	F	F	Not Feasible/No Change	Not Feasible/No Change	F	F
35	State St	G St	24.1	188.8	C	F	19.8	61.1	B	E
36	Union St	G St	26.5	135.7	C	F	25.7	40.5	C	D
37	Eighth Ave	G St	10.6	113.6	B	F	26.9	54.1	C	D
38	Park Blvd	G St	11.5	93.9	B	F	11.6	54.0	B	D
39	13th St	G St	12.6	105.7	B	F	Not Feasible/No Change	Not Feasible/No Change	B	F
40	14th St	G St	7.1	126.2	A	F	7.1	67.3	A	E
41	16th St	G St	6.2	428.6	A	F	7.9	19.6	A	B
42	17th St	G St	9.3	393.0	A	F	7.3	14.9	A	B
43	16th St	Market St	9.6	80.2	A	F	8.1	28.3	A	C
44	19th St	Market St	14.2	140.5	B	F	13.5	44.5	B	D
45	13th St	Island St	13.7	232.2	B	F	15.3	38.3	B	D
46	Eighth Ave	J St	129.2	9.2	F	A	14.8	7.9	B	A
47	13th St	J St	11.5	81.1	B	F	10.5	22.5	B	C

Table 4.16 (continued)
Proposed Downtown Community Plan
Mitigated Peak Hour Intersection Level of Service

Intersection			Before Mitigation				After Mitigation			
			Delay		LOS		Delay		Mitigated LOS	
No.	N/S Street	E/W Street	AM	PM	AM	PM	AM	PM	AM	PM
48	19th St	J St	12.5	283.0	B	F	8.4	74.3	A	E
49	13th St	K St	11.4	212.0	B	F	10.7	48.9	B	D
50	14th St	K St	7.9	209.8	A	F	10.7	38.1	B	D
51	16th St	K St	56.3	98.9	E	F	14.4	19.0	B	B
52	13th St	L St	186.5	281.3	F	F	14.4	33.5	B	C
53	16th St	L St	455.7	>500.0	F	F	54.8	76.4	D	E
54	13th St	Imperial Ave	21.4	251.6	B	F	11.4	11.4	B	B
55	16th St	Imperial Ave	86.8	254.4	F	F	11.9	36.9	B	D
56	19th St	Imperial Ave	22.6	133.0	B	F	22.7	22.7	C	C
57	Harbor Dr	Hawthorn St	99.0	31.6	F	C	18.5	11.7	B	B
58	Pacific Highway	Hawthorn St	217.1	30.8	F	C	Not Feasible/No Change	Not Feasible/No Change	F	C
59	Kettner Blvd	Hawthorn St	94.1	7.7	F	A	10.3	7.7	B	A
60	India St	Hawthorn St	165.6	11.5	F	B	39.0	4.6	D	A
61	Columbia St	Hawthorn St	157.9	24.4	F	C	54.4	6.6	D	A
62	State St	Hawthorn St	196.4	25.2	F	C	46.3	14.8	D	B

Source: SANDAG; Wilson & Company, 2005

As shown, of the 62 impacted intersections, twelve (12) intersections will remain with significant traffic impacts due to the physical infeasibility of the required mitigation

measures. At all other intersection locations, the LOS after mitigation will be acceptable (LOS E or better).

Additional Roadway Network Modifications

In addition to and complimentary with the identified intersection mitigations, the traffic analysis of the proposed Downtown Community Plan identified the need to improve a number of additional streets in the downtown study area. In a number of cases, this included changes from what had been assumed by the Downtown Community Plan as noted previously in Table 4.7.

Table 4.17 displays additional roadway network modifications to the assumed Community Plan roadway network that would be required to ensure adequate capacity and acceptable traffic operations. Where applicable, these modifications incorporate the intersection mitigation measures identified in Table 4.15 and determined to be physically feasible. **Figure 4-6** displays the additional modifications/recommended changes to the assumed Downtown Community Plan roadway network.

Table 4.17
Downtown Community Plan
Additional Roadway Network Modifications

Roadway	From	To	Existing	Proposed Plan	Recommended
Grape St	Harbor Dr	State St	3-lane EB 1-way, with parking	No Change	4-lane EB 1-way, no parking
Hawthorn St	Harbor Dr	State St	3-lane WB 1-way, with parking	No Change	4-lanes WB 1-way, no parking
Cedar St	Fourth Ave	Sixth Ave	Mostly one-way, 2 and 3 lanes, with one two-way section.	2-lane 2-way, with parking; Removal of the southbound off-ramp from I-5	2-lane 2-way, with continuous left turn lane and parking; Removal of the southbound off-ramp from I-5
Beech St	Front St	Sixth Ave	2-lane 2-way, with parking	No Change	4-lanes 2-way, no parking
C St	Park Blvd	I-5	3-lane EB 1-way, with parking	2-lane 2-way, with parking	3-lane 2-way (2 lane EB, 1 lane WB), with parking
G St	Park Blvd	17thSt	3-lane EB 1-way, with parking	No Change	4-lane EB 1-way, no parking, during peak periods
Imperial Ave	Park Blvd	19thSt	4-lane 2-way, no parking	No Change	4-lane 2-way, with continuous left turn lane, no parking
Fifth Ave	Elm St	Ash St	3-lane NB 1-way, with parking	No Change	4-lane NB 1-way, no parking, during peak periods
Sixth Ave	Elm St	Ash St	3-lane SB 1-way, with parking	2-lane 2-way, with parking	3-lane SB 1-way, with parking

Table 4.17 (continued)
Downtown Community Plan
Additional Roadway Network Modifications

Roadway	From	To	Existing	Proposed Plan	Recommended
Eighth Ave	Ash St.	G St	3-lane SB 1-way, with parking	2-lane 1-way SB, with parking	3-lane 1-way SB, with parking
Ninth Ave	Ash St	Market St	3-lane NB 1-way, with parking	2-lane 1-way NB, with parking	3-lane 1-way NB, with parking
19th St	Imperial Ave	SR-94	2-3 lanes 1-way NB	No Change	3-lane NB 1-way, with parking

Source: Wilson & Company, 2005

It should be specifically noted that Table 4.17 recommends that Sixth Avenue remain one-way southbound (3 lanes) between Elm Street and Ash Street. The proposed Downtown Community Plan roadway network included Sixth Avenue as a two way, two lane roadway. The traffic analysis indicated that forecast traffic volumes are too high for a two-way/two lane roadway, and the current one-way operation would provide the maximum capacity. This will also serve to eliminate a number of the identified unmitigated impacts under the proposed Downtown Community Plan due to infeasible mitigation at the following intersection locations:

- Sixth Avenue/Cedar Street
- Sixth Avenue/Beech Street
- Sixth Avenue/Ash Street

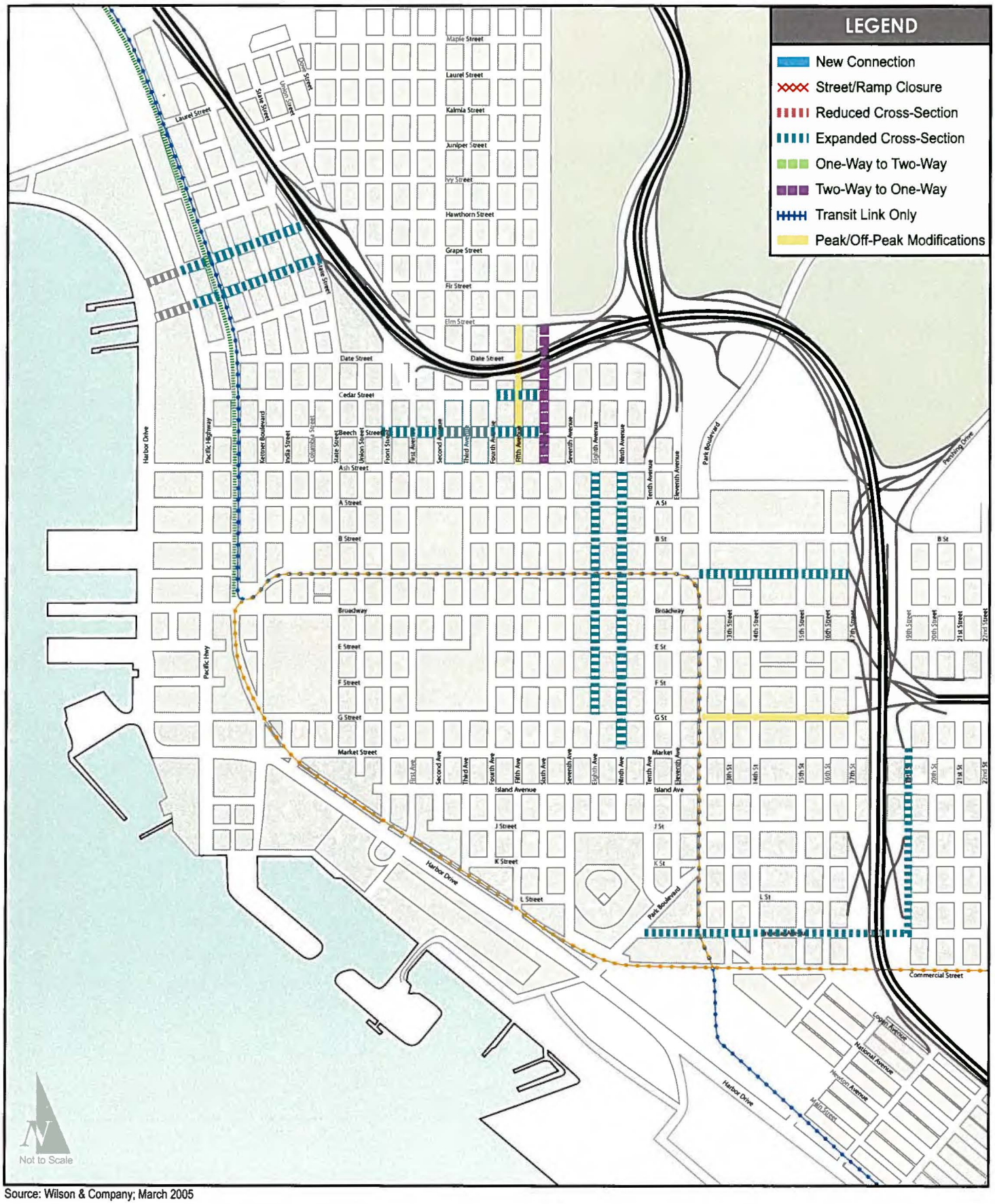
Figure 4-7 graphically displays the resulting Downtown Community Plan roadway network modifications (change from existing) with incorporation of the recommended changes noted in Table 4.17 and Figure 4-6.

Figure 4-8 displays the intersection locations where the significant traffic impacts would remain unmitigated under build-out of the proposed Downtown Community Plan due to physical infeasibility of the required mitigation measures.

4.8 Requirements for Monitoring and Further Study Prior to Implementation

It is important to note that in preparation of this EIR, the transportation, circulation, and access features of the proposed Downtown Community Plan have been evaluated collectively and in combination with each other at a planning level of detail. The result is that while individual street modifications may function adequately under future conditions, all localized impacts and related operational considerations may not have been fully identified at a project specific level. Based upon this, it is recommended that all potential roadway modifications and enhancements graphically displayed in Figure 4-6 under go further more detailed evaluations prior to implementation. These evaluations should address specific project requirements relating to operational impacts/benefits

THIS PAGE INTENTIONALLY LEFT BLANK



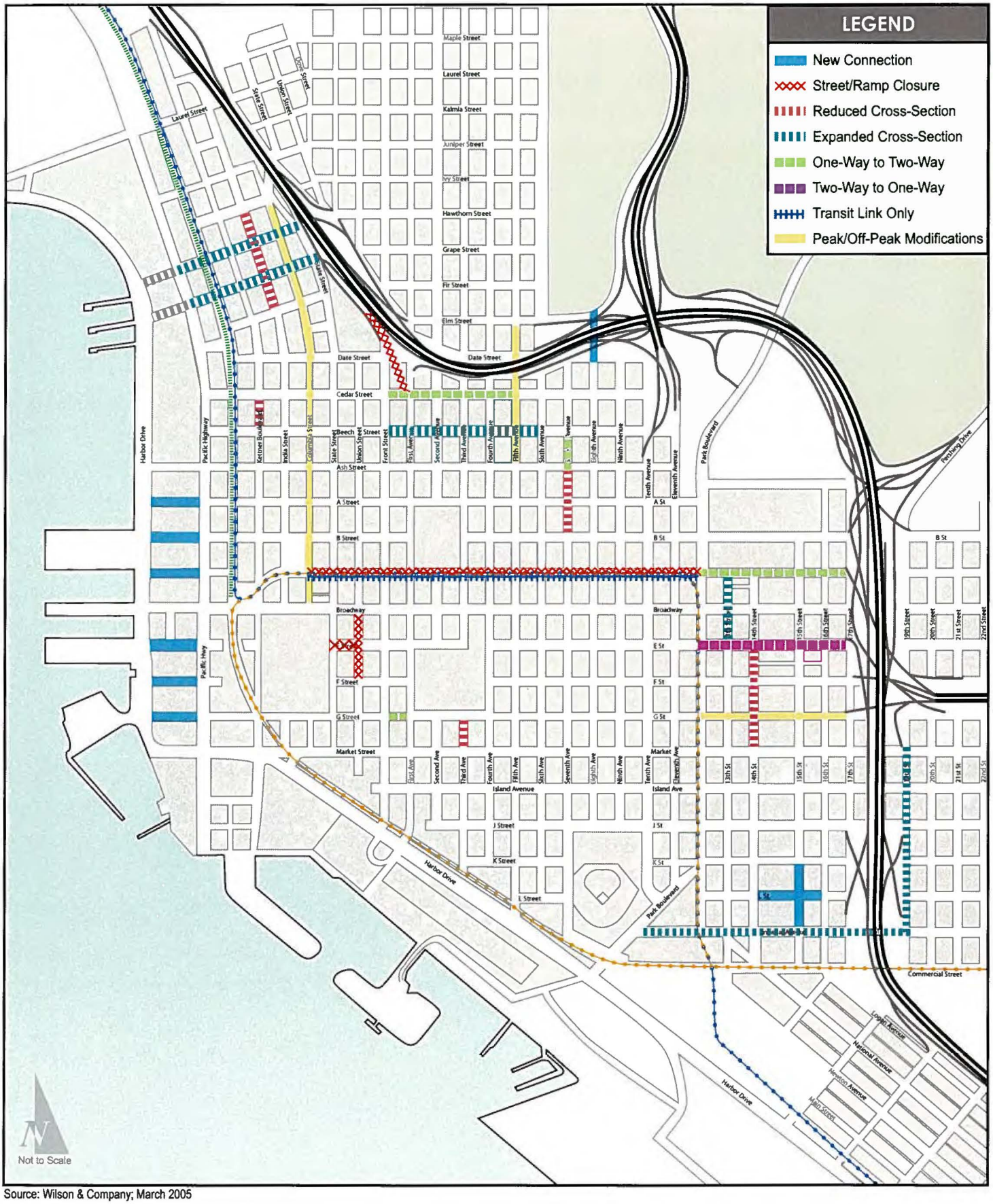
Source: Wilson & Company; March 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 4-6
Recommended Modifications to
Proposed Community Plan Roadway Network

THIS PAGE INTENTIONALLY LEFT BLANK



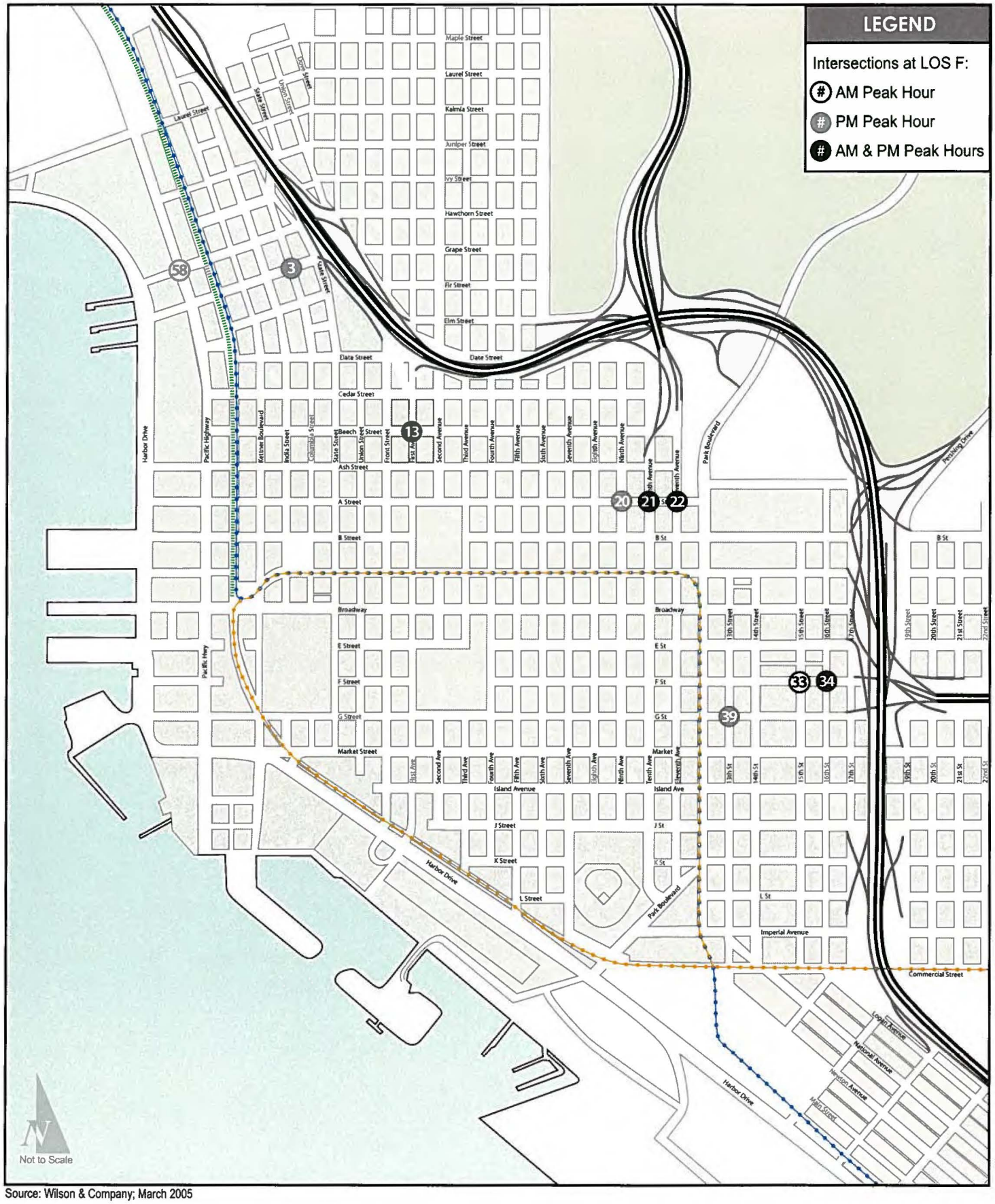
Source: Wilson & Company; March 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON &COMPANY

Figure 4-7
Future Roadway Network Modifications
With Mitigation

THIS PAGE INTENTIONALLY LEFT BLANK



Source: Wilson & Company; March 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON &COMPANY

Figure 4-8
Intersections with Unmitigated Traffic Impacts
Build-out of Proposed Downtown Community Plan

THIS PAGE INTENTIONALLY LEFT BLANK

including pedestrian and bicycle considerations, design and engineering requirements, and implementation feasibility/timing.

It is also recommended that CCDC conduct a comprehensive downtown-wide assessment of traffic operations at a minimum of every five years. This monitoring program will assist in establishing the timing and need for the identified traffic mitigation measures and related circulation system improvements consistent with downtown's growth and development. This program should also assess traffic in the adjacent neighborhood and assess improvement options, as appropriate.

4.9 Potential Impacts Due to Transfer of Development Rights (TDR) Program

The proposed TDR program, while not changing the overall magnitude of planned development in the downtown area, could result in different parcel-specific land use intensities than currently envisioned by the proposed Downtown Community Plan. Depending upon the actual transfer, this could change traffic flow patterns and related demands/impacts as analyzed and identified in the EIR. For the most part, the downtown grid system is effective in moving traffic, with the primary problem areas being the ramps to/from the freeway system. A TDR would not be expected to create new and significantly different traffic impacts compared to those previously identified in this traffic study.

4.10 Comparison of Downtown Community Plan and No Project Traffic Performance

This section provides a comparison of traffic impacts under the proposed Downtown Community Plan with the No Project alternative.

Travel Demand Characteristics

Table 4.18 provides a trip generation comparison of the proposed Downtown Community Plan and the No Project alternative. Overall, the proposed Community Plan would generate approximately 588,000 (28%) more daily person trips than the No Project alternative. The proposed Community Plan would also generate approximately 298,000 (or about 24%) more vehicle trips on a daily basis that the No Project alternative.

Table 4.18
Downtown Daily Trip Generation Comparisons
Proposed Plan vs. No Project

	Proposed Plan	No Project	Difference
Person Trips	2,706,020	2,118,030	+587,990
Vehicle Trips	1,546,470	1,248,440	+298,030

Source: SANDAG; Wilson & Company, 2005

Tables 4.19 and **4.20** summarize projected downtown trips by mode and the resulting mode share comparisons for both the proposed Community Plan and the No Project alternative.

Table 4.19
Trips By Mode Comparisons
Downtown Build-out Conditions

	Proposed Plan		No Project	
	Peak[2]	**Daily**	**Peak[2]**	**Daily**
SOV[1]	421,640	1,207,230	350,210	984,060
Carpool	227,180	783,740	179,380	613,060
Transit	86,440	151,610	67,310	117,080
Non-Motorized	181,880	563,440	126,970	403,830
Total	919,140	2,706,020	723,870	2,118,030

Source: SANDAG, December 2004

Notes:
1. SOV = Single Occupant Vehicle
2. Peak = Peak Travel Period of 6:00am – 9:00am and 4:00pm – 7:00pm.

Table 4.20
Mode Share Percentage Comparisons
Downtown Build-out Conditions

	Proposed Plan		No Project	
	Peak[2]	**Daily**	**Peak[2]**	**Daily**
SOV[1]	45.9%	44.6%	48.4%	46.5%
Carpool	24.9%	29.0%	24.8%	28.9%
Transit	9.4%	5.6%	9.3%	5.5%
Non-Motorized	19.8%	20.8%	17.5%	19.1%
Total	100.0%	100.0%	100.0%	100.0%

Source: SANDAG, December 2004

Notes:
1. SOV = Single Occupant Vehicle
2. Peak = Peak Travel Period of 6:00am – 9:00am and 4:00pm – 7:00pm.

As shown above, the proposed Downtown Community Plan, when compared with the No Project alternative, would result in increased use of alternative modes as follows:

- 39.5% increase in daily non-motorized trips, including walk, bicycle, and pedicab modes;
- 27.8% increase in daily carpool trips; and
- 29.5% increase in daily transit trips.

Table 4.21 provides a VMT comparison between the proposed Downtown Community Plan and the No Project alternative.

Table 4.21
VMT Comparison
Proposed Plan vs. No Project

	Proposed Plan	No Project	Difference
Peak Periods	297,990	259,970	+38,020
Daily	863,940	658,310	+205,630

Source: SANDAG; Wilson & Company, 2005

As shown, the proposed Downtown Community Plan would result in approximately 35% more daily VMT on the downtown surface street system than the No Project alternative.

Freeway Segment Performance

Table 4.22 displays LOS analysis results for study area freeway segments under build-out of the No Project (1992 MEIR) alternative. As shown, freeway segment volumes would generally range from 5,000 to 15,000 ADT lower than under the proposed Downtown Community Plan.

Performance of the downtown area freeway segments under build-out of the proposed Downtown Community Plan and the No Project alternative would generally be similar, with no change in the number of segments operating at LOS F, with the exception of the following:

- I-5; from Pershing to SR-163 – Improves to LOS E in the AM southbound direction under the No Project alternative.
- I-5; from Sixth Avenue to First Avenue – Improves to LOS E in the PM southbound direction under the No Project alternative.

Freeway Ramp Performance

Table 4.23 displays freeway LOS analysis results for downtown study area on-ramps and off-ramps under build-out of the No Project alternative.

Performance of the downtown area freeway ramps under build-out of the proposed Downtown Community Plan and No Project alternative would generally be similar, with no change in the number of ramps operating at LOS F, with exception of the following:

- I-5 SB off-ramp to Cedar Street operates at LOS F during the AM peak hour under the No Project alternative. This off-ramp was also to be closed under the proposed Downtown Community Plan.
- I-5 NB on-ramp from 19th Street improves to LOS E during the PM peak hour under the No Project alternative.

THIS PAGE INTENTIONALLY LEFT BLANK

Table 4.22
No Project Alternative
Peak Hour Freeway Segment Level of Service

Facility	Segment		Daily ADT	Peak Hour %		Direction	Lanes	Peak Hour	Direction Split		Truck	Peak Hour Volume		V/C		LOS	
	From	To		AM	PM			Capacity	AM	PM	Factor	AM	PM	AM	PM	AM	PM
I-5	SR-75	J St	237,500	0.072	0.074	NB	4L, 1A	9,200	0.624	0.448	0.98	10,888	8,034	1.18	0.87	F	D
						SB	4L, 1A	9,200	0.376	0.552	0.98	6,561	9,899	0.71	1.08	C	F
	J St	SR-94	236,800	0.072	0.074	NB	4L, 1A	9,200	0.624	0.448	0.98	10,856	8,011	1.18	0.87	F	D
						SB	4L, 1A	9,200	0.376	0.552	0.98	6,541	9,870	0.71	1.07	C	F
	SR-94	Pershing Dr	249,100	0.072	0.074	NB	4L, 2A	10,400	0.624	0.448	0.98	11,420	8,427	1.10	0.81	F	D
						SB	4L, 0A	8,000	0.376	0.552	0.98	6,881	10,383	0.86	1.30	D	F
	Pershing Dr	SR-163	286,200	0.072	0.074	NB	4L, 2A	10,400	0.624	0.448	0.98	13,121	9,682	1.26	0.93	F	E
						SB	4L, 0A	8,000	0.376	0.552	0.98	7,906	11,929	0.99	1.49	E	F
	SR-163	Sixth Ave	273,800	0.072	0.074	NB	4L, 2A	10,400	0.624	0.448	0.979	12,565	9,272	1.21	0.89	F	D
						SB	4L, 2A	10,400	0.376	0.552	0.979	7,571	11,424	0.73	1.10	C	F
	Sixth Ave	First Ave	290,900	0.072	0.074	NB	4L, 1A	9,200	0.516	0.51	0.979	11,039	11,214	1.20	1.22	F	F
						SB	5L, 1A	11,200	0.484	0.49	0.979	10,355	10,774	0.92	0.96	E	E
	First Ave	Hawthorne St	243,100	0.072	0.074	NB	4L, 1A	9,200	0.516	0.51	0.979	9,225	9,371	1.00	1.02	F	F
						SB	4L, 0A	8,000	0.484	0.49	0.979	8,653	9,004	1.08	1.13	F	F
SR-163	I-5	Washington St	120,900	0.068	0.077	NB	2L, 0A	4,000	0.311	0.665	0.985	2,596	6,285	0.65	1.57	C	F
						SB	2L, 0A	4,000	0.689	0.335	0.985	5,751	3,166	1.44	0.79	F	D
SR-94	17th St	28th St	146,500	0.073	0.084	EB	4L, 0A	8,000	0.192	0.713	0.982	2,091	8,935	0.26	1.12	A	F
						WB	4L, 0A	8,000	0.808	0.287	0.982	8,800	3,597	1.10	0.45	F	B

Source: SANDAG; Wilson & Company, April 2005

THIS PAGE INTENTIONALLY LEFT BLANK

Table 4.23
No Project Alternative
Peak Hour Freeway Ramp Level of Service

			Peak Hour Ramp Volume		Lanes	Peak Hour Lane Capacity Per	V/C		LOS	
	From	To	AM	PM			AM	PM	AM	PM
NB On-Ramps	19th Street	NB I-5	810	1,180	1	1,200	0.68	0.98	C	E
	B Street	NB I-5	1,560	1,440	1	1,200	1.30	1.20	F	F
	11th Ave	NB I-5 / NB SR-163	4,320	4,200	2	2,400	1.80	1.75	F	F
	First Avenue	NB I-5	2,540	2,800	1	1,200	2.12	2.33	F	F
SB On-Ramps	Grape Street	SB I-5	1,680	3,900	1	1,200	1.4	3.25	F	F
	First Avenue	SB I-5	1,040	1,400	1	1,200	0.87	1.17	D	F
	Fifth Avenue	SB I-5	630	1,480	1	1,200	0.53	1.23	B	F
	Park Boulevard	SB I-5	470	780	2	2,400	0.20	0.33	A	A
	C Street	SB I-5	800	980	1	1,200	0.67	0.82	C	D
	E Street	SB I-5	810	650	1	1,200	0.68	0.54	C	B
	J Street	SB I-5	780	620	1	1,200	0.65	0.52	C	B
EB On-Ramps	G St	EB SR-94	960	3,770	3	3,600	0.27	1.05	A	F
	19th St	EB SR-94	840	2,500	1	1,200	0.70	2.08	C	F
NB Off-Ramps	NB I-5	J Street	1,000	2,300	1	1,200	0.83	1.92	D	F
	NB I-5	B Street	1,080	770	2	2,400	0.45	0.32	B	A
	NB I-5	Sixth Avenue	1,900	2,340	2	2,400	0.79	0.98	C	E
SB Off-Ramps	SB I-5	Cedar Street	1,600	900	1	1,200	1.33	0.75	F	C
	SB I-5	Front Street	1,880	1,200	2	2,400	0.78	0.50	C	B
	SB I-5 / SB SR-163	10th Ave	3,510	3,220	3	3,600	0.98	0.89	E	D
	SB I-5	B Street	580	500	1	1,200	0.48	0.42	B	B
	SB I-5	17th Street	870	900	1	1,200	0.73	0.75	C	C
	SR-163	Fourth Ave	950	1,000	1	1,200	0.79	0.83	C	D
	SR-163	Ash St	1,960	1,500	2	2,400	0.82	0.63	D	C
	SR-163	Park Blvd	460	440	1	1,200	0.38	0.37	A	A
WB Off Ramps	SR-94	F St	3,860	2,240	3	3,600	1.07	0.62	F	B

Source: SANDAG; Wilson & Company, April 2005

- SR-94 EB on-ramp from 19th Street improves to LOS C during AM peak hour under the No Project alternative.
- I-5/SR-163 SB off-ramp to 10th Avenue improves to LOS E during AM peak hour under the No Project alternative.
- SR-163 SB off-ramp to Fourth Avenue improves to LOS C under the No Project alternative.

Intersection Performance

Table 4.24 displays the downtown study area intersections projected to operate at LOS F during the AM and/or PM peak hours, along with projected average delays under build-out of the No Project alternative.

Table 4.24
No Project Alternative
Build-out Peak Hour Intersection LOS

Intersection					Reason Intersection Fails		Delay	
No.	N/S Street	E/W Street	AM	PM	AM	PM	AM	PM
1	Laurel	Harbor	X	X	WB Traffic	EB LT/WB Traffic	103.2	136
2	PCH	Hawthorn	X	-	WB Traffic	-	100.5	45.2
3	India	Hawthorn	X	-	WB Traffic	-	95.3	5.4
4	Columbia	Hawthorn	X	-	WB Traffic	-	110.8	6
5	State	Hawthorn	X	-	WB Traffic	-	147.5	13.3
6	Harbor	Grape	-	X	-	SB LT Traffic	13.6	242.5
7	PCH	Grape	-	X	-	EB Traffic	16.1	85.8
8	India	Grape	-	X	-	EB Traffic	4.7	133.6
9	Columbia	Grape	-	X	-	EB Traffic	5	165.5

Notes:
NB = northbound
SB = southbound
WB = westbound
EB = eastbound
RT = right turn
LT = left turn
T = through

Table 4.24 (continued)
No Project Alternative
Build-out Peak Hour Intersection LOS

Intersection					Reason Intersection Fails		Delay	
No.	N/S Street	E/W Street	AM	PM	AM	PM	AM	PM
10	State	Grape	-	X	-	EB Traffic	4.5	164.9
11	Sixth	Elm	-	X	-	EB Traffic	62.8	120.8
12	First	Cedar	X	X	NB Traffic	NB Traffic	210.4	352.6
13	First	Beech	-	X	-	EB/NB Traffic, No Turn Lanes	65	207.5
14	Fifth	Beech	-	X	-	EB/NB Traffic, No Turn Lanes	14.7	94.8
15	Sixth	Beech	-	X	-	EB/SB Traffic, No Turn Lanes	16.5	86.5
16	Second	A	-	X	-	EB Traffic	36.4	109
17	Ninth	A	-	X	-	EB/NB Traffic	8	114.5
18	10th	A	X	X	EB/SB Traffic, No Turn Lanes	EB/SB Traffic, No Turn Lanes	117.3	332.8
19	11th	A	X	X	EB/NB Traffic	EB/NB Traffic	88.3	227.3
20	Union	Broadway	X	-	EB Traffic	-	89.3	9.8
21	Fourth	Broadway	X	-	WB Traffic	-	94.6	59.5
22	15th	F	X	-	WB Traffic	-	182.3	10.6
23	16th	F	X	-	WB/SB Traffic	-	242.4	42
24	16th	G	-	X	-	EB Traffic	7.6	403.5

Notes:
NB = northbound
SB = southbound
WB = westbound
EB = eastbound
RT = right turn
LT = left turn
T = through

Table 4.24 (continued)
No Project Alternative
Build-out Peak Hour Intersection LOS

Intersection					Reason Intersection Fails		Delay	
No.	N/S Street	E/W Street	AM	PM	AM	PM	AM	PM
25	17th	G	-	X	-	EB Traffic	8.8	388.6
26	19th	Market	-	X	-	NB Traffic	12	115.5
27	19th	J	-	X	-	NB Traffic	11.1	199.6

Source: Wilson & Company, May, 2005

As shown, 27 out of approximately 275 signalized intersections, are projected to operate at LOS F under the No Project alternative. This compares with a total of 62 deficient intersections under build-out of the proposed Downtown Community Plan. Under the No Project alternative, 11 intersections would fail in the AM peak hour; 19 intersections would fail in the PM peak hour; with 4 intersections identified as failing in both the AM and PM peak hours.

5.0 Transit Service and Access

This chapter describes transit service and access associated with the proposed Downtown Community Plan. The primary objective of this effort is to review and evaluate existing and planned transit services and demands under the land use intensities and future development patterns contained in the proposed Downtown Community Plan.

The increased densities and mix of land uses included in the proposed Downtown Community Plan will generate additional demands for transit services throughout the downtown area. This in turn, will reduce use of the automobile and overall levels of traffic in the downtown area.

Downtown transit demands were reviewed under both existing and downtown build-out conditions. Comparisons are made between the 1992 Community Plan (No Project Alternative) and the proposed Community Plan to assist in the identification of project benefits and related impacts.

5.1 Existing Transit Conditions

The downtown area is served by a rich variety of transit services, including intercity passenger rail, commuter rail, light rail transit, and an extensive network of local bus routes, connecting the downtown area to the rest of the region. Key transit centers serving the downtown include the 12th & Imperial Transfer Station and the Santa Fe Depot, which provide linkages between bus routes, light rail lines, and commuter rail services. The following provides a description of the key transit services in the downtown area:

- **San Diego Trolley -** Two trolley lines run to and through downtown, forming a loop within the downtown area. The Blue Line connects to Mission Valley in the north, and to National City, Chula Vista, and Imperial Beach in the south; ending at the Mexican border in San Ysidro. The 2005 opening of the Blue Line extension through Mission Valley will provide a through connection to San Diego State University and La Mesa. The Orange Line runs from Santee, El Cajon, La Mesa, and Lemon Grove in the northeast and terminates downtown.

- **Coaster Commuter Rail -** The Coaster is a commuter rail service operated by the North County Transit District. The service connects stations located at the Oceanside Transit Center, Carlsbad Village, Carlsbad Poinsettia, Encinitas, Solana Beach, Sorrento Valley, the Old Town Transit Center, and downtown. It uses the historic Santa Fe Depot, located at Columbia and Broadway, as its downtown terminal.

- **Amtrak Intercity Rail** – Amtrak currently provides nine (9) daily intercity connections between downtown San Diego, Los Angeles, and beyond, with additional local stops in Oceanside and Solana Beach.

- **Local/Express Buses** - There are currently 28 MTS bus routes serving downtown with wide service coverage and frequent service linking the downtown area with outlying communities. In addition, peak period express bus service links the downtown area with residential communities along both the I-8 and I-15 corridors.

Downtown Transit Mode Share

Table 5.1 displays the number of existing daily transit trips and total daily person trips within (originating and/or destined to) the downtown area. Total person trips incorporate all travel modes including automobile, transit, walk and bicycle trips.

Table 5.1
Existing Downtown Transit Mode Share

Trip Purpose/Timeframe	Transit Trips	Total Person Trips	Transit Mode Share
Work	27,800	132,650	20.9%
Peak Periods	30,900	391,400	7.9%
Total Daily	53,550	1,226,460	4.3%

Source: SANDAG, February 2005

As shown, over 20% of all downtown work trips currently take place by transit, with an overall transit mode share of 7.9% during peak periods, and 4.3% when considering all downtown person trips during a typical 24 hour period.

5.2 Planned Transit Improvements

The proposed Downtown Community Plan assumes future year transit improvements for the San Diego region and the downtown area consistent with the SANDAG Regional Transportation Plan. This assumes implementation of the following regional transit improvements:

- Extension of the Trolley through Mission Valley, including service to San Diego State University;
- Extension of the Trolley northbound along I-5, providing service to University of California, San Diego and University Towne Center via the Mid-Coast corridor;
- New and improved regional transit routes including Bus Rapid Transit (BRT) providing high speed and priority service throughout the region and downtown;
- Improved/new transit stations and centers; and
- Improved local and express bus service levels.

In addition to the regional transit improvements listed above, the analysis for the proposed Downtown Community Plan assumes implementation of a number of additional transit service enhancements focused on the downtown as follows:

- Downtown Bus Rapid Transit (BRT) Services – BRT is a transit service concept currently being studied and implemented by SANDAG across the region. It is a rubber-tire rapid transit system designed to have the look and feel of light rail, offering high capacity service on dedicated lanes or city streets. Proposed BRT routes haven't been determined at this time, but are anticipated to access the downtown core. BRT service would include use of existing parking lanes during peak hours (i.e. no lane reductions). The traffic analysis also assumesas a worst-case scenario that a transit-only lane would be implemented along C Street between Kettner Boulevard and Park Boulevard, requiring closure of the street to through traffic. Further study and refinement of the BRT routes in the downtown area will be undertaken by CCDC and SANDAG.

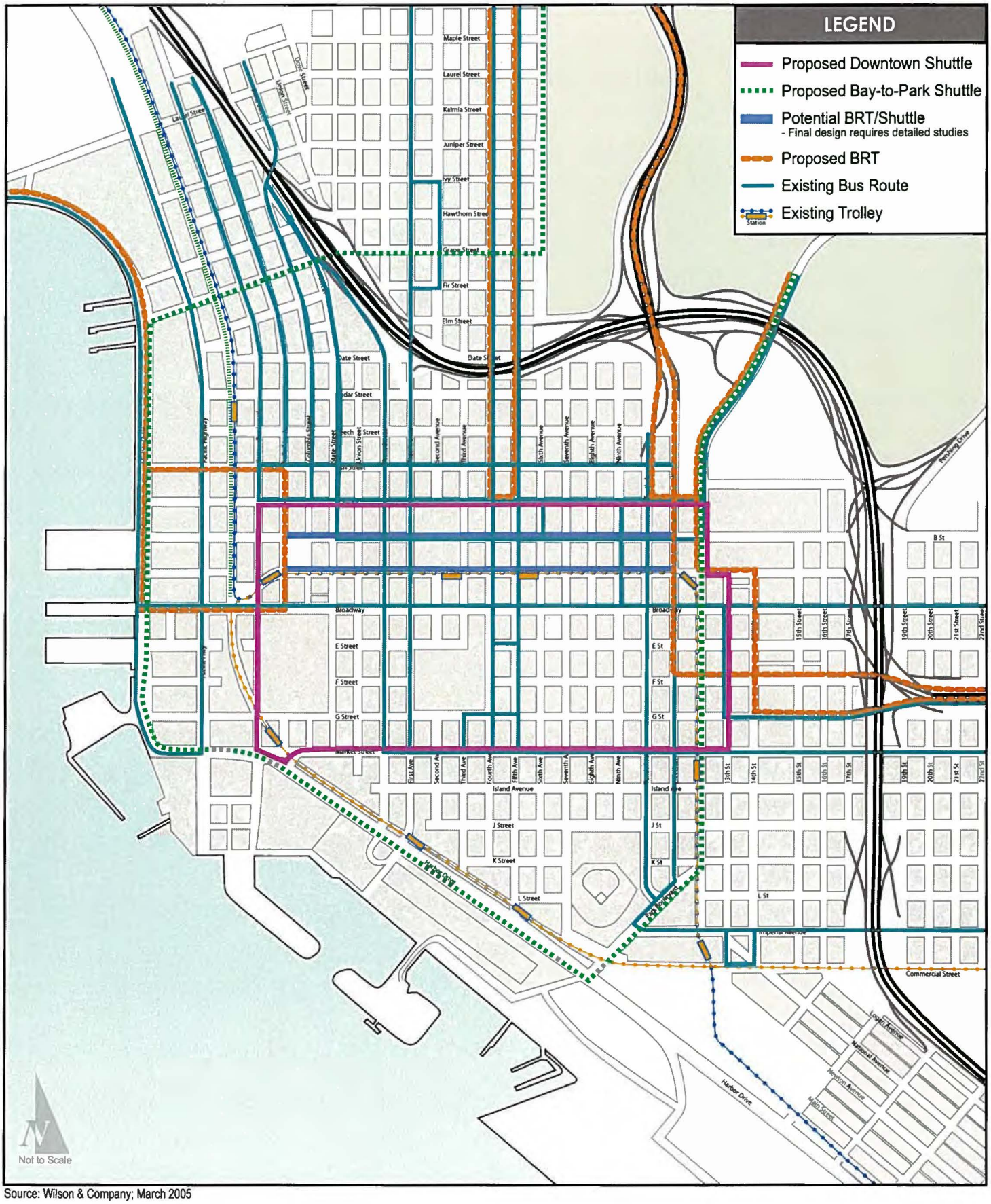
- Downtown Shuttles – This includes the development of intra-downtown shuttles connecting key activity modes. The downtown shuttle as proposed would connect downtown's neighborhoods, potentially running in a loop along Ash Street, A Street, 13th Street, Market Street, and Kettner Boulevard. A Bay-to-Park shuttle has also been proposed to link Balboa Park to the waterfront. Further study and refinement of the downtown shuttle proposals will be undertaken by CCDC and SANDAG in the future.

- Enhancement of Downtown Trolley Service – SANDAG and MTS are considering options for accommodating 4-car Trolleys through the downtown, and specifically along the C Street corridor. As previously discussed in Chapter 3.0, the current block lengths along C Street limit the Trolley service to three-car trains to avoid the blocking of the cross-streets at the station locations. The increased carry capacity of four-car trains through the downtown is required to serve future peak demands forecasted for the Blue Line in addition to adding flexibility for events at Petco Park and the Convention Center.

  Options under consideration to facilitate the operation of 4-car trains through the downtown include the closure and/or relocation of Trolley stops along C Street, along with expansion of boarding platforms. As a worst-case assumption (specifically relating to potential traffic impacts), the traffic analysis of the proposed Community Plan assumed closure of both Second Avenue and Seventh Avenue at C Street to accommodate an expansion of the Trolley boarding platforms, respectively, to serve 4-car trains. It is important to note that these closures are not specifically proposed as part of the proposed Downtown Community Plan and would be subject to additional study.

Figure 5-1 displays the future year downtown transit network as assumed under the proposed Downtown Community Plan.

THIS PAGE INTENTIONALLY LEFT BLANK



Source: Wilson & Company; March 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 5-1
Future Year Transit Network

THIS PAGE INTENTIONALLY LEFT BLANK

5.3 Community Plan Goals and Policies

The transit-related goals and policies included in the proposed Downtown Community Plan focus on providing a safe, convenient, and accessible transit system for the downtown, as follows:

Goals: Transit System

- Provide land uses to support a flexible, fast, frequent, and safe transit system that provides connections within downtown and beyond.
- Increase transit use among downtown residents, workers, and visitors.

Policies: Transit System

- Locate the highest intensity of development in or near trolley corridors to maximize adjacency of people, activity, and transit accessibility.
- Work with other agencies to support planned street improvements to accommodate transit.
- Coordinate with the transit agency and other appropriate organizations to implement:
  - Internal shuttle service for local trips, connecting key downtown locations with the wider transit network, and using smaller, cleaner vehicles for flexible neighborhood trips.
  - BRT service, improving the commuter and long-distance transit network with state-of-the-art technology to provide more frequent and faster trips.
  - Bus service modifications to improve service, and to increase transit accessibility when the internal shuttle and BRT services begin.
- Work with all relevant agencies to eliminate or mitigate adverse impacts of freight train traffic on adjacent pedestrians, uses, and residents. Impacts include blocked intersections and horn noise. If impact mitigation strategies fail, reconsider the feasibility of undergrounding freight lines through all strategic portions of downtown.
- Enhance streetscapes within transit corridors to increase attractiveness for users and promote shared transit, pedestrian, and cyclist use.
- Encourage SANDAG to develop real time information and signage systems for all downtown transit options
- Coordinate transit station design with the transit agency to ensure inviting, enjoyable places, with shade, public art, landscaping, and memorable design features reflective of the surrounding environment.
- Cooperate with the transit agency on public programs and campaigns to increase transit use for various types of trips – work, shopping, entertainment, etc.

- Coordinate with regional rail and transit planners to monitor intercity passenger and freight concepts and potential impacts on downtown

5.4 Future Year Transit Demands

The SANDAG Regional Transportation Model was utilized to forecast transit demands under build-out of the proposed Downtown Community Plan. **Table 5.2** displays projected transit ridership and resulting transit mode share in the downtown area under build-out of the proposed Downtown Community Plan assuming the downtown transit improvements discussed previously.

Table 5.2
Projected Transit Ridership
Proposed Downtown Community Plan

Trip Purpose/Timeframe	Transit Trips	Total Person Trips	Transit Mode Share
Work	64,300	265,800	24.2%
Peak Periods	84,100	894,100	9.4%
Total Daily	151,600	2,706,000	5.6%

Source: SANDAG, February 2005

As shown above, build-out of the proposed Downtown Community Plan would result in approximately 152,000 daily transit trips in the downtown area, an increase of about 98,000 transit trips or 185% over existing conditions. The proposed Downtown Community Plan would also result in approximately 53,200 additional peak period transit trips and 36,500 additional work-related transit trips, an increase of 170% and 130% respectively, when compared with existing conditions.

Under the proposed Downtown Community Plan, transit would serve approximately 25% all downtown work trips, 10% of all peak period trips, and 6% of all trips to/from and within the downtown area.

5.5 Community Plan Transit Impacts

This section discusses the potential for transit-related impacts associated with build-out of the proposed Downtown Community Plan. For the purpose of this EIR, potential impacts relating to transit would be considered significant if one or more of the following were to occur:

- The capacity and service capabilities of existing and planned transit services would be exceeded under cumulative build-out conditions; or
- Key features of planned and assumed transit services were to result in the service degradation of, and/or conflicts, with other transportation operations in the downtown area, including adjacent roadway and pedestrian facilities.

The proposed Downtown Community Plan assumes a high level of downtown transit service, supported by increased development intensities and transit supportive goals and policies. The potential for significant transit related impacts is discussed below:

1. **Potential capacity and service impacts** - The growth and development of downtown as envisioned by the proposed Downtown Community Plan will result in a tripling of transit ridership in the downtown. As noted previously, current SANDAG plans call for a variety of new and enhanced transit services in the downtown area including:

    - More frequent regional transit services, including the Trolley and the Coaster commuter rail;
    - New Bus Rapid Transit (BRT) routes;
    - Downtown shuttle routes; and
    - Improved local and express bus service levels

    A capacity assessment of existing and proposed transit service levels in the downtown area, conducted by SANDAG, indicated adequate future transit system capacity to meet the projected transit ridership demands. **Table 5.3** summarizes the results of the future year transit capacity assessment. The assessment focused on existing and planned transit services across a cordon line surrounding the downtown area and reviewed transit service capacity to/from the downtown area on a peak hour and peak directional basis. Capacity is defined as the number of riders that can reasonably be served via existing/planned transit services.

Table 5.3
Future Downtown Cordon Line Transit Capacity Assessment

	Existing	Future Planned (Mobility 2030)
Peak Hour/Peak Direction Capacity	11,100	20,800
Peak Hour/Peak Direction Demand	6,800	18,960
Available Capacity	4,300	1,840

Source: SANDAG/Wilson & Co., June 2005

As shown above, it is estimated that existing transit routes (Trolley, Coaster, local/express bus) providing peak hour service to/from downtown have the capacity to accommodate approximately 40% more trips (estimated available capacity of 4,300 out of 11,100). Future planned transit improvements will increase the capacity of service to/from downtown by approximately 75% (from 11,100 to 20,800 peak hour trips). Peak hour/peak directional transit demands will triple (from 6,800 to 18,960 trips) under future conditions, but would be adequately served via the planned increase in transit service capacity, with a remaining excess available capacity of 1,840.

In summary, the available capacity associated with existing transit services in combination with future plans will ensure the ability to adequately serve the projected increases in transit demand under build-out of the proposed Community Plan.

Therefore, no significant impacts related to transit capacity service levels are anticipated with build-out of the proposed Downtown Community Plan. It is recommended, however, that SANDAG and MTS continue to monitor downtown ridership on an on-going basis and pursue the provision of planned transit improvements in a timely basis.

2. **Potential traffic related impacts** – Potential affects on downtown traffic operations associated with increased transit service frequencies are discussed below:

   - Increased service frequencies at rail crossings – The planned increase in Trolley service frequencies will result in additional train crossings at existing gated crossing locations including Park Boulevard, Fifth Avenue, First Avenue, Front Street, and Broadway. Current crossings at those locations occur on the order of every 4 to 5 minutes during peak hours, and could be reduced to as much as one-half as Trolley frequencies are doubled in the future. While this could result in additional traffic delays at these crossing locations, in general the delays are not anticipated to be significant. Gate down times are generally less than 20-30 seconds per Trolley crossing and on-going signal timing adjustments can minimize delays. To ensure safety and minimum impacts to traffic operations, it is recommended that traffic levels and delays at the downtown gated Trolley crossings be monitored on an on-going basis, and signal timing adjustments and related improvements implemented as required, consistent with SANDAG, MTS, and City of San Diego standards.
   - Reduced roadway capacity due to dedicated transit lanes – Implementation of efficient BRT service in the downtown could require full or partial dedication of a number of travel lanes along downtown streets for the exclusive use of BRT vehicles. As a worst-case scenario, the proposed Plan includes closure of C Street to traffic between Kettner Boulevard and Park Boulevard for use as a dedicated transit-way. BRT service along B Street would include use of existing parking lanes during peak travel periods. The traffic analysis of the proposed Community Plan has not identified any direct impacts to traffic levels of service with the closure of C Street. This is due much in fact to the capacity and alternative routings provided by the local grid street system, and the fact that the current traffic routing on C Street is discontinuous. Local access to driveways and parking structures, however, could likely be affected and would need to be addressed as part of any plan to close C Street. Prior to the closure of C Street to vehicular traffic, it is recommended that CCDC and the City of San Diego review and adequately provide for local traffic access requirements of adjacent properties.

5.6 Comparison with No Project Conditions

Table 5.4 provides a comparison of transit ridership between build-out of the proposed Downtown Community Plan and build-out of the No Project alternative.

Table 5.4
Daily Transit Ridership Comparisons (Build-out Conditions)
Proposed Plan vs. No Project

	Transit Trips		Difference
	Proposed Plan	No Project	
Work	64,300	54,100	10,200
Peak Periods	84,100	65,500	18,600
Total Daily	151,600	117,000	34,600

Source: SANDAG, February 2005

As shown, transit ridership under the proposed Downtown Community Plan would result in approximately 35,000 more total transit riders in the downtown area than under the No Project alternative, a difference of about 30%. About 10,000 more work related transit trips would occur under the proposed Downtown Community Plan as compared to the No Project alternative.

THIS PAGE INTENTIONALLY LEFT BLANK

6.0 Non-Motorized (Pedestrian, Bicycle, and Pedicab) Access and Circulation

The downtown environment includes a wide variety of land uses in close proximity, providing numerous opportunities for non-motorized travel including walk, bicycle, and pedicab modes. The proposed Downtown Community Plan places a priority on promoting non-motorized travel and enhancing the pedestrian environment. As envisioned by the Plan, downtown residents, as well as employees and visitors, will be better able to accomplish many of their travel requirements without the need for an automobile.

This chapter reviews non-motorized demands and circulation/access requirements associated with the proposed Downtown Community Plan.

6.1 Non-Motorized Circulation and Access Facilities

Currently, key areas of pedestrian activity in the downtown area occur in and around Horton Plaza, the governmental/financial districts along B and C Streets, and throughout the Gaslamp Quarter. Broadway also serves as a significant pedestrian corridor, with the concentration of bus service along the street, and interaction among the business and retail/commercial activities in the area.

Table 6.1 displays the number of existing non-motorized trips and total daily person trips within the downtown area during peak period and daily timeframes. As shown, over 15% of all downtown trips currently take place via non-motorized modes (walk, bicycle, pedicab).

Table 6.1
Existing Downtown Non-Motorized Trips

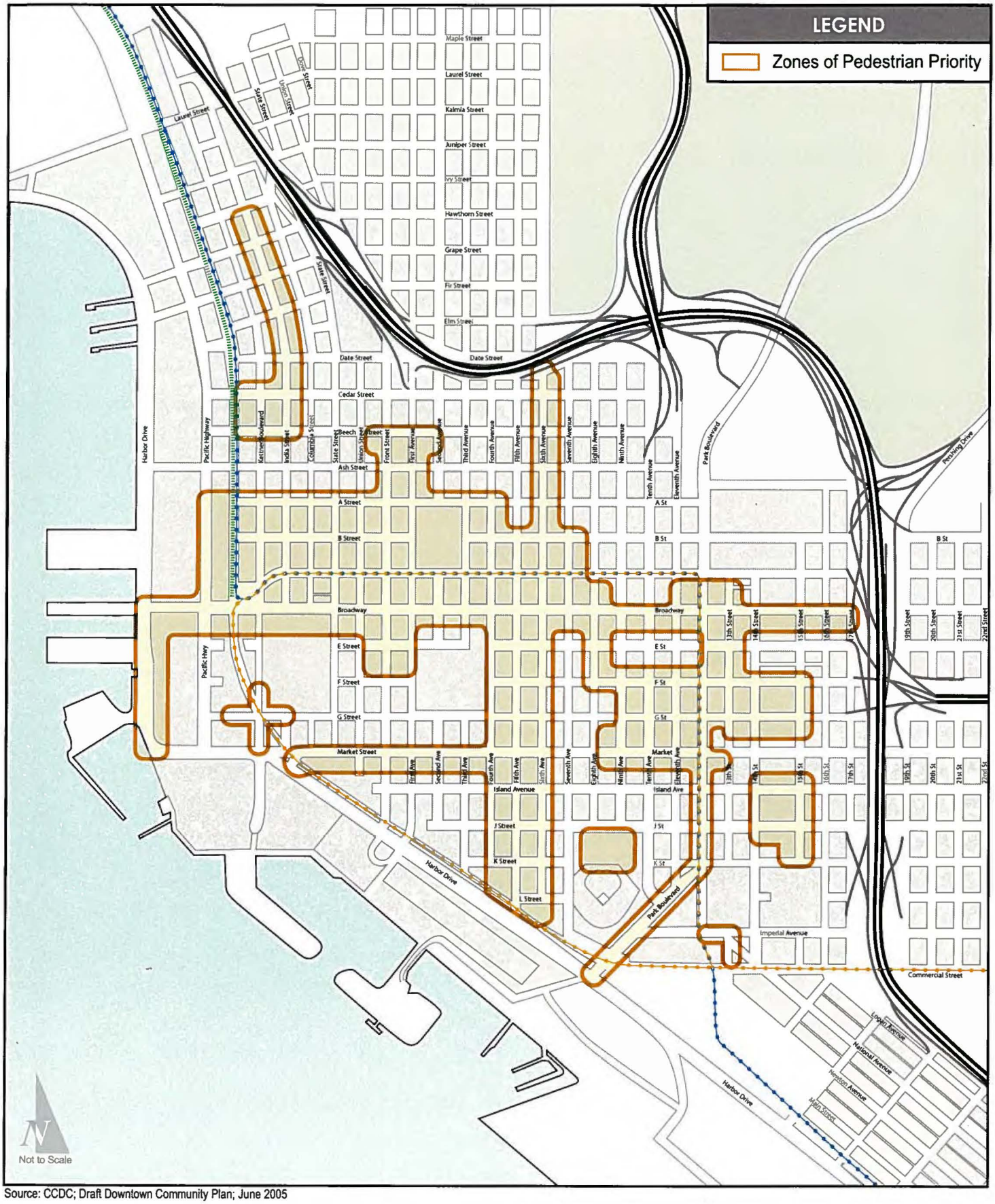
Time Frame	Non Motorized Trips	Total Person Trips	Non Motorized Mode Share
Peak Periods	56,100	391,400	14.3%
Total Daily	192,240	1,226,460	15.6%

Source: SANDAG, February 2005

With growth and development of the downtown, pedestrian activity will greatly increase throughout the entire downtown area. The additional residential development will provide for greater pedestrian activity throughout all hours of the day in many areas of the downtown currently lacking such activity.

The proposed Downtown Community Plan identifies Pedestrian Priority Zones, as shown in **Figure 6-1**. These are places with a variety of land use types (neighborhood centers, active streets, the Civic/core, and areas around major transit stops) which are likely to have increased concentrations of pedestrians. Within these areas, it will be important to ensure adequate facilities (sidewalks, crosswalks, and intersection pedestrian signal

THIS PAGE INTENTIONALLY LEFT BLANK



Source: CCDC; Draft Downtown Community Plan; June 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 6-1
Pedestrian Priority Zones

THIS PAGE INTENTIONALLY LEFT BLANK

phasing) to ensure efficient and convenient pedestrian movements. Other key pedestrian features of the proposed Downtown Community Plan include:

- Enhanced sidewalks along Broadway, recognizing the roadway's main street nature; and
- Reinforcement of the role of Park Boulevard as a key pedestrian link.

The downtown area also currently includes a significant number of bicycle and pedicab trips, both of which will increase significantly in the future. Bicycle trips currently take place throughout the downtown area and utilize the existing roadway system with no specifically designated routes or facilities. The growth of residential land uses will likely increase bicycle travel, especially for recreational uses. The bicycle will also be a viable option for many commuters to/from downtown work locations.

The proposed Downtown Community Plan establishes a network of bike facilities, with connections to the waterfront, regional bike trails, and surrounding neighborhoods. The proposed bicycle facilities are located on the streets that are likely to be best suited to bicycles. These are streets that offer north/south and east/west connections but are not freeway couplets and also that connect to the waterfront and important downtown activity centers (including shopping and parks).

Bike facilities are proposed on Pacific Highway (Class II), North Harbor Drive (shared path), Harbor Drive (shared path), and 3rd Avenue, portions of Island, K and Commercial Streets (Class II). The proposed bike facilities create north/south and east/west connections to adjacent neighborhoods as shown on **Figure 6-2**. Third Avenue north of Broadway is two-way and connects to Uptown, satisfying the need for a central north/south connection. An additional north/south connection has been made via Little Italy (on State & Columbia Streets). East/west connections to Sherman Heights (via Island & Commercial, in combination with Park Boulevard and K Street), offer options for non-motorized transportation to downtown amenities. The bike facilities are also intended to work together to provide access to parks and activity centers throughout downtown, including the proposed parks in East Village and the North Embarcadero.

Additionally, provision of bicycle storage in residential units, and provision of bicycle parking for non-residential uses will be required as part of the Planned District Ordinance.

Pedicabs will continue to be most prevalent in areas of the downtown frequented by tourists and visitors, including Seaport Village, the Convention Center, the Gaslamp Quarter, the Ballpark area, as well as major hotels throughout the downtown area.

6.2 Community Plan Goals and Policies

The proposed Downtown Community Plan includes the following goals and policies relating to pedestrian and bicycle travel:

Goals: Pedestrian and Bicycle Movement

- Develop a cohesive and attractive walking and bicycle system within downtown that provides links within the area and to surrounding neighborhoods.
- Facilitate development of mixed-use neighborhoods, with open spaces, services, and retail within convenient walking distance of residents, to maximize opportunities for walking.

Policies: Pedestrian and Bicycle Movement

- Create a system of bikeways (as shown in Figure 6-2), and encourage regional links such as the San Diego Bayshore Bikeway.
- Use traffic calming measures to control speeds on all freeway couplets – 1st/2nd, 10th/11th, F/G, 4th/5th – while optimizing traffic volumes during peak hour.
- Require bike racks and locking systems in all residential projects, multi-tenant retail and office projects, and governmental and institutional uses.
- In Pedestrian Priority Zones (Figure 6-1):
  - Undertake strategic streetscape improvements (such as sidewalk widening, bulbouts, enhanced lighting and signage);
  - Lengthen traffic signal walk times for pedestrians, and explore feasibility of "all walk" signalization at intersections with heavy pedestrian flow; and
  - Accept lower levels of automobile traffic level of service.

6.3 Non-Motorized Travel Demands

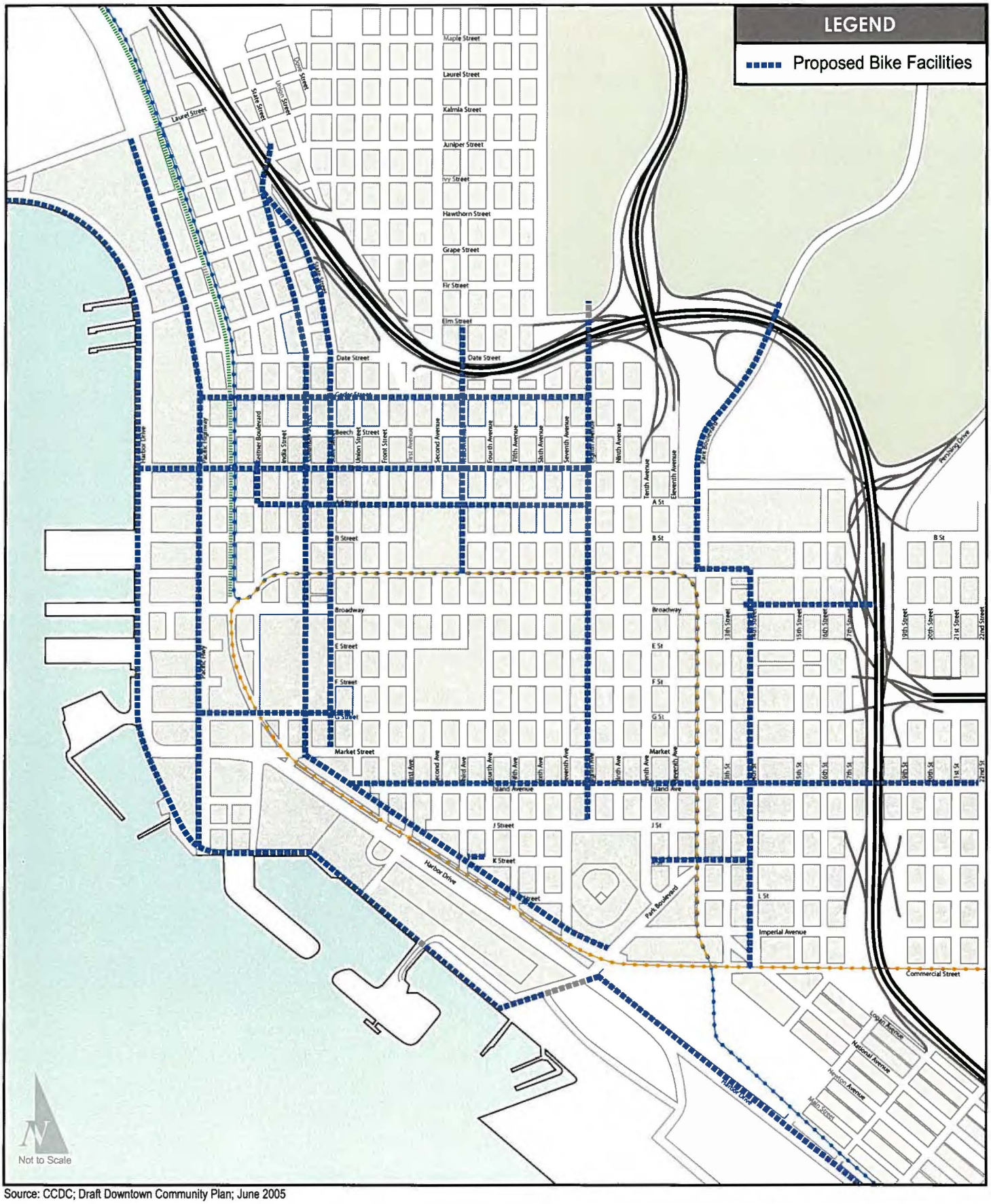
Table 6.2 displays projected non-motorized (walk, bicycle and pedicab) trips in the downtown area under build-out of the proposed Downtown Community Plan.

Table 6.2
Projected Non-Motorized Trips
Proposed Community Plan
Build-out Conditions

Time Frame	Non-Motorized Trips	Total Person Trips	Non-Motorized Mode Share
Peak Period	176,900	894,100	19.8%
Total Daily	563,400	2,706,000	20.8%

Source: SANDAG, February 2005

As shown above, build-out of the proposed Community Plan will result in approximately 563,500 non-motorized trips on a daily basis, an increase of 371,200 trips or 200 percent over existing conditions. Non-motorized trips will account for over 20% of all trips, compared to 15% under existing conditions.



Source: CCDC; Draft Downtown Community Plan; June 2005

Downtown Community Plan
EIR Transportation, Circulation, and Access Study

WILSON & COMPANY

Figure 6-2
Proposed Downtown Bike Facilities

THIS PAGE INTENTIONALLY LEFT BLANK

6.4 Community Plan Non-Motorized Impacts

For the purposes of this EIR, pedestrian, bicycle and pedicab circulation impacts would be considered significant if existing and planned non-motorized (pedestrian, bicycle, and pedicab) facilities affected by build-out of the proposed Downtown Community Plan were found to be inadequate to handle projected demands, due to either limited capacity or potential conflicts with other travel modes, such as vehicular traffic and the Trolley.

Non-motorized trip activity in the downtown area is projected to almost triple over existing levels under build-out of the proposed Downtown Community Plan. The potential for significant impacts associated with this increase in non-motorized trip activity is discussed below:

1. Pedestrian safety - One of the key indicators of the quality of the pedestrian environment is the degree to which one may safely cross the street. Intersection width, signalization, crosswalk width, and corner area/clear zone all contribute to the quality of the pedestrian experience. Trolley crossing points can pose particular problems especially as Trolley service frequencies are increased in the future.

   As the downtown grows and develops, it is fully recognized by the City of San Diego that all, if not most, intersections within the downtown grid will need to be signalized with proper provision for pedestrian crossings. The City of San Diego Street Design Manual provides specific criteria and design guidance to ensure the provision of safe pedestrian facilities including intersection cross-walks and sidewalks. As the downtown grows and develops, conformance with the City's pedestrian design requirements will ensure the provision of safe and adequate sidewalk widths in areas of concentrated future pedestrian activity, in conjunction with pedestrian plazas and walkways. Implementation of streetscape improvements, as proposed in the Community Plan's Pedestrian Priority Zones, including sidewalk widening, bulbouts, enhanced lighting and signage, will greatly enhance the pedestrian environment and ensure a focus on pedestrian safety.

2. Bicycle and vehicular conflicts - Additional bicycle trip activity will occur as the downtown grows and develops. Bicycle trips for both commuting and recreational purposes can be expected to increase with the growth in residential development. The proposed Downtown Community Plan designates a system of bicycle facilities providing both local access to downtown land uses and key linkages with regional facilities. The Plan provides for designated bicycle facilities along key streets consistent with the Plan's street typology to ensure safety and compatibility with individual street characteristics and planned cross-sections. Further specifications of bicycle facility type (either Class II bike lanes or Class III bike routes) will be conducted in conjunction with the City of San Diego as the downtown grows and develops. Implementation of the Plan's

policies and designed bikeway system in the downtown area will be conducted, in conjunction with the City of San Diego.

3. Pedicab conflicts with pedestrian and vehicular traffic - Pedicab activity will increase in a number of downtown areas including the Gaslamp Quarter, the Ballpark, Seaport Village, and the Convention Center. Potential conflicts with both vehicular and pedestrian traffic could occur without proper control and designation of pedicab loading and unloading facilities.

   The City of San Diego Traffic Engineering Division, along with the Police Department, currently monitor and enforce pedicab activity and restrictions in the downtown area. The Event Transportation Management Plan, as prepared for the Ballpark, addressed the need for circulation restrictions and controls on pedicabs activity in the vicinity of the Ballpark. As the downtown continues to develop, it is the policy of the City to continue to monitor pedicab activity and develop and enforce various restrictions to ensure safe operation and minimize potential conflicts with pedestrians and vehicular traffic.

In summary, adequate plans and policies have been developed by the City of San Diego to ensure the implementation of adequate non-motorized (pedestrian, bicycle, and pedicab) facilities. As the downtown grows and develops, conformance with City plans and policies, in conjunction with the goals and policies of the Community Plan, will promote and provide for an increase in non-motorized travel in the downtown environment.

Therefore, based upon the above, no significant impacts related to non-motorized travel (walk, bicycle, and pedicab) are anticipated with build-out of the proposed Downtown Community Plan. It is recommended, however, that CCDC and the City of San Diego continue to monitor non-motorized trip activity and pursue the provision of facilities as necessary.

6.5 Comparison with No Project Conditions

Table 6.3 provides a comparison of non-motorized trip projections between the proposed Downtown Community Plan and the No Project alternative.

Table 6.3
Daily Non-Motorized Trip Comparisons
Proposed Plan vs. No Project

	Non-Motorized Trips		Difference
	Proposed Plan	No Project	
Peak Period	176,900	123,500	53,400
Total Daily	563,400	403,900	159,500

Source: SANDAG, February 2005

As shown, the proposed Downtown Community Plan would generate a greater share of non-motorized trips under future year build-out conditions, an increase of 160,000 daily trips or 40% over the No Project alternative.

7.0 Parking Assessment

This chapter provides an assessment of future parking needs associated with build-out of the proposed Downtown Community Plan.

The methodology for conducting this assessment included the following key steps:

1. Research and development of parking demand ratios representative of local downtown conditions.

2. Application of estimated parking demand ratios to both existing land uses and the future growth in downtown land uses to determine associated parking needs.

3. Identification of the future parking requirements associated with build-out of proposed Downtown Community Plan.

7.1 Parking Demand Ratios

Research was conducted to identify applicable downtown parking demand ratios from medium to large cities across the country. Most sources and examples of parking demand ratios focus on zoning requirements which are typically not indicative of true parking demands. Zoning codes tend to reflect various policies and strategies aimed at either limiting the expanse of downtown parking to promote use of alternative transportation modes, or creating parking minimums to ensure parking options and the economic vitality of downtowns.

Auto use is generally the key variable in estimating parking demand. For the most part, documented parking standards tend to focus on suburban locations where high auto usage results in higher levels of parking demand. In downtowns, conditions are typically different, resulting in less auto use. Because all downtowns are different (variations in land use, availability of transportation modes and accessibility), a single downtown industry standard or parking demand factor does not exist.

For the purposes of this assessment, baseline parking demand ratios typically associated with high auto use suburban locations were identified from sources such as the Urban Land Institute (ULI), the Institute of Traffic Engineers (ITE), and the City of San Diego Municipal Code. These baseline parking demand ratios were then adjusted to reflect local downtown San Diego conditions relating to the utilization of transit and non-motorized modes and the mixed-use development patterns.

Downtown specific parking demand ratios were developed for office, retail, hotel, and residential land uses under average weekday conditions. It is recognized that other types of land use exist in the downtown area, including public uses such as the Convention Center. Parking demand ratios for public uses can vary significantly depending on the specific characteristics of the use. Estimating parking demands for these uses would require detailed data collection and study beyond the scope of the current effort. As a

result, the parking analysis of the proposed Downtown Community Plan focuses on the primary downtown land use types including office, retail, hotel, and residential.

Office

Table 7.1 displays the basis for calculation of an *office parking demand ratio* based upon the City of San Diego Municipal Code, transportation industry parking studies, and accounting for transit utilization and mixed-use developments under future conditions in downtown San Diego.

Table 7.1
Determination of an Office Parking Demand Ratio

		Source
Peak Office Parking Demand (90th percentile ratio - for suburban location)	3.3 / 1,000 sf	City of San Diego Municipal Code (Minimum Required Outside a Transit Area)
Reduction for transit and non-motorized use	-35% (-1.2 / 1,000 sf)	SANDAG Transportation Model (January, 2005) estimates 35% transit and non-motorized trip-making for work trips under the Proposed Plan Reference Tables 5.2 and 6.2
Reduction for mixed-use	N/A	N/A
***Office* Parking Demand Ratio**	**2.1 / 1,000 sf**	

Source: Wilson & Company February, 2005

As shown above, a parking demand ratio of 2.1 / 1000 sq. ft. was developed to reflect future parking demand for office uses in downtown San Diego.

Retail

Table 7.2 displays the basis for calculation of a *Retail parking demand ratio* based upon the City of San Diego Municipal Code, transportation industry parking studies and accounting for transit utilization and mixed-use developments under future conditions in downtown San Diego.

Table 7.2
Determination of a Retail Parking Demand Ratio

		Source / Justification
Peak Shopping Center Parking Demand (90th percentile ratio - for suburban location)	5.0 / 1,000 sf	City of San Diego Municipal Code (Minimum Required Outside a Transit Area)
Reduction for transit and non-motorized use	-25% (-1.25 / 1,000 sf)	Since transit and non-motorized mode shares are typically lower for non-work trips than for work trips, a more conservative reduction percentage was applied to retail uses compared with office uses. [See Table 7.1]
Reduction for mixed-use*	-40% (-1.5 / 1,000 sf)	The Urban Land Institute's ***Shared Parking,*** 1983
***Retail* Parking Demand Ratio**	**2.3 / 1,000 sf**	

Source: Wilson & Company February, 2005

Note:
* The mixed-use reduction percentage is applied to estimated parking demand after accounting for transit and non-motorized travel (i.e. 5 spaces per 1,000 sq. ft. x -25% = 3.75 spaces / 1,000 sq. ft ; then 3.75 / 1,000 sq..ft. x -40% = 2.75 / 1,000 sq.ft.).

As shown, a parking demand ratio of 2.3 / 1,000 sq. ft. was developed to reflect future parking demand for Retail uses in the downtown environment.

Hotel

Table 7.3 displays the basis for calculation of a Hotel parking demand ratio based upon transportation industry parking studies and accounting for transit utilization and mixed – use developments under future conditions in the downtown area.

Table 7.3
Determination of a Hotel Parking Demand Ratio

		Source / Justification
Peak Hotel Parking Demand (85th percentile ratio - for suburban locations, weekday)	0.8 / room	Institute of Transportation Engineers ***Parking Generation*** 3rd Edition, 2004
Reduction for transit and non-motorized use	-35% (-0.28 / room)	Hotel patrons will have many opportunities to engage in downtown activities within walking distance, thereby reducing auto travel.
Reduction for mixed-use	N/A	N/A
***Hotel* Parking Demand Ratio**	**0.5 / room**	

Source: Wilson & Company February, 2005

As shown above, a parking demand ratio of 0.5 / room was developed to reflect future parking demand for hotel uses in the downtown environment.

Residential

Table 7.4 displays the basis for calculation of a *Residential parking demand ratio* based upon the City of San Diego Municipal Code, transportation industry parking studies, and accounting for transit utilization under future conditions in the Downtown.

Table 7.4
Determination of a Residential Parking Demand Ratio

		Source / Justification
Peak Residential Parking Demand (85th percentile ratio - for high-rise apartment; non downtown location)	1.75/Dwelling Unit	City of San Diego Municipal Code (Basic 1 & 2 bedroom average)
Reduction for transit and non-motorized use	-25% (-0.4 / dwelling unit)	SANDAG Transportation Model (January, 2005) estimates 25% transit and non-motorized trip making under the Proposed Plan
Reduction for mixed-use	N/A	N/A
***Residential* Parking Demand Ratio**	**1.35 / dwelling unit**	

Source: Wilson & Company February, 2005

As shown above, a parking demand ratio of 1.35 / dwelling unit was developed to reflect future parking demand for downtown San Diego residential uses.

7.2 Existing Conditions

The inventory of parking in downtown San Diego is a dynamic mix of public and private spaces, on-street and off-street spaces, and spaces in surface lots and in parking garages. Redevelopment activity, including demolition of buildings and development of interim surface parking lots, as well as conversion of surface lots into buildings, can have an effect on the amount and availability of parking in the downtown area at any given time.

Current Parking Supply

The Centre City Development Corporation (CCDC) conducted an inventory of parking supply in Downtown in August 2003, which provided the basis for estimating the current downtown parking supply. The parking inventory summarized the number of parking spaces by parking type, including on-street parking, public off-street, and private off-street. Public parking includes both on-street and off-street lots and structures which are readily available for public use. Private parking is restricted to specific property owners and/or leasees, and is typically associated with residential uses. **Table 7.5** summarizes the results of the CCDC August 2003 parking inventory.

Table 7.5
Current Inventory of Downtown Parking Supply

	Type	Number of Spaces
Public Parking	On-Street Parking	6,990
	Off-Street Public Parking	34,230
	Total Public Parking	**41,220**
Private Parking	Off-Street Private Parking	15,660
	Public and Private Parking Total	**56,880**

Source: CCDC, August 2003

As shown, the estimated supply of parking in downtown San Diego is approximately 57,000 spaces, with 41,220 or 69% of the inventory being available to the public.

Current Parking Demand

An estimate of parking demand under current conditions was developed by applying the previously developed parking demands ratios to the primary existing downtown land uses. **Table 7.6** displays a summary of the primary downtown land uses under existing conditions, excluding public/institutional uses for the reasons stated previously.

Table 7.6
Existing Downtown Land Uses

Current Land Use	Quantity
Office (s.f)	13,144,000
Retail (s.f.)	2,658,000
Hotel (rooms)	8,800
Residential (units)	14,600

Source: Downtown Community Plan, June 2005

Table 7.7 summarizes existing parking demand by land use category, as well as the total existing parking demand for the downtown area under average weekday conditions.

Table 7.7
Existing Downtown Parking Demand
(Average Weekday Conditions)

Land Use	Quantity	Parking Demand Ratio	Total Parking Demand
Office (s.f)	13,144,000	2.1 / 1,000 s.f.	27,602
Retail (s.f.)	2,658,000	2.3 / 1,000 s.f.	6,112
Hotel (rooms)	8,800	0.5 / room	4,400
Residential (units)	14,600	1.35 / unit	19,710
		Total Existing Parking Demand	**57,824**

Source: Wilson & Company, February 2005

As shown above, the total estimated parking demand under existing conditions in downtown is approximately 57,824 spaces.

Existing Parking Supply / Demand Comparison

A comparison of the existing downtown parking supply with estimated demand was made with two objectives:

1. Validate the reasonableness of the parking demand ratios.
2. Provide a baseline indicator of current parking conditions in the downtown area.

Table 7.8 displays the comparison of existing parking supply with estimated demand.

Table 7.8
Existing Parking Supply and Demand
(Average Weekday Conditions)

	Parking Spaces
Existing Parking Supply	56,880
Existing Parking Demand	57,824
Parking Deficit	**944**

Source: Wilson & Company, February 2005

As shown above, the existing supply and demand comparison for the primary downtown uses indicates a parking deficit of 944 spaces, representing less than a 2% shortfall. Given the dynamics of the parking estimates (both on the supply and demand side), the comparisons above can reasonably be interpreted to indicate a relative balance in downtown-wide supply and demand under existing conditions, not withstanding the localized parking shortages which can occur during major downtown events.

Furthermore, the comparisons indicate the validity of the parking demand ratios as developed for use in this assessment.

7.3 Assessment of Future Parking Demand

Table 7.9 displays a summary of future growth (over existing)by the primary land use type as anticipated under build-out of the proposed Downtown Community Plan.

Table 7.9
Build-out Growth in Downtown Land Uses
Downtown Community Plan

Land Use	Planned Growth
Office (s.f)	16,677,000
Retail (s.f.)	3,412,000
Hotel (rooms)	11,200
Residential (units)	38,500

Source: CCDC, November 2004

The parking demand associated with build-out of the proposed Downtown Community Plan was calculated by applying the estimated parking demand ratios to the anticipated growth in land uses. **Table 7.10** summarizes the estimated parking demand associated with the planned growth in the primary land uses under the proposed Downtown Community Plan.

Table 7.10
Additional Downtown Parking Demands with Future Growth
Downtown Community Plan
(Average Weekday Conditions)

Land Use	Planned Growth	Parking Demand Ratio	Total Parking Demand
Office (s.f)	16,677,000	2.1 / 1,000 s.f.	35,022
Retail (s.f.)	3,412,000	2.3 / 1,000 s.f.	7,848
Hotel (rooms)	11,200	0.5 / room	5,600
Residential (units)	38,500	1.35 / unit	51,975
Total Parking Demand Associated with Future Growth			**100,445**

Source: Wilson & Company, February 2005

As shown above, the estimated parking demand generated by future downtown growth under build-out of the proposed Downtown Community Plan is estimated at 100,445 spaces. This is over and above the estimated current demand of 57,824 spaces and results in a projected total downtown parking demand of 158,269 spaces.

7.4 Parking Impacts

As noted above, future growth as envisioned by the proposed Downtown Community Plan would create additional parking demands, estimated at approximately 98,400 spaces above existing demands. Meeting this demand directly would require more than a 2 ½ fold increase in the supply of parking in the downtown area. Without mandatory mechanisms to ensure the provision of new parking facilities commensurate with demand, the potential for parking shortages would exist, resulting in significant impacts.

For the purpose of this EIR, potential impacts relating to parking would be considered significant if the following were to occur:

- The demand for parking generated by the proposed land uses would exceed the projected available parking supply.

The estimated parking demands associated with forecast growth under the proposed Downtown Community Plan will exceed existing parking supplies. Although proposed development may provide additional parking and/or private companies may construct parking facilities to meet these demands, there is no mechanism to assure that these occur. Therefore, parking impacts associated with build-out of the proposed Downtown Community Plan are considered significant and unmitigated.

7.5 Potential Impacts to On-Street Parking

Maintaining an adequate supply of on-street parking in the downtown is important not only to downtown visitors desiring convenient and short-term access, but also economically to the City and adjacent business. It is estimated that there are approximately 7,000 on-street parking spaces in the downtown area. This represents about 12% of the current downtown parking supply. A number of future projects could affect the future supply of downtown on-street parking, as follows:

1. Future street extensions could provide additional on-street parking.
2. Implementation of diagonal on-street parking could provide additional on-street parking.
3. Future street closures could eliminate existing on-street parking.
4. Proposed traffic impact mitigation measures, specifically re-striping of roadway and intersections to provide additional through and turn lanes could require elimination of existing on-street parking.
5. Implementation of Bus Rapid Transit (BRT) service in the downtown area could require the use of parking lanes, at least in the peak hour, and result in the elimination of on-street parking.

However, due to the lack of specific details on the above projects, it is not possible to accurately estimate or quantify the impacts to on-street parking. CCDC and the City of San Diego should endeavor to maintain and enhance the supply of on-street parking in the downtown area whenever possible. In addition, efforts should be made to avoid or replace the loss of on-street parking as a result of roadway improvements.

7.6 Potential For Increased Parking in Adjacent Neighborhoods

The potential for parking shortages in the downtown, as previously noted, could result in additional parking in the adjacent neighborhoods, both east and north of I-5. Currently, parking in the adjacent neighborhoods occurs, for the most part, by parkers desiring to avoid the costs of parking in the more central downtown core areas. This generally requires an extensive walk to the primary destinations, which tends to discourage this behavior for all but for a minority of downtown parkers. In the future and with the identified potential for parking shortages in the downtown area, a greater share of parkers could seek parking in the adjacent neighborhoods due to parking supply shortages as well as economic reasons.

The extent of parking in the adjacent neighborhoods will be a function of both the cost and availability of downtown parking as well as the specific uses developed in the adjacent sections of the downtown area. A number of public and private actions may be taken to reduce or avoid the potential parking shortages, but since these actions cannot be assured at this point in time, the potential for downtown parking shortages has been identified as a significant impact. In a similar manner, although the extent and magnitude of parking in the adjacent neighborhoods that would occur with build-out of the proposed Downtown Community Plan is difficult estimate, the potential exists, and is therefore identified as a significant project-related impact.

In response, it is recommended that CCDC evaluate parking conditions within downtown and surrounding areas every five years. Similar to the recommendation for a periodic comprehensive traffic assessment, this program will assist in identifying the extent of downtown spill-over parking in adjacent neighborhoods and assessing various options to discourage its continuation.

7.7 Community Plan Goals and Policies

The development of future parking facilities will need to occur in a manner which respects the local downtown community, while at the same time is flexible and responsive to the economic needs of downtown development. The effective management of both supply and demand can minimize the need for expansive parking facilities and ensure their effective utilization.

The proposed Downtown Community Plan identifies the following goals and policies relating to parking:

Goals: Parking

- Promote quality of life and business viability by allowing the provision of an adequate supply of parking to serve growing needs, while avoiding excessive supplies that discourage transit ridership and disrupt urban fabric.
- Site and design new parking structures to accommodate parking needs from multiple land uses to the extent possible and allow shared parking where possible.

- Distribute new public garages throughout downtown, in locations contributing to efficient circulation, and convenient and proximate to eventual destinations.
- Locate public parking resource(s) near each Neighborhood Center to provide short-term parking for merchants and businesses.

Policies: Parking

- Require a certain portion of on-site motorcycle and bicycle parking in addition to automobile spaces.
- Emphasize shared parking approaches, including:
  - Development of parking facilities that serve multiple uses, to enable efficient use of space over the course of the day;
  - Parking under new parks that are full-block or larger in size, where not limited by geologic or other constraints; and
  - Enhanced on-street parking through restriping streets where appropriate.
- Allow off-site shared parking arrangements where appropriate to maximize efficient use of parking resources.
- Work with developers of high-intensity developments unable to accommodate parking on site to allow development/use of parking under public parks, where appropriate and feasible.
- Work with the Port to provide public parking in the Waterfront/Marine area, and with the City, County and other agencies in Civic/Core.
- Ensure that all public parking structures maximize the potential for subterranean parking and incorporate other uses at higher floors where feasible. Explore the use of technological advancements (robotic parking, parking lifts, etc.) to improve cost/parking efficiencies in new public garages.
- Maximize the efficiency of street parking by managing metered time limits to correspond with daily activity patterns.

7.8 Parking Impact Mitigation Options

A number of additional options and measures will assist the downtown area in meeting future downtown parking demands; although as indicated previously, cannot be assured. These include:

- CCDC's Draft Planned District Ordinance (PDO) Parking Requirements;
- Public parking garages;
- Parking management strategies;
- TDM Goals & Policies on page 7-15 of Community Plan; and
- Update of Comprehensive Downtown Parking Plan.

Draft PDO Parking Requirements

CCDC has prepared a draft PDO which includes a set of parking minimums for all uses. Parking minimums are intended to ensure that at some level the parking needs of a development are accommodated within the development site. Typically, parking minimums are set at a level lower than market demand, so as not to impede or dictate market level demand and to encourage the use of alternative modes of transportation.

Table 7.11 summarizes the Draft PDO parking standards and estimates the number of spaces that would result from applying these standards to future land uses as proposed under build-out of the Downtown Community Plan. The draft PDO includes a number of exclusions for smaller scale office and retail uses which would likely occur as part of neighborhood serving mixed-use developments.

Table 7.11
Application of Draft PDO Parking Standards to Future Downtown Land Uses

Land Use Type	Planned Growth	Draft PDO Parking Standard	Resulting Future Parking
Office[1] (s.f)	15,009,300	1.5 spaces / 1,000 sf	22,544
Retail[2] (s.f.)	682,400	1 space / 1,000 sf	682
Hotel (rooms)	11,200	0.3 spaces / room	3,360
Residential (units)	38,500	1.0/ unit	38,500
		Total Future Parking	65,056

Source: CCDC; Wilson & Company, February 2005

Note:
1. Office Developments less than 50,000 sq. ft. would be excluded. Estimated at about 10% of total square footage.
2. Retail development less than 30,000 sq. ft. would be excluded. Estimated at about 80% of total square footage.

As shown, application of the CCDC Draft PDO parking requirements would result in a minimum of 65,056 additional parking spaces with future downtown growth and development. Thus, implementation of the PDO parking standards will help meet future downtown parking demands, but would fall short of fully addressing all the parking requirements of future growth.

Parking Garages

As the downtown develops, construction of new public or private parking facilities will likely be needed to fully meet anticipated parking demand. The proposed Downtown Community Plan recognizes that new parking must be built to continue downtown's growth as the regional center.

A well-located and designed parking facility should be close to primary destinations with good access. It will also be important that future parking garages complement existing/planned land uses and not detract from the downtown neighborhoods.

Parking garages could be centrally located in key activity nodes or located on peripheral areas near transit services. Typical site dimensions to maximize efficient use would require at a minimum half-block, and in some instances full block areas. Typical multi-level parking structures in the downtown area could provide 600-700 parking spaces each, with larger facilities providing over 1,000 spaces.

Examples of recently constructed parking garages include the Park-It-On-Market structure (533 spaces) at Sixth Avenue and Market Street, the 2,000 space parking structure at the southeast corner of Harbor Drive and Park Boulevard, the 600 space Columbia Parking Garage at C Street and Columbia and the Sixth and K Parkade with 1,230 spaces.

Parking structures do not necessarily need to be above ground. The Community Plan notes that about 3,000 – 4,000 additional spaces could result from two- to three-level subterranean parking under new parks.

Parking Management Strategies

In addition to constructing additional parking supplies, successful implementation of parking demand measures will assist in off-setting the need for new parking. The proposed Downtown Community Plan seeks to balance the accommodation of new parking spaces with more efficient use of available spaces. A key objective of CCDC, following adoption of the Downtown Community Plan, will be the preparation of a Comprehensive Parking Plan for the downtown area which will lay out a parking management strategy for the downtown area.

Many elements will need to be considered in the development of a parking management strategy for the downtown. While the intent here is not to specify the components of a comprehensive parking management strategy for the downtown area, example measures include:

- Promote shared use – Provide incentives for shared parking for developments with mixed uses to encourage joint development and improve utilization of parking facilities.
- Transit-Parking Coordination – Enhance coordination between parking and transit services, including encouraging commuters to park at remote and fringe locations and utilize downtown transit services.
- Increase parking visibility – Implement wayfinding systems and uniform directional signage to make parkers more aware of on- and off-street parking options.

- Promote Carsharing Programs – Carsharing programs eliminate and reduce the need for an individual to have a personal car available for travel. At least one carsharing program is currently up and running in downtown San Diego.

7.9 Conclusions

It is estimated that build-out of the proposed Downtown Community Plan will result in additional parking demands estimated at approximately 98,400 spaces above existing levels of demand. The current inventory of parking in the downtown area is estimated at about 56,900 spaces and a 250% increase would be required to fully meet estimated parking demands with build-out of the proposed Downtown Community Plan. As noted, CCDC's proposed PDO parking requirements will help meet the future downtown parking requirements. Parking management strategies in conjunction with the provision of new parking garages (by both public and private sectors) will further supplement proposed downtown parking requirements. However, since the supply of parking necessary to meet the demands associated with build-out of the proposed Downtown Community Plan cannot be guaranteed and the potential for parking shortages exist, the identified parking impacts remain significant and unmitigated under build-out of the proposed Downtown Community Plan.

7.10 Comparison with No Project Conditions

Table 7.12 provides a comparison of projected parking demands between the No Project alternative and the proposed Downtown Community Plan.

Table 7.12
Comparison of Additional Downtown Parking Demands Related to Future Growth
No Project and Proposed Community Plan Build-out

Land Use Type	Future Growth Quantity		Parking Demands (in addition to existing demands)	
	No Project	Proposed Plan	No Project	Proposed Plan
Office(s.f.)	7,556,000	16,677,000	15,868	35,022
Retail(s.f.)	1,642,000	3,412,000	3,777	7,848
Hotel(rooms)	6,800	11,200	3,400	5,600
Residential(units)	16,100	38,500	21,735	51,975
Total Parking Demands (in addition to existing demand)			**44,780**	**100,445**

Source: Wilson & Company, February 2005

As shown, the overall need for future parking would be approximately 120% greater under build-out of the proposed Downtown Community Plan, compared to the No Project alternative. The proposed Downtown Community Plan will require approximately 55,665 more parking spaces than the No Project alternative under future build-out conditions.

THIS PAGE INTENTIONALLY LEFT BLANK

8.0 Summary of Plan Impacts and Mitigation Measures

This chapter provides a summary of key analysis findings relating to transportation, circulation and access issues under build-out of the proposed Downtown Community Plan. Associated impacts and identified mitigation requirements are summarized as well.

8.1 Summary of Proposed Downtown Community Plan Impacts

The analysis of transportation, circulation, and access issues under build-out of the proposed Downtown Community Plan involved extensive review of forecast travel demands, projected mode utilization (auto, transit, pedestrian and bicycle), traffic operations, and transportation facility capacity assessments.

Thresholds were established to identify the potential for direct or cumulatively significant impacts due to unacceptable effects on the various components that comprise the downtown transportation circulation system. Key findings focused on the potential for negative impacts and operating deficiencies, along with the identification of suitable mitigation measures to address or resolve the issues.

Identified significant transportation, circulation and access impacts under build-out of the proposed Downtown Community Plan are summarized below.

Traffic – The traffic analysis of the proposed Downtown Community Plan identified the following direct or cumulatively significant impacts:

- Significant impacts to all downtown study area freeway segments, including I-5, SR-94, and SR-163.
- Significant impacts to four (4) of the eleven (11) freeway off-ramps serving the downtown study area.
- Significant impacts to nine (9) of the thirteen (13) freeway on-ramps serving the downtown study area.
- Significant impacts to 62 signalized intersections in the downtown study area.
- Significant impacts to two (2) arterial roadway segments in the adjacent neighborhoods.

Transit – The analysis of existing and planned transit services and projected demands under build-out of the proposed Downtown Community Plan determined the following:

- The capacity and service capabilities of existing and planned transit services will not be exceeded under proposed Downtown Community Plan build-out conditions.
- The potential for conflicts between existing/planned transit services and other transportation operations (including adjacent roadway and pedestrian facilities) in the downtown area will not be significantly increased under proposed Downtown Community Plan build-out conditions. The monitoring of traffic levels and delays at the downtown at-grade Trolley crossings and implementation of improvements

consistent with SANDAG, MTS, and City of San Diego standards will minimize potential safety conflicts.

Based upon these findings, it was determined that there would be no direct project-related significant transit impacts under build-out of the proposed Downtown Community Plan. In addition, successful achievement of the proposed Downtown Community Plan transit goals and policies will further serve to minimize the potential for transit-related impacts as the downtown area grows and develops.

Non-Motorized (Pedestrian, Bicycle, and Pedicab) Modes – The analysis of non-motorized facilities and projected demands under build-out of the proposed Downtown Community Plan determined the following:

- The potential for non-motorized facility capacity limitations and/or conflicts with vehicular traffic and the Trolley under proposed Downtown Community Plan build-out conditions will be minimized via:
  - Adherence to the City of San Diego Street Design Manual which provides specific criteria and design guidance on implementation of required pedestrian facilities.
  - Implementation of streetscape improvements as proposed in the Downtown Community Plan's Pedestrian Priority Zones, including sidewalk widening, bulbouts, and enhanced lighting and signage.
  - Implementation of bicycle facilities consistent with the City of San Diego Bicycle Master Plan.
  - Continued and on-going monitoring and enforcement of pedicab activity by the City of San Diego Traffic Engineering Division and Police Department.

Based upon these findings, it was determined that there would be no direct project-related significant impacts associated with non-motorized modes (pedestrian bicycle, and pedicabs) under build-out of the proposed Downtown Community Plan. In addition, successful achievement of the proposed Downtown Community Plan goals and policies relating to pedestrian and bicycle travel will serve to further minimize the potential for significant impacts associated with the access and circulation of non-motorized modes.

Parking – The analysis of downtown parking facilities and demands under build-out of the proposed Downtown Community Plan determined the following:

- Future growth as envisioned by the proposed Downtown Community Plan would create additional parking demands, estimated at approximately 98,400 spaces. Meeting this demand directly would require more than a 2 ½ fold increase in the current supply of parking in the downtown area. Without mandatory mechanisms to ensure the provision of new parking facilities commensurate with demand, parking shortages would likely occur, resulting in significant parking impacts under build-out of the proposed Downtown Community Plan.

- Parking shortages in the downtown area can lead to increased parking in the neighborhoods adjacent to downtown. Although the extended magnitude of parking adjacent neighborhoods that would occur with build-out of the proposed Downtown Community Plan is difficult to estimate, the potential exists, and is therefore identified as a significant project-related impact.

8.2 Summary of Required Mitigation Measures

This section provides a summary of the mitigation measures as required to address the transportation, circulation and access impacts associated with the proposed Downtown Community Plan.

Traffic – The following mitigation measures have been identified to address the significant traffic impacts:

- Freeway Segment and Ramp Impacts – A previous SANDAG study of the freeway system and the ramps serving the downtown area (Central I-5 Corridor Study; Freeway Deficiency Plan, December 2003) identified the required freeway improvements that would be necessary to address projected longer range deficiencies. These included additional through lanes on I-5, supported by new auxiliary lanes and a modified system of ramps serving the downtown area. This study also confirmed that no feasible and acceptable improvement options are available to address projected deficiencies on SR-163, north of downtown. SANDAG, Caltrans and CCDC have recommended further study of the freeway improvement proposals identified by the Central I-5 Corridor Study to ensure proper consideration of all potential community and environmental impacts.

  Subject to identification and regional acceptance of a feasible program to improve the freeway segments and ramps in the downtown area, the identified cumulative traffic impacts on study area freeway segments and ramps associated with the proposed Downtown Community Plan will remain significant and unmitigated.

  It is recommended that CCDC, along with Caltrans, SANDAG, and the City of San Diego continue to pursue and promote improvement of the I-5 freeway through the downtown area, the improvement of SR-94 to/from the east, as well as an improved system of freeway ramps serving the downtown area.

- Downtown Arterials/Intersections – 62 downtown intersections have been identified as having cumulatively significant traffic impacts under build-out of the proposed Downtown Community Plan. As discussed in Section 4.7 of this report, all but 12 of the intersections can be mitigated through re-striping of the intersection approach lanes. In some cases, this would require the elimination of on-street parking. Three (3) additional

cumulatively impacted intersections would be mitigated by maintaining Sixth Avenue as a one-way southbound roadway between Elm Street and Ash Street. The proposed Downtown Community Plan recommends converting this street to two-way operation which reduces the traffic capacity of the roadway below the level of forecasted demands. The additional roadway modifications to incorporate the recommended mitigation measures are presented in Section 4.7.

It is important to note that in preparation of this EIR, the transportation, circulation, and access features of the proposed Downtown Community Plan have been evaluated collectively and in combination with each other at a planning level of detail. The result is that while individual street modifications may function adequately under future conditions, all localized impacts and related operational considerations may not have been fully identified at a project specific level. Based upon this, it is recommended that all potential roadway modifications and enhancements graphically displayed in Figure 4-6 under go further more detailed evaluations prior to implementation. These evaluations should address specific project requirements relating to operational impacts/benefits including pedestrian and bicycle considerations, design and engineering requirements, and implementation feasibility/timing.

It is also recommended that CCDC conduct a comprehensive downtown-wide assessment of traffic operations at a minimum of every five years. This monitoring program will assist in establishing the timing and need for the identified traffic mitigation measures and related circulation system improvements consistent with downtown's growth and development. This program should also assess traffic in the adjacent neighborhood and assess improvement options, as appropriate.

Transit – No Mitigation Required

Non-Motorized (Pedestrian, Bicycle, and Pedicab) Modes – No Mitigation Required

Parking – It is estimated that build-out of the proposed Downtown Community Plan will result in additional parking demands estimated at approximately 98,400 spaces above existing levels of demand. The current inventory of parking in the downtown area is estimated at about 56,900 spaces and a 250% increase would be required to fully meet estimated parking demands with build-out of the proposed Downtown Community Plan. CCDC's proposed PDO parking requirements will help meet the future downtown parking requirements. Parking Management strategies in conjunction with the provision of new parking garages (by both public and private sections) will further address downtown parking requirements. A key objective of CCDC, following adoption of the Downtown Community Plan, will be the preparation of a Comprehensive Parking Plan for the downtown area which will lay out a parking management strategy for the downtown area.

However, since the supply of parking necessary to meet the demands associated with build-out of the proposed Downtown Community Plan cannot be guaranteed and the potential for parking shortages exist, the identified parking impacts remain significant and unmitigated under build-out of the proposed Downtown Community Plan.

It is further recommended that CCDC evaluate parking conditions within downtown and surrounding areas every five years. Similar to the recommendation for a periodic comprehensive traffic assessment, this program will also assist in identifying the extent of downtown spill-over parking in adjacent neighborhoods and assessing various options to discourage its continuation.

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix A
Existing Roadway
Classifications & Characteristics

Appendix A
Downtown Roadway Classifications
Existing Conditions

Roadway	Segment	Classification	Width	Lanes	Curb	Parking	Travel Flow
A Street	Kettner Blvd to Columbia St	Major	52'	3	yes	yes	EB
	Columbia St to State St	Major	43'	3	yes	yes	EB
	State St to Ninth Ave	Major	52'	3	yes	yes	EB
	Ninth Ave to Tenth Ave	Business	52'	4	yes	yes	EB
	Tenth Ave to Eleventh Ave	Major	43'	3	yes	yes	EB
	Eleventh Ave to Park Blvd	Major	52'	3	yes	yes	EB
Ash Street	Harbor Dr to Pacific Highway	Major	52'	4	yes	yes	EB/WB
	Pacific Highway to Kettner Blvd	Major	66'	5	yes	yes	EB/WB
	Kettner Blvd to Front St	Major	52'	4	yes	yes	WB
	Front St to Fourth Ave	Major	50'	3	yes	yes	WB
	Fourth Ave to Tenth Ave	Business	52'	3	yes	yes	WB
B Street	Kettner Blvd to India St	Local	52'	2-3	yes	yes	EB/WB
	India St to First Ave	Local	52'	2	yes	yes	EB/WB
	First Ave to Park Blvd	Business	52'	3	yes	yes	WB
	Park Blvd to I-5	Major	52'	3	yes	yes	WB
Beech Street	Pacific Highway to Tenth Ave	Local	52'	2	yes	yes	EB/WB
Broadway	N. Harbor Dr to Pacific Highway	Collector	83'	4	yes	yes	EB/WB
	Pacific Highway to First Ave	Collector	78'	4	yes	yes	EB/WB
	First Ave to Third Ave	Business	78'	4	yes	yes	EB/WB
	Third Ave to Park Blvd	Business	52'	4	yes	yes	EB/WB
	Park Blvd to I-5	Collector	52'	4	yes	yes	EB/WB
Broadway Circle	Second Ave to Third Ave	Business	78'	1	yes	yes	EB
C Street	Kettner Blvd to Columbia St	Local	24'	1	Yes	No	Trolley Only
	Columbia St to Front St	Local	52'	1	yes	no	EB/Trolley
	Front St to First Ave	Business	52'	1	yes	no	EB/Trolley
	First Ave to Second Ave	Business	52'	2	yes	no	EB/WB/Trolley
	Second Ave to Sixth Ave	Business	38'	0	yes	no	Trolley
	Sixth Ave to Ninth Ave	Business	38'	1	yes	no	EB/Trolley
	Ninth Ave to Park Blvd	Business	52'	2	yes	no	EB/Trolley
	Park Blvd to Interstate 5	Major	52'	3	yes	no	EB

Appendix A (continued)
Downtown Roadway Classifications
Existing Conditions

Roadway	Segment	Classification	Width	Lanes	Curb	Parking	Travel Flow
Cedar Street	Pacific Highway to Front St	Local	52'	2	yes	yes	EB/WB
	Front St to First Ave	Local	52'	2	yes	yes	EB
	First Ave to Second Ave	Collector	23'	1	yes	yes	WB
	Second Ave to Fourth Ave	Collector	52'	3	yes	yes	EB
	Fourth Ave to Fifth Ave	Collector	52'	2	yes	yes	EB
	Fifth Ave to Sixth Ave	Collector	52'	2	yes	yes	EB/WB
	Sixth Ave to Tenth Ave	Local	52'	2	yes	yes	EB/WB
Columbia Street	Juniper St to Ash St	Collector	51'	3	yes	yes	SB
	Ash St to Broadway	Local	51'	3	yes	yes	SB
	G St to Market St	Local	51'	2	yes	yes	NB/SB
Commercial Street	13th St to Fourth Ave	Major	52'	2	no	yes	EB/Trolley
	Fourth Ave to Fifth Ave	Major	52'	2	no	yes	EB/WB/Trolley
	Fifth Ave to I-5	Major	52'	2	yes	yes	EB/WB/Trolley
Date Street	Kettner Blvd to Union St	Local	52'	2	yes	yes	EB/WB
	Union St to Front St	Local	52'	1	yes	yes	EB/WB
	Third Ave to Fourth Ave	Local	32'	1	yes	yes	WB
	Seventh Ave to Eighth Ave	Local	40'	2	yes	yes	EB/WB
	Eighth Ave to Ninth Ave	Local	52'	2	yes	yes	EB/WB
E Street	Pacific Highway to Kettner Blvd	Local	52'	2	yes	yes	EB/WB
	State St to Union St	Local	52'	1	yes	yes	EB/WB
	Front St to First Ave	Business	30'	2	yes	yes	EB
	Fourth Ave to Tenth Ave	Collector	52'	3	yes	yes	EB
	Tenth Ave to 13th St	Major	52'	3	yes	yes	EB
	13th St to I-5	Collector	52'	3	yes	yes	EB/WB
Elm Street	Columbia St to State St	Local	52'	2	yes	yes	EB/WB
F Street	Pacific Highway to RR Tracks	Local	51'	2	yes	no	EB/WB
	RR Tracks to Kettner Blvd	Local	45'	2	yes	yes	EB/WB
	State St to First Ave	Collector	52'	2	yes	yes	EB/WB
Fir Street	Kettner Blvd to State St	Local	52'	2	yes	yes	EB/WB
Front Street	I-5 to B St	Major	52'	3	yes	yes	SB
	B St to C St	Major	50'	3	yes	yes	SB
	C St to Broadway	Major	52'	3	yes	yes	SB
	Broadway to E St	Collector	44'	3	yes	yes	SB
	E St to F St	Collector	50'	3	yes	yes	SB
	F St to G St	Collector	54'	3	yes	yes	SB
	G St to Market St	Collector	56'	3	yes	yes	SB
	Market St to Harbor Dr	Local	59'	3	yes	no	SB

Appendix A (continued)
Downtown Roadway Classifications
Existing Conditions

Roadway	Segment	Classification	Width	Lanes	Curb	Parking	Travel Flow
G Street	Pacific Highway to Front St	Collector	52'	3	yes	yes	EB/WB
	Front St to First Ave	Collector	52'	3	yes	yes	EB
	First Ave to Park Blvd	Business	52'	3	yes	yes	EB
	Park Blvd to Seventh Ave	Major	52'	3	yes	yes	EB
Grape Street	Harbor Dr to India St	Major	52'	3	yes	yes	EB
	India St to I-5	Collector	52'	3	yes	yes	EB
Harbor Drive	Pacific Highway to State St	Major	78'	4	yes	no	NB/SB
	State St to Market St	Major	68'	4	yes	no	NB/SB
Harbor Drive	Market St to Front St	Major	78'	4	yes	no	NB/SB
	Front St to Fourth Ave	Major	68'	4	yes	no	NB/SB
	Market St to Front St	Major	78'	4	yes	no	NB/SB
	Front St to Fourth Ave	Major	68'	4	yes	no	NB/SB
	Fourth Ave to Fifth Ave	Major	86'	4	yes	no	NB/SB
	Fifth Ave to Seventh Ave	Major	97'	4	yes	no	NB/SB
	Seventh Ave to Eighth Ave	Major	87'	4	yes	no	NB/SB
	South of Eighth Ave	Major	93'	4	no	no	NB/SB
Hawthorn Street	Harbor Dr to Pacific Highway	Major	48'	3	yes	yes	WB
	Pacific Highway to India St	Major	52'	3	yes	yes	WB
	India St to Columbia St	Collector	52'	3	yes	yes	WB
	Columbia St to I-5	Collector	46'	3	yes	yes	WB
Imperial Avenue	Eleventh Ave to Park Blvd	Collector	52'	2	yes	yes	EB/WB
	Park Blvd to Fifth Ave	Major	56'	4	yes	yes	EB/WB
	Fifth Ave to I-5	Major	52'	4	yes	yes	EB/WB
India Street	Laurel St to Broadway	Major	51'	3	yes	yes	NB
	Market St to G St	Local	51'	3	yes	yes	NB/SB
Island Avenue	Union St to Third Ave	Local	52'	2	yes	yes	EB/WB
	Third Ave to Fourth Ave	Local	20'	1	yes	yes	WB
	Fourth Ave to I-5	Local	52'	2	yes	yes	EB/WB
Ivy Street	Kettner Blvd to Columbia St	Local	52'	2	yes	yes	EB/WB
J Street	First Ave to Second Ave	Collector	50'	2	no	yes	EB/WB
	Second Ave to I-5	Collector	52'	2	yes	yes	EB/WB
K Street	Third Ave to Seventh Ave	Local	52'	2	yes	yes	EB/WB
Kalmia Street	Kettner Blvd to India St	Local	52'	2	yes	yes	EB/WB
Kettner Boulevard	Laurel St to A St	Major	51'	3	yes	yes	SB
	A St to B St	Major	51'	2	yes	yes	NB/SB
	B St to C St	Major	61'	3	yes	yes	NB/SB
	C St to Broadway	Major	63'	3	yes	yes	NB/SB
	Broadway to E St	Collector	51'	2	yes	yes	NB/SB
	E St to G St	Collector	48'	2	yes	yes	NB/SB
	G St to Harbor Dr	Local	52'	2	yes	yes	NB/SB

Appendix A (continued)
Downtown Roadway Classifications
Existing Conditions

Roadway	Segment	Classification	Width	Lanes	Curb	Parking	Travel Flow
L Street	Harbor Drive to Pacific Highway	Local	67'	2	yes	yes	EB/WB
	Pacific Highway to I-5	Local	52'	2	yes	yes	EB/WB
Laurel Street	Harbor Drive to Pacific Highway	Major	56'	4	yes	no	EB/WB
	Pacific Highway to I-5	Major	52'	4	yes	no	EB/WB
Market Street	Harbor Dr to Fourth Ave	Major	68'	4	yes	yes	EB/WB
	Fifth Ave to Ninth Ave	Major	68'	4	yes	yes	EB/WB
Harbor Drive	Laurel St to Grape St	Prime	88'	6	yes	yes	NB/SB
	Grape St to 570' s/o Grape St	Major	96'	5	yes	yes	NB/SB
	570' s/o Grape St to Ash St	Major	85'	5	yes	yes	NB/SB
	Ash St to Broadway	Major	76'	4	yes	yes	NB/SB
	Broadway to Pacific Highway	Major	78'	4	yes	no	NB/SB
Pacific Highway	Laurel St to Ash St	Major	86'	6	yes	yes	NB/SB
	Ash St to Broadway	Major	90'	6	yes	yes	NB/SB
	Broadway to Market St	Major	76'	6	yes	yes	NB/SB
	Market St to Harbor Dr	Major	87'	4	yes	yes	NB/SB
State Street	I-5 to Ivy St	Collector	56'	2	yes	yes	NB
	Ivy St to Hawthorn St	Collector	56'	1	yes	yes	NB
	Hawthorn St to Grape St	Collector	56'	2	yes	yes	NB
	Grape St to Date St	Collector	52'	2	yes	yes	NB
	Date St to Ash St	Collector	52'	3	yes	yes	NB
	Ash St to Broadway	Local	51'	3	yes	yes	NB
	Broadway to Market St	Local	40'	2	yes	yes	NB/SB
Union Street	Island Ave to Market St	Local	43'	2	yes	yes	NB/SB
	Market St to Broadway	Local	51'	2	yes	yes	NB/SB
	Broadway to C St	Local	43'	2	yes	yes	NB/SB
	C St to A St	Local	47'	2	yes	yes	NB/SB
	A St to Date St	Local	51'	2	yes	yes	NB/SB
First Avenue	I-5 to Harbor Dr	Major	52'	3	yes	yes	NB
Second Avenue	I-5 to C St	Local	52'	3	yes	yes	NB/SB
	C St to Broadway	Local	46'	2	yes	yes	NB/SB
	G St to Market St	Local	52'	2	yes	yes	SB
	Market St to J St	Local	52'	2	yes	yes	NB/SB
Third Avenue	I-5 to A St	Local	52'	3	yes	yes	NB
	A St to Broadway	Local	52'	3	yes	yes	NB/SB
	G St to K St	Local	52'	2	yes	yes	NB/SB
Fourth Avenue	Date St to Ash St	Major	52'	3	yes	yes	SB
	Ash St to Market St	Business	52'	3	yes	yes	SB
	Market St to Island Ave	Major	52'	2	yes	yes	SB
	Island Ave to K St	Local	52'	2	yes	yes	NB/SB

Appendix A (continued)
Downtown Roadway Classifications
Existing Conditions

Roadway	Segment	Classification	Width	Lanes	Curb	Parking	Travel Flow
Fifth Avenue	I-5 to Ash St	Major	52'	3	yes	yes	NB
	Ash St to B St	Business	52'	3	yes	yes	NB
	B St to Broadway	Business	38'	3	yes	no	NB
	Broadway to Market St	Business	52'	3	yes	yes	NB
	Market St to L St	Collector	52'	2	yes	yes	NB/SB
	L St to Harbor Dr	Collector	67'	2	yes	yes	NB/SB
Sixth Avenue	I- 5 to Ash St	Major	52'	3	yes	yes	SB
	Ash St to Broadway	Local	52'	3	yes	yes	SB
	Broadway to Island Ave	Major	52'	3	yes	yes	SB
	Island Ave to J St	Collector	52'	2	yes	yes	NB/SB
	J St to L St	Local	52'	2	yes	yes	NB/SB
Seventh Avenue	Date St to Beech St	Local	52'	1	yes	yes	NB/SB
	Beech St to A St	Local	52'	3-2	yes	yes	NB
	A St to B St	Local	36'	3	yes	yes	NB
	B St to Broadway	Local	52'	3	yes	yes	NB
	Broadway to Market St	Major	52'	3	yes	yes	NB
	Market St to Imperial Ave	Collector	52'	2	yes	yes	NB/SB
Eighth Avenue	Date St to Ash St	Local	52'	3	yes	yes	NB/SB
	Ash St to Broadway	Local	52'	3	yes	yes	SB
	Broadway to Market St	Major	52'	3	yes	yes	SB
	Market St to Harbor Dr	Collector	52'	4	yes	yes	NB/SB
Ninth Avenue	Date St to Ash St	Local	52'	2	yes	yes	NB/SB
	Ash St to A St	Local	52'	2	yes	yes	NB
	A St to Broadway	Local	52'	3	yes	yes	NB
	Broadway to Market St	Collector	52'	3	yes	yes	NB
	Market St to J St	Collector	52'	2	yes	yes	NB/SB
	J St to Imperial Ave	Local	52'	2	yes	yes	NB/SB
Tenth Avenue	Date St to Beech St	Local	32'	2	yes	yes	NB/SB
	Beech St to Ash St	Local	32'	3	yes	yes	NB/SB
	Ash St to Market St	Business	52'	3	yes	yes	SB
	Market St to Island Ave	Collector	52'	3	yes	yes	SB
	Island Ave to Imperial Ave	Collector	52'	2	yes	yes	NB/SB
Eleventh Avenue	Ash St to Market St	Business	52'	3	yes	yes	NB
	Market St to Island Ave	Collector	52'	3	yes	yes	NB/SB
	Island Ave to Imperial Ave	Collector	52'	2	yes	yes	NB/SB
Park Boulevard	Russ Blvd to A St	Major	64'	4	yes	yes	NB/SB
	A St to C St	Business	64'	4	yes	yes	NB/SB
	C St to E St	Business	52'	2	yes	no	NB/Trolley
	E St to Market St	Business	52'	2	yes	no	NB/SB/Trolley
	Market St to L St	Collector	52'	2	yes	no	NB/SB/Trolley
	L St to Imperial Ave	Collector	52'	0	yes	no	Trolley

Appendix A (continued)
Downtown Roadway Classifications
Existing Conditions

Roadway	Segment	Classification	Width	Lanes	Curb	Parking	Travel Flow
13th Street	Imperial Ave to C St	Local	52'	3	yes	yes	NB/SB
Fourth Avenue	Commercial St to Imperial Ave	Local	52'	3	yes	yes	NB
	Imperial Ave to C St	Local	52'	3	yes	yes	NB/SB
Fifth Avenue	Commercial St to Imperial Ave	Local	52'	2	yes	yes	NB/SB
	K St to C St	Local	52'	2	yes	yes	NB/SB
Sixth Avenue	Russ Blvd to B St	Local	32'	2	yes	no	NB/SB
	B St to C St	Collector	52'	3	yes	yes	NB/SB
	C St to Commercial St	Collector	52'	4	yes	yes	NB/SB
Seventh Avenue	A St to F St	Local	52'	2	yes	yes	SB
	F St to G St	Local	52'	2	yes	yes	NB/SB
	G St to Market St	Collector	52'	2	yes	yes	NB/SB
	Market St to Commercial St	Collector	52'	2	yes	yes	SB

Source: Katz, Okitsu & Associates, 2002

Appendix B
Existing Roadway Counts

Appendix B
Summary of Traffic Count Data and Annual Growth Rates

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Annual Growth
North-South Street Segments													
Columbia Street													
Ivy St to Hawthorn St			3300			3200						3006	-1%
Hawthorn St to Grape St		6100			5800							5134	-2%
Date St to Cedar St				3500						3530		3540	0%
Ash St to A St				6300						8430		9380	6%
Front Street													
Cedar St to Beech St		12600			13000						13380	13472	1%
Ash St to A St				13900						14870		15216	1%
C St to Broadway		11300			11100							10642	-1%
Broadway to E St			10000				10700		9200			8832	-1%
E St to F St			8000				9600		9800			10903	4%
G St to Market St		3800			3700							3505	-1%
Market St to Island Ave				3300			3000		3300			3300	0%
Harbor Drive													
Pacific Highway to Kettner Blvd		18400			12400			14600				12590	-3%
Kettner St to Columbia St			18100			16200			12750			10866	-5%
Columbia St to State St			18100			16200			12750			10866	-5%
State St to Market St			18100			16200			12750			10866	-5%
Fourth Ave to Fifth Ave					12200		13200			12310		12354	0%
Fifth Ave to Seventh Ave					12400		12900					14200	2%
Seventh Ave to Eighth Ave					12400		12900					14200	2%
India Street													
Laurel St to Kalmia St				14000						17210		18525	4%
Juniper St to Hawthorn St			4300			4600						5242	2%

Appendix B
Summary of Traffic Count Data and Annual Growth Rates

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Annual Growth
Hawthorn St to Grape St				5000						4810		4749	-1%
Date St to Cedar St		5000			5100							5338	1%
Ash St to A St		3400			3500							3740	1%
A St to B St				4800						6650		7504	6%
Kettner Boulevard													
Kalmia St to Juniper St		6600			6300							5632	-2%
Hawthorn St to Grape St			7000			8800				7520		7680	1%
Date St to Cedar St		4300			4500			4900				5356	2%
Ash St to A St				9300				6600		10240		10585	2%
A St to B St				5400						5700		5806	1%
C St to Broadway					5700			5100				4384	-4%
Broadway to E St		4200			3400							1889	-6%
E Street to F St			3700				3500					3264	-1%
F Street to G Street					3100		4000	3400		3960		4399	6%
G St to Harbor Dr			3300			3100	5900		3000			2864	-2%
Harbor Drive													
Laurel St to Hawthorn St			55700			50100			53000			51715	-1%
Hawthorn St to Grape St		32700			33700				35200			36353	1%
570' s/o Grape St to Ash St		17800			20700				20400			21677	2%
Ash St to Broadway			15100				16700		18400			20411	4%
Broadway to Pacific Highway		12400								10140		9678	-2%
Pacific Highway													
Juniper St to Hawthorn St			14100		12800				13000			12493	-1%
Hawthorn St to Grape St				15500			17900			15290		15221	0%
Elm St to Cedar St			11800		16300				17700			22125	8%
B St to Broadway					11900		12000			14160		15236	4%

Appendix B
Summary of Traffic Count Data and Annual Growth Rates

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Annual Growth
E St to F St			9000		8800							8116	-1%
G St to Market St			7300		6400							3638	-6%
Market St to Harbor Dr			7300		6400							3638	-6%
State Street													
Kalmia St to Ivy St		6700			5500							3776	-4%
Ivy Str to Hawthorn St			2000			1900			1800			1710	-2%
Hawthorn St to Grape St				1600					3200			4800	17%
Date St to Cedar St				2700		2900				3390		3638	4%
Ash St to A St		2600			2500							2276	-1%
C St to Broadway				3100			5500		5200			7314	14%
F St to G St		2000			2200							2713	3%
First Avenue													
Cedar St to Beech St			18800			24300			23200	24360		26418	4%
Ash St to A St		16900			18900						14150	13894	-2%
A St to B St		12600			15000						14300	14514	1%
E St to F St					10800		9900			10320		10137	-1%
G St to Market St			9200				10200		9900			10277	1%
Market St to Island Ave			3400				4200		5900			8069	12%
Second Avenue													
Cedar St to Beech St				4200						3950		3872	-1%
Third Avenue													
Cedar St to Beech St		2500			3200						2420	2411	0%
Ash St to A St					5400						4970	4926	-1%
A St to B St					8300						13090	13929	6%
Fourth Avenue													
Date St to Cedar St				16000						14960		14636	-1%
Cedar St to Beech St		15300			14300						11820	11521	-3%
A St to B St		11300			9500						9530	9364	-2%
C St to Broadway			10400				10800		9500			9089	-1%

Appendix B
Summary of Traffic Count Data and Annual Growth Rates

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Annual Growth
Broadway to E St					11500					14200		15311	4%
F St to G St			12800		13500							16084	3%
G St to Market St			9500				11900		12600			14656	5%
Fifth Avenue													
C St to Broadway		9400			9200							8972	0%
E St to F St					12900		14900			14970		15931	3%
F St to G St			10200				9900		10500			10654	0%
G St to Market St		5900			7300							11342	8%
Island Ave to L St	7700				7600							7427	0%
L St to Harbor Dr			6200			6000	7400		5900			5757	-1%
Sixth Avenue													
Interstate 5 to Cedar St				12800						14610		15299	2%
Cedar St to Beech St		11900			11500							10598	-1%
Ash St to A St		9600			9800						8190	8056	-2%
B St to C St					9600		10300			12100		13150	4%
C St to Broadway					7800		8200					9251	3%
E St to F St			7600				7400		10300			12130	6%
F St to G St			7900				6300		7600			7456	-1%
G St to Market St					4600		4900			8310		10544	13%
Market St to Island Ave					2500			3800				6435	17%
Seventh Avenue													
Broadway to E St						4900			5700			6631	5%
F St to G St					3700		4100			3890		3970	1%
G St to Market St					4200		4300			3680		3498	-2%
Tenth Avenue													
A St to B St		23900			19700							11622	-6%
B St to C St			16100				16400		17600			18420	2%
C St to Broadway					13100			14700		15070		15977	3%
E St to F St					10700			11900		11440		11756	1%
F St to G St			8800				9000		9700			10196	2%

Appendix B
Summary of Traffic Count Data and Annual Growth Rates

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Annual Growth
G St to Market St			7800		7800		7300			8560		8798	1%
J St to K St		3300			3300							3300	0%
Eleventh Avenue													
		16000			13300							8063	-6%
B St to C St			13500				12900		12880			12584	-1%
C St to Broadway			12400				11800		12000			11806	-1%
G St to Market St			6100				6100		5700			5513	-1%
Park Boulevard													
A St to B St				17800		16700						13604	-3%
C St to Broadway					3200		4800			2830		2699	-2%
E St to F St				2500			3100		2480			2468	0%
F St to G St				1600			1300					894	-6%
Sixth Avenue													
C Street to Broadway				8200	8100					9120		9461	2%
Broadway to E St				9800	9900		8800			10900		11308	2%
G St to Market St				8900		7900			8500			8271	-1%
Island Ave to J St				6600		6000			6400			6284	-1%
Imperial Ave to Commercial St			5100		5400							6512	3%
Seventh Avenue													
Imperial Ave to Commercial St								8800		7170		5842	-9%
East-West Street Segment													
A Street													
Kettner Boulevard to India St				6200						6800		7019	2%
India St to Columbia St													
Columbia St to State St				8300						9080		9364	2%
State St to Front St													
Front St to First Ave		11100			12000						8900	8704	-2%
Fourth Ave to Fifth		12400			12200						14990	15338	2%

Appendix B
Summary of Traffic Count Data and Annual Growth Rates

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Annual Growth
Ave													
Fifth Ave to Sixth Ave				13000						15810		16949	4%
Eighth Ave to Ninth Ave				12700		13500				14700		15472	3%
Tenth Ave to Eleventh Ave		8100			8000								0%
Eleventh Ave to Park Blvd				6600		7900				7390		8846	10%
Ash Street													
N. Harbor Drive to Pacific Highway		7100			8700				7500			181	1%
Pacific Highway to Kettner Boulevard				9300						9580		9676	1%
India St to Columbia St				8900						9070		9128	0%
Columbia St to State St				11100						16810		19692	9%
Front St to First Ave			15200			14600				15510		15600	0%
First Ave to Second Ave		21000			16600				15500		16890	16523	-2%
Fifth Ave to Sixth Ave		15200			12600			11900				11039	-4%
Eighth Ave to Ninth Ave				9500		7600				10020		10203	1%
B Street													
Fourth Ave to Fifth Ave				7900		8600			9500	9100		9561	3%
Fifth Ave to Sixth Ave				9700						10700		11068	2%
Eleventh Ave to Park Blvd				9800		11500						17485	9%
Park Blvd to Sixth Ave				11000						11630		11852	1%
Seventh Ave to Interstate 5				6400		6500				8320		9152	5%
Beech Street													
Pacific Highway to Kettner Boulevard			1200			1400						1867	6%

Appendix B
Summary of Traffic Count Data and Annual Growth Rates

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Annual Growth
Broadway													
N. Harbor Drive to Pacific Highway		8300			6500						6420	6258	-3%
Pacific Highway to Kettner Boulevard					10800		10900					11152	0%
Kettner Boulevard to India St			12900				13200		12900			12900	0%
Union St to Front St					18800					18830		18842	0%
Fourth Ave to Fifth Ave				17600			18700		16700			16188	-1%
Fifth Ave to Sixth Ave					16000			18300		16270		16380	0%
Ninth Ave to Tenth Ave				12800			14000					16188	3%
Tenth Ave to Eleventh Ave				10300			9400		10500			10622	0%
Eleventh Ave to Park Blvd					8000			7200		8610		8873	2%
Fourth Ave to Fifth Ave					7200			7300				7435	0%
Sixth Ave to Seventh Ave		6500		6500	6400		6800					7114	1%
C Street													
Front St to First Ave					2700			1000		1780		1537	-7%
Ninth Ave to Tenth Ave				2300			1500		1400			1071	-8%
Eleventh Ave to Park Blvd				3500			4600		4400			5079	5%
Fourth Ave to Fifth Ave					9700			7800				5763	-7%
Sixth Ave to Seventh Ave		7800			9000						10730	11178	4%
Cedar Street													
Pacific Highway to Kettner Boulevard			2200			2200				2970		3267	5%
Union St to Front St						4400				4930		5227	3%
Second Ave to 3th Ave				7500						6570		6298	-2%

Appendix B
Summary of Traffic Count Data and Annual Growth Rates

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Annual Growth
Fourth Ave to Fifth Ave								6500		6820		7156	2%
Fifth Ave to Sixth Ave			6100						6300	5350		5162	-2%
Columbia Street													
Ivy St to Hawthorn St			3300			3200						3006	-1%
Hawthorn St to Grape St		6100			5800							5134	-2%
Date St to Cedar St				3500						3530		3540	0%
Ash St to A St				6300						8430		9380	6%
E Street													
Fourth Ave to Fifth Ave				1900			3000		1530			1351	-4%
Fifth Ave to Sixth Ave					3100		3400			3400		3532	2%
Eleventh Ave to Park Blvd				2900			2700		3000			3062	1%
Fourth Ave to Fifth Ave					4500			4600		5420		5863	4%
F Street													
Front St to First Ave		2800		2700	2600							2167	-2%
Fourth Ave to Fifth Ave				7200			8100		9200			10733	6%
Fifth Ave to Sixth Ave		11200			9600							6400	-5%
Tenth Ave to Eleventh Ave				11900			12500		12800			13381	2%
14th St to 15th St		14900			14900							14900	0%
16th St to 17th				20600			19700		21500			22064	1%
G Street													
Pacific Highway to Kettner Blvd		2500					3600					5184	9%
Kettner Blvd to India St				3100			3700					4894	6%
Columbia St to State St				3400			3400		3600			3727	1%

Appendix B
Summary of Traffic Count Data and Annual Growth Rates

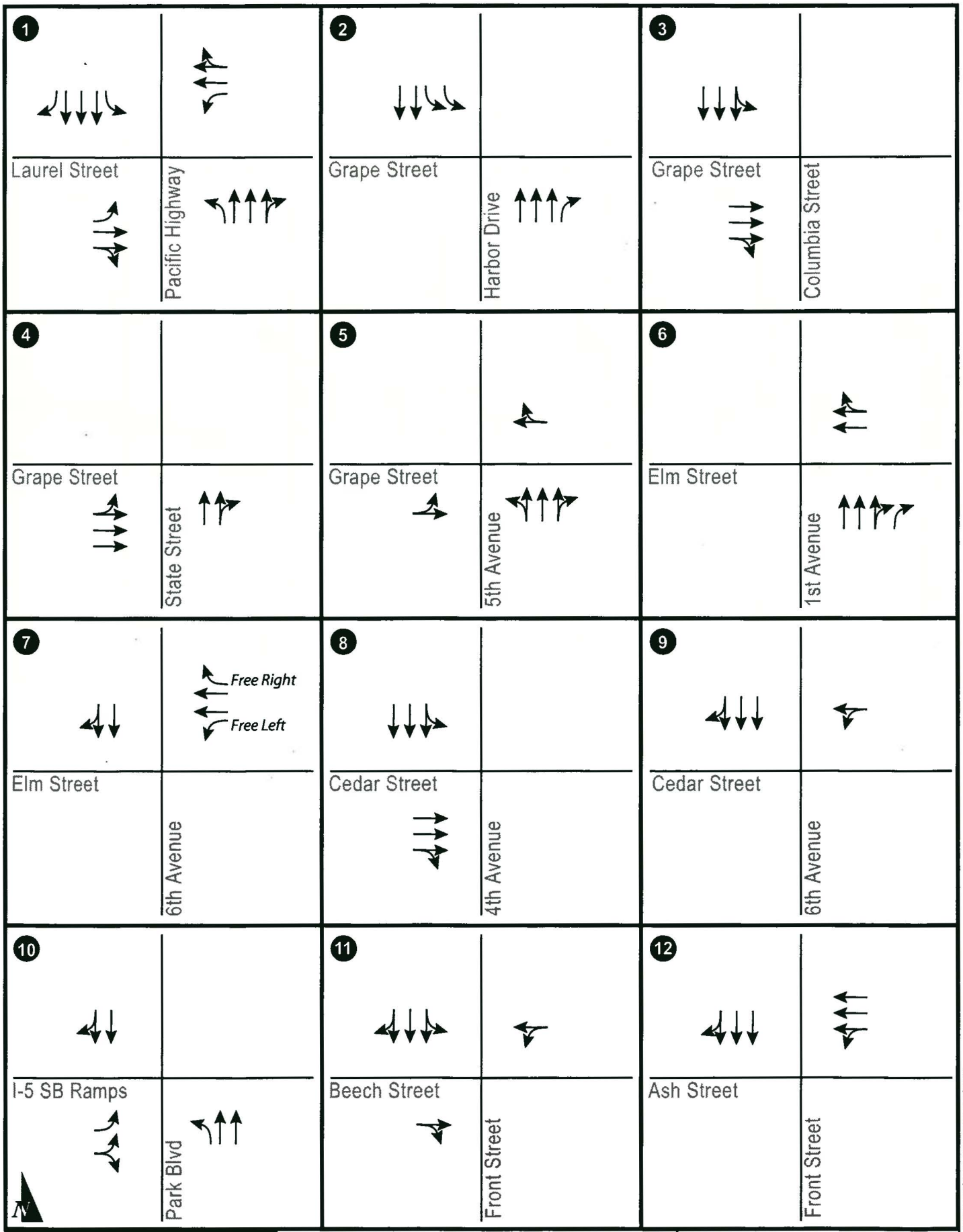
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Annual Growth
Front St to First Ave		6900	6800		8500			7700				8295	2%
Fourth Ave to Fifth Ave					11600		14300			12950		13553	2%
Fifth Ave to Sixth Ave		11100			12300			12900				14295	3%
Ninth Ave to Tenth Ave		13100			13000							12802	0%
Tenth Ave to Eleventh Ave				13600			13900		15600			16976	3%
Eleventh Ave to Park Blvd					12400		14500			15960		17793	6%
14th St to 15th St				13300		13800			15690			17382	4%
Sixth Ave to Seventh Ave				17300			16800		17130			17029	0%
Grape Street													
Harbor Dr to Pacific Highway		20100			20200				25000			27612	3%
Hawthorn Street													
Harbor Drive to Pacific Highway				20100			20800			21930		22378	2%
Pacific Highway to Kettner Blvd			21200			21800						23034	1%
Kettner Blvd to India St		21500	21700									23517	1%
India St to Columbia St		23000			23000							23000	0%
State St to Interstate 5				26300						32840		35562	4%
Imperial Avenue													
Tenth Ave to Eleventh Ave			4500		4000							2444	-6%
Fourth Ave to Fifth Ave			7100		5100						4520	4315	-5%
Sixth Ave to Seventh Ave			7700		6800						6490	6363	-2%
Laurel Street													
Harbor Drive to Pacific Highway			31100			33800				34970		36213	2%

Appendix B
Summary of Traffic Count Data and Annual Growth Rates

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Annual Growth
Pacific Highway to Kettner Blvd		27300			28000			26000				25175	-1%
Kettner Blvd to India St				18200						19650		20172	1%
Market Street													
Union St to Front St		9500			7900			9400				9334	0%
Front St to First Ave				9500			11300		12490			14849	6%
Second Ave to Third Ave					14900			15200				15608	1%
Fourth Ave to Fifth Ave			13000				9400		14140			14760	1%
Fifth Ave to Sixth Ave			13600				15300		16200			17749	3%
Eleventh Ave to Park Blvd			13600				9800		9000			7478	-6%
13th St to 14 St					12500						11560	11415	-1%
17th St to 19th St					12600		11700			9880		9027	-4%

Source: Katz, Okitsu & Associates; 2002

Appendix C
LOS F Intersection Geometry
Unmitigated and Mitigated



LEGEND

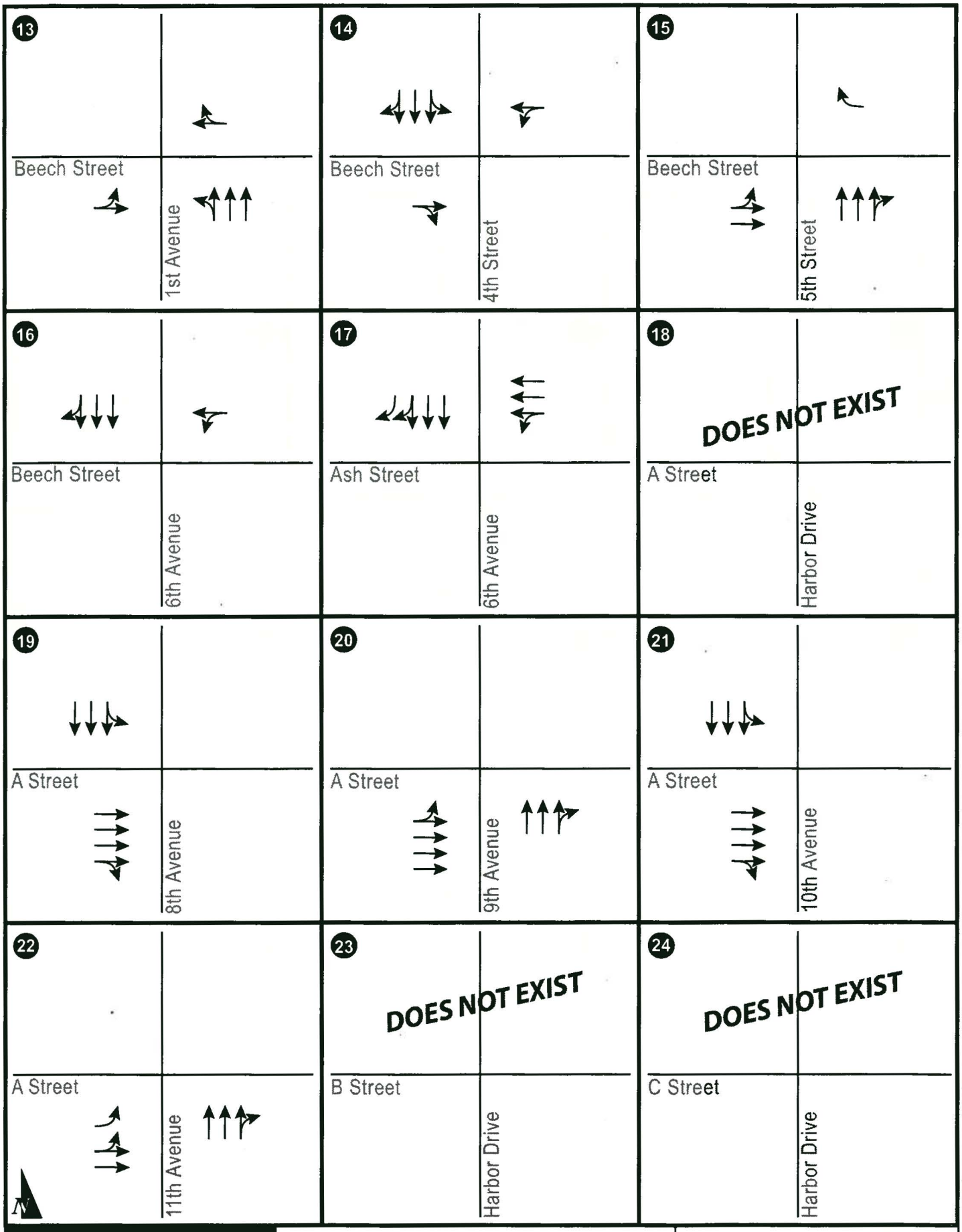
← Existing Geometry

WILSON & COMPANY

CCDC Community Plan

Figure C-1, Page 1 of 6
Intersection Geometrics
Existing Conditions

Source: Wilson & Company, April 2005



LEGEND

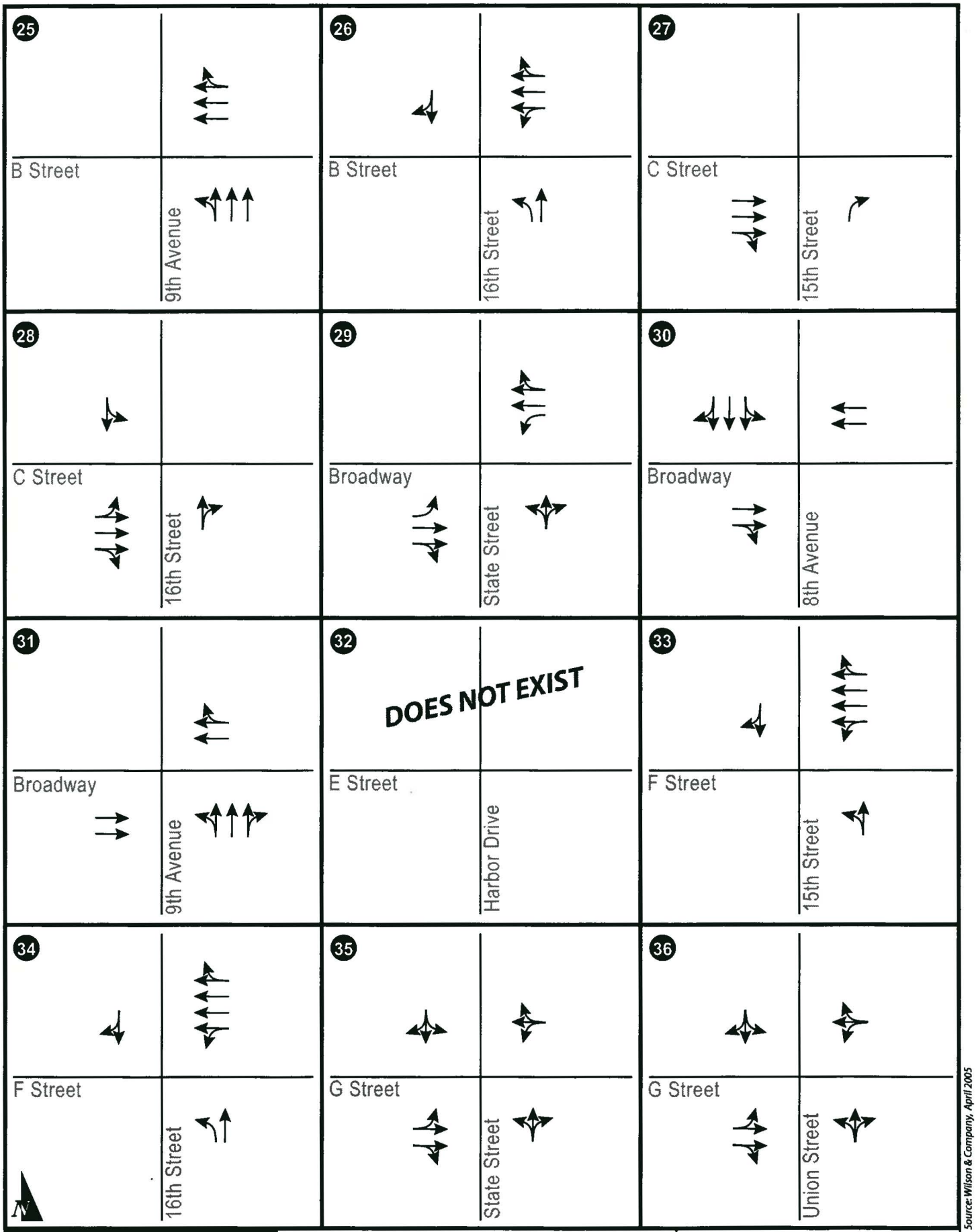
← Existing Geometry

WILSON & COMPANY

CCDC Community Plan

Figure C-1, Page 2 of 6
Intersection Geometrics
Existing Conditions

Source: Wilson & Company, April 2005



LEGEND

← Existing Geometry

WILSON & COMPANY

CCDC Community Plan

Figure C-1, Page 3 of 6
Intersection Geometrics
Existing Conditions

Source: Wilson & Company, April 2005

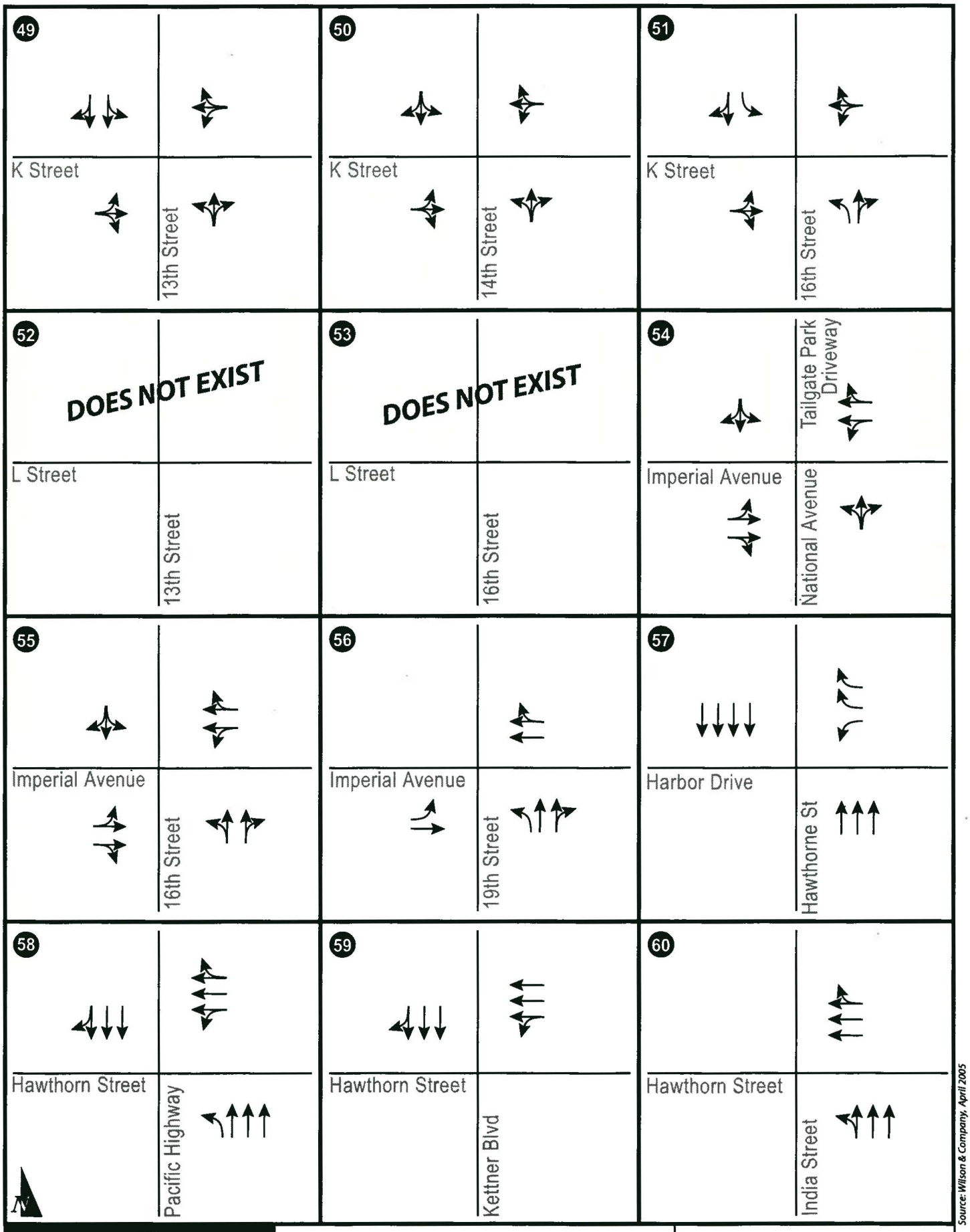
LEGEND

← Existing Geometry

WILSON & COMPANY **CCDC Community Plan**

Figure C-1 , Page 4 of 6
Intersection Geometrics
Existing Conditions

Source: Wilson & Company, April 2005



LEGEND

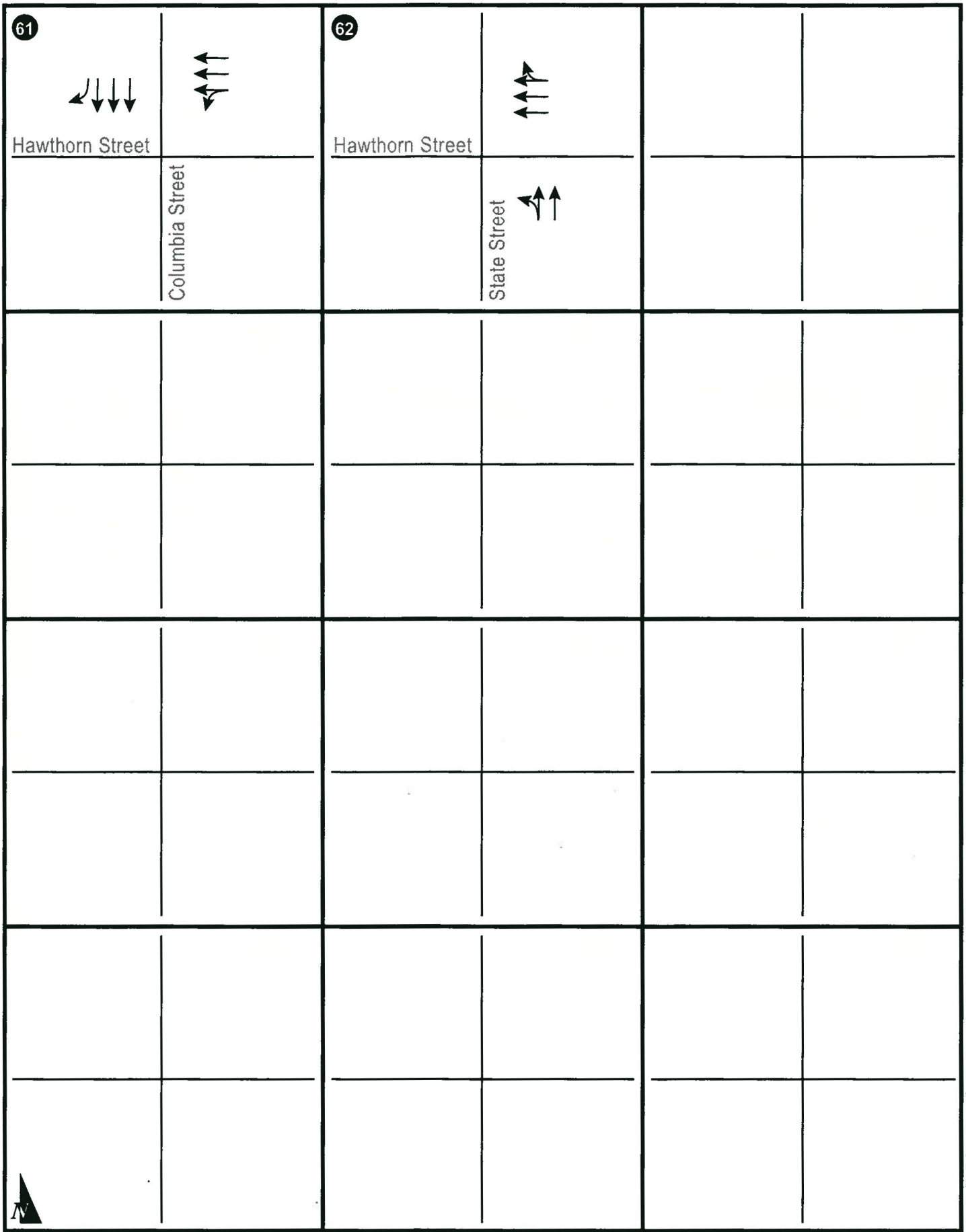
← Existing Geometry

WILSON & COMPANY

CCDC Community Plan

Figure C-1 , Page 5 of 6
Intersection Geometrics
Existing Conditions

Source: Wilson & Company, April 2005



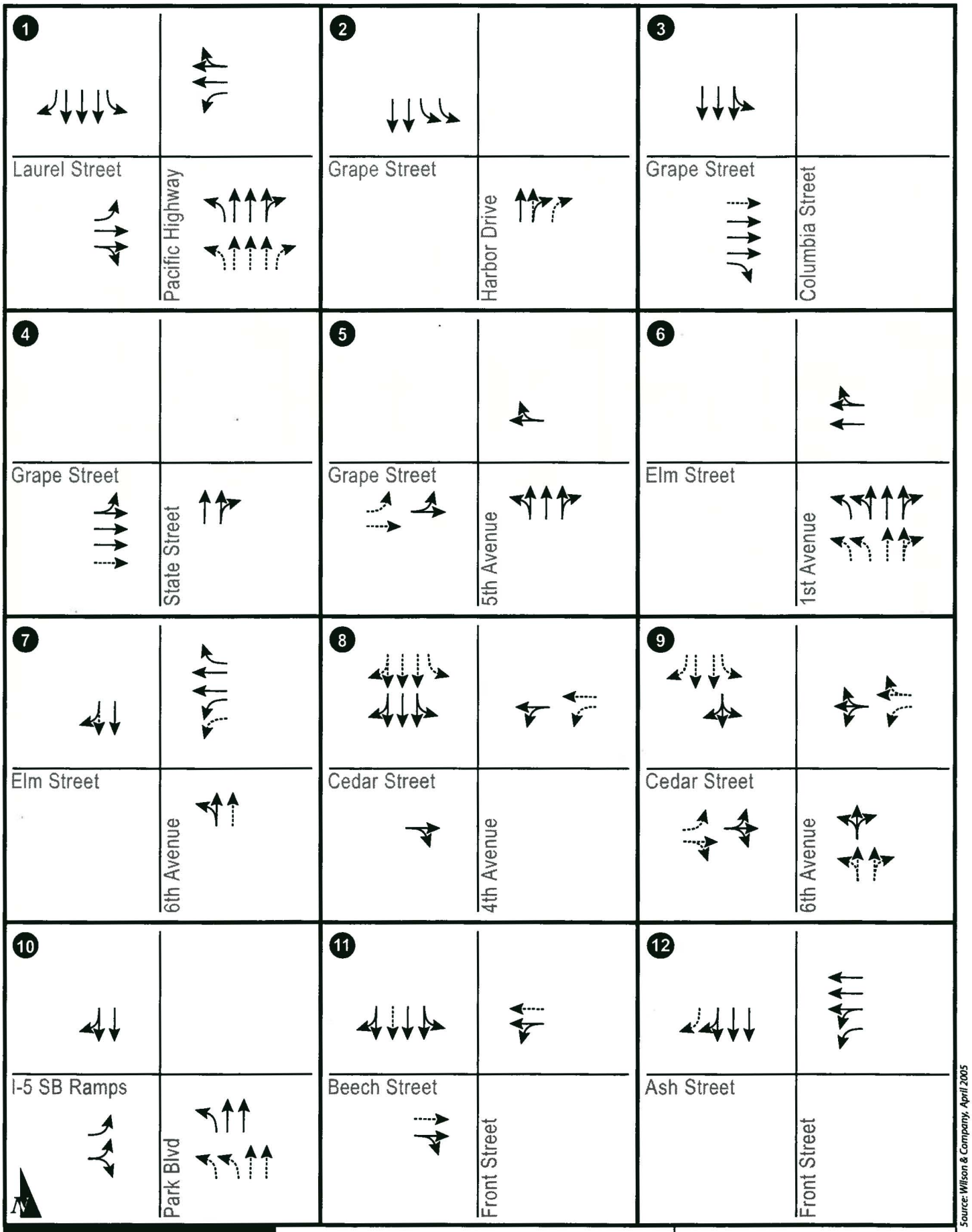
LEGEND

← Existing Geometry

WILSON & COMPANY **CCDC Community Plan**

Figure C-1 , Page 6 of 6
Intersection Geometrics
Existing Conditions

Source: Wilson & Company, April 2005



LEGEND

← CCDC Preferred Plan Geometry

◄--- Recommended Mitigation

WILSON & COMPANY **CCDC Community Plan**

Figure C-2, Page 1 of 6
Intersection Geometrics
Preferred Plan with Mitigation

Source: Wilson & Company, April 2005

LEGEND

← CCDC Preferred Plan Geometry

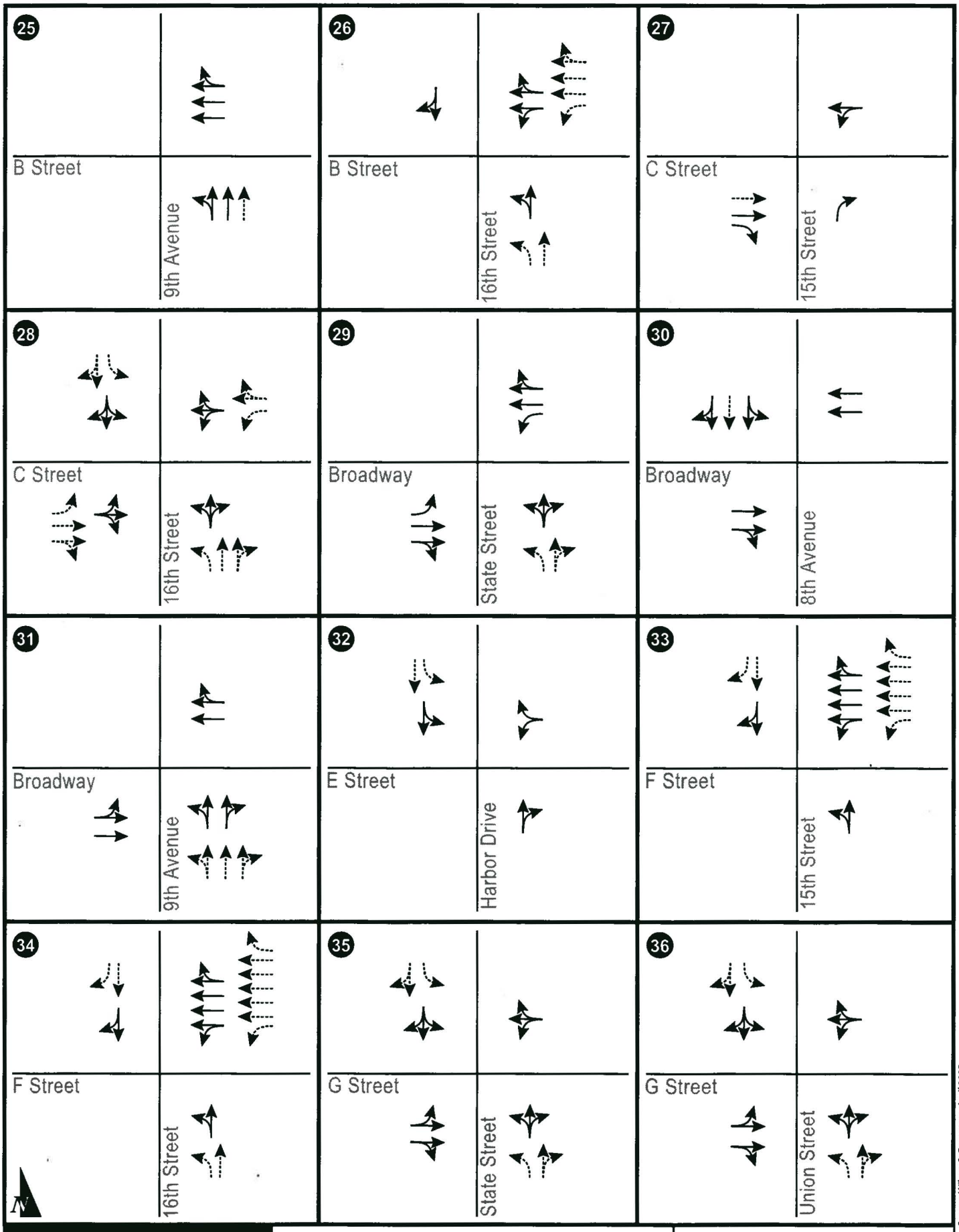
←--- Recommended Mitigation

WILSON & COMPANY

CCDC Community Plan

Figure C-2, Page 2 of 6
Intersection Geometrics
Preferred Plan with Mitigation

Source: Wilson & Company, April 2005



LEGEND

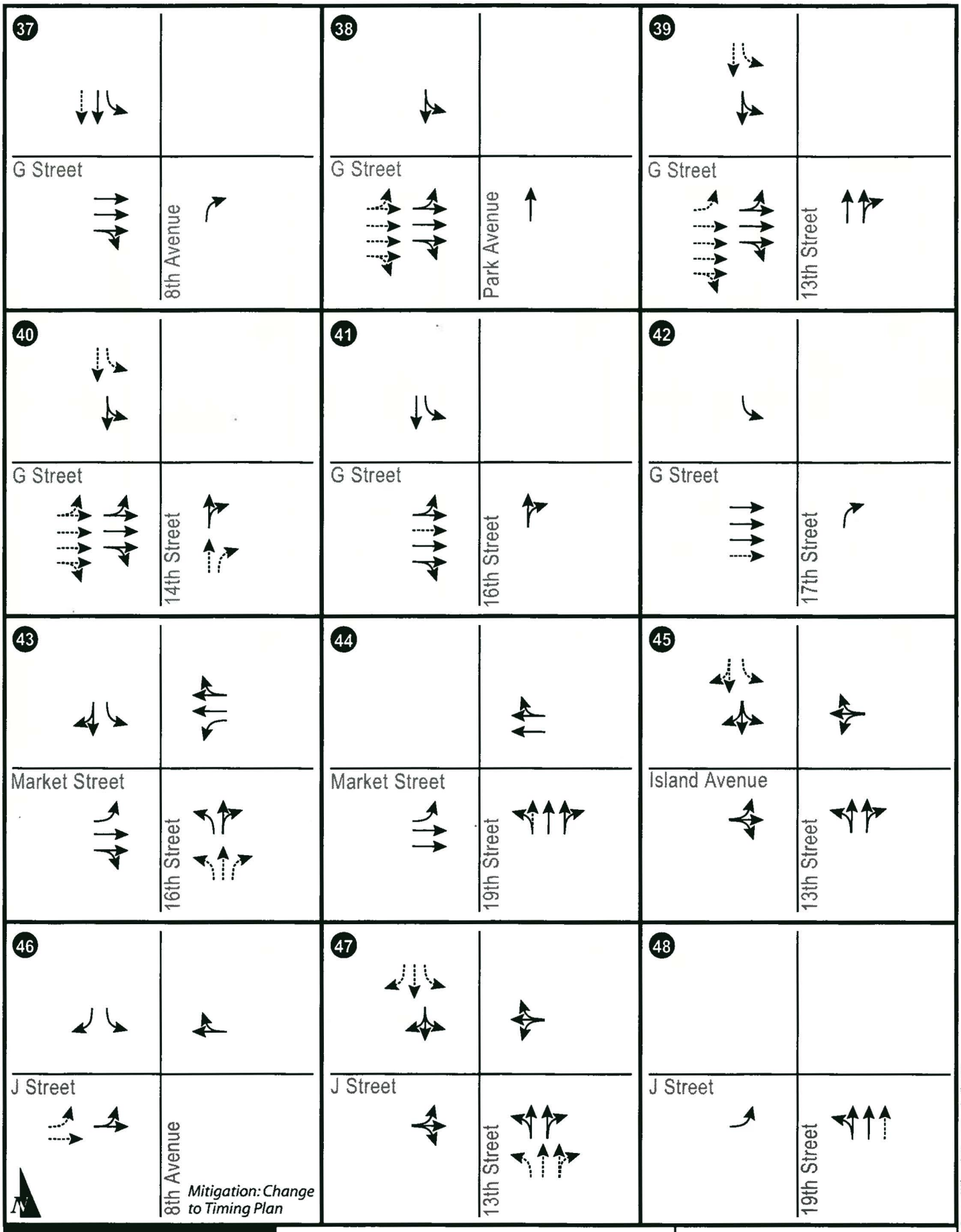
- CCDC Preferred Plan Geometry
- Recommended Mitigation

WILSON & COMPANY

CCDC Community Plan

Figure C-2, Page 3 of 6
Intersection Geometrics
Preferred Plan with Mitigation

Source: Wilson & Company, April 2005



LEGEND

← CCDC Preferred Plan Geometry

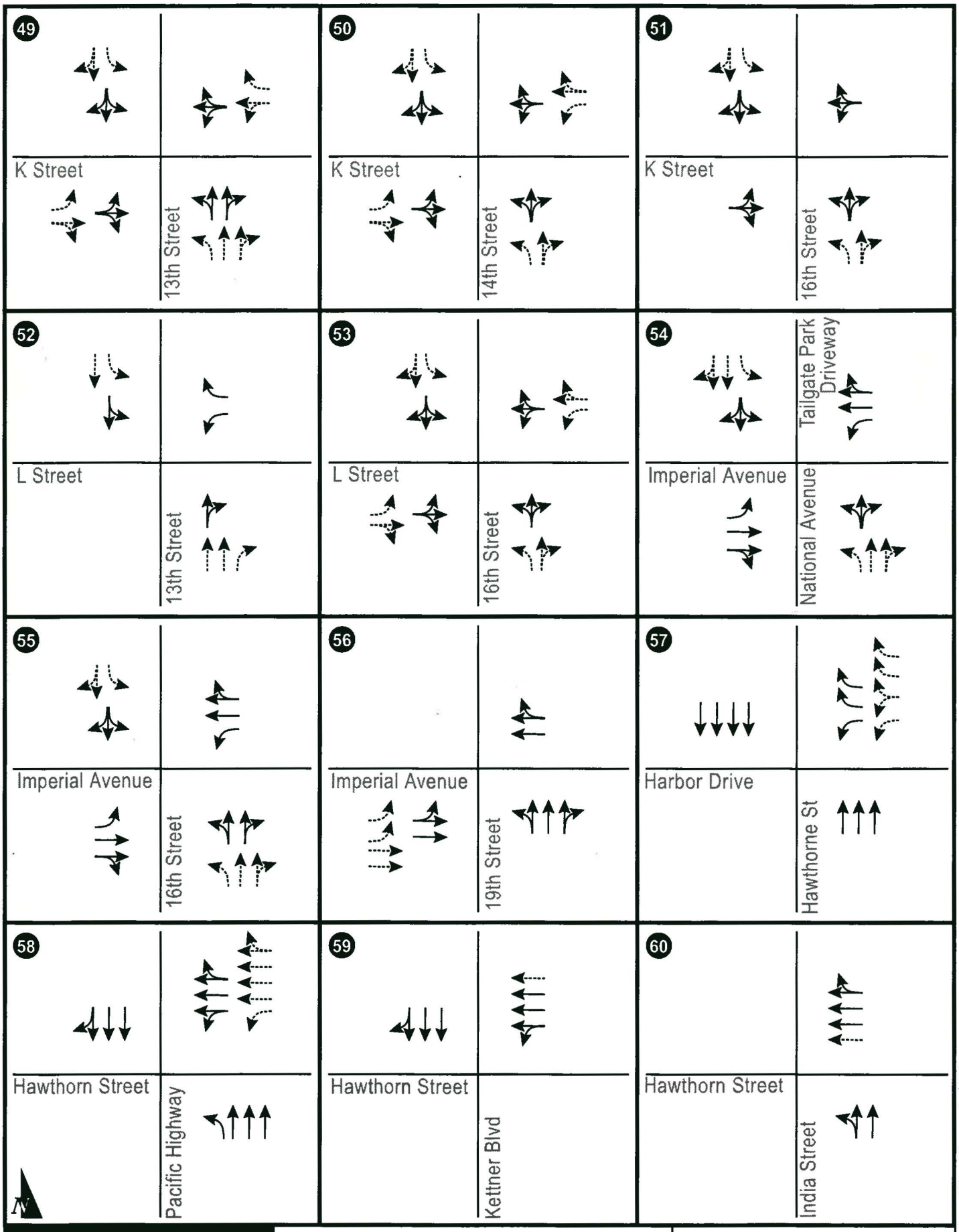
←--- Recommended Mitigation

WILSON & COMPANY

CCDC Community Plan

Figure C-2, Page 4 of 6
Intersection Geometrics
Preferred Plan with Mitigation

Source: Wilson & Company, April 2005



LEGEND

← CCDC Preferred Plan Geometry

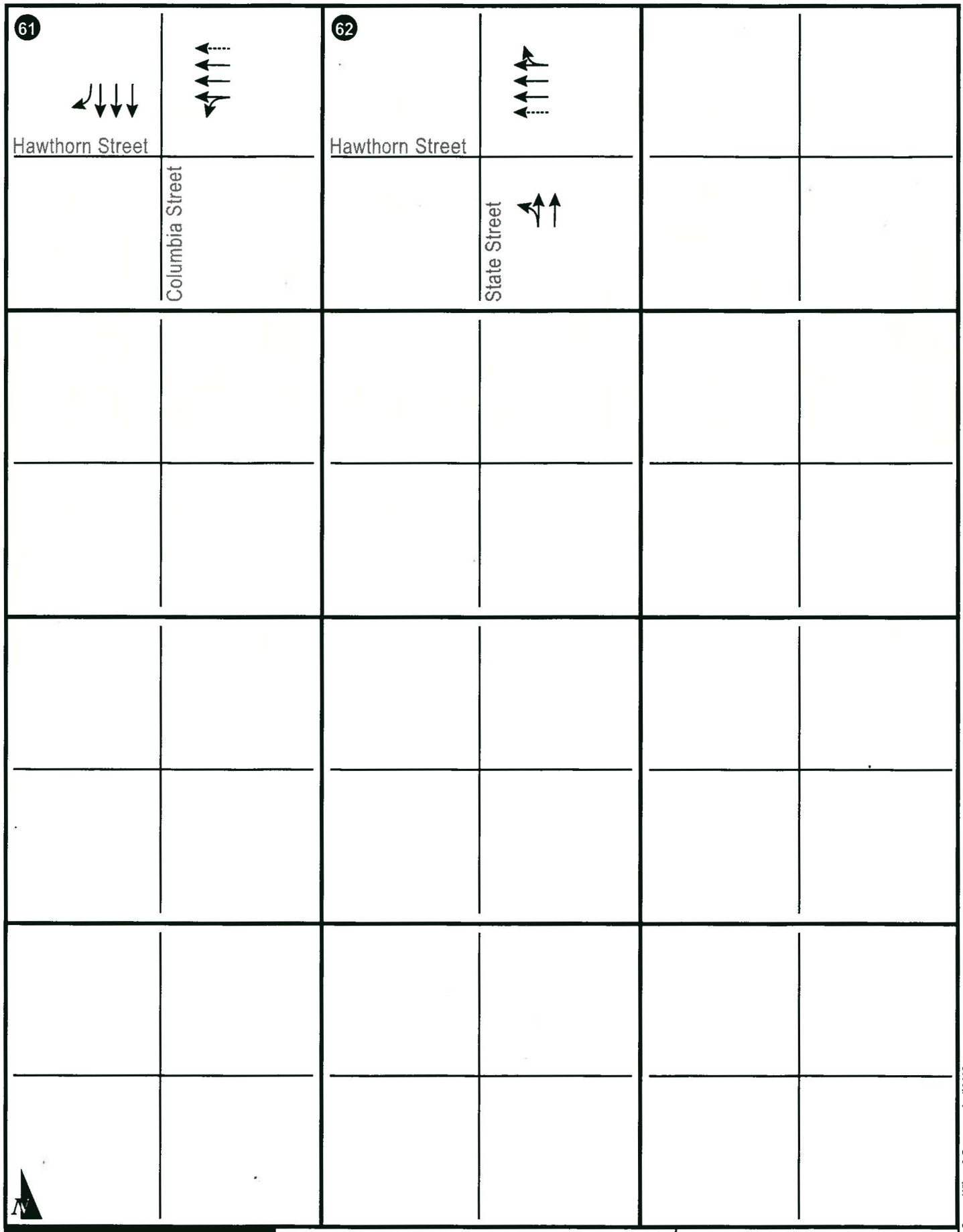
←--- Recommended Mitigation

WILSON & COMPANY

CCDC Community Plan

Figure C-2, Page 5 of 6
Intersection Geometrics
Preferred Plan with Mitigation

Source: Wilson & Company, April 2005



LEGEND

← CCDC Preferred Plan Geometry

←--- Recommended Mitigation

WILSON & COMPANY

CCDC Community Plan

Figure C-2 , Page 6 of 6
Intersection Geometrics
Preferred Plan with Mitigation

Source: Wilson & Company, April 2005