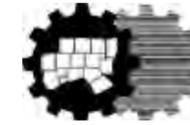




2011

DALLAS

BIKE PLAN



North Central Texas
Council of Governments



City of Dallas



JUNE 2011

ACKNOWLEDGMENTS

This 2011 Dallas Bike Plan (the Plan) was prepared for the City of Dallas (the City) within a public participation planning framework, and for the North Central Texas Council of Governments (NCTCOG) to serve as the basis for the creation of a regional template. This Plan was developed in close coordination with the Dallas County, Dallas Area Rapid Transit (DART), the Texas Department of Transportation (TxDOT), and the Dallas Independent School District (DISD).

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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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EXECUTIVE SUMMARY

PLAN PURPOSE

The primary purpose of, and impetus for the 2011 Dallas Bike Plan (Plan) is to provide an update to the 1985 Dallas Bike Plan (1985 Plan). This Plan update provides a master plan and an implementation strategy for a new bicycle network, the Dallas Bikeway System, which will be made from designated on-street and off-street facilities. This document also provides recommendations for supporting policies, and the identification of bicycle-related programs to be recognized, sponsored, or supported under the Plan.

GUIDING PRINCIPLES

The guiding principles for the 2011 Dallas Bike Plan provide an overarching mission and vision, in addition to goals and objectives. The guiding principles form the basis for the identified programs, specifications for the Dallas Bikeway System Master Plan, and the implementation strategy. Ultimately, the Plan is structured around creating actions to implement the goals and objectives.

PLAN MISSION

To improve the safety, use and efficiency of the bicycle in the City of Dallas, and to better integrate the bicycle mode within the City and regional transportation system.

PLAN VISION

The implementation of the 2011 Dallas Bike Plan will result in the existence of the following characteristics that describe the Dallas Bikeway System and the City's bicycling culture:

1. Wide-spread use of bicycles as an accepted and practical form of transportation, recreation and exercise, contributing to a healthier and happier lifestyle for Dallas residents.
2. A safe, efficient, connected bikeway system for all of Dallas, used by people of all ages and abilities, including a range of standardized on-street and off-street bicycle facilities that are sensitive to their land use and transportation context.
3. A high level of education and public awareness on how to use the bikeway system's facility types, and on bicycling safety, laws, and techniques.
4. A bicycling culture which promotes bicycling as a viable transportation option that is part of a comprehensive, City-sponsored strategy to revitalize neighborhoods and improve public health and air quality.

PLAN GOALS

- Goal 1: Create a fully interconnected, seamless bikeway system that connects to all areas in the City and to every adjacent jurisdiction.**

Goal 2: Improve education and enforcement, establish supporting policies.

Goal 3: Promote and install end-of-trip facilities.

Goal 4: Identify funding sources for all projects and programs in the Plan.

Goal 5: Provide strategies to measure and evaluate success of Plan over time.

Goal 6: Provide a set of standards in the Plan that can be used as a regional template for other jurisdictions in the North Central Texas region.

PLAN'S RELATIONSHIP TO THE CITY'S COMPLETE STREETS DESIGN MANUAL INITIATIVE

The development of the Dallas Bikeway System will be achieved within the context of executing the City's Complete Streets Initiative, with the overall goal of having a balanced, integrated, safe, and efficient surface transportation system. The Complete Streets Initiative is being pursued to further develop and build upon the policy direction as established in the *forwardDallas! Comprehensive Plan*.

PLANNING PROCESS

PUBLIC INVOLVEMENT/OUTREACH

The public was involved in crafting the Plan and its recommendations throughout the planning process. Public involvement and input opportunities included:

- A series of three public meetings.
- An online survey.
- Providing input via an interactive online mapping tool.
- Targeted focus groups.
- Outreach to under-represented groups.

PLAN COMMITTEES

Three committees provided support and guidance for development of the 2011 Dallas Bike Plan. The Bicycle Policy Steering Committee consisted of decision makers charged with reviewing and advancing policy related to

bicycling within the City of Dallas, and providing the regulatory and inter-agency framework for the Plan's implementation. The Bicycle Advisory Committee was appointed by the Bicycle Policy Steering Committee and consisted of community members with an interest in improving bicycling conditions in Dallas. The Project Review Committee was the technical committee comprised of agency staff from DART, TxDOT, Dallas County, DISD, and various City departments that will assist with implementation of the adopted Plan.

Together the three 2011 Dallas Bike Plan committees reviewed and provided input on all aspects of the Plan including the following key Plan elements:

- Developed project vision, goals, and objectives that were presented at the first open house (attended by approximately 320 people). After further input at the open house, they were once again reviewed and revised by the three committees,
- Reviewed and provided input into two important online tools to collect public input: 1) interactive mapping website and, 2) public survey (described in Chapter II: Planning Process),
- Reviewed and provided feedback on the draft facility recommendations (draft bikeway network) developed by the consultant team,
- Helped develop project prioritization guidelines for implementing the plan, and
- Provided oversight and review of the draft Plan.

ANALYSIS AND DATA COLLECTION

A technical and policy analysis was completed in order to get a full understanding of current practices, and to identify opportunities and constraints for developing the Plan. There were three parts to the analysis:

- 1) A complete review of existing planning documents.
- 2) Stakeholder focus groups.
- 3) A visual survey of the Dallas Bike Plan area.

DALLAS BIKEWAY SYSTEM MASTER PLAN

One of the main goals of the 2011 Dallas Bike Plan is to create a fully interconnected, seamless, and safe Dallas Bikeway System that connects all areas of the City and adjacent jurisdictions, and meets the needs of all types of bicyclists. This requires a master plan for the installation of context-appropriate bicycle facilities that have been recommended with input from the public, the City of Dallas, the NCTCOG, DART, Dallas County, TxDOT, and surrounding jurisdictions.

NETWORK OVERVIEW

The Dallas Bikeway System Network (Figure 1) extends to all parts of the City of Dallas, and is designed to meet the needs of all types of bicyclists.

At full buildout, the envisioned Dallas Bikeway System will feature 1,300 miles of interconnected bicycle facilities:

- ~840 miles of on-street facilities
- ~460 miles of off-street facilities
- over 130 miles of inter-jurisdictional connections

DALLAS BIKEWAY SYSTEM NETWORK STATISTICAL SUMMARY

The following tables provide an overview of the Dallas Bikeway System, divided by facility type.

Breakdown of On-Street Facilities	Miles	Percent of 604 Miles Studied
Bike lanes	123	21%
Shared lane markings	213	35%
Climbing lanes	2	.5%
Cycle track/buffered bike lane	115	19.5%
Paved shoulder	19	3%
Sub-Total	472	
Further study needed*	125	21%
Total Miles	597	100%
Additional network connections (not studied)**	236	
Total on street network	833	

* Further study needed: Streets where design solution not immediately apparent.

** Additional network connections: Streets that are important to the network but have not been studied. In most cases, shared lane markings will be most appropriate.

Figure 1. Breakdown of on-street facilities.

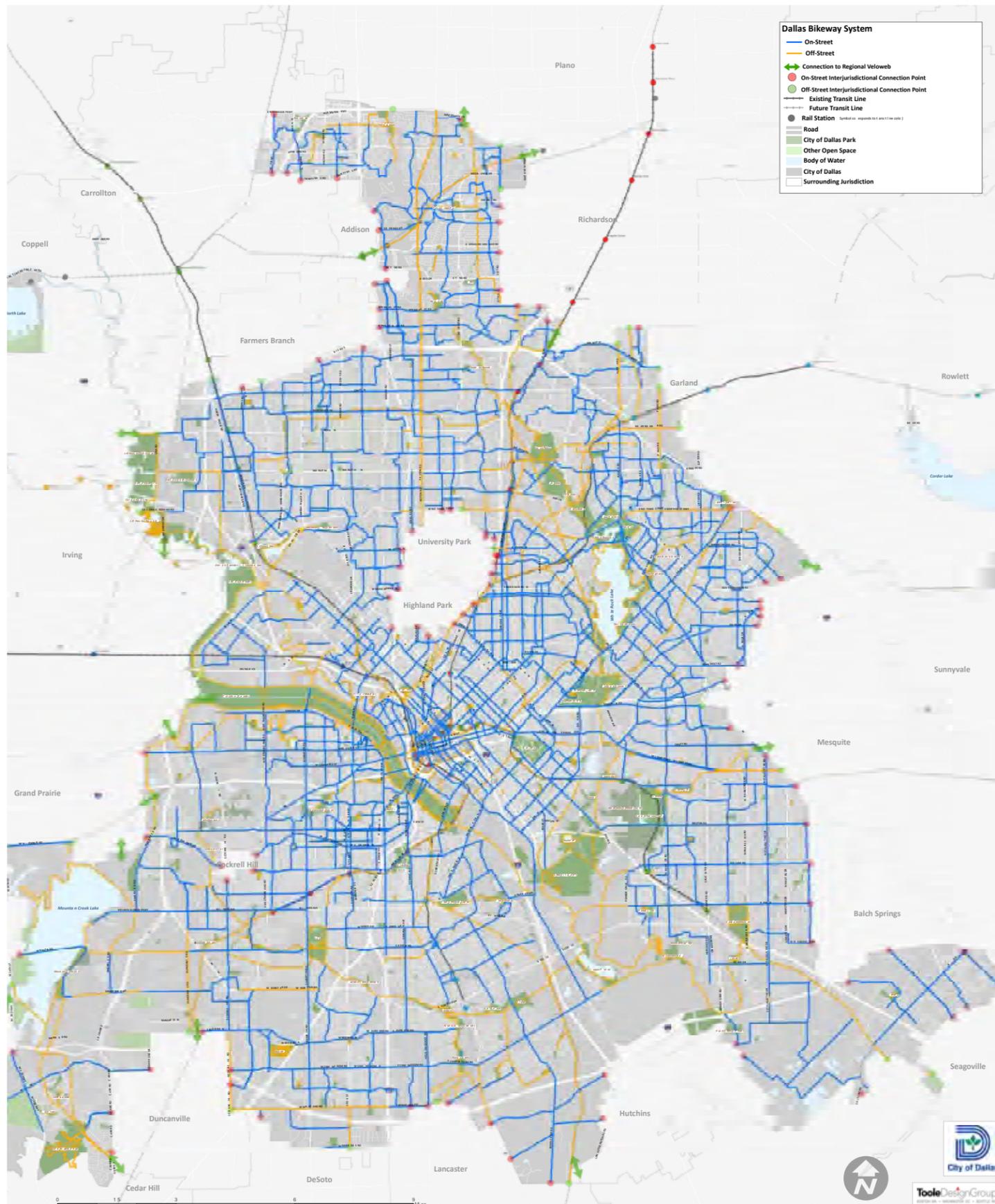


Figure 2. Network overview.

Breakdown of Off-Street Facilities*	Miles	Percent of Off-Street Network
Existing or funded	130	29%
Planned	170	37%
Proposed	97	21%
Sidewalk - bikes permitted	59	13%
Total Miles	456	100%

* Note: Off-street facilities were not evaluated as part of this project

Figure 3. Breakdown of off-street facilities.

The Plan identifies examples and possible locations of regionally significant and signature projects that could be planned and designed as elements of the bikeway system network. Examples include the Design District Connection over I-35, a signature bridge over U.S. 75 for the White Rock Creek Trail, the Medical City/Forest Lane Connection, and a bicycle-pedestrian bridge over U.S. 75 for the Katy Trail.

BICYCLE PROGRAMS AND SUPPORTING POLICIES

BICYCLE PROGRAMS

Education, encouragement, and enforcement programs are essential to achieve the full set of goals and objectives of this Plan. The City will help to facilitate events and programs that will allow community groups to better participate in the encouragement and outreach to the rest of the community about the positive, healthy aspects of bicycling.

PROGRAMMATIC ACTIONS

The Plan identifies a number of actions to improve and promote bicycle safety education and enforcement, and for the encouragement and promotion of bicycling in the City of Dallas. These actions are listed below and elaborated on in the Plan.

BICYCLE SAFETY EDUCATION AND ENFORCEMENT

Action 5.1: Improve bicycle safety education and awareness in the City of Dallas through partnerships with community organizations.

Action 5.2: Promote and enforce mandatory bicycle helmet use in Dallas through partnerships with the Dallas Police Department and community organizations.

BICYCLE TRANSPORTATION / DALLAS BIKEWAY SYSTEM ADVOCACY AND MARKETING

The Plan's recommended actions for bicycle advocacy and the Dallas Bikeway System marketing include:

- Expanding and maintaining the City's bicycle planning program,
- Continuing a citizen-based technical advisory committee,
- Having a Plan implementation fundraising task force,
- Facilitating and supporting bicycling promotional events,
- Maintaining and providing a Dallas Bikeway System guide map,
- Planning and implementing a bicycle sharing program,
- Planning and implementing a youth bicycle program, and expanding the City's Safe Routes to Schools program
- Increasing enforcement of bicyclist and motorist behavior
- Establishing a bicycle commuter incentives

SUPPORTING POLICIES

The Plan identifies a number of bicycle-specific policy changes that will be necessary to implement the programs and facilities in the 2011 Dallas Bike Plan. Several more policy recommendations that are relevant to bicycling in Dallas and the Dallas Bikeway System, but which cannot be considered exclusively or in isolation from the other transportation modes and street elements, will be addressed in the Dallas Complete Streets Initiative/Design Manual.

DEMONSTRATION PROJECTS AND EARLY IMPLEMENTATION

A full list of demonstration/early implementation projects, including facility type and project limits are provided in the Implementation Strategy Chapter of the Plan.

BIKEWAY SYSTEM IMPLEMENTATION STRATEGY

The implementation strategy and project prioritization methodology for the Dallas Bikeway System Master Plan is generally guided by first providing those parts of the bicycle network within a three-mile radius of rail transit stations to local destinations. Using this general approach for bicycle circulation, access, and parking around transit is the most practical and feasible means to having an integrated, and almost citywide alternative transportation system in the shortest time possible. Taking advantage of other opportunities early on, such as connecting trails to destinations

and to each other, is also part of the overall strategy for implementing the Dallas Bikeway System. The many funded roadway improvement projects currently under design at the City, with input from this Plan process, will offer an opportunity to implement portions of the envisioned bicycle network in the Plan's earlier stages of implementation. Each year, the City rebuilds and resurfaces streets that are on the bikeway system.

IMPLEMENTATION PHASES

There are demonstration/early implementation projects plus three main implementation phases: Near-Term (2011-2014), Medium-Term (2015-2017), and Long-Term (2018-2021). A description of each phase is provided in detail in the implementation strategy.

PRIORITIZATION CRITERIA AND METHODOLOGY

The prioritization methodology used in this Plan is based on estimated levels of current or latent demand for bicycle facilities. For a detailed discussion of the methodology see Chapter VI, Implementation.

ACTIONS

The Plan identifies a number of specific actions related to planning of the Bicycle network, evaluating and tracking Plan progress, funding, and updating the Plan. These actions are summarized below. A discussion of each Action is provided in the Plan.

PLANNING

Action 6.1: Coordinate implementation of the 2011 Dallas Bike Plan with Complete Streets Policy.

Action 6.2 Provide necessary staff expertise and commitment to implement this Plan within the timeframe identified.

Action 6.3: Adopt provisions for how to create and run an effective Bicycle Advisory Board (BAB).

PLAN EVALUATION

The following recommended actions will help the City evaluate and monitor the Plan's implementation and effectiveness in reaching the stated vision and goals:

- Task the Dallas Bicycle Advisory Board to monitor and track implementation of the Plan.
- Establish base line data and data collection methods that can be used to measure success in the future.
- Pursue League of American Bicyclists (LAB) Bicycle-Friendly Community designation.

FUNDING

The following recommended actions will aid in the identification and collection of funds from public and private sources for the implementation of this Plan:

- Partner with local events and hold other events to raise funds for Bike Plan implementation, while at the same time promoting bicycling in Dallas.
- Establish mechanisms for the collection of funds from private sources for the implementation of the Bike Plan programs and events, the Bikeway System Master Plan, and the City of Dallas Bicycle Planning Program.
- Establish City financial/budget mechanism for accepting Bikeshare program revenues to help fund the Bikeshare program.

PLAN UPDATES

There are three update provisions recommended in the Plan that would require the monitoring the progress of bikeway system implementation and programs, as well as updating project priorities.

- Update to demonstration/early implementation project list, and three general implementation phase lists, annually.
- Mid-cycle review after 5th implementation year (Fall/Winter 2016-2017).
- Coordination updates with other relevant City and regional planning documents, as necessary.
- Full update after 10th implementation year (2021).

PLAN PURPOSE, BACKGROUND AND ORGANIZATION



This chapter states the purpose of the 2011 Dallas Bike Plan (Plan), and provides an overview of the Plan's background, including descriptions of the existing physical/transportation context, relevant existing plans, current bicycling practices and conditions, national and regional bicycle planning trends, and the Plan's main opportunities and constraints. A summary of the logical organization of the rest of this document, by chapter, is also included at the end.

PLAN PURPOSE

The primary purpose of, and impetus for the 2011 Dallas Bike Plan is to provide an update to the 1985 Dallas Bike Plan (1985 Plan). The 1985 Plan was developed partly in response to a 1983 change in the Texas State Statutes which gave bicyclists the same rights and responsibilities as other vehicles operating on the roadway¹, and therefore provided for a comprehensive system of on-road signed bicycle routes that guided bicyclists throughout the City of Dallas. As they were not widely accepted or known, the 1985 Plan did not include provisions for designated on-street bicycle facilities. This Plan update provides a master plan and an implementation strategy for a new bicycle network, the Dallas Bikeway System, which will be made from designated on-street and off-street facilities. This document also provides recommendations for supporting policies, and the identification of bicycle-related programs to be recognized, sponsored, or supported under the Plan.

The Dallas Bikeway System to be implemented under this Plan is justified

¹ State of Texas, Transportation Code Chapter 551, Section 551.101. Rights and Duties.

primarily by the local recognition, as evidenced through the Plan's public involvement activities, that investing in bicycle infrastructure will improve the City's overall quality of life. Consistent with national and international planning trends and best practices for urbanized areas, the use of dedicated on-street bicycle facilities to provide needed connectivity for all user types leads to higher levels of bicycling. This proven method, in turn, can lead to improvements in quality of life factors such as air quality, public health, and economic development. Re-investment occurs as people are attracted to neighborhood centers within the City that are great places to bike and walk.

The stated vision and mission of the Plan are consistent with the purposes stated above.

PLAN MISSION

To improve the safety, use and efficiency of the bicycle in the City of Dallas; and to better integrate the bicycle mode within the City and regional transportation system.

PLAN VISION

The implementation of the 2011 Dallas Bike Plan will result in the existence of the following characteristics that describe the Dallas Bikeway System and the City's bicycling culture:

1. Wide-spread use of bicycles as an accepted and practical form of transportation, recreation and exercise, contributing to a healthier and happier lifestyle for Dallas residents.

2. A safe, efficient, connected bikeway system for all of Dallas, used by people of all ages and abilities, including a range of standardized on-street and off-street bicycle facilities that are sensitive to their land use and transportation context.
3. A high level of education and public awareness on how to use the bikeway system's facility types, and on bicycling safety, laws, and techniques.
4. A bicycling culture which promotes bicycling as a viable transportation option that is part of a comprehensive, City-sponsored strategy to revitalize neighborhoods, and improve public health, and air quality.

PLAN BACKGROUND

Several factors comprise the relevant planning background for this Plan. The following discussion is intended to orient the reader to the Plan's challenges and opportunities over its lifetime.

PREVIOUS CITY BICYCLE PLANNING EFFORTS

Dallas Bikeway Plan, 1975

The Dallas Bikeway Plan, the City's first on-street bikeway plan, was prepared by the City of Dallas Department of Traffic Control and adopted unanimously by the City Council in April of 1975. At that time, \$300,000 was allocated for implementation, with a projected citywide implementation cost of \$7,500,000 for 36 trails that consisted of 515 miles of both on- and off-road bikeways. This Plan recognized the viability of the bicycle both as a recreational and a transportation vehicle, stating that both experts and the general public alike see bicycles as an appropriate transportation mode, because the bicycle creates no noise or air pollution problems.² It uses little space and is reliable, low-cost, healthful exercise and fun.³ It also called for inclusion of bikeways and bicycle facilities in subdivision planning, the construction of bicycle parking/storage facilities in commercial, entertainment and shopping areas, bus stops, park and ride terminals, schools, colleges, and the Central Business District.⁴

1985 Dallas Bike Plan

The 1985 Dallas Bike Plan, prepared by the City of Dallas Department of Transportation and adopted by the Dallas City Council, updated the 1975 Plan. The 1985 Plan goals were to improve the mobility of bicyclists, to

increase safety on the road, and encourage bicycle use for transportation.⁵ The Plan's network development occurred between 1982 to 1985 with field assessments led by the Texas Committee on Natural Resources's Bicycle Information Committee members who were local bicyclists, many of whom belonged to the Greater Dallas Bicyclists and/or the Grand Prairie Bicycling Association (later renamed Lone Star Cyclists), in partnership with the City of Dallas. The group worked with City Transportation staff to shepherd the Plan through the City approval process. Local bicyclists who were familiar with streets throughout Dallas provided input on a citywide network of the most bicycle-friendly bike routes, with an eye towards overcoming barriers such as freeways, rivers, and rail lines.

THE 2011 CONTEXT

Since the 1985 Dallas Bike Plan was adopted, several contextual factors have changed that have necessitated the City's need for an updated bicycle plan. These changes represent both opportunities and challenges in promoting bicycling as a viable means of personal transportation.

Higher motor vehicle traffic volumes within the region have contributed to reduced air quality in the region and more congestion on some roadways, especially on major arterials that function as regional automobile commuting options. As a result, the Dallas/Fort Worth (DFW) metroplex has been designated by the Environmental Protection Agency (EPA) as non-attainment status for National Ambient Air Quality Standards (NAAQS) as established in the Clean Air Act since 1997.

In response to the sprawl of development in the region which has partially led to this growth in motor vehicle traffic, investment in the City street system has outpaced all other forms of investment in transportation. Paradoxically, this reality has resulted in many miles of excess roadway capacity in which space designated for bicycle facilities could be installed without adversely impacting the roadway's motor vehicle level of service.

Finally, a great deal of investment has occurred in public transit. While some bus and rail lines are very well utilized, public transit has gone largely under-utilized for work-day commute trips. According to the long range transportation plan for the North Central Texas Council of Governments, Mobility 2030: The Metropolitan Transportation Plan for the Dallas-Fort Worth Area, 2009 Amendment, transit equates to less than 1% of overall daily home to work based trips within the region.

A NEW APPROACH TO THE BICYCLE PLANNING, ACCOMMODATION AND PROMOTION

While the goals of the 2011 Dallas Bike Plan, having been vetted through the public participation process, remain largely the same as in 1985 (mainly safety and mobility), the implementation strategies for achieving those goals have changed significantly in three ways: popular programming, coordinated governmental (inter-agency) action, and the introduction of new types of on-street bicycle facilities.

Popular Programming

There is an ever growing group of individuals and organizations that are energized and motivated to assist in the implementation of the Plan. This programming approach, to be supported under the Plan's implementation strategy, includes the possibility of sponsoring, planning, or otherwise dedicating City resources in partnership with members of the community, to hold events and establish annual programs that will help to create a new cultural mind-set that embraces bicycling and recognizes the important role bicycling can play in improving the health and economic vitality of Dallas.

Coordinated Governmental Action

Complementary City policies and planning activities throughout City departments can support the vision, goals and objectives of the Plan. Each of these policies and activities are supported by federal transportation legislation that provides planning guidance along with funding opportunities for bicycle projects and programs.⁶ As a key part of implementing the proposed Dallas Bikeway System, close cooperation and coordination between the City and regional transportation agencies are identified as part of the Plan's implementation strategy. The City, the Texas Department of Transportation (TxDOT), Dallas Area Rapid Transit (DART), and Dallas County have already begun coordination to plan for the installation of on-street bicycle facilities and provide better bicycle access and parking at transit locations.

New Bicycle Facility Types

Since 1985, the design of on- and off-street facilities has evolved and become widely accepted throughout the United States. Nationally recognized publications, such as the American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities* and the 2009 Edition of the *Manual on Uniform Traffic Control Devices* (MUTCD), provide detailed guidance on the planning and design of bicycle facilities that are recognized by the U.S. Department of Transportation (DOT). This, along with new research, is giving local communities a variety of

² Dallas Bikeway Plan, 1975.

³ City of Dallas, Dallas Bikeway Plan, The Department of Traffic Control, 1975, page 1.

⁴ City of Dallas, Dallas Bikeway Plan, The Department of Traffic Control, 1975.

⁵ Citation 1985 Dallas Bike Plan, Executive Summary.

⁶ Intermodal Surface Transportation Efficiency Act in 1991, and March, 2010 USDOT Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations.

options and opportunities for implementing on- and off-street bicycle facilities. The City of Dallas, in undertaking the implementation of the Plan update, will take advantage of this evolution in thought and practice, and employ these new bicycle facility types in a context-sensitive manner.

Dedicating space for bicycle facilities on the City roadway system is imperative to increasing bicycle use within the City of Dallas. While Dallas has nationally recognized trails⁷, building trails alone cannot significantly increase commuter and utilitarian bicycling trips since many do not provide access to employment centers, rail stations and other major destinations. On-street bicycle facilities, including shared lane markings, bicycle lanes, buffered bicycle lanes, cycle tracks, and paved shoulders, are key components of this Plan's proposed Dallas Bikeway System.

Introducing a set of standardized on-street bicycle facility types will encourage the large population of less confident riders (the interested but cautious) to use their bicycles more often, by providing places to ride that are compatible with motor vehicle traffic. As the number of bicyclists grows, safety also improves as motorists come to expect to the presence of bicyclists on all streets (see Figure 7, page 8). This fact reinforces one of the main strategies to improve bicycle safety in this Plan.

The relative success of this strategy comes with one very important condition - good behavior on the part of bicyclists and motorists. In that regard, most roadway contexts of the network represented in this Plan will require the installation of the minimum bicycle facility designation, the shared lane marking. This facility especially will require good behavior by motorists and cyclists to share the roadway.

A Modern bikeway system and Complete Streets: The time has come
Fully integrating these modern, on-street facility types and traditional shared-use pathways (or trails) with other transportation modes and other elements in the public realm is the greatest challenge for the implementation of this Plan. In coordination with the City's Complete Streets Initiative, the principles of Complete Streets will guide the inclusion of all modes in the safest and most efficient manner possible, taking into account street/roadway contexts and their intended functions.

The Dallas Bikeway System, as envisioned and specified by this Plan, combines on- and off-street bicycle facilities with the City's existing and planned trail network plan facilities, to provide a total of over 1,000 miles of connected bicycle facilities. This system has been strategically designed to connect neighborhoods to transit, and to access other desired destinations such as employment centers, schools, event centers, museums, and parks (Figure 1).

⁷ Rails to Trails Conservancy, Katy Trail - Trail of the Month; <http://www.railstotrails.org/news/recurringFeatures/trailMonth/archives/0508.html>

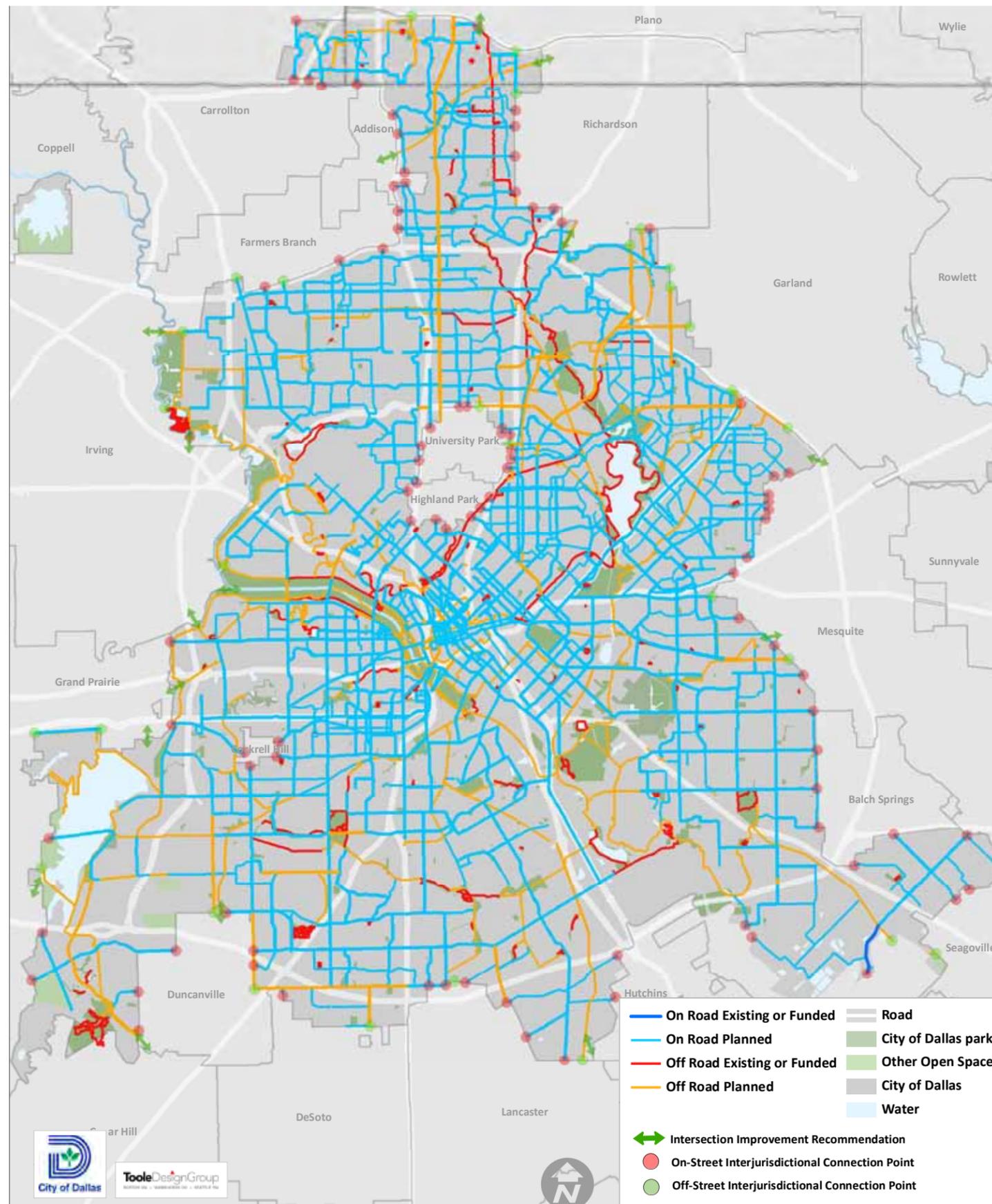


Figure 1. Dallas Bikeway System.

Dallas Complete Streets Initiative

The development of the Dallas Bikeway System will be achieved within the context of executing the City's Complete Streets Initiative, with the overall goal of having a balanced, integrated, safe, and efficient surface transportation system. The Complete Streets Initiative is being pursued to further develop and build upon the policy direction as established in the *forwardDallas!* Comprehensive Plan. The Complete Streets Design Manual, of which the Bikeway System Master Plan will be a part will include a consistent set of design policies, guidelines, processes and standards for the street network that promotes increased choice and safety for all users.⁸ The Bikeway System Master Plan's network plan and on-street bicycle facility type recommendations will serve as a basis for the inclusion of dedicated bicycle facilities on certain streets. Its corresponding recommended street cross-section types are intended to serve as guides or base templates for complementary roadway design and street typologies in the Complete Streets Design Manual.

OTHER RELEVANT CITY/REGIONAL PLANS AND DOCUMENTS

This Plan, in addition to being a leading-edge document for Complete Streets, also complements, builds upon, and lends more specificity to the *forwardDallas!* Comprehensive Plan, the Dallas Thoroughfare Plan, the Dallas Trail Network Plan, and Mobility 2030: The Metropolitan Transportation Plan for the Dallas-Fort Worth Area, 2009 Amendment which includes the Regional Veloweb. As implementation of this Plan moves forward and the aforementioned Plans are updated, it is anticipated that there will be opportunities to coordinate, synchronize, and otherwise further align this Plan with the visions, goals, and objectives of each.

forwardDallas! Comprehensive Plan

The *forwardDallas!* Comprehensive Plan, adopted in June of 2006, provides a comprehensive vision for the kind of city within which Dallas residents want to live and do business. One of the core values identified in the plan is convenient transportation: offer choices in how to get around.⁹ The Plan calls for investment in various transportation modes including pedestrians, bicycles and rapid transit in order to reduce car trips, increase transit ridership and improve air quality.¹⁰ Its Transportation and Public Policy section notes that "[a]bout 50 percent of Dallas's population is either too young or too old to drive. This statistic alone requires a new approach to design and development of transportation systems, especially in areas where schools, services, and stores are not easy to get to by walking or riding a bicycle... Only an integrated network of urban places and multipurpose street systems can support the change needed for the next century of growth."¹¹

8 Request for Proposals for the City of Dallas Complete Streets Initiative, 2010 (1 & 2).

9 *forwardDallas!* Comprehensive Plan, 2006 (I-7).

10 *forwardDallas!* Policy Plan, 2006 (I-32).

11 *forwardDallas!* Policy Plan, 2006 (II-4-1).

The policy recommendations are followed by more specific recommendations for context sensitive design, defined as the practice of developing transportation projects that serve all users and meet the needs of the neighborhoods through which they pass.¹² Context sensitive street types should accommodate bicycle use including downtown, mixed-use, commercial and residential streets.¹³

Finally, the *forwardDallas!* Comprehensive Plan provides some very specific policy direction for promoting bicycling. The ongoing Complete Streets Initiative will be updating and advancing the *forwardDallas!* policy direction with regard to various elements within streets including bicycle facilities, through development of a Complete Streets Design Manual. This relationship will ensure that the recommendations of this Plan are incorporated within comprehensive design and policy guidance that addresses all facilities within roadways.

Thoroughfare Plan

The City's Thoroughfare Plan provides a hierarchical street classification system that distinguishes streets based on their ability to move automobile traffic. There are five street types in the Thoroughfare Plan, which are based on their functional classification, dimensional classification, and the number of traffic lanes. Typically, the street network design process focuses on minimizing automobile traffic time and congestion at the regional level. While this approach does not always provide for a range of modes of transportation,¹⁴ the Complete Streets Initiative provides an opportunity to change the process to be inclusive of all modes.

Dallas Trail Network Plan

The Dallas Park and Recreation Department's Trail Network Plan was initially adopted in 2005 with an update in 2008. Included in the plan are over 66 miles of linear trails (most suited for transportation), of which over 35 miles have been completed. These linear trails are connected where rights-of-way make it feasible. However, many gaps remain in the system that may be addressed through the possibility of on-street bicycle facilities. The plan also includes over 20 miles of trails that are contained within metropolitan, regional and community parks.¹⁵

The Metropolitan Transportation Plan for the Dallas-Fort Worth Area

As the Metropolitan Planning Organization (MPO) for the Dallas-Fort Worth area, the North Central Texas Council of Governments (NCTCOG) is required by federal statute to maintain a long-range transportation plan that defines a vision for the region's multimodal transportation system. This plan is known as the Metropolitan Transportation Plan (MTP) and its purpose is to identify policies, programs, and projects that respond to adopted goals and to guide

12 *forwardDallas!* Policy Plan, 2006 (II-4-2).

13 *forwardDallas!* Policy Plan, 2006 (I-32).

14 *forwardDallas!* Policy Plan, 2006 (II-4-2).

15 *Dallas Trail Network Plan; Update*, Quality of Life Committee, August 11, 2009 (24).

expenditures for state and federal funds over the next 25 years.

NCTCOG has recently adopted a new long-range transportation plan, Mobility 2035: The Metropolitan Transportation Plan for North Central Texas that will replace the existing Mobility 2030: The Metropolitan Transportation Plan for the Dallas-Fort Worth Area, 2009 Amendment. Mobility 2035 represents a blueprint for a comprehensive transportation system for the Dallas-Fort Worth area. Recommended goals include Improving the availability of transportation options for people and goods.¹⁶ Mobility 2035 includes a chapter for active transportation. The Regional Veloweb is a component of, Mobility 2030, the existing MTP, which is comprised of a 644 mile, designated off-street trail network that has been planned to provide bicycle and pedestrian connections throughout the Dallas-Fort Worth Metroplex. The Regional Veloweb network was determined in cooperation with the NCTCOG, local governments, and various regional partners. The Regional Veloweb identifies existing, planned and funded transportation trails that provide an air quality benefit, or access transit or other major destinations, all in an effort to encourage regional connectivity.¹⁷ In addition to the Regional Veloweb, the NCTCOG recognizes the importance of on-street bicycle facility networks to make connections between trails and within communities to provide a more seamless network for bicyclists, and encourages local municipalities to adopt on- and off-street bicycle plans.

EXISTING PRACTICES AND CONDITIONS

1985 Dallas Bike Plan Signed Route System

The existing Dallas Bike Route System is a numbered grid of east/west and north/south routes. The east/west routes are three digit even numbers, starting with Bike Route 100 in the southern part of the City and ending with Bike Route 370 in the north. The north/south routes are one and two digit odd numbers, starting with Bike Route 1 in the west, running through Bike Route 99 in the east.

The Dallas Bike Route signs are 18"x 24" and are white on blue with the pegasus on wheels logo. They have a route number, directional arrow, and a N, E, S, or W following the number to indicate the overall direction of travel. The signs are placed on the right side of the street, sometimes freestanding although usually in conjunction with other signage. They are located approximately every half mile along the routes, but are always present where a route changes direction. In many locations, there are small 3" x 4 1/2" generic, pegasus on wheels bike route stickers on stop sign posts that serve as confirmation signs.¹⁸

The 365 miles of existing, signed on-street routes are spaced at about half

16 *Mobility 2035, 2010*, <http://www.nctcog.dst.tx.us/trans/mtp/2035/index.asp>

17 The Regional Veloweb; <http://www.nctcog.dst.tx.us/trans/sustdev/bikeped/veloweb.asp>

18 The Greater Dallas Bike Plan Map, 1992 (back cover).

mile intervals. However, the frequency of routes varies throughout the City due to availability of suitable streets and geographic factors.

Vehicular Cycling

The 1985 Dallas Bike Plan did not include any dedicated on-street bicycle facilities, and therefore contained nearly 400 miles of signed routes, primarily on relatively low volume streets that provided good routes for bicyclists of all skill levels. Concerns about safety and bicyclists' rights to use the road were, and continue to be, very legitimate. The following map (Figure 2) shows where bicycle crashes have occurred between 2003 and 2008. This map represents existing crash numbers and patterns. As the 2011 Dallas Bike Plan is implemented and on-street bicycle facilities are added to the system, this map will serve as an important baseline for measuring one element of the success of the Plan.

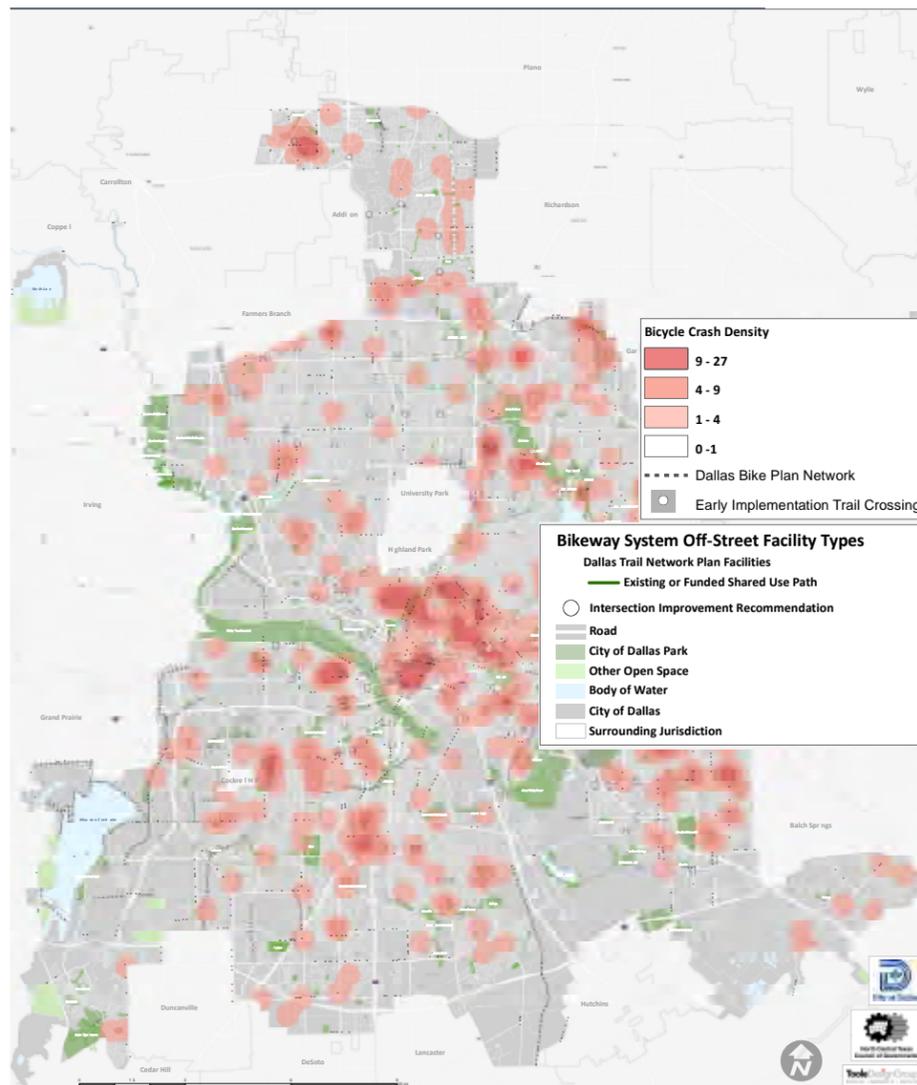


Figure 2. Bicycle crash density 2003-2008.

DALLAS TRAIL NETWORK PLAN

There has also been an increase in the number of people using their personal motor vehicles to transport their bicycles to trail heads. This can have the unintended consequence of increasing motor vehicle traffic and creating more demand for parking where trails are accessed.

Many of the trails have become increasingly crowded, especially on weekends and in the early evening. This problem of success is reflected in the language of the brochure titled *Share the Trail: User Guidelines for Multi-Use Trails*. "Trails for non-motorized use have become very popular. A consequence of their success is congestion. With this, a major issue has become safety."¹⁹ The Dallas Park and Recreation Department has been developing a comprehensive system of trails, as specified in the Dallas Trail Network Plan. Figure 3 demonstrates how the trail network continues to grow with many more miles of trail funded and scheduled for construction.

INVENTORY OF EXISTING TRAILS

	2005	2009	Funded and Existing Trails
Major Linear Trails	28.8 mi	35.65 mi	61.8 mi
Major Loop Trails	20.1 mi	20.7 mi	20.7 mi
Major Nature Trails	22.8 mi	23.0 mi	23.4 mi
Neighborhood Trails	13.8 mi	19.4 mi	27.1 mi
Total Miles	85.5 mi	98.75 mi	132.9 mi
Additional proposed trails	144.0 mi	172.15 mi	151.0 mi
Plan Total	229.5 mi	270.9 mi	283.9 mi

Figure 3. Existing, funded and additional proposed trails ²⁰

OPPORTUNITIES AND CONSTRAINTS

The main opportunities and constraints of the Plan are discussed below, including excess capacity on City streets, intersection safety and access improvements, bicycle connectivity and safe access to transit and trails, barriers, bridges, and signage.

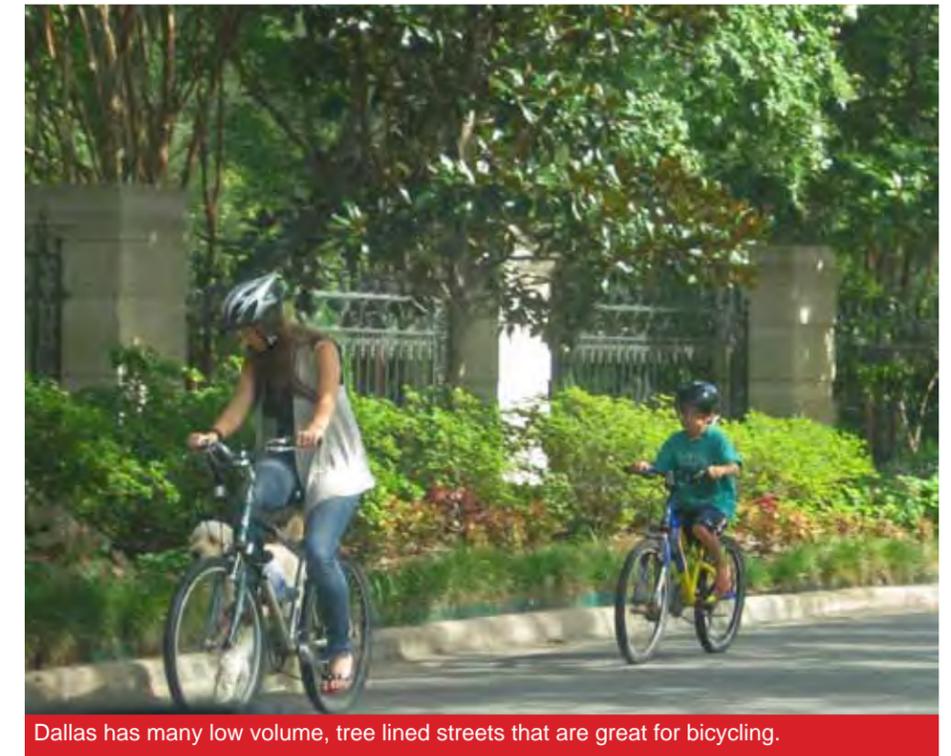
Excess Capacity on City Streets

Many City of Dallas roadways have excess motor vehicle capacity. The City of Dallas has the opportunity to capitalize on this excess roadway capacity and become one of the premiere bicycling cities in the nation. Typically, space in the developed street right-of-way is a scarce urban resource with motor vehicles, transit, parked cars, sidewalks, landscaping and bicycle facilities often competing against each other for the same space. Many of the streets in Dallas do not have this problem. The excess capacity that exists means that street space can be more easily reallocated, often by simply using paint

¹⁹ *Share the Trail: User Guidelines for Multi-Use Trails*, City of Dallas.

²⁰ *Dallas Trail Network Plan; Update*, Quality of Life Committee, August 11, 2009 (24).

to re-channelize traffic to create space for on-street bicycle facilities.



Dallas has many low volume, tree lined streets that are great for bicycling.

Intersection Safety and Access Improvements

Intersections are where most of the on-street bicycle crashes occur that involve motor vehicles (See Figure 2. Bicycle Crash Map). public input, verified by field review, identified numerous intersections that present safety and access challenges for bicyclists. In some cases, this was due to intersection geometrics which allow for high-speed motor vehicle turns. In other cases, it was due to traffic control practices involving signal timing, pavement markings and signs. In all cases, problematic intersections discourage bicycling, especially by novice bicyclists who consistently identify fear of unsafe and unlawful motorist behavior as the number one reason for not bicycling more frequently.²¹

While challenging intersections can be a constraint for bicyclists, they may also present an opportunity to increase bicycling at relatively low costs. Changes to signal timing and traffic channelization using paint and signs are often relatively inexpensive. Once an intersection is improved, it has the potential to make an entire corridor more inviting and bike-friendly.

²¹ 2010 Dallas online survey, Appendix A .4.

Bicycle Connectivity, Safe Access to Transit and Trails

Providing bicycle facilities that connect neighborhoods to and from existing transit stations and trails will help to address immediate unmet bicycling demand for commuting, recreation, and short utilitarian trips.

Barriers

Freeways, railroad tracks, super blocks (long blocks with no through access), rivers, and lakes can all create barriers for bicyclists and other road users. Where barriers exist, bicyclists, along with other modes are often funneled into the same pinch points such as freeway over and under passes. In many cases these pinch points are hostile environments for bicyclists where there is little or no excess space on the roadway and sidewalks are narrow or nonexistent, which can provide an alternate space for bicyclists to ride in certain locations.

Since pinch points are often locations where all modes experience congestion and higher crash rates exist, they frequently qualify for state and federal funding opportunities for congestion mitigation, especially if they are within state rights-of-way. As cooperation between the City of Dallas and other agencies such as Texas Department of Transportation (TxDOT), Dallas Area Rapid Transit (DART) and Dallas County increases, opportunities to improve bicycle safety and access in conjunction with other capital projects has the potential to increase. In other cases, there may still be a need for stand-alone bicycle projects. As barriers are removed, system connectivity is increased and opportunities for destination-based bicycling become viable.



Bridges

Safe, convenient and easy access across bridges is critical to creating a bicycle friendly Dallas. Bridges provide the connectivity necessary to create a complete, integrated bikeway network that is a truly viable alternative to the automobile. The lack of bicycle facilities on bridges presents a major barrier to increasing bicycle use in the City of Dallas. Since bridges are often built to last more than fifty years, missing an opportunity to install a bicycle facility on a bridge can create a gap in the bikeway network that lasts for two or three generations.

There will be multiple opportunities to improve and expand bicycle access leading to and across bridges as the City moves forward in rehabilitating and replacing existing bridges and constructing new ones. In some cases there will be a need for shared use paths that are separated from motor vehicle traffic. In other cases, on-street bicycle facilities will be more desirable. In all cases, creating access to the bridge, on both ends, will be equally important. The Complete Streets Initiative provides an opportunity to clarify and strengthen policy that will ensure bicycle facilities are included as part of future bridge projects.

Signage

The 2009 Edition of the MUTCD provides new guidance on regulatory, warning, and way-finding signage. It reflects best practices from Europe and the United States, with regard to sign placement and design. The cities of Seattle, Portland and Chicago have already begun installing wayfinding signage for bicyclists according to the guidance provided in the 2009 Edition of the MUTCD.

Dallas has a unique opportunity to create a world class bicycle signage system by taking advantage of lessons learned from the cities of Seattle, Portland and Chicago.

NATIONAL AND REGIONAL BICYCLE PLANNING TRENDS

In response to concerns expressed throughout the country, new research was initiated and the guidance for planning and designing bicycle facilities was revised in recent versions of the MUTCD and the AASHTO *Guide for the Development of Bicycle Facilities*. As a result, local communities can move forward with a much higher level of confidence that the facilities they are installing will reduce crashes while increasing the number of trips by bicycle. Recent federal policy guidance supports the new research and design guidance, including a major policy statement on bicycle accommodation released by the U.S. Department of Transportation (U.S. DOT) in March of 2010.

U.S. Department of Transportation Policy

In March of 2010, Secretary of the U.S. Department of Transportation (DOT) Ray LaHood released a signed policy statement summarizing key federal statutes and regulations regarding walking and bicycling. He reiterated the DOT policy to “incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation system.”²² He goes on to cite federal statutes that require state and Metropolitan Planning Organizations “to integrate walking and

²² *United States Department of Transportation Policy Statement on Bicycle and pedestrian Accommodation Regulations and Recommendations*; Signed on March 11, 2010 and announced March 15, 2010 (1).

bicycling facilities and programs in their transportation plans to ensure the operability of an intermodal transportation system.”²³ This federal directive provides NCTCOG with a unique opportunity to play a leadership role in working with TxDOT, DART, Dallas County, and the City of Dallas to coordinate the inclusion of appropriate bicycle facilities in all projects that include federal funding.

State, Regional, and City Plans

States, regions and cities across the United States are increasingly adopting and implementing bicycle master plans. The large number of cities that are promoting bicycling is reflected in League of American Bicyclists (LAB) Bicycle Friendly Community Program which has recognized more than 150 cities for actively supporting bicycling.²⁴ More recently, the League recognized seven states through its Bicycle Friendly States award program.²⁵

Cities being recognized for actively supporting bicycling have a number of things in common that reflect national trends. Similarities include:

- An adopted bicycle master plan,
- A comprehensive bikeway network that includes on- and off-street facilities,
- Innovative on street facilities that promote bicycling such as green bicycle lanes, cycle tracks, and bike boxes, and
- Ongoing and effective public involvement.

Examples of cities that have installed on-street bicycle facilities over the last decade include Seattle - 111 miles, Philadelphia - 180 miles, and Chicago - 115 miles. The City of Portland, with over 250 miles of bicycle facilities, has tracked the relationship between the provision of bicycle facilities, bicycle use, and bicycle crash rates. They have identified two very encouraging trends:

- Bicycle use increases as bikeway miles go up (Figure 4).
- Crash rates decrease as bicycle use goes up (Figure 5).

²³ *United States Department of Transportation Policy Statement on Bicycle and pedestrian Accommodation Regulations and Recommendations*; Signed on March 11, 2010 and announced March 15, 2010 (3).

²⁴ League of American Bicyclists; <http://www.bikeleague.org/programs/bicyclefriendly-america/communities/>

²⁵ League of American Bicyclists; <http://www.bikeleague.org/programs/bicyclefriendly-america/bicyclefriendlystate/rankings.php>

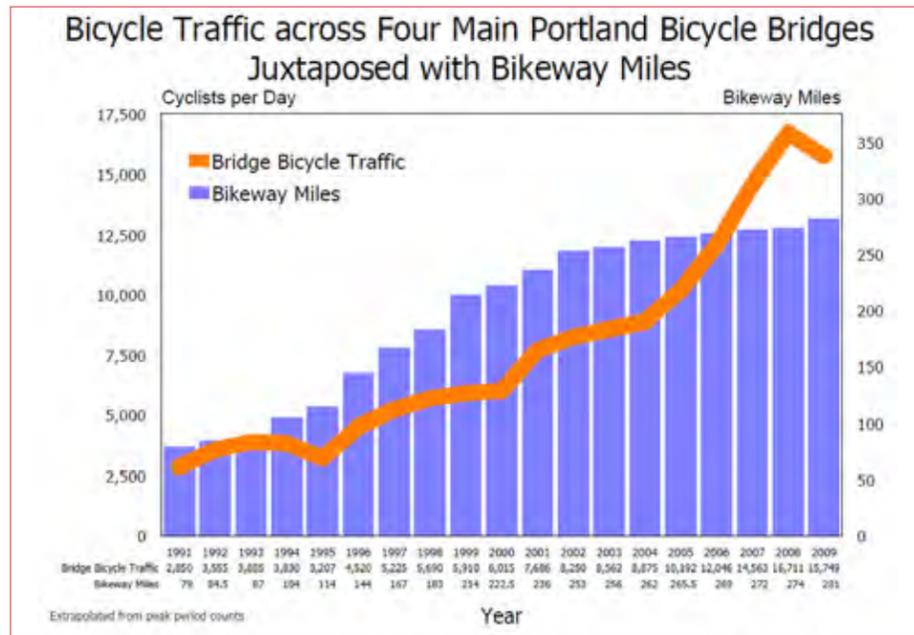


Figure 4. Bicycle traffic across four main Portland bicycle bridges juxtaposed with bikeway miles.²⁶

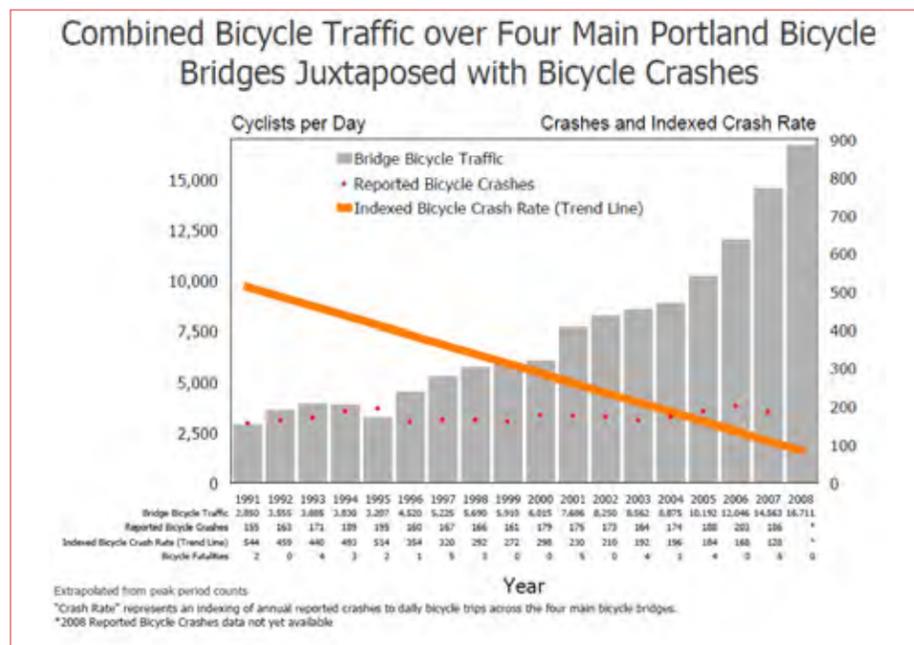


Figure 5. Combined bicycle traffic over four main Portland bicycle bridges juxtaposed with bicycle crashes.²⁷

²⁶ Portland Bicycle Count Report 2009; <http://www.bta4bikes.org/btablog/wp-content/uploads/2010/05/bikecount2009reportfinal.pdf>

²⁷ Portland Bicycle Count Report 2009; <http://www.bta4bikes.org/btablog/wp-content/uploads/2010/05/bikecount2009reportfinal.pdf>

The Austin Experience

There are two lessons learned from the City of Austin with regard to its recent updates to its Bicycle Master Plan. First and foremost, this Plan recognizes Austin's strategy of varying the density of bicycle infrastructure to support relative demand, and still have a connected citywide network. Austin has a goal to increase bicycle usage in the central city to 10% of all trips, and 5% citywide by 2020. The majority of the bicycle lanes added to the bikeway network since 1998 serve the central city area and other more dense centers of activity. Like Austin, the population of Dallas has consistently grown over the last 25 years, and there is a renewed interest in focusing on downtown as a commercial and liveable area. The Dallas Downtown 360 Plan, as well as other efforts such as street car system planning and the planned DART D2 line, are expected to be transformational organizing forces for the City. These plans will also include the recognition that bicycling is part of the answer to congestion as a viable transportation alternative.

The second lesson learned with Austin is its geopolitical context and significance within its own region when it comes to cycling and bicycle transport. Similarly, Dallas is part of a large, multi-county metropolitan region with several inter-jurisdictional travel challenges. The greater Austin region has a 1,451-mile bicycle network, including 49.5 miles of multi-use paths, 131 miles of bicycle lanes, 287 miles of paved shoulders, and 984 miles of shared lane and wide curb lane streets.

Dallas Online Survey Results

A web-based, bilingual survey was made available on the project website, which elicited over 1,400 responses. The purpose of the survey was to better understand existing conditions, opportunities, and constraints, and to develop project and policy recommendations for the Plan. The most frequently cited needs were for:

- Education for all travelers through on-road signage and other techniques to instruct users how to share the road,
- More bike lanes on major streets and shared lane markings on wide outside or curb lanes,
- Stronger bike connections to transit,
- Additional bike parking, and
- More off-street facilities and on-street connections between them.

Nearly all respondents were ages 21 to 65; 42% of these between 46 to 65 years old, 30% of respondents were women.

The Dallas online survey sought to find out why respondents biked. When asked, 75 percent of respondents indicated that their last bicycle trip was for exercise and recreation.

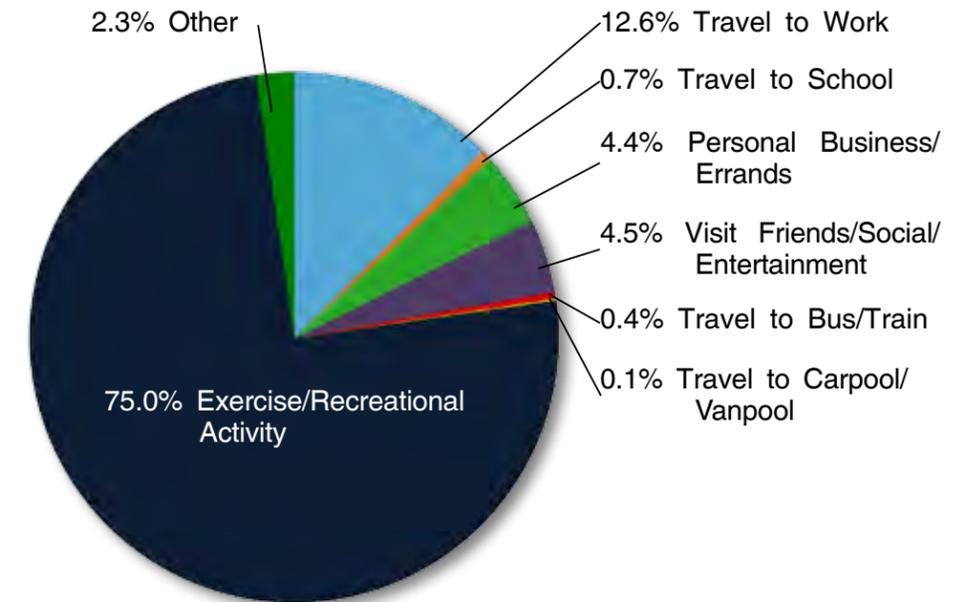


Figure 6. Results of Dallas online survey²⁸

The Dallas online survey also sought to find out whether there was unmet demand for more bicycle facilities. When asked, respondents indicated that they would bike more often if they had more on-street and off-street facilities along with more education for motorists.

The Dallas online survey results are very consistent with surveys that have been done over the years in other parts of the country. This includes:

- Fear of motor vehicle traffic is the biggest barrier to more bicycling,
- Strong desire for more on and off-street bicycle facilities, and
- Recognition of need for more education (motorists and bicyclists).

²⁸ 2010 Dallas online survey, Appendix A .4.

Which of the following improvements influence you to bike more often?
Please rate each option that would influence you to bike more often.
Total respondents for this question: 1,379

Answer Options	Very Likely	Likely	Neutral	Unlikely	Very Unlikely
More bike lanes on major streets	941	286	69	27	37
More wide outside/curb lanes (easier to share lanes with cars)	679	337	187	93	41
More education for motorists	634	412	174	65	38
More on-road bike signage (share the road signs/bike route signs)	529	370	272	102	49
More off-street trails	781	302	152	46	41
Increased maintenance (street sweeping/repair to roads)	429	423	335	80	28
Increased enforcement of traffic laws	447	352	356	85	32
More education for bicyclists on how to deal with motor vehicle traffic	303	306	441	132	85
More bicycle parking/storage	384	427	323	81	47
Better bicycle access to transit stops	294	277	457	160	67
Showers and lockers at work	496	317	309	69	57
Other (please specify)					

Figure 7. Results of Dallas online survey²⁹

These results suggest that Dallas, like other cities, can expect to see significant increases in the number of bicycle trips as people's fear of motor vehicles are reduced through the implementation of bicycle facilities and education programs are undertaken to improve motorist and bicyclist behavior.

DALLAS BIKE PLAN ORGANIZATION BY CHAPTER

The organization of the 2011 Dallas Bike Plan follows a logical sequence with each chapter building on topics presented in the previous chapter, while reflecting two forward-looking goals: 1) to create a distinct Dallas Bikeway System Master Plan, and 2) to utilize portions of the Plan as a guide or regional template for other municipalities within the Dallas-Fort Worth Metroplex.

CHAPTER I: PURPOSE AND BACKGROUND

The first chapter provides the Plan purpose, background and context. This is followed by an overview of relevant city and regional plans and documents, previous City of Dallas bicycle planning efforts, opportunities and constraints, and national and regional bicycle planning trends.

CHAPTER II: PLANNING PROCESS

This chapter includes a summary of the seven main planning activities of the Plan production process, as well as detailed descriptions of each element of the public involvement aspect of the planning process.

CHAPTER III: GUIDING PRINCIPLES

This chapter states the Plan mission, vision, goals and objectives that were developed in collaboration with the three Plan committees and from input received at the open house.

CHAPTER IV: DALLAS BIKEWAY SYSTEM MASTER PLAN

This chapter focuses on the physical environment. It begins with a discussion of facility design guidelines, including detailed design guidance for installing various types of bicycle facilities. Included are generic bicycle facility designs and guidance on trail roadway crossings, bicycle and transit integration, and bicycle parking. They are written in a template format so they can easily be used by other municipalities within the Dallas-Fort Worth Metroplex. The second half of the chapter focuses more specifically on Dallas, providing detailed recommendations for over 500 miles of on-street bicycle facilities.

CHAPTER V: BICYCLE PROGRAMS AND SUPPORTING POLICIES

This chapter outlines specific safety, education, advocacy, and marketing strategies. It also outlines specific policy strategies. Included are design, parking, maintenance, land-use, and legislative recommendations.

CHAPTER VI: IMPLEMENTATION STRATEGY

Provided in this chapter are specific recommendations for implementing the Plan including prioritization criteria, early implementation projects, near, medium, and long term projects, and accountability strategies. The priorities reflect input received from the Plan committees and the public.

APPENDICES

Appendix A provides a complete summary of public involvement efforts, including meetings, copies of surveys and other public outreach materials. Appendix B provides criteria for identifying and prioritizing specific projects within each general implementation phase of the Plan.

²⁹ 2010 Dallas online survey, Appendix A .4.



PLANNING PROCESS



This chapter outlines the seven main activities of the 2011 Dallas Bike Plan planning process, and details the Plan's committees and public involvement activities.

2011 DALLAS BIKE PLAN PRODUCTION AND ORGANIZATION

1. PUBLIC INVOLVEMENT

The public was involved in crafting the Plan and its recommendations throughout the planning process. Public involvement and input opportunities included:

- A series of three public meetings.
- An online survey.
- Providing input via an interactive online mapping tool.
- Targeted focus groups.
- Outreach to under-represented groups.

On May 27, 2010 approximately 320 people attended the open house for the Plan. Attendees provided over 500 written and verbal comments. This was followed by an online interactive mapping application which generated another 600 comments, and an online user survey (described on page 7) which received over 1,400 responses. Together, this input provided the basis for establishing the Plan's vision, goals, and objectives, identifying priorities, revising the bikeway system network, identifying difficult intersections, and data collection.

2. TECHNICAL/POLICY ANALYSIS

A technical and policy analysis was completed in order to get a full understanding of current practices, and to identify opportunities and constraints for developing the Plan. There were three parts to the analysis. 1) A complete review of existing planning documents. This included the 1985 Dallas Bike Plan, *forwardDallas!* Comprehensive Plan, the Thoroughfare Plan, Mobility 2030: The Metropolitan Transportation Plan for the Dallas-Fort Worth Area, 2009 Amendment, which includes the Regional Veloweb, and the Dallas Trail Network (described on page 5). 2) stakeholder focus groups with the City of Dallas (various departments including Public Works), neighboring jurisdictions³⁰, Dallas County, Dallas Area Rapid Transit (DART) and Texas Department of Transportation (TxDOT) to better understand current transportation policies and design practices (described on page 11). 3) A visual survey of the Dallas Bike Plan area.

3. DATA COLLECTION

Three two-person teams conducted a bicycle facility feasibility analysis of over 550 miles of Dallas roadways over a two-week time period during the summer of 2010. Taking into account observed and recorded traffic volumes and existing roadway widths, the field work teams identified 517 miles of roadway that could include context-appropriate bicycle facilities without the acquisition of additional right-of-way.

³⁰ City of Carrollton, Town of Addison, City of Irving, City of Plano, City of Cedar Hill.

4. DRAFT FACILITY RECOMMENDATIONS

Facility recommendations were identified for the 517 miles of roadway determined to be appropriate for bicycling improvements. As a result, the recommended network established an inter-connected route system on a variety of street types including arterials, collectors, and local streets.

5. REVISED DRAFT FACILITY RECOMMENDATIONS

The maps with the draft facility recommendations were reviewed by the City of Dallas, Dallas County, North Central Texas Council of Governments (NCTCOG), Dallas Area Rapid Transit (DART), Dallas Independent School District (DISD) and the three Plan committees: the Bicycle Advisory Committee (BAC), the Bicycle Policy Steering Committee (BPSC), and the Project Review Committee (PRC). This was followed by a public meeting on September 23, 2010 where over 200 people had an opportunity to review and comment on the maps. In addition, the maps were provided on the Plan website with instructions on how to provide comments electronically. Comments and feedback from these various review bodies and the public were incorporated into the revised bicycle facility recommendations.

6. DRAFT PLAN

In December 2010, the draft Plan text, along with revised facility maps and other additional maps (priorities, cross sections, etc.) to be incorporated into the Plan were reviewed by the City of Dallas, NCTCOG, and Dallas County. This was followed by a public meeting on January 20, 2011 where approximately 160 people had an opportunity to review and comment on the draft Plan, including the aforementioned maps.



Stakeholders provide input at first public meeting.

7. FINAL PLAN

Comments and feedback from the January 2011 Public Meeting, the City of Dallas, Dallas County, NCTCOG, DART, DISD, and the three Plan committees (BAC, BPSC, PRC) were incorporated into the revised final Plan.

2011 DALLAS BIKE PLAN COMMITTEES

Three committees provided support and guidance for development of the 2011 Dallas Bike Plan. The Bicycle Advisory Committee (BAC) was appointed by City staff and the Bicycle Policy Steering Committee (BPSC), and consisted of community members with an interest in improving bicycling conditions in Dallas.

The BPSC consisted of decision makers charged with reviewing and advancing policy related to bicycling within the City of Dallas, and providing the regulatory and inter-agency framework for the Plan's implementation.

The Project Review Committee (PRC) was the technical committee comprised of agency staff from NCTCOG, DART, TxDOT, Dallas County, DISD, and various City departments that will assist with implementation of the adopted Plan.

The three 2011 Dallas Bike Plan committees met on average once every six weeks, and three times jointly, over the course of the project. They reviewed and provided input on all aspects of the Plan including the following key Plan elements:

- Developed project vision, goals, and objectives that were presented at the first open house (attended by approximately 320 people). After further input at the open house, they were once again reviewed and revised by the three committees.
- Reviewed and provided input into two important online tools to collect public input: 1) interactive mapping website, and 2) public survey (described in previous chapter and the following section).
- Reviewed and provided feedback on the draft facility recommendations (draft Bikeway Network) developed by the consultant team.
- Helped develop project prioritization guidelines for implementing the Plan.
- Provided oversight and review of the draft Plan.

Additionally, members of the committees served as volunteers for the open house and two public meetings, providing everything from helping attendees park their bikes in the Dallas City Hall garage, to providing detailed information on the facilities being recommended in the draft Plan.

PUBLIC INVOLVEMENT

In addition to the three bike plan committees, public input was solicited through a project website, an open house, two public meetings, three newsletters, and stakeholder focus groups.

ONLINE PUBLIC SURVEY

A web-based, bilingual survey was made available on the project website which elicited over 1,400 responses. The survey provided valuable information on current bicycle use, barriers to bicycling, and actions needed to increase bicycling within the City of Dallas (see Appendix A.4 for full survey results).

INTERACTIVE MAPPING APPLICATION (COMMUNITY WALK)

Between May 27 and July 16, 2010, the public provided specific bicycling-related information on a map of the City of Dallas through an interactive mapping application. A total of 617 comments were posted on a variety of issues ranging from frequently used routes to problem locations and connectivity needs. The input was used to revise the Bikeway System Network, identify difficult intersections within the Bicycle System Network that were then analyzed, and to identify projects included in the Plan's implementation strategy.

NEWSLETTERS



Three newsletters were produced to update the public on the status of the Plan and to inform the public on how to provide input and get involved in the planning process. English and Spanish versions were distributed via the project website, and through council member distribution lists with additional copies mailed to anyone requesting a hard copy.

OPEN HOUSE AND TWO PUBLIC MEETINGS

Three centralized public meetings were held at Dallas City Hall as main components of the Plan's participatory planning framework. Spanish language translators were provided at all three meetings.

On May 27, 2010 approximately 320 people participated in the 2011 Dallas Bike Plan Open House. With Mayor Leppert and five City Council members in attendance, the open house allowed the opportunity for attendees to provide feedback on how to improve and encourage bicycling within the City of Dallas and to neighboring jurisdictions within the North Central Texas region. Listening stations were designed to solicit different types of community input. Feedback on the overall network, potential bicycle connections, and on location-based safety issues, were gathered using maps of the City of Dallas. Participants also helped to prioritize the vision, goals and objectives of the Plan, and commented on bicycle education, access to transit, and the Trinity River crossings. A street design exercise called Tinker Streets allowed attendees to draw a profile of an ideal street.

On Thursday, September 23, 2010 over 200 people participated in the 2011 Dallas Bike Plan second public meeting. The consulting team provided recommendations, including over 550 miles of on-street bicycle facilities. A



May 27, 2010, the 2011 Dallas Bike Plan Open House, Council members Angela Hunt and Sheffield Kadane (Dallas Bicycle Policy Steering Committee Co-chairs) introduce the 2011 Dallas Bike Plan process.

presentation at the beginning of the public meeting introduced attendees to the various on-street bicycle facilities being recommended as part of the Plan. Other public feedback gained through separate stations dealt with project prioritization criteria and marketing and promotion ideas for the Plan's implementation strategy.

On Thursday, January 20, 2011, approximately 160 people participated in the third and final public meeting for the 2011 Dallas Bike Plan held at City Hall. The public meeting provided an opportunity for participants to review a full draft of the Plan, and provide additional comments on the network recommendation maps which were revised following the September 23, 2010 Public Meeting.

STAKEHOLDER FOCUS GROUPS AND NEIGHBORHOOD MEETING VISITS

Stakeholder meetings were held with groups that provided important information for understanding current transportation policies and design practices. Meeting objectives were to:

- Familiarize meeting attendees with process and opportunities for their involvement,
- Establish areas of coordination with each organization related to bicycle planning and system implementation,
- Gather important information from each organization pertinent to the Plan, and
- Generate a list of items to be collected or actions for follow-up.

Stakeholder focus group interviews were held with 1) the City of Dallas (Public Works, Transportation Planning, Sustainable Development and Construction, Economic Development, Housing, Park and Recreation, Trinity River, and the Office of Environmental Quality), 2) neighboring jurisdictions,³¹ 3) DART and, 4) TxDOT. Information collected from the focus groups was used to develop Plan recommendations, priorities, and implementation strategies. In addition, presentations and visits by members of the Project Management Core Team and the consultant team to various community groups and neighborhood meetings around the City raised the level of local-area input to the Plan.

INTERACTIVE WEBSITE

An interactive project website was developed that served as a one-stop source for all Plan related activities and information. The website provided news and information about the planning process including a project description, calendar of upcoming meetings, copies of the three newsletters,

draft facility recommendations and the draft Plan. The website also hosted the online survey and interactive mapping application described previously. Web visitors were invited to provide comments and sign-up to be added to the Plan contact database to receive emails on upcoming meetings.



Public input section of 2011 Dallas Bike Plan website.

CONTACTS DATABASE

A contact database that included attendees from the open house and public meetings along with those who signed up through the website was developed and maintained throughout the planning process. The database served as a mailing list for the Plan and was routinely updated. Included was a re-senders list of organizations who agreed to send out information through their own contact databases on important updates to the Plan. A total of 1,243 people signed up for the database as of the end of December, 2010.

31 City of Carrollton, Town of Addison, City of Irving, City of Plano, City of Cedar Hill.

III GUIDING PRINCIPLES



The guiding principles for the 2011 Dallas Bike Plan provide an overarching mission and vision, in addition to goals and objectives. These principles were initially developed through an interactive exercise with the Plan's three guiding committees. These principles were further identified and lent relative importance through a process at the Plan's open house on May 27, 2010. This activity involved attendees receiving four red dots upon sign-in, and placing the dots on their top priorities among a list of over 25 draft goals. The results of this exercise were brought back to the Plan committees where they were used to refine the guiding principles.

The guiding principles form the basis for the identified programs, specifications for the Dallas Bikeway System Master Plan, and the implementation strategy. Ultimately, the Plan is structured around creating actions to implement the goals and objectives.

PLAN MISSION

To improve the safety, use, and efficiency of the bicycle in the City of Dallas; and to better integrate the bicycle mode within the City and regional transportation system.

PLAN VISION

The implementation of the 2011 Dallas Bike Plan will result in the existence of the following characteristics that describe the Dallas Bikeway System and the City's bicycling culture:

1. Wide-spread use of bicycles as an accepted and practical form of transportation, recreation and exercise, contributing to a healthier and happier lifestyle for Dallas residents.
2. A safe, efficient, connected bikeway system for all of Dallas, used by people of all ages and abilities, including a range of standardized on-street and off-street bicycle facilities that are sensitive to their land use and transportation context.
3. A high level of education and public awareness on how to use the bikeway system's facility types, and on bicycling safety, laws, and techniques.
4. A bicycling culture which promotes bicycling as a viable transportation option that is part of a comprehensive, City-sponsored strategy to revitalize neighborhoods and improve public health and air quality.

PLAN GOALS AND OBJECTIVES

Goal 1: Create a fully interconnected, seamless bikeway system that connects to all areas in the City and to every adjacent jurisdiction.

Objectives (strategies) to meet goal:

- Develop routes to destinations such as schools, employment, transit, parks, shopping, libraries and other activity centers,
- Create on-street connections between existing trails (close gaps),
- Install appropriate bicycle facilities (e.g. bike lanes, shared lane markings, cycle tracks, etc.) to make connections,
- Address barriers to bicycling (spot locations/access points such as

- Trinity River, major highways, railroad tracks, etc.),
- Create routes and/or facilities to employment centers,
- Develop better access between all areas within and surrounding Dallas,
- As part of the implementation Plan, develop an initial list of projects and priorities based on the objectives above. Once the Plan is adopted, maintain and update this list until the entire proposed bikeway system network is implemented, and
- As part of the implementation Plan, include recommendations for the development and enforcement of a facilities maintenance plan beyond Plan adoption.

Goal 2: Improve education and enforcement, establish supporting policies.

Objectives (strategies) to meet goal:

- Focus on Safe Routes to School projects and programs (collaborate with scout groups, parents, etc.; include promotion and education),
- Identify and encourage education programs,
- Clarify state law,
- City provide input to the creation of bike-friendly legislation as a consensus approach among public and private sector interests, and
- Work with law enforcement to identify enforcement strategies.

Goal 3: Promote and install end-of-trip facilities.

Objectives (strategies) to meet goal:

- City staff recommend to City Planning Commission and City Council economic incentives for employer/retailer provision end-of-trip facilities (i.e., bicycle parking, showers, lockers, etc. at appropriate locations), and
- Provide bicycle parking and other end-of-trip facilities at transit stations and in other public areas where density or land-use patterns warrant.



Creative use of a small space.

Goal 4: Identify funding sources for all projects and programs in the Plan.

Objectives (strategies) to meet goal:

- Identify sources of funding for highest priority projects (2011),
- Identify funding for near-term projects (1 to 3 years after Plan adoption),
- Identify funding for medium-term projects (4 to 6 years after Plan adoption),
- Identify funding for long-term projects (7 to 10 years after Plan adoption), and
- Provide list of funding opportunities including inclusion of bicycle facilities through development codes.

Goal 5: Provide strategies to measure and evaluate success of Plan over time.

Objectives (strategies) to meet goal:

- Establish base line data and data collection methods that can be used to measure success in the future,
- Identify ways to build accountability into Plan implementation,
- Provide for regular Plan updates, and
- As progress on the Plan begins and continues, the City applies for and obtains the various levels of Bicycle-Friendly Community designations from the League of American Bicyclists.

Goal 6: Provide a set of standards in the Plan that can be used as a regional template for other jurisdictions in the North Central Texas region.

Objectives (strategies) to meet goal:

- NCTCOG Bicycle and Pedestrian Advisory Committee (BPAC) endorsement of applicable elements of the 2011 Dallas Bike Plan for use as a regional template for other jurisdictions in the North Central Texas region.



Stakeholders provide ideas for new bicycle facilities with assistance from team consultants.

IV DALLAS BIKEWAY SYSTEM MASTER PLAN



INTRODUCTION

One of the main goals of the 2011 Dallas Bike Plan is to create a fully interconnected, seamless, and safe Dallas Bikeway System that connects all areas of the City and adjacent jurisdictions. This requires a master plan for the installation of context-appropriate bicycle facilities that have been developed with input from the public, the City of Dallas, the North Central Texas Council of Governments (NCTCOG), Dallas Area Rapid Transit (DART), Dallas County, the Texas Department of Transportation (TxDOT), and surrounding jurisdictions. These facility improvements must be complemented by a robust policy, education, encouragement and enforcement programs that support the physical network, and follow-up evaluation to measure progress (see Chapters V and VII).

This chapter defines a set of recommendations and actions to create an integrated Bikeway System Network. They are visionary, yet practical action strategies to make Dallas a great city for bicycling. They were developed with the following functional criteria in mind:

- **Connections to destinations:** Streets chosen for inclusion in the bikeway system are intended to provide access to major employment centers, retail centers, transit, schools, and other destinations.
- **Land use and facilities:** Recommended bicycle facilities and designs are intended to fit adjacent land use patterns. For example, residential, narrow, low-volume neighborhood streets typically will only need shared lane markings, while arterials in higher density neighborhoods may require buffered bike lanes.

- **Trail connectivity:** Some of the streets in the bikeway system were selected to connect existing and planned trails. The intent is to make sure that all trails can be accessed via on-street bicycle routes.
- **Traffic conditions:** Recommended bicycle facilities and designs reflect roadway traffic conditions. These include traffic volume, speed, and roadway capacity. In some cases, excess capacity provides an opportunity to reduce the number of general purpose lanes and add bicycle facilities such as bike lanes and cycle tracks. In other cases, the lack of existing capacity may be a constraint that prevents the installation of bicycle facilities.
- **Inter-jurisdictional connectivity:** There are many points where the bikeway system connects to adjacent communities. The on-street part of the network complements and builds on the NCTCOG Regional Veloweb, which is a 644-mile, designated off-street trail network that provides existing and proposed connections throughout the Dallas-Fort Worth Metroplex.
- **End-of-trip facilities:** End-of-trip facilities such as bike parking and amenities such as showers and bike lockers at transit stations and other major destinations have the potential to extend the network to include other modes. Allowing bikes to be safely parked at transit extends bicycle-borne travel, especially for work trips. The importance of extending the system by tying into the transit network is reflected in the prioritization map on page 26 which gives high priority to on-street bicycle facilities that connect to transit stations.

NETWORK OVERVIEW

The Dallas Bikeway System network extends to all parts of the City of Dallas, and is designed to meet the needs of all types of bicyclists. One of the most important outcomes of the Plan is a thorough assessment of Dallas's roadway network, which has resulted in the identification of an overall Bikeway System Network (see Figure 10), and detailed recommendations for bicycle facility types and street profiles on each network segment

DALLAS BIKEWAY SYSTEM' NETWORK STATISTICAL SUMMARY

The following tables give a quick overview of the Dallas Bikeway System, divided by facility type. Figure 8 gives a summary of the Dallas Bikeway System network, divided into on-street and off-street facilities. Figure 9 is an overview of streets important to the network that have not been studied.

Figure 11 on the following page provides an overview of off-street facilities divided by existing or funded, planned, proposed, and sidewalks where bikes are permitted.

Network Summary	Miles	Percent
On-Street facilities	840	63%
Off-Street facilities	456	35%
TOTAL MILES	1,296	100%

Figure 8. Network summary.

Breakdown of On-Street Facilities	Miles	Percent of Miles Studied
Bike lanes	123	20%
Shared lane markings	203	33.5%
Climbing lanes	3	.5%
Cycle track/buffered bike lane	132	22%
Paved shoulder	19	3%
Sub-Total	480	
Further study needed*	124	21%
TOTAL MILES	604	100%
Additional network connections (not studied)**	236	
TOTAL ON-STREET NETWORK	840	

* Further Study Needed: Streets where design solution not immediately apparent.

** Additional network connections: Streets that are important to the network but have not been studied. In most cases, shared lane markings will be most appropriate.

Figure 9. Breakdown of on-street facilities.

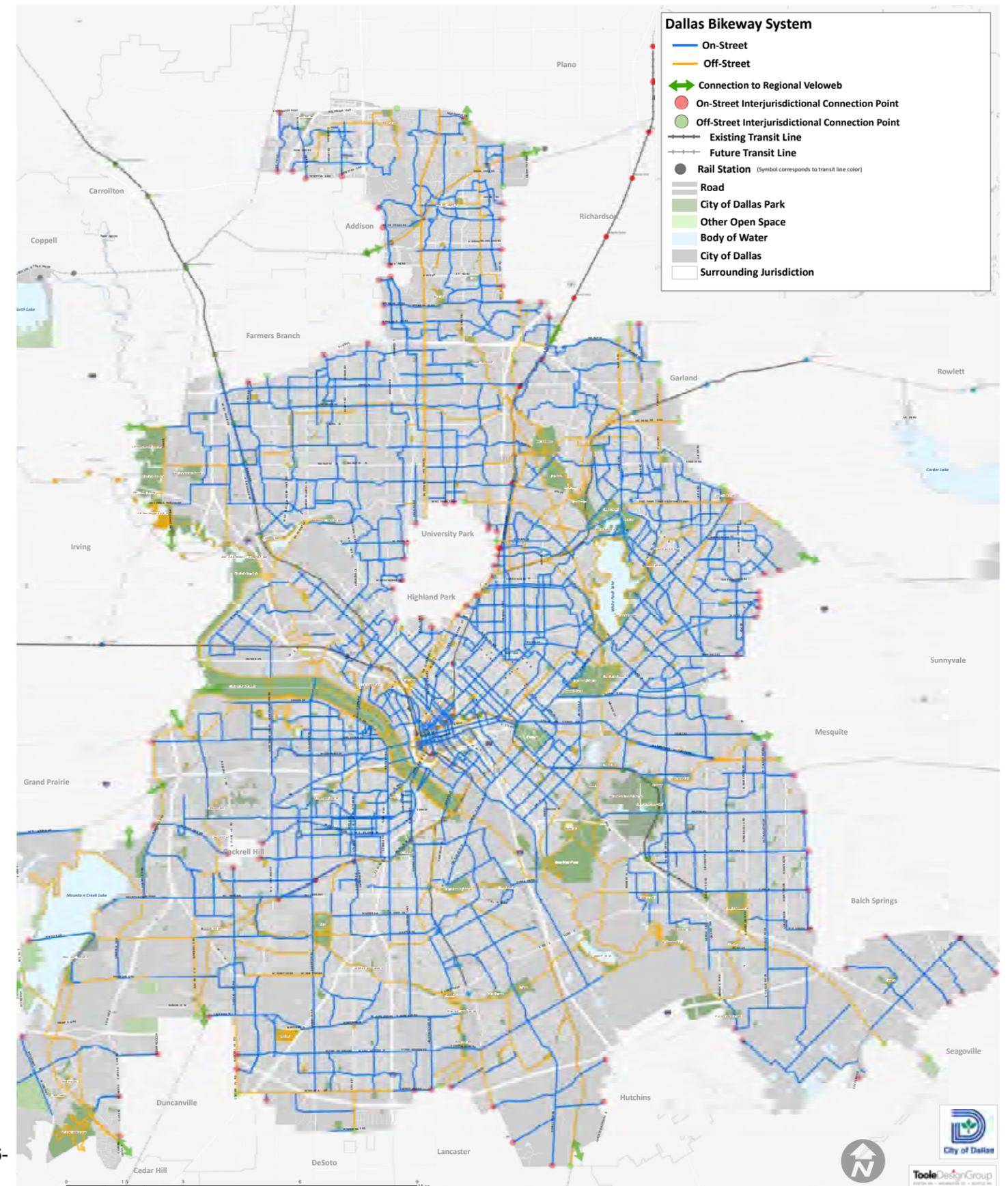


Figure 10. Overall network, 1,296-mile Dallas Bikeway System

Breakdown of Off-Street Facilities	Miles	Percent of Off-Street Facilities
Existing or funded	130	29%
Planned	170	37%
Proposed	97	21%
Sidewalk - bikes permitted	59	13%
TOTAL	456	100%

* Note: Off-street facilities were not evaluated as part of this project.

Figure 11. Breakdown of off-street facilities.

As the Metropolitan Planning Organization (MPO) for the Dallas-Fort Worth area, the North Central Texas Council of Governments (NCTCOG) is in a position to help ensure that similar planning and design guidelines are used throughout the DFW Metroplex. To accomplish this, the NCTCOG is developing a regional template that jurisdictions will be encouraged to use when developing on-street bicycle facilities.

With this goal in mind, the design guidance for on-street bicycle facilities and other physical design elements for the Dallas Bikeway System Master Plan are being included as compatible but separate products from the 2011 Dallas Bike Plan, so that they may be more easily incorporated into the City's Complete Streets Design Manual and the NCTCOG regional template.

REGIONALLY SIGNIFICANT AND SIGNATURE FACILITIES

Regionally significant and signature bicycle facilities usually represent critical connections between large areas, or they may serve as a major thoroughfare or spine of the network. As barrier crossings or as unique facility types, they may be highly visible and take on a signature character because of their design (including aesthetic considerations). The few examples that follow represent a current list of project under design and funded, or ones that have been identified as potential projects and are under study as to their location and purpose. This list will change as projects get completed and the Plan gets regularly updated."

DESIGN DISTRICT CONNECTION I-35 CROSSING

East side location: Victory Overlook, Katy Trail

West side location: Southeast end of the Trinity Strand Trail in the Design District

The Design District Connection is the planned and funded link between the Katy Trail and Trinity Strand Trail systems. At just under ¾ of a mile, its course weaves below and beside IH-35, Stemmons Park and Oak Lawn Ave, and will feature steep grades up to 5% and therefore should include a relatively slow design speed for a trail. In areas where motor vehicles are in close proximity, the connection will be covered for protection from falling debris and noise abatement. The master plan for this connection also includes a parking lot, a dog run, benches, public art, and various scenic overlooks (see image below).

NORTHAVEN EXTENSION - LOW-FIVE U.S. 75/WHITE ROCK CREEK CROSSING

This important east-west bicycle barrier crossing in the area around the eastern terminus of the planned Northaven Trail will be the subject of a feasibility analysis in which four different options will be thoroughly explored, and one or two options may be chosen as a signature connection for the bikeway system as funding becomes available:

- 1) Bridge crossing at Royal Lane.
- 2) Sidewalk underpass and bridge (under-over) connection at the Oncor right-of-way and Park Central Plaza.
- 3) Bridge crossing at the end of Park Central Place to cross White Rock Creek.
- 4) Bridge crossing of White Rock Creek at Medical City/Forest Lane.

TRINITY CORRIDOR LEVEE-TOP PATHWAY/REGIONAL VELOWEB BICYCLE HIGHWAY

Consistent with and building upon the Dallas Trail Network Plan and the Balanced Vision Plan, it is recommended that, for parts of the Trinity Corridor Levee System, a feasibility analysis be conducted on the possibility of constructing a "bicycle highway" that doubles as an emergency and maintenance vehicle access route. This facility would be consistent with and build upon what is identified in the Dallas Trail Network Plan and the Trinity River Corridor Balanced Vision Plan.

KATY TRAIL U.S. 75 BICYCLE PEDESTRIAN BRIDGE

West side location: Northern end of the operational portion of the Katy Trail (near Airline Dr.), where the City-leased DART right-of-way meets the U.S. 75 southbound frontage road on a bluff.

East side location: Glencoe Park, east of northbound U.S. 75 frontage road.

Description: As the geographic center of the envisioned Dallas Bikeway System, this potential and un-funded signature bridge will span a major barrier to bicycling in Dallas (U.S. 75 and frontage roads), and connect two phases of the Katy Trail. As an attractive, high-profile facility seen from many vantage points, this facility will raise consciousness about bicycling and multimodal transportation, and realize the intent of the Katy Trail not



Design District I-35 Crossing, Courtesy of Schirkel Rolling and Associates, Inc.

only as a recreational facility, but also as a commuter route for the East Dallas and Uptown neighborhoods (see image of concept below).



Katy Trail US 75 Bicycle-Pedestrian Bridge, Courtesy of IC3, Inc.

DALLAS BIKEWAY SYSTEM - PHYSICAL NETWORK

Implementation of this Plan will establish an overall bikeway system made up of approximately 1,300-miles of on- and off-street bikeways throughout the City of Dallas. All bikeway system segments will have some type of visible facility (bike lane, shared lane marking, bike route sign, etc.) to indicate that special accommodations have been made for bicyclists. While the network will provide primary routes for bicycling, it is important to note that, by law, bicyclists are permitted to use all roadways in Dallas except limited access freeways or where bicycles are otherwise explicitly prohibited.

The proposed bikeway system includes a variety of facility improvements that are designed to meet the needs of all types of bicyclists. The American Association of State Highway and Transportation Officials' (AASHTO) *Guide for the Development of Bicycle Facilities* defines bicycle user types by comfort and skill level:

- Advanced or experienced riders are generally using their bicycles as they would a motor vehicle. They are riding for convenience and speed and want direct access to destinations with a minimum of detour or delay. They are typically comfortable riding with motor vehicle traffic; however, they need sufficient operating space on the travel way or shoulder to eliminate the need for either them or a passing motor vehicle to shift position.
- Basic or less confident adult riders may also be using their bicycles for transportation purposes, e.g., to get to the store or to visit friends, but prefer to avoid roads with fast and busy motor vehicle traffic unless there is ample roadway width to allow easy overtaking by faster motor vehicles. Basic riders are comfortable riding on neighborhood streets and shared use paths and prefer designated

facilities such as bike lanes or wide shoulder lanes on busier streets.

- Children, riding on their own or with their parents, may not travel as fast as their adult counterparts but still require access to key destinations in their community, such as schools, convenience stores and recreational facilities. Residential streets with low motor vehicle speeds, linked with shared use paths and busier streets with well-defined pavement markings between bicycles and motor vehicles can accommodate children without encouraging them to ride in the travel lane of major arterials.³²

Up to 85 percent of bicyclists are basic or child bicyclists. Consequently, if bicycle use is to increase, there is a need for a variety of facility types to accommodate these less experienced or less confident bicyclists.

STATE HIGHWAY SYSTEM (TXDOT)

The United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations, signed on March 11, 2010, states that, "the United States Department of Transportation (DOT) supports the development of fully integrated active transportation networks. Accordingly, transportation agencies should plan, fund, and implement improvements to their walking and bicycling networks, including linkages to transit. In addition, DOT encourages transportation agencies to go beyond the minimum requirements, and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics when appropriate." Additionally, the DOT Policy Statement includes Recommended Actions that specifically state the following, "integrating bicycle and pedestrian accommodation on new, rehabilitated, and limited-access bridges: DOT encourages bicycle and pedestrian accommodation on bridge projects including facilities on limited-access bridges with connections to streets or paths."

According to recommendations in the U.S. DOT Policy Statement, TxDOT issued a Policy Memorandum on March 23, 2011 which states, in part, that "TxDOT is committed to proactively plan, design and construct facilities to safely accommodate bicyclists and pedestrians." The Memorandum goes on to state that, "the inclusion of bicycle and pedestrian facilities shall be considered when the project is scoped. Public input, when applicable, as well as local city and metropolitan planning organization bicycle and pedestrian plans shall be considered."

In accordance with and in support of these landmark policies, this Plan

recommends that the bicycle facilities identified in the Dallas Bikeway System network which are also on the State Highway System (especially on limited-access bridges, overpasses, and underpasses) be built with the intent to accommodate and enhance bicycle accessibility and connectivity as maximally as possible. Guidance from the facility type recommendations in this Plan should always be confirmed through interagency coordination during project development or as soon as coordination is otherwise required. Relevant facilities with a 'needs further analysis' designation will require additional coordination between the City and TxDOT to determine the maximal facility that can be installed.

³² AASHTO Guide for the Development of Bicycle Facilities, 1999 (6).

V BICYCLE PROGRAMS AND SUPPORTING POLICIES

A. BICYCLE PROGRAMS

Being primarily responsible for the planning, building, maintenance and operation of its transportation infrastructure, the City will focus its efforts on the physical engineering elements of the Dallas Bikeway System. The City also recognizes, however, that education, encouragement, and enforcement programs are also essential to achieve the full set of goals and objectives of this Plan.

In order to increase the capacity of the City to oversee, facilitate, and support the programs and supporting actions described below, an augmented bicycle planning program will be required within the City. Moreover, a citizen-based Bicycle Advisory Board should succeed and replace the Plan's Bicycle Advisory Committee (BAC).

Educating motorists and bicyclists about safety and courtesy is one of the top priorities identified through the public involvement process of this Plan, and it represents an opportunity for the City and the community to work together to affect the desired outcomes. There are many established organizations and individuals who provide training and instruction on the proper use of bicycles as part of the roadway system.

This Plan recognizes that the involvement of the ever-growing group of individuals and organizations that are energized and motivated to assist in the promotion and encouragement of bicycling is critical to improving the bicycle-friendly culture within the City and the region. These individuals are already involved in a variety of education, promotion, and encouragement activities, such as helmet promotion, and will make good partners for the City in the future. The City, in turn, must help to facilitate events and programs that will allow these groups to better participate in the encouragement and outreach to

the rest of the community about the positive, healthy aspects of bicycling.

The City's ongoing online presence will emulate what other cities have done to use the internet as an organizing force and as an information-sharing tool. For example, online way-finding programs are very popular in Germany and other parts of Europe, and are beginning to be explored and piloted in various cities in the U.S.

Enforcement of good behavior on the Bikeway System Network is a responsibility that will fall primarily on the City of Dallas. Having proper warning and regulatory signage, as well as the participation of the Dallas Police Department to re-enforce proper behavior, will be necessary parts of the enforcement strategy. Policies to encourage good behavior and to deter bad behavior on the part of bicyclists and motorists should be considered and implemented contemporaneously with the development of the physical network.

Encouragement will occur through the establishment of supportive programs by the City which promote and raise awareness by bicycling options and events. Evaluation will follow as the Plan is being implemented to determine levels of success or allow for modifications to areas that need improvement.

The actions listed in the following sections define the role of the City regarding bicycle programs in Dallas. They are recommended as strategies to improve and promote bicycle safety education and enforcement, and for the encouragement and promotion of bicycling in the City of Dallas.



BICYCLE SAFETY EDUCATION AND ENFORCEMENT

ACTION 5.1: Improve bicycle safety education and awareness in the City of Dallas through partnerships with community organizations.

The City of Dallas will partner with community-based organizations to offer bicycle education programs within the City. These programs can be offered at City recreation centers, libraries, and schools, as well as at community festivals and other organized events. For programs that target children, youth-specific curricula and age-appropriate language should be used to explain concepts and safety issues.

Examples of how the City could support this effort include 1) contracting with local organizations to provide education programs, 2) providing in-house support for activities such as printing and publicity, and 3) providing venues (rooms, parking lots, etc.) for educational programs.

Examples of activities that could be promoted through this program include:

- Hands-on bicycle training for children and adults.
- Bicycle commuter classes.
- Bicycle ambassadors (modeled after programs in Seattle and elsewhere), who develop and promote social marketing campaigns to encourage bicycling.
- Media outreach to promote bicycling and increase awareness of bicycle safety, including billboards, direct mail, television, radio advertisements, etc.
- A Share the Road campaign to increase safe travel behavior and respect between all types of roadway users.
- Outreach to lower-income populations that are typically under-represented in the Dallas bicycling community.
- 'Drive with Care' campaign targeted to improve motorists behavior around bicyclists (similar to City of Chicago).
- General safety outreach through utility newsletters and bills.
- Partner with businesses and business organizations to develop programs that encourage their employees and customers to bicycle.

ACTION 5.2: Promote and enforce mandatory bicycle helmet use in Dallas through partnerships with the Dallas Police Department and community organizations.

The City of Dallas will partner with community-based organizations, including public health agencies, to offer bicycle helmet education, awareness and provision programs. These programs should be focused at locations where both parents and children can be reached (e.g. schools

and community centers, etc.). The single best way to encourage helmet use among children is for adults (parents, teachers, and other role models) to set an example by wearing helmets regularly.

Examples of how the City could support community organizations to promote helmet use include, but are not limited to 1) subsidizing the purchase of helmets for children living in under-served neighborhoods, 2) providing in-house support for activities such as printing and helmet promotion, and 3) identifying and encouraging business leaders and organizations to become involved in purchasing and distributing helmets.

The City's bicycle planning program and the Dallas Police Department will work together to develop and implement improved and practical bicycle helmet use enforcement strategies.

BICYCLE TRANSPORTATION / DALLAS BIKEWAY SYSTEM ADVOCACY AND MARKETING

ACTION 5.3: Establish and maintain the City bicycle planning program and the Bicycle Advisory Board.

The City bicycle planning program, in the Department of Sustainable Development and Construction, will oversee all technical planning, program outreach, and execution for the Plan implementation. The City of Dallas Bicycle Advisory Board will replace the Plan's Bicycle Advisory Committee, and will be comprised of one representative from City and participating agency staff representatives. The Bicycle Advisory Board will advise the bicycle planning program on bike plan implementation issues, and lend organizational and planning support for implementing programs and events to be facilitated by the City or officially supported under the Plan.

ACTION 5.4: Facilitate and/or support existing and new bicycling promotion events through partnerships with community organizations.

It is recommended that the City of Dallas could facilitate and/or support special events that promote bicycling within Dallas, and partner with community-based organizations to make them as effective as possible. These can be existing or new events. Events to be officially facilitated and/or supported as a recognizable program in the implementation strategy can include, but are not limited to:

- **Tour Dallas** (April)
- **Dallas Clean Air Bike Ride** – This ride can be sponsored by the City and/or DART as part of National Bike to Work Month (May).



Bike to Work Day - an example of a special event that should be supported.

• **Summertime Fair Park Bicycle Series:**

- Green Festival - late April (Earth Day) or mid-September (component of weekend-long event). Add a bicycle component to this annual event at Texas Discovery Gardens which would be designed to teach and inform people about the environmental and health benefits of bicycling as an alternative form of personal transportation combined with DART transit services.
- Bike Rally/Texas Custom Bike Show/Bicycle Rodeo – May or June (weekend-long major event). This event would be a major weekend draw with all the regional/city bicycle shops, bicycle advocacy groups, and the public participating. Museums would stay open later than normal, and could be combined with water-related activities. Dallas Park and Recreation could install a sprayground (near Texas Discovery Gardens). Museums could host vendors. A Park-wide treasure hunt (on bikes) could be a component. If held in May, could be part of City's efforts to promote National Bike Month.
- Family Bike Nights - mid-July through mid-September (weekly or monthly event). Families would be invited to bike to Fair Park on a weeknight when all the museums stay open a little later. Concept would be for families to bike between museums. Fair Park could install bike racks near all the main venues.
- Bike Games - mid-July through mid-September (weekly or monthly event). Could be combined with Bicycle Family Night (see previous events). Expect ~100 entrants each time, ends after sunset. Use same crit/stunt/BMX courses established for Bike Rally/Rodeo in May/June (see previous events). Could also have bike polo matches.
- State Fair of Texas - late September/early October (component of

existing three-week major event). Establish designated bicycle parking corrals near the Women’s Museum and the Perry Ave. DART station, and near Texas Discovery Gardens and the MLK Jr. DART Station. Also, have Bike Shows in the Classic Corral on weekdays when cars are not present. Note: State Fair may be challenging to encourage riders to come to Fair Park unless safe passage on roadways outside the fairgrounds and bicycle parking corrals are established. A retailer or vendor would need to sponsor/manage the bicycle parking corrals, as they would require constant security.

- Fall Museum Cycle - October (after State Fair of Texas, week-long program). Akin to Cyclesomatic being done in Oak Cliff in the fall every year. Bike-Friendly Oak Cliff puts on bike-related themed events every day for a week, such as Tweed Ride where people dress up like British gentry and ride. At Fair Park, could have a series of bicycle-related themed events in the late afternoons and evenings, associated with and focused on one museum per night.
- **Walk/Bike to School Day** (October)

Examples of how the City could further support existing special events include, 1) providing incentives for City employees to participate in events such as Bike to Work Day, 2) having dignitaries (e.g. elected officials, department directors, etc.) speak at events such as a downtown gathering for Bike to Work Day, and 3) providing permits and other assistance needed to organize special events.

ACTION 5.5: Develop, provide, and maintain a Dallas Bikeway System map.

As bicycle facilities are added to the Dallas Bikeway System Network over the next ten years, there will be a need for the publication and distribution of a Dallas Bikeway System map that is regularly updated to ensure that bicyclists are aware of new network additions and routing options. The maps can be distributed in paper form and/or be posted online as downloadable documents. In addition, the bikeway system map could serve as the basis for an interactive, internet-based bicycle route way-finding program (refer to Action 5.6 for more details). In maintaining the Dallas Bikeway System map, the City will provide regular updates to NCTCOG for its coordination of the regional bicycle network. The City of Dallas should work with DART to distribute the hard copy version of the Dallas Bikeway System map, and incorporate information into DART informational brochures on bicycle use with transit facilities.

ACTION 5.6: Develop an interactive, internet-based bicycle route way-finding program.

As part of the Plan’s online presence (dallasbikeplan.org), a web-based bicycle route way-finding application will be developed by the City to

help bicyclists determine preferred routes to destinations throughout the DFW Metroplex. This program would allow bicyclists to enter their origin and destination to generate an optimal route to follow, given their experience level, time sensitivity, willingness to ride on hills, or other potential way-finding factors. The application can include a drop-down list of tourist destinations, park amenities, transit locations, schools, and other commonly-known origin-destination markers.

ACTION 5.7: Establish and maintain a Bikeshare program.

The Dallas Bikeshare Program, to be administered and possibly managed by the Dallas Bicycle Planning Program, would be a scalable and flexible program using electric-assist bicycles. Initial implementation of the Bikeshare program would occur in the downtown area, serving tourist destinations and the Dallas Arts District. Initial Bikeshare program stations may respond to demand created by the opening of the Dallas Convention Center Hotel. Later expansion of the Bikeshare program would serve destinations in Deep Ellum, Fair Park, Uptown, Victory, the Trinity River Corridor, White Rock Lake, and Oak Cliff, among others.

In either of the Bikeshare program implementation scenarios described below, the bicycle helmet provision for paying customers would be embraced as a tourism and bicycling promotion concept (i.e., possibly providing helmets for Bikeshare customers as discounted or even free souvenirs). Also, the implementation of relevant on-street bicycle facilities as early/near-term implementation projects would need to take place either prior to or at the same time as the Bikeshare program implementation.

Scenario A:

The City partners with a business operator that manages the Bikeshare program, shares an agreed upon percentage of its total revenue with the City for operating on City-held property and right-of-way, and uses another percentage to procure and provide helmets to paying customers. The operator provides up-front capital for equipment and start-up costs, and enters into a purchasing and maintenance contract with an established bikeshare program equipment provider. The operator uses the rest of its revenue to pay its employees and other costs not covered by its contract with the equipment provider. The remaining revenue would be its profit margin. The operator would, under its agreement with the City, monitor bikeshare use/destinations and work with the bicycle planning program on expansion plans.

Scenario B:

A City-managed Bikeshare program would have administration and oversight from the Dallas Bicycle Planning Program, and have management and operation from dedicated program employees who are part of a City service branch. The bicycle planning program would

manage and maintain the program. All revenues come to the City for bike share maintenance, helmet provision, and bike plan implementation. The City enters into an equipment purchasing and contract with a major bikeshare program equipment provider.

ACTION 5.8: Plan and implement youth bicycle program.

This recommended program would provide youth with bicycle-related skills and education, and could potentially be a part of the Mayor’s Youth Fitness Initiative (YFI). YFI is a public-private partnership designed to create and cultivate programs and funding to address the issues faced by children in the City of Dallas. As part of the bike plan’s implementation strategy, a specific component of the YFI could be professionally led bicycle outings and educational programs run through the City’s recreation centers in the summer months. The education aspect of this YFI possible component should emphasize bicycle safety and maintenance.



Community outreach program helps adolescents learn to fix bikes.

ACTION 5.9: Develop and implement bicycling promotional materials and strategies.

The City of Dallas should partner with community based organizations to develop materials promoting bicycling. As a component of this initiative, t-shirts or bicycling jerseys could be developed by the Bicycle Advisory Board (BAB).

Promotional materials should be evaluated as a cost-benefit question (the cost involved in production and delivery versus the quantifiable or tangible/

intangible benefits that can be derived). The focus should be on selecting unique products that will generate the most buzz for the Plan.

ACTION 5.10: Expand the Safe Routes to School Program to encourage children to walk and bicycle to school.

The City of Dallas should build on its existing efforts to work with Dallas Independent School District (DISD) and other area charter and private schools, public health organizations, parent associations, and local neighborhood groups to identify and develop safe bicycle and pedestrian routes to Dallas area schools. These routes could be identified as part of the local Safe Route to School Plan and could be improved in conjunction with the implementation of the City of Dallas Complete Streets initiative.



Crossing Guards help promote bicycling and walking to school.

ACTION 5.11: Increase enforcement of bicyclist and motorist behavior to reduce bicycle-motor vehicle-related accidents.

The Dallas Bicycle Planning Program should work with the Dallas Police Department to enforce laws that reduce bicycle/motor vehicle crashes and increase mutual respect between all roadway users. This enforcement program will take a balanced approach to improving behaviors of both bicyclists and motorists. Motorists' behaviors that should be targeted include:

- Turning left and right in front of bicyclists,
- Passing too close to bicyclists,
- Parking in bicycle lanes,

- Opening doors of parked vehicles in front of bicyclists,
- Rolling through stop signs and disobeying traffic signals, and
- Harassment or assault of bicyclists.

Bicyclist behaviors that should be targeted include:

- Ignoring traffic control (particularly traffic signals),
- Riding the wrong way on a street,
- Riding with no lights at night, and
- Riding recklessly near pedestrians on sidewalks.

Bicyclist safety is a shared responsibility between all roadway users. Enforcement priorities should be established through a collaborative process including City agencies, the Dallas Police Department and the Bicycle Advisory Board.

ACTION 5.12: Establish and maintain Bicycle Commuter Incentive Reimbursement program through the U.S. IRS for City employees, support/promote use of program for other employers.

The Commuter benefit for bicycling is actually provided to an employee in the form of a voucher or pre-paid card. The City of Dallas will need to set-up an account with one of the providers that offer the commuter benefit cards/vouchers to offer to employees. The City should provide additional support by providing employers with information on how to set up and administer a Bicycle Commuter Incentive Reimbursement program.

B. SUPPORTING POLICIES

This section describes the identified potential bicycle-specific policy actions that may be necessary or helpful to implement the 2011 Dallas Bike Plan.

PHYSICAL NETWORK

Bicycle facility maintenance must be responsive to citizen concerns. Bicyclists who ride in the street every day will often spot potentially hazardous situations before anyone else is aware of the problem.

ACTION 5.13: Citizen requests.

The City should add the capability of adding bicycle facilities issues to its existing 311 system, which already handles citizen reports of related street

issues such as potholes, signals that are not working and downed signs. While not limited to bicyclists, it will serve as a way to involve the bicycling public and significantly improve bicycle safety.

USER AND PROVIDER BENEFITS

ACTION 5.14: Encourage bicycle/transit commuter incentives.

In addition to providing bicycle parking at light rail stations, it is recommended that the City could partner with DART to create incentives to encourage bicyclists to use public transit.

Examples of activities that could be promoted through this program include:

- Development of monthly commuter passes that also provide access to high security lock up facilities,
- Offer incentive days where bicyclists ride free on DART trains,
- Revise printed DART schedules to include information on bicycle parking accessibility to and at stations,
- Offer free bicycle maps at locations where DART schedules are displayed,
- Coordinate organizations and efforts on media outreach to promote increase awareness of bicycle parking at stations, including billboards, direct mail, television and radio advertisements, etc.,
- Reach out to lower-income populations that are typically under-represented in the Dallas bicycling community, and
- Partner with neighborhood businesses, business organizations and employers to develop programs that encourage their employees to bike to work in conjunction with DART rail lines.

VI IMPLEMENTATION STRATEGY



INTRODUCTION

This chapter describes practical and feasible strategies for implementing the 2011 Dallas Bike Plan. In order for bicycling to become a truly viable form of transportation in Dallas, it is essential to institute practices for the construction and maintenance of the physical network and to provide programs for the encouragement of bicycle use. It will also be important to establish complementary laws and regulations with regard to accommodating wide-spread use of bicycles, and to expand the planning and support function of bicycle planning at the City. Policies and design practices related to construction of the physical network, encouragement of bicycle use, laws and regulations and bicycle planning are recommended to make bicycling a truly viable form of transportation in Dallas.

The actions described in the following sections define the role and recommended actions of the City and desired actions of partner agencies. The City recognizes that other agencies such as Dallas Area Rapid Transit, the Texas Department of Transportation, the North Central Texas Council of Governments, and surrounding jurisdictions play important roles in shaping Dallas transportation systems. Consequently, a high level of collaboration and cooperation will continue to be necessary in order to implement the Plan.

All recommendations for the Bikeway System Network/Master Plan have been prioritized into three general implementation phases – near-term (2012-2014), medium-term (2015-2017), and long-term (2018-2021) projects.

Specific projects within the three general implementation phases should be further prioritized by the City on an annual basis using the criteria described on page 26 and in Appendix B. These criteria were developed

through an interactive exercise with the Bicycle Advisory Committee (BAC), Bicycle Policy Steering Committee (BPSC) and the Policy Review Committee (PRC), and through specific feedback provided at the second public meeting.

In addition to the near-, medium-, and long-term projects, the City will immediately begin to include bicycle facilities as part of roadway resurfacing and reconstruction projects. These projects, along with grant-funded projects developed to improve locations where shared use paths cross streets at-grade, are listed as early implementation/demonstration projects on page 23.

DALLAS BIKEWAY SYSTEM MASTER PLAN IMPLEMENTATION STRATEGY

The implementation strategy and project prioritization methodology for the Dallas Bikeway System Master Plan is generally guided by first providing those parts of the bicycle network within a three-mile radius of rail transit stations. Using this general approach for bicycle circulation, access, and parking around transit is the most practical and feasible means to having an integrated, and almost citywide alternative transportation system in the shortest time possible. Taking advantage of other opportunities early on, such as connecting trails to destinations and to each other, is also part of the overall strategy for implementing the Dallas Bikeway System. The many funded roadway improvement projects currently under design at the City, with input from this Plan process, will offer an opportunity to implement portions of the envisioned bicycle network in the Plan's earlier stages of implementation. This maintenance practice [roadway

reconstruction and resurfacing projects] will be used to maintain on-street bicycle facilities that have already been installed, and will function as the City's systematic repair and preventative maintenance program. It is also recommended that the maintenance and repair of the off-street facilities represented in this Bikeway System Master Plan are to continue as chiefly the responsibility of the Park and Recreation Department, with input and guidance from City bicycle planning staff

There are demonstration/early implementation projects plus three main implementation phases: near-term, medium-term, and long-term. A description of each phase is provided on the following page.

STRATEGIC DEMONSTRATION/EARLY IMPLEMENTATION PROJECTS

The demonstration/early implementation Projects of this Plan will focus on the area including downtown and its immediate surrounding districts (i.e., Deep Ellum, Uptown, Cedars, and the Design District), as well as those projects that are already being planned by the City as funded roadway reconstruction projects that will have designated bicycle facilities on them as part of the bikeway system network. It should be noted that, in many cases, the latter approach will result in improved sections that will not, in the short run, connect with the larger, unfinished sections of the network. It has the potential of leaving bicyclists with no clear place to go when a facility ends. This reality can be addressed by providing bicyclists with temporary, spot signing at the end of each facility that directs them to the nearest and best available street. There are two basic options or strategies for adding way-finding and other signage required by this Plan. As facilities recommended in the 2011 Dallas Bike Plan are installed, existing route signs can be removed and new ones installed. In some cases, routes will remain the same as those identified in the 1985 Plan while others will be completely new. The removal of existing signs could be accelerated if an aggressive way-finding signage program is in place to stake out the entire Dallas Bikeway System even before the on-street facilities are implemented.

Figure 12 is a table of projects, many of which are already programmed and funded as City Thoroughfare Plan reconstruction projects, which represent an opportunity to implement discrete segments of the Dallas Bikeway System.

Demonstration/Early Implementation Projects

Street/Project Name	Facility	Project Limits
Central Core Connector (CCC): Bishop Ave. Jefferson Viaduct - Katy Trail Spur - Convention Center Hotel - City Hall/Central Library - Farmers Market - Arts District - Baylor Medical Center/LRT (DART) - Santa Fe Trail	Combination of one-way and two-way on-street facilities	Katy Trail Santa Fe Trail Bishop Arts District (connect two major trails through downtown) (see map on the following page)
Traffic control and safety treatments for at-grade trail-road crossings	Pavement markings, signage, signalization, and lighting	75 at-grade crossing locations citywide
NC Route	Combination of on-street facility types and off-street pathways	Hill Haven/Forest Ln and Boedeker Dr/UP City Limits/UP Link
W. Davis, 8th St. Corridor Improvements (~6 miles)	Combination of on-street facility types	W. Davis/Bagley Street, 8th St./Corinth Ave.
N. Oak Cliff - Rosemont Elementary	Safe Routes to School (SRTS) demonstration project, temporary-to-permanent	TBD
N Bishop Ave.	Two 5'-wide one-way bike lanes w/painted buffers	W. Colorado Blvd., W. Neely St.
Dickerson St.	Two 5'-wide, one-way bike lanes with 2' painted buffers	Frankford Rd. and McCallum Blvd.
Lakeland Dr.	Two 4'-wide, one-way bike lanes with 2' painted buffers	G.C. & S.F. R.R. and Ferguson Rd.
N. Riverfront Blvd.	Two 5'-wide one-way bike lanes	Continental Ave. and Cadiz St.
Central Business District (CBD) - Fair Park Link	One 12'-wide two-way off-street cycle track on south side of street	Elm/Exposition and Hall St.
Mountain Creek Parkway	Two 5'-wide, one-way off-street cycle tracks	SE of Eagle Ford Dr. to Clark Rd.
Brockbank Dr.	Shared lane markings	Walnut Hill Ln. and Lombardy Ln.
Lamar St.	Bike lanes/shared lane markings	Ross Ave. to Cadiz St.
Bagley St.	Shared lane markings	W. Davis to Moonlight E.
Belleview St.	Shared lane markings	S. Lamar to Akard St.
Chalk Hill Rd.	Bike lanes (25'-wide one-way)	W. Davis to Singleton
Wheatland Rd.	Two one-way cycle tracks	Lancaster Rd., Houston School Rd.
West Dallas Neighborhood Projects	Combination of on-street facility types	West Dallas
Southern Sector Project (Wonderview area)	Combination of on-street facility types	Wonderview area
Existing (1985) Bike Plan Route Sign Removal/Replacement	4,000-5,000 signs (estimated)	Citywide
Hampton Road	Shared lane markings	Wheatland Rd., Canada Dr.
Sylvan Dr	Two 5'-wide one-way bike lanes with 2' painted buffers	I-30 and Ft. Worth Ave
Sylvan Dr	Two 5'-wide one-way bike lanes with 2' painted buffers	I-30 and Colorado Ave

Figure 12. Demonstration and early implementation projects

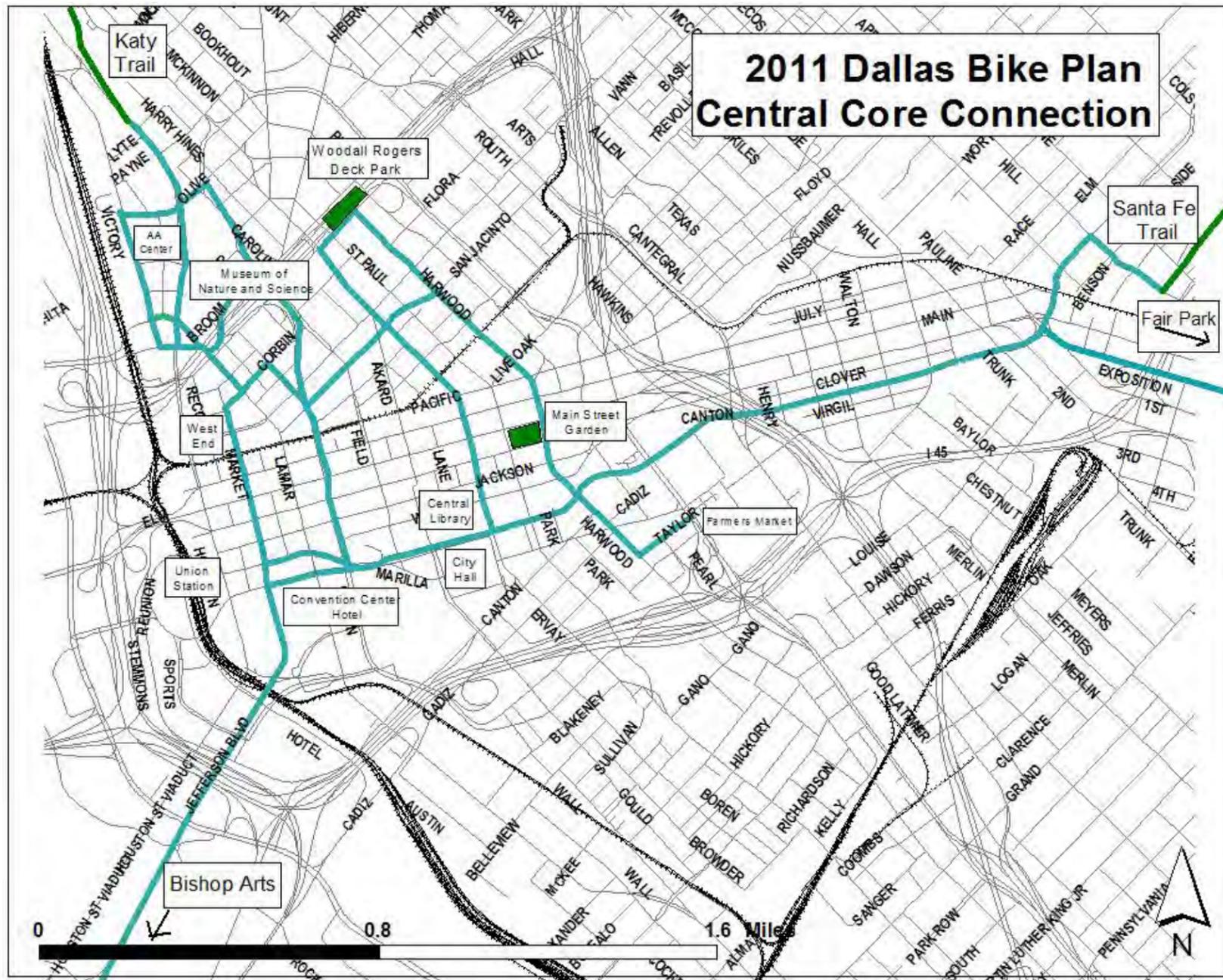


Figure 13. 2011 Dallas Bike Plan, Central Core Connector Project.

NEAR-TERM IMPLEMENTATION (2012-2014)

From 2012 through 2014, the Plan recommends the installation of approximately 90 miles of new on-street bicycle facilities. New bicycle facilities include approximately 20 miles of bicycle lanes, 10 miles of cycle tracks/buffered bike lanes, 30 miles of shared lane markings, 0 miles that will need further study and 5 miles of additional network connections (not studied - likely to be shared lane markings).

Some of these numbers will vary slightly, depending on the number and location of repaving projects that provide opportunities for implementation of bicycle facilities. Partnerships with local organizations for bicycle safety education, enforcement, encouragement, and parking (e.g. DART) will also be developed for the near-term period. New way-finding signs will be installed in conjunction with new facilities, and can be installed citywide under a more aggressive sign removal and bikeway system network definition way-finding program.

The following table represents recommended near-term projects. Figure 14 is a summary of all recommended projects by facility type. They reflect priorities as shown on the prioritization map.

Facility	Measurement
Bike lanes	15 Miles
Cycle tracks/buffered bike lanes	13 Miles
Shared lane markings	33 Miles
Climbing lanes	1 Mile
Additional analysis needed	16 Miles
Additional connections	4 Miles

Figure 14. Near-term implementation (2012-2014).

MEDIUM-TERM IMPLEMENTATION (2015-2017)

From 2015 to 2017, the Plan recommends the installation of approximately 370 miles of new on-street bicycle facilities. New bicycle facilities include approximately 50 miles of bicycle lanes, 40 miles of cycle tracks/buffered bike lanes, 80 miles of shared lane markings, 50 miles that will need further study and 80 miles of additional network connections (not studied - likely to be shared lane markings).

If not already completed in the near-term phase, the City will also complete installation or upgrade of most of the wayfinding signs. As the on-street system is completed, the City will shift resources toward intersection improvements to create an interconnected system. Additionally, the Plan will be updated during this time period to reflect new priorities that arise. Figure 15 summarizes the recommendations for medium term projects. They reflect priorities as shown on the prioritization map.

Facility	Measurement
Bike lanes	55 Miles
Cycle tracks/buffered bike lanes	42 Miles
Shared lane markings	82 Miles
Climbing lanes	1 Mile
Additional analysis needed	19 Miles
Additional connections	82 Miles

Figure 15. Medium-term implementation (2015-2017).

LONG-TERM IMPLEMENTATION (2018-2021)

In the closing stage that completes the 10-year implementation timeframe for the Dallas Bikeway System Master Plan, the intersection improvements and the remaining on-street and off-street bicycle facilities are recommended to be completed. From 2018 through 2021, the Plan recommends the

installation of approximately 480 miles of new on-street bicycle facilities. New bicycle facilities include approximately 50 miles of bicycle lanes, 50 miles of cycle tracks/buffered bike lanes, 90 miles of shared lane markings, 60 miles that will need further study and 150 miles of additional network connections (not studied - likely to be shared lane markings).

Major construction projects to provide bicycle and pedestrian bridges and bicycle facilities in constrained roadway corridors are likely to be designed during this long-term timeframe. Visionary projects, such as the completion of dedicated bicycle bridges and some roadway reconstruction projects may occur further in the future, but are still identified as important to this Plan.

Figure 16 summarizes recommended long term projects. They reflect priorities as shown on the prioritization map.

Facility	Measurement
Bike lanes	46 Miles
Cycle tracks/buffered bike lanes	50 Miles
Shared lane markings	86 Miles
Climbing lanes	1 Mile
Additional analysis needed	31 Miles
Additional connections	150 Miles

Figure 16. Long-term implementation (2018-2021).

DALLAS BIKEWAY SYSTEM MASTER PLAN PROJECT PRIORITIZATION METHOD

PRIORITIZATION CRITERIA

The prioritization methodology is based on estimated levels of current or latent demand for bicycle facilities. The figures to the right illustrate the process. Map of figures shows the existing transit stations, map two the future transit stations, map three the major employment centers weighted to reflect the number of employees, and map four the colleges and universities. For each destination (i.e. transit station, employment center, college, etc.), a three mile bubble (or radius) was drawn to indicate the geographic area most likely to capture bicycling trips.

Figure 18 shows the equally weighted sum of the first four maps surfaces classified in three categories representing near-, medium- and long-term priorities. Areas with higher projected potential demand are indicated by the darker color on the maps. As would be anticipated, Downtown Dallas and areas along the light rail lines have higher levels of projected potential demand than in more suburban portions of the City according to this prioritization methodology.

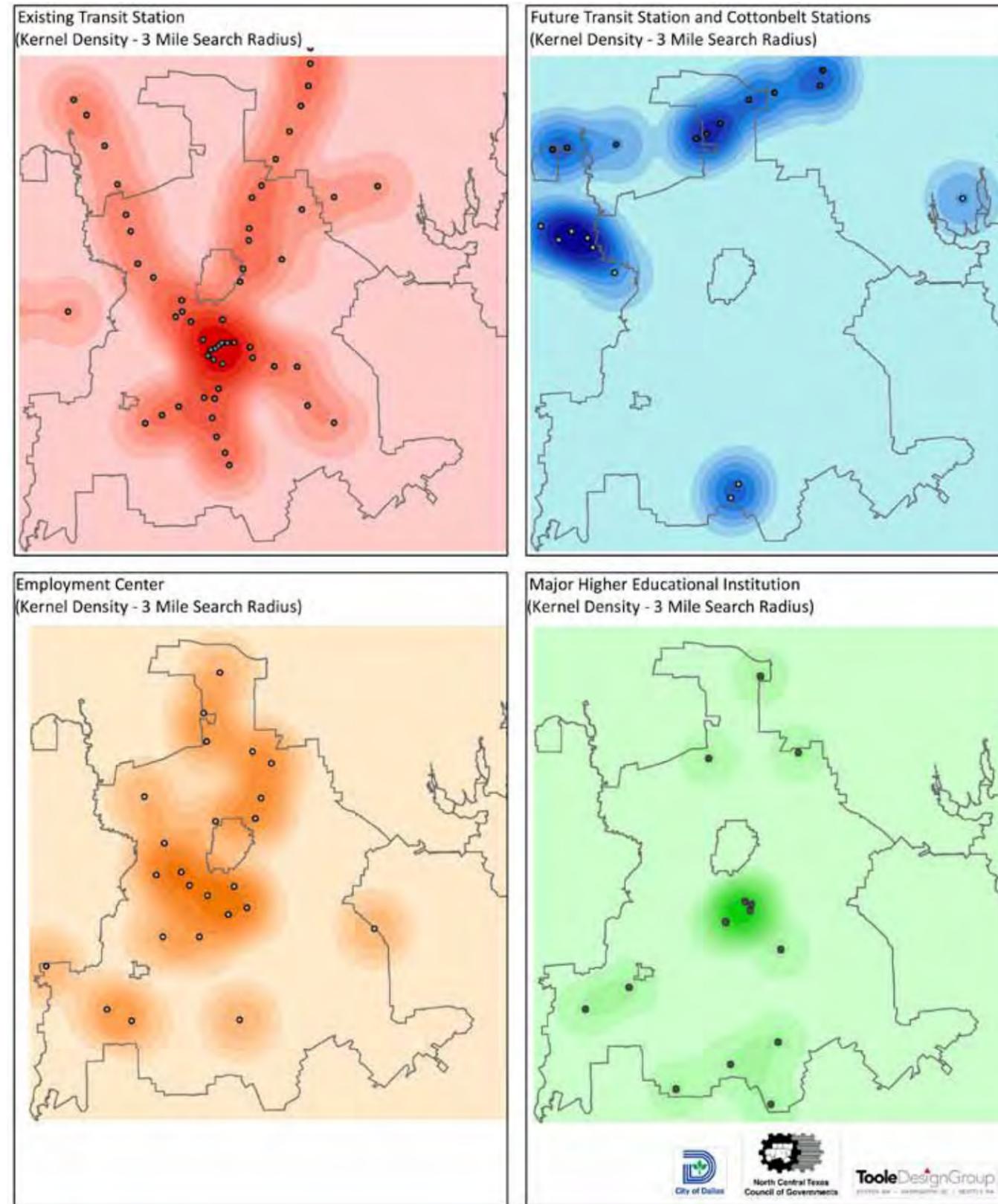


Figure 17. Prioritization Areas by Trip Generator.

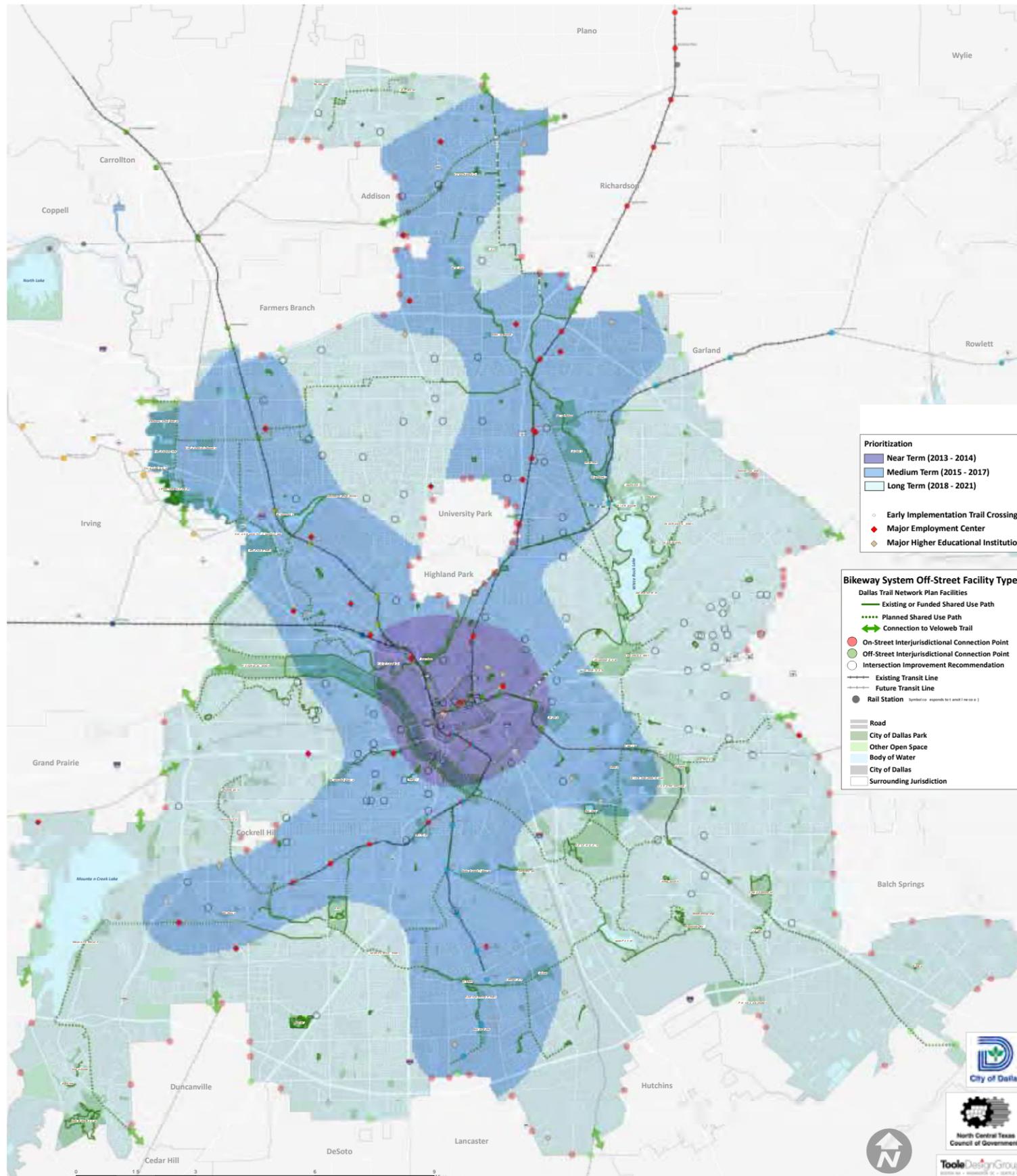


Figure 18. Prioritization Areas.

ADDITIONAL PROJECT PRIORITIZATION CRITERIA

As noted previously, specific projects within the four implementation phases/priority categories will be further prioritized by the City on an annual basis using the formula found in Appendix B.

PROGRAMS AND EVENTS

As stated in Chapter V of this Plan, there are programs and events that are recommended as strategies to improve and promote bicycle safety education and enforcement, and for the encouragement and promotion of bicycling in the City of Dallas. These are listed on pages 19 through 20 and could be initiated as part of the Plan implementation as funding becomes available.

POLICY CREATION PROCESS

As stated in Chapter V of this Plan, some policy recommendations will be addressed within the larger context of Complete Streets Initiative and their compatibility or integration with the anticipated Complete Streets Design Manual.

Relevant forms that bicycle-specific policy recommendations included in Chapter IV, page 16, can take in support of this Plan include, but are not limited to:

- City Council resolution,
- City Code (ordinance) amendment or addition (with City Council approval),
- Inter-governmental Memorandums of Agreement (MOA),
- Inter-governmental Memorandum of Understanding (MOU),
- City planning document modification and/or amendment (with City Council approval), and
- Inter-jurisdictional MOU for facility installation.

CITY OF DALLAS BICYCLE PLANNING

ACTION 6.1: Coordinate implementation of the 2011 Dallas Bike Plan with Complete Streets Policy.

As noted on page 3, the City is currently pursuing a new Complete Streets Initiative that will further develop and implement the policy direction that

was established by the *forwardDallas!* Comprehensive Plan. The primary goal will be to develop a consistent set of design policies, guidelines, processes and standards for the street network in the context of various land development patterns in a manner that promotes increased choice and safety for all users (including bicyclists).

This Plan provides protocols and generic design guidance for standard and special bicycle facilities and recommended cross-sections for 769 miles of on-street bicycle facilities. These are designed to be used as regional templates by the City and the NCTCOG. As Dallas moves forward and adopts a Complete Streets Design Manual, the protocols, design guidance, and cross-section recommendations in this Plan should be used as a reference to plan and design on-street projects.

ACTION 6.2 Provide necessary staff expertise and commitment to implement this Plan within the timeframe identified.

This Plan envisions an accelerated pace for bicycle facility implementation throughout the City of Dallas. The City may require additional full-time and part-time staff, and have a volunteer force, to administer and execute programs, design projects, monitor progress, conduct public outreach, and perform other tasks related to implementation of the Plan. This staffing level is consistent with staffing levels in other cities that have successfully implemented plans in a relatively short time frame.

ACTION 6.3: Adopt provisions for how to create and run an effective Bicycle Advisory Board (BAB).

The following is a template for how to create and run an effective Bicycle Advisory Board (BAB).

Step 1: Create an Official BAB

BABs should be created through official action such as a resolution or ordinance. The creation of the BAB will immediately make decision-makers aware of the board and its importance while also educating them on important bicycle issues.

Step 2: Recruit and Interview BAB Members

BABs should be made up of about eight to eleven people; any fewer, and participants will be overwhelmed; any more, and the size can become unmanageable. Appointments should be staggered to avoid large turnover and promote continuity. In order to ensure stability and continuity, the chair position should be for at least one year.

To create an effective, balanced, and diversified BAB, all prospective candidates should be recruited and interviewed. Simply contacting various organizations

and asking them to send a representative isn't enough; openings should be advertised through local media sources. A letter of interest and a resume should be required. People who invest their time are more likely to be committed BAB members. The interview should be like any other job interview. For example, interviews could be conducted by a representative from the mayor's office, the person who will be staffing the BAB, and a current BAB member.

There are three qualities to look for in prospective BAB members:

- 1) Candidates need to have the interests of the broader community in mind rather than be focused on an issue close to home (e.g. a stop sign on their street), or they are likely to leave once their issue has been addressed.
- 2) Candidates should have a history of volunteerism. Experienced volunteers will be more likely to attend meetings and commit the time needed to make the BAB successful.
- 3) Candidates need to be good listeners and have a collaborative approach to problem solving.

Since BABs are advisory, they will only be effective and legitimate if their members reflect the community they represent. Gender, race, age, type of bicyclist (inexperienced to advanced bicyclists), and the geographic location of residence for each applicant should be considered to ensure a balanced, representative board.

Step 3: Determine Logistical Support

The local agency should make it very clear from the beginning what services can and cannot be provided to a BAB. Staffing a BAB should require about four to eight hours a month. Direct services should be limited to providing a meeting place and attending meetings. Minutes and meeting notices should be done by the board. The more the board members take responsibility for their logistics, the more invested and effective they will be.

Step 4: Provide BAB Members with Timely and Useful Information

The most important role for local agency staff is to provide the BAB with timely and useful information so their input is effective. BAB members are volunteers who are giving up their limited time to the community and their time should be well spent. For example, board members need to know when they can provide comments on an Environmental Impact Statement or a major public works project.

An informed BAB will be a better decision-making and advisory body for the City bicycle planning program. For example, in Dallas, BAB members may meet once a year for a day-long, facilitated retreat. As part of the retreat, City staff would conduct a short training session on bicycle design issues. One of the purposes of the training is to help participants better understand items that cannot be changed (e.g. shape and color of a regulatory sign) versus things that involve more choice and engineering judgment (e.g. determining the number of lanes needed on an arterial that is being reconstructed).

Step 5: Set the BAB Agenda

The board chair should coordinate with City staff to develop a list of topics for board review and input, and to set and modify the schedule for regular meetings, as needed. The relationship of the City with the chair is critical to the success of the board.

Typically, BABs will want to provide input on agency policies, programs, and projects. Board meetings should feature a presentation on one of these topics, and review progress on the implementation of the Dallas Bikeway System Master Plan as well as the Plan programs. This approach is designed to make every meeting important, and promote good attendance and participation. The chair (not City staff) should invite the program / project manager to participate and present at a BAB meeting. City staff assigned to the BAB should help with every presentation, however. This protocol is intended build teamwork and mutual understanding around the direction and purpose of programs and projects.

PLAN ACCOUNTABILITY

ACTION 6.3.1: Task the Bicycle Advisory Board to monitor and track implementation of the Plan.

Once adopted, the City must be accountable for implementing the Plan. The Bicycle Advisory Board is the logical choice since it is a diverse group that represents all types of bicyclists and areas of the City.



More than 680 people provided input at the Plan's three public meetings.

City Responsibilities

- **Annual Work Plan:** Once a year, the City will provide the Bicycle Advisory Board with a work plan for the upcoming year. The work plan will include a list of work products as called for in the Plan. For example, it might say that 50 miles of new bicycle lanes and shared lane markings will be installed in the upcoming year. The work plan should be short (under ten pages) and focused, with measurable deliverables.
- **Report Card:** Once a year, the City will provide the Bicycle Advisory Board with a report card that summarizes all the work products completed for the year, along with a big picture review of where things are in relation to the ten-year time-frame for completing various elements of the Plan. The list of work products completed should be compared to the work plan submitted the year before as a way to build institutional accountability.

Bicycle Advisory Board (BAB) Responsibilities

- **Timely Review:** The BAB will provide timely review and feedback on the annual work plan and report card. Comments provided by the BAB must relate to implementing the Plan and should reference Plan actions and other recommendations.
- **Overall Progress:** The BAB will monitor overall progress of Plan implementation. For example, the City will have to install close to fifty miles of new bicycle facilities per year to complete installation within ten years. If the City falls behind, the BAB will need to flag this immediately and then work with the City to get back on track.

PLAN PERFORMANCE MEASURES AND EVALUATION

ACTION 6.4: Establish base line data and data collection methods that can be used to measure success in the future.

PERFORMANCE MEASURE FRAMEWORK

This Plan establishes two types of performance measures, 1) the performance measures used to monitor progress toward long-term trends in bicycle use and safety, and 2) the performance measures related to specific performance targets (e.g. miles of bike lanes installed). For each new performance measure, the City and partner agencies will collect the data necessary to establish baseline measurements.

LONG-TERM PERFORMANCE MEASURES

Long-Term Performance Measure: Number of bicyclists observed at counting

locations throughout Dallas. Bicycle counts should be taken at up to 30 locations throughout the City every other year to benchmark the amount of bicycling in the City. Count locations could include downtown entry points, locations on each of the City's major trails, arterial roadways with bicycle lanes or shared lane markings, and intersections of arterial roadways with existing or planned bicycle facilities. The official counts for this performance measure should be taken around the same date each year, on the same day of the week, and under similar weather conditions. In other cases, one-time before and after counts should be taken to measure increases in bicycle use related to a specific bicycle lane, shared lane marking, or trail project. The National Bicycle and Pedestrian Documentation Project provides more guidance on dates, times, locations and methods to follow for consistent counts.

Additional bicycle counts may be obtained by requiring bicycles to be included in current, manual traffic counts. This data set would not represent all bicycle activity throughout Dallas, but would begin to provide some basic data on the use of bicycle facilities. Counts may also include observations of important bicyclist behaviors, such as wearing helmets, riding on the correct side of the street, obeying traffic controls, and using lights at night. The City will need the assistance of local bicycle advocacy and other organizations to take these counts. In addition, pneumatic tubes should be used to reduce the labor required to count bicyclists on trails. Bicycle counting technologies, such as video and infrared detection should be explored for counts in all types of locations, and the City should move toward adopting these technologies.

Long-Term Performance Measure: Number of reported bicycle crashes per total number of bicyclists observed during the bi-annual bicycle count and annual traffic volumes. This measure would compare bicycle crash trends (as reported in police records) in terms of bicycle exposure. Exposure would be approximated using one or more of the following: the annual bicycle counts at up to 30 locations throughout the City or the total number of bicycle trips in the City reported by the NCTCOG Regional Travel Survey (assuming that it is updated to capture more bicycle trips). The number of reported bicycle crashes should also be normalized by changes in annual traffic volumes, as observed at a consistent sample of locations (such as regular traffic count locations). It should be noted that police reported crashes do not represent all bicycle collisions.³³

³³ A study by Stutts and Hunter of a sample of cases collected at eight hospital emergency rooms in three states showed that only 56 percent of the pedestrians and 48 percent of the bicyclists were successfully linked to cases reported on their respective state motor vehicle crash files. This study looked at only the most serious crashes (involving emergency room treatment). We can assume that less-severe crashes were accurately reported at an even lower rate.

Source: Stutts, J.C. and W. W. Hunter. "Police-reporting of Pedestrians and Bicyclists Treated in Hospital Emergency Rooms," Transportation Research Record No 1635, Transportation Research Board, 1998. P. 88-92.

STRATEGIC PERFORMANCE MEASURES

Strategic performance measures calculate the amount of progress that has been made toward specific 2021 performance targets.

Percentage of bicycle facility network completed. This measure will track progress toward completing the overall recommended 1,296 mile bicycle network by 2021. An additional option that will be considered is tracking the percentage of network miles completed for different facility types (e.g., bicycle lanes, climbing lanes, shared lane, markings, etc.).

The frequency or density of routes that make up a bicycle network is one measure for evaluating its effectiveness and accessibility. Other important factors to consider are connectivity, directness, stops, surface quality, topography, traffic volumes and speeds, intersection conditions and access to destinations.

Percentage of bicycle-related intersection improvements completed. This measure will track progress toward completing all the intersection improvements recommended in the Plan by 2021.

(Recommended for DART consideration) **Number of bicycle racks installed/ bicycle parking accommodations at DART rail transit stations.** This measure will monitor progress towards providing short-term bicycle parking near key destinations throughout Dallas by 2021.

(Recommended for DART consideration) **Number of bicycles carried on DART trains and buses.** DART should obtain more complete, year-round data on bike-on-train & bus boardings. This measure would include all routes served by DART throughout the region, and would not be exclusive to the City of Dallas.

Strategic Performance Measure: Number of bicycle racks installed and other bicycle parking accommodations in the public realm (not at transit).

Strategic Performance Measure: Number of bicycle racks installed/ bicycle parking accommodation in the private realm (retail and residential).

Strategic Performance Measure: Number of Dallas Bicycling Guide Maps distributed, viewed and downloaded. This measure will monitor progress toward improving bicycle way-finding and encouraging people to use the City's bicycle facilities. The City of Dallas should track the number of bicycle maps that are distributed. This includes paper maps and the number of times maps are accessed online. At least 30,000 bicycling guide maps should be distributed per year.

Strategic Performance Measure: (Recommended for Dallas area bicycle and neighborhood organizations consideration.) Number of Dallas

residents participating in pedestrian or bicycle safety education programs or events. Dallas area bicycle and neighborhood organizations should track the number of participants in education or encouragement activities (e.g. Bike to Work Day, bicycle commuter classes, bicycle safety training, bicycle camps, etc.). The number of participants in these bicycle activities should triple between 2011 and 2021.

Strategic Performance Measure: Percentage of targeted City staff who participate in training on bicycle planning, design, and engineering issues. This measure will help indicate the level of internal training that is provided on bicycle issues. The following types of staff should receive bicycle training: planners, designers, engineers, project managers, and staff working on projects with signs and paint, staff working on signals, crew chiefs, and field crews. The City should take advantage of everyday opportunities to provide these targeted staff with bicycle training. This includes Complete Streets training, field demonstrations of products (e.g. shared lane markings), ProBike/ProWalk conference sessions, mobile workshops, walking audits, and out-of-town expert presentations. 100 percent of targeted City staff should receive some type of training every year.

Strategic Performance Measure: Amount of grant funding applied for and obtained, and private funding secured, for bicycle programs and projects. The City should continue to track the amount of bicycle project funding that they obtain through grant and private sources.

Figure 19 summarizes and describes the performance measures. These performance measures will be reviewed and updated every two years to ensure that the City continues to use the best available metrics to assess Plan implementation.

ACTION 6.5: Pursue League of American Bicyclists (LAB) Bicycle-Friendly Community award.

The LAB Bicycle Friendly Community (BFC) program provides award recognition for communities that actively support and advance bicycling as a form of transportation. A bicycle-friendly community welcomes bicyclists by providing safe accommodation for bicycling and encouraging people to bike for transportation and recreation.³⁴ There are five levels of recognition: Platinum, Gold, Silver, Bronze and Honorable Mention. LAB has recognized more than 150 cities through its BFC program.

As progress on implementing the Plan moves forward, the City will apply for and obtain the various levels of BFC designations. The City should set a goal to obtain the Bronze level of recognition within three years of Plan adoption.

Long-Term Performance Measure	Baseline Measurement	Performance Target	Data Collection Frequency	Data Collection Responsibility
Number of bicyclists observed at counting locations throughout Dallas	To be counted in 2011	Triple the number of bicyclists between 2011 and 2021	Every two years	City, volunteer groups, bicycle organizations
Number of reported bicycle crashes per total number of bicyclists counted and annual traffic volumes	To be calculated in 2011	Reduce the bicycle crash rate by one third between 2011 and 2021	Every two years	City, law enforcement agencies, volunteer groups, bicycle organizations
Strategic Performance Measure	Baseline Measurement	Performance Target	Data Collection Frequency	Data Collection Responsibility
Percentage of bicycle facility network completed	Miles of existing facilities: 0	100% by 2021	Every year	Sustainable Development and Construction Streets, Public Works and Transportation
Intersection Improvements Completed	Number of Intersections improved: 0	100% of identified intersections by 2021	Every year	Sustainable Development and Construction Streets, Public Works and Transportation
Number of bicycle racks installed	~500 existing	Provide up to 2,500 public racks by 2021 (includes existing racks, does not include new racks at DART stations, racks provided by businesses and residential establishments).	Every year	Sustainable Development and Construction, Streets
Number of DART stations with adequate bicycle parking and/or other lock-up facilities	0	100% of DART light rail transit stations by 2021	Every year	DART & City
Number of bicycles carried on DART trains and buses	To be counted in FY 2011-2012	Utilize 50-100% of existing weekday and weekend service capacity by 2021	Every year	DART & City
Number of Dallas bicycling guide maps distributed	Number of new bicycling guide maps distributed: 0	Once 75% of network is completed, provide 30,000 route guide maps	Every year	Sustainable Development and Construction, Public Information Office
Number of people participating in safety educational programs or events	To be counted in 2011	Triple the number between 2011 and 2021	Every two years	Volunteer/neighborhood groups, bicycle organizations, City
Percentage of targeted City staff who participate in training on bicycle issues	To be counted in 2011	100% of targeted staff participating in regular training by 2021	Every two years	Sustainable Development and Construction, Dallas Police Department, Public Works and Transportation, Park and Recreation, Streets
Number of bicycle project grant applications applied for and obtained for bicycle programs and infrastructure	To be tracked in 2011	Steady annual increase in the amount grant funding captured, and private funds raised for bicycle programs and infrastructure.	Every year	Sustainable Development and Construction, Intergovernmental Services

Figure 19. Bicycle master plan performance measures.

34 <http://www.bikeleague.org/programs/bicyclefriendlyamerica/communities/>

FUNDING

Funding from public and private sources is critical to implementation. It can be the “enabler” for making improvements or the “barrier” that prevents needed improvements from being made. In a time of severe public sector funding challenges, it is recommended here that the Plan’s implementation strategy also include raising funds from private sources. It will be necessary for the City and the community to work together to ensure that there are mechanisms for raising, accepting, and managing private sector contributions with regard to specific goals in the Plan. In addition the City will view the allocation of public funds towards bicycle improvements as a priority for the implementation of this Plan, and as an opportunity to meet a growing demand for alternative transportation through this difficult economic period. Grant award opportunities in which bicycle improvements qualify amongst a list of other qualifying purposes that the City could apply for, could be given serious consideration. Doing so will be a challenge in the face of other unmet needs, and that is why private sector support will be critical to keep up the desired pace of implementation.

FUNDING STRATEGIES

Routine Accommodation: The construction of bicycle infrastructure as part of normal public and private development, and the adoption of traffic management practices that are used to implement bicycle infrastructure are known as routine accommodations. Routine accommodations are the most cost effective funding strategy for reducing bicycle crashes and encouraging more bicycling. In many communities, the majority of bicycle infrastructure is built in conjunction with other projects. On-street bicycle facilities are built in conjunction with roadway resurfacing or new roadway construction projects. The same applies to traffic management practices. All funding strategies begin with routine accommodation since it allows for significant improvements over time, even if there is no direct funding available for bicycle improvements.

Partnerships Opportunities: Most public works projects, and many private developments, provide partnership opportunities to implement projects that improve safety for bicyclists (this is in addition to what can be accomplished through routine accommodation). Partnerships typically occur in three ways.

- 1) Voluntary – no cost improvements: many projects will generate some neighborhood concern or opposition. In response, public and private projects more often than not include some bicycle amenities that are supported by the neighborhood, in order to build good will. In many cases, there may be a common benefit. A safer, more accessible development is more attractive to potential tenants or buyers. The City of Dallas should be proactive throughout the development process to ensure their interests are being addressed, particularly where

regulations and standards are not in place to guarantee a certain level of bicycle facilities are provided.

- 2) Required restoration and mitigation: large projects may require an Environmental Impact Statement (EIS) or other type of environmental permit. Often, this can present an opportunity for significant bicycle improvements. For example, a new development may generate enough traffic to warrant a signal near a school or other destination. A water main or fiber optic cable placed next to a roadway or in an abandoned railroad line can provide an opportunity for constructing a pathway.
- 3) Funded Improvements: because of economies of scale, it is often advantageous to fund improvements that are constructed as part of larger projects. For example, if there is a public works project to construct a roadway, it may be cheaper to add construction of a nearby multi-use path instead of building it as a separate project and at a different time.

In addition to partnerships on major capital projects, there are many opportunities to raise funds by partnering with local community and advocacy groups on special events.



Public involvement can help build support for funding bicycle facilities.

ACTION 6.6: Partner with local events and hold other events to raise funds for bike plan implementation, while at the same time promoting bicycling in Dallas.

Finally, to take full advantage of partnership opportunities, the City should take the following two actions:

ACTION 6.7: Establish a mechanism for the collection of funds from private sources for the implementation of the bike plan programs and events, the Bikeway System Master Plan, and the City of Dallas Bicycle Planning Program.

ACTION 6.8: Establish City financial/budget mechanism for accepting Bikeshare program revenues to help fund a Bikeshare Program.

Funding Priorities and Criteria:

The City of Dallas should consider this Plan when it prioritizes and allocates funds for projects and programs. There are two things to consider when looking at prioritization and funding criteria: 1) the funding criteria should give higher scores to those projects that include bicycle safety elements such as intersection improvements, and 2) the funding criteria should allow for bicycle projects (those likely to reduce crashes) to compete for the funding independently of a larger project.

Dedicated Funds - Set Asides:

The City of Dallas should consider set aside funding for bicycle (and pedestrian) improvements. Set asides are typically one of two types. A percentage of a larger fund is set aside. For example, some cities set aside a percentage of their transportation funds for bicycle (and pedestrian) projects. The second set aside is typically with an independent funding source. Examples include development funds (funds deposited by developers into a centralized fund), resource funds (taxes on extracted natural resources such as gravel or oil), and real estate excise funds (taxes on all sales of real estate).

The advantage of dedicated funds is that they can provide an ongoing, dependable source of revenue for bicycle safety improvements. The disadvantage, especially if they are a percentage of a larger fund, is that it may actually reduce the total number of dollars that are used to construct bicycle facilities. Improvements that should be routine accommodation can be credited to set aside funds. In other words, if proper safeguards are not put in place, construction of trails or on-street bicycle facilities may count as having fulfilled certain obligations under a percentage based set aside.

Safety:

Achieving intended outcomes always begins with a renewed commitment to safety. It should be the number one priority of the City of Dallas. Once this commitment is made, it gives permission to allocate funds to reducing all types of crashes, including bicycle crashes.

A simple cost / benefit analysis can also be an excellent way to justify and increase expenditures on bicycle improvements. Bicycle improvements that reduce crashes are often relatively cheap when compared to other

efforts to reduce motor vehicle crashes. In other words, the cost to the City to reduce a bicycle crash will typically be much less than it costs to reduce a motor vehicle crash. In fact, it may not cost anything if it is a policy change or a change in a design standard that leads to fewer bicycle crashes. For example, lower design speeds and lower speed limits for arterial and collector streets, e.g., reducing motor vehicle speeds to 35 mph can be a major contributing factor to reducing bicycle fatality rates

Annual Maintenance Budget:

Maintenance of the Dallas Bikeway System network will be a major part of the implementation strategy for the Plan, and will be an integral part of the City's strategy in planning for overall transportation system improvements. The relevant City departments will strive to budget for maintaining and improving bicycle facilities in the roadway, especially re-striping bike lanes, replacing worn away pavement markings, and doing spot improvements to the roadway surfaces that affect on-street bicycle facilities.”

Action 6.9: Update the 2011 Dallas Bike Plan on a regular basis.

As the Plan recommendations are implemented, priorities for bicycle improvements may change and new needs and opportunities may be identified. The Plan will be updated on a regular basis.

- Every year the list of short-term projects for implementation should be updated,
- At least every five years the entire Plan should be updated, and
- Periodic updates in coordination with other planning documents (e.g. Complete Streets) should be completed on an as-needed basis.

APPENDIX A



A.1 COMMITTEE MEMBERS AND MEETING DATES

BICYCLE POLICY STEERING COMMITTEE

The BPSC consisted of decision makers charged with adopting the Plan, reviewing and advancing policy related to bicycling within the City of Dallas, and providing the regulatory and inter-agency framework for the Plan's implementation.

Co-Chair, Angela Hunt, Dallas City Council, District 14,
Co-Chair, Sheffield "Sheffie" Kadane, Dallas City Council, District 9,
Mike Cantrell, Dallas County Commissioner, District 2,
A.C. Gonzalez, Assistant City Manager, City of Dallas,
William Hale, District Engineer, Dallas District, TxDOT,
Jill Jordan, Assistant City Manager, City of Dallas,
Lee Kleinman, Dallas Park and Recreation Board, District 11,
Linda Koop, Dallas City Council, District 11,
Richard Mason, Bicycle Coordinator, TxDOT - Dallas District, Advanced
Project Development,
Michael Morris, Director, Transportation, NCTCOG,
John Wiley Price, Dallas County Commissioner, District 3,
Stephen Salin, Vice President, Rail Planning, DART,
Gary Thomas, President/Executive Director, DART, and
Karla Weaver, AICP, Principal Planner, Transportation, NCTCOG.

Agency technical analysis, coordination and product review assistance for the Plan were provided by the members of the Project Review Committee.

PROJECT REVIEW COMMITTEE (PRC)

Orlando Alameda, Director of Real Estate and Leasing Services, DISD,
Steve Biba, Project Manager, DART,
Peer Chacko, Assistant Director, Department of Sustainable Development
and Construction City of Dallas,
Cheryl Cook, Safe Routes to School Coordinator, Dallas District, TxDOT,
Esmeralda de la Cruz, Planner II, Housing/Community Services
Department, City of Dallas,
Samir Goel, Project Manager, Public Works and Transportation, City of Dallas,
Michael Hellmann, Manager, Park Planning and Acquisitions, Park and
Recreation Department, City of Dallas,
Alan Hendrix, Assistant Director, Public Works and Transportation, City of Dallas,
Deborah Humphreys, Planner II, Transportation, NCTCOG,
Max Kalhammer, Senior Transportation Planner, Bicycle Coordinator,
Department of Sustainable Development and Construction, City of Dallas,
Keith Manoy, Program Manager, Department of Sustainable Development
and Construction, City of Dallas,
Richard Mason, Bicycle Coordinator, Advanced Project Development,
Dallas District, TxDOT,
Misty Parker, Government Relations Representative, DART,
Dan Perge, Assistant Advance Project Development Engineer, Dallas
District, TxDOT,
John Quinn, Project Manager, DART,
Elizabeth Ramirez, Assistant Director, Public Works and Transportation,
City of Dallas,
Shilpa Ravande, Senior Planner, Department of Sustainable Development
and Construction, City of Dallas,
Karl Stundins, Manager, Office of Economic Development, City of Dallas,

Pam Thompson, Analyst, Office of Economic Development, City of Dallas,
Jerry Tikalsky, DART,
Jonathan Toffer, Transportation Planner, Department of Public Works,
Dallas County,
Karla Weaver, Principal Planner, Transportation, NCTCOG,
Jared White, Project Coordinator, Park and Recreation Department, City of
Dallas, and
Melaenie Young, Safe Routes to Schools Coordinator, Dallas District, TxDOT.

The citizens and bicycle advocates who served on the Plan's Bicycle Advisory Committee provided considerable thought and advice for draft Plan products, as well as product review assistance and voluntary event coordination and support for the Plan.

BICYCLE ADVISORY COMMITTEE (BAC)

Doug Bowen
Warren Casteel
Mike Freiberger
John Garippa
Arthuro Garza
Lydia Gonzalez-Welch
Craig Herteg
Robert Ikel
Christina Jones
Jason Land
Anita Mills
Waco Moore
Michelle Nichols
Ejike Okpa
Anthony Pace
Boris Palchik replaced by Liz Butler
Jason Roberts
Pete Shannon
Jesse Tafalla, Jr.
Hollis Wakefield
Sabra Wigfall

A.2 OUTREACH SUMMARY

PUBLIC INVOLVEMENT

In addition to the three bike plan committees, public input was solicited through a project web site, an open house, two public meetings, three newsletters, and stakeholder focus groups.

Online Public Survey

A web-based, bilingual survey was made available on the project web site which elicited over 1,400 responses. The survey provided valuable information on current bicycle use, barriers to bicycling, and actions needed to increase bicycling within the City of Dallas (see appendix A.4 for full survey results).

Interactive Mapping Application (Community Walk)

Between May 27 and July 16, 2010 the public provided specific bicycling-related information on a map of the City of Dallas through an interactive mapping application. A total of 617 comments were posted on a variety of issues ranging from frequently used routes to problem locations and connectivity needs. The input was used to revise the bikeway system network, identify difficult intersections within the bicycle system network that were then analyzed, and to identify projects included in the Plan's implementation strategy.

Newsletters

Three newsletters were produced to update the public on the status of the Plan and to inform the public on how to provide input and get involved in the planning process. English and Spanish versions were distributed via the project website, and through council district office distribution lists with additional copies mailed to anyone requesting a hard copy.

Open House and Two Public Meetings

One open house and two public meetings were held at Dallas City Hall as main components of the Plan's participatory planning framework. Spanish language translators were provided at all three meetings.

On May 27, 2010 approximately 320 people participated in the 2011 Dallas Bike Plan Open House. With Mayor Leppert and five City Council members in attendance, the open house allowed the opportunity for attendees to provide feedback on how to improve and encourage bicycling within the City of Dallas and to neighboring jurisdictions within the North Central Texas region. Listening stations were designed to solicit different types of community input. Feedback on the overall network, potential bicycle connections, and on location-based safety issues, were gathered using maps of the City of Dallas. Participants also helped to prioritize the vision, goals and objectives of the Plan, and commented on bicycle education,

access to transit, and the Trinity River crossings. A street design exercise called "Tinker Streets" allowed attendees to draw a profile of an ideal street. All feedback received at the open house was used in the development of the draft Bicycle Network System and Plan.

On Thursday, September 23, 2010 over 200 people participated in the 2011 Dallas Bike Plan first public meeting. Council members Angela Hunt (District 14) and Sheffield Kadane (District 9) provided the welcome and words of support for the Plan. The consulting team provided recommendations, including over 550 miles of on-street bicycle facilities. A presentation at the beginning of the public meeting introduced attendees to the various on-street bicycle facilities being recommended as part of the Plan. Participants were then invited to review and comment on these recommendations laid out on maps of the City of Dallas divided into four quadrants, a map of the Central Business District, and the Trinity River Corridor portraying the proposed network segments, as well as the recommended facility type for each. Other public feedback gained through separate stations dealt with project prioritization criteria and marketing and promotion ideas for the Plan's implementation strategy. Information on the Plan's vision, goals and objectives as well as educational materials was also available.

On Thursday, January 20, 2011 the final public meeting was held. Attendees were invited to circulate among four information stations and discuss their ideas and share comments related to the Plan with the project team. These stations focused on the bikeway system network map with facility type and street type recommendations, the general bikeway system implementation approach, the draft Plan document, and relevant City of Dallas and North Central Texas Council of Governments (NCTCOG) planning initiatives that promote bicycling and alternative transportation. Conversations were lively as attendees continued to provide constructive and informative feedback on the Plan.

Stakeholder Focus Groups and Neighborhood Meeting Visits

In June, stakeholder meetings were held with stakeholder groups that provided important information for understanding current transportation policies and design practices. Meeting objectives were to:

- Familiarize meeting attendees with process and opportunities for their involvement,
- Establish areas of coordination with each organization related to bicycle planning and system implementation,
- Gather important information from each organization pertinent to the Plan, and
- Generate a list of items to be collected or actions for follow-up.

Stakeholder Focus groups interviews were held with 1) the City of Dallas (Public Works, Transportation Planning, Sustainable Development and Construction, Economic Development, Housing, Park and Recreation, Trinity River, and the Office of Environmental Quality), 2) Neighboring

jurisdictions,¹ 3) Dallas Area Rapid Transit, and the 4) Texas Department of Transportation. Information collected from the focus groups was used to develop Plan recommendations, priorities, and implementation strategies. In addition, presentations and visits by members of the Project Management Core Team and the consultant team to various community groups and neighborhood meetings around the City raised the level of local-area input to the Plan.

Interactive Web Site

An interactive project website was developed that served as a one-stop source for all Plan related activities and information. The web site provided news and information about the planning process including a project description, calendar of upcoming meetings, copies of the three newsletters, draft facility recommendations, and the draft Plan. The web site also hosted the online survey and interactive mapping application described previously. Web visitors were invited to provide comments and sign-up for the Plan database to receive emails on upcoming meetings.

Contacts Database

A contacts database that included attendees from the open house and public meetings, along with those who signed up through the web site, was developed and maintained throughout the planning process. The database served as a mailing list for the Plan and was routinely updated. Included was a re-senders list of organizations who agreed to send out information through their own contact databases on important updates to the Plan. A total of 1,243 people signed up for the database as of the end of March, 2011.

Outreach to Under-Represented Groups

Under-represented groups were included as stakeholder groups to be approached for input on the Plan. A meeting was held with a group in West Dallas, and members of the Project Management Core Team attended meetings with neighborhood groups to discuss the Plan and its participation opportunities. Discussions were also held at City Hall with citizens and community development activists from Southern Dallas. Newsletters about the Plan's activities, and flyers and post cards advertising the Plan's public meetings were printed in Spanish and distributed widely in South Dallas and West Dallas through Council District office email and mailing lists, and via the NCTCOG's mailing lists.

¹ City of Carrollton, Town of Addison, City of Irving, City of Plano, and the City of Cedar Hill

A.3 OPEN HOUSE AND PUBLIC MEETING: MEETING SUMMARIES, MEETING MATERIALS

MAY 27, 2010 OPEN HOUSE

On May 27, 2010 approximately 320 people participated in the 2011 Dallas Bike Plan Open House. With Mayor Leppert and five City Council members in attendance, the open house allowed the opportunity for attendees to provide feedback on how to improve and encourage bicycling within the City of Dallas and to neighboring jurisdictions within the North Central Texas region. Listening stations were designed to solicit different types of community input. Feedback on the overall network, potential bicycle connections, and on location-based safety issues, were gathered using maps of the City of Dallas. Participants also helped to prioritize the vision, goals and objectives of the Plan, and commented on bicycle education, access to transit, and the Trinity River Crossings. A street design exercise called Tinker Streets allowed attendees to draw a profile of an ideal street. All feedback received at the open house was used in the development of the draft Bicycle Network System and Plan. A copy of meeting materials are provided on pages a.3 through a.11.

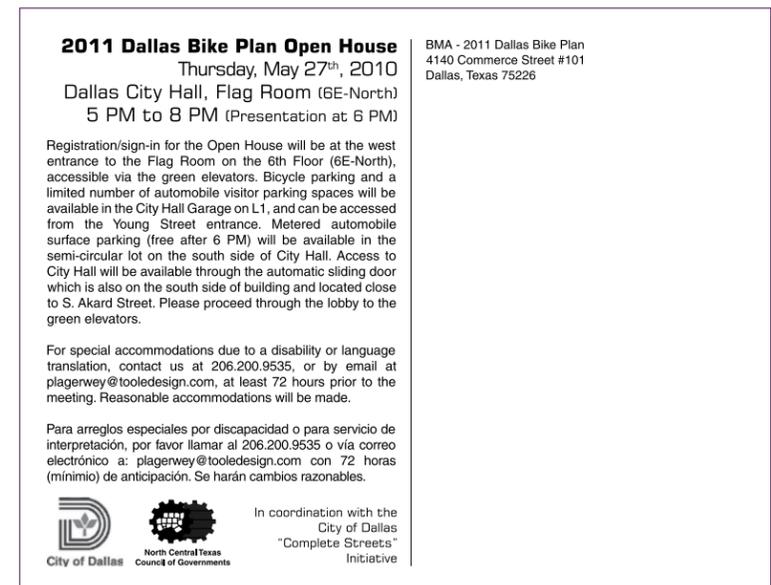
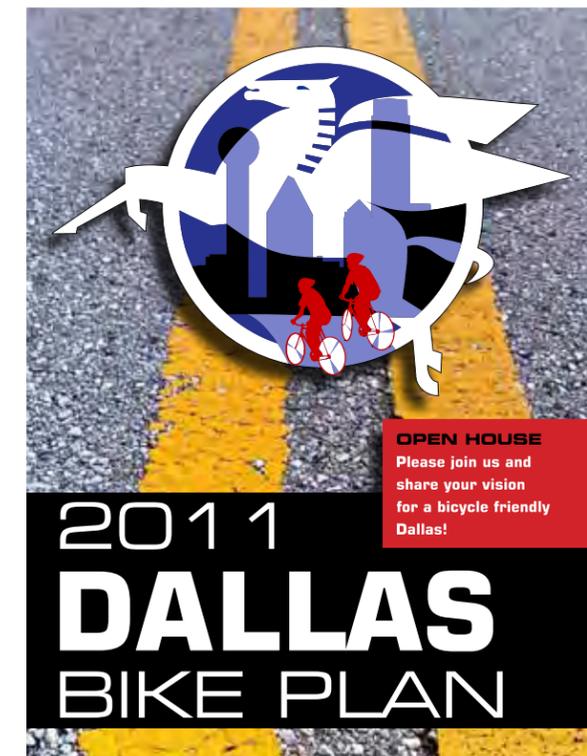


Figure a.1. May 27, 2010 Open House postcard

City of Dallas News Release

Public Information Office

www.dallascityhall.com



FOR IMMEDIATE RELEASE
May 17, 2010

FOR MORE INFORMATION CONTACT:
Max Kalhammer, City of Dallas
Sr. Planner & Bicycle Coordinator - (214) 671-8295

Karla Weaver, AICP, NCTCOG
Principal Transportation Planner - (817) 608-2376

Residents invited to May 27 open house for 2011 Dallas Bike Plan update

DALLAS – Residents are encouraged to share their ideas and priorities for the 2011 Dallas Bike Plan at an open house from 5 to 8 p.m. Saturday, May 27 at Dallas City Hall, 1500 Marilla St. The open house will be in the Flag Room, 6E north. The event will include a 6 p.m. presentation about how the 2011 Dallas Bike Plan relates to city and regional transportation goals.

When complete, the bike plan will identify key routes and facilities, prioritize project implementation areas for future funding, and outline design criteria for consistent bicycle infrastructure. Representatives from the City, North Central Texas Council of Governments (NCTCOG), and new citizen-based Bicycle Advisory Committee will listen to ideas for making Dallas a 'bicycle friendly' city.

Participants will have an opportunity to:

- Prioritize goals and objectives
- Provide ideas for future bike routes
- Identify barriers to bicycling (e.g. – access across a river or freeway)
- Develop ideas for designing effective education programs
- Suggest improvements for better bicycle access to rail stations
- Submit ideas for what should be included in the plan

The Plan, envisioned to be a regional guide or template for other North Texas municipalities, will include a detailed map of the Dallas Bikeway System, generic facility type descriptions and designs, prioritized projects, as well as an overall implementation strategy. This plan will serve as a leading component of Dallas' "Complete Streets" Initiative aimed at creating a roadway system that serves all modes of transportation.

Registration/sign-in for the open house will be at the west entrance to the Flag Room (6E north) accessible via the green elevators. Bicycle parking and a limited number of visitor parking spaces will be available in the City Hall Garage on L1; accessed from the Young Street entrance. Metered parking (free after 6 p.m.) is available in the semi-circular lot on the south side of City Hall. Access to City Hall will be available through the automatic sliding door, also on the south side of the building and located close to S. Akard St. Attendees should proceed through the lobby to the green elevators.

For special accommodations due to disability or language translation, contact _____ at (phone) or (e-mail) at least 48 hours prior to the meeting. Reasonable accommodations will be made. For more information and to receive regular updates on the 2011 Dallas Bike Plan, register for the contact list at dallasbikeplan.org

Figure a.2. May 27, 2010 Open House news release



The City of Dallas
and the North
Central Texas Council
of Governments
invite you to
participate in the

2011
DALLAS
BIKE PLAN

In coordination with the City of Dallas
"Complete Streets" Initiative

Please join us
and share your
vision for a
bicycle friendly
Dallas!

Open House
Thursday, May 27th, 2010
Dallas City Hall
Flag Room (6E-North)
5 PM to 8 PM
(Presentation at 6 PM)

Registration/sign-in for the Open House will be at the west entrance to the Flag Room on the 6th Floor (6E-North), accessible via the green elevators. Bicycle parking and a limited number of automobile visitor parking spaces will be available in the City Hall Garage on L1, and can be accessed from the Young Street entrance. Metered automobile surface parking (free after 6 PM) will be available in the semi-circular lot on the south side of City Hall. Access to City Hall will be available through the automatic sliding door which is also on the south side of building and located close to S. Akard Street. Please proceed through the lobby to the green elevators.

For special accommodations due to a disability or language translation, contact us at 206.200.9535, or by email at plagerwey@tooledesign.com, at least 72 hours prior to the meeting. Reasonable accommodations will be made.

Para arreglos especiales por discapacidad o para servicio de interpretación, por favor llamar al 206.200.9535 o vía correo electrónico a: plagerwey@tooledesign.com con 72 horas (mínimo) de anticipación. Se harán cambios razonables.

Figure a.3. May 27, 2010 Open House flyer



2011 Dallas Bike Plan OPEN HOUSE

Thursday, May 27, 2010
Flag Room (6E North) & City Council Chambers
Dallas City Hall
5 P.M. to 8 P.M. (Presentation at 6 P.M.)

Welcome to the 2011 Dallas Bike Plan Open House. This is your opportunity to provide us with your thoughts and ideas for making Dallas a great place to bicycle.

To help make it easy for you to provide your input, we have set up a series of 'listening stations' where you can provide written and verbal comments on a variety of topics. You are encouraged to visit each station where you will find knowledgeable staff and volunteers to answer your questions. Stations include:

- 1) **Map of Dallas** (divided into four quadrants): Write directly on the maps – tell us where you would like to see bike lanes and other facilities; tell us the where there are barriers to bicycling.
- 2) **Transit Map:** Tell us where you would like better access to transit.
- 3) **Trinity Corridor:** Tell us where you would like better bicycle access on existing bridges; tell us locations where new access is needed.
- 4) **Goals and Objectives:** Use your stickers to 'vote' on project goals and objectives (stickers provided at sign-in table).
- 5) **Tinker Streets:** Use magnetic chips to 'Tinker' with your street. Create your ideal street on our game board and we'll take a picture to capture your vision.
- 6) **Bicycle Facilities:** Take a look at the different types of bicycle facilities we will propose for Dallas – give us your thoughts.
- 7) **Education:** Pick up safety education materials; learn about education opportunities; tell us what education messages and programs you think are needed.
- 8) **North Central Texas Council of Governments and the City of Dallas:** Visit the sponsors of the 2011 Dallas Bike Plan. Share your dreams and learn what else is being done to promote bicycling in the Dallas-Fort Worth Metroplex.

At 6 P.M., there will be a special presentation in the City Council Chambers. The objective will be to provide an overview of the planning process and introduce a vision of a 'bicycle friendly' Dallas from input gathered to-date, and by providing examples from other cities around the United States.

2011 Dallas Bike Plan web site – www.DallasBikePlan.org

Figure a.4. May 27, 2010 Open House agenda

2011 Dallas Bike Plan

Comment Form

INSTRUCTIONS:

Open House

Date: May 27, 2010

Time: 5 – 8 pm

Location: Dallas City Hall – Flag Room

1. Please fill in your name and affiliation.
2. Please write your comment on this form and **return it to the Comment Box** on the registration table or send to one of the following:
Mail: 2011 Dallas Bike Plan, 4140 Commerce St. Suite 101, Dallas, TX 75226
Fax: (214) -760-7968; **E-mail:** info@dallasbikeplan.org

Name: _____

Affiliation (Company or Organization): _____

Please provide written comments below:

Figure a.5. May 27, 2010 Open House sign-in

HELP US PRIORITIZE GOALS FOR THE 2011 DALLAS BIKE PLAN

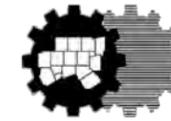
Place your RED DOTS (the 4 you received when you signed in) next to your priorities.

The team has been collecting ideas from bicyclists and local leaders – this is what we've heard so far. Now, it's your turn – tell us what you think is important to include in the 2011 Dallas Bike Plan.

Suggested Mission: To increase bicycle use for all trip purposes while reducing bicycle crashes.

PLACE RED DOTS HERE	GOALS
	Plan is inclusive – provides facilities for all types of bicyclists
	Connectivity – plan creates a baseline for a regionally interconnected bikeway system (seamless system)
	Better bicycle access to transit (including rail stations)
	Institute a Complete Streets policy to ensure that projects and programs accommodate bicyclists, transit, motor vehicles and pedestrians of all ages and abilities, as appropriate
	Focus on environmental quality – improve air quality by reducing motor vehicle trips
	Transportation system where bicycling is a viable transportation option
	Early implementation – immediate progress with catalyst projects
	Create on-street connections between existing trails (fill in the missing links)
	Focus on Plan implementation – practical, sustainable, integrated into all projects
	Better access within and between neighborhoods; provides options within districts
	Education for both motorists and bicyclists
	Economic Development – define the influence and importance of bicycle facilities in revitalizing neighborhoods
	Emphasis on promoting Public Health
	System that is safe, secure, efficient and used
	Focus on Safe Routes to School projects and programs

Figure a.6. May 27, 2010 Open House vision, goals, objectives exercise



North Central Texas
Council of Governments



2011 Dallas Bike Plan

Comment Form

INSTRUCTIONS:

Open House

Date: May 27, 2010

Time: 5 – 8 pm

Location: Dallas City Hall – Flag Room

1. Please fill in your name and affiliation.
2. Please write your comment on this form and **return it to the Comment Box** on the registration table or send to one of the following:
Mail: 2011 Dallas Bike Plan, 4140 Commerce St. Suite 101, Dallas, TX 75226
Fax: (214) -760-7968; **E-mail:** info@dallasbikeplan.org

Name: _____

Affiliation (Company or Organization): _____

Please provide written comments below:

Figure a.7. May 27, 2010 Open House comment form

Helmet Sizing & Adjustment

Helmet Sizing

Bicycle helmets come in five sizes to fit heads with different circumferences. A bicycle safety helmet that doesn't fit or isn't adjusted properly is not safe. There are five standard sizes of certified helmets readily available. The size measure depends on the circumference of the head.

Compare the circumference of your head to this chart to determine what size your helmet should be. Most helmets come with sizing pads. A helmet should fit snugly. Use the different thickness pads to adjust the fit. Some heads are not the same shape as the standard helmets and in these cases a mixture of thick and thin pads in front and back or on the sides can be used to get the proper fit.

Helmet Adjustment

Eyes

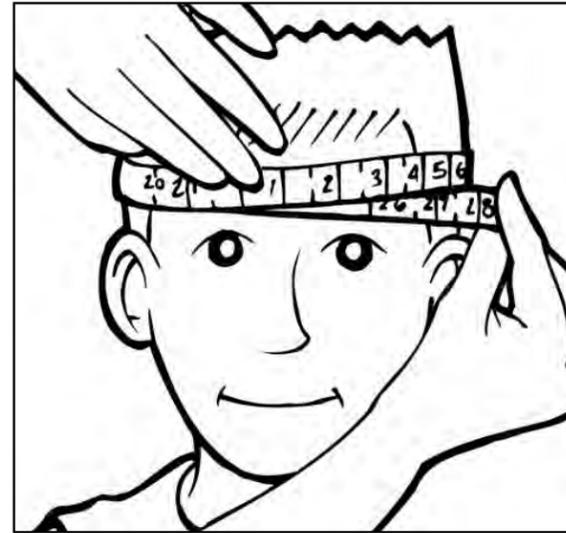
The helmet is flat on the head and the front of the helmet can be seen by the wearer. Some people suggest that the helmet should be worn so that one or two fingers can be placed between the helmet and the eyebrows.

Ears

The straps on the side should form a "V" just below the ears with the front strap almost vertical. Many riders let the adjusting buckles slide down under the chin. When properly fitted, the helmet should not be able to be pushed backwards or forwards.

Mouth

Always buckle the strap under the chin. The chin straps should be buckled on every ride. It should be snug but not uncomfortably tight. One should feel the strap tugging on the helmet when the mouth is opened.



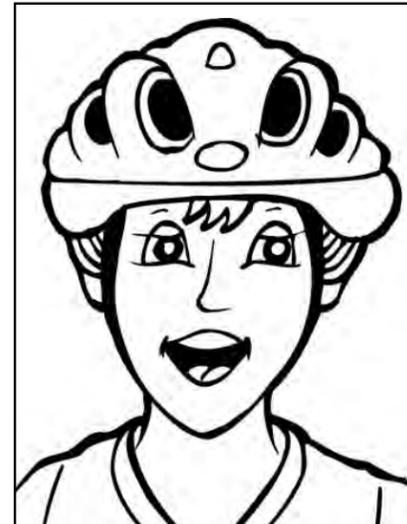
Extra Small (18.9" - 20")
Small (20" - 21 1/4")
Child (20 1/2" - 22")
Youth (21 3/4" - 22 3/4")
Adult S/M (22 1/2" - 23 3/8")
Adult M/L (23 1/8" - 23 7/8")

Remember These Tips

Wear a helmet straight and level on the head. The helmet must rest straight on the top of the head. The rim of the helmet should be level from front to back. It should be worn low on the forehead, just above the eyebrows. If the helmet is tipped back, it will not protect the front of the head.

To be effective, adjust the helmet for a snug fit. With the helmet correctly positioned on the head, gently rotate the helmet from left to right and from front to back. If the skin of the brow moves with the helmet, then the fit is correct. If the skin of the brow does not move when the helmet is rotated, the fit may be too loose.

Replace a helmet after a crash. Crash impacts will cause the foam of the helmet to crush. Even though the damage may not be visible, the helmet should be replaced.



www.supercyclist.org

SuperCyclist 2.1 Reference Master - Lesson 11
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Midiendo y Ajustando el Casco

Midiendo el Casco

Hay cinco tamaños de cascos de bicicleta que le quedan a las cabezas con diferentes circunferencias. Un casco de bicicleta que no queda o no ajusta propiamente no es seguro. Hay cinco tamaños normales disponibles de cascos certificados. El tamaño y la medida dependen de la circunferencia de la cabeza, tomando la medida en la frente.

Compara la circunferencia de tu cabeza con esta tabla para determinar de qué tamaño debe ser tu casco. La mayoría de los cascos vienen con almohadillas. Un casco debe quedarte cómodamente. Usa las almohadillas con diferentes groesos para ajustarlo. Algunas cabezas no son de la misma forma que los cascos normales y en estos casos una mezcla de almohadillas gruesas y delgadas adelante y atrás o en los lados consiguen poder ajustarlo apropiadamente.

Ajuste del Casco

Ojos

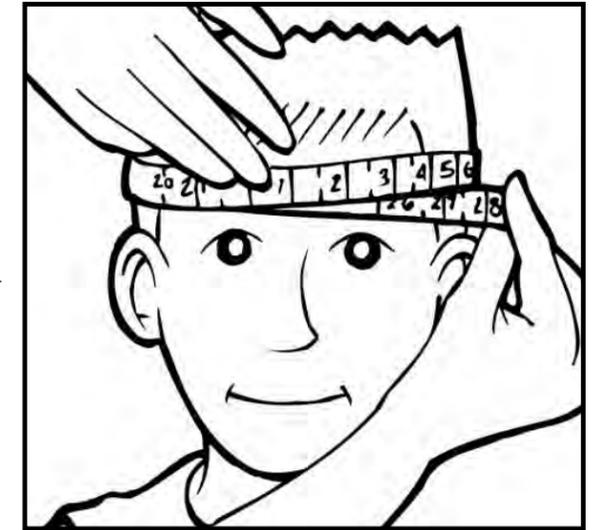
El casco es plano en la cabeza y en el frente del casco puede verse por el usuario. Algunas personas sugieren que el casco debe usarse de tal forma que uno o dos dedos puedan ponerse entre el casco y las cejas.

Orejas

Las correas en el lado deben formar un "V" debajo de las orejas con la correa del frente casi vertical. Muchos ciclistas dejan que las hebillas ajustadoras resbalen hacia abajo, bajo la barbilla. Cuando se ajustó apropiadamente, el casco no debe poderse empujar para atrás o jalar para adelante.

Boca

Siempre abroche la correa bajo la barbilla. Las correas de la barbilla deben abrocharse encada paseo. Debe ser cómodo pero no incómodamente apretado. Uno debe sentir la correa que arrastra el casco cuando la boca se abre.



Extra Chico (18.9" a 20")
Chico (20" a 21 1/4")
Niño (20 1/2" a 22")
Juvenil (21 3/4" a 22 3/4")
Adulto S/M (22 1/2" a 23 3/8")
Adulto M/L (23 1/8" a 23 7/8")



www.supercyclist.org

SuperCiclista 2.1 Referencia Maestra - Lección 11
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Recuerda Estos Tips

Usa un casco recto y nivelado en la cabeza. El casco debe descansar derecho en el tope de la cabeza. El margen del casco debe estar nivelado del frente y atrás. Debe llevarse más bajo en la frente, sobre las cejas. Si el casco se leadea hacia atrás, no protegerá la frente.

Para ser eficaz, ajusta el casco para que quede cómodo. Con el casco correctamente colocado en la cabeza, suavemente rueda el casco de izquierda a derecha y del frente hacia atrás. Si la piel de la frente se mueve con el casco, entonces esta correcto. Si la piel de la frente no se mueve cuando el casco se rueda, puede estar demasiado flojo.

Reemplaza el casco después de una caída. Impactos de la caída causan que la espuma del casco se aplaste o rompa. Incluso aunque el daño no pueda ser visible, el casco, debe reemplazarse.

Figure a.8. Educational Materials: helmet sizing and adjustment (English and Spanish)

How To Fix A Flat

1. Remove wheel

Rear: set bike upside down on handlebars and seat before opening hub quick release.

Rear: shift into smallest gear in rear, undo brake then hub quick release; remove.

Front: undo brake then wheel quick release and remove.

2. Deflate tire

Remove remaining air by depressing valve.

Schraeder is a larger, spring loaded valve and must be depressed; car style valve.

Presta is an all-metal, air sprung, narrow valve. Unscrew then press.

3. Remove one side of tire from rim

Using tire levers, unseat one side of tire; start away from valve stem.

For tight rim/tire combinations, multiple tire levers are needed; be careful when using metal levers.

Many mountain and hybrid bike. tires will come off by hand. Practice at home.

4. Remove tube

Remove tube from tire; avoid valve damage by starting away from valve.

Keep tube and tire in same position relative to each other to aid in finding puncture.

Inspect tube for holes; mark with chalk for patching or replace with a spare tube.

5. Inspect inside of tire

Feel inside of tire for cause of flat; use caution to prevent injuries to your finger.

Remove thorn, glass, staple, nail, or whatever caused your flat.

Inspect tire for damage caused by flat.

6. Install new or patched tube

After repairing damaged tube or retrieving spare, inflate tube to give it round shape.

Fold back tire to allow access to valve hole; insert valve first, then tube into tire.

For presta valve, screw valve closed and install valve nut loosely against rim.

7. Reseat tire bead

Start reseating tire by hand at valve hole; work in both directions.

Push valve partially back through rim to insure proper seating of tire bead.

Visually inspect tire bead to insure proper tire seating on rim.

8. Inflate tire

Inflate tire slowly, checking for bulges which might indicate improper bead seating on rim.

Deflate if bulge occurs; carefully re-inspect and reseat bead on rim.

Inflate to desired pressure.

9. Install on bike

Front: install wheel, tighten hub quick release, and attach brakes; make sure wheel is straight.

Rear: install wheel by placing chain on top and bottom of small cog.

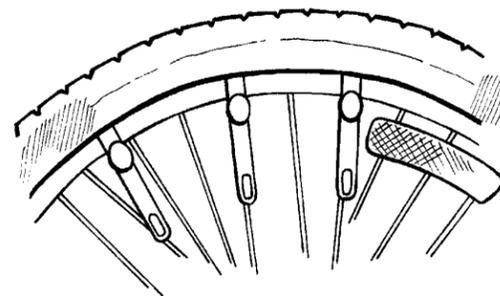
Rear: push pulley closest to you forward; drop hub down into frame and tighten.

10. Ride away

Check brake and hub quick releases; make sure that tire does not rub brakes or frame.

Check rear derailleur to make sure that shifting is still smooth.

If anything is wrong, the wheel is probably crooked; make sure wheels are in straight.



Tire levers

are made to hook onto the spokes. Insert to a lever and hook it on the spoke, insert the second one to the right of the first and, if you need a third, insert it to the left of the first lever.

Cómo Arreglar una Pochadura

1. Quita la Rueda

Frente: Suelta el freno después afloja el seguro y remueve la rueda.

Trasera: Cambia al piñón trasero más pequeño, Suelta el freno después el seguro de la maza; quita la rueda.

Trasera: Pon la bicicleta al revés sobre el manubrio y asiento antes de abrir el seguro de la maza.

2. Desinfla la llanta

Quita el aire que permanece dentro oprimiendo la válvula.

Schraeder la válvula americana es más grande, tiene un resorte en la válvula y debe ser oprimido; válvula de estilo de automóvil.

Presta es la válvula francesa toda de metal, válvula estrecha de aire; desatornille y presione.

3. Quita un lado de la llanta del rin

Usando las espátulas de la llanta, quita un lado de la llanta; empieza del lado contrario de la válvula.

Para la unión de rines con llantas apretadas, necesitarás utilizar varias espátulas de llanta; Oten cuidado al usar espátulas de metal.

Muchas llantas de bicicletas de montaña e híbridas se pueden quitar a mano. Practica en casa.

4. Quita la Cámara

Quita la cámara de la llanta; evita dañar de la válvula comenzando al lado contrario de ella.

Mantén la cámara y llanta en la misma posición una junto a la otra para encontrar la perforación.

Revisa la cámara, busca el agujero; marca con tiza para parchar o reemplaza con una cámara de repuesto.

5. Revisa dentro de la llanta

Busca dentro de la llanta la causa de la pochadura; hazlo con cuidado para evitar lastimando tu dedo.

Quita la espina, vidrio, grapa, clavo, o cualquier cosa que causó la pochadura.

Revisa la llanta para ver el daño causado por la pochadura.

6. Instala una nueva cámara o parcha la actual

Después de reparar la cámara dañada o de reemplazarla, Infla la cámara para darle forma.

Dobla la llanta hacia atrás para permitir acceso al agujero de la válvula; introduce primero la válvula en la llanta y después la cámara.

Para la válvula presta, atornilla cerrando la válvula e instala la tuerca de la válvula sin apretar demasiado en el rin.

7. Colocando la llanta

Comienza a colocar la pared de la llanta a mano, comienza en el agujero de la válvula; trabaja en ambas direcciones.

Empuja la válvula parcialmente hacia atrás a través del rin asegurándote de sostener apropiadamente la pared de la llanta.

Visualmente inspecciona la pared de la llanta para asegurarte que la llanta esta correctamente asentada en el rin.

8. Inflando la llanta

Infla la llanta despacio y revisa que no haya protuberancias pues estas indican una incorrecta instalación en el rin.

Desinfla si aparecen protuberancias; vuelve a revisar cuidadosamente y coloca de nuevo la llanta en el rin.

Infla a la presión adecuada.

9. Instala la rueda en la bicicleta

Frente: Instala la rueda, aprieta el seguro de la maza y coloca los frenos, asegurate que la rueda esta derecha.

Trasera: Instala la rueda poniendo la cadena encima del piñón de la rueda libre.

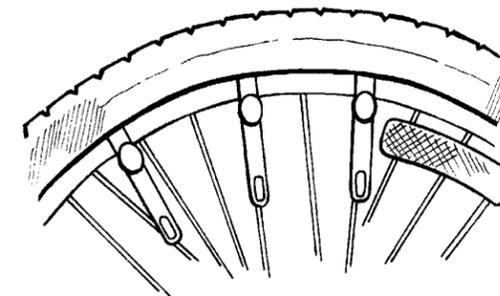
Trasera: Jala el cambio cerca de ti remita; deja caer la maza en el cuadro y aprieta.

10. Móntate

Revisa el freno y el seguro de la maza; asegúrate que la llanta no roce en los frenos o cuadro.

Revisa el cambio trasero para asegurarte que cambie bien.

Si algo está mal, es probable que la rueda este torcida; asegúrate que las ruedas están puestas derechas.



Espátulas para llantas

Están hechas para engancharse entre los rayos. Inserta una espátula y engánchala en el rayo, inserta la segunda a la derecha de la primera y, si necesitas una tercera, insértala a la izquierda de la primera espátula.



Texas Bicycle Coalition
Education Fund

www.supercyclist.org

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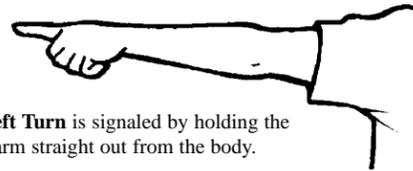
Texas Bicycle Coalition
Education Fund



Figure a.9. Educational Materials: how to fix a flat (English and Spanish)

Texas Bicycle Laws

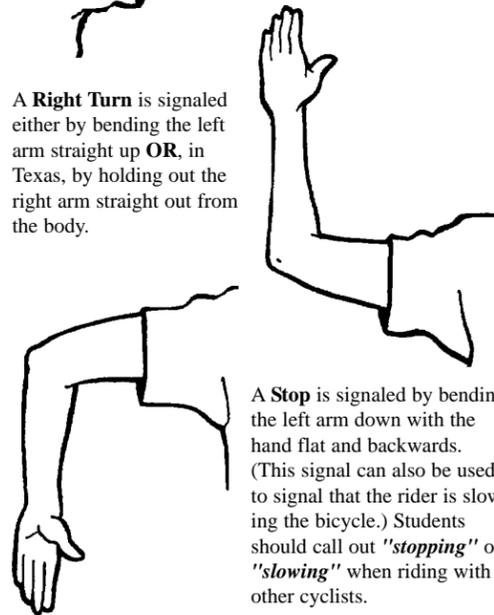
1. Obey all traffic signs and signals.
2. Ride near the curb and go in the same direction as other traffic.
3. Use hand and arm signals.
4. One rider per saddle (seat).
5. Keep at least one hand on the handlebars.
6. Bicycles must have a white light on the front and a red reflector or red light on the rear (for riding at night).
7. Use effective brakes capable of making the braked wheel skid.



A **Left Turn** is signaled by holding the left arm straight out from the body.



A **Right Turn** is signaled either by bending the left arm straight up **OR**, in Texas, by holding out the right arm straight out from the body.



A **Stop** is signaled by bending the left arm down with the hand flat and backwards. (This signal can also be used to signal that the rider is slowing the bicycle.) Students should call out "stopping" or "slowing" when riding with other cyclists.

IMBA Rules of the Trail

The way we ride today shapes mountain bike trail access tomorrow. Do your part to preserve and enhance our sport's access and image by observing the following rules of the trail, formulated by **IMBA, the International Mountain Bicycling Association**. These rules are recognized around the world as the standard code of conduct for mountain bikers. Keep trails open by setting a good example of environmentally sound and socially responsible off-road cycling.

1. Ride On Open Trails Only

Respect trail and road closures (ask if uncertain); avoid trespassing on private land; and obtain permits or other authorization as may be required. Federal and state Wilderness areas are closed to cycling. The way you ride will influence trail management decisions and policies.

2. Leave No Trace

Be sensitive to the dirt beneath you. Recognize different types of soils and trail construction; practice low-impact cycling. Wet and muddy trails are more vulnerable to damage. When the trail bed is soft, consider other riding options. This also means staying on existing trails and not creating new ones. Don't cut switchbacks. Be sure to pack out at least as much as you pack in.

3. Control Your Bicycle

Inattention for even a second can cause problems. Obey all bicycle speed regulations and recommendations.

4. Always Yield Trail

Let your fellow trail users know you're coming. A friendly greeting or bell is considerate and works well; don't startle others. Show your respect when passing by slowing to a walking pace or even stopping. Anticipate other trail users around corners or in blind spots. Yielding means slowing down, establishing communication, being prepared to stop if necessary, and passing safely.

5. Never Scare Animals

All animals are startled by an unannounced approach, a sudden movement, or a loud noise. This can be dangerous for you, others, and the animals. Give animals extra room and time to adjust to you. When passing horses, use special care and follow directions from the horseback riders (ask if you are uncertain). Running cattle and disturbing wildlife are serious offenses. Leave gates as you found them, or as marked.

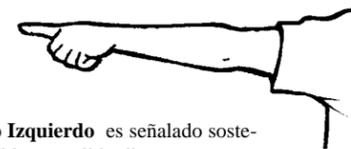
6. Plan Ahead

Know your equipment, your ability, and the area in which you are riding - and prepare accordingly. Be self-sufficient at all times, keep your equipment in good repair, and carry necessary supplies for changes in weather or other conditions. A well-executed trip is a satisfaction to you and not a burden to others. Always wear a helmet and appropriate safety gear.



Leyes de Bicicleta de Texas

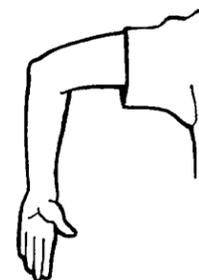
1. Obedece todas las señales y signos de tráfico.
2. Monte dentro del área de restricción y ve en la misma dirección que el tráfico.
3. Usa signos con el brazo y las manos.
4. Un ciclista por asiento al montar.
5. Mantén por lo menos una mano en el manubrio.
6. Las bicicletas deben tener una luz blanca en el frente y un reflector rojo o una luz roja en la parte de atrás (al montar por la noche).
7. Usa frenos eficaces capaces de hacer que la rueda derripare al frenar.



Un **Giro Izquierdo** es señalado sosteniendo el brazo salido directamente fuera del cuerpo mostrando hacia la dirección que voy.



Un **Giro a la derecha** es señalado doblando el brazo hacia arriba **O** en Texas es sosteniendo el brazo salido directamente fuera del cuerpo mostrando hacia la dirección que voy.



Una **Parada** es señalado doblando el brazo izquierdo abajo con la mano abierta, apuntando al revés. (Este signo también puede usarse para señalar que el ciclista está frenando la bicicleta) Los estudiantes deberían gritar "alto" o "frenando" al montar con otros ciclistas.

Reglas del Camino IMBA

La manera que montamos hoy en día permite el acceso a la bicicleta al camino en la montaña el día de mañana. Haz tu parte conservando y reforzando el acercamiento a nuestro deporte e imagen observando las siguientes reglas del sendero, formuladas por **IMBA, International Mountain Bicycling Association**. Estas reglas se reconocen alrededor del mundo como el código estándar de conducta para los ciclistas de montaña. Mantén las vías abiertas poniendo un buen ejemplo legítimo y socialmente responsable para el medioambiente del ciclismo de ruta o montaña.

1. Monta Solamente en Caminos Abiertos.

Respete las vías y caminos cerrados (pregunta si tienes dudas); evita entrar ilegalmente a terrenos privados; y obtén permiso u otra autorización que sea requerida. Recuerda que Áreas Federales y Estatales desérticas o de preservación están cerradas al ciclismo. La manera que tu montes influirá en las decisiones y políticas de las personas que dirigen o llevan la ruta.

2. No dejes Ningún Rastro

Sé sensible con la tierra que esta debajo de ti. Reconoce la composición de los diferentes tipos de tierras y caminos; práctica el ciclismo de bajo-impacto. Los caminos mojados y lodosos son más vulnerables y se pueden dañar. Cuando la tierra del camino es suave, considera otras opciones para montar. Esto quiere decir que uses las vías existentes no creando nuevas. No cortes caminos en zigzag.

3. Controla tu Bicicleta

La falta de atención, por incluso un segundo, puede causar problemas. Obedece todas las regulaciones de velocidad y recomendaciones del uso de la bicicleta.

4. Siempre Sede el Paso en el Camino

Hazle saber a tus compañeros usuarios del camino que estás pasando. Un saludo amistoso o el sonido de un timbre es considerable y funciona; procura no espantarlos. Muestra tu respeto al pasar despacio o incluso detente. Anticípate a otros usuarios cuando llegues a una esquina en lugares que no es fácil la visibilidad. Permitir el paso significa bajar la velocidad, establecer comunicación, prepararte para detenerte si necesario, y pasar con precaución.

5. Nunca espantes a los Animales

Todos los animales se sobresaltan al haber un acercamiento sin ser anunciado, un movimiento rápido, o un ruido fuerte. Esto puede ser peligroso para ti, para otros y para los animales. Dale a los animales espacio y tiempo para que se adapten a ti. Cuando pases junto a los caballos, ten cuidado y sigue las direcciones de los jinetes (pregunta si es necesario). Correr y perturbar la fauna son delitos serios. Deja las rejas como las encontraste.

6. Planea a Futuro

Conoce tu equipo, tu habilidad y el área en la que estás montando - y prepárate. Sé en todo momento autosuficiente, mantén tus equipos en buenas condiciones y lleva suministros necesarios para los cambios en el clima u otras condiciones. Un viaje bien planeado y ejecutado es una satisfacción personal y no una carga para otros. Siempre usa un casco y vestimenta de seguridad apropiada.

¡Protégete! ¡Usa Casco!



www.supercyclist.org

SuperCyclist 2.1 Reference Master - Lesson 1
© Copyright, Texas Bicycle Coalition Education Fund, 1999-2005



www.supercyclist.org

SuperCiclista 2.1 Referencia Maestra - Lección 1
© Copyright, Texas Bicycle Coalition Education Fund, 1999-2005



Figure a.10. Educational Materials: Texas Bicycle Laws and IMBA rules of the trail (English and Spanish).



These "rules of the road" are based on Texas Transportation Code statutes. Find the complete bicycle code at the bottom of the page. Laws are designed to improve the safety of everyone who uses the roadways. Don't become a statistic! Remember to always use hand signals and body actions to communicate with motorists and other bicyclists.

Bicyclists have the rights and duties of other vehicle operators: (551.101) Yes, this means you have to stop at stop signs and red lights, but cars are required to yield right-of-way to a bicycle when appropriate, just as to any other vehicle.

Ride near the curb and go in the same direction as other traffic: (551.103) Near the curb is subjective (we recommend leaving a cushion of about three feet) but the law gives a cyclist the right to take the lane when necessary for safety.

At least one hand on the handlebars (two are safer): (551.102c) One when signaling but two when turning works well.

Use hand and arm signals: (545.107) Point the way you are going, let the other operators know what you want to do.

One rider per saddle: (551.102a) Don't let your friends share your bike while riding unless you're both on a tandem.

You may ride two abreast as long as you don't impede traffic: (551.103c) Racing and taking the lane are special cases.

Must have a white light on the front and a red reflector or red light on the rear (for riding at night): (551.104b) The light is primarily so people can see you coming from the side, where their headlights do not shine on your reflectors. The law, effective as of Sept. 2001, states that a red light can replace a red reflector.

Brakes capable of making the braked wheel skid: (551.104a) Don't test that front brake to see if the wheel will skid while riding, especially down hill.

P.O. Box 1121, Austin, Texas 78767-1121
 512-476-RIDE (7433) Fax: 512-476-7458
 mail@biketexas.org - www.BikeTexas.org

Advancing Bicycle Access, Safety & Education

Texas Transportation Code

Sec. 545.107. Method of Giving Hand and Arm Signals

An operator who is permitted to give a hand and arm signal shall give the signal from the left side of the vehicle as follows: to make a left turn signal, extend hand and arm horizontally; to make a right turn signal, extend hand and arm upward, except that a bicycle operator may signal from the right side of the vehicle with the hand and arm extended horizontally; and to stop or decrease speed, extend hand and arm downward.

Chapter 551

Operation of Bicycles, Mopeds, and Play Vehicles

SUBCHAPTER A. APPLICATION OF CHAPTER

Sec. 551.001. Persons Affected

This chapter applies only to a person operating a bicycle on: a highway; or a path set aside for the exclusive operation of bicycles.

Sec. 551.002. Moped Included

A provision of this subtitle applicable to a bicycle also applies to a moped, other than a provision that by its nature cannot apply to a moped.

SUBCHAPTER B. REGULATION OF OPERATION

Sec. 551.101. Rights and Duties

(a) A person operating a bicycle has the rights and duties applicable to a driver operating a vehicle under this subtitle, unless: a provision of this chapter alters a right or duty; or a right or duty applicable to a driver operating a vehicle cannot by its nature apply to a person operating a bicycle.

(b) A parent of a child or a guardian of a ward may not knowingly permit the child or ward to violate this subtitle.

Sec. 551.102. General Operation

(a) A person operating a bicycle shall ride only on or astride a permanent and regular seat attached to the bicycle.

(b) A person may not use a bicycle to carry more persons than the bicycle is designed or equipped to carry.

Figure a.11. Educational Materials: Texas Bicycle Coalition Rules of the Road.

(c) A person operating a bicycle may not use the bicycle to carry an object that prevents the person from operating the bicycle with at least one hand on the handlebars of the bicycle.

(d) A person operating a bicycle, coaster, sled, or toy vehicle or using roller skates may not attach either the person or the bicycle, coaster, sled, toy vehicle, or roller skates to a streetcar or vehicle on a roadway.

551.103. Operation on Roadway

(a) Except as provided by Subsection (b), a person operating a bicycle on a roadway who is moving slower than the other traffic on the roadway shall ride as near as practicable to the right curb or edge of the roadway, unless: (1) the person is passing another vehicle moving in the same direction; (2) the person is preparing to turn left at an intersection or onto a private road or driveway; (3) a condition on or of the roadway, including a fixed or moving object, parked or moving vehicle, pedestrian, animal, or surface hazard prevents the person from safely riding next to the right curb or edge of the roadway; or (4) the person is operating a bicycle in an outside lane that is: (A) less than 14 feet in width and does not have a designated bicycle lane adjacent to that lane; or (B) too narrow for a bicycle and a motor vehicle to safely travel side by side.

(b) A person operating a bicycle on a one-way roadway with two or more marked traffic lanes may ride as near as practicable to the left curb or edge of the roadway.

(c) Persons operating bicycles on a roadway may ride two abreast. Persons riding two abreast on a laned roadway shall ride in a single lane. Persons riding two abreast may not impede the normal and reasonable flow of traffic on the roadway. Persons may not ride more than two abreast unless they are riding on a part of a roadway set aside for the exclusive operation of bicycles.

(d) Repealed by Acts 2001, 77th Leg., ch. 1085, § 13, eff. Sept. 1, 2001.

Acts 1995, 74th Leg., ch. 165, § 1, eff. Sept. 1, 1995.

Amended by Acts 2001, 77th Leg., ch. 1085, §§ 10, 13, eff. Sept. 1, 2001.

Sec. 551.104. Safety Equipment

(a) A person may not operate a bicycle unless the bicycle is equipped with a brake capable of making a braked wheel skid on dry, level, clean pavement.

(b) A person may not operate a bicycle at nighttime unless the bicycle is equipped with:
(1) A lamp on the front of the bicycle that emits a white light visible from a distance of at least 500 feet in front of the bicycle; and (2) on the rear of the bicycle: (A) A red reflector that is: (i) of a type approved by the department; and (ii) visible when directly in front of lawful upper beams of motor vehicle headlamps from all distances from 50 to 300 feet to the rear of the bicycle; or (B) lamp that emits a red light visible from a

distance of 500 feet to the rear of the bicycle. (C) In addition to the reflector required by Subsection (b), a person operating a bicycle at nighttime may use a lamp on the rear of the bicycle that emits a red light visible from a distance of 500 feet to the rear of the bicycle.

Sec. 551.105. Competitive Racing

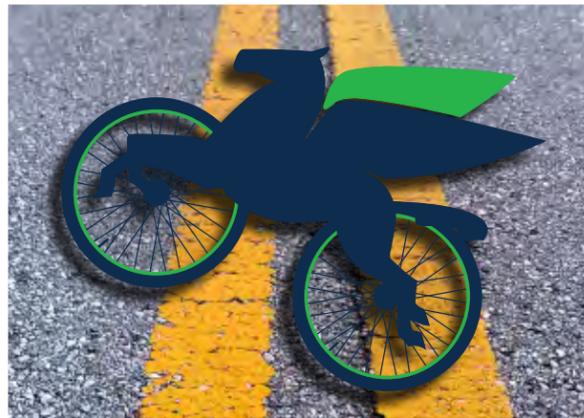
(a) In this section, "bicycle" means a non-motorized vehicle propelled by human power.

(b) A sponsoring organization may hold a competitive bicycle race on a public road only with the approval of the appropriate local law enforcement agencies.

(c) The local law enforcement agencies and the sponsoring organization may agree on safety regulations governing the movement of bicycles during a competitive race or during training for a competitive race, including the permission for bicycle operators to ride abreast.

SEPTEMBER 23, 2010 PUBLIC MEETING

On Thursday, September 23, 2010, over 200 people participated in the 2011 Dallas Bike Plan first public meeting. Council members Angela Hunt (District 14) and Sheffield Kadane (District 9) provided the welcome and words of support for the Plan. The consulting team provided recommendations, including over 550 miles of on-street bicycle facilities. A presentation at the beginning of the public meeting introduced attendees to the various on-street bicycle facilities being recommended as part of the Plan. Participants were then invited to review and comment on these recommendations laid out on maps of the City of Dallas divided into four quadrants, a map of the Central Business District, and the Trinity River Corridor portraying the proposed network segments, as well as the recommended facility type for each. Other public feedback gained through separate stations dealt with project prioritization criteria and marketing and promotion ideas for the Plan's implementation strategy. Sign-in sheets and comment forms were available to those who attended the meeting. Information on the Plan's vision, goals and objectives as well as educational materials were also available. A copy of meeting materials are provided on pages a.12 through a.16.



2011 Dallas Bike Plan Public Meeting
 Thursday, September 23rd, 2010
 Dallas City Hall, L1FN Conference Center
 5 PM to 8 PM (Presentation at 5:30 P.M.)

BMA - 2011 Dallas Bike Plan
 4140 Commerce Street #101
 Dallas, Texas 75226

The 2nd 2011 Dallas Bike Plan Public Meeting will be held in the Dallas City Hall L1FN Conference Center, located in the northwest corner of City Hall on the L1 Level (one level below ground). An ample amount of bicycle parking and limited automobile visitor parking will be available just outside the Public Meeting venue in the City Hall Garage on the L1 Level. The Garage can only be accessed from the eastbound Young Street entrance that is west of S. Akard St. Metered automobile surface parking (free after 6PM) will be available in the semi-circular lot on the south side of City Hall. From there, access the Public Meeting through the automatic sliding door which is also on the south side of the building and located close to S. Akard Street. Please proceed through the lobby to the Green elevators, and go down to L1.

For special accommodations due to a disability or language translation, contact us at 206.200.9535, or by email at plagenwey@tooleedesign.com, at least 72 hours prior to the meeting. Reasonable accommodations will be made.

Para arreglos especiales por discapacidad o para servicio de interpretación, por favor llamar al 206.200.9535 o vía correo electrónico a: plagenwey@tooleedesign.com con 72 horas (mínimo) de anticipación. Se harán cambios razonables.

  In coordination with the City of Dallas "Complete Streets" Initiative

Figure a.12. September 23, 2010 Public Meeting postcard



FOR IMMEDIATE RELEASE
 September 13, 2010



FOR MORE INFORMATION CONTACT:
 Karla Weaver, AICP, NCTCOG
 Principal Transportation Planner - (817) 608-2376

Max Kalhammer, City of Dallas
 Sr. Planner & Bicycle Coordinator - (214) 671-8295

Residents invited to public meeting for 2011 Dallas Bike Plan

DALLAS – Guided by input received at an open house last spring, planners were out in Dallas reviewing more than 500 miles of recommendations for the 2011 Dallas Bike Plan. At a public meeting Sept. 23, residents can review refined recommendations and continue the conversation as the City of Dallas develops a bike plan to guide project and funding decisions.

The public meeting will be 5 p.m. - 8 p.m. at Dallas City Hall in the L1FN Conference Center, 1500 Marilla St. Maps and displays will be available for review and input and there will be a presentation at 5:30 p.m.

About 320 residents participated in the 2011 Dallas Bike Plan Open House on May 27 and shared their ideas and priorities. "Listening stations" were designed to solicit feedback on the bicycle network, safety issues, goals and priorities. Using this and other community input, the project team completed a systematic field evaluation of more than 500 miles of the proposed Dallas Bikeway System Network. Draft facility recommendations developed from the field evaluations will be presented at the public meeting.

Participants will have an opportunity to:

- Review maps with proposed recommendations for over 500 miles of streets in Dallas
- See a presentation on the development of the draft Dallas Bikeway System Network and recommended cross-section types
- Review locations of intersections identified as barriers
- Identify priority projects
- View goals and objectives identified at the May 27 open house

When complete, the bike plan will identify key routes and facilities, prioritize project implementation areas for future funding, and outline design criteria for consistent bicycle infrastructure. The plan, envisioned to be a regional guide or template for other North Texas municipalities, will include a detailed map of the Dallas Bikeway System, generic facility type descriptions and designs and prioritized projects, as well as an overall implementation strategy. This plan will serve as a leading component of Dallas' "Complete Streets" Initiative aimed at creating a roadway system that serves all modes of transportation.

Registration/sign-in will be at the entrance to the L1FN Conference Center in the northwest corner of City Hall on the L1 Level (one level below ground). Ample bicycle parking and limited automobile visitor parking will be available just outside the public meeting venue in the City Hall garage on the L1 Level. The garage can only be accessed from the eastbound Young Street entrance, west of South Akard St. Metered parking (free after 6 p.m.) will be available in the semi-circular lot on the south side of City Hall. From there, access the public meeting through the automatic sliding door which is also on the south side of the building and located close to South Akard Street. Please proceed through the lobby to the Green elevators, and go down to L1.

Figure a.13. September 23, 2010 Public Meeting announcement



The City of Dallas
and the North Central
Texas Council of
Governments
invite you to
participate in the

2011 DALLAS BIKE PLAN

In coordination with the City of Dallas
"Complete Streets" Initiative

Please join us to
review facilities
proposed in the
Draft
Network Plan

Public Meeting
Thursday, September 23rd, 2010
Dallas City Hall
L1FN Conference Center
5 PM to 8 PM
(Presentation at 5:30 PM)

The 2nd 2011 Dallas Bike Plan Public Meeting will be held in the Dallas City Hall L1FN Conference Center, located in the northwest corner of City Hall on the L1 Level (one level below ground). An ample amount of bicycle parking and limited automobile visitor parking will be available just outside the Public Meeting venue in the City Hall Garage on the L1 Level. The Garage can only be accessed from the eastbound Young Street entrance that is west of S. Akard St. Metered automobile surface parking (free after 6PM) will be available in the semi-circular lot on the south side of City Hall. From there, access the Public Meeting through the automatic sliding door which is also on the south side of the building and located close to S. Akard Street. Please proceed through the lobby to the Green elevators, and go down to L1.

For special accommodations due to a disability or language translation, contact us at 206.200.9535, or by email at plagerwey@tooledesign.com, at least 72 hours prior to the meeting. Reasonable accommodations will be made.

Para arreglos especiales por discapacidad o para servicio de interpretación, por favor llamar al 206.200.9535 o vía correo electrónico a: plagerwey@tooledesign.com con 72 horas (mínimo) de anticipación. Se harán cambios razonables.



PUBLIC MEETING #2
September 23, 2010
5:00 p.m. – 8:00 p.m.

AGENDA

5:30 P.M.: Presentations, Q&A

- ❖ Welcome and Introduction, City Council Member Angela Hunt
- ❖ Development of the Dallas Bikeway System Draft Network Recommendations, Peter Lagerwey, Toole Design Group

6:30 P.M.: Public Feedback Stations

To make it easy for you to provide your input on elements of the Plan that have been developed thus far, we have set up a variety of listening stations, as described below. You are welcome to discuss ideas with us and your fellow attendees, but *please be sure to provide us with written comments.*

- 1) **Dallas Bikeway System Draft Network Recommendations.** Review the Bikeway System network and help us identify viable segments we may have missed, proposed segments that would be problematic in any way, and locations in the proposed network that present barriers or obstacles to bicycling. *Your input on the overall connectivity and facility type assignments of the network will drive what's in the final proposal for the Dallas Bikeway System Master Plan.*
- 2) **Trinity Corridor:** Review our map with proposed recommendations for crossing, accessing, and riding within the Trinity Corridor.
- 3) **Project Prioritization Criteria:** Once the Bikeway System network has been finalized by your input, the project team is going to use a system based on "weighted" prioritization criteria in order to prioritize the capital projects to be identified in the Plan's Implementation Strategy. Tell us what you think of the proposed criteria, and also whether or not you think we are missing any.
- 4) **Goals and Objectives:** View the refined Plan Vision, Goals and Objectives that were identified and prioritized by the public at the May 27th Open House.
- 5) **Plan Promotion and Education:** Review the Plan's branding concept, and share your ideas about how to make the Bikeway System network "a Dallas thing". Review some existing literature, and let us know how we should deliver education and outreach about bicycle safety and the benefits of bicycling.
- 6) **North Central Texas Council of Governments and the City of Dallas:** Visit with the sponsors of the 2011 Dallas Bike Plan and look at relevant planning documents. Learn what else is being done to promote bicycling in the Dallas-Fort Worth Metroplex.



Figure a.14. September 23, 2010 Public Meeting flyer

Figure a.15. September 23, 2010 Public Meeting agenda

**2011 Dallas Bike Plan
PUBLIC MEETING #2
September 23, 2010**

VISION, GOALS, and OBJECTIVES

On May 27, 2010 approximately 320 residents participated in the 2010 Dallas Bike Plan Open House to share their ideas and priorities. Participants were asked to place four red dots that they received at sign-in next to their priorities for the 2011 Dallas Bike Plan. We believe that the following Vision, Goals, and Objectives statements reflect the input received from the Open House and other community outreach efforts.

Mission

To improve the safety, use and efficiency of the bicycle in the City of Dallas; and to better integrate the bicycle mode within the City and regional transportation system.

Vision

The implementation of the 2011 Dallas Bike Plan will result in the existence of the following characteristics that describe the Dallas Bikeway System and the City's bicycling culture:

- ❖ Wide-spread use of bicycles as an accepted and practical form of transportation, recreation and exercise, contributing to a healthier and happier lifestyle for Dallas residents.
- ❖ A safe, efficient, connected Bikeway System for all of Dallas, used by people of all ages and abilities, including a range of standardized on-street and off-street bicycle facilities that are sensitive to their land use and transportation context.
- ❖ A high level of education and public awareness on how to use the bikeway system's facility types, and on bicycling safety, laws, and techniques.
- ❖ A bicycling culture which promotes bicycling as a viable transportation option that is part of a comprehensive, City-sponsored strategy to revitalize neighborhoods and improve public health and air quality.

(Editorial Note: Once a draft Plan has been developed, specific, measurable numbers will be added to the following objectives. They will be organized under 1) Short Term Implementation (1 to 3 years after Plan adoption); 2) Medium Term Implementation (4 to 6 years after Plan adoption); and 3) Long Term Implementation (7 to 10 years after Plan adoption). For example, in the first three years, one objective might be to install 500 new bicycle parking racks.)

Goal 1: Create a fully interconnected, seamless Bikeway System that connects to all areas in the City and to every adjacent jurisdiction.

Objectives (strategies) to meet goal

- Develop routes to destinations such as schools, employment, transit, parks, shopping, libraries and other activity centers.
- Create on-street connections between existing trails (close gaps)
- Install appropriate bicycle facilities (e.g. bike lanes, cycle tracks, bicycle boulevards, etc.) to make connections
- Address barriers to bicycling (spot locations/access points such as Trinity River, major highways, railroad tracks, etc)
- Create routes and/or facilities to employment centers
- Develop better access between all areas within and surrounding Dallas
- As part of the Implementation Plan, develop an initial list of projects and priorities based on the objectives above. Once the Plan is adopted, maintain and update this list until the entire proposed Bikeway System network is implemented.
- As part of the Implementation Plan, include recommendations for the development and enforcement of a facilities maintenance plan beyond Plan adoption.

Goal 2: Improve Education and Enforcement, Establish Supporting Policies

Objectives (strategies) to meet goal

- Focus on Safe Routes to School projects and programs (collaborate with scout groups, parents, etc; include promotion and education)
- Identify and encourage education programs
- Clarify state law – use of bike lanes should never be required
- Promote bike-friendly legislation including, but not limited to, the development of a "Bicyclists Bill of Rights" and a 3' passing ordinance
- Work with law enforcement to identify enforcement strategies

Goal 3: Promote and Install End-of-Trip Facilities

Objectives (strategies) to meet goal

- Provide economic incentives for employer/retailer provision of end-of-trip facilities (i.e., parking, showers and lockers, etc. at appropriate locations).
- Provide bicycle parking and other end-of-trip facilities at transit stations and in other public areas where density or land-use patterns warrant.

Goal 4: Identify funding sources for all projects and programs in the Plan.

Objectives (strategies) to meet goal

Figure a.16. September 23, 2010 Public Meeting vision, goals, and objectives

- Identify sources of funding for highest priority projects (2011)
- Identify funding for near-term projects (1 to 3 years after Plan adoption)
- Identify funding for medium-term projects (4 to 6 years after Plan adoption)
- Identify funding for long-term projects (7 to 10 years after Plan adoption)
- Provide list of funding ideas including inclusion of bicycle facilities through development codes

Goal 5: Provide strategies to measure and evaluate the success of the Plan over time

Objectives (strategies) to meet goal

- Establish base line data and data collection methods that can be used to measure success in the future
- Identify ways to build accountability into Plan implementation
- Provide for regular Plan updates
- As progress on the Plan begins and continues, the City applies for and obtains the various levels of Bicycle-Friendly Community designations from League of American Bicyclists.

Goal 6: Provide a set of standards in the Plan that can be used as a “regional template” for other jurisdictions in the North Central Texas region

Objectives (strategies) to meet goal

- Regional Transportation Council (RTC) endorsement of applicable elements of the 2011 Dallas Bike Plan for use as a “regional template” for other jurisdictions in the North Central Texas region. NCTCOG coordination with local jurisdictions to develop and adopt bicycle master plans

Implementation Strategies

- Complete Streets: develop and adopt a Complete Streets policy-manual to help create a 'bicycle friendly' Dallas. Design streets to accommodate multiple modes, as appropriate, and invite good behavior (good engineering invites right use).
- Focus on Plan implementation: Show progress early with catalyst projects. A practical, sustainable, approach is incorporated into all projects.
- Establish methods to monitor and measure the use of bicycles for work commutes, utilitarian trips, and recreation, by age and geographic area.



2011 Dallas Bike Plan

Public Meeting Sign-In
Please Print Clearly

Title	First Name	Last Name		
<input type="checkbox"/> Mr. <input type="checkbox"/> Ms. <input type="checkbox"/> Mrs. <input type="checkbox"/> Dr. <input type="checkbox"/> Other: _____				
Email Address:				
Affiliation: (Company / Organization)				
Affiliation Title:				
Address Line 1:				
Address Line 2:				
City:		State:		Zip:
Please contact me by:	<input type="checkbox"/> email <input type="checkbox"/> regular mail <input type="checkbox"/> both email & standard mail			
I prefer to receive communications when possible in:	<input type="checkbox"/> English <input type="checkbox"/> Spanish			
How did you hear about this meeting?	<input type="checkbox"/> Email <input type="checkbox"/> Newspaper <input type="checkbox"/> Radio <input type="checkbox"/> Internet <input type="checkbox"/> From Friends <input type="checkbox"/> Other _____			
Did you attend the Open House on May 27, 2010?	<input type="checkbox"/> Yes <input type="checkbox"/> No			

Figure a.17. September 23, 2010 Public Meeting sign-in sheet



General Comments Form

2011 Dallas Bike Plan Public Meeting

INSTRUCTIONS:

1. Please fill in the date, your name and e-mail or mailing address, and affiliation if desired.
2. Please write your comment on this form and **return it to the Comment Box** on the registration table or send to one of the following by October 1, 2010:
Mail: 2011 Dallas Bike Plan, 4140 Commerce St. Suite 101, Dallas, TX 75226
Fax: (214) -760-7968; **E-mail:** info@dallasbikeplan.org

*Date: _____

*Name: _____

*E-mail or Address: _____

Affiliation (Company or Organization): _____

* required

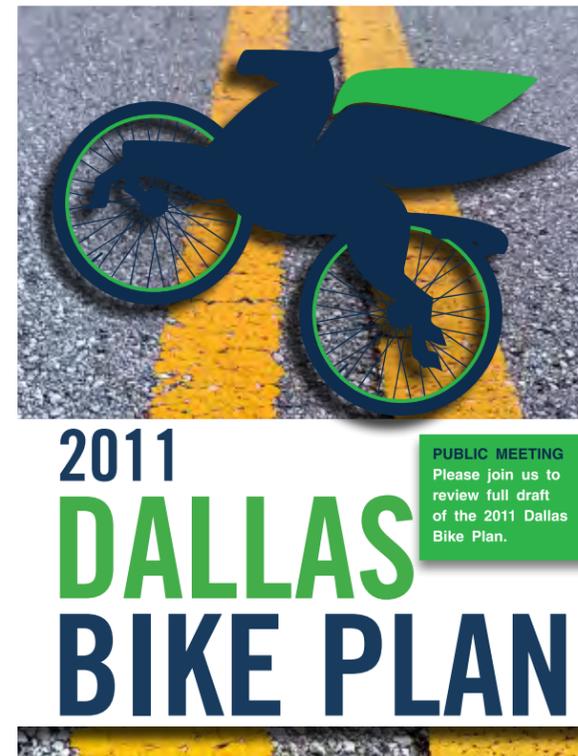
Please provide written comments below:

2011 Dallas Bike Plan web site – www.DallasBikePlan.org

Figure a.18. September 23, 2010 Public Meeting comment form.

JANUARY 20, 2011 PUBLIC MEETING

On Thursday, January 20, 2011, approximately 160 people participated in the second and final public meeting for the 2011 Dallas Bike Plan held at City Hall. The public meeting provided an opportunity for participants to review a full draft of the Plan, and provide additional comments on the network recommendation maps which were revised following the September 23, 2010 Public Meeting. Council members Angela Hunt (District 14), Sheffield Kadane (District 9), and Linda Koop (District 11) welcomed attendees, followed by a greeting from Andy Clark, President of the League of American Bicyclists (LAB). Max Kalhammer, the City's Project Manager, and Peter Lagerwey of Toole Design Group provided an overview of the Plan, including facility cross-section types, route signage, and the Plan's recommendations for programs, policies, and implementation. Following the presentation, Deputy Chiefs Michael Genovesi (Central Patrol Division) and Gloria Perez (Northeast Patrol Division) from the Dallas Police Department discussed education and enforcement as it relates to both motorists and bicyclists. Max Kalhammer then facilitated a question and answer session, after which attendees visited the meeting's public information and input stations. A copy of meeting materials are provided on pages a.16 through a.19.



2011 Dallas Bike Plan Public Meeting
 Thursday, January 20th, 2011
 Dallas City Hall Flag Room (6E North)
 5 PM to 8 PM (Presentation at 5:30 PM)

BMA - 2011 Dallas Bike Plan
 4140 Commerce Street #101
 Dallas, Texas 75226

The 3rd Public Meeting for the 2011 Dallas Bike Plan will be held in the Flag Room at City Hall on January 20th. Please join us to review the final maps, and see a presentation on the main recommendations from the draft Plan, public safety, and implementation. Registration/sign-in for the meeting will be at the west entrance to the Flag Room on the 6th Floor (6E-North), accessible via the green elevators.

**** Notice: Automobile visitor parking spaces are no longer available in the City Hall Garage. There will be a bicycle corral outside the west entrance to City Hall. Metered automobile surface parking (free after 6 PM) will be available in the parking lot on the south side of City Hall. Access to City Hall will be available through the automatic sliding door on the south side of building and located close to S. Akard Street. Please proceed through the lobby to the green elevators. ****

For special accommodations due to a disability or language translation, contact us at 206.200.9535 or by email at plagerwey@tooledesign.com at least 72 hours prior to the meeting. Reasonable accommodations will be made.

Para arreglos especiales por discapacidad o para servicio de interpretación, por favor llamar al 206.200.9535 o vía correo electrónico a: plagerwey@tooledesign.com con 72 horas (mínimo) de anticipación. Se harán cambios razonables.



In coordination with the
 City of Dallas
 "Complete Streets" Initiative

Figure a.19. January 20th, 2011 Public Meeting postcard



FOR IMMEDIATE RELEASE
January 18, 2011

FOR MORE INFORMATION CONTACT:
Karla Weaver, AICP, NCTCOG
Principal Transportation Planner - (817) 608-2376

Max Kalhammer, City of Dallas
Sr. Planner, Bicycle Coordinator - (214) 671-8295

Public invited to review draft 2011 Dallas Bike Plan Jan. 20 at City Hall

DALLAS – The public is invited to hear about and review a draft of the 2011 Dallas Bike Plan from 5 p.m. to 8 p.m. Thursday, Jan. 20 in the Flag Room and Council Chambers at Dallas City Hall, 1500 Marilla St. A presentation will begin at 5:30 p.m. Participants will have an opportunity to:

- Learn about the overall goals of the draft 2011 Dallas Bike Plan
- Hear a presentation given by Andy Clark, President, League of American Bicyclists
- Listen to Dallas Police Officers discuss public safety for bicyclists and drivers
- Review and provide feedback on the draft 2011 Dallas Bike Plan and updated Dallas Bikeway System network maps
- Talk to planners about how the Bike Plan will serve as a leading component of the Dallas Complete Streets Initiative, and as a regional bicycle planning template

Registration/sign-in will be at the entrance to the Flag Room in 6E-North (Green Elevators).

Important notice: Visitor parking spaces are no longer available in the City Hall Garage. There will be a bicycle corral outside the west entrance to City Hall, near South Akard Street. Metered surface parking (free after 6 p.m.) will be available in the parking lot on the south side of City Hall. Access to City Hall will be available through the automatic sliding door on the south side of the building, close to South Akard Street. Attendees should proceed through the lobby and take the green elevators down to L1.

For special accommodations due to disability or language translation, contact Pete Lagerwey at (206) 200-9535 or plagerwey@tooledesign.com at least 48 hours prior to the meeting. Reasonable accommodations will be made. For more information and to receive regular updates on the 2011 Dallas Bike Plan, register for the contact list at www.dallasbikeplan.org.

###



The City of Dallas and the North Central Texas Council of Governments invite you to participate in the

2011 DALLAS BIKE PLAN

In coordination with the City of Dallas "Complete Streets" Initiative

Please join us to review a full draft of the 2011 Dallas Bike Plan

Open House Thursday, January 20th, 2011 Dallas City Hall Flag Room (6E-North) 5 PM to 8 PM (Presentation at 5:30 PM)

The 3rd Public Meeting for the 2011 Dallas Bike Plan will be held in the Flag Room at City Hall on January 20th. Please join us to review the final maps, and see a presentation on the main recommendations from the draft Plan, public safety, and implementation. Registration/sign-in for the meeting will be at the west entrance to the Flag Room on the 6th Floor (6E-North), accessible via the green elevators.

**** Notice: Automobile visitor parking spaces are no longer available in the City Hall Garage. There will be a bicycle corral outside the west entrance to City Hall.** Metered automobile surface parking (free after 6 PM) will be available in the parking lot on the south side of City Hall. Access to City Hall will be available through the automatic sliding door on the south side of building and located close to S. Akard Street. Please proceed through the lobby to the green elevators. **

For special accommodations due to a disability or language translation, contact us at 206.200.9535 or by email at plagerwey@tooledesign.com at least 72 hours prior to the meeting. Reasonable accommodations will be made.

Para arreglos especiales por discapacidad o para servicio de interpretacion, por favor llamar al 206.200.9535 o via correo electronico a: plagerwey@tooledesign.com con 72 horas (minimio) de anticipacion. Se haran cambios razonables.

Figure a.20. January 20, 2011 Public Meeting announcement

Figure a.21. January 20, 2011 Public Meeting flyer



PUBLIC MEETING #3
January 20, 2011
5:00 p.m. – 8:00 p.m.

AGENDA

Please join us to review the final maps, and see a presentation on the main recommendations from the draft Plan, public safety, and implementation.

5:30 P.M.: Presentations, Q&A

- ❖ Welcome and Introduction, City Council Members Angela Hunt and Sheffield “Sheffie” Kadane
- ❖ Greetings from Andy Clark, President, League of American Bicyclists
- ❖ 2011 Dallas Bike Plan: Bikeway System Network Maps and Plan Recommendations, Peter Lagerwey, Toole Design Group
- ❖ Education and Enforcement, Deputy Chief Michael Genovesi , Central Patrol Division; and Deputy Chief Gloria Perez, Northeast Patrol Division
- ❖ Closing, Max Kalhammer, Project Manager, City of Dallas

6:30 P.M.: Public Information Stations

To facilitate your review of the draft Plan, a variety of information stations are set up in the Flag Room. Each station’s purpose is described below. You are welcome to discuss ideas with us and your fellow attendees, and to provide us with written comments using the comment forms provided at each station.

Information Stations:

- 1) **Dallas Bikeway System Network Recommendations and Facilities Reference Map to Street Profiles (“Cross-Sections”).** Review the Bikeway System network that is based on hundreds of public comments, to date. Your careful review of the overall connectivity and facility type assignments of the network will help us identify viable segments and barriers or obstacles that have not yet been captured. Also review the existing and proposed cross-sections for the on-street segments of the proposed Dallas Bikeway System. There are 72 individual cross-sections, primarily organized by the number of automobile travel lanes in the roadway.
- 2) **Dallas Bikeway System Master Plan: Network Recommendations with Prioritization Categories Overlay.** Review the Near-, Medium-, and Long-Term Implementation focus areas for the Dallas Bikeway System.
- 3) **Draft 2011 Dallas Bike Plan.** Review copies of the current draft 2011 Dallas Bike Plan document. Your review of the “Action” items and the implementation strategies, in particular, will help us refine the final Plan.
- 4) **North Central Texas Council of Governments and the City of Dallas:** Visit with the sponsors of the 2011 Dallas Bike Plan and learn about relevant planning initiatives that promote bicycling and alternative transportation in the Dallas-Fort Worth Metroplex.



Figure a.22. January 20, 2011 Public Meeting agenda



North Central Texas
Council of Governments



2011 Dallas Bike Plan

Public Meeting Sign-In
Please Print Clearly

Title	First Name	Last Name		
<input type="checkbox"/> Mr. <input type="checkbox"/> Ms. <input type="checkbox"/> Mrs. <input type="checkbox"/> Dr. <input type="checkbox"/> Other: _____				
Email Address:				
Affiliation: (Company / Organization)				
Affiliation Title:				
Address Line 1:				
Address Line 2:				
City:		State:		Zip:
Please contact me by:	<input type="checkbox"/> email <input type="checkbox"/> regular mail <input type="checkbox"/> both email & standard mail			
I prefer to receive communications when possible in:	<input type="checkbox"/> English <input type="checkbox"/> Spanish			
How did you hear about this meeting?	<input type="checkbox"/> Email <input type="checkbox"/> Newspaper <input type="checkbox"/> Radio <input type="checkbox"/> Internet <input type="checkbox"/> From Friends <input type="checkbox"/> Other _____			
Did you attend the Open House on May 27, 2010?	<input type="checkbox"/> Yes <input type="checkbox"/> No			

Figure a.23. January 20, 2011 Public Meeting sign-in form



General Comments Form

2011 Dallas Bike Plan
Public Meeting

INSTRUCTIONS:

1. Please fill in the date, your name and e-mail or mailing address, and affiliation if desired.
2. Please write your comment on this form and **return it to the Comment Box** on the registration table or send to one of the following by March 4, 2011:

Mail: 2011 Dallas Bike Plan, 4140 Commerce St. Suite 101, Dallas, TX 75226

Fax: (214) -760-7968; **E-mail:** info@dallasbikeplan.org

*Date: _____

*Name: _____

*E-mail or Address: _____

Affiliation (Company or Organization): _____

** required*

Please provide written comments below:



2011 Dallas Bike Plan Dallas Bikeway System Network & Facility Recommendations COMMENT FORM

INSTRUCTIONS:

1. Please fill in the date, your name and e-mail or mailing address, and affiliation if desired.
2. Please write your comment on this form and **return it to the Comment Box** or send it no later than March 4, 2011 by doing one of the following:

Mail: 2011 Dallas Bike Plan, 4140 Commerce St. Suite 101, Dallas, TX 75226

Fax: (214) -760-7968; **E-mail:** info@dallasbikeplan.org

*Date: _____

*Name: _____

*E-mail or Address: _____

Affiliation (Company or Organization): _____

** required*

Review Dallas Bikeway System Draft Network Recommendations map, provide comments below.

Street:
From:
To:
Comment:

Figure a.24. January 20, 2011 Public Meeting General comment form

Figure a.25. January 20, 2011 Public Meeting Recommendations comment form

A.4 SURVEY: SURVEY AND SURVEY RESULTS

ONLINE SURVEY RESULTS

As part of the effort to solicit public input for the 2011 Dallas Bike Plan, a survey was placed on the project web site for approximately seven weeks from May 27 to July 16, 2010. Over 1,400 responses to the survey were received.

The online survey was developed in the spring of 2010 with input from the Project Review Committee (PRC), Bicycle Advisory Committee (BAC) and Bicycle Policy Steering Committee (BPSC). It was provided in English and Spanish. The survey was publicized on the project website home page and through other list-serves.

Over 1,400 responses to the online survey were received. The most frequently cited concerns expressed by survey respondents regarding bicycling in the City of Dallas included:

- Unsafe motorist behavior,
- Lack of on-road facilities for bicyclists (specifically bike lanes), and
- Additional bicycle parking is most needed at places of employment.

It is important to note that survey respondents were self-selected, and the results are not necessarily statistically significant. The online survey was used to broaden the reach of public input. The following are summary tables and charts illustrating the results of the survey questions.

EXISTING BICYCLE BEHAVIOR

What was the purpose of your last bicycle trip? Please select only one answer.

Total respondents for this question: 1,376



Figure a.26. Online Survey Results

- The most popular purpose for bicycling among the respondents was for exercise/recreational activity,
- The second most popular bicycle trip was travel for work, and
- Many of the write-in responses indicated that their bicycle trip combined two or more of the answer options.

How many days during the last week did you use each of the following types of transportation? (Enter 0-7 for each mode. It's ok if your grand total is greater than seven.)

Total respondents for this question: 1,379

Answer Options	0	1	2	3	4	5	6	7	Use Days Total*
Drive alone	50	43	84	78	95	229	95	612	6,824
Bicycle	129	176	249	268	193	138	53	96	3,930
Walk	247	215	184	113	63	77	25	169	2,892
Train	810	78	40	27	17	28	3	8	1,011
Bus	901	27	22	11	5	15	1	6	988
Carpool	663	80	100	57	29	32	2	15	978
Motorcycle	854	27	19	13	9	10	8	18	958
Auto Taxi	878	26	8	0	1	1	1	1	916

*Use Days are calculated by multiplying the number of days by the number of times that mode was chosen. For example, to calculate the total Use Days for bicycle the formula is $0(129) + 1(176) + 2(249) + 3(268) + 4(193) + 5(138) + 6(53) + 7(96) = 3,930$ Use Days.

Figure a.27. Survey results for types of transportation

FACTORS MAKING IT MORE DIFFICULT OR UNPLEASANT TO BIKE IN DALLAS

What prevents you from cycling more often? Check all that apply. (Since respondents checked more than one answer option, the total will add up to more than 100%.)

Total respondents for this question: 1,372

Answer Options	Response Percent
Unsafe/unlawful motorist behavior	70.8%
Not enough bike lanes	67.5%
Not enough bike trails	48.6%
Weather	37.9%
No shower or changing facilities at my destination	34.5%
Roads are in poor condition (pot holes, debris)	34.3%
No place to conveniently/safely park a bicycle (Short-term / a few hours)	32.7%
Destinations are too far away	26.2%
No place to conveniently/safely park a bicycle (Long-term / several hours / all day)	25.4%
I don't have enough time	20.3%
I have too many things to carry	14.6%
I must transport small children or other people	7.7%
I ride as much as I want	7.5%
Fear of crime	6.8%
Physical limitations	1.3%
Topography (it's too hilly)	1.0%
I don't own a bike	0.7%
Other (please specify)	

Figure a.28. Factors that prevent cycling in Dallas

Common write-in responses for barriers include

- Need to haul or carry materials,
- Threat of loose dogs,
- Lack of adequate street lighting, and
- Cycling is not convenient for professional trips.

AREAS IN NEED OF IMPROVEMENT

Which of the following improvements influence you to bike more often?
Please rate each option that would influence you to bike more often.

Total respondents for this question: 1,379

Answer Options	Very likely	Likely	Neutral	Unlikely	Very Unlikely
More bike lanes on major streets	941	286	69	27	37
More wide outside/curb lanes (easier to share lanes with cars)	679	337	187	93	41
More education for motorists	634	412	174	65	38
More on-road bike signage (share the road signs/bike route signs)	529	370	272	102	49
More off-street trails	781	302	152	46	41
Increased maintenance (street sweeping/repair to roads)	429	423	335	80	28
Increased enforcement of traffic laws	447	352	356	85	32
More education for bicyclists on how to deal with motor vehicle traffic	303	306	441	132	85
More bicycle parking/storage	384	427	323	81	47
Better bicycle access to transit stops	294	277	457	160	67
Showers and lockers at work	496	317	309	69	57
Other (please specify)					

Figure a.29. Areas of improvement that would influence bicycling

Common write-in responses included

- On-road connectivity between trails,
- On-road facilities on non-major streets, and
- More public education for both cyclists and motorists.

PERSONAL CRASH EXPERIENCE

If you have been involved in a crash while riding your bike in the City of Dallas, please check the boxes below indicating who (or what else was involved).

(Since respondents checked more than one answer option, the total will add up to more than 100%.)

Total respondents for this question: 477

Answer Options	Response Percent
Other Cause (i.e. slippery surface, bollard, uneven pavement, train tracks, etc.)	56.8%
Motorist	32.9%
Bicyclist	18.7%
Pedestrian	9.4%
Total respondents that did not report a crash	977

Figure a.30. Crash experience

If you have been involved in a crash while riding your bike in the City of Dallas, please check one box below indicating the type of facility where the crash occurred.

Total respondents for this question: 479

Answer Options	Response Percent
Arterial street	38.6%
Residential street	30.7%
Trail	23.2%
Sidewalk	6.5%
Railroad track	1.0%
Total respondents that did not report a crash	977

Figure a.31. Crash experience location

DESTINATIONS IN NEED OF MORE BICYCLE PARKING

At which types of location would you like to see additional bicycle parking (racks or lockers) provided? Check all that apply.

(Since respondents checked more than one answer option, the total will add up to more than 100%.)

Total respondents for this question: 1,276

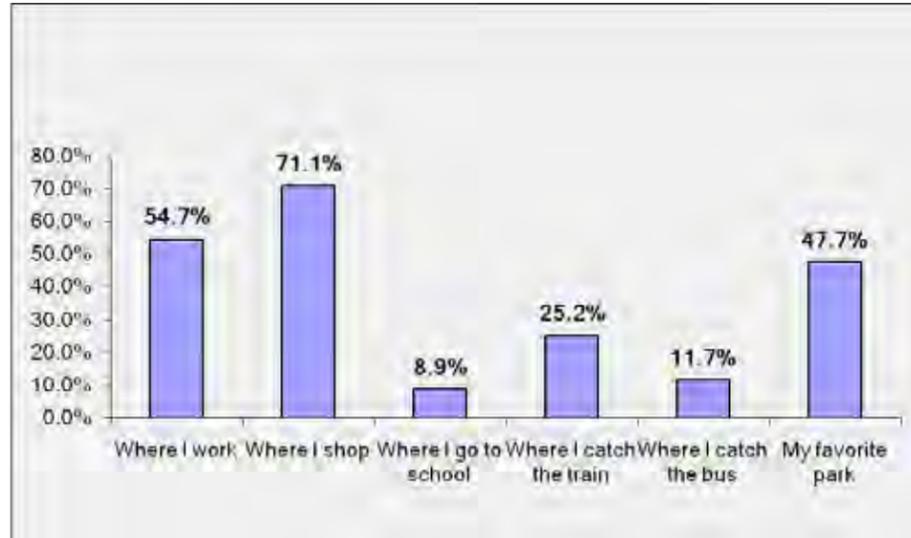


Figure a.32. Need for additional bicycle parking by location

DEMOGRAPHICS

Age

Total respondents for this question: 1,344

0-20	0.3%
21-45	56.0%
46-65	42.0%
66 and older	1.6%

Figure a.33. Age of survey responders

Gender

Total respondents for this question: 1,344

Male	69.6%
Female	30.4%

Figure a.34. Gender of survey responders

Are you currently a member of a bicycle related organization (e.g. bicycle club, bicycle advocacy group, etc.)?

Total respondents for this question: 1,342

Yes	38.5%
No	57.0%

Figure a.35. Bicycle organization memberships of survey responders

- Over 160 unique zip codes were represented by the survey.

A.5 COMMUNITY WALK

2011 DALLAS BIKE PLAN

Interactive Online Map (Community Walk): As part of the effort to solicit public input for the 2011 Dallas Bike Plan, an interactive online map was placed on the project web site for approximately seven weeks from May 27 to July 16, 2010. The public was invited to identify problem locations and make recommendations directly on a map of the City of Dallas. A total of 617 comments were received. The following is a summary of the comments, grouped by category and number of responses.

Category	Number of Comments
Route I would like to see improved for bicycles	151
Route I use frequently	66
Difficult intersection	65
Bad pavement	63
Traffic is uncomfortable	61
Short trail connection needed (cut through)	36
Missing connection	33
Bike crash location	31
Signal will not turn green for bicyclists	30
Bike parking needed or other bike amenities (end of trip facilities)	22
Street sweeping needed	16
Better access to rail station needed	15
Bridge improvement needed (existing or new)	14
I take bike on bus/rail (on & off points)	12
Dangerous drainage grate(s)	2
TOTAL:	617

Figure a.36. Interactive map results

These results were used to shape the 2011 Dallas Bike Plan in several ways:

- The Dallas Bikeway Network was revised to reflect route preferences,
- Difficult intersections (on the bikeway network) were analyzed and identified on the Dallas Bikeway Network map,
- Missing street and trail connections were added to the Dallas Bikeway Network, and
- Priority projects and policies recommended in the Plan (were updated to) reflect user preferences.

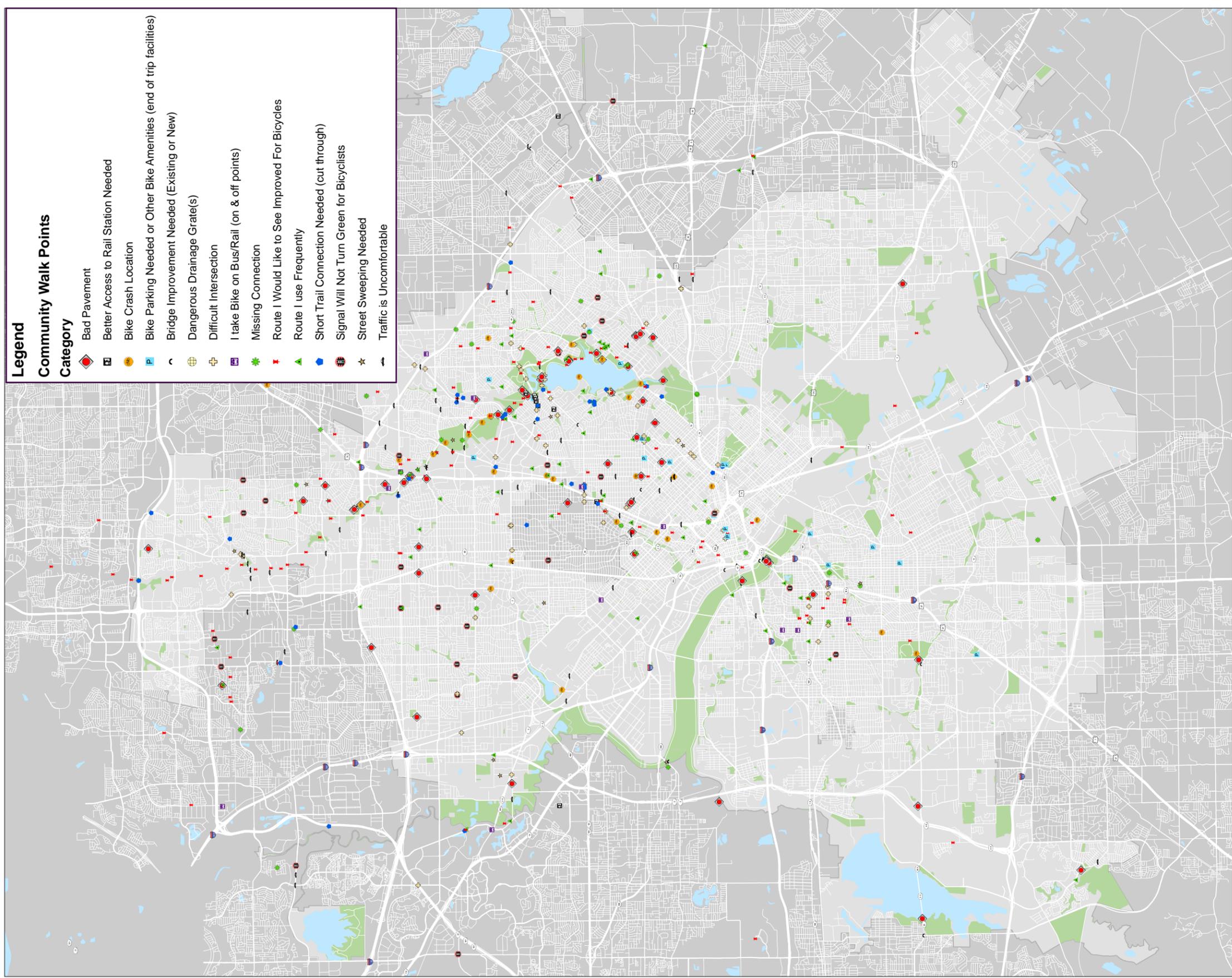


Figure a.37. Community Walk, public input locations

A.6 NEWSLETTERS

Starting with a list of stakeholders obtained from NCTCOG, the City of Dallas, and others, a database of key stakeholders, elected officials, general public, transportation leaders and anyone else with an interest of the Plan was developed and maintained. The database served as the mailing list for the Plan, and was updated with the names of anyone attending a public meeting or contacting the Plan team. Three newsletters regarding project progress, milestones, highlights, and upcoming events, were sent out to contacts listed in the database. Printed copies of the newsletters were sent to anyone requesting a mailed copy and City Council members distributed the newsletters through their contact lists. The newsletters were developed for the following time periods August-September 2010, November-December 2010, and March-April 2011. Copies of these three newsletters are provided on pages a.24 through a.27

2011 DALLAS BIKE PLAN Newsletter August - September 2010



Newsletter August-September 2010



OPEN HOUSE OVERFLOWS CITY COUNCIL CHAMBERS

On May 27, 2010 approximately 320 citizens participated in the 2011 Dallas Bike Plan Open House at Dallas City Hall. With Mayor Leppert and five City Council members in attendance, the Open House allowed the opportunity to provide feedback on how to improve and encourage bicycling within the City of Dallas and to its neighbors within the North Texas region. "Listening stations" were designed to solicit different kinds of community input. Feedback on the overall network and potential bicycle connections, and on location-based safety issues, was gathered using maps. Participants also helped to prioritize draft goal statements, and commented on bicycle education, access to transit and the Trinity River crossings. A street design exercise called "Tinker Streets" allowed people to draw a profile of the way they would like their own street to look.



Stakeholders provide input at a map station with the assistance of Bicycle Advisory Committee volunteers at City Hall.



Council Members Angela Hunt and Sheffield Kadane (Dallas Bicycle Policy Steering Committee Co-Chairs) introduce the 2011 Dallas Bike Plan process.

DALLAS BIKE PLAN GOALS

Input on Plan goals that was received through the Open House and via the project website (www.dallasbikeplan.org) will help shape the final Plan. At the Open House, attendees received four red dots at sign-in; attendees were asked to place the dots on their top priorities among a list of over 25 draft goals identified by the Plan Committees at the Goals and Objectives station.

This exercise revealed the top four goals are:

- Connectivity – Plan creates an interconnected bikeway system, and there are better routes to major destinations such as schools, parks, shopping, and other activity centers.
- Complete Streets – To create a more 'bicycle-friendly' Dallas, adopt a Complete Streets approach as one strategy to implement the Plan.
- Install bicycle facilities (e.g. bike lanes, shared-use lanes, cycle tracks, multi-use pathways, bike boxes, etc.) where appropriate, to help define the future Bikeway System network and to improve bicycle connections.
- Promote education and awareness for both motorists and bicyclists.



Attendees place red dots next to their top goals for the Plan at the Goals and Objectives station.

NETWORK ANALYSIS AND FIELDWORK

Following May's Open House, the planning team began developing the draft Dallas Bikeway System network. This draft network is based largely on community input, and is being vetted by City staff and the Bike Plan committees in coordination with concurrent planning efforts. July was devoted to field work including the systematic evaluation of over 450 miles of the proposed on-street portion of the overall Bikeway System network. This field data will be used to develop bicycle facility recommendations for street segments.

Figure a.38. Newsletter August-September 2010 (front)

NCTCOG SEES 2011 DALLAS BIKE PLAN AS MODEL FOR THE REGION

The North Central Texas Council of Governments (NCTCOG) intends to use the 2011 Dallas Bike Plan as part of a model being created for local jurisdictions within the North Central Texas region with respect to alternative transportation and bicycle planning. Standard sections from the document, including bicycle facility types and standards that are consistent with the most current and anticipated national guidelines, will be crafted into a regional prototype to guide local governments through the bicycle master plan process.

THREE COMMITTEES SUPPORT PLANNING

Three committees provide support and guidance for development of the 2011 Dallas Bike Plan. The Bicycle Advisory Committee consists of community members with an interest in improving bicycling conditions in Dallas. It is expected that this Committee will continue to exist beyond the anticipated adoption of the 2011 Dallas Bike Plan next Spring, providing guidance on Plan implementation and current bicycling issues.

The Bicycle Policy Steering Committee consists of decision makers who will be charged with adopting the Plan, reviewing and advancing relevant policy, and providing the regulatory and inter-agency framework for the Bike Plan's implementation.

The Project Review Committee is the technical committee comprised of agency staff from DART, TxDOT, Dallas County,

DISD, and various Departments within the City of Dallas, who will assist with implementation of the adopted Plan.

STAY INFORMED ON THE BIKE PLAN WEBSITE

The 2011 Dallas Bike Plan website (www.dallasbikeplan.org) is updated regularly and serves as a one-stop source for all project related activities and information. In addition to providing ongoing opportunities for input, the website will provide news and information on the project schedule, upcoming events, and educational materials. Other links include information on the Safe Routes to School Program and Complete Streets initiative.

For those who have yet to sign up to receive bicycle plan information by email or standard mail, please visit www.dallasbikeplan.org and click on "Join Contact List."

Be sure to visit the website regularly throughout the planning process to stay up to date on information pertaining to the development of the 2011 Dallas Bike Plan.

NEXT PUBLIC MEETING

The draft bicycle network plan will be available for review at the next Public Meeting, scheduled for September 23, 2010. Attendees will be encouraged to provide feedback on facilities proposed for the network plan. Visit our web site at www.dallasbikeplan.org for more details.



2011 Dallas Bike Plan
4140 Commerce Street
Suite 101
Dallas, Texas 75226



Figure a.39. Newsletter August-September 2010 (back)



INTEREST IN BIKE PLAN STILL STRONG AT SECOND PUBLIC MEETING

On Thursday, September 23, over 200 people participated in the second 2011 Dallas Bike Plan Public Meeting at City Hall. Council members Angela Hunt (District 14) and Sheffield Kadane (District 9) provided the welcome and words of support for the Plan. Peter Lagerwey provided an overview of the draft Bikeway System network recommendations, including over 550 miles of on-street facilities. After the presentation, participants were invited to review and comment on these recommendations laid out on maps showing the proposed network segments as well as the facility type for each. Other public feedback gained through separate stations dealt with project prioritization criteria and marketing and promotion ideas for the Plan's *Implementation Strategy*. Information on the Plan's vision, goals and objectives as well as educational materials were also available.

Review and comment on the draft bikeway recommendations at public feedback stations included a map of Dallas divided into four quadrants, a map of downtown Dallas, and maps of the Trinity Corridor. Other stations provided information on plan goals and objectives, education for bicyclists and motorists, project prioritization criteria and marketing and promotion.



INTERACTIVE MAPPING APPLICATION A SUCCESS

Between May 27 and July 16, the public provided information on a map of the City of Dallas through an interactive mapping application. A total of 617 comments were posted on a variety of issues ranging from frequently used routes to problem locations and connectivity needs. This input will affect the final plan in several ways:

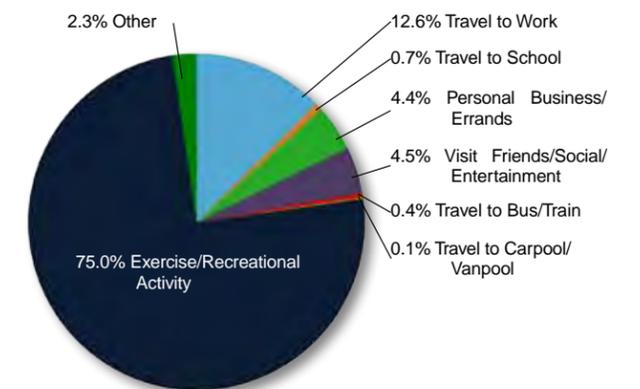
- Draft Bikeway System network recommendations were revised to reflect route preferences wherever they were

- deemed to be practical and possible
- Difficult intersections within the anticipated bicycle network were analyzed
- Connectivity gaps were addressed, and
- Projects to be identified in the Plan's *Implementation Strategy*.

SURVEY PROVIDES OPPORTUNITY FOR CITY-WIDE INPUT

A web-based, bilingual survey was made available on the project website (dallasbikeplan.org) from May 18 to July 11, which elicited over 1,400 responses. The survey results will help the project team describe existing conditions, opportunities and constraints, and develop project and policy recommendations in the Plan. The most frequently cited needs were for:

- Education for all travelers through on-road signage and other techniques to instruct users how to share the road
 - More bike lanes on major streets and shared lane markings on wide outside or curb lanes
 - Stronger bike connections to transit
 - Additional parking
 - More off-street facilities and on-street connections between them
- Nearly all respondents were ages 21 to 65; 42% of these between 46 to 65 years old. 30% of respondents were women.



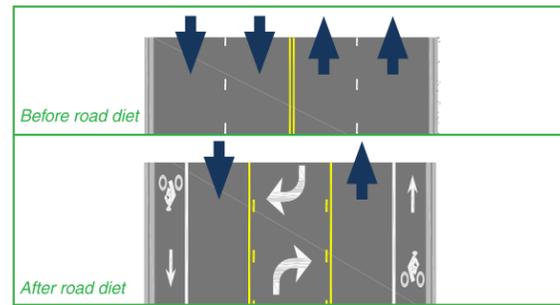
FIELD WORK

Three two-person teams conducted a feasibility analysis of over 550 miles of Dallas streets over a two-week period during the Summer of

Figure a.40. Newsletter November-December 2010 (front)

2010. Taking into account observed and recorded traffic volumes and existing roadway (curb-to-curb) widths, the field work teams identified 517 miles of roadway that could include context-appropriate bicycle facilities. Facility recommendations were identified for all areas and a variety of roadways within the City in order to serve transportation and recreational needs. As a result, the recommended network establishes inter-connected routes on a variety of street types, including arterials, collectors and local streets.

According to this analysis, there are many scenarios where the opportunity exists to install bicycle lanes or cycle tracks by re-allocating roadway space via a technique called a "road diet" (see graphic example right).



STAY INFORMED ON THE BIKE PLAN WEBSITE

The 2011 Dallas Bike Plan website (www.dallasbikeplan.org) serves as a one-stop source providing input on the Plan, getting info on Bike Plan and Dallas area bicycling activities, as well as downloading or viewing draft Bike Plan products. The website also provides news and information on the project schedule, and educational materials. Other links include information on the Safe Routes to School Program and the Complete Streets Initiative.

**NEXT PUBLIC MEETING -
THURSDAY, JANUARY 20, 2011
Dallas City Hall Flag Room (6E North)**

Review the revised network recommendation maps based on comments from the September Public Meeting and a full draft of the 2011 Dallas Bike Plan. Visit our web site at www.dallasbikeplan.org for more details on the agenda as the time gets near.

DRAFT BIKEWAY SYSTEM FACILITY RECOMMENDATIONS

Bikeway Type	Miles	Percentage
Bike lanes	157	27%
Shared lane markings	185	31%
Climbing lanes (bike lane on uphill side only)	3	0.5%
Paved shoulder	24	4%
Cycle track/buffered bike lane	90	15%
Multi-purpose path/wide sidewalks	58	10%
Further study needed	66	11%
TOTAL MILES	583	



2011 Dallas Bike Plan
4140 Commerce Street
Suite 101
Dallas, Texas 75226



Figure a.41. Newsletter November-December 2010 (back)



THE DALLAS BIKE PLAN NEARING COMPLETION

On Thursday, January 20th, 2011, approximately 160 people participated in the third and final Public Meeting for the 2011 Dallas Bike Plan held at City Hall. The Public Meeting provided an opportunity for participants to review a full draft of the Plan, and provide additional comments on the network recommendation maps which were revised following the September 23, 2010 Public Meeting. Council Members Angela Hunt (District 14), Sheffie Kadane (District 9), and Linda Koop (District 11) welcomed attendees, followed by a greeting from Andy Clark, President of the League of American Bicyclists (LAB). Max Kalhammer, the City's Project Manager, and Peter Lagerwey of Toole Design Group provided an overview of the Plan, including facility cross-section types, route signage, and the Plan's recommendations for programs, policies, and implementation. Following the presentation, Deputy Chiefs Michael Genovesi (Central Patrol Division) and Gloria Perez (Northeast Patrol Division) from the Dallas Police Department discussed education and enforcement as it relates to both motorists and bicyclists. Max Kalhammer then facilitated a question and answer session, after which attendees visited the meeting's public information and input stations.



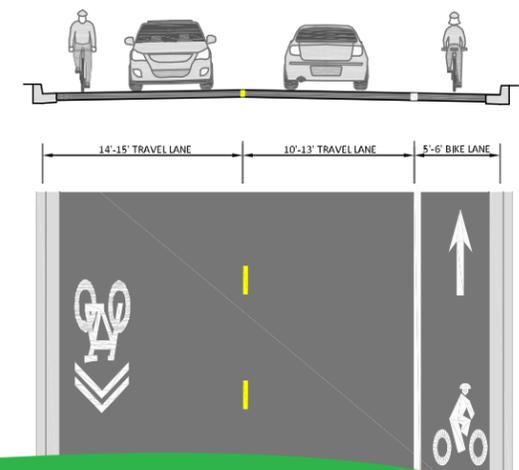
The public commented on bicycle network recommendation maps.



Example of directional signage

ATTENDEES HELP STRENGTHEN THE PLAN BY SHARING THEIR IDEAS AND COMMENTS

Attendees were invited to circulate among four information stations and discuss their ideas and share comments related to the Plan with the project team. These stations were focused on the Bikeway System network map with facility type and street type recommendations, the general Bikeway System implementation approach, the draft Plan document, and relevant City of Dallas and North Central Texas Council of Governments (NCTCOG) planning initiatives that promote bicycling and alternative transportation. Conversations were lively as attendees continued to provide constructive and informative feedback on the Plan.



Street profile of a climbing lane

Figure a.42. Newsletter March-April 2011 (front)

DALLAS AIMING TO BE A "BICYCLE FRIENDLY COMMUNITY"

The City of Dallas was honored to have Andy Clark, President of the League of American Bicyclists, to provide encouragement for the Bike Plan and information about the League's Bicycle Friendly Community (BFC) Program. The BFC Program provides incentives, hands-on assistance, and award recognition for communities that actively support bicycling. A BFC welcomes cyclists by providing safe accommodation for cycling and encouraging people to bike for transportation and recreation. The City of Dallas hopes to join the distinguished list of Bicycle Friendly Communities throughout the country, including Austin, San Antonio, Denver, Tulsa, Chicago, and many more.



STAY INFORMED ON THE BIKE PLAN WEBSITE

The 2011 Dallas Bike Plan website (www.dallasbikeplan.org) serves as a one-stop source for providing input on the Plan, getting info on Bike Plan and Dallas area bicycling activities, as well as downloading or viewing draft Bike Plan and educational materials. Other links include information on the Safe Routes to School Program and the national Complete Streets initiative.

NEXT STEPS

The draft 2011 Dallas Bike Plan is being revised based on comments received at the January 20, 2011 Public Meeting and via the City's website through comments recorded by the February 2011 deadline. The final version of the Plan document and relevant maps will be posted on the Bike Plan and City websites upon City Council adoption, anticipated in Spring of 2011.



2011 Dallas Bike Plan
4140 Commerce Street
Suite 101
Dallas, Texas 75226

A.7 PRESS COVERAGE

The 2011 Dallas Bike Plan process was covered by several local media outlets. The following section contains copies of that media coverage.

Figure a.43. Newsletter March -April 2011 (back)

Dallas Morning News, The (TX)

September 12, 2010

Blazing trails for the city MELISSA REPKO

As Peter Lagerwey stands at **the** side of a road and pencils street widths onto a clipboard, he envisions a much different Dallas.

A decade from now, he sees a vibrant **city** where more people pedal to grocery stores and to work, where bike racks line **the** front of coffee shops and restaurants, and where all kinds of cyclists - from **the** spandex-clad to **the** business-attired - share **the** road with lane-clogging SUVs.

For the 58-year-old urban planner from Seattle, bike and pedestrian paths mean more than paint and pavement. They build community.

His vision will result in **the** 2011 Dallas Bike Plan, revamping **the** 1985 version to increase connectivity between bike **trails** and on-street bike paths. **The city's** existing 365 miles of marked bike routes could ultimately double.

Lagerwey, a senior planner **for** Maryland-based Toole Design Group, is working on **the** \$375,000 plan **for the city** along with local consultants Bowman-Melton Associates Inc. and Kimley-Horn and Associates Inc. A \$300,000 grant from **the** North Central Texas Council of Governments kick-started **the** planning process.

Restriping roads and affixing traffic signs will cost \$30,000 a mile, Lagerwey estimates. In **the** end, Dallas wants to have up to 700 miles of bike routes.

But sticker shock may be a lesser challenge than building widespread support in a **city** where **the** car reigns.

"I can't go and do anything unless people are ready," Lagerwey said, "and I think Dallas is ready."

The benefits

Surrounded by gated properties and expansive lawns of a North Dallas neighborhood, Lagerwey is decidedly out of place. As he surveys a potential bike path, he sports an orange construction vest over a "Life Is Good" T-shirt. His white-gray curls spill out of a baseball cap that provides shade on a 12-hour summer day.

Every aspect of **the** streetscape is a clue. Speed bumps mean high traffic. Multiple driveways mean numerous hazards. And quick-changing stoplights mean treacherous intersections **for** cyclists, who need time to turn a corner or cruise through a crossroad.

Beyond **the** landscape, Lagerwey talks about **the** impact of a growing cyclist and pedestrian population. "Communities that have bicycling and walking have healthier people, happier people," he says.

Bike paths come with an economic benefit, he adds: "I've always noticed that where there's a lot of bicycling and walking, there's a lot of reinvestment."

Lagerwey's frequent references to safety and livability reflect his background as a community activist. Before he began his career in urban planning, he worked **for** Volunteers in Service to America in Anchorage, Alaska, and coordinated neighborhood associations in Grand Rapids, Mich.

He grew up hearing his father's whimsical stories about delivering groceries by bicycle in **the** Netherlands.

And road trips with his family of "hikers, campers and climbers" - Mom, Dad, six kids and Grandma - inspired his sense of adventure and love **for the** Pacific Northwest.

While his graduate school classmates studied cul-de-sacs and highways, Lagerwey pursued independent study, dreaming up path ideas and reading about one of **the** first comprehensive bike plans in Geelong, Australia.

Whether in Seattle, Dallas or elsewhere, he frequents locally owned businesses rather than chains. Here, he stays at Belmont Hotel - a trendy independent with one of **the** best views of **the city**. His crumpled-up list of recommended restaurants and bars reads like that of a microbrew enthusiast. And he admits Dallas brewpubs rank among his favorite attractions.

The obstacles

When Lagerwey began as Seattle's bike coordinator in 1984, he says it wasn't all that different from today's Dallas. There were bike **trails**, he says, but few routes that made work commutes easy and safe. Along with his day job, he traveled from **city** to **city**, spreading **the** gospel of bike and pedestrian planning.

Back then, few **cities** were willing to be pioneers in bike planning. Most held back and watched.

Anticipating fast growth, Dallas' roads were built with many lanes. Today, some streets have unneeded lanes because traffic has been diverted to highways. To Lagerwey, that's space that can be transformed into an on-street bike lane with a stripe of paint or a concrete barrier.

He shrugs off Texas heat as a formidable challenge. To cope with sweltering temperatures, **the city** could consider tax breaks or other incentives **for** workplaces that build showers and locker rooms, which has helped in other **cities**, he says. Every **city** has its own geographic or weather-related obstacles: San Francisco is a **city** of hills. In Seattle, it rains often, sometimes **for** weeks at a time.

Lagerwey is used to working with resistance, even in **cities** considered early adopters of alternate transportation.

One Seattle bank wrote him a letter describing a bike rack as a security risk and warning him not to put one in front of its building. Five years later, **the** bank complained about being skipped over.

The story reflects Lagerwey's philosophy, a belief that in time, people will come around. Change takes patience. It's a Zen that Lagerwey has mastered.

His ability to overcome naysaying and build coalitions between large and diverse groups is why Jennifer Toole, president of Toole Design Group, says she chose Lagerwey **for the** Dallas project.

"He is just really good at public involvement," she said, calling him a longtime mentor. "I was always impressed with his ability to get people working together."

"If there was going to be someone who could be **the** face of this project," said Dallas bike coordinator Max Kalhammer, "it had to be someone like him."

Kalhammer said **the** bike plan should roll out over **the** next 10 years or a little longer - depending on **city** finances. Projects will spread from supportive neighborhoods to skeptical ones, using **the** first few to energize **the** next.

"You don't go to your biggest challenge first," Lagerwey says. "You answer **the** critics by proving them wrong."

Figure a.44. Repko, M. (2010, September 12). Blazing trails for the city. *Dallas Morning News*. Retrieved from <http://nl.newsbank.com>

Emerging culture

After a sweaty day of fieldwork, Lagerwey and his crew ditch their clipboards and head to Oak Cliff - **the** future site of one of **the** plan's pilot projects.

For one July evening, Bishop Avenue is a street in Paris. Eager onlookers line up near bocce ball courts of granite and sand, and an expected turnout of a few hundred swells to a crowd of 1,500.

Lagerwey spends **the** Bastille Day celebration like a usual evening, eating at a neighborhood haunt and talking to locals about biking.

The event's sponsor, Bike Friendly Oak Cliff, might be **the** best representation of how bike culture can emerge, and thrive, in Dallas.

"They understand pedestrian and bike paths are **the** key ingredients to adding life and community to an area," he says.

The Oak Cliff advocacy group was born out of **the** discontent of its founding members.

Co-founder Jason Roberts, 36 and a father of two, marveled at **cities** like Portland and wondered why bike culture didn't exist in Dallas.

Seeking a small-town feel, he joined forces with other locals in 2008 to help improve **the** neighborhood, throwing community events, hosting bike rides, and partnering with nearby businesses.

"Either we move or we start making changes," Roberts remembers thinking. "We have to create **the** kind of **city** we want to grow old in, and we need to create **the city** we want our kids to grow up in."

With **the** national perspective of Lagerwey, **the** time is ripe, Roberts says - far different from 2008. That year Dallas was ranked **the** nation's worst bicycling **city** by Bicycling magazine, and **the city** ousted its bike coordinator, who opposed building bike **trails**.

"It's night and day," Roberts says. Lagerwey "has allowed everyone to have a voice at **the** table."

A **city** priority?

Warren Casteel, 56, has been similarly impressed by Lagerwey. But Casteel, a member of **the** bike plan's citizen advisory board, questions whether biking is a **city** priority.

He looks no further than **the** Margaret Hunt Hill Bridge over **the** Trinity River. **The** \$119 million bridge - one of **the** design projects intended to put Dallas on **the** map - will carry six lanes of car traffic, but no bikes.

"Dallas will come out of this [drafting process] with a literally world-class bicycle plan," Casteel said. "If it will be funded and how it will be funded, I don't know."

In early December, Lagerwey will hand over his suggestions to **the city** and cross his fingers. It will take years to see if **the** plan is put in place and if new routes coax Dallasites behind handlebars.

Years from now, once his plan is a reality, Lagerwey says he'll come back to Dallas. He imagines seeing a bike-friendly **city** he helped create, once mere sketches on a surveyor's page. Perhaps he'll pull his road bike to **the** side of a **trail** to watch a family bicycle by.

The greatest reward, he says, is to see bike paths in use.

AT A GLANCE

The Lagerwey file

Age: 58

Hometown: Seattle

Job: Senior planner **for** Toole Design Group.

Education: Bachelor's degree in secondary education, Calvin College, Grand Rapids, Mich., 1975; master's degree in urban planning, University of Michigan, 1981.

Family: Married to wife, Pat, who is also a cyclist. They have two children, Pieter, 27, and Claire, 24.

Notable:

·Born in Grand Rapids but spent part of his childhood in Toronto and Minnesota.

·One of his favorite bikes is a tandem bike, which he rides with his wife.

·Participates annually in a bike ride from Seattle to Portland, which is about 203 miles.

·After visiting **the** Pacific Northwest on a family vacation in middle school, he wrote in a school paper that he wanted to live in Seattle when he grew up.

·Big fan of microbrews and Tex-Mex restaurants in Dallas.

·Received National Environmental Award from former President George H.W. Bush in 1991 **for** creation of Seattle's urban **trails**.

Learn about **the** plan

Dallas residents who want to hear more about **the** bike plan can attend an open forum later this month.

When: 5 to 8 p.m. Sept. 23

Where: Dallas **City** Hall, L1FN conference center

DigitalExtra

ONLINE CHAT: Ask Peter Lagerwey questions and share your thoughts in a live chat hosted by reporter Melissa Repko at 1 p.m. Tuesday.

dallasnews.com

WATCH a video about what it's like to be a Dallas bicyclist.

dallasnews.com/video

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Dallas to give update on bike plan

By **JOE SIMNACHER**
Staff Writer
jsimnacher@dallasnews.com

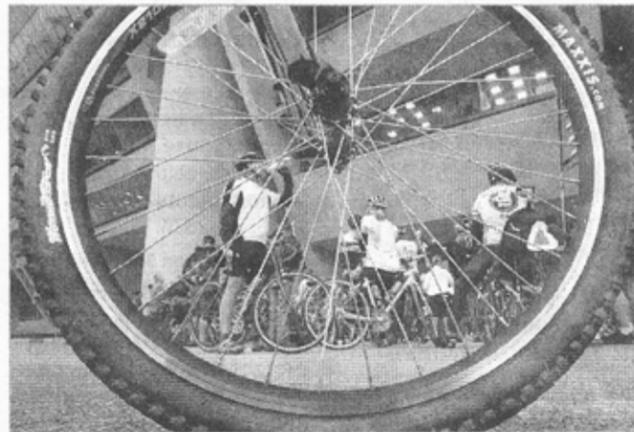
Dallas will update the public on its 2011 bike plan, as well as seek additional input, at City Hall today.

The public meeting will begin at 5 p.m. in the L1-FN conference center. A proposed bikeway network will be unveiled at 5:30.

City and regional planners have worked through the summer revamping Dallas' quarter-century-old bike plan in an effort to make North Texas more bicycle-friendly.

The final bike plan should be ready for approval in December, said Max Kalhammer, a Dallas city planner.

The revised plan is expected to become a template for cities across North Texas to create a regional veloweb — more than 600 miles of routes



FILE 2009/Staff Photo

The public can attend a meeting at 5 p.m. today at Dallas City Hall to hear about the city's 2011 bike plan.

that one day could honeycomb the area.

Transportation planners across the country want more people to ride bicycles to help solve a host of problems, from relieving pressure on increasingly crowded roadways to

improving public health.

Dallas officials and committees will draft a proposal in October.

"So far it's about on track with what we expected," Kalhammer said. "We're not cutting any corners."

First draft of bike plan unveiled

By **MELISSA REPKO**
Staff Writer
mrepko@dallasnews.com

The city of Dallas unveiled the first version of the 2011 Dallas Bike Plan on Thursday night.

About 200 people attended a meeting at City Hall to hear an update on the plan, which would revamp the city's network of bike paths. If adopted by the City Council, the bike plan will be rolled out over about 10 years.

The draft unveiled Thursday calls for expanding the city's system of bike paths to include 757 on-road miles and 418 off-road miles.

Lead planner Peter Lagerwey of Maryland-based Toole Design Group explained the draft and fielded questions from the audience.

Lagerwey used slides to explain the different types of on-street bike lanes, discussing the advantages of each one, depending on its location and street traffic. He explained the benefits of turning four-lane roads that have little car traffic into two-lane roads with bike lanes: The change would decrease speeding, accidents and neighborhood noise, benefits that are popular with cyclists and neighborhoods alike, he said.

Lagerwey urged attendees to think about prioritizing certain expenses — such as bridges that connect bike paths — since the city's budget is tight.

Lagerwey and his team finished collecting data and examining more than 500 miles of Dallas roads, turning their observations into the draft.

Now, with suggestions from the public, that draft will be revised for a final version.

"A paper product is not an end in itself," Lagerwey told the audience. "The only reason why we're doing this project is so it can be implemented."

Lagerwey and Max Kalhammer, Dallas bike coordinator, invited attendees to write suggestions onto large copies of the map or fill out comment forms. The city is collecting suggestions through mid-October. Toole Design Group will review and incorporate them into a final version of the plan, which will be presented to the public in early December.

The \$375,000 drafting process has been funded mostly by the North Central Texas Council of Governments.

Final meeting held on bike plan

By **MELISSA REPKO**
Staff Writer
mrepko@dallasnews.com

Bike activists attended the third and final meeting about the 2011 Dallas Bike Plan on Thursday night.

In front of a nearly packed City Council chamber, Peter Lagerwey of Toole Design Group presented the bike plan he helped design. If the council adopts and funds it, the plan would cover 770 on-street and 418 off-street miles of bike lanes. It would be rolled out over 10 years as a revision of the 1985 city bike plan and a way to make bicycling a more viable transportation option.

The draft was funded by the North Central Texas Council of Governments and the city as a template for other bike plans in the Dallas-Fort Worth area.

Thursday's presentation formally concluded the drafting process, though comments can still be submitted. The council is scheduled to vote on the plan April 13.

Council member Angela Hunt, an advocate of the project, said she hopes

the proposal is "a living plan that doesn't collect dust."

"We're going to transform this city," she said. "Ten years from now, it's going to be a different one than you see today."

Demonstration projects may begin as soon as this summer, said Max Kalhammer, the city's bike coordinator. Early projects will probably include Bishop Avenue, several streets in West Dallas, and the connection between the Katy Trail and Santa Fe Trail.

Lagerwey reviewed suggestions to raise the plan's awareness and success, such as bike rental programs, a Safe Routes to School program and a maintenance hotline.

By successfully implementing the plan, Dallas can send a positive message to the rest of the nation, said Andy Clark, president of the Washington, D.C.-based League of American Bicyclists.

"People have the idea that Dallas is the quintessential automobile city and it's huge and it's sprawling," he said. "You are going to help set the standard for a new generation of cities."

Figure a.45. Simnacher, J. (2010, September 23). Dallas to give update on bike plan. *Dallas Morning News*.

Figure a.46. Repko, M. (2010, September 24). First draft of the bike plan unveiled. *Dallas Morning News*.

Figure a.47. Repko, M. (2011, January 21). Final meeting held on bike plan. *Dallas Morning News*.

5 things to watch

DALLAS

Officials to go over 2011 bike plan maps

1 The third and final public meeting to discuss the proposed 2011 Dallas Bike Plan is scheduled for 5:30 p.m. today in the flag room and council chambers at Dallas City Hall.

Officials will go over the plan's route maps, discuss its main recommendations and talk about safety for cyclists and motorists. Andy Clark, president of the League of American Bicyclists, is also scheduled to speak. If approved by the City Council, the plan would take effect this spring and be rolled out over about 10 years. Follow developments at dallasnews.com.

BIKE PLAN ASPIRES TO GREEN UP CITY TRANSPORTATION

The City of Dallas has a 1,000 lane-mile, on-street bike route system for commuting and alternative transportation use that covers the entire city. The bike routes were selected by local cyclists as the best way for bicyclists to get around town for work, school, and errands. (Check out the City's "Urban Cycling Tips" at GreenDallas.net/pdfs/cycling_tips.pdf.)

Dallas is now in the process of revamping its quarter-century-old Bike Plan with the goal of making it easier to convert from four-wheel transportation



to two wheels. Recently, an open house was held to solicit public input and hear from the many and diverse constituents regarding the various "bicycle-friendly" options the City is weighing. "We have a real opportunity to guide the development of, and encourage, cycling in Dallas if we create a good plan for our city," says Angela Hunt, Dallas City Council member and co-chair of the Bike Plan revision effort. Whatever decisions Dallas makes for its 2011 Bike Plan will have a wide impact.

For more information on biking/cycling in Dallas, contact PM Summer, Transportation Alternatives Coordinator/Effective Cycling Instructor #349, City of Dallas, at 214-670-4039.

Figure a.48. (2011, January 20). 5 things to watch. *Dallas Morning News*.

Figure a.49. (2010 July). Bike Plan Aspires to Green Up City Transportation. *Natural Awakenings Dallas*.

APPENDIX B



B.1 DALLAS BIKEWAY SYSTEM MASTER PLAN PROJECT PRIORITIZATION CRITERIA FOR GENERAL IMPLEMENTATION PHASES/CATEGORIES

PRINCIPLE CRITERION: BUILDS THE DALLAS BIKEWAY SYSTEM

A minimum number of “baseline” points will be allocated to a project which provides for the initial implementation of a portion of the Dallas Bikeway System.

PRIORITIZATION CRITERIA

The criteria in the following tables have been identified in order to prioritize projects meeting the principle criterion. Input from the public and the three bike plan committees on these criteria were used as guidance for assigning their relative weight and applying them systematically to establish and maintain project priorities in the Plan’s implementation strategy. Figure b.1 portrays the results of the weighting of the general prioritization criteria determined by assigning a number 1 through 5 for each criteria, with 1 being the least important and 5 being the most important. Figure b.2 is a copy of the prioritization criteria hand-out provided at the first public meeting. Figure b.3 portrays the prioritization criteria results.

Criteria	Maximum Weighting
Part of existing project	16
City council priorities key focus area	15
Funding secured	10
Proximity to dense residential land use	10
Proximity to city bike share program station	10
Safety	10
Connection to rail transit	10
Linkage to an existing or soon-to-be operational link	4
Destination	4
Barrier crossing	4
Mobility improvement	4
Other intermodal	3
Total	100

Figure b.1. Prioritization criteria

Weight	General Criterion	Description
1 5 ○○○○○	Bikeway system linkages	Does a project expand existing or soon-to-be operational portions of the bikeway system?
1 5 ○○○○○	Barrier crossings	Does a project provide a connection across natural barriers or “urban edges”, such as the Trinity River or a freeway?
1 5 ○○○○○	Connection to rail transit	Does a project connect to a DART Light Rail Transit (LRT) station or a TRE commuter rail station?
1 5 ○○○○○	Other intermodal connections	Does a project connect to DART bus transfer stations and DART bus stops?
1 5 ○○○○○	Addresses safety concerns	Does a project have the potential to reduce recurring conflicts that pose a danger, and/or the severity and frequency of crashes?
1 5 ○○○○○	Mobility improvement	Does a project provide a facility where it will be used by a large number of cyclists (meets a higher demand)?
1 5 ○○○○○	Residential land use	Does a project occur in a strictly single-family residential area, a medium density multi-family residential area, or in a high-density multi-family residential area?
1 5 ○○○○○	Access to destinations	Does a project access a school, university, park or open space, or a major employment centers?

Figure b.2.Prioritization criteria weighted scale

General Criterion	Description	Avg. Weight Bike Plan Committees (14)	Avg. Weight Public (63)	Avg. Weight Total (77)
Addresses safety concerns	Does a project have the potential to reduce recurring conflicts that pose a danger, and/or the severity and frequency of crashes?	4.07	4.32	4.27
Bikeway system linkages	Does a project expand existing or soon-to-be operational portions of the bikeway system?	3.29	4.29	4.10
Access to destinations	Does a project access a school, university, park or open space, or a major employment centers?	3.93	4.24	4.18
Barrier crossings	Does a project provide a connection across natural barriers or “urban edges”, such as the Trinity River or a freeway?	4.29	4.11	4.14
Connection to rail transit	Does a project connect to a DART Light Rail Transit (LRT) station or a TRE commuter rail station?	3.50	4.00	3.91
Mobility improvement	Does a project provide a facility where it will be used by a large number of cyclists (meets a higher demand)?	3.64	3.86	3.82
Other intermodal connections	Does a project connect to DART bus transfer stations and DART bus stops?	2.93	3.21	3.16

Figure b.3.Prioritization criteria results

Figure b.4.

B.2 FUNDING

FUNDING IMPLICATIONS

Figure b.4 Outlines the cost of new facilities that should be coordinated with annual work plan goals for installation of new facilities. The annual maintenance budget will need to be increased annually as new facilities are installed.

Note: The estimated costs on the following chart have been calculated using USD as of April 2011, these numbers do not account for inflation/ deflation or other economic effects on prices.

ON-STREET FACILITIES	FACILITY UNIT COST (per mile)	CALCULATION	NOTES
Bike lanes			
Repave	\$19,300.00	Facility Unit Cost = \$0.34 per linear foot * 5,280 feet * 2 lines * 2 sides + \$160 per bike and arrow * 30 bike and arrow per mile * 2 sides + \$250 per sign * 10 signs per mile	Assumes pavement costs are not specific to the bicycle improvement. Assumes 2 bicycle lane lines and 30 bike and arrow symbols per mile are added on each side of the roadway to create the bicycle lane. Assumes lane lines will be less than 5,000 feet in length. \$160 per bike and arrow symbol includes the material, construction, and design costs. Assumes that an average of 10 regulatory or warning signs will be added per mile.
Grind, 2-lane road	\$24,600.00	Facility Unit Cost = \$1 per linear foot * 5,280 feet + \$0.34 per linear foot * 5,280 feet * 2 lines * 2 sides + \$160 per bike and arrow * 30 bike and arrow per mile * 2 sides + \$250 per sign * 10 signs per mile	Assumes 1 lane line will be removed. Assumes 2 bicycle lane lines and 30 bike and arrow symbols per mile are added on each side of the roadway to create the bicycle lane. Assumes lane lines will be less than 5,000 feet in length. \$160 per bike and arrow symbol includes the material, construction, and design costs. Assumes that an average of 10 regulatory or warning signs will be added per mile.
Grind, 4-lane road	\$29,800.00	Facility Unit Cost = \$1 per linear foot * 5,280 feet * 2 lines + \$0.34 per linear foot * 5,280 feet * 2 lines * 2 sides + \$160 per bike and arrow * 30 bike and arrow per mile * 2 sides + \$250 per sign * 10 signs per mile; Design Unit Cost = [\$1 per linear foot * 5,280 feet * 2 lines] * 0.15 + [\$3 per linear foot * 5,280 feet * 2 lines * 2 sides] * 0.15 + [\$250 per sign * 10 signs per mile] * 0.30	Assumes 2 lane lines will be removed. Assumes 2 bicycle lane lines and 30 bike and arrow symbols per mile are added on each side of the roadway to create the bicycle lane. Assumes lane lines will be less than 5,000 feet in length. \$160 per bike and arrow symbol includes the material, construction, and design costs. Grinding and adding bicycle lanes to a two-lane roadway with a center-turn lane is included in this category. Assumes that an average of 10 regulatory or warning signs will be added per mile.
Stripe, add markings	\$19,300.00	Facility Unit Cost = \$0.34 per linear foot * 5,280 feet * 2 lines * 2 sides + \$160 per bike and arrow * 30 bike and arrow per mile * 2 sides + \$250 per sign * 10 signs per mile; Design Unit Cost = [\$3 per linear foot * 5,280 feet * 2 lines * 2 sides] * 0.15 + [\$250 per sign * 10 signs per mile] * 0.30	Assumes 2 bicycle lane lines and 30 bike and arrow symbols per mile are added on each side of the roadway to create the bicycle lane. Assumes lane lines will be less than 5,000 feet in length. \$160 per bike and arrow symbol includes the material, construction, and design costs. Assumes that an average of 10 regulatory or warning signs will be added per mile.
Road diet 4- to 3-lane	\$35,100.00	Facility Unit Cost = \$1 per linear foot * 5,280 feet * 3 lines + \$0.34 per linear foot * 5,280 feet * 2 lines * 2 sides + \$160 per bike and arrow * 30 bike and arrow per mile * 2 sides + \$250 per sign * 10 signs per mile	Assumes that 3 lane lines will be removed. Assumes 2 bicycle lane lines and 30 bike and arrow symbols per mile are added on each side of the roadway to create the bicycle lane. Assumes lane lines will be less than 5,000 feet in length. \$160 per bike and arrow symbol includes the material, construction, and design costs. Assumes that an average of 10 regulatory or warning signs will be added per mile.
Shared lane markings			
Shared laned markings	\$14,500.00	Facility Unit Cost = \$200 per shared lane marking * 30 shared lane markings per mile * 2 sides + \$250 per sign * 10 signs per mile	Assumes 30 shared lane marking symbols per mile are added on each side of the roadway to create the shared lane pavement marking facility. \$200 per shared lane marking includes the material, construction, and design costs. Assumes that an average of 10 regulatory or warning signs will be added per mile.
Repave	\$14,500.00	Facility Unit Cost = \$200 per shared lane marking * 30 shared lane markings per mile * 2 sides + \$250 per sign * 10 signs per mile	Assumes pavement costs are not specific to the bicycle improvement; design cost only. Assumes 30 shared lane marking symbols per mile are added on each side of the roadway to create the shared lane pavement marking facility. \$200 per shared lane marking includes the material, construction, and design costs. Assumes that an average of 10 regulatory or warning signs will be added per mile.
Grind, 2-lane road	\$19,800.00	Facility Unit Cost = \$1 per linear foot * 5,280 feet + \$200 per shared lane marking * 30 shared lane markings per mile * 2 sides + \$250 per sign * 10 signs per mile	Assumes 1 lane line will be removed. Assumes 30 shared lane marking symbols per mile are added on each side of the roadway to create the shared lane pavement marking facility. \$200 per shared lane marking includes the material, construction, and design costs. Assumes that an average of 10 regulatory or warning signs will be added per mile.
Grind, 4-lane road	\$30,300.00	Facility Unit Cost = \$1 per linear foot * 5,280 feet * 3 lines + \$200 per shared lane marking * 30 shared lane markings per mile * 2 sides + \$250 per sign * 10 signs per mile	Assumes 3 lane lines will be removed. Assumes 30 shared lane marking symbols per mile are added on each side of the roadway to create the shared lane pavement marking facility. \$200 per shared lane marking includes the material, construction, and design costs. Assumes that an average of 10 regulatory or warning signs will be added per mile.
Stripe, add markings	\$14,500.00	Facility Unit Cost = \$200 per shared lane marking * 30 shared lane markings per mile * 2 sides + \$250 per sign * 10 signs per mile	Assumes 30 shared lane marking symbols per mile are added on each side of the roadway to create the shared lane pavement marking facility. \$200 per shared lane marking includes the material, construction, and design costs. Assumes that an average of 10 regulatory or warning signs will be added per mile.
Climbing lanes			
Repave	\$16,890.00	Facility Unit Cost = \$0.34 per linear foot * 5,280 feet * 2 lines + \$160 per bike and arrow * 30 bike and arrow per mile + \$200 per shared lane marking * 30 shared lane markings per mile + \$250 per sign * 10 signs per mile	Assumes pavement costs are not specific to the bicycle improvement; design cost only. Assumes 2 bicycle lane lines and 30 bike and arrow symbols per mile are added on one side of the roadway and that 30 shared lane marking symbols per mile will be added on the other side of the roadway to create the climbing lane facility. Assumes lane lines will be less than 5,000 feet in length. \$160 per bike and arrow symbol includes the material, construction, and design costs. \$200 per shared lane marking includes the material, construction, and design costs. Assumes that an average of 10 regulatory or warning signs will be added per mile.
Grind, 2-lane road	\$22,170.40	Facility Unit Cost = \$1 per linear foot * 5,280 feet + \$0.34 per linear foot * 5,280 feet * 2 lines + \$160 per bike and arrow * 30 bike and arrow per mile + \$200 per shared lane marking * 30 shared lane markings per mile + \$250 per sign * 10 signs per mile	Assumes 1 lane line will be removed. Assumes 2 bicycle lane lines and 30 bike and arrow symbols per mile are added on one side of the roadway and that 30 shared lane marking symbols per mile will be added on the other side of the roadway to create the climbing lane facility. Assumes lane lines will be less than 5,000 feet in length. \$160 per bike and arrow symbol includes the material, construction, and design costs. \$200 per shared lane marking includes the material, construction, and design costs. Assumes that an average of 10 regulatory or warning signs will be added per mile.

Figure b.4 Funding Implications: Funding for new facilities should be coordinated with annual work plan goals for installation of new facilities. The annual maintenance budget will need to be increased annually as new facilities are installed.

ON-STREET FACILITIES	FACILITY UNIT COST (per mile)	CALCULATION	NOTES
Stripe, add markings	\$16,900.00	Facility Unit Cost = \$0.34 per linear foot * 5,280 feet * 2 lines + \$160 per bike and arrow * 30 bike and arrow per mile + \$200 per shared lane marking * 30 shared lane markings per mile + \$250 per sign * 10 signs per mile	Assumes 2 bicycle lane lines and 30 bike and arrow symbols per mile are added on one side of the roadway and that 30 shared lane marking symbols per mile will be added on the other side of the roadway to create the climbing lane facility. Assumes lane lines will be less than 5,000 feet in length. \$160 per bike and arrow symbol includes the material, construction, and design costs. \$200 per shared lane marking includes the material, construction, and design costs. Assumes that an average of 10 regulatory or warning signs will be added per mile.
Cycle track	\$671,680.00	Facility Unit Cost = 9 bike and arrow symbols per mile*\$160+\$190 per 3-foot section*1,760	Assumes a one-way cycle track both sides of street with 9 bike and arrow symbols per mile and continuous quick curb. If drainage work required add 50%. If new signal heads and timing required add 20%.
Buffered bike lane	\$45,926.40	Facility Unit Cost = 264 flex post bollards per mile*2 sides*\$50 + (2 lines*5,280*\$0.34)+(1,056 LF diagonal lines*2*\$3)+(30 bike and arrow per mile*\$160)	Assumes 20-foot spacing of flex post bollards, a 24" diagonal stripe every 10 feet between two continuous parallel lines both sides of street, 30 bike and arrow symbols per mile both sides.
Paved shoulder	\$2,323,200.00	Facility Unit Cost = \$20.00 per linear foot*22*5,280, includes a 25% contingency	Assumes earthwork (4 feet width, 2 feet depth), aggregate base (4 feet width, 1 foot depth), asphalt surface course (4 feet width, 0.125 depth), asphalt base courses (4 feet width, 0.5 depth), thermoplastic pavement markings (2 lines entire length) plus 5% for landscaping, 10% for drainage and E&S, 5% for traffic maintenance, 10% for utility adjustment.
Other Facility Costs			
Install full traffic signal	\$200,000.00	(estimate of unit cost)	Assumes that the full cost of the traffic signal is applied as a bicycle facility improvement (no cost shared by pedestrian, transit, motor vehicle, or other budgets).
Install pedestrian crossing signal	\$90,000.00	(estimate of unit cost)	Assumes that the full cost of the pedestrian crossing signal is applied as a bicycle facility improvement (no cost shared by pedestrian budgets).
Install pedestrian crossing island	\$40,000.00	(estimate of unit cost)	Assumes that two 11' by 10' islands and signs will be provided at each intersection, and that the full cost of the pedestrian crossing islands will be applied as a bicycle improvement (no cost shared by pedestrian budgets).
Upgrade existing pedestrian crossing signal to accommodate bicycles	\$12,000.00	(estimate of unit cost)	Assumes 4 special-order bicycle traffic signal heads will be needed at the intersection.
Signs	\$250.00	(estimate of unit cost)	Typically up to 20 signs per mile are installed on each side of trunk bicycle routes (includes signs along the bicycle route and signs to direct bicyclists to and from nearby destinations).
Bike racks	\$300.00	(estimate of unit cost)	Typically up to three racks per block in commercial areas.
Calibrate bicycle detection at traffic signals (on-street facilities)	\$100.00 per approach	(estimate of unit cost)	Assumes four approaches per intersection calibrated.
Maintenance Costs			
Replace signs (on-street facilities)	\$5,000.00	Facility Unit Cost = \$250.00 per sign; 20 signs per mile	Assumes 20 regulatory, warning, wayfinding signs per mile at \$250 per sign. Every 7 to 10 years.
Sweep bicycle lanes and other on-road facilities	\$1,000.00	Facility Unit Cost = \$1,000 per mile	Assumes that spot sweeping after major rain or snow/ice storms and sweeping of bicycle lanes two times per year averages \$1,000 per mile. The cost is based on the number of on-road bicycle facility network miles that are complete. Typically 2 to 4 times per year as needed.
Climbing lanes	\$12,595.20	Facility Unit Cost = \$0.34 per linear foot * 5,280 feet * 1 line + \$160 per marking * 30 markings per mile + \$200 per shared lane marking * 30 shared lane markings per mile	Every 2 to 4 years as needed.
Shared laned markings	\$12,000.00	Facility Unit Cost = \$200 per shared lane marking * 30 shared lane markings per mile * 2 sides	Every 2 to 4 years as needed.
Bicycle lanes	\$13,190.40	Facility Unit Cost = \$0.34 per linear foot * 5,280 feet * 1 lines * 2 sides + \$160 per marking * 30 markings per mile * 2 sides	Every 2 to 4 years as needed.
Cycle track	\$1,440.00	Facility Unit Cost = 9 signs *\$160 per sign	Assumes 9 bike and arrow symbols per mile*\$160. Every 2 to 4 years as needed.
Buffered bike lane	\$14,726.40	Facility Unit Cost = \$0.34 per linear foot*5,280*2 lines+1,056 LF diagonal lines*2 sides*\$3 per linear foot +30 bike and arrow per mile*\$160	Every 2 to 4 years as needed.

Global Assumptions

- 1) Cost calculations assume that bicycle facility improvements are made on both sides of the street. Costs are generally over-estimated for the small portion of recommendations on one-way streets.
- 2) Cost estimates do not include design unless specifically stated in assumptions. Design costs, which includes construction planning, public process, facility design, and other background work required to implement the project, can generally be estimated at 12% of the facility construction cost. More controversial projects may have higher design cost.
- 3) Cost estimates do not include contingency costs, which typically are estimated at 20 to 25% of the construction costs.
- 4) Thermoplastic is assumed for all roadway markings.

Figure b.4 continued.

