Active Transportation (Bicycle / Pedestrian) Planning in North Texas
Dallas - Fort Worth Region

Kevin Kokes, AICP
North Central Texas Council of Governments

MPO for the Dallas-Fort Worth Region

Metropolitan Planning Area (MPA)
12 Counties = 9,441 sq. mi.

Land area larger than the states of New Hampshire, New Jersey, Connecticut, Delaware, and Rhode Island.
Metropolitan Planning Area (MPA)
209 cities
13 cities larger than 100,000 pop.

MPA Population
2015 Estimate = 7 million
2040 Forecast = 10.7 million
Planning for All Ages and Abilities

USDOT policy emphasizes the provision of active transportation accommodations to be considered as the same priority as other transportation modes.
US DOT Support for Safer Streets

18-month campaign to reduce the growing number of pedestrian and bicyclist injuries and fatalities.

Pedestrian and bicyclist safety a top priority for the DOT.

A Road Diet Guide is a 2015 FHWA Initiative

Credit: http://plancharlotte.org/story/charlotte-bike-share-launches
It is critical that bicycle and pedestrian accommodations be considered and discussed as the need and purpose of a project is defined.”

MEMORANDUM

TO: District Engineers
FROM: John A. Barton, P.E.
DATE: March 23, 2011
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:
States and cities with the highest number of pedestrian fatalities

OR

Fatality rates (per 100,000 population) greater than the national average.

Pedestrian Fatality Rates*
(Per 10k walking commuters)

#41: Texas

Top 50 Cities*

#47: Dallas
#50: Fort Worth

Pedestrian Safety

The pedestrian experience along many major roadways is challenging.

Safety Challenges

- Gaps in the Sidewalk Network
- Wide Intersections/Crossings
- Distance between Crossings
- High Traffic Speeds
- Vehicle Turning Movements
- ADA Maintenance
- Barriers
Pedestrian Fatalities and Crashes

A large number of pedestrian fatalities are “on-system” (interstate and state highways).

The location of pedestrian crashes are more evenly dispersed.

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<td>Total</td>
<td>61</td>
<td>53</td>
<td>82</td>
<td>79</td>
<td>71</td>
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Pedestrian Crash Contributing Factor Analysis
12-County MPA (2009 - 2013)

<table>
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<tr>
<th>Contributing Factors (Top 3)</th>
<th>% of All Occurrences</th>
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</thead>
<tbody>
<tr>
<td>Pedestrian Failed to Yield ROW to Vehicle</td>
<td>57%</td>
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<tr>
<td>Vehicle Failed to Yield ROW to Pedestrian</td>
<td>28%</td>
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<td>Driver Inattention</td>
<td>11%</td>
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</table>
Regional Bicycle/Pedestrian Crash Data

Bicycle and Pedestrian Crash Density (2009-2013)

Legend
- No Crash Density
- Low Crash Density
- Medium Crash Density
- High Crash Density
- Very High Crash Density
- Highway
Regional Bicycle/Pedestrian Crash Data

Dallas County Bicycle and Pedestrian Crash Density (2009-2013)

Legend
- No Crash Density
- Low Crash Density
- Medium Crash Density
- High Crash Density
- Very High Crash Density

- Highway
- Major Arterial
- Minor Arterial

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Regional Pedestrian Crash Data

Dallas County Pedestrian Crash and Fatality Locations (2009-2013)

Legend
- Pedestrian Fatal Crash Location (207)
- Pedestrian Crash Location (3,080)
- Highway
- Major Arterial
- Minor Arterial
- Passenger Rail

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Education and Training

Designing for Pedestrian Safety

- NCTCOG hosts workshops for engineers and transportation planners
- TxDOT, City Staff, Transportation Agencies
- Case study site visit exercises
Pedestrian Network Analysis

GIS network-based assessment of pedestrian routes (distance) within half-mile to/from rail stations

Impacts of barriers on the actual distance of travel

“"A true walkable radius does not typically exist."
Pedestrian Routes to Rail Network Analysis

nctcog.org/RoutesToRail

Rail Station

Half-mile walk distance

Beyond half-mile walk distance

Disconnected pedestrian facility

Barriers and Gaps in the Network

Destination
Half-Mile Walk Distance
Beyond Half-Mile Walk Distance
Facility Disconnected From Network
Pedestrian Routes to Rail - Illinois Station
Last Updated: February 2015

Legend
- Rail Stations
- 0.5 Mile Station Buffer
- Railroads
- Existing sidewalk facilities within a 0.5 mile walk distance
- Existing sidewalk facilities greater than a 0.5 mile walk distance
- Existing sidewalk facilities that are disconnected due to a gap in the network

Project Overview
The Pedestrian Routes to Rail study identifies all existing pedestrian facilities within a half-mile radius of existing light rail and commuter rail stations in the Dallas-Fort Worth region based on 2014 data. The ArcGIS Network Analyst tool was used to identify continuous facilities that are less than or greater than a half-mile actual walking distance to a station. The maps also reflect existing facilities that are disconnected due to gaps or other barriers not allowing a continuous pedestrian route to a station. The maps do not reflect the condition or ADA compliance of the existing infrastructure. More information on the Routes to Rail study and methodology can be found at:
  nctcog.org/RecipesToRail
Dallas Co. Trails and Bikeways

Active Transportation Network
Dallas Co. Trails and Bikeways

Active Transportation Network

Existing and Planned Trails
Dallas Co. Trails and Bikeways

Active Transportation Network

Existing and Planned Trails

Regional Veloweb (Prioritized Corridors)
Dallas Co. Trails and Bikeways

Active Transportation Network

Existing and Planned Trails

Regional Veloweb (Prioritized Corridors)

On-Street Bikeways
Facilities Design Guides

AASHTO (American Association of State Highway and Transportation Officials) 

NACTO (National Association of City Transportation Officials) 

ITE (Institute of Transportation Engineers) 
Facilities Design Guides

Outlines planning considerations and design options for separated bike lanes.

FHWA
Separated Bike Lane Planning and Design Guide
(May 2015)
On-Street Bikeway Facilities

Protected Bike Lanes

Bike Lanes

Marked Shared Lanes
Buffered Bike Lanes – Travel Side Buffer

(National Association of City Transportation Officials)
Buffered Bike Lanes – Merging Area
Raised Cycle Track with Mountable Curb

(National Association of City Transportation Officials)
Raised Cycle Track with Mountable Curb

(National Association of City Transportation Officials)
Design Guidance

Buffered Bike Lanes

Recommended Features

- At intersections, signalized or non-signalized, add buffer at crosswalks
- Buffer should be at least 5 feet wide
- Buffer should be at least 5 feet wide
- On intersections approaches, on-street parking should be 20 feet from the curb
- On intersections approaches, on-street parking should be 20 feet from the curb
- On intersections approaches, on-street parking should be 20 feet from the curb
- On intersections approaches, on-street parking should be 20 feet from the curb

Optional Features

- If a conventional bike lane is 4 feet wide, the buffer should be extended to 3 feet
- If a conventional bike lane is 3 feet wide, the buffer should be extended to 2 feet
- If a conventional bike lane is 2 feet wide, the buffer should be extended to 1 foot
- If a conventional bike lane is 1 foot wide, the buffer should be extended to 0 feet

NACTO

(National Association of City Transportation Officials)
What are Complete Streets?

Multi-Modal Complete Streets

There is no singular design prescription for Complete Streets; each one is unique and responds to its community context.

They are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities.

Complete Streets make it easy to cross the street, walk to shops, and bicycle to work.

Source: Smart Growth America
Multi-Modal / Context Sensitive Thoroughfare Planning

The updated plan will encourage multi-mode transportation like streetcars, buses, trains and bicycles.

- Complete Streets Based
- Context Sensitive Street Typologies
- Designated Street Types
  - Activity Street
  - Commercial / Mixed-Use Street
  - Connector Corridors
  - Commercial Corridor
  - System Link
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