Regional Bicycle and Pedestrian Planning and Projects

Karla Weaver, AICP
Senior Program Manager
Metropolitan Planning Area (MPA)
209 cities
13 cities larger than 100,000 pop.

MPA Population
2017 Estimate = 7.2 million
2045 Forecast = 11.2 million
Regional Initiatives to Promote Great Urban Places

Sustainable Development (SD) Program

**Sustainable Development**
- Funding Program (Infrastructure, Planning, Landbanking)
- Land Use-Zoning, Parking, Economic Development, and Housing

**Transit-Oriented Development**
- TOD Regional Working Group
- Data Collection/Mapping/Technical Studies
- Training & Outreach
- FTA Grant

Community Schools and Transportation (TIGER Planning Grant)

**Bicycle and Pedestrian Planning**
FHWA Pedestrian-Bicycle Safety Focus States and Cities

States and cities with the highest pedestrian fatalities and/or fatality rates

Pedestrian Fatality Rates*
(Per 10k walking commuters)

#41: Texas

Top 50 Cities*
#26: Austin
#37: Houston
#44: San Antonio
#47: Dallas
#50: Fort Worth

Pedestrian fatalities increased 27% from 2007-2016, while all other traffic deaths decreased by 14%.

Source: NHTSA Fatality Analysis Reporting System
<table>
<thead>
<tr>
<th>Year</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>7</td>
</tr>
<tr>
<td>2015</td>
<td>11</td>
</tr>
<tr>
<td>2016</td>
<td>15</td>
</tr>
</tbody>
</table>

Number of states with pedestrian fatality rates \( \geq 2.0 \) per 100,000 population

Source: GHSA
2013 - 2017
Bicycle And Pedestrian Crashes And Fatalities
(North Central Texas – 12 Counties)

20.3% Increase
Counties with the Largest Numbers of Pedestrian Fatalities, 2016

<table>
<thead>
<tr>
<th>State</th>
<th>County</th>
<th>Number of Pedestrian Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>Los Angeles</td>
<td>265</td>
</tr>
<tr>
<td>AZ</td>
<td>Maricopa</td>
<td>133</td>
</tr>
<tr>
<td>TX</td>
<td>Harris</td>
<td>128</td>
</tr>
<tr>
<td>TX</td>
<td>Dallas</td>
<td>84</td>
</tr>
<tr>
<td>FL</td>
<td>Miami-Dade</td>
<td>83</td>
</tr>
<tr>
<td>IL</td>
<td>Cook</td>
<td>74</td>
</tr>
<tr>
<td>CA</td>
<td>San Diego</td>
<td>71</td>
</tr>
<tr>
<td>TX</td>
<td>Bexar</td>
<td>68</td>
</tr>
<tr>
<td>FL</td>
<td>Broward</td>
<td>67</td>
</tr>
<tr>
<td>CA</td>
<td>Orange</td>
<td>63</td>
</tr>
</tbody>
</table>

Source: FARS
Governors Highway Safety Association, Pedestrian Traffic Fatalities by State, 2017
Urbanized Area

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

NCTCOG 12 County Metropolitan Planning Area

Note: Density concentration is calculated as a magnitude per unit area from crash point features and is based on the geography of the census designated urbanized area. Blue symbolizes higher concentration of crashes and yellow displays lower concentrations.

1) Source: TxDOT's Crash Records Information System - 2017 data is current as of April 2018. All TxDOT disclaimers apply.
2) Data displayed contains reportable crashes with latitude and longitude information. Additional crashes may have occurred.
3) This data is composed of TxDOT "Reportable Crashes" that occurs or originates on a traffic way, results in injury to or death of any person, or damage to the property of any person to the apparent extent of $1,000.
Dallas County
Bicycle and Pedestrian
Crash Locations and Density

Legend
- Fatal Bicycle or Pedestrian Crash Location - (350)
- Non-Fatal Pedestrian Crash Location - (3,371)
- Non-Fatal Bicycle Crash Location - (1,047)

- No Crash Density
- Low Crash Density
- Medium Crash Density
- High Crash Density
- Very High Crash Density
- Highway
- Major Arterial
- Minor Arterial
- Passenger Rail

NCTCOG 12 County Metropolitan Planning Area

Note: Density concentration is calculated as a magnitude per unit area from crash point features and is based on each county’s geography. Blue symbolizes higher concentration of crashes and yellow displays lower concentrations.

1) Source: TxDOT's Crash Records Information System - 2016 data is current as of February 2017. All TxDOT disclaimers apply.
2) Data displayed contains reportable crashes with latitude and longitude information. Additional crashes may have occurred.
3) This data is composed of TxDOT "Reportable Crashes" that occur or originate on a traffic way, results in injury to or death of any person, or damage to the property of any person to the apparent extent of $1,000.
Fatalities on TxDOT Roadways
North Central Texas MPA
(Pedestrian and Bicycle)

65% of Fatalities Occur on TxDOT Roadways
On-system roadway crashes account for 26% of pedestrian and bicycle crashes in the region and 65% of all pedestrian and bicycle fatalities.
Location of Pedestrian Fatalities (Nationwide)

Pedestrian Fatalities by Roadway Type, 2016

- Local Street Municipality: 33%
- State Highway: 25%
- U.S. Highway: 16%
- Interstate: 11%
- County Road: 9%
- Local Street Township: 5%
- Local Street Frontage Road: 1%

Source: FARS

Governors Highway Safety Association, Pedestrian Traffic Fatalities by State, 2017
Contributing Factors (Nationwide)

2016 Pedestrian Fatalities by Light Level

Source: FARS

Governors Highway Safety Association, Pedestrian Traffic Fatalities by State, 2017
As motor vehicle speeds increase, the risk of serious injury or fatality for a pedestrian also increases (AARP Impact Speed and a Pedestrian’s Risk of Severe Injury or Death 2011, p. 1). Also, motorist visual field and peripheral vision is reduced at higher speeds.
Programs and Projects
Education and Training

Complete Streets Workshops

Designing for Pedestrian Safety 101 & 201

ADA Transition Plans

Designing for Pedestrian Safety Workshops

• NCTCOG hosts workshops for engineers and transportation planners
• TxDOT, City Staff, Transportation Agencies
• Case study site visit exercises
What are 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.

Source: Smart Growth America
Proven Safety Countermeasures

https://safety.fhwa.dot.gov/provencountermeasures/
Land Use Considerations

Considerations

- Distance between intersections
- Access to land use destinations (pedestrian generators)
- Crosswalks and traffic signal or beacon warrants
Road Safety Audit for Pedestrian Safety

- Collaboration between City of Dallas, Dallas County, Dallas Area Rapid Transit, NCTCOG and FHWA
- Area with large transit dependent population
- Agencies now collaborating on a Complete Streets project
LookOutTexans.org
Technical Objectives

1. **Code five years of bicycle and pedestrian crash reports** for the 12-county North Central Texas Metropolitan Planning Area using the methodology developed by the National Highway Traffic Safety Administration for the Pedestrian and Bicycle Crash Analysis Tool (PBCAT).

2. Conduct an analysis to **identify corridors with highly concentrated bicycle and pedestrian crashes** and the unsafe actions that are contributing to the crashes.

3. **Provide safety countermeasures and recommendations** for further study for these corridors.

4. **Review the crash narrative/diagram** as part of the coding process to understand the true nature concerning the cause of the crash.
Regional Pedestrian Safety Action Plan

12-County Regional Plan

• Demand analysis and mapping areas with a high propensity to walk;
• Identify corridors and districts with high density of pedestrian crashes;
• Conduct safety assessments in “hot spot” areas of crashes;
• Prepare a guide for best practices and safety countermeasures for the region; and
• Recommended programs and projects.
Pedestrian and Bicycle Routes to Rail Stations

Distance and gaps in the actual “Routes” to stations (walksheds)

nctcog.org/RoutesToRail
Facility Disconnected From Network
Poor Design for Access to Transit
Pedestrian Routes to Rail - Illinois Station

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/ RoutesToRail
Data Collection – Sidewalk Gaps & Verification

Legend
- Sidewalk
- Sidewalk Gap
- Unacceptable Sidewalk Condition
Fort Worth
Active Transportation Plan
Pedestrian Experience Index

• Scores segments (lines) and intersections (circles)

• Green is more pleasant/comfortable

• Red is less comfortable
Segment Scoring

Maximum Points

- Sidewalk Presence & Condition – 30
- Posted Speed Limit – 25
- Number of Lanes – 25
- Bike Lane Presence – 5
- Car Parking Presence – 5

- Block Length – 40
- Building Set Back – 50
- Driveways – 20
- Addresses per block – 20
Intersection Scoring

Scored on 1 - 4

- Number of Lanes:  
  1: 2 lanes  
  4: >5 lanes

- Posted Speed Limit:  
  1: 30mph  
  4: >40mph

- Average Daily Traffic:  
  1: <1,200  
  4: >18,000

- ADA Curb Ramps:  
  1: 4 corners  
  4: 0 ramps

Score Improved By:

- Traffic Signal
- Crosswalk across major road
Pedestrian Safety Initiatives in North Texas (Dallas – Fort Worth Regional Impacts)

**Activities**

**TxDOT HQ (Austin)**
- State Highway Safety Plan (Pedestrian Safety Emphasis Area (EA))
- Texas Pedestrian Safety Coalition (TPSC) *TTI*
- TxDOT Austin Education/Training
  - Bike/Walk Safe *TTI*
- Safe Route to School Education/Funding
- Statewide Pedestrian Crash Study on High Speed (>45) Facilities *TTI*
- Section 40X funding for safety initiatives

**TxDOT Dallas District**
- Dallas District Pedestrian Crash Study (Dallas Co) *TTI*
- Dallas Traffic Safety Coalition (TxDOT)

**TxDOT Fort Worth District**
- Fort Worth Area Coalition on Traffic Safety (FACTS)
- Fort Worth Safe Communities Coalition (FWSCC) Road Safety Task Force

**NCTCOG Transportation Dept.**
- 12-County Regional Pedestrian Safety Action Plan
- NCTCOG requested research program 19-72
  - N. Texas Pedestrian Crash Analysis *TxDOT/UPEP*
  - Safe Routes to School Planning in partnership with State Farm
  - Roadway Safety Audits
  - Road to Zero Plans
  - Regional Safety Plan
  - Look Out Texans

**Other**
- City of Dallas Pedestrian Safety Action Plan
- Fort Worth Active Transportation Plan
- Injury Prevention Center of Greater Dallas (downtown PAS)
- Fort Worth Safe Communities Coalition Road Safety Task Force
Facility recommendations indicate transportation need. Corridor-specific alignment, design, and operational characteristics for the Regional Veloweb system will be determined through ongoing project development.
The Regional Veloweb and Community Shared-Use Path network does not include recreational paths/loops, private paths, equestrian or nature trails, or wide sidewalks less than 10 feet in width.

On-street bikeways in the urbanized area include: separated or protected bike lanes/cycle tracks, bike lanes, marked shared lanes, and marked bicycle boulevards.

On-street bikeways in the urbanized area do not include: signed bike "routes", signed "share the road", unmarked wide outside lanes, or signed wide shoulders.

The use of wide shoulders is included on various roadways linking rural communities outside of the urbanized area.

Facility recommendations indicate transportation need. Corridor-specific alignment, design, and operational characteristics for the network will be determined through ongoing project development.
Highlighted Regional Trail Corridors

<table>
<thead>
<tr>
<th>Existing/Funded</th>
<th>Planned</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 miles</td>
<td>32 miles</td>
<td>46 miles</td>
</tr>
<tr>
<td>53 miles</td>
<td>11 miles</td>
<td>64 miles</td>
</tr>
<tr>
<td>67 miles</td>
<td>15 miles</td>
<td>82 miles</td>
</tr>
<tr>
<td>41 miles</td>
<td>13 miles</td>
<td>54 miles</td>
</tr>
</tbody>
</table>
North Central Texas Regional TAP Call for Projects (2019)

Safety-related projects typically score well in multiple categories.

nctcog.org/TAP

### Transportation Alternatives Set-Aside Program Application Evaluation Categories (2019)

<table>
<thead>
<tr>
<th>Category</th>
<th>Scoring (Maximum Points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Network Connectivity (Completing the Gaps)</td>
<td>25</td>
</tr>
<tr>
<td>Mobility (Connections to Transit)</td>
<td>20</td>
</tr>
<tr>
<td><strong>Safety</strong> (Improves Safety, Facilities for All Ages &amp; Abilities)</td>
<td>15</td>
</tr>
<tr>
<td>Reducing Barriers (Safe Crossings of existing travel obstacles)</td>
<td>10</td>
</tr>
<tr>
<td>Congestion Reduction</td>
<td>10</td>
</tr>
<tr>
<td>Destination Density</td>
<td>5</td>
</tr>
<tr>
<td>Air Quality Benefits</td>
<td>5</td>
</tr>
<tr>
<td>Equity (Serving Environmental Justice Areas)</td>
<td>5</td>
</tr>
<tr>
<td>Local Network Connectivity</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Data Collection

Bicycle Opinion Survey

Bicycle and Pedestrian Count Stations in the North Central Texas Region

Legend
- Bicycle/Pedestrian Count Stations:
  - NCTCDG Owned Equipment (11)
  - Other Agency Owned Equipment (19)
  - Other Recreation-Based Equipment (9)
  - On-Street Bike Lane Equipment (1)
- Regional VeloWeb:
  - Existing/Funded Paths
  - Planned Paths

Four Types of Cyclists* within North Texas Region

- Strong & Fearless
  - Will ride a bicycle regardless of the roadway conditions. Riding is a strong part of their identity.
- Enthusiastic & Confident
  - Somewhat comfortable sharing the road with vehicular traffic. Prefers dedicated bike facilities.
- Interested But Concerned
  - Like riding a bicycle, and would ride more if they felt safer on the roadway.
- No Way No How
  - Not comfortable, not interested, or not physically able to ride a bicycle.
WALKABLE STREETS OF NORTH TEXAS
Karla Weaver, AICP
Senior Program Manager
kweaver@nctcog.org
(817) 608-2376

nctcog.org/bikeped