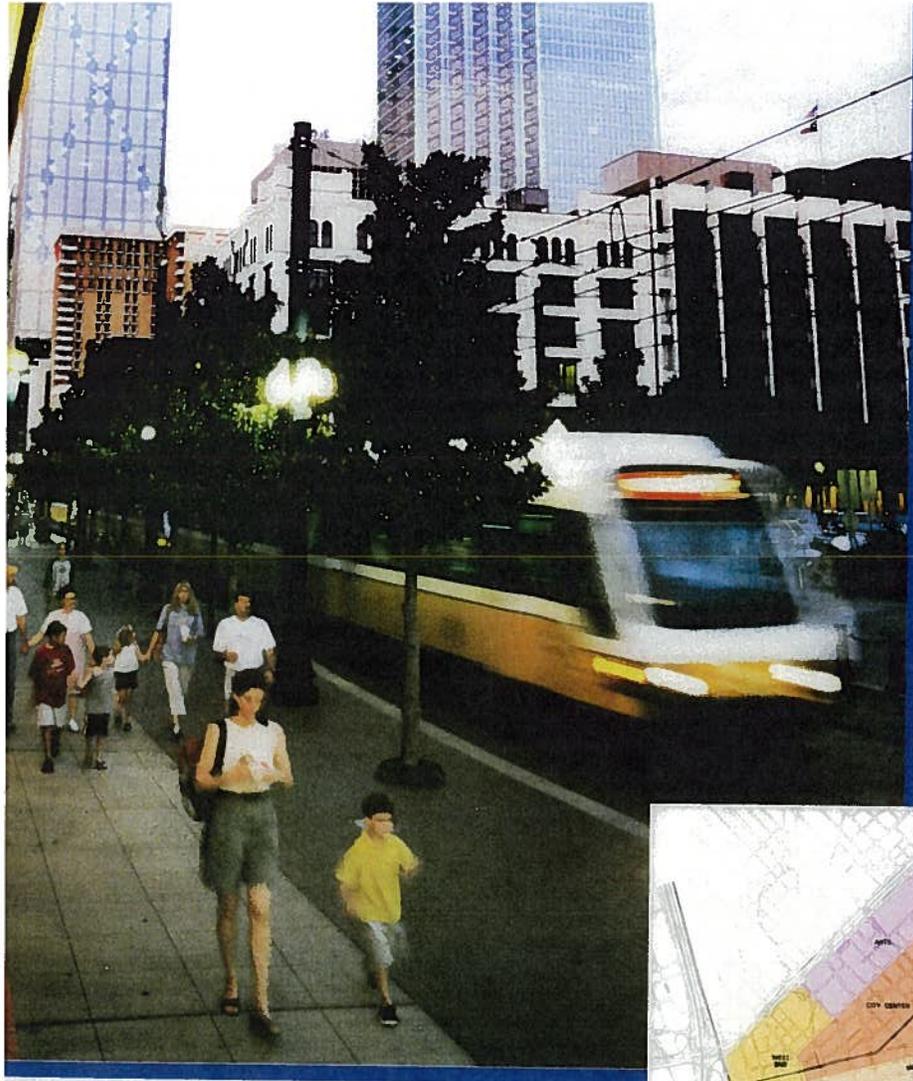


# COMPREHENSIVE TRANSPORTATION PLAN

for the

# DALLAS CENTRAL BUSINESS DISTRICT



**JUNE 2005**

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- 3 Ed Oakley
- 4 Dr. Maxine Thornton-Reese
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Michael Morris, NCTCOG  
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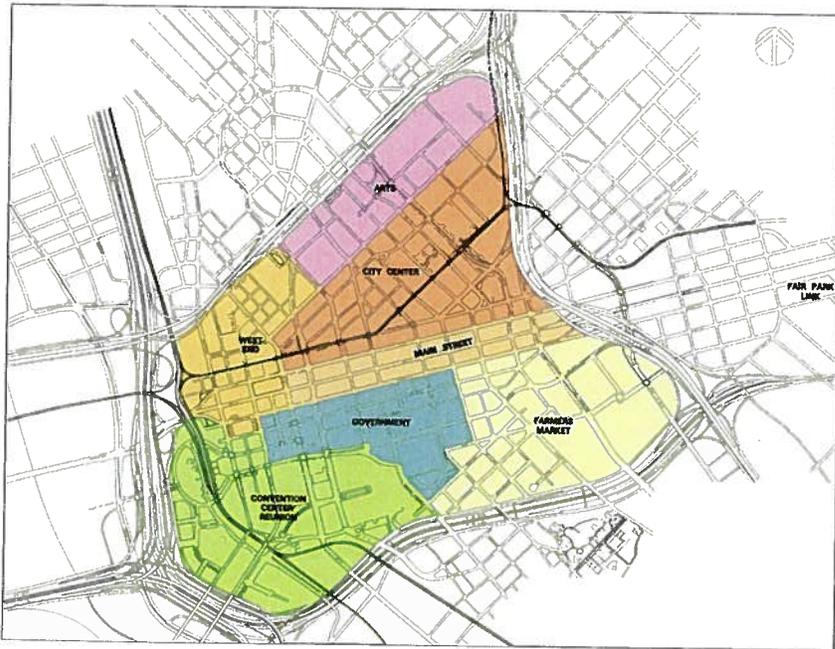
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# COMPREHENSIVE TRANSPORTATION PLAN FOR THE DALLAS CENTRAL BUSINESS DISTRICT

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a guide plan for the development of streets  
including a simplified and improved street  
network and a vehicular circulation plan



June 8, 2005

prepared for the  
**DALLAS CITY COUNCIL**  
by the CBD Transportation Study Steering Committee  
*in cooperation with Jacobs Engineering*

## ACKNOWLEDGEMENTS

When four governmental jurisdictions, each with a keen interest in the success of the Central Business District (CBD) of Dallas, partner to update the existing Dallas Central Business District Streets and Vehicular Circulation Plan and set a 25 year vision of the future, it takes individuals of foresight and endurance to see the process to a successful conclusion. On behalf of the CBD Comprehensive Transportation Study Team, we would like to recognize the leadership and perseverance of Sandy Greyson, Steering Committee Chairperson. Robert Decherd supported the Steering Committee as Vice Chairperson and provided a liaison with the Inside the Loop Committee (ITLC). As Chairman of the ITLC, Mr. Decherd sponsored several important design initiatives that complemented the work of the CBD Transportation Study Team. In addition, the Steering Committee included Dallas County Commissioner John Wiley Price, DART Board Chairman Huelon Harrison, DART Board Member Linda Koop, NCTCOG Director of Transportation Michael Morris, DART Executive Vice President Doug Allen, City of Dallas Assistant Director of Public Works and Transportation John Brunk and Dallas County Commissioners and Court Deputy Administrator Dan Savage. The Committee was diligent in their guidance and encouragement to the study team.

In his role as study Project Manager, Keith Manoy helped guide the study team through the review and approval process at City Hall. Mike Simms (NCTCOG) served as Contract Manager assisting with revisions to the scope and schedule as the study evolved.

We acknowledge the professional support of the following subconsultants on the Jacobs study team: URS; Good, Fulton & Farrell Architects (GFF); Townscape, Inc.; ITC; Kimley-Horn Associates; Gram Associates; Dunbar Transportation Consulting and DeShazo, Tang & Associates. In particular, Larry Good and Brian Moore with GFF and Dennis Wilson with Townscape were instrumental in taking a "fresh look at land use" which is presented in Section II of the Report. Based on their understanding of the vision developed by the Steering Committee, they synthesized the existing land use, known new development, and possible future land use patterns into the "fresh look". The recommended land use plan supports the NCTCOG special regional model for Downtown residents (population) and workers (employment). Larry Good and Brian Moore developed illustrative concepts for the recommended roadway cross-sections that are featured in Section III of the Report. Larry, Brian and David Farrell created a visualization of special treatments at the major focus intersections of the Boulevard Ring recommended by the Study. These alternative concepts are shown in Figure 46. As part of an assignment for the ITLC and Meadows Foundation, Larry and Brian developed the Emerald Bracelet concept that interfaces with the Katy Trail System and Downtown Bikeway Plan. The Emerald Bracelet is featured in Figure 60.

Traffic Modeling and Vehicle Simulation for the entire Downtown street network was a major part of the study effort and critical to the analysis of alternatives. The final set of deliverables includes an A.M. peak period and P.M. peak period traffic simulation model for Downtown Dallas developed through an extraordinary effort of Jacobs engineers: Ali Kazmi, Behruz Pashaie and Arun Olarnrat. Terry Watson, served as Jacobs Project Manager, guiding this comprehensive effort to a successful conclusion.

The contents of this report reflect the views of the authors who are responsible for the opinions, findings, and conclusions presented herein. The contents do not necessarily reflect the views or policies of the Federal Highway Administration, the Federal Transit Administration, or the Texas Department of Transportation. This document was prepared in cooperation with the Texas Department of Transportation and the U.S. Department of Transportation, Federal Highway Administration, and Federal Transit Administration.

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# COMPREHENSIVE TRANSPORTATION PLAN FOR THE DALLAS CENTRAL BUSINESS DISTRICT

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## EXECUTIVE SUMMARY

The Dallas City Council adopted the Dallas CBD "Streets and Vehicular Circulation Plan" in April 1971. It details right-of-way and operational characteristics for streets within the freeway loop. For the most part, it responded adequately to the City's past needs through the amendment process, ensuring mobility for traffic in and through the CBD and providing needed access to land uses. The North Central Texas Council of Governments, the City of Dallas, Dallas Area Rapid Transit (DART) and the County of Dallas undertook the Comprehensive Transportation Plan for the Dallas Central Business District (CBD) jointly as an update of the 1971 Plan.

The vision of how the CBD is used and who are the customers of its transportation system is changing from when the current plan was first adopted. The evolving vision includes an environment that focuses on pedestrians, transit, bicycles, and automobiles for its workers, residents, and visitors in a manner that balances each mode and its requirements so as to ensure mobility with safety, security, and efficiency for all users. Issues and factors contributing to the need for this study and development of a new plan include the following:

- Land uses in the Dallas CBD are changing from the traditional office use to a mixed-use environment of office, retail, residential, cultural and recreational under programs that encourage this transition and support development.
- Peripheral highway systems under study have the potential to influence traffic patterns into and out of Downtown Dallas. The significant ones include the Pegasus project (for the I-30 Canyon, Mixmaster and Lower Stemmons Corridor) and the Trinity Parkway reliever route project.
- A future, second Light Rail Transit (LRT) to accommodate developing needs and increasing passenger demand.
- The operation of the street system is currently geared to moving vehicular traffic through the CBD in the most efficient manner, utilizing one-way flow that increases street capacity, by providing effective signal progression and prohibiting parking during peak commuting

periods. The conversion of some existing one-way streets to two-way can offer increased circulation opportunities in Downtown and a reduction in overall circulatory travel.

The study team catalogued the rich history of planning studies for Downtown and presented the best recent ideas to the Technical and Steering Committees. The "Context for Achieving Vibrancy in Downtown Dallas" observed that, "linking these existing assets from a transportation and beautification standpoint is the first priority of a far-sighted land use strategy...and, there must be a contemporary transportation plan for Downtown...integrating vehicles, light rail, pedestrians and cyclists." "Our vision of Downtown Dallas asserted, "...this transportation planning process is all about activities and people Downtown rather than mere transportation measures of effectiveness."

A list of 53 roadway improvements for the Downtown network was compiled during the public involvement process. The list was screened against the vision and considered for its impact on the following: traffic operations, vehicular circulation, cost, parking, capacity and safety.

Three alternatives for the second DART Light Rail Transit corridor made it to the final steps of the study. Four simulation models were built based on the LRT and roadway improvement alternatives. The study recommends a LRT Corridor defined by Lamar and Field Streets in the north-south direction and Commerce and Young Streets in the east-west direction for consideration during the Alternatives Analysis phase of the DART expansion.

The study recommends a network of roadway classifications: Boulevards, Pedestrianways and Major Thoroughfares. The focus of these "systems" is derived by considering the nature of trips to the various districts in Downtown and the need to help users find their way into, around and out of Downtown. Typical streetscape cross-sections were developed and recommended for each system.

After carefully analyzing the impact of converting some one-way streets to two-way, including reinforcement of the vision, continuity of the street network, vehicle conflicts at intersections, wayfinding, LRT operations and traffic simulation during the peak periods, we identified 15 roadways for conversion.

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**INTRODUCTION**

## PURPOSE OF THE PLAN

The **Dallas Central Business District Streets and Vehicular Circulation Plan** was adopted by the Dallas City Council in April 1971. An update to the Plan was prepared in November 1988, which incorporated all amendments that had been approved by the City Council up to that time.

Since the original plan and the 1988 update, the Dallas Central Business District (CBD) has changed dramatically. With the many changes, the vision for how the CBD is used and the resulting transportation needs have evolved. This Comprehensive Transportation Plan is intended to develop a synthesis of CBD visions and provide a complementary transportation plan in order to encourage and support the vibrant mix of uses and overall vitality of Downtown Dallas. The plan addresses current issues related to street operations, transit operations, including analysis of a second Light Rail Transit corridor, and other public needs.

The evolving vision for the Dallas CBD includes an environment that focuses on pedestrians, transit, bicycles, and automobiles for its workers, residents, and visitors in a manner that balances each mode and its requirements so as to ensure mobility with safety, security, and efficiency for all users of the transportation system. There are many issues and factors contributing to the need for this study and development of the plan. The following are some of these factors and issues:

- Land uses in the Dallas CBD are changing from the traditional office use to a mixed-use environment of office, retail, residential, cultural and recreational under programs that encourage this transition and support development.
- Peripheral highway systems are currently under study, which have the potential to influence traffic patterns into and out of the Dallas CBD. The significant studies include the Pegasus project (for the I-30 Canyon Mixmaster and Lower Stemmons Corridor) and the Trinity Parkway reliever route project.
- A future, second Light Rail Transit Corridor through the CBD is planned to accommodate developing needs and increasing passenger demand.
- Loading will significantly influence the transportation system in addition to modifications to bus and para-transit routes.
- The operation of the street system is currently geared toward moving vehicular traffic through the CBD in the most efficient manner, utilizing one-way streets that increase their capacity, by providing effective signal progression and prohibiting parking during typical peak commuter hours. The possible conversion of some existing one-way streets to two-way can offer improved circulation opportunities within the Dallas CBD. The relaxation of no-parking regulations during the peak hours has the potential to benefit retail and residential uses.

## A HISTORY OF DOWNTOWN DALLAS TRANSPORTATION STUDIES

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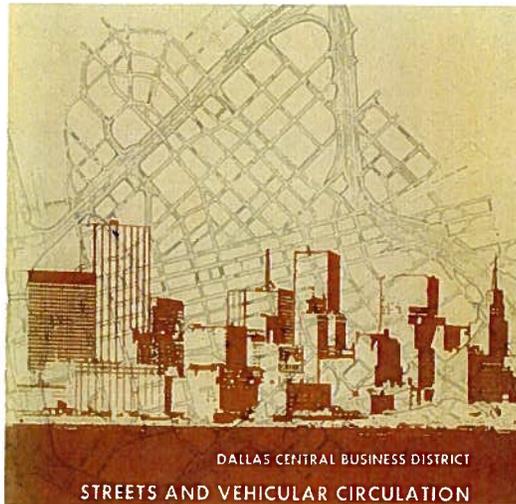


The study team catalogued the rich history of planning studies for Downtown and presented the best recent ideas to the Technical and Steering Committees. Revitalization of Downtown, pedestrianism, promotion of transit usage (circulators, streetcars, LRT, et al), ring roads (precursor of the boulevard concept) and green space have been recurring themes of the major studies. The 1969 study, Dallas Central Business District, was prepared by planning and traffic consultants Ponte-Travers, Associates. It provided a fresh and thorough evaluation of ways in which the heart of the city could be strengthened and fortified to meet the pressures of future growth. Topics addressed in the study include:

- An inner boulevard ring
- Grade separated pedestrian walkways
- Additional parks
- An underground terminal system for truck and service vehicles
- Peripheral intercept parking with shuttles
- A regional rail transit system
- The Main Street bus transit way
- An Elm Street subway

In 1971, the City of Dallas Department of Planning and Urban Development presented two studies to the City Plan Commission. **Dallas Central Business District, Streets and Vehicular Circulation** was a guide plan for the development of streets including a simplified and improved street network and a vehicular circulation plan.

Recommendations made in the study included the closure of many minor streets, alterations to the directional flow of traffic through Downtown, and realignment, straightening, and widening of streets. **Dallas Central Business District, Boulevards and Green Spaces** was a guide plan for the development of central area boulevards and green spaces including a system of major parks linked by landscaped boulevards.



October 1986

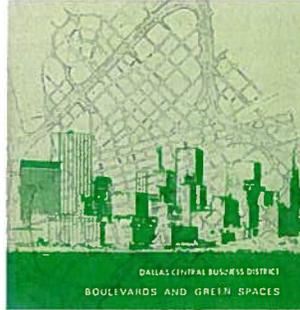


Ponte-Travers Associates

**General planning overview of Downtown Dallas with eight focus areas:**

- DART and Downtown Dallas (affirms DART two corridor Downtown system as essential to CBD vitality)
- Thanksgiving Square truck terminal
- Truck deliveries Downtown
- Sidewalks and walkways
- Streets and traffic
- Surface transit
- Green spaces Downtown
- Housing and retail

April 19, 1971



City of Dallas, Department of Planning & Urban Development

**Recommended landscaped areas at several scales to meet a variety of needs:**

- Freeway green spaces creating a greenbelt around the CBD
- Major parks for leisure enjoyment, strolling or relaxation
- Portal parks to enhance points of entry and departure
- Tree-lined boulevards to create a pattern of dignity and continuity
- Mini parks to add pleasing variety to the urban scene
- Spot landscaping for accent, beauty and interest

1992

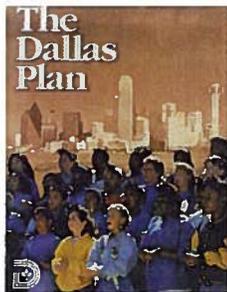


James Pratt with the Dallas Institute of Humanities & Culture

**A handbook for long term civic thinking which recommends:**

- Strategies to maintain Downtown vitality
- Developing linkages to the Trinity River
- Utilizing existing open spaces and developing new ones

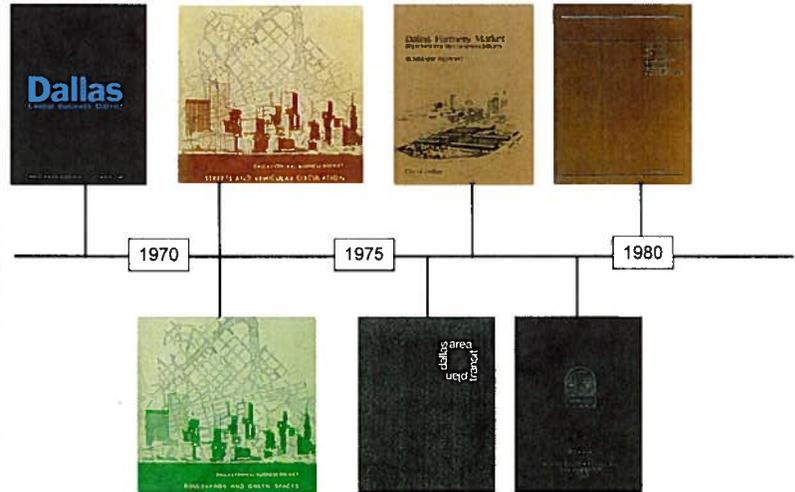
December 14, 1994



Dallas City Plan, Inc.

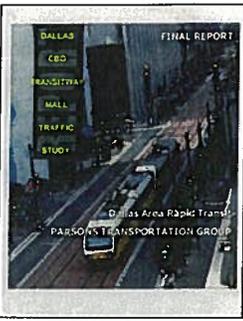
**Center City Concept:**

- Downtown plus surrounding neighborhoods
- A place to work, live, play and raise children
- A destination that includes the finest in education, culture, entertainment, sports and recreation
- Travel, with or without an automobile, is convenient and efficient



Sequential timeline of predecessor studies

June 21, 2000

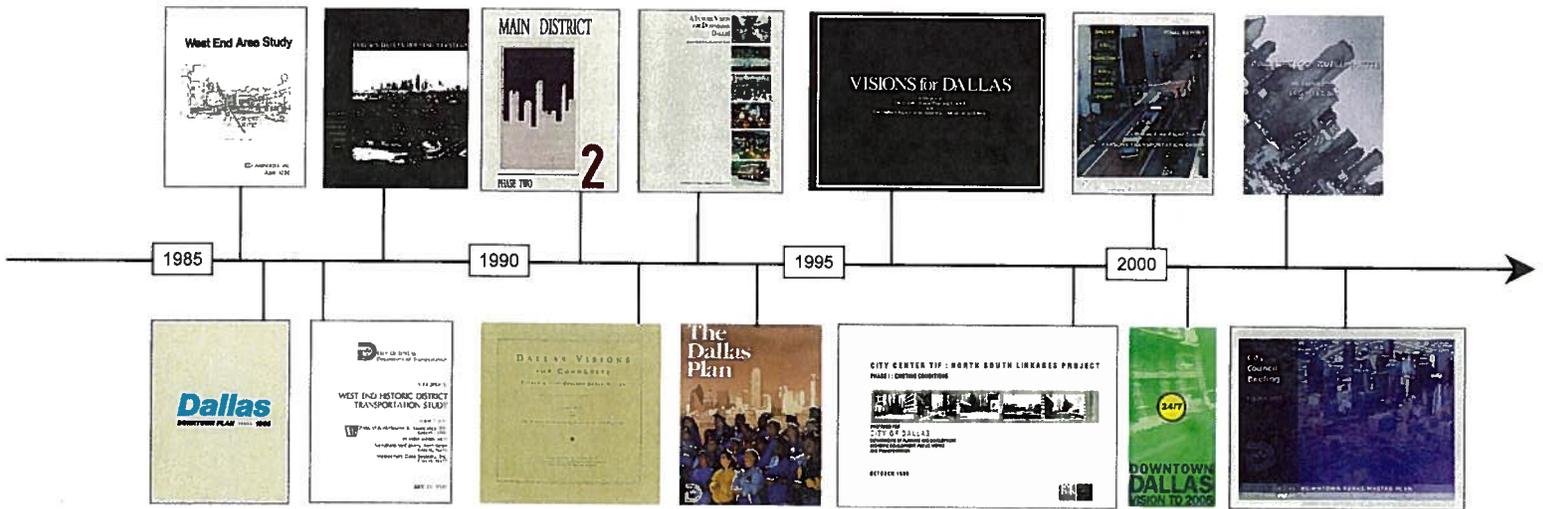


Parsons Transportation Group Inc.

Recommended preemption of LRT signals to mitigate the impacts of 2.5-minute headways

Many additional studies have been conducted over the years, some with broad scopes for the CBD and others with more specific focus areas. The **Dallas Landmark West End District** study provided by Turner, Collie & Braden and The SWA Group in 1979 focused on near-term capital improvements and alternative long term plans to develop the West End Historic District. Studies by Corgan Associates Architects in 1991 and the Economics Research Association in 1997 focused on the strategies for redeveloping and enhancing the Main Street retail district. In 2000, the Central Dallas Association presented the document **24/7 Downtown Dallas Vision to 2005** which provided strategies to promote a 24-hour/7-day vibrant Downtown such as converting under-utilized buildings into residential space, opening a Downtown grocery store, constructing a 1,000-room convention hotel,

promoting increased pedestrian linkages and wayfinding signage, and identifying the best placement for the second DART alignment through the CBD. A 2003 document, **Dallas Central Business District Wayfinding and Signage Program**, prepared by Hillier Architecture, spelled out wayfinding principles and recommended that the Pegasus image be used as the unique graphic design moniker for Dallas. Also in 2003, Carter & Burgess presented a study, **Dallas Downtown Parks Master Plan**, in which they divided Downtown Dallas into districts and park opportunity zones. The study also considered specific potential park sites and established economic, land use, and aesthetic criteria for judging site suitability. In 2003, DKS Associates conducted a study for the City of Dallas that examined the operations of the LRT System and the Downtown traffic signal system.



## CONTEXT FOR ACHIEVING VIBRANCY IN DOWNTOWN DALLAS

Downtown Dallas is the single most important financial asset of the City of Dallas, and there is great unrealized potential inside the Downtown freeway loop for economic development initiatives and public sector investments that can yield above-average returns to our citizens in the form of increased sales and property tax revenues. Realizing this potential is pivotal in ensuring the City's ability to grow.

A forward-looking strategy for Downtown focused on enhancing the City's revenues can dramatically increase vibrancy and improve the perception of Dallas locally, nationally and globally. Combined with an ambitious but pragmatic physical plan that incorporates specific priorities for land use, transportation, parks, public spaces, and cultural facilities inside the loop, this strategy can result in a wide range of positive economic development choices and public amenities that our citizens deserve.

Dallas citizens want and need a dynamic Downtown. The area inside the freeway loop has benefited primarily from a few high-impact public projects over the past two decades, and private capital has been invested only sporadically. Dallas must undertake bold projects Downtown in a business-like and orderly manner. To facilitate these projects, the various Downtown



Figure 2: Pegasus Plaza

constituencies must speak with one voice, and have the collective will -- in both the public and private sectors -- to make necessary investments.

The many stakeholders Downtown, including the emerging residential population, have the same needs and concerns as other residents throughout our City. An ambitious plan for Downtown Dallas touches an exceptionally wide range of interested persons, from apartment renters to homeowners; from shopkeepers to large retailers; from commercial/corporate property owners to one of the largest public sector constituencies in Texas; from visitors to workers who make up the largest concentration of employment in the City of Dallas.

There must be an investment/return relationship to the public sector's investments inside the freeway loop. Disciplined investments will produce higher tax revenues associated with stepped-up activity Downtown, including commercial, retail, support services, entertainment spending and convention business. These investments increase the likelihood of vibrancy comparable to Dallas' competitor cities, and potentially lessen the tax burden on other parts of Dallas. These investments also heavily

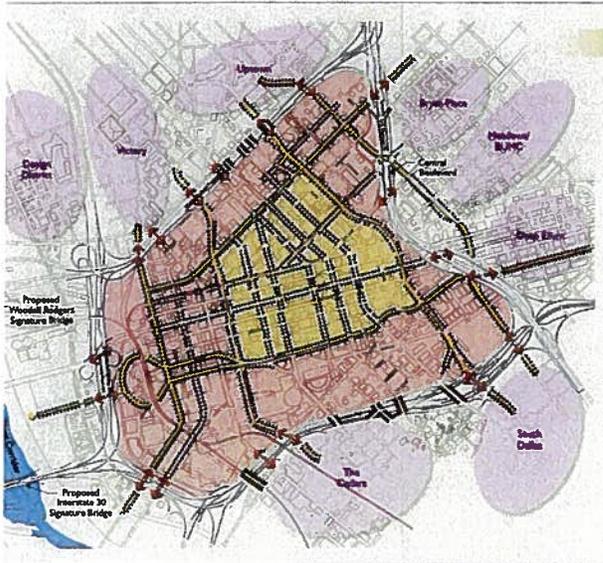


Figure 1: Inside the Loop Committee 2003 Proposed Thoroughfare Plan

impact the ability of commercial property owners Downtown to retain existing major tenants and attract new ones. It is a truism that smart investments create growth, and growth in turn attracts additional investment capital.

There are many notable assets inside the loop presently. Linking these existing assets both from a transportation and beautification standpoint is the first priority of a far-sighted land use strategy that fully integrates Downtown with planning/investment initiatives in the districts surrounding Downtown. There must be a *significant* increase in the number of important parks and public spaces Downtown for the benefit of residents, Dallas

citizens generally, and visitors. Adequate, yet attractive and discreet, parking must support Downtown's commercial infrastructure and public events. And, there must be a contemporary transportation plan for Downtown that incorporates the best thinking for integrating vehicles, light rail, pedestrians and cyclists. It is critical that major thoroughfare enhancements and light rail routes be decided now. For Downtown Dallas, time is truly of the essence. Envious choices abound if Downtown's stakeholders have the will to make them.

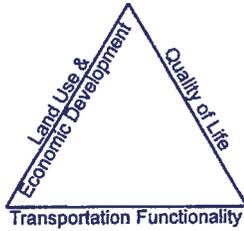
"Linking these existing assets (in the CBD) from a transportation and beautification standpoint is the first priority of a far-sighted land use strategy...and, there must be a contemporary transportation plan for Downtown...integrating vehicles, light rail, pedestrians and cyclists."

Excerpt from *Context for Achieving Vibrancy in Downtown Dallas*

# OUR VISION OF DOWNTOWN DALLAS

Downtown Dallas may be too large, too complex, and too important to be easily defined by a simple vision statement. However, this transportation planning process is all about **activities** and **people** Downtown rather than mere transportation measures of effectiveness. The best way to communicate the focus on activities and people is to describe a Downtown Dallas Vision in terms of three inter-related components. The three elements of the Downtown Dallas Vision are:

- Functionality of the Transportation System
- Land Use and Economic Development
- Quality of Life



## TRANSPORTATION FUNCTIONALITY

### Transportation Functionality

- Transit
- Traffic
- Circulation
- Parking
- Goods Movement

None of it matters if it doesn't work well. Functional components often have standards that recommend or even dictate minimum

standards or levels of service. These standards or guidelines are often based on safety, which is paramount in the consideration of public facilities (and this vision).

It is expected that the application of standards for each functional element often places them in conflict with each other. When this occurs, resolution should be in favor of **safety** and **people**, not vehicles, buildings or dimensions.

## Transit

The success of the DART Light Rail Starter System and subsequent extensions has exceeded all expectations. Increased transit usage to, from, within, and through the Dallas CBD has helped reduce the number of single occupant vehicles on the roads, reduce congestion, improve air quality, and generally speed up the travel experience of Downtown workers, residents, and visitors. Future expansions of the LRT system are necessary, and the interface between the expansions and the CBD transportation system should be as **seamless** as possible to encourage continued use and continued growth of transit. In order to accomplish this, accommodating bus routes to and from Downtown, and a circulator system to complement the radial bus routes, must be considered. Optimizing the use of two-bus transfer centers needs to be incorporated into the comprehensive transportation plan for the Dallas CBD.



Figure 3: West End DART Station, looking east on Pacific

### *Traffic*

Since its invention, the automobile has always been, and will continue to be, a significant part of our transportation system. The infrastructure that supports single occupant vehicles needs to be updated and maintained in a way that addresses the continued use of all forms of transportation. Signal systems and Intelligent Transportation System (ITS) elements will be used to maximize capacity of the roadway network and provide for the safety of all users of the transportation system. While the emphasis on moving traffic *through* the CBD has decreased in recent years, it is still of great importance to serve traffic with *origins* or *destinations* in the CBD.

### *Circulation*

The movement of people and vehicles among Downtown attractions and destinations is accomplished through an integrated circulation system. Linkages have always been a key element of the Downtown circulation system. These linkages should be established between districts within the CBD, between the CBD and adjacent neighborhoods (e.g. Deep Ellum and Uptown), and between the CBD and non-adjacent neighborhoods (e.g. Fair Park and Gateway Park). These linkages will support all modes of transportation between the districts and neighborhoods. The efficiency of this system may be enhanced by establishing and enhancing linkages, simplifying interfaces between modes, and having a strong and simple way-finding system.

### *Parking*

Parking facilities are as integral to a CBD as the cars that use them. Redevelopment of the Dallas CBD will likely replace many of the surface lots with more productive uses. This, in turn, increases the need to provide parking in structures or remote lots. The efficiency of the parking facilities is improving with the incorporation of the Pegasus® system. Incorporation of this technology into existing and new parking facilities should continue to be encouraged. Integration of this system with the North Texas Tollway Authority's (NTTA) Tolltag® system will yield further efficiencies.

### *Goods Movement*

As the diversity of development in the CBD increases, so does the need to provide for deliveries to these developments. The goods movement system - routes, docks, and circulation areas - need to operate with minimal interference to pedestrians and activities. This goal is accomplished through physical and temporal separation of goods movement activities from other activities.

## LAND USE AND ECONOMIC DEVELOPMENT

### Land Use and Economic Development

- Living in Downtown
- Working in Downtown
- Shopping in Downtown
- Learning in Downtown
- Culture, Entertainment and Recreation in Downtown

Downtown Dallas must continue to support a variety of activities in which people live, work, shop, learn, and play.

### *Living in Downtown*

Downtown and near Downtown has seen a

resurgence of residential development. This favorable trend should be nurtured and celebrated. Other land uses and activities that serve people who live Downtown *must* be encouraged and supported. These include retail stores for both regional and neighborhood-oriented shopping. People who live Downtown may choose an automobile-independent lifestyle. Shopping activities should be within walking and transit distance.

Housing in Downtown should serve a population that is as diverse as the city itself. The advantages of a Downtown life style will be available to all.

### *Working in Downtown*

As a center of commerce, culture, and government, Downtown continues to be the greatest source of employment in the region. The enterprises that operate Downtown and the people who work Downtown are supported with convenience and access to necessities.

### ***Shopping in Downtown***

Retail in Downtown is necessary for the convenience and vitality of the people and activities located there. A resurgence of shopping opportunities in Downtown is essential to the realization of the 21st Century Vision for Downtown Dallas. The perseverance of retail enterprises that have remained or recently opened in Downtown should be noted and rewarded with support from all citizens, businesses, and institutions. The value of Neiman Marcus to the City of Dallas and especially Downtown is inestimable.

The location of new shopping opportunities should be such that they easily serve markets that lie beyond those who share the building in which it is located. The vitality of commerce in Downtown should be visible and accessible from the street.



Figure 4: Downtown Street Cafes

### ***Learning in Downtown***

Educational facilities continue to be integral to the Downtown experience, contributing significantly to after-hours activities. The El Centro College and University of North Texas Campuses; the Universities Center of Dallas; and Dallas Independent School District are all important CBD assets that rely on students who live off-campus for survival.

### ***Culture, Entertainment, and Recreation in Downtown***

Each day and night, Downtown Dallas is visited by thousands of people who come to enjoy the sights and sounds, history and culture, food and fun, and entertainment and hospitality that are unique to Big D. The Sixth Floor Museum and Dealey Plaza, the West End, the Arts District, Farmers Market, the Convention Center, Union Station, Founders Plaza, the Library and City Hall,

as well as fine hotels are each important destinations for visitors. But it is not only places, but also events that attract these people.

They bring vitality that complements the experience of the workers and residents whose routines are Downtown. The services that seek the visiting consumers are available to all. The economy driven by the discretionary spending of

visitors is a highly multiplied benefit that reduces the local tax burden.

To the visitor, Downtown is not confined to The Loop. Victory, Uptown, Fair Park, the Zoo, and Deep Ellum are all center City attractions that are linked to and complement the Downtown. Soon Trinity Park will be an added amenity that shares its limelight with Downtown.

The simple fact that these attractions make Dallas a destination to visitors worldwide should be expanded, enhanced, and promoted. And, it can be done in a manner that benefits all other essential purposes and experiences envisioned for Downtown.

"...this transportation planning process is all about activities and people Downtown rather than mere transportation measures of effectiveness."

Excerpt from *Our Vision of Downtown Dallas*

## QUALITY OF LIFE

It may not be possible to define "quality of life" in a brief vision statement.

The term integrates people enjoying the things they want to do, being safe and comfortable while doing them, and ultimately feeling glad they can enjoy their pursuits in Dallas. So, quality of life is about people and activities more than buildings and places, focusing on pedestrians, occupants, shoppers, workers, and visitors. The 21st Century Vision for Downtown focuses on enhancing the experience of people Downtown.

### Quality of Life

- Pedestrians
- Safety and Security
- Attractiveness

### *Pedestrians*

After people arrive Downtown, they all become pedestrians. Many of the advantages of Downtown relate to the proximity of activities within walking distance.

The pedestrian experience, including that of mobility challenged citizens, will be enhanced. A sidewalk improvement program will be developed that identifies and address the greatest needs including improvements to meet accessibility standards. Signs, street furniture, weather protection, pedestrian lighting, defined routes, and other elements will be incorporated in site, sidewalk, and street improvements.

When pedestrians and vehicles interact at intersections and on sidewalks and driveways, the considerations of the pedestrian must be given priority, in balance with overall safety.

### *Safety and Security*

Public safety is given the highest priority in all aspects of the Downtown experience. Awareness of safety and opportunities to encourage, enforce, and provide it is an overarching principle that touches all aspects of Downtown facilities and life.

### *Attractiveness*

Downtown Dallas is graced with an identifiable skyline and numerous examples of exceptional art and architecture. The epitome of the built environment, its opportunities for natural beauty must be expanded, protected, and treasured. Parks and open spaces will be expanded and improved.

Because Downtown is so intensely utilized, maintenance will be given more priority to correct and avoid the worn out appearance that is obvious in many places. An attractive, clean Downtown is the responsibility of individuals, businesses, and the public sector. Repair, reconstruction, renovation, clean up and increased maintenance must become a crusade.



Figure 5: Artwork in Downtown ("Venture", outside the Bank of America Tower)

SECTION II

**THE TRANSPORTATION PLAN FOR  
DOWNTOWN DALLAS**

## STUDY PARTICIPANTS

Public involvement is a vital part of the Comprehensive Transportation Plan for the Dallas Central Business District. Below is a description of each public involvement activity.

### **COMMITTEES**

There are three committees supporting the development of the Comprehensive Transportation Plan for the Dallas Central Business District. The proposed plan elements were first reviewed by the Technical Committee, then discussed by the Steering Committee, and subsequently reviewed and commented on by the Stakeholders Committee.

The Technical Committee consisted of leaders and key staff from each funding agency (City of Dallas, DART, Dallas County and NCTCOG), as well as from other key agencies (TxDOT and NTTA). The purpose of the Technical Committee was to review technical information prior to presentation to the Steering Committee, Stakeholder Committee, and the general public. The Technical Committee held 15 meetings.

The Steering Committee consists of elected, appointed, and staff officials from each of the funding agencies and the Downtown stakeholder community. The purpose of the Steering Committee is to review and provide input on issues and proposals prior to discussion with the Stakeholder Committee. The Steering Committee held 13 meetings over the course of the study.

The Stakeholder Committee consists of individuals representing Downtown commercial and residential property owners and major Downtown tenants. It also includes actively involved individuals whose principal mode of travel includes bicycle, transit and walking. The purpose of the Stakeholder Committee is to serve as a prime source of information related to transportation needs and vision for the future.

In addition to the information received in the three stakeholder meetings, the consulting team conducted individual stakeholder interviews to acquire data, information, and perceptions. A stakeholder interview protocol was used to promote uniform information collection.

### **PUBLIC MEETINGS**

Two public meetings were arranged to present the Comprehensive Transportation Plan for the Dallas Central Business District and request general public comments.

### **PRESENTATIONS**

In addition to the process outlined above, presentations on the study results were made to the governing bodies of each participating agency. Briefings were presented as follows:

- Dallas County Commissioners Court – March 22, 2005
- Dallas Area Rapid Transit Planning Committee – March 22, 2005
- Dallas City Council Transportation & Telecommunications Committee – March 28, 2005
- City Plan Commission (CPC) Transportation Committee – May 5, 2005
- CPC Public Briefing – May 12, 2005
- Dallas City Council Briefing – May 18, 2005
- City Council (Public Hearing & Approval) – June 8, 2005

## ISSUES

We compiled a list of roadway improvements for the Dallas CBD network based on discussions with the Technical, Steering, and Stakeholders Committees. The list then went through a screening process which tested each listed improvement against our study vision of Downtown Dallas and considered its impact on traffic operations, ease of use, circulation, cost, parking, capacity, and safety. The screening process for the roadway improvements and final recommendations are summarized in the Appendix. Street operations, transit operations and other public needs were taken into consideration throughout the various steps of the study and are specifically addressed where appropriate.

## **STREET OPERATIONS**

### *Two-way versus One-way*

Analysis of retail development trends in major urban central business districts suggest that two-way streets and on-street parking stimulate activity while creating the perception of "ease of access". When a potential shopper unfamiliar with the Downtown street network tries to find a specific retail or restaurant destination, data shows that being able to circle the block looking for the address and a parking space feed the perception that the destination is

easier to find. With these factors in mind, consideration was given to converting 19 specific sections of streets in the CBD from one-way to two-way. In the city center area, we looked at converting **Harwood Street** and **Olive Street** between **Pacific** and **Ross** to two-way (Figure 6). Both streets are currently four-lanes wide with curbside parking on either side, and each carry a high level of peak period traffic into the CBD core. There is an existing LRT station on Pacific between Harwood and St. Paul, which is anticipated to be lengthened to accommodate longer train sets in the future. During research we determined that one-lane on Harwood and one-lane on Olive need to be dedicated to extending the platform for the LRT station.



Figure 6: Harwood at Federal, looking southeast

Currently, **Pearl Street** is one-way southbound between **Central Expressway** and **Marilla Street** (Figure 7). We analyzed converting Pearl to two-way along this section in coordination with converting **Central Expressway** to two-way between Pearl and Commerce Street. From the Farmers Market District, we considered converting **Canton Street** between **Akard Street** and **Harwood Street**, and **Cadiz Street** between **IH 30** and **Central Expressway** from one-way to two-way based on the future configuration of the IH 30 ramps when the Pegasus project is completed.

**San Jacinto Street** between **Griffin Street** and **Ross Avenue** is an important Downtown exit route and carries high volumes primarily during the PM peak period. In previous studies it was envisioned that San Jacinto would provide an eastbound one-way pair with a future one-way conversion of Ross Avenue. Ross Avenue serves an important function as a boulevard and continues to represent an important link in the boulevard system and therefore this coupling of two one-way pairs, San Jacinto and Ross, is not likely in the future.

In order to provide recirculation within the Main Street core district, consideration was given to converting **Akard Street**, **Field Street** (Figure 8), and **Ervay Street** (Figure 9) between **Commerce** and **Elm** each to two-way. If someone wanted to recirculate around the blocks in the core of the Main Street District where existing and future retail and restaurants are being encouraged, then each of these streets would provide an opportunity to do that



Figure 7: Pearl at Elm, looking south

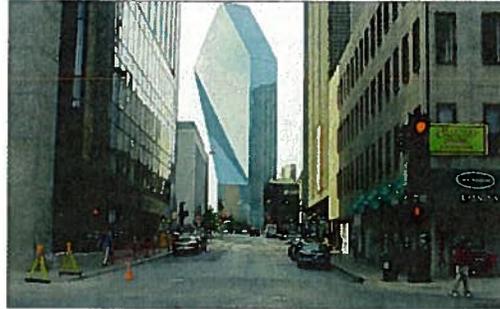


Figure 8: Field at Main, looking north



Figure 9: Ervay at Main, looking north



Figure 10: Commerce at Ervay, looking west



Figure 11: Akard at Main, looking north



Figure 12: Elm between Akard & Ervay, looking east

more conveniently than continuing west to Griffin Street or east to Harwood Street to complete the loop. We were asked to look at converting Akard Street and Ervay Street between Elm and Ross to two-way. However, we determined that complex intersections and a subsequent complication of turning movements at Pacific Avenue and other crossing streets, including Ross Avenue, did not support analyzing these recommendations in the model.

When the Pegasus project is fully developed, it will be desirable for Ervay Street between Young Street and IH 30 to be converted from one-way to two-way. This recommendation is included in the base model.

An analysis of converting a portion of Elm Street and Commerce Street between Griffin Street and St. Paul Street was undertaken at the beginning of this study to address the perception that two-way streets in front of retail destinations are preferable to one-way streets. An analysis of needed capacity on Elm Street and Commerce Street indicated that a lane was needed for parking, another lane for buses, and a lane was desirable for pedestrian enhancements, including wider sidewalks, such that the remaining lanes were not adequate to be converted to two-way and retain enough vehicle capacity to support the roadway network.

Requests were made to convert Houston Street from one-way to two-way between Young Street and Elm Street. This is consistent with the recommended boulevard system as well as the desire to address circulation plans near the Kennedy Memorial and Schoolbook Depository buildings.

We were asked to look at converting Wood Street and Jackson Street between Griffin Street and Central Expressway to two-way but determined there were a number of conflicts with adjacent property access and further complications if a future LRT alignment was recommended for either street.

In order to improve linkage between the CBD and Baylor Medical Center complex, it was suggested that Live Oak Street between Harwood Street and IH 345 (Figure 15) be converted to two-way. A review of the traffic flow on Live Oak indicated that although there are some potential capacity issues, this conversion makes sense and is included in the base case.



Figure 13: Wood Street (west of Ervay) looking east



Figure 14: Jackson Street (west of Ervay) looking west



Figure 15: Live Oak at Pearl, looking east at IH 345

### *Ring Road Systems*

As far back as the Ponte-Travers report in 1969, the concept of a boulevard system connecting various developing districts in the CBD and providing a basis for wayfinding was considered. This study advances the concept of a ring road network made up of roads with cross sections communicating a boulevard profile. Roads considered for the boulevard system and approved by the Technical and Steering Committees include from west to east: **Houston Street, Griffin Street, Pearl Street, Central Expressway and Routh/Good Latimer**. Ross Avenue forms the boundary between the Arts District and City Center District and comprises the northern most leg of the Boulevard System. Wood Street coupled with Young Street on the west end of Downtown, Young adjacent to the Convention Center and City Hall and Canton Street in the Farmers Market District complete the Boulevard System in the south.



Figure 16: San Jacinto at Pearl, looking southeast



Figure 17: Main Street between Houston & Market, looking east

### *Vehicle/Rail Transit Interface*

The existing light rail network interfaces with the local street network primarily along the **Pacific/Bryan Street** corridor. In addition, DART constructed transit transfer centers on the east side and west side of Downtown near the transit mall. This study began with 13 potential at-grade alignments through the CBD for consideration of a second light rail corridor. These 13 corridors, developed during a comprehensive planning charrette and subsequent planning exercise by DART, were narrowed down to three alignments that represented corridors for the purposes of our traffic modeling exercise. These three alternative alignments are described and studied in more detail later in this study.

### *Traffic Calming Techniques*

We considered a number of traffic operation enhancements (frequently referred to as "traffic calming" techniques), which are designed to make a driver slow down and be more aware of their immediate surroundings. In residential neighborhoods it is common to use road humps, rumble strips, two-way and four-way stop intersections, dead end streets and closed streets to make the travel pattern more restrictive, reducing cut-through traffic. These types of traffic calming techniques are not necessarily appropriate in the CBD. However, other techniques can accomplish

some of these same benefits without creating too much of a disincentive to come to the CBD and utilize the roadway network. These include making the roadways narrower by increasing the width of the sidewalks, adding parallel on-street parking where it does not currently exist, and in some cases converting one-way streets to two-way. All of these techniques intended to restrict traffic flow or "calm" the traffic movements are considered in this study.

### *Street Closures/Abandonments*

Our study considers six proposed street closures. The closure of the segments of **Jackson Street** between **Market Street** and **Austin Street** and between **Austin Street** and **Lamar Street** were considered. It was determined in both cases that Jackson currently provides necessary access to the adjacent property owners. It was suggested that the segments of **Main Street** between **Lamar** and **Griffin** and between **Houston** and **Market** might be candidates for closure. However, we determined that closure of Main Street in each of these areas would have inappropriate negative impact on access to retail in the core of the Main Street District. **San Jacinto Street** between **Griffin** and **Lamar** is immediately adjacent to the DART West Bus Transfer Center and is a candidate for street closure in the future as long as a route for buses to recirculate is maintained. Three streets in the Farmers Market district - **Canton Street** between **Marilla** and **Harwood**, **Cadiz Street** between **Park** and **Harwood**, and **Cadiz Street** between **Harwood** and **Pearl** - were considered for closure and included in the base traffic model run.

### *Canyon/Mixmaster Reconfiguration*

A major study to improve Interstate 30 and Interstate 35E, also known as "the Canyon" and "Mixmaster", was undertaken by TxDOT in cooperation with the City of Dallas and the CDA. The project, referred to as Pegasus, has resulted in major reconstruction plans for the Canyon and Mixmaster area. The primary features are improved main lane capacity and continuous service roads with fewer interchanges with CBD streets on the south and west sides of Downtown. Recommendations from the Pegasus study (being completed as this study was beginning) were included in the screening process, deliberations, and the

modeling analysis, and are represented in the graphics of this report.

#### ***Traffic/Transit Signal Priority***

We obtained traffic volume and traffic operation input from the City of Dallas and TxDOT in preparing the alternatives analysis and modeling analysis. The City of Dallas was completing a study of the light rail line, existing transit mall, and near term and future traffic operation characteristics. Our study took into consideration the existing and proposed traffic signal priority assumptions adopted by the City and DART. These settings are discussed in more detail in the evaluation discussion and appendix.

#### ***ITS (Intelligent Transportation Systems)***

The City of Dallas has a ring-and-spoke freeway network. TxDOT and the City of Dallas maintain monitoring stations and changeable message signs on the freeway systems and major thoroughfares. This study took into consideration the existing ITS systems as well as those envisioned by the City and TxDOT along the freeway network leading into and out of Downtown Dallas. Wayfinding recommendations developed by the Downtown Improvement District currently being implemented were also incorporated.

### **TRANSIT OPERATIONS**

#### ***Reduction/Relocation of Bus Operations***

Over time, as the light rail network is expanded within the service area, it is anticipated that DART will reduce some of its bus operations in the CBD. In addition, it is anticipated that DART will relocate some of the existing routes from Main Street to Elm Street and Commerce Street as well as some other possible streets in the CBD. During this study, we coordinated with DART and its bus operations group to incorporate as many of these bus operation changes as possible. In addition, the model reveals conflicts and congestion of automobiles and buses at various intersections and further adjustments were incorporated into the analysis with conclusions to address these issues.

#### ***Rail/Bus Circulators***

Our study considers the recommendations of "Dallas Street Car Inc." and several circulator systems they are promoting in Downtown Dallas. We met with representatives from Dallas Street Car Inc., the McKinney Avenue Trolley Association, and DART staff to determine the impact of circulator systems on the model and on our recommended roadway network. Working with this stakeholder group, we determined that trolley or streetcar systems would be street running, operate like a bus, and observe standard traffic control devices. The result of these considerations is reflected in the analysis and conclusions.

#### ***Appropriate Use of Bus Transfer Centers***

DART maintains two existing bus transfer centers in the CBD, the **East Transfer Center**, bounded by Pearl Expressway, Pacific Avenue, Olive Street and Live Oak Street, and the **West Transfer Center**, bounded by Griffin Street, Pacific Avenue, Lamar Street and San Jacinto Street. The East Transfer Center serves 17 bus routes and approximately 500 buses over the course of a day. The West Transfer Center serves 25 bus routes and approximately 600 buses over the course of a day. The existing routes and buses using each transfer center were factored into the model for Downtown and the analysis and conclusions are included in this study in subsequent sections and the appendix.

### **OTHER PUBLIC NEEDS**

#### ***Pedestrian Enhancements***

Eleven specific pedestrian enhancement projects were considered in this study. Four of these projects included extending and enhancing pedestrian circulation to and from the Arts District along streets that provide direct access between DART LRT stations and the Arts District. These include extending the pedestrian arrival to the Arts District along **St. Paul Street, Harwood Street, Pearl Street and Leonard Street**. Each of the recommended enhancements was included in the base model run and recommended in



Figure 18: Main Street at Ervay, looking west

this study. Pedestrian improvements including wider sidewalks, trees, street furniture, pavers and other urban design enhancements were implemented along **Main Street** between **Field Street** and **St. Paul Street** (Figure 18). This study considered widening sidewalks at various locations consistent with the recommended pedestrianway system for the remaining blocks in the CBD. Dallas County is undertaking an improvement project to widen sidewalks and improve pedestrian facilities on **Main Street** in the blocks between **Houston Street** and **Market Street**. Currently, Dallas County is narrowing Main Street to 36 feet in width in this area. All the Main Street pedestrian enhancement projects survived the screening process and are included in the alternative model analysis. Our study envisions improving **Marilla Street** with pedestrian enhancements from City Hall and **Ervay Street** to the Farmers Market at the intersection of **Harwood Street**. Dallas County considered widening the sidewalks on **Market Street** and this suggestion was included in the base model run. **Flora Street** provides the primary focus for the Arts District and a major public investment in pedestrian enhancement along Flora has already been undertaken. Our study anticipates further development of Flora, north to Routh Street and beyond in the future, as a pedestrian oriented street. In lieu of making **Elm Street** and **Commerce Street** two-way, the Steering Committee agreed to invest in pedestrian enhancements along these streets, widening sidewalks and narrowing existing lanes.

These two streets with pedestrian enhancements are included in the alternative model analysis. **Akard Street** which has already been improved between **Elm Street** and **Commerce Street** was initially identified as a street for future pedestrian enhancements. However, due to the narrow right-of-way and importance of **Akard** as a pedestrianway, a narrower Akard was not carried into the modeling analysis.

### ***Bicycle Routes***

We interviewed a number of individuals who are active participants in the bicycle user community. There is a strong preference for bicycle routes to be placed on less traveled streets in order to minimize bicycle/vehicle conflicts. Our study team reviewed the existing bicycle route plan (Figure 19) for the CBD and made recommendations reflected in Figure 60.



Figure 19: Existing CBD Bicycle Route

### ***Identified Public Activity Centers***

In developing the CBD districts, recognition of areas in the CBD representing special traffic generators was acknowledged and incorporated into the model. The Dallas Convention Center encompasses a 25-block portion of Downtown, bounded on the east by Akard Street, on the north by Young Street, and on the west and south by IH 35E/ IH 30 or Pegasus. This facility generates tourists and vendors more than 200 days each year and is a major focus of the tourist experience in Downtown Dallas. Reunion Arena and Reunion Tower are visible landmarks and destinations in Downtown Dallas linked by a pedestrian tunnel to the historic Union Station. Together, the Convention Center, Reunion Arena and Reunion Tower represent a major district and destination in Downtown Dallas.

### ***Continuity in Street Naming***

In order to simplify wayfinding in the CBD, we recommend the principal of establishing the most prominent and appropriate name for a route with multiple designations. For instance, this study presents a Central Boulevard and Pearl Street reconstruction project that makes the arrival from the north on Central Expressway consistent. Once implemented, Central will no longer change names to Pearl. We recommend naming the Memorial/Canton route – Memorial Street. Potential candidates for renaming under this principal are Griffin/Field and the Good-Latimer/Routh/Maple Routh Connector Route.

### ***On-Street and Off-Street Parking***

The City of Dallas Zoning Ordinance prescribes an off-street parking requirement of "one parking space for every 2000 square feet of gross floor area to be provided on-site or immediately adjacent to each development". The demand for parking in the CBD supports a ratio with more parking than the code requires. Thus, Downtown has a robust commercial parking inventory in surface and parking structures. In developing the trip attractors and producers that fed into the trip matrix for the Downtown traffic simulation model, existing parking facilities in Downtown were inventoried and included in the analysis. We also considered the effect of on-street parking on existing

capacity of the street system both during morning and afternoon peak periods and during off-peak periods.

### ***On-Street Loading Zones***

The city has permitted on-street loading zones scattered around the CBD, in many cases integrated with on-street parking spaces. On-street loading is not permitted during peak periods and by policy is encouraged outside of normal business hours. The traffic simulation model assumes that on-street loading restrictions are enforced during the peak periods.

### ***Valet Parking Operations***

Our study looked at a consolidated valet parking operation serving the core retail area in the Main District. Many of the alternatives considered regarding one-way to two-way conversion and other street enhancements are part of the valet operation analysis. It was determined during the alternatives analysis process that a majority of these valet operations can be successful without major changes to existing street operations. However, our recommendations do reflect an appreciation for the importance of valet operations to the success of retail and restaurant operations.

### ***Cab Stands***

Taxicabs provide an important service to the economic vitality of the CBD. Taxicabs support the Downtown hotels, convention center, restaurants and local attractions such as the Arts District museums and performance facilities. The majority of cab stands in Downtown are adjacent to major hotels. The current and future operation of taxicab stands will not have a detrimental impact on street operations.

### ***Emergency Vehicle Impact***

Dallas Police Department (DPD) Headquarters was moved from Downtown to the Cedars area. Several DPD facilities remain in Downtown's City Hall, the West End and the Old Municipal Building. Much of the day-to-day policing in Downtown occurs by foot, bicycle or horseback. The Dallas Fire Department maintains two stations inside the freeway loop. Emergency access is critical to the safety of Downtown residences and businesses. Emergency vehicles are not specifically included in the traffic simulation model. However, excessive congestion, bottlenecks and

long vehicle queues identified in the model have a negative impact on emergency vehicle access.

### ***Security Concerns***

The CBD Study Vision Statement emphasizes that a sense of security and safety is essential to the quality of life we strive for Downtown. This study considers a number of design standards that impact security and safety. Personal safety, particularly as it relates to crime, involves issues such as parking, sidewalks, lighting and police presence. The conflict between pedestrians and vehicles occurs in cross-walks and at signalized intersections. The Americans with Disabilities Act (ADA) mandates conversion and/or implementation of pedestrian signals, audible alarms, special ramps and lighted cross-walks. Driveways crossing sidewalks pose a special safety challenge to

minimize visibility and stopping problems. Some locations warrant warning devices.

### ***Sustainable Development Opportunities***

We are aware of the relationship between transit availability, walking distances, pedestrian enhancements, a mix of uses that encourage Downtown activity and occupancy 24 hours a day, seven days each week. The factors that feed into sustainable development and its success are reflected in the Vision Statement in this study, the fresh look at land use and the light rail alternatives analysis. We believe that this study honors and considers the ingredients that are necessary for successful sustainable development in the CBD.

## DISTRICTS

Those persons who "use" Downtown are assisted by the perception of Downtown as a collection of neighborhoods, or districts. Even if it is too big for a pedestrian to traverse, the seven districts that comprise Downtown are each of a scale that invites personal transportation. The districts also help organize Downtown by grouping activities and land uses that benefit from proximity. This transportation plan adopted (with minor adjustments) the district definitions developed in previous studies and programs such as the *Dallas Central Business District Wayfinding and Signage Program*. Our plan adopts the seven districts developed in previous studies.

### ARTS

This area is an "event-based" district with the Museums, the Myerson Symphony Center and the future Winspear Opera Hall and new multiform theater. In addition, it is anticipated to attract additional high-density office and some high-density residential buildings. This combination of uses, along with additional retail, will contribute considerably to the dynamic character of the District.

### CITY CENTER

This area has historically been the focus of corporate high-density office construction and will likely continue to be so. It is well served by DART and the freeway system, reinforcing its position. It may attract some limited residential use along its western edge but is viewed largely as a major corporate office employment center.

### WEST END

This district continues to be a major entertainment center but can also accommodate a significant residential population on previously-owned railway lands bordering Houston Street and on several land parcels near Lamar Street. This provides additional support for retail and restaurants in this area.

### GOVERNMENT

This area includes City, County, and Federal offices. New office use is shown north of City Hall, adjacent to the Downtown retail core. In addition, there is a limited amount of residential use which is attracted to some of the historic buildings in this area.

### MAIN STREET

This area is the historic core of the Downtown, and is continuing to evolve as the focus of retail activities. It will also be strengthened with the addition of more residential units, both in new and historic structures.

### CONVENTION CENTER/REUNION

The Convention Center and Reunion Arena dominate this area. A hotel associated with the Convention Center will likely be constructed in the future.

### FARMERS MARKET

This area provides the greatest opportunity for new housing in Downtown. It also provides a major opportunity for retail, which requires large parcels of land. The Farmers Market provides a focus for this residential neighborhood and new retail development. It is also easily accessible to the regional highway system.



Figure 20: CBD District Map

## A FRESH LOOK AT LAND USE

A Land Use Plan helps identify a likely scenario for land uses in Downtown. This provides critical information for the identification and development of vehicular and pedestrian corridors. These corridors in turn are designed to support adjacent land use and provide ease of circulation.

We developed alternative scenarios of future land use based on review of market absorption, and prepared a recommended Land Use Plan was prepared for use in this study. The following issues were taken into account in preparing the scenarios and resultant plan:

- Size and development potential of individual blocks
- Current ownership patterns
- Existing development and land use
- Estimates of where new residential and offices would likely locate, and where retail should locate
- Proposed locations for future parks

### LAND USE SCENARIOS

Initially, two land use scenarios were prepared—one based on maximum office absorption and one based on maximum residential absorption. These scenarios were based on a likely maximum build-out. Recent absorption figures were then analyzed and it was found that the market for office use has been much lower than that for housing. Based on the absorption information, we developed the recommended Land Use Plan.

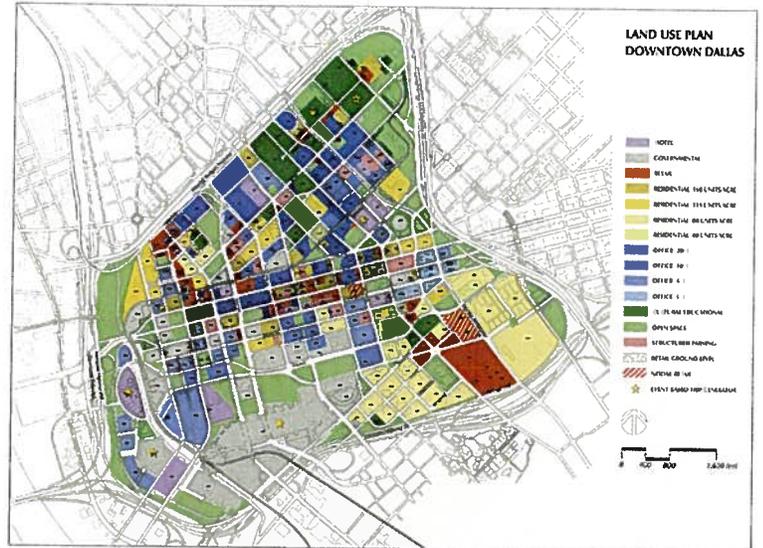


Figure 21: Maximum Office Land Use Scenario

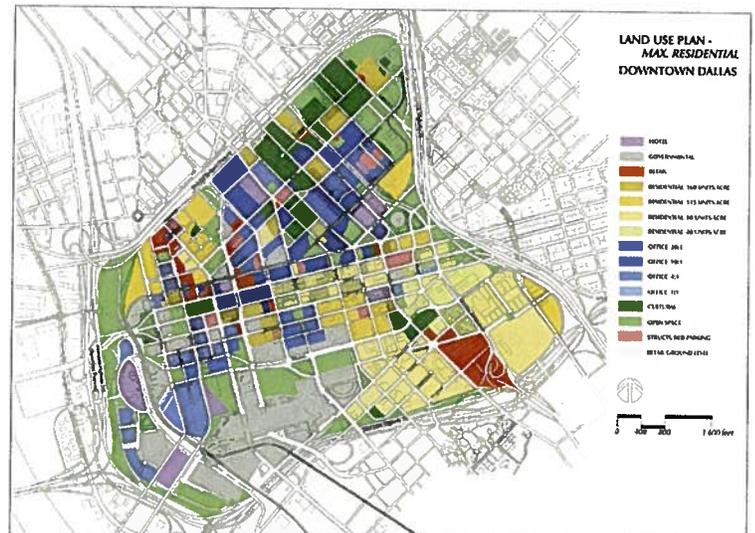


Figure 22: Maximum Residential Land Use Scenario

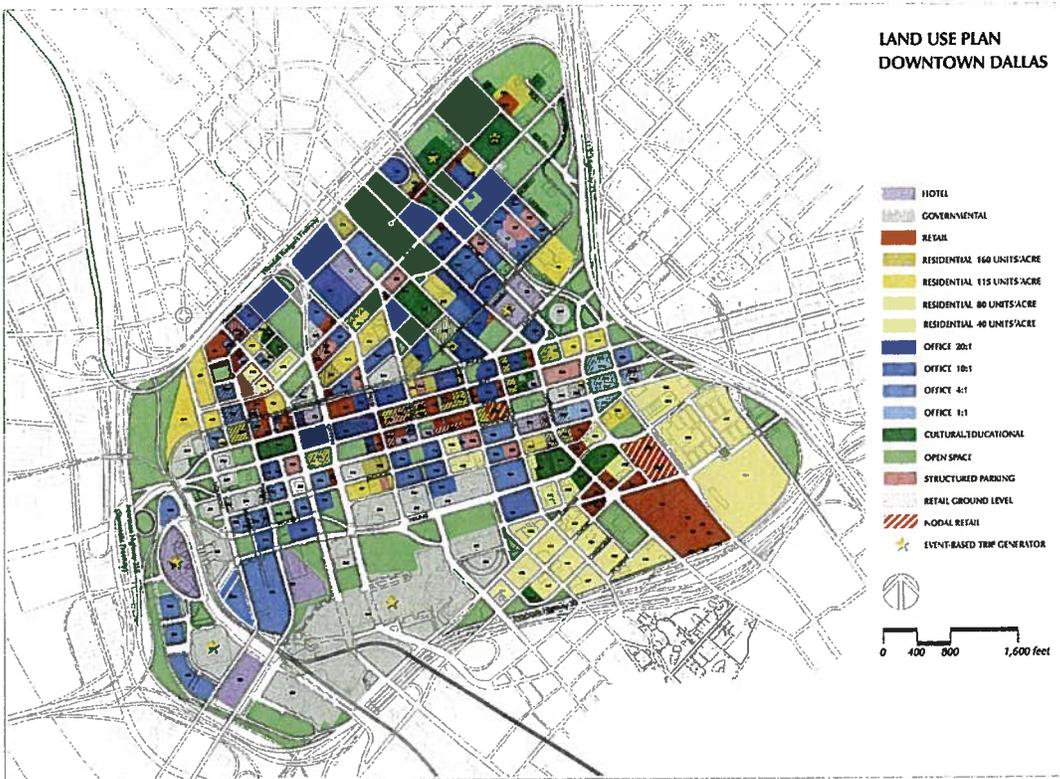


Figure 23: Recommended Land Use Plan

**Framework Plan**

Finally, we prepared a Land Use Framework Plan based on the recommended Land Use Plan. It provides a "ground-level view" of dominant land uses. It indicates office, residential, retail and entertainment districts and pedestrian corridors that connect them. The Land Use Framework Plan provides an organized view of the land uses in the "whole" Downtown. It is a tool that provides a useful perspective beyond the branding implied by the Districts. This plan provides a basis for detailed street planning and design within Downtown.

### *Framework Plan Policies*

The Framework Land Use Plan is an expression of the Vision and Context Statements. The fundamental linkage of land use and transportation invites the recognition of the following land use policies logically expressed in this transportation-planning document:

1. Incentive programs to encourage retail use identified in the Framework Plan.
2. Implement the Parks Plan to encourage residential and pedestrian use in Downtown and increase sustainable value to surrounding properties.
3. Encourage the inclusion of residential use in the Arts District to provide extended activity on evenings and weekends as well as additional support for retail and restaurants.
4. In areas defined as retail in the Land Use Framework Plan:
  - a. Construct new buildings close to the sidewalk and ensure continuous frontage except for possible mid-block access to parking.
  - b. Provide sidewalks with street trees and awnings to provide shade for pedestrians, and pedestrian-level lighting for safety.
  - c. All new buildings should be at least three stories in height adjacent to the sidewalk.
  - d. Utilize historic architectural elements such as pediments, recessed entries, canopies and tri-partite architecture (base, middle and top) in designing new buildings.
  - e. Construct ground floor retail use along at least 60% of the block face.
  - f. Provide windows at grade along all block faces with retail, and windows and balconies overlooking the street on all block faces with residential.
  - g. Avoid blank walls.
  - h. Encourage new structured parking.
  - i. Encourage enrichments such as public art and seasonal color.

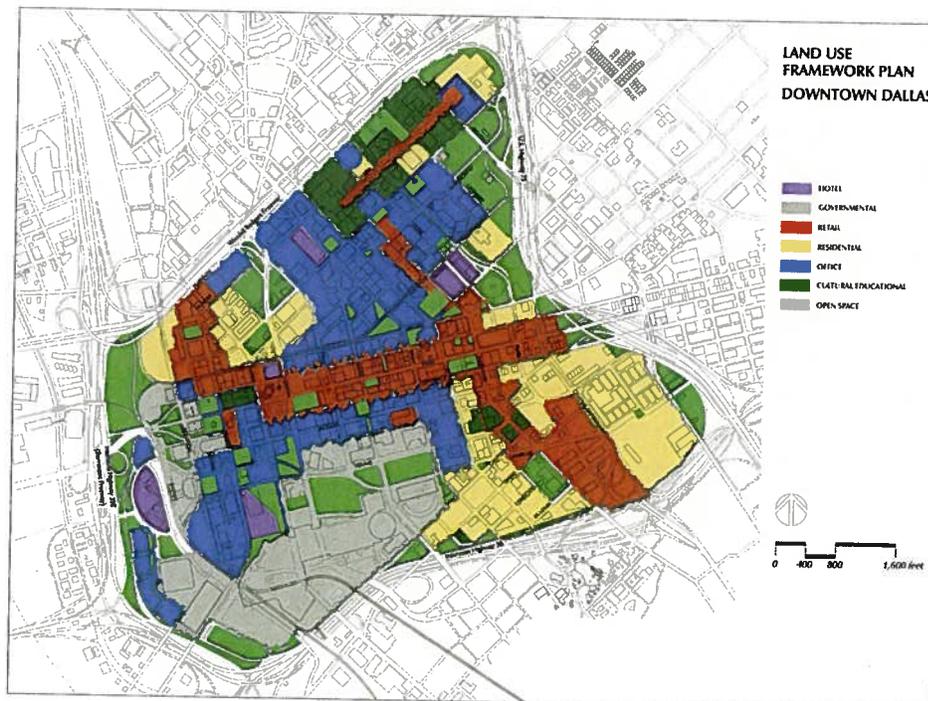


Figure 24: Framework Land Use Plan

## ANALYSIS OF ALTERNATIVES

DART, as part of its 2025 system plan update process, identified fourteen alternative alignments for a second LRT route in Downtown. Beginning with this list, the study team performed a screening process to identify three LRT corridors for further evaluation. The screening yielded the best three corridors, as compared to the vision for Downtown. They offered the most potential for service to existing activity centers and opportunity for support for new transit oriented development in Downtown.

Four simulation models were then built based on the LRT and roadway improvement alternatives to compare their pros and cons. A description of each LRT corridor alternative follows:

### ALTERNATIVE 1:

#### *North Griffin-Jackson Alignment*

In this alternative the second LRT alignment connects north and south ends of the Dallas CBD and provides service to the Government, Farmers Market and West End districts. This LRT alignment enters the CBD from the north through North Griffin Street and then turns on Griffin Street, where it will run in the center of the roadway, reducing street capacity to one lane in each direction. This alternative has an at-grade rail/rail crossing with the Pacific Transit Mall at the intersection of Griffin Street and Pacific Avenue. This alignment turns east on Jackson Street until it switches to Canton Street just east of Pearl. The alignment converts Jackson Street to a transit mall with access to local properties at a few locations. The alignment leaves Canton to run into Good Latimer Expressway until it intersects the southeast alignment.

NOTE: This LRT alignment was analyzed both with the existing roadway system and the roadway improvement alternative.

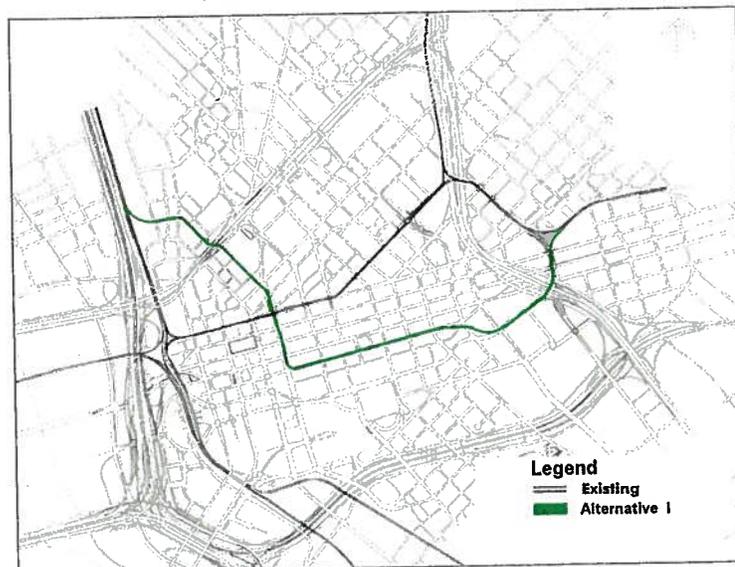


Figure 25: Alternative 1 – North Griffin – Jackson Alignment

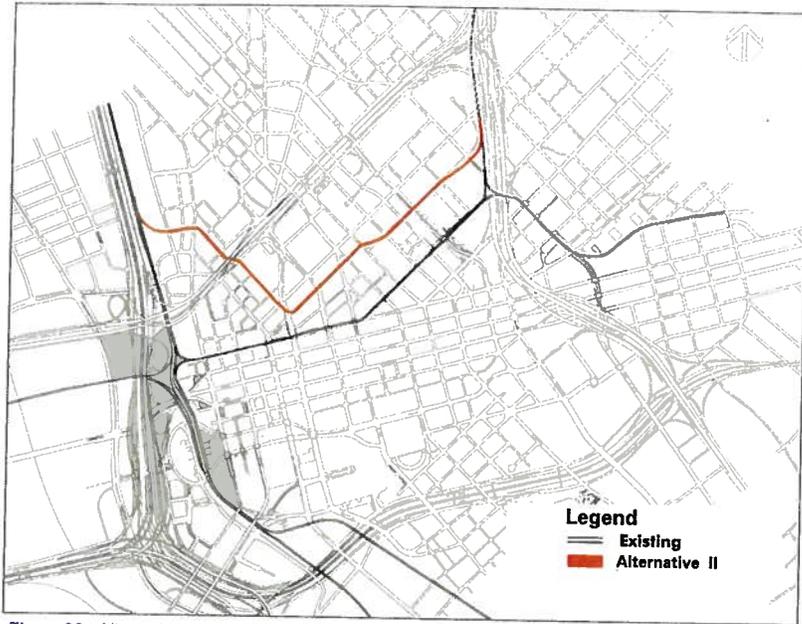


Figure 26: Alternative II – North Griffin – San Jacinto Alignment

## ALTERNATIVE 2:

### *North Griffin-San Jacinto Alignment*

This alignment also enters the CBD from North Griffin Street and provides service to the City Center, Arts and West End districts. It then turns east on San Jacinto Street, which is converted to a transit mall, with access to local properties at a few locations, until it exits the CBD area on the east. This alignment does not have an at-grade rail/rail crossing with the existing Pacific Transit Mall. The northwest lines are linked to the north central lines and the southwest lines are linked to the southeast lines with this alternative.

## ALTERNATIVE 3:

### *South Griffin-Jackson-Pearl Alignment*

In this alternative, the second LRT alignment connects the north and south ends of the Dallas CBD area and provides service to the Convention Center, Government, Farmers Market and City Center districts. The alignment enters the CBD from the northeast grade-separated until just north of Pacific Avenue. From that point it runs in the median of Pearl Street until it turns west on Jackson Street. At Griffin Street the alignment turns southward. This alignment converts Jackson Street into a transit mall with access to local properties at a few locations, whereas Griffin Street between Jackson Street and IH 30 and Pearl Street between Pacific Avenue and Jackson Street will have two lanes open to vehicular traffic (one in each direction). This alternative does not have an at-grade rail/rail crossing with the Pacific Mall and eliminates the LRT service to the Union Station and the Trinity Railway Express.

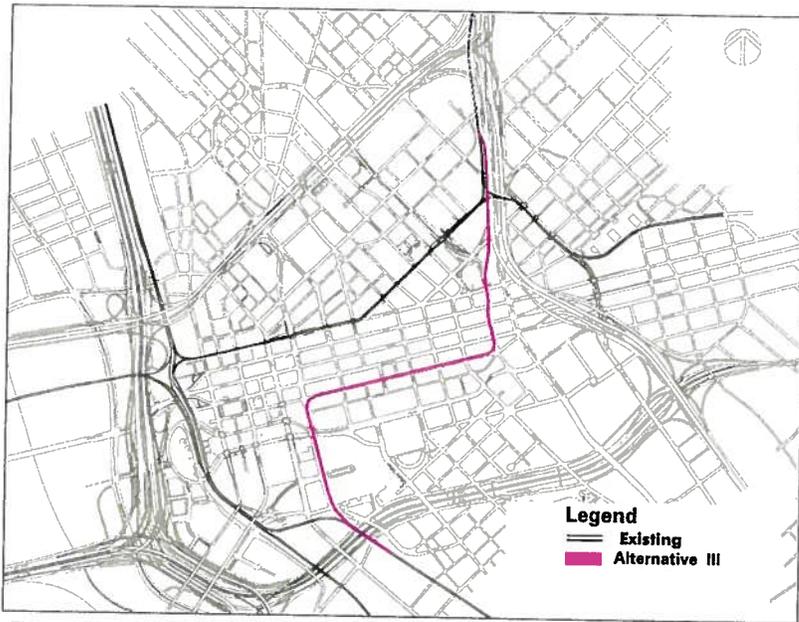


Figure 27: Alternative III – South Griffin – Jackson – Pearl Alignment

# TOOLS AND EVALUATION

## THE MODEL

Microscopic traffic simulation modeling was used in this project to assist with planning for a second Light Rail Transit (LRT) corridor in the Dallas Central Business District (CBD) as well as the evaluation of roadway Dallas, DART, Dallas County, and NCTCOG as a continually evolving planning and operations tool. The simulation model includes most of the roadways enclosed by Interstate Highway (IH) 35E on the west, Woodall Rodgers Freeway on the north, IH 345 (Julius Schepps) on the east and IH 30 on the south. The analysis results highlighted the pros and cons of each LRT and roadway alternative regarding the operations of vehicular traffic and the transit system within the CBD area. We used the simulation package VISSIM (*Verkehr in Staedten – Simulation*) for modeling purposes.

## Network Building

In the past, several other microscopic simulation studies have been performed in the CBD area. The focal point of most of these models has been the Elm Street, Main

Street and Commerce Street corridors. Therefore, a portion of the network for this study was already developed by others in the VISSIM environment. This study uses the existing network while adding 110 intersections to build the complete Dallas CBD network to about 200 intersections.

## Simulation Program Selection

In recent years, many simulation programs have entered the market, each having advantages and disadvantages. These market entries provide users with more options to choose from when selecting a traffic simulation model. The factors below contribute to the accelerated rate of development of such program suites:

1. Advances in traffic flow theory;
2. Advances in available computing power and resources;
3. Developments in programming tools; and
4. Requests for more accurate data from both the public and decision-making agencies.

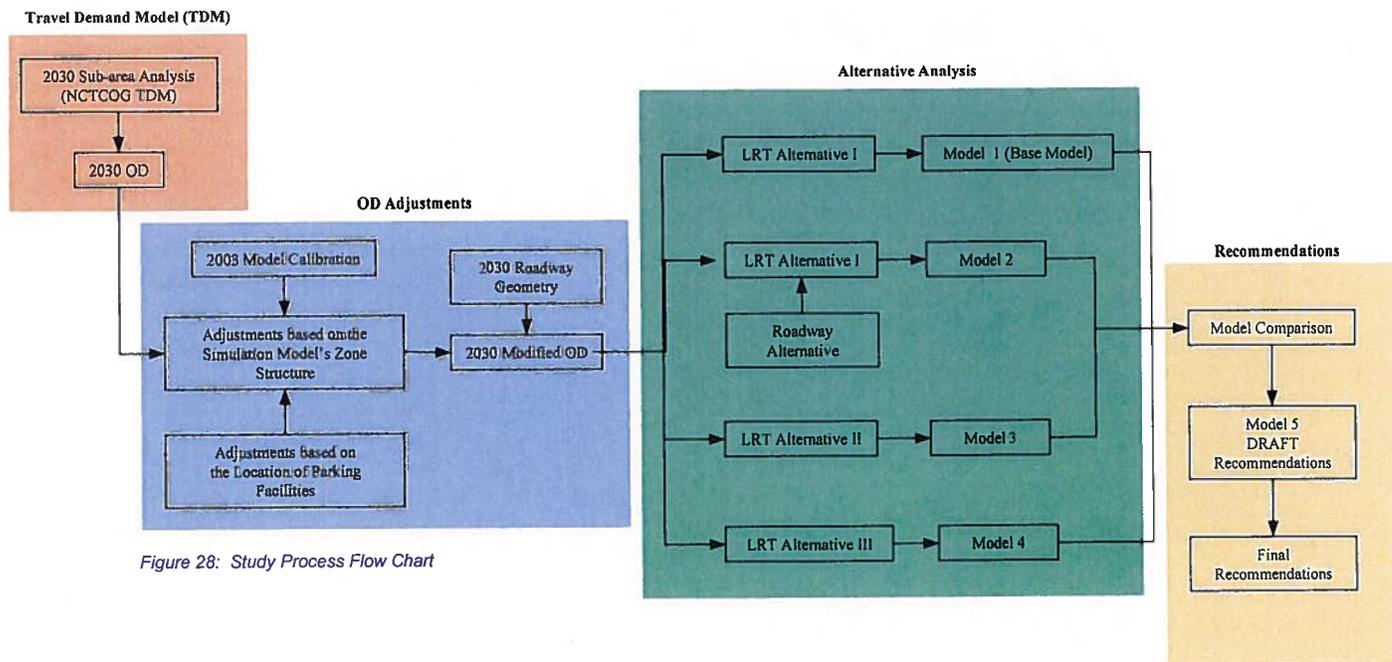


Figure 28: Study Process Flow Chart

With the additional choices available, more attention needs to be paid to selection criteria. In the case of this study, several parameters led to the selection of VISSIM:

1. The existence of a VISSIM model that covers part of the Dallas CBD network
2. The capability of VISSIM to simulate several modes of transportation (i.e., LRT, bus transit, pedestrian traffic, and vehicular traffic)
3. The capability of defining an Origin-Destination matrix (O-D matrix) for generating vehicular traffic
4. The capability of performing a Dynamic Assignment (DA) to reduce the amount of guess-work in vehicle routing; and
5. The programming interface (Vehicle Actuated Programming [VAP] script language) for simulating traffic signal controllers, specifically LRT pre-emption operations.

Complications involving car-following and lane-changing behavior and their effects on the location of possible bottlenecks prevent the use of conventional programs that are not path-based. In the dynamic assignment process, the vehicles are assigned routes between each pair of O-D. The probability of taking any of the routes is determined based on the general cost of each route with travel time being one of the major components of the general link cost.

### ***Model Input***

#### **Roadway Geometry**

The sources listed below were used to ensure the roadway network model represents existing and future conditions as closely as possible:

1. Site visits and data collection in the field;
2. Lane configuration figures from previous studies;
3. Aerial photographs with an accuracy of three feet; and
4. NCTCOG's 2030 regional Travel Demand Model (TDM).

#### **LRT System**

The variables listed below were entered into the simulation model:

1. LRT vehicle length
2. Acceleration and deceleration rates
3. Maximum desired speed
4. Station dwell times; and
5. Type of traffic signal control.

Two signal control scenarios of "green extension" and "full priority" had been considered in other CBD studies. However, the full priority alternative was assumed for this project. This study is not intended to recommend one of the control types but to compare LRT corridor and roadway alternatives, and make recommendations based on that analysis. Therefore, the selection of full priority does not significantly affect the comparison process if followed consistently in all scenarios.

#### **Origin-Destination (O-D) Matrix**

NCTCOG uses a multi-modal travel demand model (TDM) of the DFW area in the TransCAD Model environment. This model includes variables such as the cost of travel, population and land-use projections, and modal and network configurations to forecast future traffic volumes on the roadway and transit network. NCTCOG performed a sub-area analysis covering the scope of this project, based on the recommended Land Use Plan for this study, and provided the 2030 O-D matrix as the demand basis for the CBD simulation. This O-D matrix was used in all analysis scenarios. The effect of changes in roadway geometry and LRT corridor alternatives was captured through the dynamic assignment process in VISSIM. By using the NCTCOG Regional Travel Demand Model as the basis for Downtown demand, the study remains consistent with the regional planning context. However, some modifications were in order before the provided O-D matrix could be used in a path-based microscopic simulation program. In the regional model, the trips are "produced" from and "attracted" to where the development is located, even when the drivers have to park off-site and walk to their destination. This simplification is not suitable for a microscopic simulation model where the driveways to each parking lot and parking garage are defined in the model. The correct location of the driveways has a significant effect on the development of bottlenecks and poor weaving segments. Therefore, we took a closer look at the CBD

developments, focusing on the parking facilities and their capacities. Several sources were available for this research as follows:

1. Site visits and field data collection
2. Central Dallas Association's (CDA) parking map
3. Aerial photographs; and
4. GIS database of parking facilities obtained through SBC.

The destination of inbound and outbound trips was then adjusted based on this information.

#### Pedestrian Traffic

Pedestrian counts were performed at selected locations. These counts were then closely analyzed and divided into four groups as follows:

1. Activity levels consistent with the existence of LRT stations
2. Activity levels consistent with a nearby parking garage

3. Global background base activities at each intersection; and
4. Pedestrian activity levels created by the anticipated residential areas in the CBD.

The proposed 2030 land-use plan was used to forecast the levels of pedestrian activities in each of the four groups. These elements of the pedestrian activities were then summed to result in the future 2030 pedestrian movements at each intersection along the two transit malls.

### MEASURES OF EFFECTIVENESS

Comparisons of the three alignment alternatives were made based on the following criteria.

- Vehicular travel time along critical routes
- LRT travel time
- LRT CBD throughput (trains per hour)
- Intersection delay and level of service
- Area-wide measure of effectiveness

The following tables summarizes the results of our analysis:

Figure 29: Vehicular Travel Time Along Critical Routes (minutes)

Route No.	Route Description	Direction	Segment		LRT Alternatives			
			Street 1	Street 2	Alternative 1 Griffin/Jackson (PM)	Alternative 2 Griffin/San Jacinto (PM)	Alternative 3 Griffin/Jackson/Pearl (PM)	Alternative 4 North Griffin/Lamar/Jackson AM (PM)
1	Ross	EB	Houston	Central Expressway	(7.2)	(9.5)	(6.6)	5.5 (6.6)
2	Ross	WB	Central Expressway	Houston	(11.8)	(14.0)	(14.2)	5.1 (11.9)
3	Elm	WB	Central Expressway	Houston	(8.2)	(5.2)	(9.1)	9.4 (11.6)
4	Main	WB	Central Expressway	Houston	(8.9)	(6.9)	(7.7)	8.3 (9.6)
5	Main	EB	Houston	Central Expressway	(3.8)	(4.4)	(6.3)	6.1 (8.4)
6	Commerce	EB	Houston	Central Expressway	(6.3)	(4.3)	(8.3)	9.1 (4.6)
7	Young	EB	Griffin	Central Expressway	(5.1)	(2.7)	(2.7)	5.4 (3.3)
8	Lamar	SB	Woodall Rodgers	Young	(5.1)	(6.6)	(4.3)	13.5 (8.1)
9	Lamar	NB	Young	Woodall Rodgers	(4.9)	(5.7)	(4.3)	5.8 (6.4)
10	Griffin	SB	Woodall Rodgers	Young	(8.3)	(6.2)	(8.8)	12.0 (7.1)
11	Griffin	NB	Young	Woodall Rodgers	(12.2)	(9.0)	(4.6)	5.1 (10.5)
12	Field	SB	Woodall Rodgers	Elm	(5.1)	(6.0)	(5.4)	4.7 (6.3)
13	Field	NB	Young	Woodall Rodgers	(9.9)	(9.6)	(7.3)	4.1 (4.9)
14	Ervay	NB	Corsicana	Young	(4.7)	(4.9)	(6.3)	13.9 (5.1)
15	Pearl	SB	Woodall Rodgers	Young	(5.5)	(4.1)	(8.3)	6.0 (9.2)
16	Central Expressway	NB	Marilla	Woodall Rodgers	(5.1)	(6.1)	(5.7)	14.9 (6.2)
17	Central Expressway	SB	Commerce	Marilla	(1.4)	(0.7)	(1.2)	1.5 (2.7)

Figure 30: LRT Travel Time (minutes)

LRT Lines	Origin and Destination		LRT Alternatives			
	From	To	Alternative 1 Griffin/Jackson (PM)	Alternative 2 Griffin/San Jacinto (PM)	Alternative 3 Griffin/Jackson/Pearl (PM)	Alternative 4 North Griffin/Lamar/Jackson AM (PM)
Red/Blue	Convention Center	US 75 Tunnel/Good Latimer	(13.7)	(10.3)	(10.0)	13.3 (13.3)
	US 75 Tunnel/Good Latimer	Convention Center	(12.8)	(10.3)	(9.8)	11.9 (11.8)
Orange/ Purple	Woodall Rodgers	US 75 Tunnel/IH 345	(7.2)	(6.9)	(8.1)	6.6 (6.6)
	US 75 Tunnel/IH 345	Woodall Rodgers	(8.2)	(7.0)	(8.2)	8.7 (8.7)

Figure 31: LRT CBD Throughput (trains per hour)

LRT Lines	Origin and Destination		LRT Alternatives			
	From	To	Alternative 1 Griffin/Jackson (PM)	Alternative 2 Griffin/San Jacinto (PM)	Alternative 3 Griffin/Jackson/Pearl (PM)	Alternative 4 North Griffin/Lamar/Jackson AM (PM)
Red/Blue	Convention Center	US 75 Tunnel/Good Latimer	(19)	(22)	(22)	19 (19)
	US 75 Tunnel/Good Latimer	Convention Center	(18)	(22)	(22)	19 (19)
Orange/ Purple	Woodall Rodgers	US 75 Tunnel/IH 345	(18)	(22)	(22)	20 (20)
	US 75 Tunnel/IH 345	Woodall Rodgers	(22)	(22)	(22)	21 (21)

Figure 32: Area-Wide Measures Of Effectiveness

Measure of Effectiveness	LRT Alternatives			
	Alternative 1 Griffin/Jackson (PM)	Alternative 2 Griffin/San Jacinto (PM)	Alternative 3 Griffin/Jackson/Pearl (PM)	Alternative 4 North Griffin/Lamar/Jackson AM (PM)
Total Vehicular Delay (veh-hour)	(1,773)	(1,590)	(1,501)	1,964(1,686)
Total LRT Delay (train-hrs)	(2.5)	(0.9)	(1.3)	3.3 (3.3)
Total Persons Delay (persons-hours)	(3,301)	(2,350)	(2,431)	3,897(3,546)
Total Train Throughput (Trains per hour)	(77)	(88)	(88)	79 (79)

### ***Model Findings***

The final step was to analyze the model results and recommend a corridor for the second LRT alignment. It was clear from the results that providing sufficient capacity along Griffin Street, Pearl Street, Commerce Street, and Market Street is essential to operations of vehicular traffic in the CBD area during the am and pm peak hours. These thoroughfares are among the major access points to the CBD from north and south. Any capacity constraints created along these roadways drastically reduces the input volumes to Downtown and creates queues that potentially extend onto the freeway system. Alternative I bisects the intersection of Ross Street and Griffin Street and, as a result, most of the movements at this intersection come to a complete stop when the train crosses the intersection. This, combined with the frequency of trains and reduced number of lanes on Griffin Street south of Pacific Avenue, caused a drastic reduction in the capacity of the Ross/Griffin Intersection. Increased travel time along Griffin Street diverted traffic to the eastbound frontage road through the loop ramp creating a major bottleneck at the intersection of Field Street and the eastbound frontage road. Therefore, LRT Alternative I, in which the LRT runs in the median of Griffin Street with an at-grade rail/rail intersection at Pacific Avenue and Griffin Street, was determined to be a non-viable alternative. However, the east-west segment of LRT Alternative I on Jackson Street would not significantly impact the operations of the vehicular traffic.

Alignment II has the same deficiency regarding the intersection of Ross Street and Griffin Street. In addition, it also removed the through capacity along San Jacinto Street. These two factors contributed to an unacceptable level of congestion on parallel routes such as Ross Avenue. However, the elimination of the at-grade rail/rail intersection increased the train throughput in Alternative II.

Alternative III also performed much better than Alternative I as measured by train throughput. However, a major deficiency of this alternative corridor location is the fact that the lines that operate in the North Central and Southwest Corridors would not serve Union Station and require the relocation of the Convention Center Station. This means that users of these two major lines would have

to transfer (to the Pearl Station) to be able to access the Trinity Railway Express at Victory Station.

The analysis of the three alternatives found deficiencies in each. Based on the subjective evaluation of consistency with the Vision Statement, it was clear that Alternative I was preferred, if the traffic deficiencies could be avoided or mitigated. For this reason, a fourth alternative was developed, based on Alternative I. The fundamental improvement for the revised alignment is the use of Lamar Street to avoid Griffin Street. Alternative IV enters the CBD from the north along North Griffin Street and then turns onto Lamar Street. The alignment then continues south in the middle of Lamar Street until it turns east on Jackson Street. The results of Alternative IV are also summarized in the above tables. The results of Alternative IV show that an at-grade rail/rail intersection between the existing transit mall on Pacific Avenue and the second LRT causes significant congestion and delays for vehicular and pedestrian traffic, and reduces train throughput in Dallas CBD. The traffic improvements (over Alternative I) achieved by this alternative were not enough to offset the train operations deficiencies of the at-grade, rail/rail intersection. Another rail operations deficiency is presented by the street spacing of Pacific, Elm, Main, Commerce, Jackson, Wood, and Young Streets. At 200-foot spacing between streets, the alignments along Griffin or Lamar must be operated to eliminate the likelihood that a train would ever need to stop at a traffic signal.

### ***Corridor Recommendation***

The analysis of the alternative corridors leads to a specific recommendation for the location of the second Light Rail Corridor. The recommended corridor is bounded by Woodall Rodgers, Field Street, Commerce Street, Young Street, and Lamar Street. The corridor as defined by Alternatives I and IV meets the study goal of supporting the Vision Statement for Downtown Dallas. The purpose of this study was not to specify the exact light rail alignment. The determination of exact light rail alignment must be made by DART, as the result of an Alternatives Analysis and Draft Environmental Impact Statement as required by the Federal Transit Administration. However, the technical analysis does lead to a recommendation that grade-separation be considered for the second LRT alignment, at

least between Ross Avenue and Commerce Street. With grade-separation, the second LRT alignment can run in the recommended corridor. The specification of a below grade alignment between Ross and Commerce is made because it separates the grade of the two light rail lines and avoids crossing the short blocks between Ross Avenue and Commerce Street. It is left to the DART Alternatives Analysis to identify the full extent of the subway alignment and determine the best locations for subway portals.

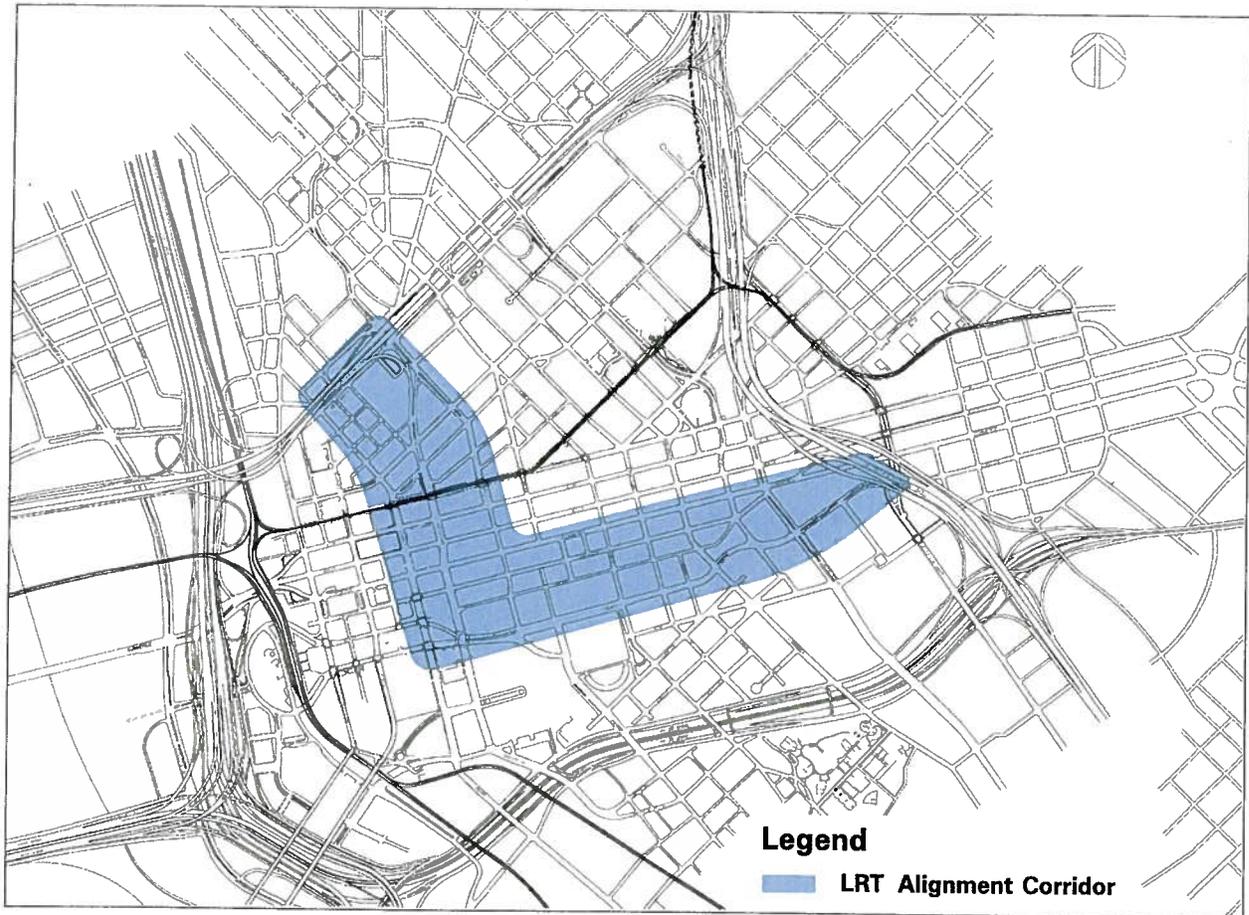


Figure 33: Recommended LRT Corridor- Lamar/Field (NS) and Commerce/Young (EW)

## DOWNTOWN STREET CLASSIFICATION

A transportation plan is fundamentally a hierarchical network - a system of right-of-ways that provides for the movement of pedestrians, passengers, drivers, and their vehicles. The hierarchy is a function that describes a relationship between capacity and access. For example, a major thoroughfare is intended to carry a large amount of traffic, but to do so the number of access connections must be limited. At the other extreme, a local street has a large number of driveways but isn't designed to carry much traffic.

In a Downtown area, the range of function is so compressed that the traditional classifications of thoroughfare, collector, and local street do not prove as useful as in the balance of the city. Almost every street is "local" in that it must provide access to adjacent property or even on-street parking. And, these same facilities are expected to carry large traffic volumes across, into, and out of Downtown.

A classification of rights-of-way in Downtown Dallas facilitates the efficient movement of automobiles, trains, buses, and trucks. However, *The Vision for Downtown Dallas* recognizes a new necessity to focus on people as they use Downtown, in contrast to a previous mindset that emphasized the movement of cars. This does not eliminate the need to ensure there is safe and adequate capacity for cars, trucks, and buses. But it does place a new emphasis on shoppers, transit users, visitors, commuters, students, and other pedestrians. These words link the people who are engaged in transportation with the purpose of their trip. This focus is derived by considering the nature of trips to the various districts in Downtown and the need to help people, the users of Downtown, to find their way into, around, and out of Downtown.

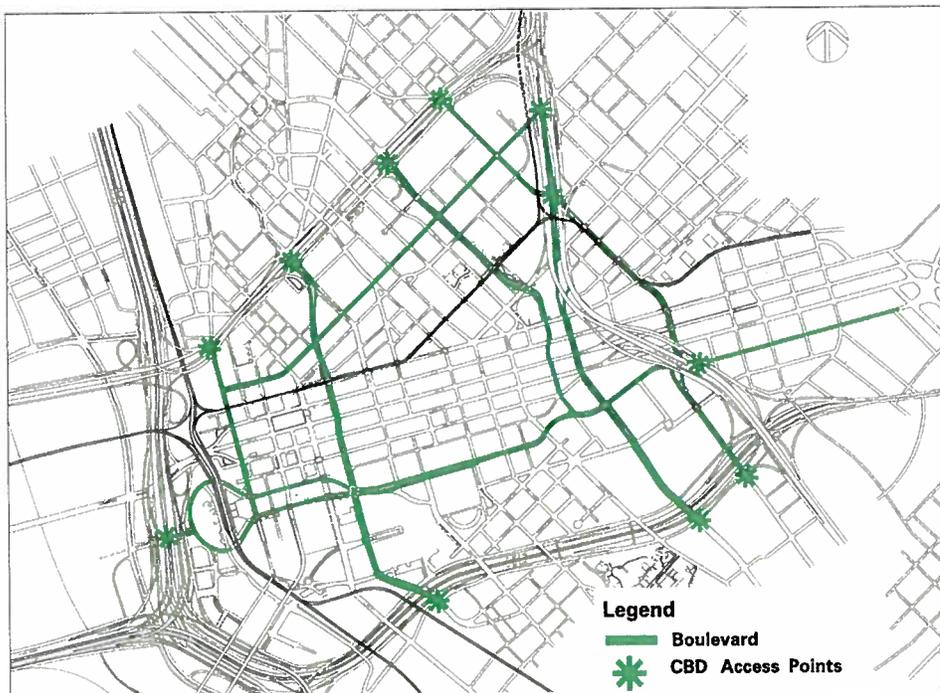


Figure 34: Boulevard System Map

### Houston Street

This north-south street, located in the western part of Downtown, connects the West End District and the Convention Center/Reunion Districts. Beyond the CBD it links the Victory development and coupled with the Jefferson Street Viaduct is a primary link to Oak Cliff. These districts are primary destinations for visitors to Downtown. It is an important route to and from Downtown from IH 35 (Stemmons Freeway) via the Continental Street interchange.

Between Elm and Young Streets, Houston Street is a six-lane one-way street in a 80'0" of right-of-way (See Figure 35). As part of the Boulevard System, we propose that Houston Street be converted to two-way and improved to 4-11' lanes undivided with 8'0" parallel parking spaces hooded by landscape pockets as shown in Figure 36.

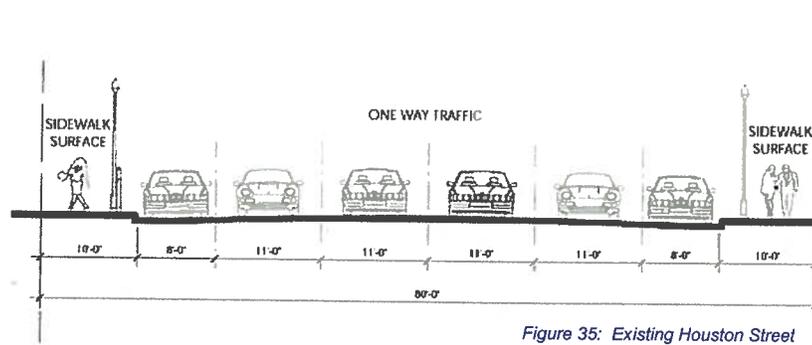


Figure 35: Existing Houston Street

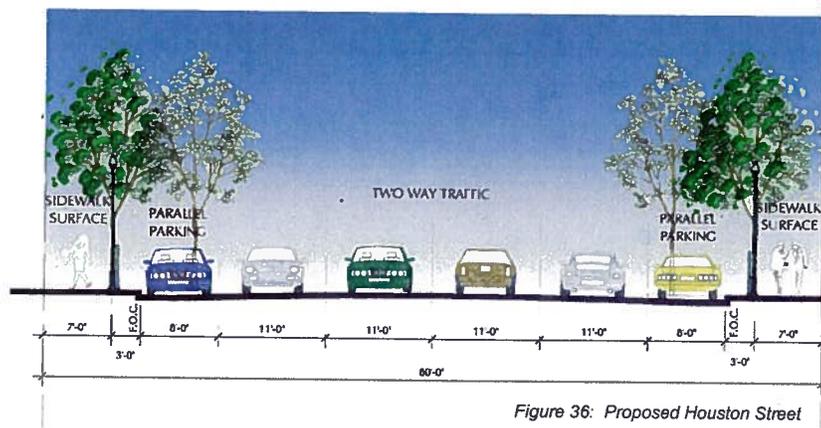


Figure 36: Proposed Houston Street

The following classification system is designed to help people use Downtown Dallas and make the experience more pleasurable. The user benefits from the sense of place and direction, increased wayfinding capabilities, and amenities. The City will focus its resources and guide private investments to multiply the value of a people-focused transportation system.

## **BOULEVARD SYSTEM**

The Boulevard System (See Figure 34) is the single most important component of the Downtown network. Its primary function is to make it easier and more pleasant for visitors, commuters, and residents to efficiently get into and out of Downtown and to get around Downtown -- especially between the various districts. A principal attribute is easy identification by all users. It has a "recognition factor" such that people using maps, directional signs, or even verbal directions will recognize the Boulevard System when they encounter it and know how to find the specific boulevard they are seeking.

Boulevards are not necessarily always median-divided, because existing right-of-way width (of Ross or Houston for instance) does not always permit space for a median. But all of the boulevards are proposed to be characterized by significant landscape development, two-way traffic operation and a ring-and-spoke configuration. The heart of the Boulevard System comprises Ross Avenue, Griffin Street, Young Street, and Pearl Street. This set of two-way streets forms an intra-Downtown ring that touches all districts and intersects most of the major streets with destination addresses. This ring serves to minimize the confusing effect of the different grid patterns that comprise the Downtown network. While these four streets define a loop, they also extend to the boundaries of the CBD and beyond to connect Downtown to its adjacent neighborhoods and the rest of the region. The following discussion describes all the streets that comprise the Boulevard System. Figures 35-41 depict examples from the proposed Boulevard System with typical cross-sections including two-way traffic, landscaped medians, and tree-lined sidewalks.

**Field/Griffin Street**

The next north-south boulevard is Griffin Street and a one-block section of Field Street (adjacent to Woodall Rodgers Freeway). Griffin Street's six lanes and landscaped medians connect the Arts, West End, City Center, Main Street, Government, and Convention Center/Reunion Districts. Beyond the CBD, as Field Street, the route connects to the uptown area, as well as Victory. It is also a continuous route to the Harry Hines / McKinnon one-way pair that directly serves the Dallas North Toll Road and connects Downtown Dallas to the Market Center and Medical Center areas. To the south of Downtown, Griffin Street provides a linkage to southside and the Cedars area. The boulevard provides direct access to both the Woodall Rodgers Freeway (Spur 366) and Interstate Highway (IH) 30.

**Pearl Street**

The next north-south boulevard is Pearl Street, a six-lane facility with landscaped medians. Within Downtown, Pearl connects the Arts, City Center, Main Street, and Farmers Market Districts. It links Downtown to the uptown and the Cedars area. Pearl also ties into the Harry Hines / McKinnon one-way pair for excellent connectivity to North Dallas, the Market Center, and the Medical Center. It has direct freeway access to Woodall Rodgers (Spur 366).

In the Arts and City Center Districts, the typical cross-section of Pearl Street is six lanes divided by a landscaped median in 100' right-of-way (See Figure 37). As part of the Boulevard System we recommend completing the streetscape enhancements as illustrated in Figure 38. South of Live Oak we recommend converting Pearl Street from one-way southbound to two-way. This conversion is illustrated in plan view in Figure 39.

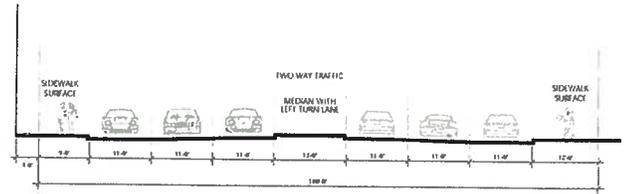


Figure 37: Existing Pearl Street

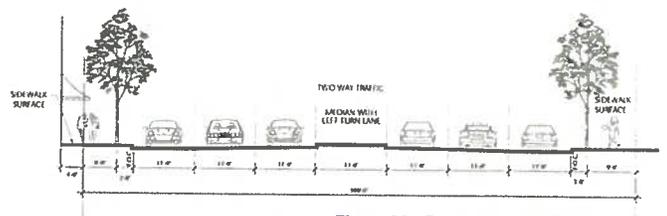


Figure 38: Proposed Pearl Street

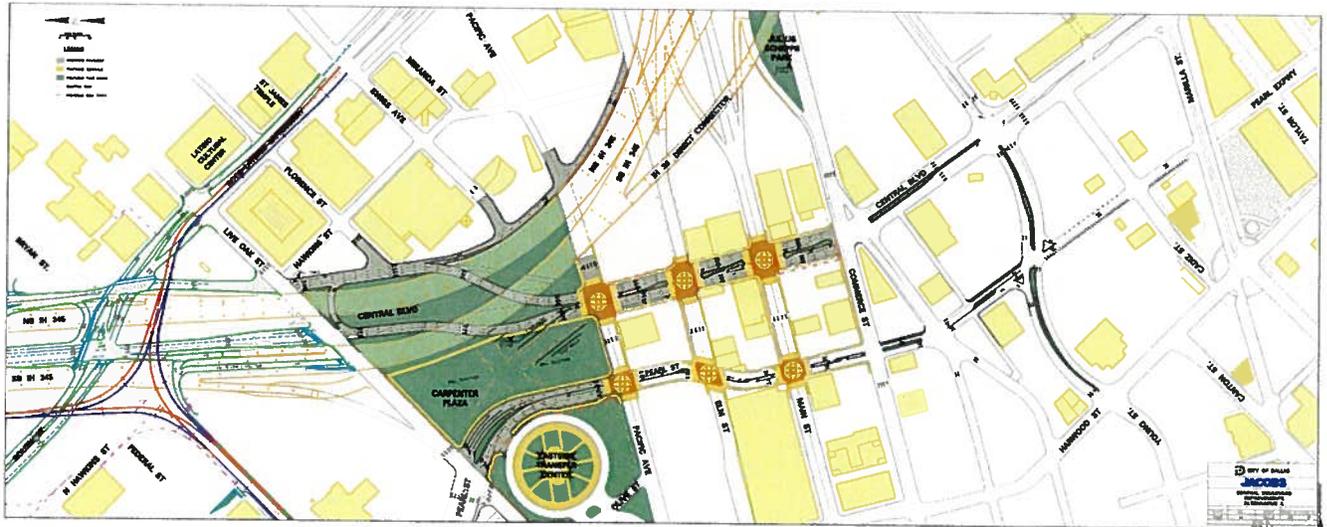


Figure 39: Proposed Central Boulevard and Pearl Street Reconstruction Project

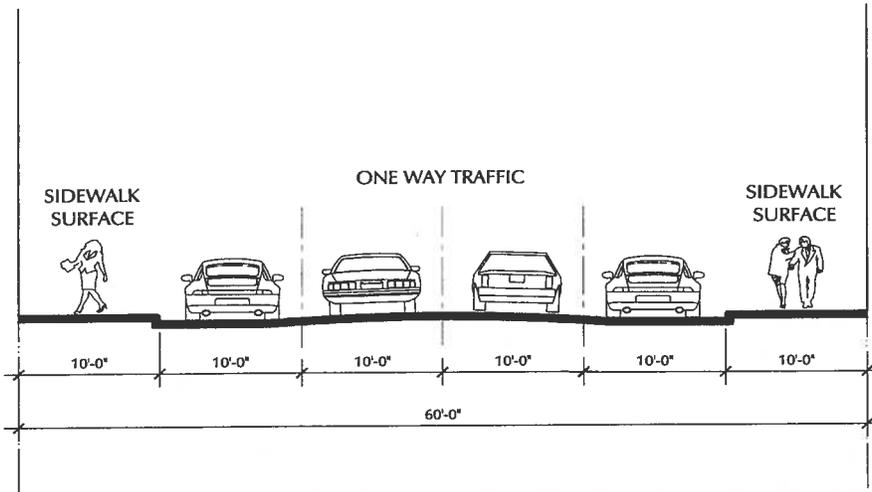


Figure 40: Existing Central Boulevard

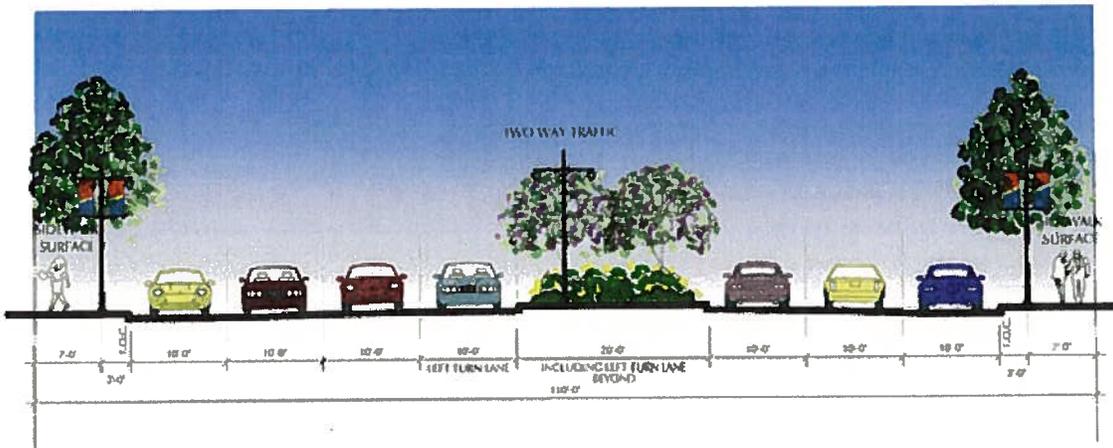


Figure 41: Proposed Central Boulevard

**Central Boulevard**

Central Boulevard is the Downtown portion of North Central and South Central Expressway. Three significant modifications will minimize the expressway characteristics of the existing facility in Downtown. Central Expressway currently overpasses the Bryan/Good Latimer-Routh Street intersection. The overpass will be removed, creating a surface street intersection of Central Boulevard and Routh/Good Latimer. This reconfiguration accommodates the Southeast Corridor Light Rail Transit Line with connections between the existing transit mall, the North Central Line, and the new alignment of Good Latimer Expressway. The second change is the proposed reconfiguration of the Central Expressway/IH 30

interchange. The existing directional interchange will be simplified to a traditional "diamond" interchange with Central Boulevard intersecting the IH 30 service roads at signalized intersections. And third, between these two "downsized" interchanges, Central Boulevard will be converted from its current one-way arrangement to a six-lane, two-way facility with a landscaped median.

This new two-way Central Boulevard connects the City Center, the Main Street, and Farmers Market Districts. Central Boulevard will be a significant Downtown link with its direct connection to and from North Central Expressway (US 75). Also, to and from the south, Central Boulevard links the Central Business District to South Dallas. South Central Expressway also provides a direct route to US 175,

(the S.M. Wright Freeway) and to IH 45, (the Julius Schepps Freeway).

Between Commerce and Pacific Streets, Central Expressway is an existing four-lane one-way roadway functioning as a northbound couplet with Pearl Street. As part of the Boulevard System, we recommend converting Central to a six-lane divided, two-way boulevard. This should be constructed in conjunction with converting Pearl Street in the same vicinity to a boulevard. As shown in Figure 39, these improvements create an opportunity to expand Carpenter Plaza. In addition, these improvements simplify circulation in the City Center, Main Street and Farmers Market Districts.

***Routh Street/Good Latimer Expressway***

The eastern most of the north-south boulevard is comprised of Routh Street and the Good Latimer Expressway. This route traverses the Arts, City Center, Deep Ellum (a district just east of Downtown), and Farmers Market Districts. The fact that this route partially exists

outside of the CBD does not diminish its importance as part of the Boulevard System. It provides connectivity to the uptown area with the Maple-Routh Connection, it is a primary access route to Deep Ellum, and connects to South Dallas. Good Latimer Expressway will be a more significant Downtown access roadway to and from IH 30 after the Pegasus Project rebuilds the IH 30 "Canyon".

South of Ross Avenue, Routh Street is three lanes in a 50' right-of-way with 10'6" sidewalks (See Figure 42). As part of the Boulevard System, we propose that Routh Street be improved to four lanes divided by a landscaped median in a wider 80' right-of-way as shown in Figure 43.

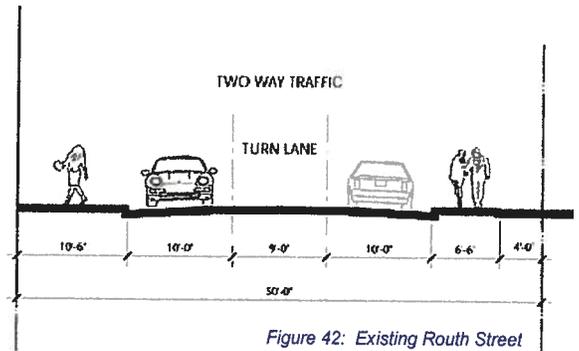


Figure 42: Existing Routh Street

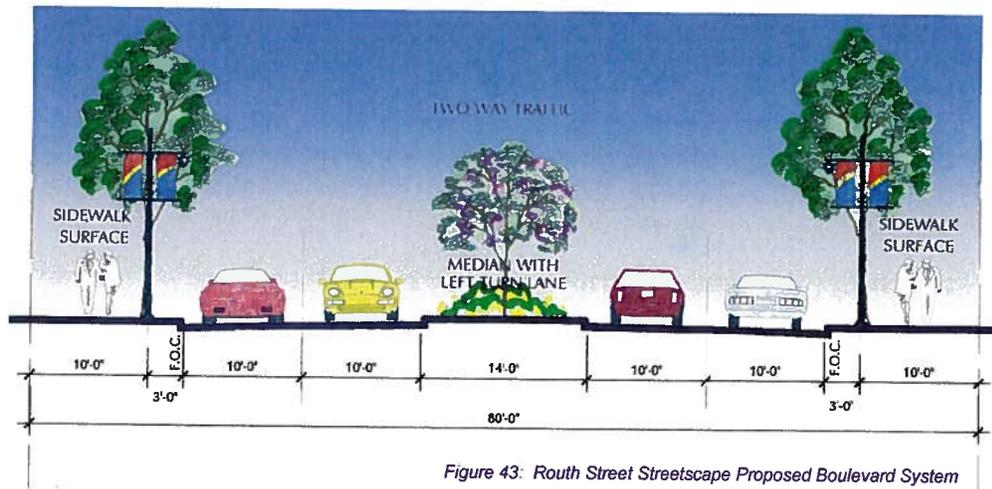


Figure 43: Routh Street Streetscape Proposed Boulevard System

**Ross Avenue**

Ross Avenue is one of the two boulevards that travel in an east-west direction (nominally east-west). It originates in the West End at Houston Street and forms the northern boundary of the City Center District and the southern boundary of the Arts District. On the eastern edge of Downtown, Ross interchanges with North Central Expressway (US 75) and extends into East Dallas as an important major thoroughfare.

In the vicinity of Olive Street, Ross Avenue is six lanes in an 80' right-of-way with 11'6" wide sidewalks (See Figure 44). As part of the Boulevard System, we propose that Ross Avenue be improved to four lanes divided by a landscaped median with wider sidewalks and a 10'0" streetscape easement in addition to the 80' wide right-of-way as shown in Figure 45.

Fair Park Link. In its ultimate configuration, this leg of the Downtown Dallas Boulevard System will be one of the most significant routes in Dallas. The Trinity River Park, Reunion Tower, Dallas Convention Center, City Hall, and Fair Park will all be connected. This special road provides a new axis to reference the reinvigoration of Downtown and the entire City.

**Reunion Boulevard/Wood-Young Couplet/Young Street/Canton Street**

Although this boulevard comprises multiple streets, it is one continuous route. It traverses the Convention Center/Reunion, Government, and Farmers Market Districts. Beyond Downtown to the west, the route will connect Downtown to the Reunion Boulevard Plaza component of the Trinity River Corridor Project. As the boulevard extends eastward from Downtown on Canton Street, and connects directly to Exposition Avenue, it is the

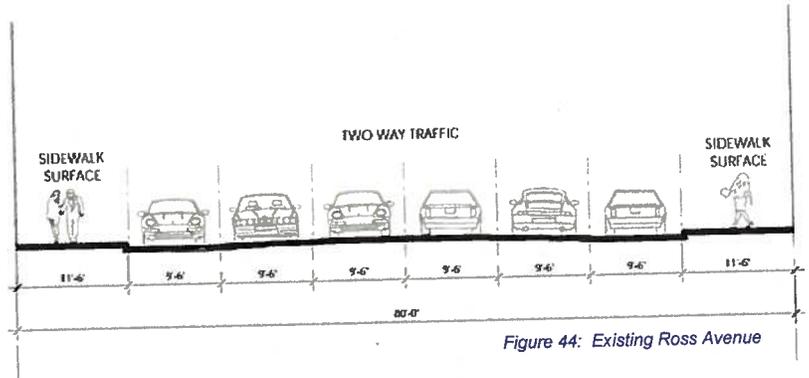


Figure 44: Existing Ross Avenue

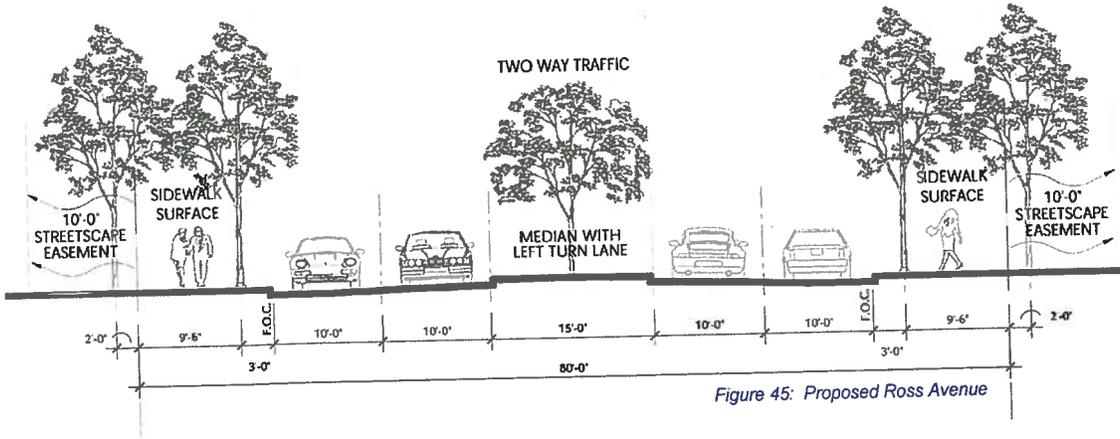


Figure 45: Proposed Ross Avenue

## MAJOR FOCUS INTERSECTIONS

Because clarity of the Boulevard System and its role in wayfinding for the vehicular traveler is so important, we recommend that the "four corners" of the boulevards which define the inner core of Downtown be marked as "Major Focus Intersections". Illustrated in Figure 46 are several examples of how the intersection of Ross and Pear could be made memorable with special monumentation. These examples utilize special lighting masts, cable-stayed beams, flags, and arched trusses or favorite symbolism to bring a landmark quality to the intersections. These treatments will be visible from blocks away at daytime or at night, greatly increasing the recognition factor which aids in wayfinding.



Figure 46: Major Focus Intersection Options

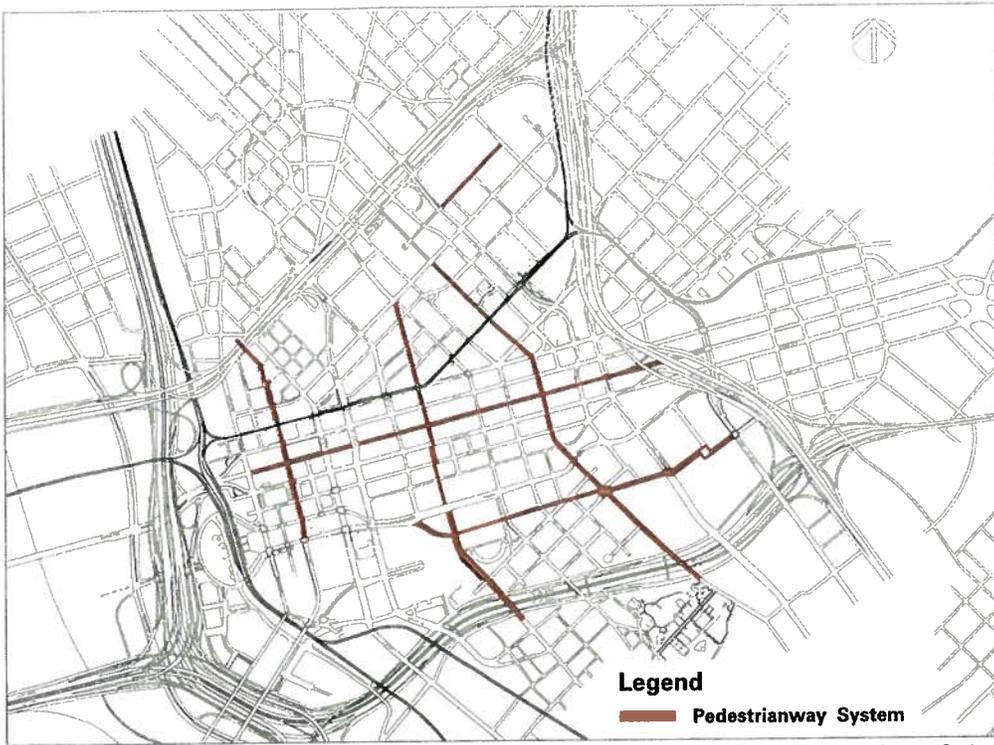


Figure 47: Pedestrianway System

## PEDESTRIANWAY SYSTEM

Characteristics of successful pedestrianway streets include the following:

- 1) No more than two lanes of continuous carriageway.
- 2) Provision for short term parallel parking buffering the carriageway from the sidewalks.
- 3) Street trees on approximate 25-foot spacing, planted between 2'6" and 5'0" from the curb line.
- 4) Clean sidewalk widths of 7'0" minimum (10'0" preferred).
- 5) Pedestrian scaled lighting (14'0" to 16'0" high poles).
- 6) Buildings constructed against the property line to ensure continuous frontage to define the public realm.
- 7) Construction of ground floors for retail use, incorporating canopies and projected awnings to provide shade for pedestrians, and a high percentage of glass store fronts and entryways.

The City of Dallas should consider changes to policies regarding the purchase of private licenses to allow the use of public right-of-ways for alfresco dining patios, overhanging canopies, awnings and signage, potted flowers and shrubs and related pedestrian features and amenities. Because these elements create and encourage vitality on our streets, every effort should be made to streamline the licensing process and reduce costs for applications.

The Pedestrianway System (See Figure 47) is a new concept for Downtown Dallas. Its purpose is to create a street-level pedestrian network that is recognized by shoppers, transit users, visitors, commuters, students, and other pedestrians as pedestrian-friendly routes between major destinations in Downtown. The Pedestrianway System is not a plan to close streets to vehicular traffic. To the contrary, where the system is on a vehicular street, the opportunity for vehicles to "serve passengers" is a functional necessity. In reality, the pedestrian network in Downtown Dallas is much more extensive than just the Pedestrianway System. It includes the underground and

aboveground pedestrian system that connects many Downtown buildings. And, of course, every street in Downtown Dallas includes at least minimal sidewalks. Off-street sidewalks, parks, and even building lobbies complete the nearly ubiquitous network that is available to pedestrians. The Pedestrianway System is always available, always visible network that is identifiable, self-directing, and safe. It includes the information, amenities, and design features that favor the pedestrian as tourist, cultural visitor, entertainment seeker, shopper, resident, worker, or student.

The Pedestrianway System is complemented by the Boulevard System to constitute a complete network. It is devised so that there is at least one major pedestrianway facility within each of the seven Downtown Districts. It is located to connect most of the major parks and public spaces in Downtown. Where possible, it utilizes off-street locations and in all cases it is on facilities that are not of necessity dominated by vehicles. In addition to their identification, the routes need considerable public and private investment to enable the function and fulfill the promise of the system. The specific design elements and implementation process necessary to create the system are described later in this chapter. The following descriptions identify the individual components of the Pedestrianway System. Figures 48-55 show examples of cross-sections of the proposed pedestrianways.

Many of the Downtown sidewalks are not in a consistent state of good repair. Broken curb sections, cracked and unaligned sidewalk slabs and inadequate, inconsistent sidewalk widths do not foster pedestrian activity. In some, features in front of newly constructed office or civic buildings contrast with older, poorly maintained segments adjacent to surface parking lots. We recommend that the City place a priority on repairing and reconstructing of Downtown curbs and sidewalks to achieve excellence throughout, starting with those streets which are part of the Pedestrianway System.

### ***Flora Street in the Arts District***

Flora Street is the inspiration for the Pedestrianway System. In its current extent from Harwood to Routh Streets, it is designed to invite and engage the pedestrian in the public spaces and facilities in the district. Cars are permitted on Flora Street to facilitate the transition from passenger to pedestrian, yet for special events the street can be closed to vehicular traffic to create a totally pedestrian environment.

### ***Market Street in the West End and Convention Center/Reunion District***

Market Street already embodies many of the characteristics of the ideal pedestrianway system. It provides a direct and easy route between the Convention Center and the amenities in the West End and also, through the Dallas Alley, it links the West End to Victory. Along the way are the public attractions and amenities that make Market Street a noteworthy pedestrian destination. The Market Street Pedestrianway also enhances the transit experience to and from the Market Street LRT Station.

**Marilla Street in the Convention Center/Reunion, Government, and Farmers Market Districts**

As a component of the Pedestrianway System, Marilla Street needs to be given a new identity. Beginning at Young Street at the Convention Center and continuing through City Hall Plaza, Marilla serves the great public space of the City. Eastward from City Hall Plaza, Marilla Street loses its pedestrian purpose. The three or so blocks from Ervay to Harwood must receive considerable improvement to achieve the promise of a viable pedestrian link from the Convention Center and City Hall to the Farmers Market and the flourishing residential community east of Central Boulevard.

East from Harwood Street, Marilla regains its pedestrian purpose with proximity to the Farmers Market, but improvements are needed to create the identity and magnify the pedestrian function. From Central Boulevard to Good Latimer, Marilla is an attractive residential street. As such, it is an origin for neighborhood pedestrian activity and a suitable anchor for the pedestrianway.

Marilla Street between Ervay and Harwood is a four-lane undivided roadway in 64'-0" of right-of-way (See Figure 48). As part of the Pedestrianway System, we recommend establishing a streetscape design within the existing right-of-way that features trees and other amenities, two lanes of traffic and curbside parking (See Figure 49).

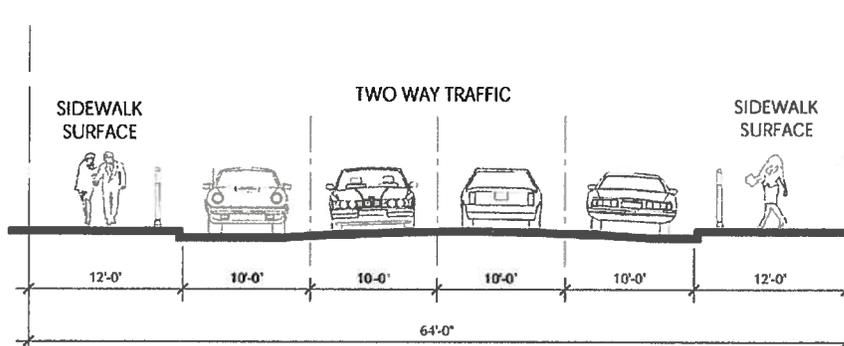


Figure 48: Existing Marilla Street

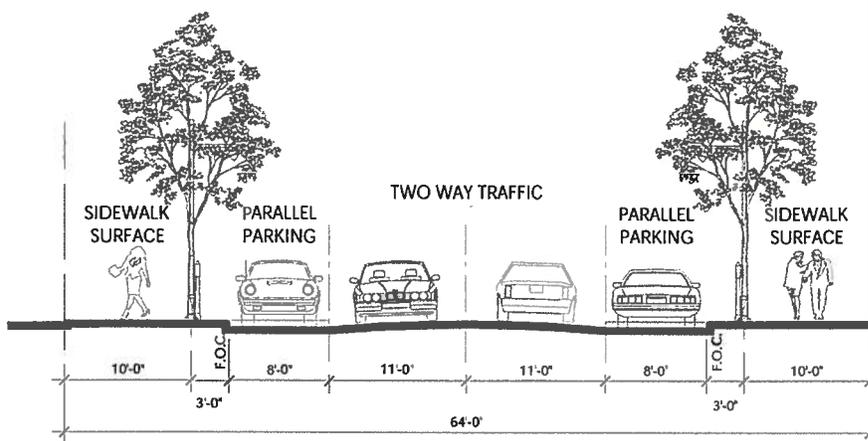


Figure 49: Proposed Marilla Street

**Main Street in the West End and Main Street Districts**

In the West End, anchored at Dealey Plaza, Main Street's pedestrian character is being enhanced by Dallas County as it improves the Founders Plaza and Kennedy Memorial sites flanking Main Street. From Market Street to Field Street, similar improvements to widen the sidewalks (by narrowing the roadway) will match previous Main Street improvements to create the desired facility from Houston to St. Paul. This improvement package may be linked to the implementation of the Griffin Street Garden at Main and Griffin Streets. The pedestrian improvements will be extended eastward from St. Paul Street to Good Latimer, triggered by the creation of Main Street Garden and other redevelopment along Main Street.

**Akard Street in the Arts, City Center, Main Street, Government, and Convention Center/Reunion Districts**

Akard Street is the recipient of pedestrian upgrades that are part of the City of Dallas' Five North-South Street Improvement Projects. This pedestrian linkage, with the ultimate extension south to the Pegasus improvements to IH 30, is an important link for Convention Center visitors and Government District workers to the Main Street District. This link also facilitates shopper's movements from the Arts and City Center Districts to Main Street retail. The pedestrianway also enhances the movement of transit riders from the Akard Street Station to destinations to the north and south.

**Harwood Street in the Arts, City Center, Main Street, and Farmers Market Districts**

The Harwood Pedestrianway is an ambitious but essential link in the Pedestrianway System. Since it is one of five north-south street improvement projects, there are already pedestrian enhancements being implemented. Harwood links more of the Parks Master Plan parks than any other street in Downtown. It connects the Nasher Sculpture Center, Dallas Museum of Art, Pacific Garden, Main Street Garden, the Farmers Market, and Old City Park. It links the hearts of the districts it serves, plus it serves the St. Paul LRT Station. By linking three of the other pedestrianways: Flora, Main, and Marilla, it gives the Pedestrianway System the scope and scale necessary to create a functional and robust non-vehicular transportation network.

Harwood provides 4-11' vehicular lanes along its route through Downtown in 64' of right-of-way (See Figure 50). Over time, we recommend acquiring additional right-of-way in order to expand Harwood up to 80' of right-of-way where practical. A wider right-of-way facilitates creating a Pedestrianway System cross-section that provides wider sidewalks, parallel curbside parking on both sides of the street and retaining up to 4-10' wide lanes. An example is illustrated in Figure 51.

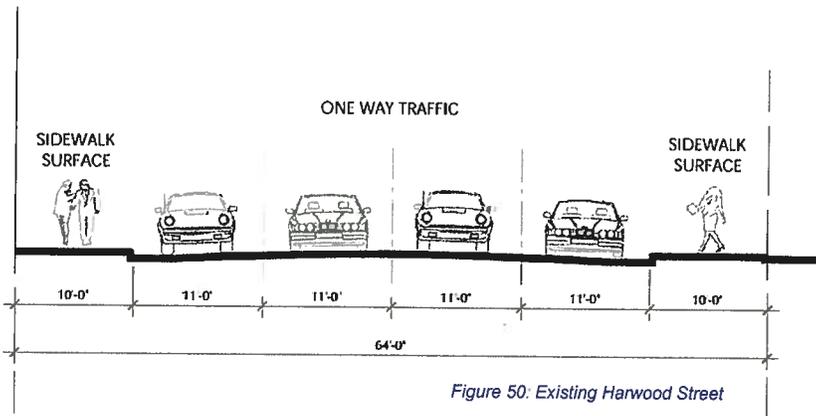


Figure 50: Existing Harwood Street

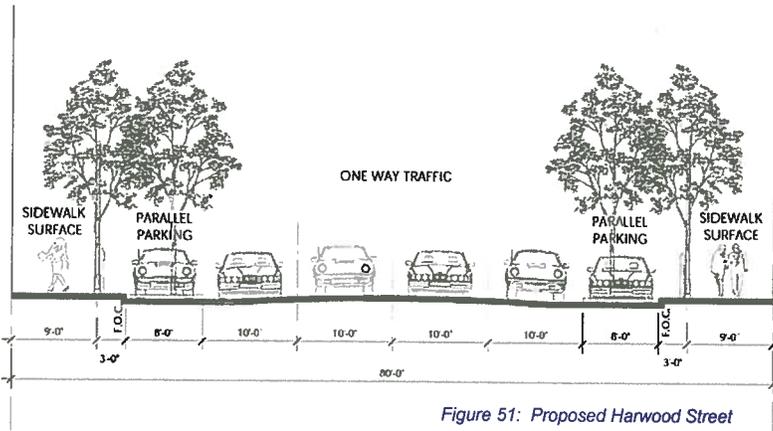


Figure 51: Proposed Harwood Street

**Pedestrian Enhancements**

The Pedestrianway System provides a framework for planning and developing pedestrian improvements. In addition to the Pedestrianway System, we recommend the following individual pedestrian enhancements:

- 1) Extend the pedestrian corridors to the Arts District from the DART LRT stations along St. Paul, Harwood, Olive, Pearl and Leonard Streets. An example of how the existing cross-sections of streets like Leonard (See Figure 52) can be transformed into pedestrianway with "MEWS" like atmosphere is illustrated in Figure 53.
- 2) In the Main Street District, we recommend the City continue to improve the pedestrian environment on Elm Street and Commerce Street by widening sidewalks and establishing a streetscape standard. The existing cross-section of Elm and Commerce is illustrated in Figure 54. The proposed streetscape layout for each of the streets between Lamar and IH 345 is shown in Figure 55.

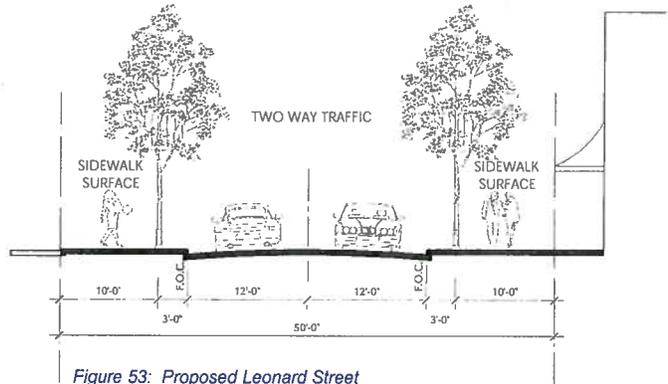


Figure 53: Proposed Leonard Street

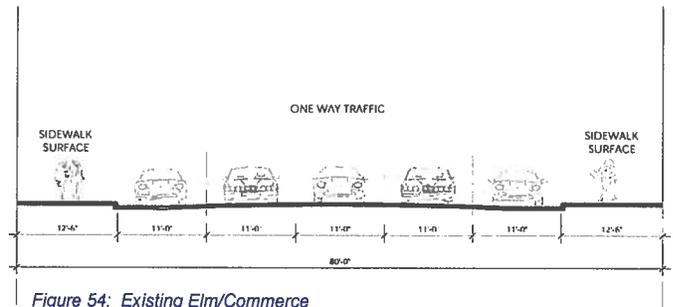


Figure 54: Existing Elm/Commerce

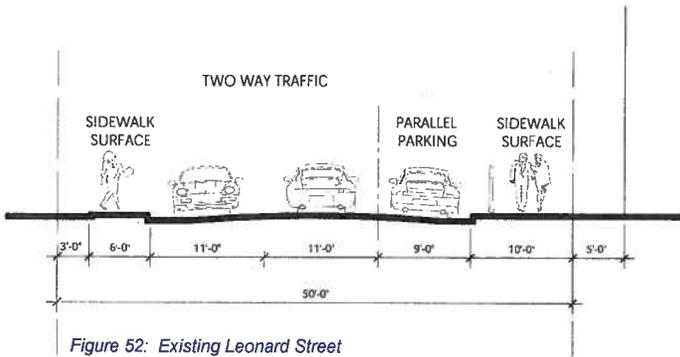


Figure 52: Existing Leonard Street

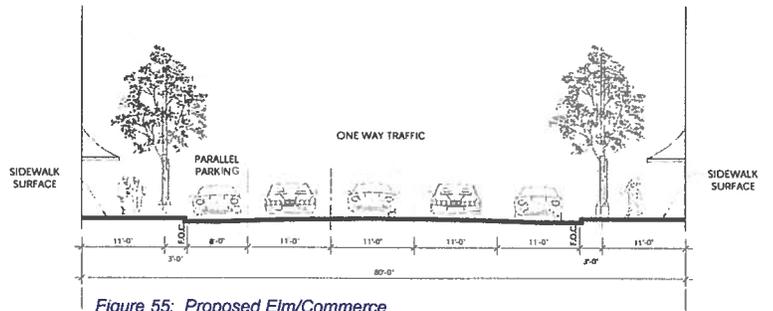


Figure 55: Proposed Elm/Commerce

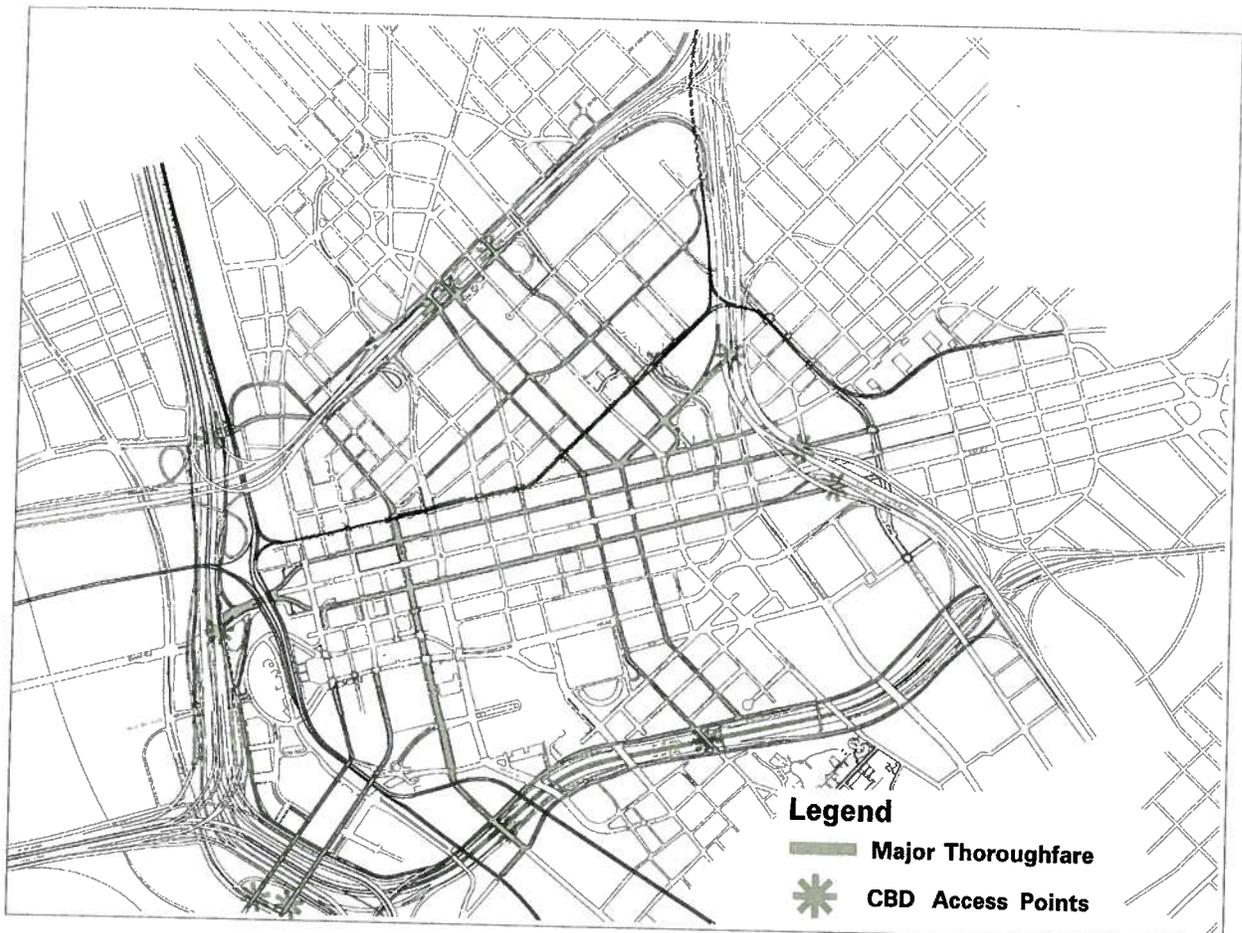


Figure 56: CBD Major Thoroughfares

### MAJOR THOROUGHFARE SYSTEM

In addition to the Boulevard and Pedestrianway Systems, there is a classification of streets that are operated to optimize their capacity to move automobiles, buses, and trucks into and out of Downtown. The Central Business District Major Thoroughfares (See Figure 56) are well connected to the freeway ring that defines the CBD. As a capacity and access network, the CBD Major Thoroughfares include the freeway service roads that are the interface between the freeways and Downtown surface streets. This sub-system of the Downtown network should

be recognized as the essential backbone for which the steady flow of vehicles is the priority. A challenge for the City is to accommodate the access needs of adjacent property and yet optimize vehicular flow. No Downtown street has a singular function but, even as driveways and pedestrians are accommodated, the CBD Major Thoroughfares must be designed and operated to optimize vehicular flow. Figures 57 and 58 show example cross-sections for streets that are part of the Major Thoroughfare System.

The following streets comprise the CBD Major Thoroughfare System:

***Elm Street (Five Lanes)***

This five-lane street is the westbound part of the Elm/Commerce one-way couplet that provides the primary east-west capacity in the CBD. It is a major access route into Downtown from IH 345 and Central Expressway on the east and out of Downtown on the west to IH 35E. Beyond the CBD, it links to Deep Ellum and West Dallas (as Commerce Street). It is also a principal bus route.

***Commerce Street***

The five-lane eastbound component of the Elm/Commerce couplet, Commerce interchanges with IH-35E to the west and IH 345 and Central Expressway to the east. It complements Elm's connections to West Dallas and Deep Ellum and is a principal bus route. The Elm/Commerce couplet intersects the significant north-south boulevards and major thoroughfares to make it the most important sub-system in the CBD.

***Houston Street Viaduct (from Young Street) (Five Lanes)***

Houston Street, south from Young, is paired with the Jefferson Street Viaduct to provide a direct linkage between the CBD and Oak Cliff. The facility provides five lanes of capacity. The Houston Street Viaduct is a historic bridge.

***Jefferson Street Viaduct (to Young Street) (Five Lanes)***

The five-lane Jefferson Boulevard Viaduct connects directly to Market Street. Jefferson is the Oak Cliff to the CBD component of the Jefferson/Houston Viaducts.

***Lamar Street***

Lamar Street consists of two lanes in each direction plus a continuous turn lane from Woodall Rodgers to Pacific Avenue. From Pacific Avenue to IH 30 it operates with three lanes in each direction. Lamar Street is a major access route to and from IH 35E paired with Continental Avenue. This connection to Continental Avenue also links Downtown to the Design District and, via the Continental Viaduct, to West Dallas (in the future, Continental Avenue will be replaced by Woodall Rodgers as a link to West Dallas). Lamar Street (with Continental) also provides an important link to the Victory Area and the American Airlines Center. At IH 30, Lamar is accessed by Cadiz (from northbound IH 35E) and IH 30 from the west. After the Pegasus project is developed, Lamar will intersect the new IH 30 Service Roads. This will improve Lamar Street's connectivity to IH 30, east and IH 35E.. Lamar Street is a primary north-south route in the West End, Government, and Convention Center/Reunion Districts. To the south of Downtown, Lamar Street provides an important connection to The Cedars.

***Akard Street/Ervay Street***

Akard Street from Woodall Rodgers to Ross Avenue is the two-way component of the Akard/Ervay one-way couplet, providing three lanes northbound and two lanes southbound. From Ross to IH 30, Akard is a designated pedestrianway. From IH 30 to Ross Avenue, Ervay is currently one-way northbound, providing four lanes and functioning as a couplet with southbound Akard to Commerce Street. This plan proposes that Ervay Street be converted to a two-way operation from Pacific Avenue to IH 30. The Pegasus Project that eliminates the southbound St. Paul Bridge over IH 30 triggers this conversion. Ervay will replace the southbound connectivity to the freeway system. Ervay provides north-south access and circulation through the Arts, City Center, Main Street, Government, and Farmers Market Districts.

### ***St. Paul Street***

St. Paul Street is a major access route from the north with a direct-access ramp from westbound Woodall Rodgers Freeway. It provides four lanes in one-way service southbound. As an egress route to IH 30, it will change after the Pegasus Project removes the St. Paul Bridge over IH 30. This connectivity is replaced by Ervay's conversion to a two-way street. This modification also allows St. Paul to be converted to two-way operation south of Canton Street to facilitate circulation in the Farmers Market District. St. Paul also serves the Arts, City Center, Main Street, and Government Districts.

### ***Olive Street***

Olive functions as a one-way couplet with Harwood Street between Woodall Rodgers Freeway and Pacific Avenue. Harwood Street is a pedestrianway facility. Olive Street is four lanes in configuration and serves the Arts and City Center Districts. Outside of Downtown it provides easy access to Uptown.

### ***San Jacinto Street***

San Jacinto Street from Lamar to Ross Avenue is an important route for eastbound traffic leaving the Downtown or seeking north-south routes. As a one-way street with four lanes (Griffin Boulevard to Pearl Boulevard) and three lanes (Pearl Boulevard to Ross Avenue), San Jacinto provides important capacity for east to west flows in a part of Downtown that is under-served by east-west streets. As a major thoroughfare it complements Ross Avenue (Boulevard System) in serving West End and City Center Districts.

### ***Live Oak Street***

Live Oak Street from Central Expressway to Pacific Avenue currently provides four lanes in one-way operation southbound (or westbound). This street provides essential capacity into the City Center District from the north via Central Expressway. It also links to St. Paul to provide an important route to Main Street and the southern CBD districts. This plan recommends conversion of Live Oak from Harwood to Central Expressway to a two-way operation. This action improves circulation from the eastern part of the CBD to the Baylor Hospital area.

West of Central Expressway, Live Oak is four 11' lanes one-way westbound in 80' right-of-way (See Figure 57). As part of the Major Thoroughfare system, we recommend converting Live Oak to two-way between Harwood and Central Expressway. An illustration of the streetscape features is presented in Figure 58.

***Pacific Avenue (East from Ervay Street)***

Pacific Avenue provides connectivity between the Center City District and Baylor University Medical Center. The street alternates between one-way, eastbound (St. Paul to Olive Street) and two-way operations with three, four, and five lanes.

***Westbound IH 30 Frontage Road (Pegasus Project), Continuous to Commerce Street***

The Pegasus Project will reconstruct IH 30 (The Canyon) south of Downtown Dallas. The project adds service roads, including a continuous westbound/ northbound service road from IH 30 east of IH 45 to Commerce Street. This two or three-lane roadway connects westbound IH 30 to and from the Boulevard System (Good Latimer Expressway, Central Boulevard, Griffin Street, Reunion Boulevard) and the Major Thoroughfare System (St. Paul, Ervay, Lamar, and Commerce). The intersecting streets east of Lamar Street access a southbound connection to IH 35E, and northbound IH 35E will connect to Reunion Boulevard and Commerce Street.

***Eastbound IH 30 Frontage Road (Pegasus Project)***

Pegasus will also implement an eastbound frontage road on the south edge of the Downtown. This frontage road begins at Lamar as a three-lane, eastbound frontage road. Eastbound on-ramps provide access from Hotel, Lamar, and Griffin. Eastbound off-ramps provide access to Harwood Street, Central Boulevard, and Good Latimer Expressway. West from Lamar Street the frontage road aligns with a two-way Cadiz Street between Industrial and Lamar. An off-ramp from northbound IH 35E provides access to Hotel and Lamar Streets.

Figure 57: Existing Live Oak Street

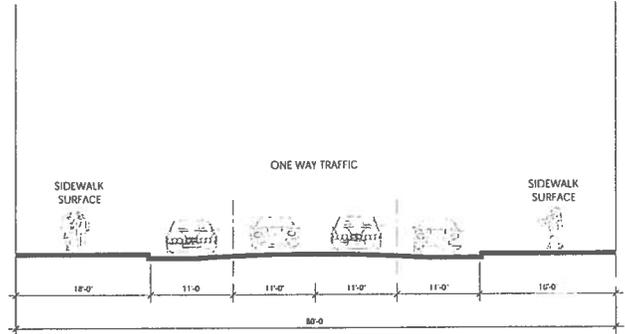
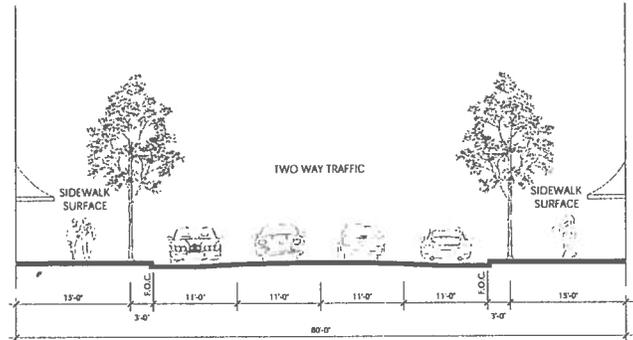


Figure 58: Proposed Live Oak Street



***Eastbound Woodall Rodgers  
Frontage Road, Continuous to  
Ross Avenue***

The eastbound Woodall Rodgers Frontage Road begins at Lamar Street and is continuous to Ross Avenue. It serves the routes that access Downtown from the west and traffic leaving via eastbound on-ramps to Woodall Rodgers. The eastbound frontage road also collects and distributes traffic leaving Downtown to the west and north.

***Westbound Woodall Rodgers  
Frontage Road***

The westbound Woodall Rodgers Frontage Road begins as southbound Central Expressway Frontage Road and ends as McKinney Avenue at Lamar Street. It works with the eastbound frontage road to collect and distribute traffic into and out of the Downtown and the uptown and Victory areas.

***Southbound IH 35 Frontage  
Road (Pegasus Project),  
Continental Street to Reunion  
Boulevard***

Another Pegasus Project improvement will rebuild IH 35E. This project includes a southbound frontage road from Continental Avenue to Reunion Boulevard that provides access to Continental and Reunion Boulevard from the north. The existing exit to Commerce Street will be replaced by an exit to Reunion or a u-turn at Reunion Boulevard that accesses Commerce.

***Northbound IH 35 Collector-  
Distributor Road (Pegasus  
Project), Commerce Street to  
Continental Street***

Northbound traffic exiting Downtown from Commerce will use a new collector-distributor roadway that provides direct access to IH 35E northbound and the Dallas North Tollroad.

# NETWORK AND CIRCULATION ENHANCEMENTS

## ONE-WAY TO TWO-WAY STREET CONVERSIONS

Based on our analysis, the study demonstrates that a system of one-way couplets and ancillary one-way streets is essential to the efficient and safe flow of traffic in the CBD in the future. After careful analysis of the impact of converting some one-way streets to two-way, including reinforcement of the stated vision, continuity of the street network, vehicle conflicts at intersections, wayfinding, LRT operations and the traffic simulation analysis during the AM and PM peak periods, 15 roadways were identified for conversion from one-way to two-way. The following is a description with accompanying justification:

### ***Pearl Street Between Marilla and South of Live Oak***

- Essential to the Boulevard System
- Improves traffic operation
- Eliminates complicated Pearl/Central intersection
- Improves circulation in Main Street District

### ***Central Expressway Between Commerce and Pacific***

- Essential to the Boulevard System
- Improves traffic operation
- Eliminates the complicated Pearl/Central intersection
- Improves circulation in Main Street District

### ***Canton Street Between Akard and Harwood***

- Triggered by Pegasus
- Works with the extension to Memorial Street
- Improves circulation in Government and Farmers Market Districts

### ***Cadiz Street Between IH 30 and Harwood***

- Triggered by Pegasus improvements that eliminate Cadiz Bridge over IH 30
- Improves circulation in Government and Farmers Market Districts

### ***Ervay Street Between IH 30 and Pacific***

- Improves circulation between Main Street District - City Hall and IH 30
- Triggered by Pegasus improvements that eliminate St. Paul Bridge over IH 30
- Improves circulation in Main Street District

### ***Houston Street Between Young and Elm***

- Essential to Boulevard System
- Improves access to Dallas County Parking Garage
- Improves circulation in West End and Convention Center/Reunion Districts

### ***Live Oak Street Between Harwood and Central***

- Improves access between CBD and Baylor University Medical Center
- Efficiently uses under-utilized capacity

### ***Browder Street Between Wood and Commerce***

- Provides circulation between Commerce and Wood Streets
- Reinstates vehicular circulation between Jackson and Commerce Streets
- Serves new residential and retail development

### ***St. Paul between IH 30 and Canton***

- Overpass at IH 30 eliminated as part of Pegasus improvements
- Improves circulation in Farmers Market District
- Provides access to/from the WB IH 30 frontage road

### ***Federal Street Between Akard and Ervay***

- Improves access to adjacent properties

### ***Patterson Street Between Field and Akard***

- Improves access to adjacent properties

### ***Akard Street Between Commerce and Elm***

- Improves circulation in Main Street District

### ***Akard Street Between Young and Jackson***

- Required reconstruction of Akard/Young intersection
- Improves circulation in Government District

### ***Field Street Between Wood and Elm***

- Requires reconstruction of Field/Elm intersection
- Improves circulation in and between Main Street and Government Districts

### ***Corbin Street Between Lamar and North Griffin***

- Improves circulation in West End District

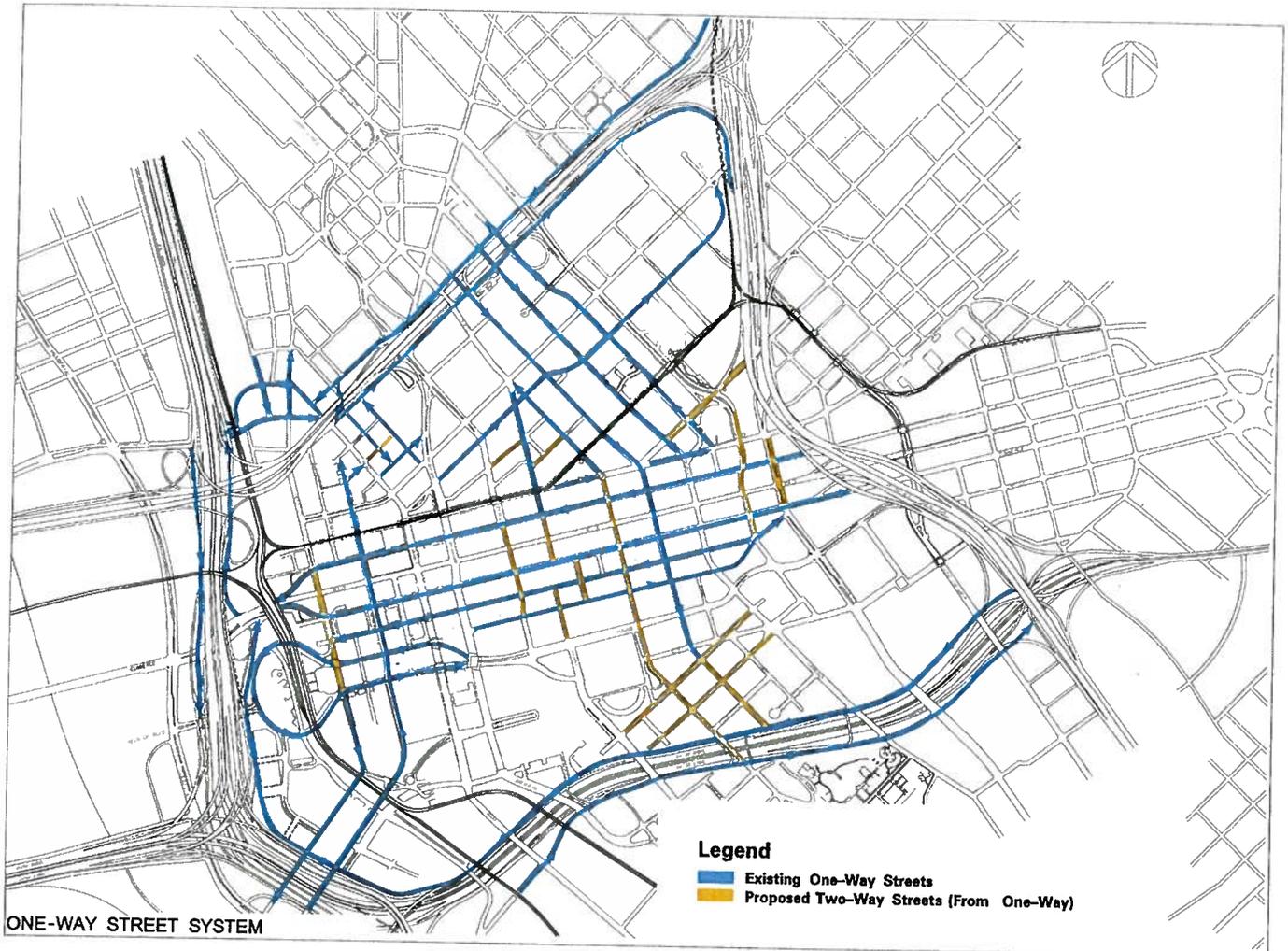


Figure 59 – One Way Street System Recommendations

## **STREET MODIFICATIONS**

The *Dallas Central Business District Streets and Vehicular Circulation Plan (Adopted 1971, Updated 1988)* presents a Master Street Plan that defines the basic layout of the Downtown streets. The Plan also describes a Ring Road System, street deletions (specific locations for street closure or abandonment), and street adjustments that are the physical adjustments required to achieve the Master Street Plan. In large part, these recommendations have been implemented over the years and created the street system that now serves Downtown.

The *Comprehensive Transportation Plan for the Dallas Central Business District* includes specific changes to the Master Street Plan, including replacement of the Ring Road System, modifications to the basic street system layout, and one recommended street closure. Those street adjustments that have not been implemented by the current Plan remain in effect unless addressed below.

### ***Removal of the Bryan Street Overpass on Central Expressway***

This project favorably affects several important aspects of the downtown transportation system. These are: the development of the new Southeast Light Rail Line from the Bryan Light Rail Transit Mall and the North Central Tunnel; reconfiguration of the Bryan/Routh Street/Good Latimer Expressway Intersection; and elimination of the Central Expressway Overpass at Bryan Street. The elimination of the existing overpass creates the transition from Central Expressway to Central Boulevard with a look and feel that is more consistent with the roadway system in the Downtown. The intersection accommodates the surface Light Rail Transit Southeast Alignment, including the improvement of the Hawkins Curves on the existing Northeast Alignment.

### ***Elimination of Pearl/Central Connection***

This roadway realignment will allow Central Boulevard and Pearl Expressway to be converted to a two-way operation in the Downtown. The southbound Central alignment now turns westward to intersect Pearl Expressway which is one-way southbound. A new southbound Central Boulevard

roadway replaces this connection through Carpenter Plaza. The expanded Central Boulevard accommodates the new southbound Central between Pacific Avenue and Commerce Street. This improvement has the added benefit of considerably increasing the amount of parkland in Carpenter Plaza.

### ***Reunion Boulevard Connection to the Trinity River Park***

Reunion Boulevard is part of the proposed Boulevard System in Downtown from IH 35E to Houston Street. This important Downtown boulevard will take on added importance as the connection between Downtown and the developing Trinity River Parks and the Trinity Parkway. The IH 35E improvements (Pegasus Project), the Trinity Parkway, and improvements to Industrial Boulevard will create the Reunion Gateway. The Reunion Boulevard design must accommodate pedestrian amenities, landscaping, and urban design features that are consistent with its important role. At a minimum, the extension requires six lanes, a full-width median, and ample accommodations for pedestrians and bicycles. A minimum right-of-way width of 150 feet for Reunion Boulevard is appropriate from the Trinity Parkway to IH 35E.

### ***Fair Park Link***

The Reunion Boulevard-Young Street-Canton Street leg of the Boulevard System will have a new significance with its link to the Trinity River Parks. The eastern extension of the boulevard also has extra significance as the Fair Park link. A ceremonial connection between Downtown and Fair Park has long been a goal for the City. This plan adopts the Canton Street extension of the Downtown Dallas Boulevard System as the Fair Park link. The Fair Park link should be a significant ceremonial linkage from City Hall to Fair Park. The design standards for the Boulevard System and the existing configuration of the segments within Downtown are consistent with this designation.

### ***Memorial Drive - Canton Street Connection***

Project Pegasus, the proposed reconstruction of the IH 30 south of Downtown, provides a new eastbound service road that is separated from Canton Street. This plan recommends the construction of a new roadway between Griffin Street and Akard Street that connects Memorial

Drive to Canton Street. This improves circulation between the Convention Center/ Reunion, Government, and Farmers Market Districts. Since this segment is discontinuous with Canton Street east of Central Boulevard, this new route should be considered for designation as Memorial Drive.

### ***Street Closure Recommendations***

The *Dallas Central Business District Streets and Vehicular Circulation Plan* recommended a number of street closures in order to create larger development sites in the Downtown. Our proposed plan makes three adjustments to those closures that have not yet been implemented. A new closure proposed for favorable consideration is **San Jacinto** between Lamar Street and Griffin Street. This street is north of the DART West Bus Transfer Center and south of a block that is largely surface parking. This closure should be considered when private or joint public/private redevelopment plans for the adjacent blocks are proposed.

**Marilla Street** between St. Paul Street and Park Avenue is currently on the plan as a potential street abandonment. In light of the designation of Marilla Street as a pedestrianway, this plan recommends that Marilla remain open and in public ownership. **Canton Street** between Marilla and Harwood is also slated for closure in the existing plan. With Canton Street now proposed for conversion to a two-way operation and Marilla's designation as a pedestrianway, it is preferred that Canton (or future Memorial Drive) remain in service to Harwood Street.

### **PROGRAMS**

Not all transportation improvements are physical changes to the network. There are recommendations that are operational in nature and others that are best implemented as programs. The following recommendations are each consistent with the Plan's vision for Downtown Dallas.

#### ***Designated Bus Layover Sites***

There are several significant Downtown destinations that are served by tour buses or school buses. The large number of buses that congregate near Dealey Plaza and in the Arts District, for example, can be a problem that

detracts from the very attraction they are serving. The problems can be minimized by the designation and dissemination of information about preferred locations for drivers to park buses after drop-off and prior to pick-up of passengers. With the advent of cell phone communication, the timely arrival of the return bus at a preferred pick-up location (that may be different from the drop-off location) is easily accomplished. The designation of an appropriate site for the buses to stage is necessary. A candidate location is the parking that serves Reunion Arena. Other locations may be suitable as well. To be effective, this concept needs to be identified and communicated to those destinations that generate the bus demand. The staffs of these destinations can distribute the needed information, including locations and maps to the persons making the arrangements for specific events and tours. Further, specific communications directed to transportation providers such as the Dallas County School District facilitate the identification of easier routes and bus parking.

#### ***Retail District Enhancements***

There are three related improvements that are made to encourage and support the increase of quality retail activity in the Main Street District. One of these is the development of and signing to support additional retail parking that serves the Main Street District. This is currently taking the form of additional public parking developed with residential conversions. If demand warrants, an additional garage could be developed using the City Center Tax Increment Finance District. The Downtown Dallas Partnership is implementing CityPark, a program that enhances the availability of parking priced for retail and with a universal validation system available for participating retailers.

A unified valet district is a related concept that enhances retail activity by making it easier to access shopping, restaurant, and entertainment activities Downtown. A unified valet operation offers users the ability to make multiple visits to Main Street locations and retrieve their vehicle from a convenient location even if different from the drop-off location. All of these retail district enhancements are made more useful by improved circulation that is to be implemented by the conversion to

two-way operation of Field, Akard, and Ervay Streets in the Main Street Retail District.

Having discussed the importance of parking to the Main Street District, it is not contradictory to emphasize the importance of transit to the continued vitality of this area. Elm, Main, and Commerce Streets are vital components of the bus routes that serve residents, customers and workers Downtown. The buses that operate on Elm and Commerce Streets are facilitated by the designation of the curb lane for the use of buses and turning vehicles. This places the buses on the north side of Elm and the South side of Commerce Streets. Only two-way Main Street accommodates buses on both sides. The Plan recommends that, to the extent it is consistent with DART's bus operations, Elm and Commerce Streets are preferred over Main Street for bus routes.

## **STREETCAR CIRCULATION SYSTEM**

In addition to getting to and from Downtown, the transportation challenges for Downtown Dallas include getting around in Downtown. The seven Downtown districts are each regional destinations that necessitate regional transportation service. Additionally, the districts are *local* destinations that generate *intra-CBD* trips by residents, visitors, and employees. The number of districts and the size of the Downtown means that a special circulator system is needed to complete the supply of transportation necessary to meet the Vision for Downtown Dallas.

In the past, Downtown Dallas was served by bus circulation systems. In recent years, prompted by the success of light rail in Downtown, the operational example of the McKinney Avenue Historic Trolley, and examples of other cities, a streetcar system has gained momentum as the ultimate circulator solution for Downtown Dallas. Building on studies conducted by DART, Downtown interests advanced the concept of a new organization: to promote and implement a modern streetcar system that serves Downtown Dallas and even some of the surrounding neighborhoods that comprise Dallas the Plan's Center City.

The Comprehensive Transportation Plan for Dallas Central Business District endorses the streetcar concept for a Downtown circulation system. It also recommends the establishment of a mechanism by which DART, the City of Dallas, and the McKinney Avenue Transit Authority (MATA) would jointly participate in the funding, development, implementation, operation, and maintenance of a streetcar system that meets the circulation needs for Downtown.

DART is currently anticipating that development of specific alignments for a streetcar system would be developed in conjunction with the Alternatives Analysis for the second light rail line. Funding for a streetcar system can be pursued under appropriate federal programs (a "Small Starts" category is under consideration at this time under the proposed Transportation Bill).

The current focus is to construct an extension of the current McKinney Trolley into Downtown on Olive Street to connect to the existing transit mall. Future phases would extend the system to intersect the second LRT alignment. This new line alone, with the existing alignment and the second LRT alignment addresses a significant percentage of the circulation needs Downtown. Additional routes to provide more circulation within Downtown and even to nearby districts will build on this initial streetcar system.

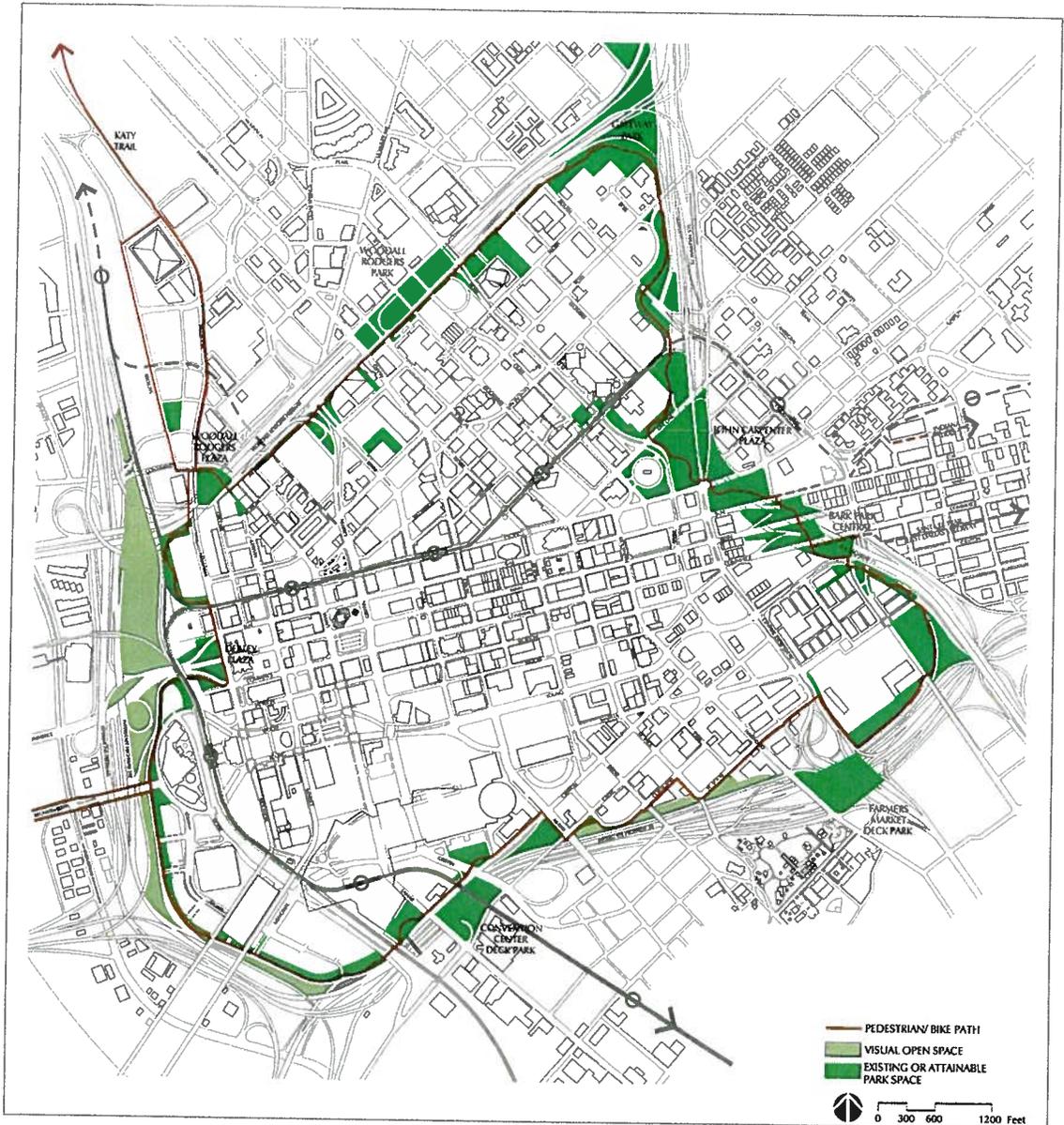


Figure 60 – Emerald Bracelet

***Downtown Bike Route System***

The Bike Route System for Downtown is illustrated in Figure 60. The map indicates existing bike routes through the CBD as well as a new proposed Emerald Bracelet Trail System. Another concept indicated on the CBD Bike Route System is the location of bicycle amenities at key locations. These typically are shown at certain bike route

intersections near attractions and land uses that are bike-trip generators. These amenities, such as bike racks or bike lockers, recognize that the increasing use of bicycles for recreation and commuting is a beneficial trend consistent with the CBD Vision for Downtown Dallas.

# THE PLAN

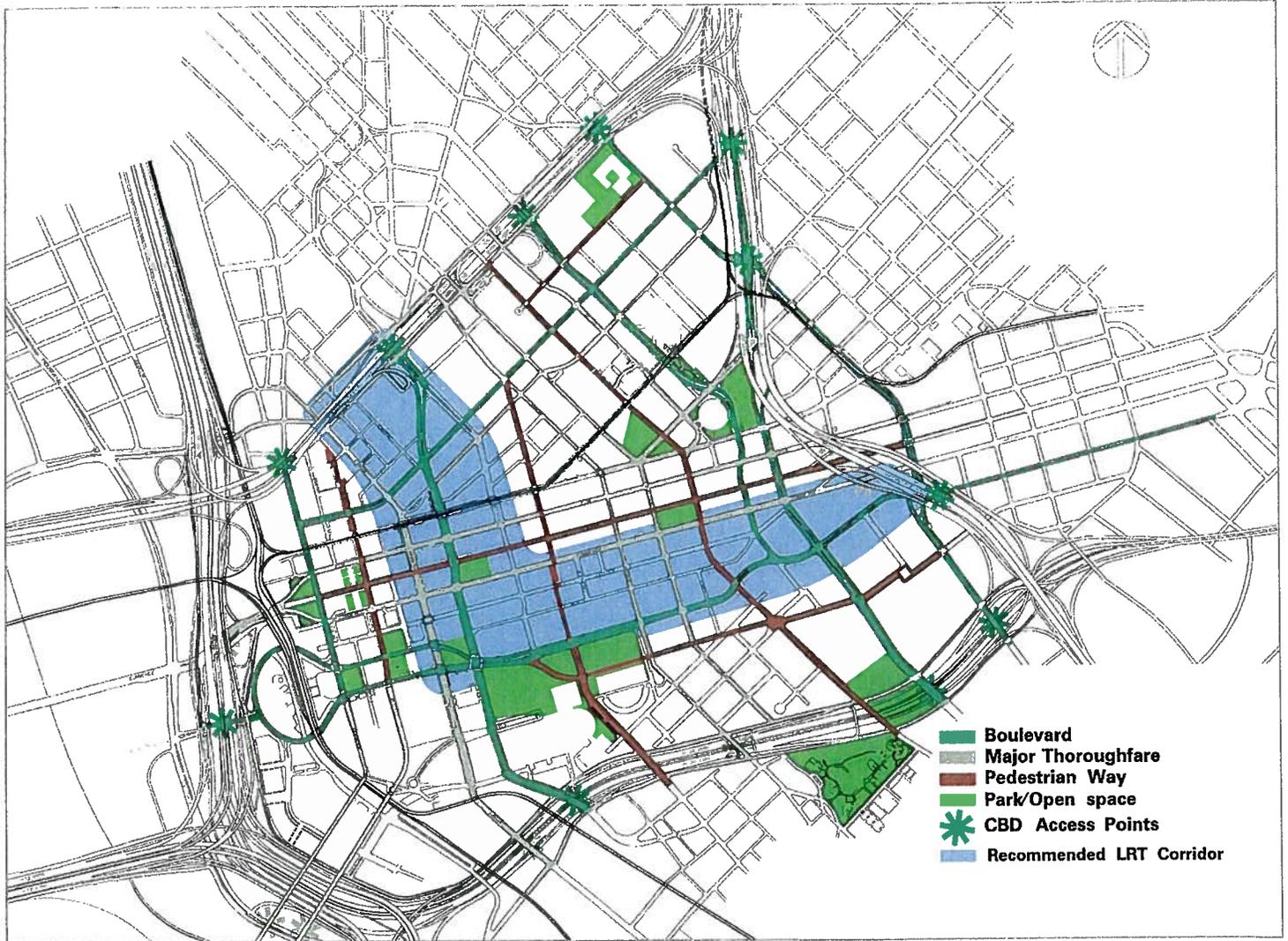


Figure 61: The Recommended Plan

**APPENDIX**

**SECTION IV**

**Dallas CBD Comprehensive Transportation Study  
Stakeholder Committee and Individual Meetings  
(As of May 17, 2005)**

**Confirmed Stakeholder Committee Members:**

<b>Organization</b>	<b>Individual Invited</b>	<b>Confirmed Member</b>
Arts District Friends	Lee Papert	Lee Papert
Belo Corporation (major employer) & Inside the Loop	Robert Decherd	Robert Decherd (Participating through Steering Committee)
Business Owner (NW)	John Zogg, Crescent Real Estate	Kirby White, Crescent Real Estate
Business Owner (SW)	Thom Ridnour, V.P., Dallas/Tulsa Operations, TrizecHahn	Thom Ridnour
Business Owner	John C. Tatum	John C. Tatum
Cab industry representative	Karl Kuhlman	Karl Kuhlman
CBD Resident's Council	Don Raines Jr.	Don Raines Jr.
Cedars TIF	Pete Coughlin, Matthews Southwest	Pete Coughlin
Central Dallas Association	Larry Fonts	Larry Fonts initially, later replaced by Nancy Hormann
Central Dallas Association [RD]	David Biegler, Chairman	David Biegler
Convention/Visitor's Bureau	Greg Elam, Senior V.P.	Elam attended 9/29 mtg. (although, leaving the Bureau soon)
Dallas Center for the Performing Arts		Doug Hildinger, Design Principal with Hillier Architects (architect for the Center)
Dallas County Community College	Bill Wenrich	Wright Lassiter
Dallas Independent School District	Dr. Larry Groppe, Dept. Supt.-Business Services	George C. Sparks
Dallas World Aquarium	Daryl Richardson	Arden Richardson
Deep Ellum Association	Sean Wisdom	Sean Wisdom
Downtown Improvement District	Patty Kleinknecht	Patty Kleinknecht
Downtown Improvement District	Tom Persch, Chairman	Tom Persch
Fair Park	Eddie C. Hueston Executive General Manager	Eddie C. Hueston
Farmers Market	Troy Thorn	Troy Thorn
Greater Dallas Asian Chamber of Commerce	Les Tanaka	Les Tanaka
Greater Dallas Chamber of Commerce	Jan Hart Black President	Robert Prendergast, Executive VP, Truckload-USA
Greater Dallas Chamber of Commerce	Tom Leppert, Chairman	Martin J. Malloy, Pres., Half Associates
Greater Dallas Hispanic Chamber of Commerce	Andres Ruzo	Called and plans to appoint someone
Greater Dallas Hispanic Chamber of Commerce	Arturo Violante	Called and plans to appoint someone
Greyhound	Stephen E. Gorman, Pres./CEO	Stephanie Gonterman
Neiman Marcus (major retailer)	Neva Hall	Gregory G. Shields, Sr. V.P./Ops & Dist.
Parking Industry	Michael H. Anderson	Michael H. Anderson
Small CBD business owner (central)	Joyce Foreman, Foreman Office Products, Inc.	Joyce Foreman
Transit Rider	Charles Johnson	Charles Johnson
Transit Rider-Disabled	John Killian	John Killian
West End Association	Gregg Schooley	Gregg Schooley

**Not Confirmed before First Stakeholder Meeting, but contacted before subsequent meetings:**

Organization	Individual Invited	Status
American Indian Chamber of Commerce of Texas	Dean Bridges	
American Indian Chamber of Commerce of Texas	Shirley Hankins	
Business Owner (NW)	John Sughrue, CEO, Brook Partners	
Business Owner (SE)	Bob Bussone, V.P. of Development, Camden	
Central City TIF	Miles Zitmore, V.P./Investments, A.G. Edwards & Sons, Inc.	
City Council District 2	Hon. John Loza	Had time conflict
City Council District 14	Hon. Veletta Forsythe Lill	
Convention/Visitor's Bureau	Peter Kline, Chairman	
Dallas Black Chamber of Commerce	Reginald Gates	
Dallas Plan	Karen Walz	Have disbanded
Dallas Plan	Elaine Agather, Chair (CEO JP Morgan Chase)	Have disbanded
Dallas Zoo	Rich Buickerood	Not interested in participating
Greater Dallas Asian Chamber of Commerce	Sun Kwon Lee	
Main Street Partnership	Susan Mead	
McKinney Avenue Trolley Authority	Miguel del Valle	Briefed in separate meetings
Restaurateur	Brady Wood	Responded 11/12 that he declined to participate
Sixth Floor Museum	Jeff West, Executive Director	However Dallas County is a Study sponsor and is represented on Steering & Technical Committees
Stemmons Corridor Business Association	David A. Neumann, Chairman	
Urban goods movement representative	Ed Grube Director of Facilities Thanksgiving Square	

**Individuals and Organizations Contacted and Meetings Confirmed:**

Organization	Individual Invited	Status
Downtown Property Owner	Chip Johnson	Meeting 4/18/05
Downtown Property Owner	Carolina Pace	Meeting 4/18/05
Downtown Property Owner	John Pace	Meeting 4/18/05
Downtown Property Owner	Lawrence E. Hamilton	Meeting 4/18/05
Downtown Property Owner		Meeting 4/18/05
Downtown Property Owner	Steve Kanoff	Meeting 4/18/05
Downtown Property Owner	Marc Richman	Meeting 4/18/05
Downtown Property Owner	John C. Tatum	Meeting 4/18/05
Downtown Property Owner	Terry Hundley	Meeting 4/18/05
Manager Hotel Lawrence	Sebron Hood	Meeting 4/18/05
Greater Dallas Planning Council Board of Directors	Karen Walz, President	Meeting 5/3/05
Downtown Property Owner	Otto Wetzel	Hosted a briefing for the Arts District Association

Screening of Alternatives  
Dallas CBD Comprehensive Transportation Study

Item #	Description	Screen 1 <sup>1</sup> Out or Base or Alternative	Screen 2 <sup>2</sup> Out or Base or Alternative	Recommendation	Vision					Impact					Notes	
					Residential	Retail	Ped/Bike	Transit	Traffic Ops.	Ease of Use	Circulation	Cost	Parking	Capacity <sup>3</sup>		Safety
1	Convert from one Way to Two Way Harwood - between Pacific and Ross	Alternative	Out	X	+	+	0	--	--	--	--	\$550	--	0.89	--	Contradicts the need to expand the LRT station; lots of parking; decrease ability to enhance pedestrian treatment
2	One Way - between Pacific and Ross	Alternative	Out	X	0	+	0	--	--	--	--	\$550	--	0.89	--	Lots of parking; capacity; conflict with Harwood
3	Pearl - between Merkle and Central	Alternative	Alternative	✓	+	+	+	0	-	+	+	\$550	0	0.92	-	Works with the completion of the Central / Pearl Boulevard as part of the Boulevard System.
4	Central Expressway Overpass (at Central and Pearl)	Alternative	Alternative	✓	+	+	+	0	0	+	+	\$550	0	1.00	-	Completes the Boulevard System; provides for the Pearl Street
5	Central Street - between Akard and Harwood	Alternative	Alternative	✓	+	+	+	0	0	+	+	\$50	0	0.84	-	Connection to IH 30 eliminated by Pedways
6	Central Street - between Ross and Central	Alternative	Alternative	✓	+	+	+	0	0	+	+	\$50	0	0.87	-	Connection to IH 30 weakened by Pedways
7	San Jacinto - between Griffin and Ross	Out	Out	X	0	0	0	0	-	+	+	\$50	0	--	-	Too much traffic; important downtown east route
8	Harold Street - between Commerce and Elm	Alternative	Out	X	0	+	-	0	-	0	+	\$50	0	1.54	0	2-way circulation is important; this is an option
9	Akard Street - between Elm and Ross	Out	Out	X	+	+	0	0	-	-	-	\$50	--	--	-	Akard / Envy / Ross intersection complexity; capacity needed
10	Envy Street - between Commerce and Elm	Alternative	Alternative	✓	+	+	0	0	-	-	+	\$50	--	1.37	-	Complexity of circulation pattern and intersection; capacity needed
11	Envy Street - between Elm and Ross	Out	Out	X	+	+	0	0	-	-	+	\$50	--	--	-	Akard / Envy / Ross intersection complexity; capacity needed
12	Envy Street - between Young and IH 30	Base	Base	✓	+	+	0	0	-	0	+	\$50	--	--	-	Requires circulation between city hall and IH 30
13	Field Street - between Commerce and Elm	Alternative	Alternative	✓	+	+	0	0	-	-	+	\$50	--	0.99	-	2-way circulation is important; this is an option
14	Elm Street - between Griffin and St. Paul	Out	Out	X	+	+	0	-	--	--	+	\$50	--	--	-	Capacity needed on Elm Street; too confusing for drivers; parking impacts
15	Commerce Street - between Griffin and St. Paul	Out	Out	X	+	+	0	-	--	--	+	\$50	--	--	-	Capacity needed on Elm Street; too confusing for drivers; parking impacts
16	Houston Street - between Griffin and Elm	Base	Base	✓	0	+	0	0	0	+	+	\$50	--	0	0	As supported by signage and priority signage. This should be part of Boulevard System
17	Wood Street - between Griffin and Central	Out	Out	X	0	0	-	--	-	0	0	\$50	--	--	-	Brewster Street Transit Terminal Extension; Narrow ROW; Private Garage entrance at Griffin
18	Beason Street - between Griffin and Central	Out	Out	X	0	0	-	--	-	0	0	\$50	--	--	-	Conflicts with proposed LRT Alignment
19	Live Oak Street - between Harwood and IH 345	Base	Base	✓	+	0	0	0	0	0	0	\$50	--	1.13	-	Improved linkage between CBD and Baylor Medical Center
Bicycle Mobility																
20	Jackson Street - between Market and Austin	Out	Out	X	0	0	0	0	-	-	--	\$50	--	--	0	Provides needed local access
21	Jackson Street - between Austin and Lamar	Out	Out	X	0	0	0	0	-	-	--	\$50	--	--	0	Provides needed local access
22	Main Street - between Lamar and Griffin	Out	Out	X	0	-	0	+	--	--	--	\$50	--	--	0	Future DART station can be placed elsewhere to eliminate the need for this closure
23	Main Street - between Houston and Market	Out	Out	X	0	--	0	0	--	--	--	\$50	--	--	0	Provides necessary access to the Main Street Retail District
24	Magnolia Street - reconfigure eastbound east ramp to Field	Base	Base	✓	+	+	0	0	+	+	+	\$50	+	+	+	Already on Master thoroughfare plan for future improvement; improves geometry
25	San Jacinto - between Griffin and Lamar	Alternative	Base	✓	+	+	+	--	-	0	-	\$50	0	0.21	0	Requires a larger development site to be parcel use plan; need to see open lot for access to DART
26	Central Street - between Merkle and Harwood	Base	Base	✓	+	+	0	0	0	0	+	\$50	0	0	+	Recommended in 1971 plan; simplifies intersection
27	Lyda Street - between Park and Harwood	Base	Base	✓	+	+	0	0	0	0	+	\$50	0	0	+	Simplifies intersection
28	Cardo Street - between Harwood and Pearl	Base	Base	✓	+	+	0	0	0	0	+	\$50	0	0	+	Recommended in 1971 plan; simplifies intersection
Pedestrian Connectivity																
29	Extend pedestrian arrival to Arts District on St. Paul	Base	Base	✓	+	+	+	+	0	0	0	\$50	--	--	0	Improved pedestrian connectivity between stations and Arts District
30	Extend pedestrian arrival to Arts District on Harwood	Base	Base	✓	+	+	+	+	0	0	0	\$50	--	--	0	Improved pedestrian connectivity between stations and Arts District
31	Extend pedestrian arrival to Arts District on Pearl	Base	Base	✓	+	+	+	+	0	0	0	\$50	--	--	0	Improved pedestrian connectivity between stations and Arts District
32	Extend pedestrian arrival to Arts District on Lamar	Base	Base	✓	+	+	+	+	0	0	0	\$50	--	--	0	Improved pedestrian connectivity between stations and Arts District
33	Main Street	Alternative	Alternative	✓	+	+	+	-	0	0	0	\$50	--	0.95	0	Widen sidewalks at various locations; Consistent with recommended pedestrianway system
34	Main Street	Alternative	Base	✓	+	+	+	0	0	0	0	\$50	--	0.21	0	Widen sidewalks between CH 2702 and Farmers Market
35	Market Street	Alternative	Base	✓	+	+	+	0	-	0	0	\$50	--	1.23	0	Widen sidewalks at Dallas County Plaza; Consistent with recommended pedestrianway system
36	Flora Street	Base	Base	✓	+	+	+	0	0	0	0	\$50	--	0	0	Widen sidewalks at Dallas County Plaza; Consistent with recommended pedestrianway system
37	Elm Street	Alternative	Alternative	X	+	+	+	0	0	0	0	\$50	--	1.15	0	In Lieu of making Elm 2-way, widen sidewalks; Consistent with recommended pedestrianway system
38	Commerce Street	Alternative	Alternative	X	+	+	+	0	0	0	0	\$50	--	0.92	0	In Lieu of making Commerce 2-way, widen sidewalks; Consistent with recommended pedestrianway system
39	Akard Street	Alternative	Out	X	+	+	+	0	0	0	0	\$50	--	1.32	0	Widen sidewalks at various locations; Consistent with recommended pedestrianway system
Boulevard System																
40	Widen South Street between Byron Street and Woodall Rodgers	Base	Base	✓	+	+	+	+	+	+	+	\$50	0	+	+	Incorporate into Boulevard System
41	Eliminate Central Expressway Overpass at Ross Avenue	Base	Base	✓	+	+	+	+	-	+	+	\$550	0	-	-	Part of the plan coordinated by City, DART and TxDOT. Incorporate into Boulevard System
42	Eliminate Central Expressway Overpass at Ross Avenue	Out	Out	X	+	+	0	0	--	+	+	\$550	0	--	--	Too much traffic; too close to US75 ramps
43	Provide designated parking area for four, shared and shared hours	Base	Base	✓	+	+	+	+	+	+	+	\$50	+	+	+	Look for opportunities around transit-based destinations
44	Fair Park Link (Central Street Alignment)	Base	Base	✓	+	+	+	0	0	0	+	\$50	--	0	+	Part of Long Range Plan
45	Expand Pearl Street through Farmers Market	Out	Out	X	-	-	-	0	0	0	+	\$50	0	+	--	Proposed by Farmers Market at consultants
46	Live Oak Street (between St. Paul and Harwood)	Base	Base	✓	+	+	+	0	0	0	+	\$50	0	+	+	Incorporate urban design features, as long as three traffic lanes are provided
47	Live Oak Street (between St. Paul and Harwood)	Base	Base	✓	0	0	0	0	+	+	+	\$50	0	+	+	Not yet selected by LRT Alignment
48	Development of Reunion Boulevard as Trinity Park Link	Base	Base	✓	+	+	+	0	0	+	+	\$50	0	0	0	Proposed CBD-Trinity Park access
49	Eliminate street parking operations in Retail District	Out	Out	X	+	+	0	-	0	+	+	\$50	+	0	0	Reducing street parking through conversion of field lanes to park way. There is already a proposal to create a retail district
50	Development of TP Parking Garages	Base	Base	✓	+	+	+	0	+	+	+	\$550	+	0	0	Serving the retail area and the retail parking needs
51	Urban Streetcar with "connector" capacity	Alternative	Out	X	+	+	+	+	-	0	-	\$550	--	--	0	Focus on serving areas not served by LRT
52	Minimize (re-route) buses on Main Street	Base	Base	✓	+	+	+	+	0	+	+	\$50	0	0	+	DART is moving in this direction already; base of increased LRT service
53	Live Oak Street (between St. Paul and Harwood)	Out	Out	X	+	+	+	+	+	+	+	\$550	0	+	+	Proposed by Arts District Association

Out: These alternatives are eliminated from further analysis based on the initial evaluation. Summary of the evaluation is provided in Notes section of the table.  
 Base: These alternatives will be included in the 2030 Base run of the VSSIM model.  
 Alternative: These alternatives will be considered in further evaluation and analysis, as these alternatives don't seem to have any fatal flaws based on initial evaluation.  
 For Volume to Capacity analysis, existing (2003) volumes and existing capacities (lane configurations) were used.  
 1 Technology Recommendation Only

