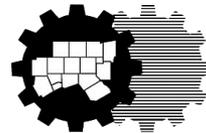


Vision North Texas Regional Summit

Environment and Infrastructure Session



October 28, 2011

Arlington, TX

Introduction to Session



- Session's focus is on the environment, transportation infrastructure, and funding initiatives
- The value of environmental resource areas including open spaces, public parks, greenways, lake shores, floodplains, etc., should be preserved and protected
- Variety of products and tools have been developed to:
 - Assist in determining funding initiatives that support sustainable development
 - Develop infrastructure that is sensitive to the environment
 - Promote the protection of natural areas and a regional ecosystem framework

Introduction to Session



- Those products to be discussed include:
 - Funding tools for sustainable development
 - Regional Bicycle and Pedestrian Design Guidelines
 - Greenprinting
- These tools and products serve as resources to help communities plan for development with natural and environmental features in mind

Session Format

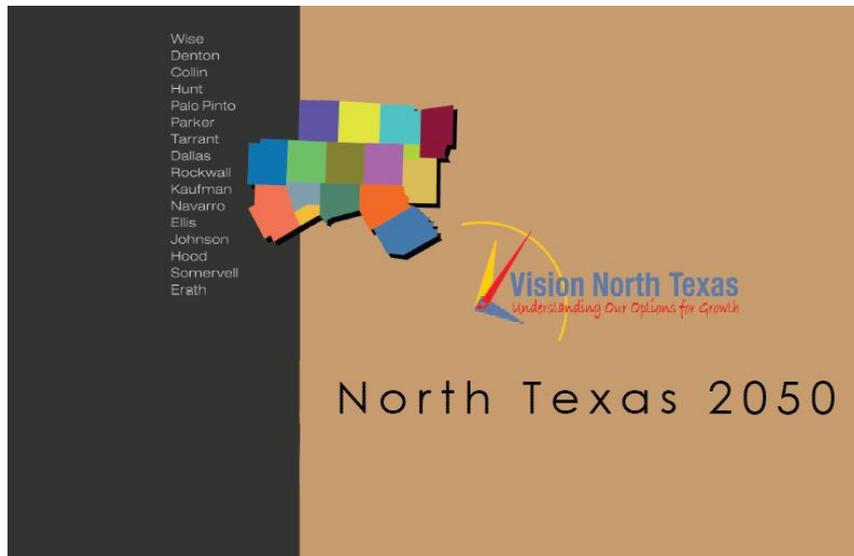


- Introduce and discuss products and tools
- Explore questions to guide future work
- Develop recommendations for action in 2012 on the topic of environment and infrastructure

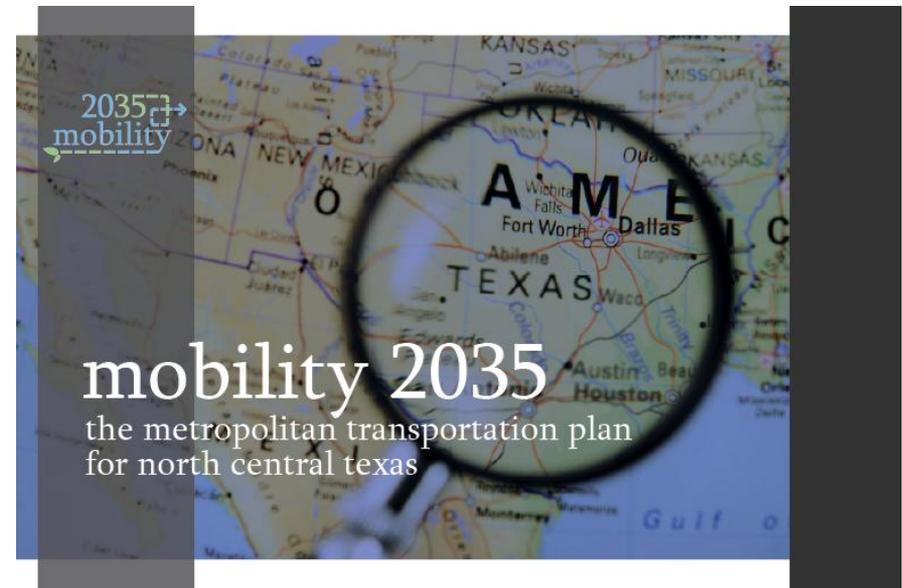
Financial Tools for Sustainable Development

Regional Bicycle and Pedestrian Design Guidelines

North Texas 2050



Mobility 2035



Mobility 2035 Policies and Programs

Mobility 2035 supports the following sustainable development policies:

SD3-001: Support mixed-use, infill, and transit-oriented developments that utilize system capacity, reduce vehicle miles of travel, and improve air quality through improved rail mobility and access management.

SD3-002: Promote livable communities that offer safe, reliable, and economical transportation choices; contain equitable and affordable housing; and enhance economic competitiveness which support the HUD-DOT-EPA Interagency Partnership Principles of Livability.

Mobility 2035 Policies and Programs

Mobility 2035 supports the following sustainable development policies (cont.):

SD3-003: Plan and implement multimodal transportation options that connect and complement a variety of land uses while serving diverse demographic groups.

SD3-004: Encourage sustainability through a cooperative process of preservation, integration, and development of land which support healthy transitions between ranges of development possibilities from natural areas to the urban core.

Implementing sustainable development strategies in the Dallas-Fort Worth area is important to demonstrating the outcomes of investing in new approaches to living and traveling in the region.

The Mobility 2035 sustainable development policies are supported by the following initiatives:

- Respond to local initiatives for town centers, mixed-use growth centers; transit-oriented developments, infill/brownfield developments, and pedestrian-oriented projects.
- Complement rail investments with coordinated investments in park-and-ride and bicycle and pedestrian facilities.
- Encourage local government regulations that promote mixed-use, infill, and transit-oriented developments.
- Promote interaction between planning and zoning officials, development community, and transportation interests.

Mobility 2035: Sustainable Development



The Mobility 2035 sustainable development policies are supported by the following initiatives (cont.):

- Coordinate with transit agencies and the development community to incorporate access to facilities early in the design process.
- Incorporate livable communities factors as criteria in funding programs.
- Encourage multimodal transportation options including transit, bicycle, and pedestrian activities and programs.
- Encourage elements that reduce traffic congestion and pollution and offer traffic calming impacts which result in safer environments for pedestrians.
- Encourage mixed-use zoning and form-based codes including Smart Growth and New Urbanism Principles.

Mobility 2035: Sustainable Development



Mobility 2035 supports the following sustainable development programs:

SD2-001: Alternative Future Program

SD2-002: Center for Development Excellence

SD2-004: Sustainable Development Funding Program

SD2-005: Transit-oriented Development Implementation Program

SD2-006: Brownfields Revolving Loan Fund

SD2-007: Resource Efficiency and Sustainable Growth Management

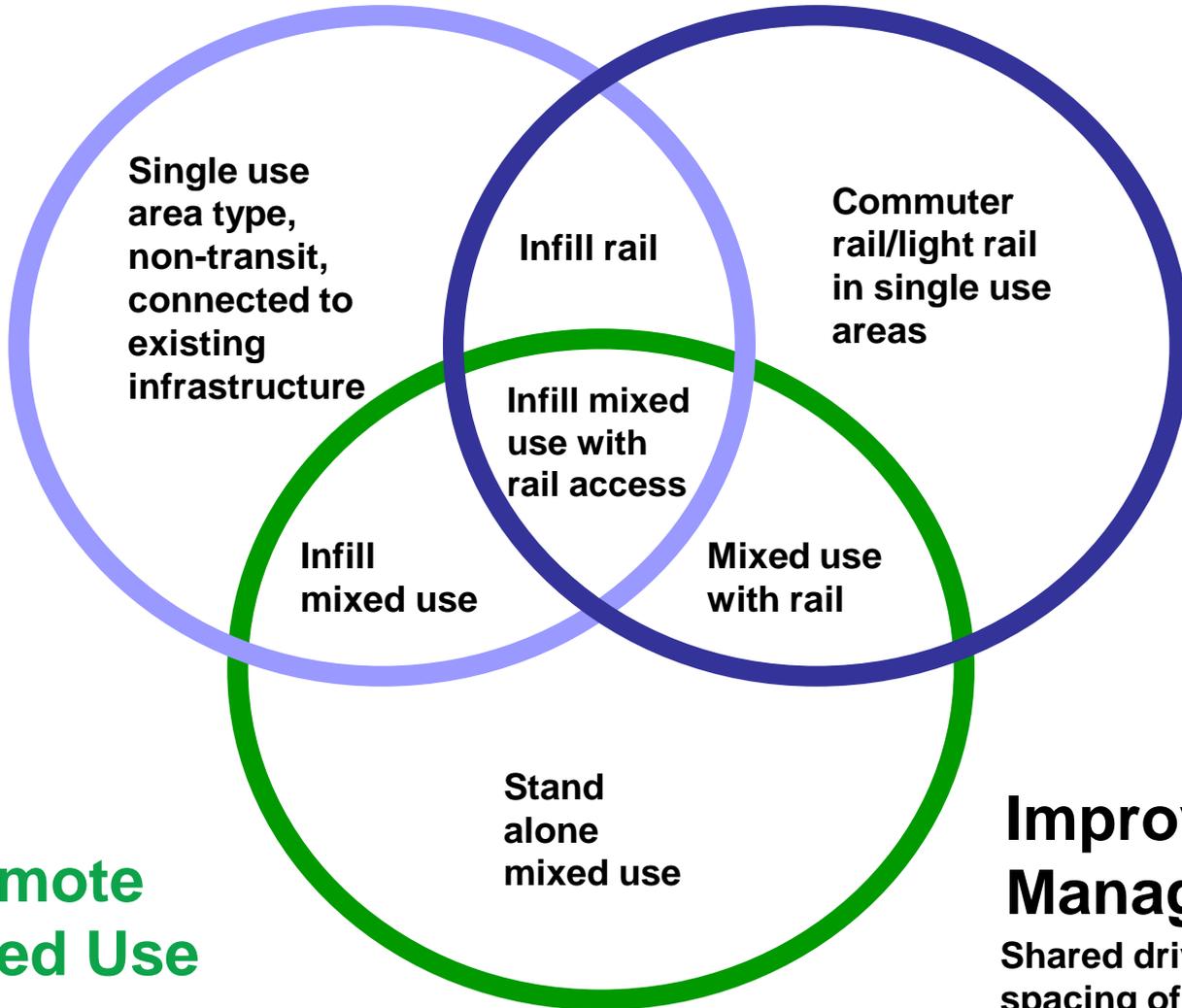
SD2-008: Land Use/Transportation Connection

SD2-009: Livability and Transportation

Sustainable Development Initiative



Utilize Existing System Capacity



Improve Rail Mobility

Promote Mixed Use

Improve Access Management

Shared drives/parking, spacing of turns/signals

VNT Projects and Progress



8. Transportation Related Activities

- a. Regional Coordination of Local Governments & ISDs.
- b. Public infrastructure improvements to support transit and/or development and in-fill development in areas of environmental justice concern.
-  c. **Creation of infill and redevelopment tools and strategies.**
- d. Rural county land use and growth scenario planning.
- e. Coordination of community group & stakeholder involvement of context sensitive design and thoroughfare projects.
-  f. **Creation of regional templates and guidelines for on-street bicycle facilities.**
- g. Housing & market analysis for redevelopment and mixed use development opportunities.

9. Mobility 2035

Financial Tools for Sustainable Development

Patrick Mandapaka
NCTCOG

Public Sector Tools for Financing and Implementing Sustainable Development



- Tax Increment Financing Districts (TIF)
- Municipal Utility District (MUD)
- Bonds
- Sales Tax 4A and 4B
- Tax Incentives for Developers
- Neighborhood Empowerment Zone

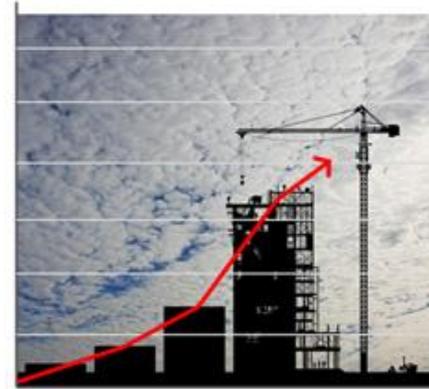


- Public Improvement District (PID)
- Business Improvement District (BID)
- Economic Development Grants/Loans
- Reinvestment Zone
- Local Enterprise Zone
- Special Assessment Districts
- Property Tax Abatement

Financial Tools for Sustainable Development

Financing tools for sustainable development, TOD, and supporting infrastructure.

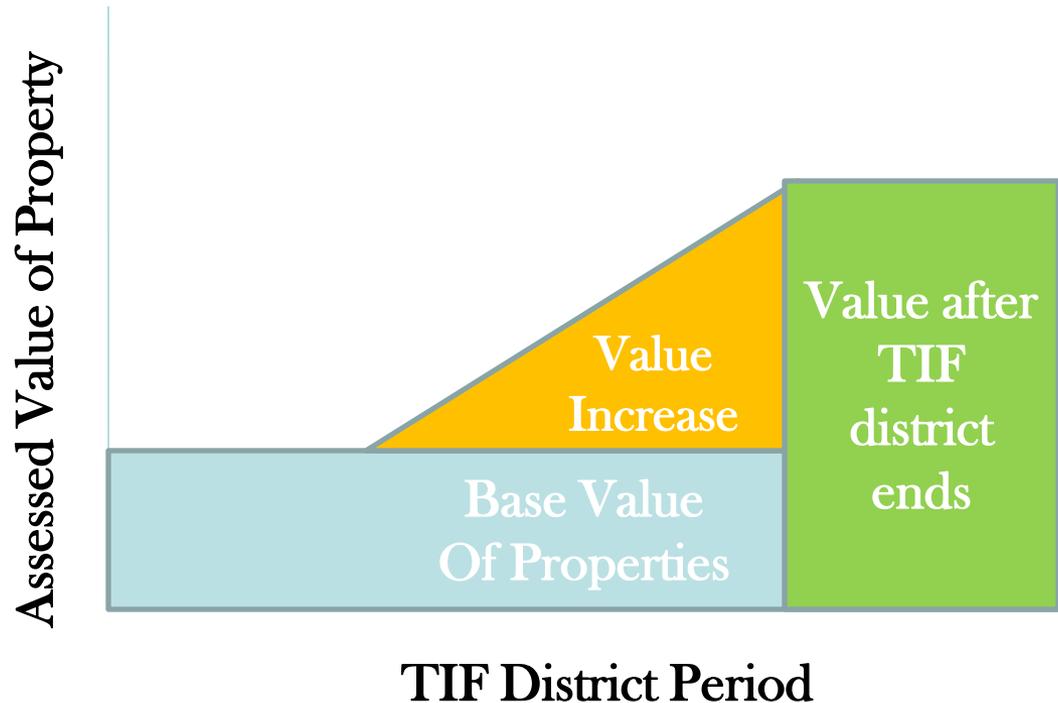
- [4A Sales Tax](#)
- [4B Sales Tax](#)
- [Brownfields Economic Development Initiative \(BEDI\)](#)
- [Community Development Block Grants \(CDBG\)](#)
- [HOME Investment Partnerships Program](#)
- [Municipal Development District \(MDD\)](#)
- [Municipal Management District \(MMD\)](#)



- [Neighborhood Empowerment Zone](#)
- [Public Improvement District \(PID\)](#)
- [Section 108 Loan Guarantee Program](#)
- [Section 380 Grants](#)
- [Sustainable Development Call for Projects](#)
- [Tax Abatement](#)
- [Tax Increment Finance Zone \(TIF\)/ Tax Increment Reinvestment Zone \(TIRZ\)](#)
- [Transportation Reinvestment Zone \(TRZ\)](#)

Examples of Financial Tools - TIF

- “Base value” is set at creation of district - Assessed value of Property in district
- Base value of district increased value from redevelopment
 - As redevelopment occurs, total value increases
 - Taxes generated by the difference between total value and base value is the “tax increment” Property taxes are captured to service TIF debt
- District dissolves once debt is retired; all taxes go to the taxing authorities



Transfer of Development Rights

The act of transferring development rights requires four elements:

1. Sending area(s) to be protected,
2. Receiving area(s) to be developed,
3. Transferable credits that symbolize and quantify the development rights being sold,
4. Procedure for carrying out the transaction.

Owner of “sending” parcel sells development rights in exchange of conservation easement

Owner of “receiving” parcel purchases development rights too build at higher densities.



TDR and increased density



Financial Tools Matrix



Funding Source	Focus/ Use	Requirements		Funding Rules	Other Rules	Advantages	Limitations
		Government	Private				
4A Sales Tax	Citywide Economic Development	City must be in a county of under 500,000 people. In a county over 500,000 with if city's population is below 50,000, or part of the city is in another county that is below 500,000.	Must be basic city infrastructure, research facilities, transportation, military bases, corporate headquarters, water facilities, warehouses, and job training programs	Revenue limited to half cent sales tax	City can donate land, provide loans, give grant to developer. Deal must include clawback provision from developer if project fails.	A permanent funding source covering the entire city with limited number of restrictions and taxes a more popular source of revenue than property taxes	Required to create non-retail jobs. This source of taxes is shared with other programs, especially mass transit. strict limits on use for retail projects, cannot be used for parks & entertainment facilities.
4B Sales Tax	Citywide Community Development	All cities are eligible	Everything allowed for 4A Sales Tax plus sports stadiums, parks, convention centers, entertainment projects, public safety, retail developments, and affordable housing.	Revenue limited to half cent sales tax	Can donate land, provide loans, give grant to developer. Deal must include clawback provision from developer if project fails.	A permanent funding source covering the entire city with even fewer restrictions than a 4A tax and taxes a more acceptable source. 4B taxes can be paired with 4A taxes.	Source of taxes shared with other programs, especially mass transit.
Brownfields Economic Development Initiative (BED)	Redevelopment of abandoned industrial and commercial facilities	The Brownfield site must be in an area with low to moderate incomes or benefit people with low to moderate incomes	The land must be used for economic development of some sort, not land banking.	\$2 million per grant from US HUD	Must be paired with Section 108 Loan Guarantee and receive approval from local Community Block Grant Entitlement Agency	Federal funds to improve the quality of the site, does not have to be paid back.	Subject to federal government approval, requires extensive documentation, and development and cleanup must happen together.
Community Development Block Grants (CDBG)	Eliminating poverty and urban blight	Cities with over 50,000 people and counties with over 200,000 people automatically qualify for an amount set by a formula. Small cities and counties have to apply to receive funding	At least 70% of grant must be used to improve infrastructure in low to moderate income areas, and can not be for regular government business.	Based on funding formula for city/ county/ state.	Plan for funds must be submitted to US HUD for approval.	Many large and medium size cities automatically qualify. They are only required to inform HUD how they spent the money.	Subject to federal government approval, and requires documentation of expenditures.
HOME Investment Partnerships Program	Create affordable housing for low income people	Must qualify for Community Development Block Grant (CDBG)	Funding must be directed at people with incomes below a specified level to be used for rental assistance or down payment assistance.	Formula amount if it is above \$500,000 or smaller sub-grants from state	Must be affordable for 20 years, have a maximum selling price and maximum subsidy per unit, and the city must contribute 25% of the cost	Federal funds to increase availability of affordable housing, does not have to be paid back.	Subject to federal government approval, requires extensive documentation, can not be used for luxury housing or people earning over 80% of median income of the area.
Municipal Development District (MDD)	Economic Development for entire city and its extraterritorial jurisdiction or specific neighborhood	District is created by a general election inside the proposed district	Funds can be spent on anything that a 4B sales tax is spent on, plus convention center, civic center, or convention center hotel	Sales tax of up to half cent within district.	Boundaries automatically adjust to changes in city limits	It allows for the widest possible tax base, does not take money away from the general fund, and has very few restrictions	Shares the funds with other uses of sales tax, especially mass transit, requires a general election to create and raise tax rate
Municipal Management District (MMD)	Permanent political entity for a specific neighborhood with taxing powers.	Created by either an act of the state legislature or by application to the Texas Commission on Environmental Quality (TCEQ).	A MMD can fund anything that a city can fund out of its general fund, including police, streets, parks, etc	Can raise revenue through a property tax, a special assessment, or an impact fees.	City is required to maintain same level of service to district. District can raise bonds backed by just the district.	City is not liable for bond debt and does not pull money out of general fund.	Property in district is liable for bond debt.
Neighborhood Empowerment Zone	Promoting improved quality of life in a single neighborhood	Must show how the creation of a zone will promote affordable housing, economic development, or improved quality of government services in an ordinance.	Any project must create affordable housing, increase economic development, or improve public safety in the zone to receive the benefits.	City can waive or adopt fees related permitting, waive taxes, and forgive liens	Can only waive taxes for a maximum of 10 years	It has a simple structure with few financial commitments to the city. City maintains complete control of the district.	Limited to subsidizing developments up to the amount of taxes and fees paid and removes funds from the general fund.
Public Improvement District (PID)	Ongoing public improvements in specific area	Can only be created by a petition by the owners of a majority of either property value, land parcels, or acreage in the area. The city can turn down petition.	PIDs can be used for paying for public infrastructure, maintenance, services, or amenities in a development.	No maximum except 10% must come from assessment on property in district.	Area can be in the Extraterritorial Jurisdiction (ETJ) of a city, and budget must be approved by city.	It does not divert general tax revenue, allows for a continuous program for maintaining a specific area with few limits on use and can be managed by neighborhood association.	It places an additional tax burden on development. It requires majority of the district to agree on an additional tax.

Financial Tools for Sustainable Development



Web link

transportation

Home > Transportation > Sustainable Development > Land Use/Transportation Planning > Land Use/Transportation Planning
Print this page

Sustainable Economic Development

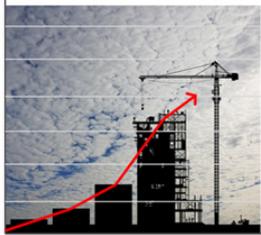
The new wave of sustainable economic development focuses on promoting businesses, industries, and real estate development that are low carbon, low pollution, energy/resource efficient, and ecologically supportive. In the climate of depleting economic sources and limited conventional lenders, innovative financial tools are critical to realize the economic goals of communities while preserving valuable non-renewable resources.

Mixed-use, mixed income, walkable, transit-oriented development (TOD) is a key component of sustainable economic development. Various best practices and examples for innovative financing tools and programs are available nationally to implement sustainable development projects and TODs. However, some of the sources can limit the use to fund projects in particular cities or the State of Texas due to local ordinances or State legislation. Every funding option has specific rules, legal limitations on its use, and other possible trade-offs. The four primary limitations that a city will have to choose between are:

- Higher tax rates in the development.
- Higher taxes for those outside the development.
- Changes in control of development.
- Increased financial risks that come with debt.

Beyond these four tradeoffs, there is the complexity of the program requirements, tradeoffs of alternatives of that particular incentive, level of commitment shown to potential developers by the program, and alternative uses for that particular funding source.

Sales tax and property tax are the primary source of local government funding. Beyond using local tax revenue to encourage or subsidize a targeted business, there are several state and federal programs that aim to encourage development around transit. Some of these programs are given to cities as grants according to formulas set by their laws and other programs require submitting a competitive bid. Cities are left to find the best method for achieving its development goals.



<http://www.nctcog.org/trans/sustdev/landuse/econdev.asp>

Regional Bicycle and Pedestrian Guidelines

Deb Humphreys
NCTCOG

Regional Bike/Ped Design Guide



- Developed in conjunction with the 2011 Dallas Bike Plan.
- Coordinated with the NCTCOG Complete Streets Policy Statement.
- Tool to assist local governments in development of bicycle and pedestrian facilities that combines state and federal guidance, as well as national best practices.
- Addresses both on- and off-street bicycle facilities, pedestrian facilities, and more.

State and Federal Guidance



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

Note: Also available on the [United States Department of Transportation Website](#)

Purpose

The United States Department of Transportation (DOT) is providing this Policy Statement to reflect the Department's support for the development of fully integrated active transportation networks. The establishment of well-connected walking and bicycling networks is an important component for livable communities, and their design should be a part of Federal-aid project developments. Walking and bicycling foster safer, more livable, family-friendly communities; promote physical activity and health; and reduce vehicle emissions and fuel use. Legislation and regulations exist that require inclusion of bicycle and pedestrian policies and projects into transportation plans and project development. 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. Transportation programs and facilities should accommodate people of all ages and abilities, including people too young to drive, people who cannot drive, and people who choose not to drive.

Policy Statement

The DOT policy is 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 systems. Because of the numerous individual and community benefits that walking and bicycling provide—including health, safety, environmental, transportation, and quality of life—transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes.

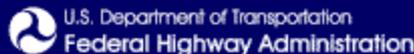
Authority

This policy is based on various sections in the United States Code (U.S.C.) and the Code of Federal Regulations (CFR) in Title 23—Highways, Title 49—Transportation, and Title 42—The Public Health and Welfare. These sections, provided in the Appendix, describe how bicyclists and pedestrians of all abilities should be involved throughout the planning process, should not be adversely affected by other transportation projects, and should be able to track annual obligations and expenditures on nonmotorized transportation facilities.

Recommended Actions

The DOT encourages States, local governments, professional associations, community organizations, public transportation agencies, and other government agencies, to adopt similar policy statements on bicycle and pedestrian accommodation as an indication of their commitment to accommodating bicyclists and pedestrians as an integral element of the transportation system. In support of this commitment, transportation agencies and local communities should go beyond minimum design standards and requirements to create safe, attractive, sustainable, accessible, and convenient bicycling and walking networks. Such actions should include:

- Considering walking and bicycling as equals with other transportation modes: The primary goal of a transportation system is to safely and efficiently move people and goods. Walking and bicycling are efficient transportation modes for most short trips and, where convenient intermodal systems exist, these nonmotorized trips can easily be linked with transit to significantly increase trip distance. Because of the benefits they provide, transportation agencies should give the same priority to walking and bicycling as is given to other transportation modes. Walking and bicycling should not be an afterthought in roadway design.
- Ensuring that there are transportation choices: Requirements and provide safe, convenient, and accessible facilities should meet accessibility and bicycling to school and work. People who are safe and convenient options for walking or



MEMORANDUM

TO: District Engineers DATE: March 23, 2011
FROM: John A. Barton, P.E. *John A. Barton, P.E.*
SUBJECT: Guidelines Emphasizing Bicycle and Pedestrian Accommodations

A recent federal policy statement on Bicycle and Pedestrian Accommodations Regulations and Recommendations by USDOT signed on March 11, 2010, emphasizes an increased commitment to, and investment in, bicycle facilities and walking networks to help meet goals for cleaner, healthier air; less congested roadways; and more livable, safe, cost-efficient communities. This USDOT policy encourages the incorporation of safe and convenient walking and bicycling facilities into transportation projects.

With this stronger emphasis for multimodal transportation facilities, TxDOT is committed to proactively plan, design and construct facilities to safely accommodate bicyclists and pedestrians. It is critical that bicycle and pedestrian accommodations be considered and discussed as the need and purpose of a project is defined during the National Environmental Policy Act (NEPA) process, taking into consideration existing and anticipated bicycle and pedestrian facility systems and needs. In the NEPA document, the managing office should include a discussion in the project description of proposed bicycle and pedestrian facilities and linkages to transit stops and corridors. If no bicycle or pedestrian facilities are planned, the managing office shall state why no such facilities are planned. Plans, specifications, and estimates (PS&Es) shall also ensure that proposed designs include these accommodations, if applicable, and are constructed according to Texas Accessibility Standards and Americans with Disabilities Act Accessibility Guidelines (TAS/ADAAG), AASHTO Guide for the Development of Bicycle Facilities (AASHTO Bike Guide) and TxDOT's Roadway Design Manual (RDM).

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.

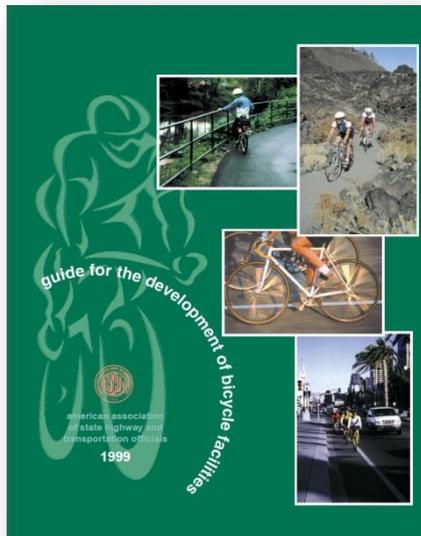
For all urbanized settings, regardless of the type of improvement, the following guidance is provided:

Snapshot of the Guide

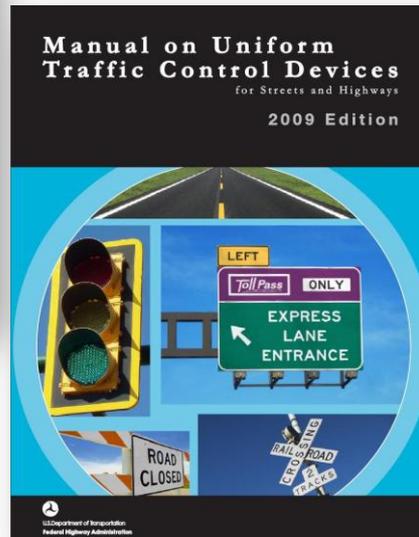
- Bicycle Facilities
- Pedestrian Facilities
- Emerging Innovations
- Implementation Strategies
- Additional Considerations
- Funding Tools

Bicycle Facilities

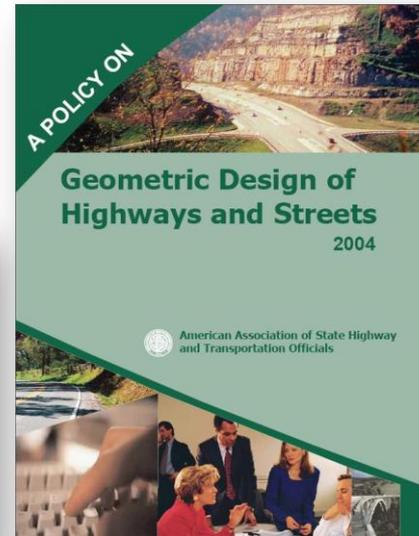
National and State Guidance



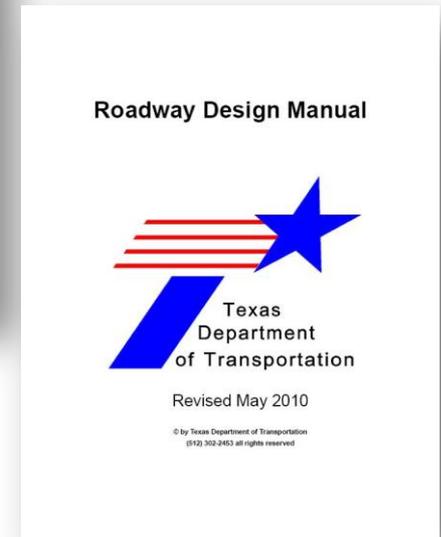
American Association of State Highway and Transportation Officials (AASHTO): *Guide for the Development of Bicycle Facilities*, 1999



U.S. Department of Transportation Federal Highway Administration: *Manual on Uniform Traffic Control Devices (MUTCD)*, 2009



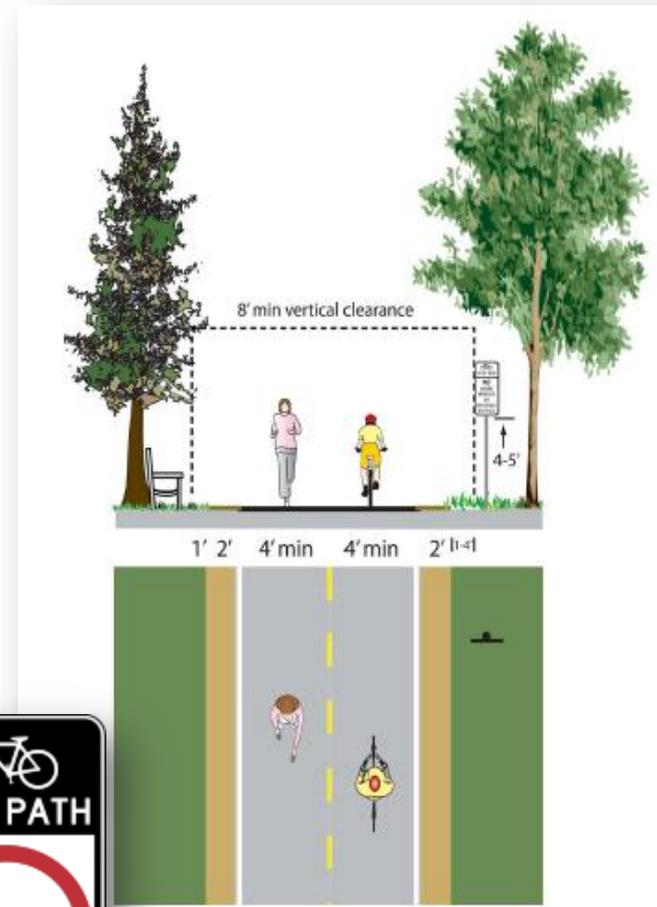
American Association of State Highway and Transportation Officials (AASHTO): *Geometric Design of Highways and Streets (Green Book)*, 2004



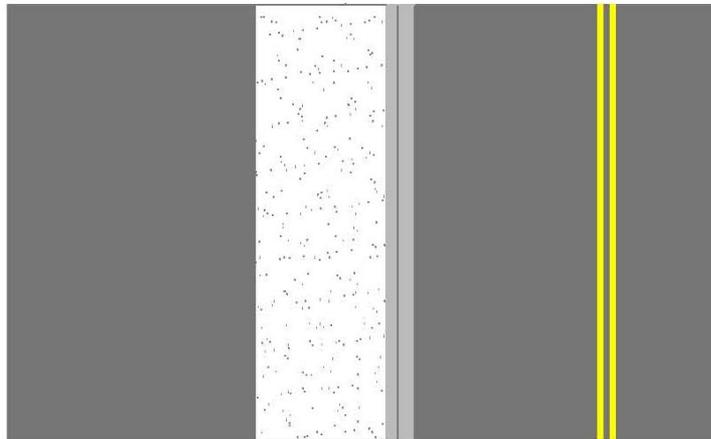
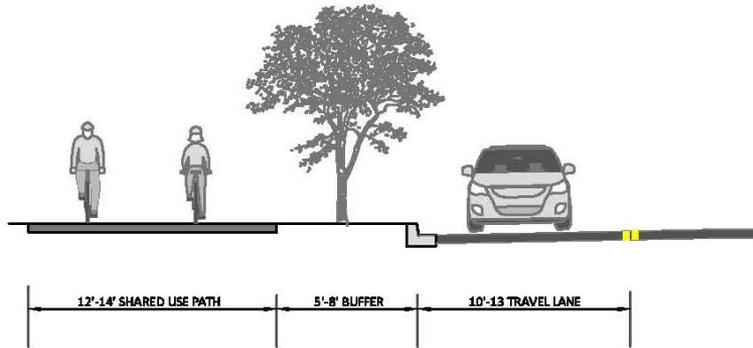
Texas Department of Transportation: *Roadway Design Manual*, Revised May 2010

Shared-use Path

- A shared-use path is marked for bicycle, pedestrian, and other non-motorized modes of travel. This facility offers an option for those not comfortable riding on the road with traffic. Shared-used paths should be separated from the roadway by at least a 5 ft. buffer.
- **Design Considerations:**
The minimum paved width for a two-way bicycle path shall be 12 ft. 4 ft. for two-way bicycle travel lane with 2 ft. shoulders. 17 ft. is preferred with 2 ft. shoulders, 4 ft. each way for two-way bicycle travel lane and 5 ft. for pedestrians.
- **Capital costs:**
~\$100,000 per mile
(not including right-of-way acquisition)



Shared-use Path

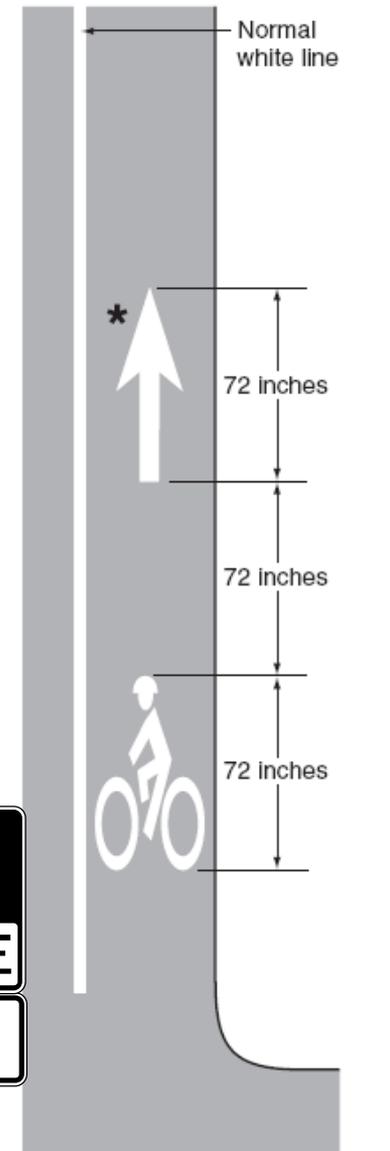
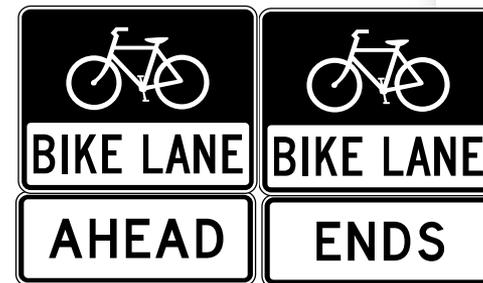


SHARED USE PATH



Bicycle Lane

- Bicycle lanes are portions of the roadway that have been designated for the preferential or exclusive use of bicyclists through striping, signage and other pavement markings.
- **Design Considerations:**
Bike lanes should be at least four ft wide on roadways with open shoulders and five ft wide on roadways with curb and gutter. Pavement markings should appear at intervals not to exceed .5 mile.
- **Capital costs:**
 - Pavement Markings ~ \$125 per marking;
\$2,500 per mile (every 300 ft.)
 - Lane Striping ~ \$3,266 per mile
 - Bicycle Sign ~ \$200 per sign;
\$2,000 per mile (every 500 ft.)Total: \$7,766 per mile



B - Helmeted Bicyclist Symbol

Bicycle Lane

PARKING LANE

8' minimum width. 9' preferred width.

PARKING LANE LINE

5" solid white line.

BICYCLE LANE

5' Minimum width adjacent to parking. See facility width guidelines below.

BICYCLE LANE LINE

5" solid white line. Wider lines may be installed at the discretion of the engineer.

TRAVEL LANE

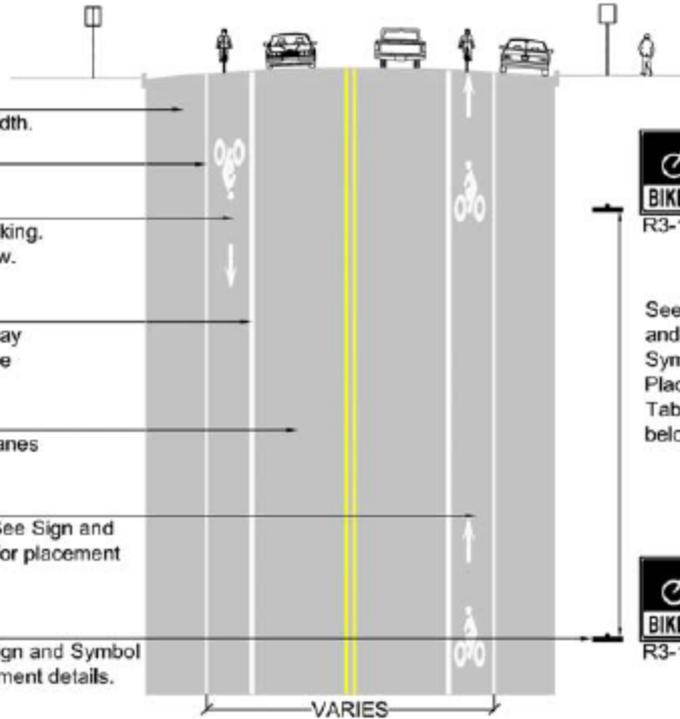
The number and width of travel lanes will vary.

BICYCLE LANE SYMBOL

Place in center of bicycle lane. See Sign and Symbol Placement Table below for placement details.

BICYCLE LANE SIGN

Use MUTCD Sign R3-17. See Sign and Symbol Placement Table below for placement details.



R3-17

See Sign and Symbol Placement Table below.



R3-17

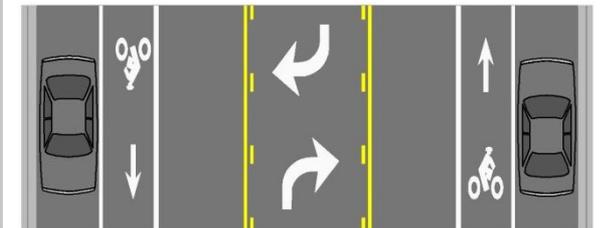
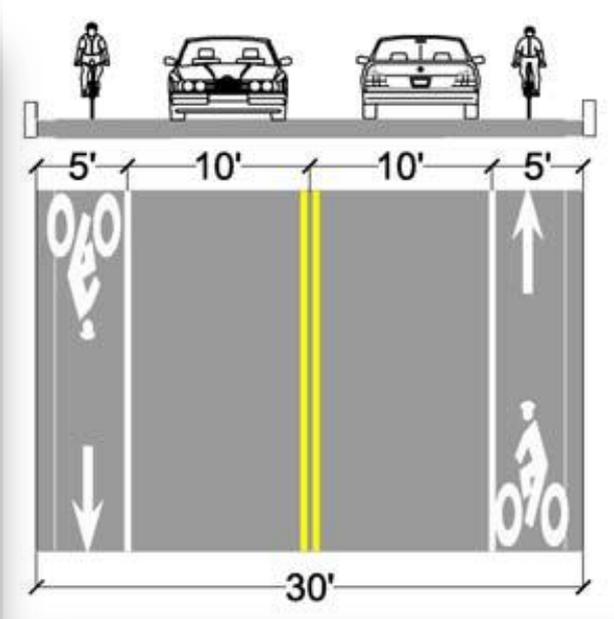
FACILITY WIDTH GUIDELINES

OPERATING SPEED	VOLUME RANGE	BICYCLE LANE WIDTH
≤35 MPH	<10,000 ADT	5 FEET
36-45 MPH	10,000-20,000 ADT	5-6 FEET
>45 MPH	>20,000 ADT	6 FEET

SIGN AND SYMBOL PLACEMENT

	SIGN SPACING	SYMBOL SPACING
RURAL	1-3 MILES	0.5-1 MILES
SUBURBAN	0.5-1 MILES	0.1-0.5 MILES
URBAN*	VARIES ¹	2-4 PER BLOCK

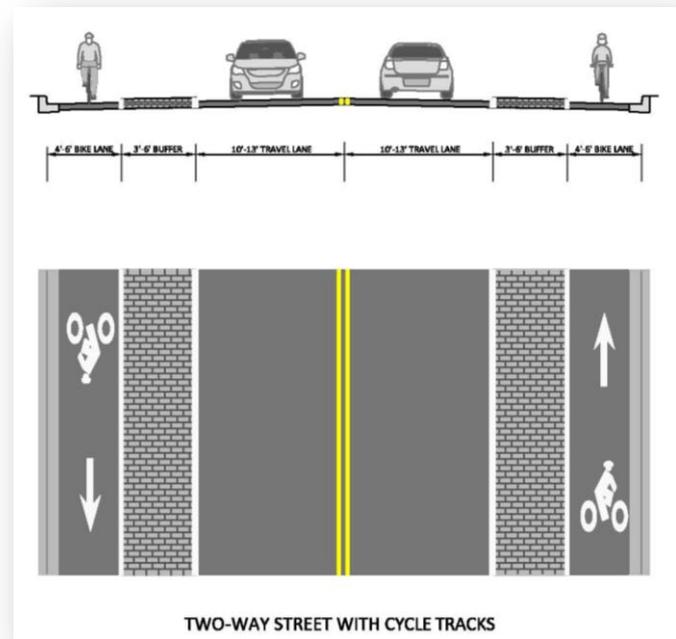
* In urban areas, the use of bike lane signs should be kept to a minimum. Generally a sign may be utilized at the beginning and end of a bike lane.



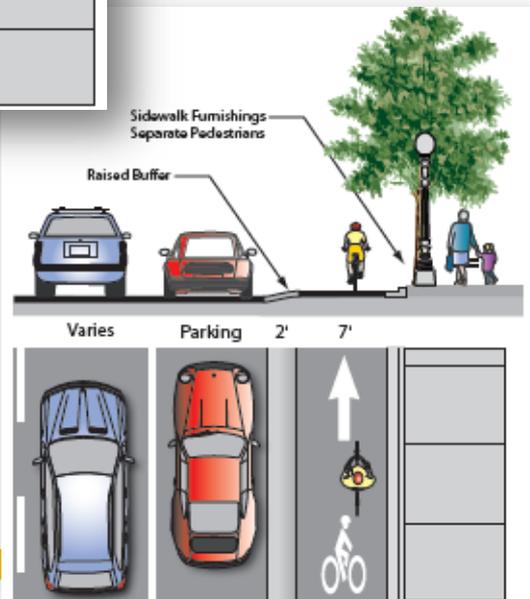
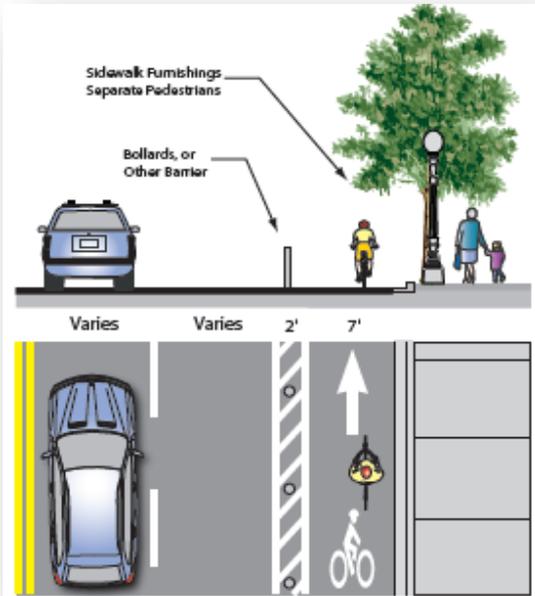
THREE TRAVEL LANES WITH BIKE LANES AND TWO PARKING LANES

Cycle Track

- **Design Considerations:**
Between 6-8 ft. wide, with a 2 ft. buffer on the vehicle side.
Separation from vehicle lane is channelized (elevated or at-grade), mountable curb, or bollards/markings.
- **Capital costs:**
~ \$200,000 per mile
(including curb, raised buffer and street reconstruction)



Cycle Track

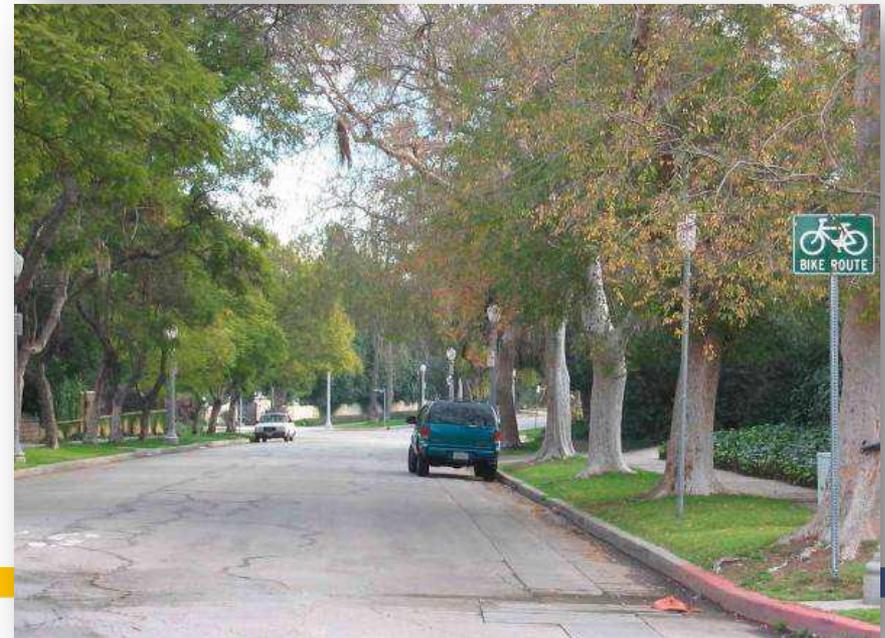
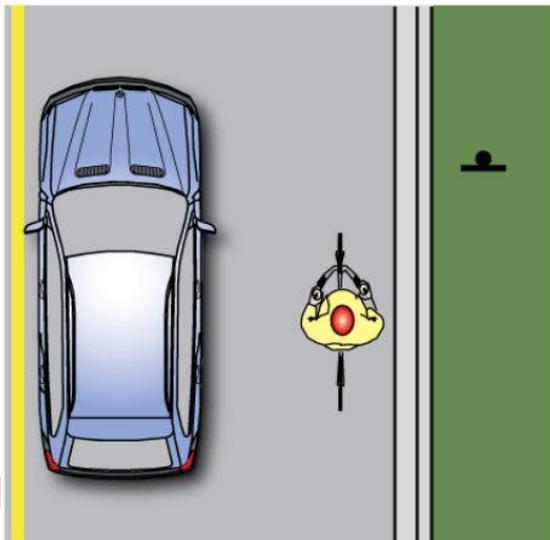


Signed Bicycle Route

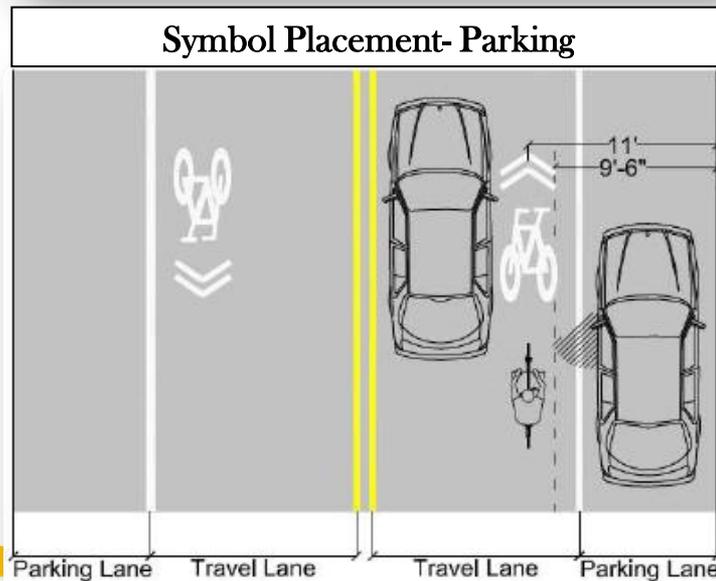
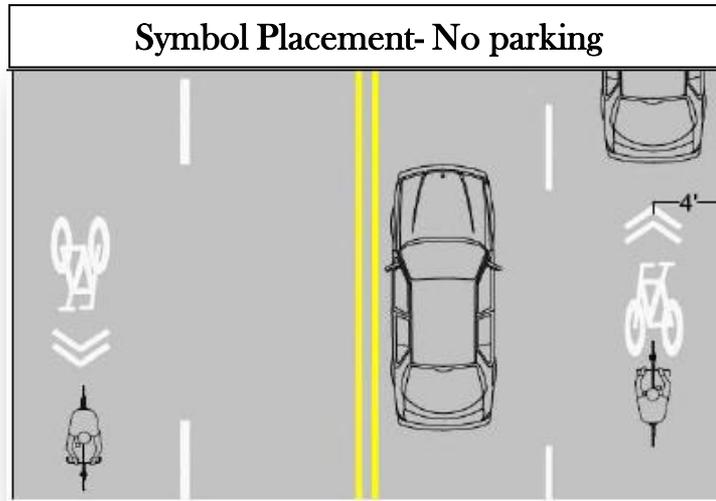
- A signed bicycle routes is a shared roadway without any designated bicycle facilities, i.e. no roadway striping or markings.
- **Design Considerations:**
Provide bicycle route signs every one-third to one-half mile on straight segments of the route.
- **Capital costs:**
~\$200 per sign; \$4,000 per mile (20 signs)



Signed Bicycle Route



Shared Lane Marking



Pedestrian Facilities

State and Federal Guidance

Architectural Barriers

TEXAS ACCESSIBILITY STANDARDS (TAS)

of the
Architectural Barriers Act
Article 9102, Texas Civil Statutes
Prepared and Administered by the
Policies and Standards Division
ARCHITECTURAL BARRIERS SECTION
Adopted by the Commission December 17, 1993
Effective April 1, 1994

Texas Accessibility Standards (TAS) of the
Architectural Barriers Act, codified as Article 9102,
Texas Civil Statutes; April 1994

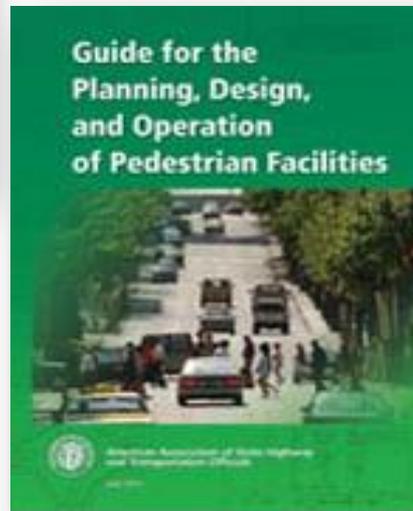


Americans with Disabilities Act
and Architectural Barriers Act
Accessibility Guidelines

July 23, 2004

UNITED STATES ACCESS BOARD
A FEDERAL AGENCY COMMITTED TO ACCESSIBLE DESIGN

Americans with
Disabilities Act
Accessibility Guidelines
(ADAAG); US Access
Board; July 2004



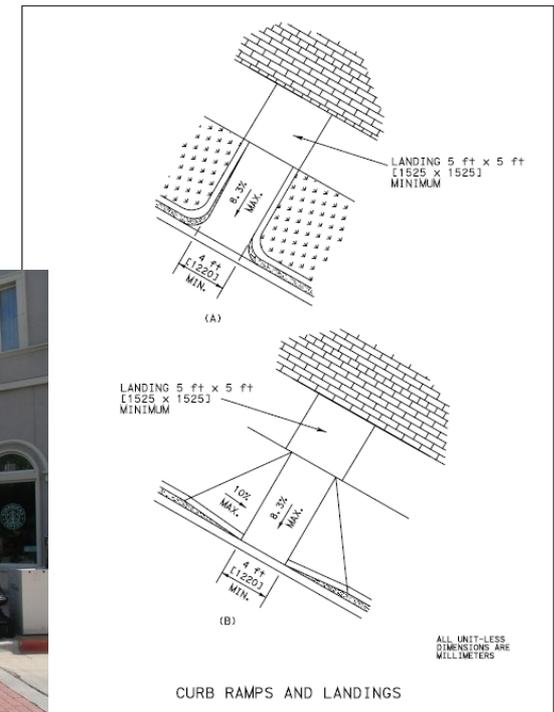
American Association of State
Highway and Transportation
Officials (AASHTO): *Guide
for the Planning, Design, and
Operation of Pedestrian
Facilities, 1st Edition*



DRAFT: Accessibility
Guidelines for
Pedestrian Facilities in
the Public Right-of-
Way; US Access
Board; July 2011

Sidewalks

- ADAAG requires sidewalks to be constructed at a minimum of 36 in.
- Sidewalks constructed at 36 in. must not have any barriers, and extra walkway width of 48 in. is required at distances not to exceed 200 ft.
- TxDOT recommends sidewalks be 6 ft.
- Curb Ramps are the only item of right-of-way construction specifically required in the Department of Justice (DOJ) Title II regulation



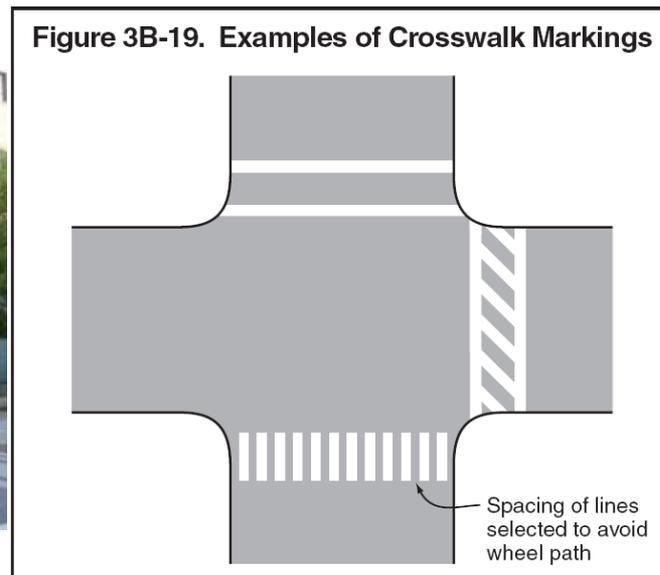
Pedestrian Signals

- Any new or replacement pedestrian signals being installed after the adoption of the 2009 MUTCD onward must include countdowns unless the pedestrian change interval is 7 sec. or less.
- *Signal Timing:* 2009 MUTCD recommended walking speed for calculating the pedestrian clearance time reduced from 4 ft. per second to 3.5 ft. per second.
- *Accessible Pedestrian Signals:* 2009 MUTCD includes requirements for accessible pedestrian signals including both audible and vibrotactile walk indications.



Crosswalks

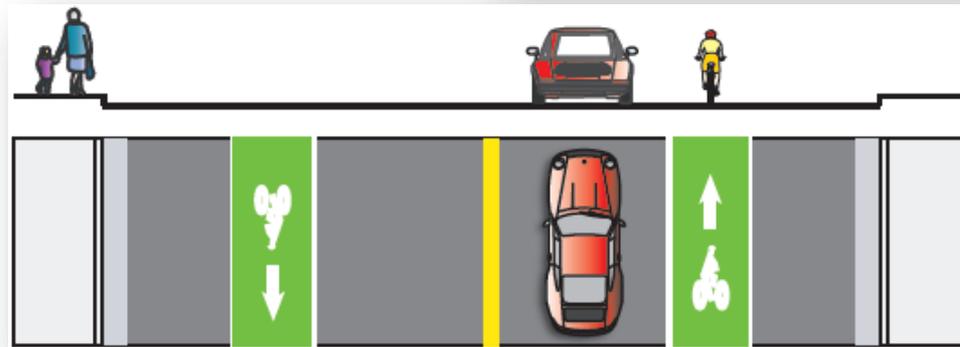
- At non-intersection locations, crosswalk markings legally establish the crosswalk.
- When crosswalk lines are used, they shall consist of solid white lines that mark the crosswalk.
- 2009 MUTCD: crosswalk lines shall not be less than 6 in. or greater than 24 in. in width.



Emerging Innovations

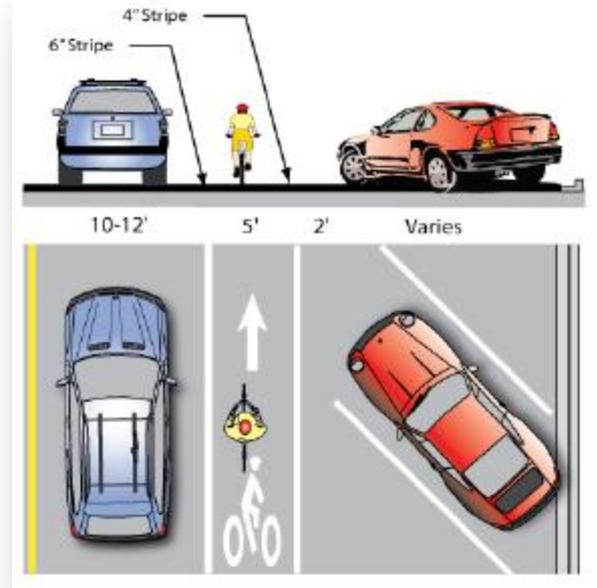
Colored Bike Lanes

- A contrasting color for the paving of bicycle lanes can be applied to continuous sections of roadways.
- These situations help to better define road space dedicated to bicyclists and make the roadway appear narrower to drivers resulting in beneficial speed reductions.



Back-in Diagonal Parking

- The use of ‘back-in diagonal parking’ or ‘reverse angled parking’ is recommended over head-in diagonal parking. This design addresses and improves sight distance between drivers and bicyclists and has been shown to reduce parking related crashes.



Before



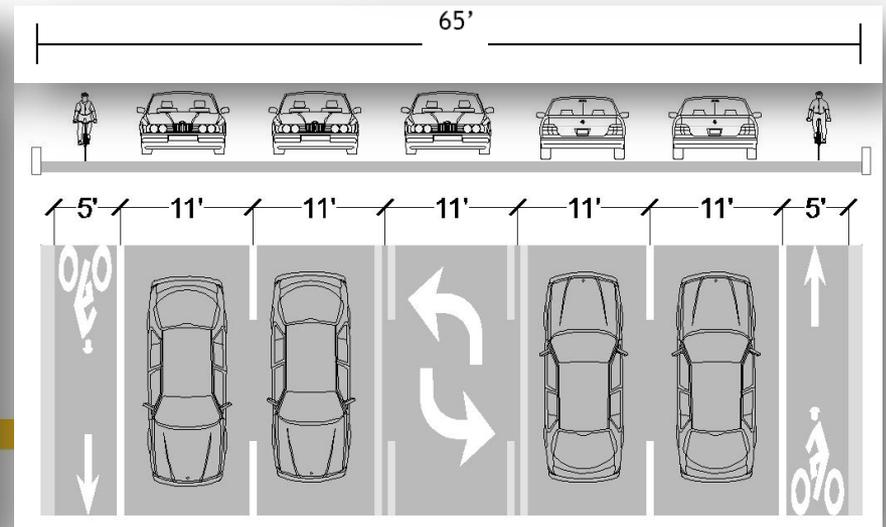
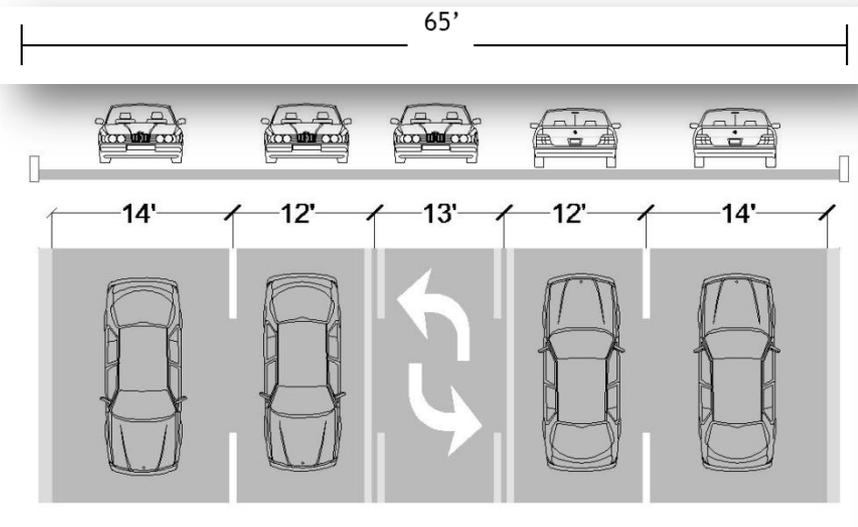
After

Implementation Strategies

Lane Diet

- Locations where narrowing automobile travel lanes creates enough space within the existing road right-of-way to provide bicycle facilities. The 2010 version of the Highway Capacity Manual includes safety data supporting 10 ft. wide travel lanes as a standard in certain circumstances.

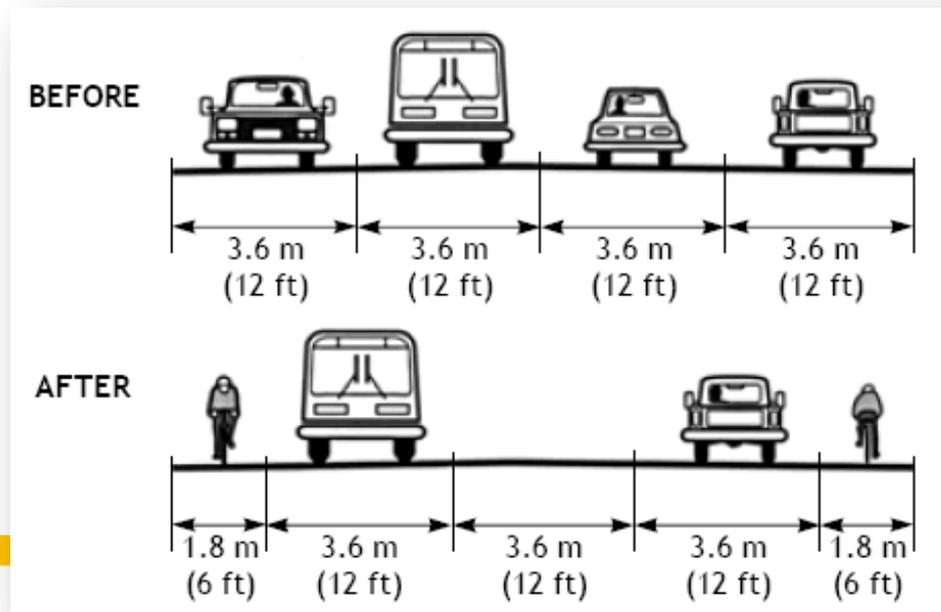
Capital Costs: ~\$5,000 - \$10,000 per mile (depending on the number of lanes that need to be repainted)



Road Diet

- A road diet is a technique whereby a road is reduced in the number of travel lanes and/or effective width in order to achieve systemic improvements. A typical road diet technique is to reduce the number of lanes on a roadway cross-section. The additional space that is freed up by removing a vehicular travel lane is converted into bicycle lanes on either side of the roadway.

Capital Costs: ~ \$5,000 - \$20,000 per mile (depending on the number of lanes that need to be repainted)



Additional Considerations

Bicycle End-of-trip Facilities

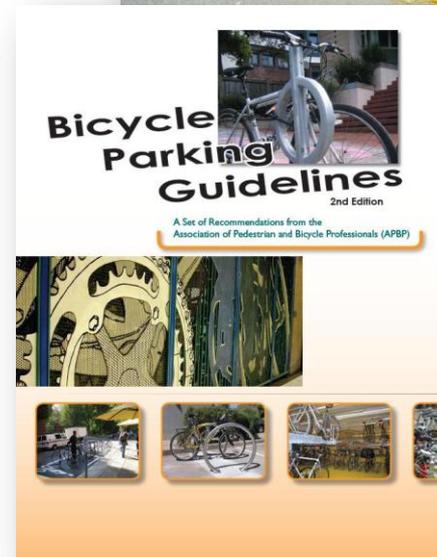
The term *bicycle end-of-trip facilities* refers to parking and complementary infrastructure for bicycles.

- Bicycle parking infrastructure includes: stands or racks that support bicycles and shelters or enclosures that protect parked bicycles from vandalism, theft, and the elements.
- Complementary infrastructure includes: lockers for stowing helmets, bicycle clothing, and other personal belongings; change rooms and showers; air pumps; and sometimes even bicycle parts and maintenance shops.



Bicycle Parking

- One of the most common obstacles for bicyclists
- Parking encourages people to ride
- Designated, well designed parking promotes a more orderly streetscape and preserves the pedestrian right-of-way
- Helps legitimize bicycling as a transportation mode by providing parking opportunities equal to motorized modes
- Short Term vs. Long Term
- Capital Costs:
 - Bike Rack (parks two bikes): \$150 - \$300
 - Bike Lockers (parks two bikes): \$1,000 - \$4,000
 - Surface Parking (parks up to 14 bikes): \$2,200



Maintenance Activities

Ex: Walkway and Bikeway Maintenance Activities

Maintenance Activity	Frequency
Inspections	Seasonal – at beginning and end of Summer
Pavement sweeping/blowing	As needed, weekly in Fall
Pavement sealing, potholes	5 - 15 years
Culvert and drainage grate inspection	Before Winter and after major storms
Pavement markings replacement	1 – 3 years
Signage replacement	1 – 3 years
Shoulder plant trimming (weeds, trees, brambles)	Twice a year; middle of growing season and early Fall
Tree and shrub plantings, trimming	1 – 3 years
Major damage response (washouts, fallen trees, flooding)	As soon as possible



Funding Tools

Federal Funding Tools



Federal Bicycle and Pedestrian Funding Opportunities Broken Out By Eligible Activities

	NHS	STP	HSIP	SRTS	TE	CMAQ	RTP	HBR	PLA	FLH	BYW	402	FTA	TRE	JARC	TCSP
Bicycle and pedestrian planning		*				*			*							*
Bicycle lanes on roadway	*	*	*	*	*	*		*		*	*		*	*		
Paved Shoulders	*	*	*	*	*	*		*		*	*					
Signed bike route	*	*		*	*	*				*	*					
Shared use path/trail	*	*		*	*	*	*	*		*	*					
Single track hike/bike trail							*									
Spot improvement program		*	*	*	*	*										
Maps		*		*		*						*				
Bike racks on buses		*			*	*							*	*		
Bicycle parking facilities		*		*	*	*					*		*	*		
Trail/highway intersection	*	*	*	*	*	*	*			*	*					
Bicycle storage/service center		*		*	*	*							*	*	*	*
Sidewalks, new or retrofit	*	*	*	*	*	*		*		*	*		*	*		
Crosswalks, new or retrofit	*	*	*	*	*	*				*	*		*	*		
Signal improvements	*	*	*	*	*	*										
Curb cuts and ramps	*	*	*	*	*	*										
Traffic calming		*	*	*												*
Coordinator position		*		*		*										*
Safety/education position		*		*		*						*				
Police Patrol		*		*								*				
Helmet Promotion		*		*	*							*				
Safety brochure/book		*		*	*	*	*					*				
Training		*		*	*	*	*					*				

NHS National Highway System

STP Surface Transportation Program

HSIP Highway Safety Improvement Program

SRTS Safe Routes to School Program

TE Transportation Enhancement

CMAQ Congestion Mitigation/Air Quality Program

RTP Recreational Trails Program

HBR Bridge

PLA State/Metropolitan Planning Funds

FLH Federal Lands Highway Program

BYW Scenic Byways

402 State and Community Traffic Safety Program

FTA Federal Transit Capital, Urban & Rural Funds

TRE Transit Enhancements

JARC Access to Jobs/Reverse Commute Program

TCSP Transportation and Community and System Preservation Pilot Program

Next Steps



- Draft will be available on-line after November 17, 2011 at www.nctcog.org/regdesguidelines
- Anticipated to go before the Bicycle and Pedestrian Advisory Committee for approval in February 2012

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Which would you prefer?



Frontage
Zone

Wide Sidewalks

Curb/Planter
Zone

Curb Ramps

Crosswalks



Which would you prefer?



Which would you prefer?



Financial Tools for Sustainable Development



Sustainable
Development
Funding
Program

TIF

PID

Regional Bike/Ped Design Guide



Frontage
Zone

Pedestrian
Amenities

Sidewalks

Existing Conditions



Can you spot the changes?



Can you spot the changes?



Financial Tools for Sustainable Development

NEZ



Financial Tools for Sustainable Development

CMAQ

CMAQ

TIF



RTR

Regional Bike/Ped Design Guide



Pedestrian
Infrastructure
and
Amenities

Medians

Crosswalks

Financial Tools for Sustainable Development



Tax Abatement/
workforce housing

PID



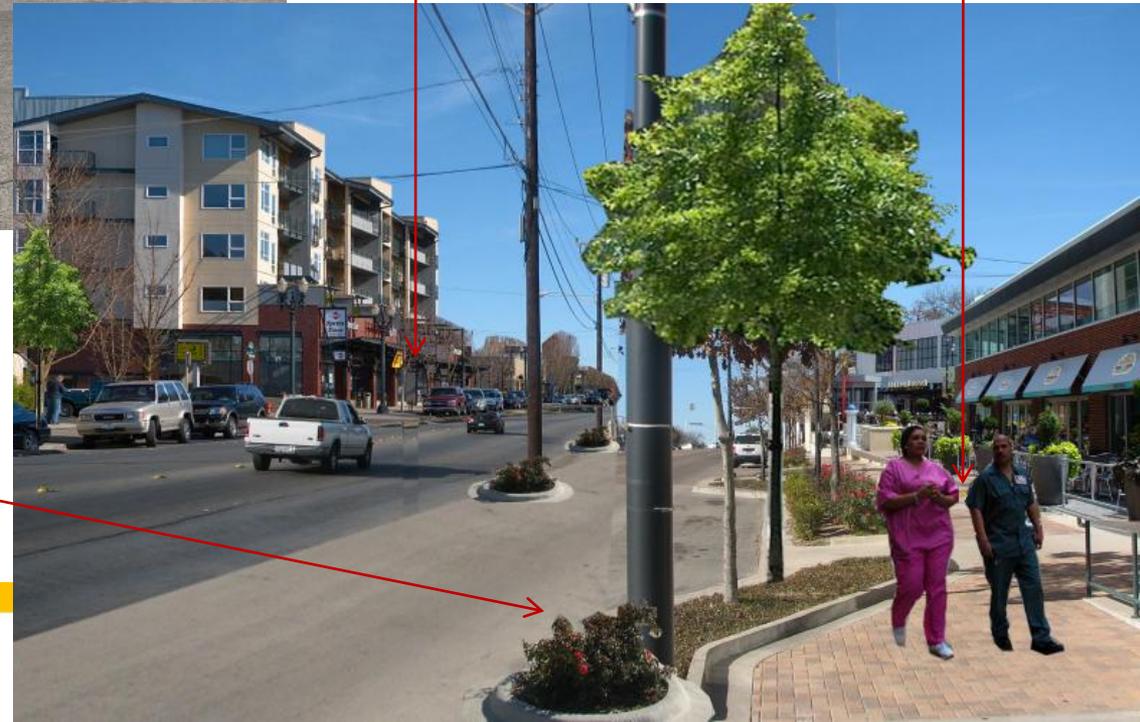
Sustainable Development
Funding Program

Regional Bike/Ped Design Guide



Pedestrian
Amenities

Sidewalks



Curb/Planter Zone

Existing Conditions



Can you spot the changes?



Can you spot the changes?



Financial Tools for Sustainable Development



CMAQ

TIF

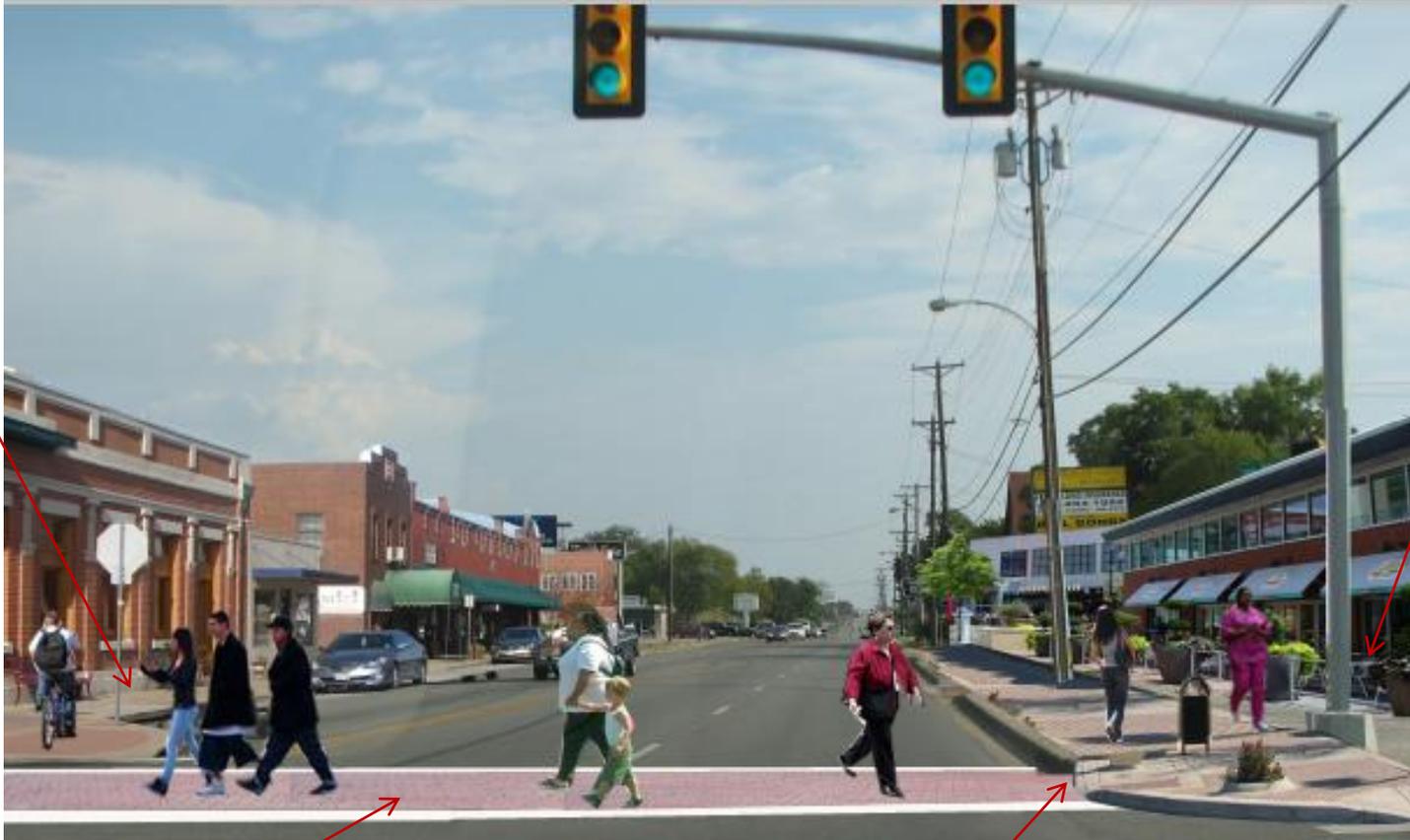
PID

RTR

Regional Bike/Ped Design Guide

Sidewalks

Frontage
Zone



Crosswalks

Curb Ramps

Complete Street?



Complete Street?

YES!



Generally, paved shoulders provide adequate facilities for bicyclists and pedestrians on low demand rural roadways

Financial Tools for Sustainable Development Questions



1. Have you participated in any projects that have included sustainable development or redevelopment?
2. What are the financing tools used in the process?
3. What are the challenges encountered?
4. What is the most successful redevelopment financing tool you are aware of?
5. What are some of the successful redevelopment financing tools in the current economic climate?

Regional Bike/Ped Guide Questions



1. What resources does your municipality currently use?
2. Do you think the Guide will be beneficial to local governments for the implementation of bicycle and pedestrian facilities?
3. Would you like to see more bicycle and pedestrian facilities in your community?
4. Are there additional elements the guide should address?
5. Is there a way that Parks and Public Works can better coordinate?