Improving Multi-Modal Last Mile Connections to Transit and Parking Management

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Metropolitan Planning Area (MPA)
- 209 cities
- 13 cities larger than 100,000 pop.

MPA Population
- 2018 Estimate = 7.4 million
- 2045 Forecast = 11.2 million
Regional Veloweb

- Existing: 455 Miles
- Funded: 143 Miles
- Planned: 1,285 Miles
- Total: 1,883 Miles

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

Fidelity recommendations indicate transportation need. Corridor-specific alignment, design, and operational characteristics will be determined through ongoing project development.

June 2018
Pedestrian and Bicycle Routes to Rail Stations

Rail Station

0.5 mile actual walk distance

Barriers and Gaps in the Network

Destination

0.5+ mile

Disconnected pedestrian facility
Actual Walkshed

0.5 mile walkshed on a connected sidewalk route

The actual 0.5 mile walkshed is often much less coverage than the 0.5 mile radius
Actual Walkshed

0.5+ mile walkshed on a connected sidewalk route

The 0.5 mile radius may require a much further actual walking distance on existing sidewalks.
Actual Walkshed

Other sidewalks disconnected from the network
FTA Planning Pilot Program for Transit-Oriented Development

Partnership
NCTCOG, DART, Cities of: Dallas, Garland, Plano, and Richardson

Transit Project
DART Red and Blue Lines Platform Extensions (28 stations built before 2004)
FTA Planning Pilot Program Scope of Work

Task 1. Routes to Rail Stations Connectivity

Task 2. TOD Parking Utilization Study

Task 3. TOD Resident / Employee Survey
Goal:
Identify sidewalks and sidewalk improvements to maximize access for potential transit riders

Menu of Improvements for the Access and Safety of Potential Riders

Recommended Improvements and preliminary cost estimates

Preliminary Engineering
Appraisal district parcel data
(Dallas, Collin, Denton, Tarrant Co.)

SQFT, land use, and parcel geometry

calculate parcel population
e.g. 300 SQFT office = 1 person
## Criteria And Weighting

### Proposed Improvements

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment and Population Density</strong></td>
<td>50</td>
</tr>
<tr>
<td>(Number of potential riders connected by the improvement’s catchment area)</td>
<td></td>
</tr>
<tr>
<td><strong>Distance / Proximity of Improvements to the Station</strong></td>
<td>25</td>
</tr>
<tr>
<td>Walkshed Trip Length Reduction</td>
<td>5</td>
</tr>
<tr>
<td>(Catchment area benefitting from a reduced walk distance to the station)</td>
<td></td>
</tr>
<tr>
<td><strong>Land Use Types and Key Destinations</strong></td>
<td>5</td>
</tr>
<tr>
<td>(e.g. schools, government buildings, social services, hospitals, large shopping centers, parks)</td>
<td></td>
</tr>
<tr>
<td><strong>Crash History</strong></td>
<td>5</td>
</tr>
<tr>
<td>(Number of crashes in the general area of the project improvement)</td>
<td></td>
</tr>
<tr>
<td><strong>Safety Benefit</strong></td>
<td>5</td>
</tr>
<tr>
<td>(Speed limit as a surrogate for systemic safety of the project improvement)</td>
<td></td>
</tr>
<tr>
<td><strong>Equity / Transit Dependent Populations</strong></td>
<td>5</td>
</tr>
<tr>
<td>(Minority households, % below poverty line)</td>
<td></td>
</tr>
</tbody>
</table>
Pedestrian “Trees”

Existing “goat path” to station

Station

Apartment complex ("large fruit")
### Station Recommendations Matrix

#### Parker Road Station

<table>
<thead>
<tr>
<th>Location ID</th>
<th>Ownership</th>
<th>Project Type</th>
<th>Description</th>
<th>Opinion of Probable Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A-PR-ST-01</td>
<td>DART</td>
<td>Lighting</td>
<td>Close gap in hedges that appears to imply this as a valid location for crossing the bus loop. Consider fencing to redirect pedestrians. The lack of ramps or a crosswalk across the bus loop here makes this an inappropriate location for a crossing. Fire hydrant here is likely the reason for the gap in the hedges, so fire hydrant access from the bus loop should be preserved.</td>
<td>$68,100</td>
</tr>
<tr>
<td>1A-PR-ST-02</td>
<td>DART</td>
<td>Fencing</td>
<td>Add Regional Veloweb shared use path to connect platform more directly to Parker Road to the north. Will require grading, new fence between parking lot and tracks, and drainage modifications. Concrete drainage swales drain parking lot downhill toward the east at several locations across proposed path alignment; in addition, additional study will be required.</td>
<td>$700</td>
</tr>
<tr>
<td>1A-PR-ST-03</td>
<td>DART</td>
<td>Multi-Use Trail</td>
<td>Add educational signage at all covered bike parking locations regarding rules of use. Existing covered bike parking lids were locked. Several of the locked lids were empty without bikes inside or were storing personal belongings. The locking of empty lids indicates a shortage of available covered bike parking.</td>
<td>Separate Project</td>
</tr>
<tr>
<td>1A-PR-ST-06</td>
<td>DART</td>
<td>Bicycle Parking</td>
<td>Add additional covered bike parking, preferably closer to train platform (at Location 4).</td>
<td>$17,400</td>
</tr>
<tr>
<td>1A-PR-ST-07</td>
<td>DART</td>
<td>ADA Ramp or Relocate ADA Parking</td>
<td>Relocate ADA parking from Location 7 closer to the north crosswalk to the train platform (near Location 3). Reasons for this change are:  - Ramps are absent for crossing the southbound tracks east of the bus loop (near Location 6).  - Much of the ADA parking for the station is in the small parking lot immediately west of the bus loop (Location 7 and southwest of Location 10). Some ADA parking is already located southwest of the platform near Location 14.  - The lack of ramps near Location 6 requires passengers in wheelchairs to travel to the compliant crosswalks at the north or south ends of the platform (Locations 7a or 7b).</td>
<td>$32,600</td>
</tr>
<tr>
<td>1A-PR-ST-08</td>
<td>DART</td>
<td>Crosswalk Markings</td>
<td>Add 12” white markings on each side of brick paver crosswalks. Bus loop crosswalks are stop-controlled, but need white markings outside the brick area to be legal crosswalks.</td>
<td>$1,100</td>
</tr>
<tr>
<td>1A-PR-ST-09</td>
<td>DART</td>
<td>Crosswalk Signs and Markings</td>
<td>Add pedestrian warning signs and 12” white markings outside brick pavers for Kiss &amp; Ride crosswalk. (Crosswalk is raised to slow drivers but not signed or marked.)</td>
<td>$1,900</td>
</tr>
<tr>
<td>1A-PR-ST-11</td>
<td>DART</td>
<td>Sidewalk Repair</td>
<td>Correct trip hazard on sidewalk.</td>
<td>$700</td>
</tr>
<tr>
<td>1A-PR-ST-12</td>
<td>DART</td>
<td>Landscaping</td>
<td>Trim hedges or replace with easier maintenance plants so they don’t encroach on sidewalk.</td>
<td>$6,900</td>
</tr>
<tr>
<td>1A-PR-ST-13</td>
<td>DART</td>
<td>Landscaping</td>
<td>Close hedge gap that provides access to existing covered bike parking (at Location 5). Gap in hedges is convenient for bicycle access to existing covered parking, but lacks ramps and conflicts with bus loop. Provide bike parking closer to platform as indicated at Location 4 above.</td>
<td>$400</td>
</tr>
<tr>
<td>1A-PR-ST-14</td>
<td>DART</td>
<td>Multi-Use Trail</td>
<td>Add new shared use path connecting platform more directly to Park Blvd to the south on planned Regional Veloweb alignment. May require relocation of utilities or removal of trees and/or parking spaces.</td>
<td>Separate Project</td>
</tr>
</tbody>
</table>

**Opinion of Probable Cost - DART Subtotal: $131,200**
Unsignalized Crosswalk Improvements

Nine options considered per FHWA’s “Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations” (2018)

Options to consider vary based on:

- Number of lanes to cross
- AADT
- Speed
Pedestrian Routes to Rail - Parker Road 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. 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 is available at:
Other Considerations

• Adjacent Land Uses
• Future Development / Redevelopment Impacts
• Existing Conditions and ADA
• Roadway and Intersection Characteristics
Other Considerations

• Basic Improvements

  vs.

Other Desired Streetscape Enhancements

• Implementation Agency

  (City, TxDOT, DART)

• Local vs. Regional vs. Transit Agency Priorities

• Funding Availability
Which accommodation is more comfortable?
Next Steps /Lessons Learned

- Logical Construction Packages
- We can build it. *But will they come?*
  - ✔ TOD Survey of Residents and Employers
  - ✔ Must Address Other Issues Impacting Perceptions of Safety
  - ✔ Weather

▷ Tell The Story (Media, Elected Officials, Public At-Large)
  - Benefits vs. Cost
  - Safety
  - Economic Development
  - 4M more residents in the region = increased vehicle congestion
Improving Multimodal Last Mile Connections to Transit and Managing Parking

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Greenville Ave.
DART Arapaho Center Station
Source: City of Richardson