Goals

• Develop a context sensitive design framework and typical sections
• Provide local practitioners with Complete Streets design guidance
• Emphasize multimodal safety and mobility
• Connect with FDOT Complete Streets Implementation including
  Context Classification Guide and new FDOT Design Manual
Process

• MPO Complete Streets Policy adopted in March 2016
• Complete Streets Working Group guided document progress
  • Best practice Design Guidelines
  • Initial CSDG outline
  • Multimodal typology framework (street type and land context type)
  • Design criteria
**Complete Streets Design Guidelines**

**Benefits of Complete Streets**

- Increased physical activity promotes better grades, school attendance, and classroom behavior.

- Pedestrian street activity increases support of local businesses, expands employment opportunities, and promotes reinvestment into the local economy.

- If 100,000 car trips were replaced by bike trips once a month, it would cut carbon dioxide (CO2) emissions by 3.764 tons/year.

- $9,700 is the average annual savings from choosing to ride transit instead of driving alone.

- Every $1 communities invest in transit generates $4 in economic returns.

- Homes with higher Walk Scores sell for between $4,000 and $34,000 more.

- Increased pedestrian street activity acts as self-policing, deterring criminal behavior.

People who live in neighborhoods with sidewalks on roads are 47% more likely to be active at least 30 minutes per day.
Table of Contents

Summary of Primary Topics .................................................. 7
Street Typology
Land Use Typology
Flexibility in Design
Sidewalk Zones
Lane Width
Separated Bicycle Lanes

1. Introduction ................................................................. 11
   Purpose
   Background
   Existing Design Guidance

2. Best Practices ............................................................. 23
   Introduction
   Review of Example Design Guidelines

3. Multimodal Street Typology Framework .............................. 31
   Framework
   Typologies
   Street Type Table
   Street Types
   Land Use Type Table
   Land Use Types
   Street and Land Use Maps

4. Blended Typology Approach ........................................... 55
   Introduction
   Design Dimensions for Street Type and Land Use
   Context Combinations
   Pedestrian Realm/Streetside Design Guidance
   Roadway Realm Design Guidance
   Intersection Design Guidance

5. Implementation ............................................................ 91
   Adopt a Complete Streets Policy
   Build Complete Streets
   Demonstrate Success

Links Take You Directly There
Acronyms and Glossary

AASHTO - American Association of State Highway and Transportation Officials

ADA - Americans with Disabilities Act

ADT - Average Daily Traffic

APBP - Association of Pedestrian and Bicycle Professionals

APTA - American Public Transportation Association

ASCE - American Society of Civil Engineers

Bicycle Box - A signalized intersection traffic control device that provides a designated space between the intersection stop bar and an advance stop bar, intended to provide bicyclists a space in which to wait in front of stopped motor vehicles during the red phase to improve visibility at the start of the green phase.

Bicycle Lane - Delineated roadway space for preferential use by bicyclists and marked with the bicycle lane symbol and arrow.
Chapter Dividers with Local Photos
Summary of Primary Topics

• Flexibility in Design
• Street Typology
• Land Use Typology
• Sidewalk Zones
• Separated Bike Lanes
• Vehicle Lanes
Flexibility in Design

- FAST Act encourages flexibility in design
- *Toward More Flexible Design*, (FHWA, 2016)
- FDOT Complete Streets Policy
- FDOT Context Classification Guide
- FDOT Design Manual (FDM)
Street Typology

- Limited Access Facilities
- Major Corridors
- Main Connectors
- Community Connectors
- Neighborhood Streets

Land Context Typology

- Urban Core
- Urban General
- Suburban
- Rural Town
- Rural
- Natural
Complete Streets Design Guidelines

Street and Land Use Maps
Anatomy of a Complete Street

<table>
<thead>
<tr>
<th>PEDESTRIAN REALM</th>
<th>ROADWAY REALM</th>
<th>PEDESTRIAN REALM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sidewalk/Shared Use Pathway</td>
<td>Bicycle Facilities</td>
<td>Sidewalk/Shared Use Pathway</td>
</tr>
<tr>
<td>Street Trees</td>
<td>Bus Lanes</td>
<td>Street Trees</td>
</tr>
<tr>
<td>Benches/Furnishing</td>
<td>Through Lanes</td>
<td>Benches/Furnishing</td>
</tr>
<tr>
<td>Bike Racks</td>
<td>Turn Lanes</td>
<td>Bike Racks</td>
</tr>
<tr>
<td>Lighting</td>
<td>Parking Lanes</td>
<td>Lighting</td>
</tr>
<tr>
<td>Parking Meters</td>
<td>Curb/Gutter Swale</td>
<td>Parking Meters</td>
</tr>
<tr>
<td>Utilities</td>
<td></td>
<td>Utilities</td>
</tr>
</tbody>
</table>

Figure 4-1 Street Elements in the Pedestrian Realm and the Roadway Realm
Why Multimodal Design?

- MPO Vision is a **Safe**, **Efficient**, **Connected** and **Multimodal** Transportation System
- LRTP goals seek higher mode split for walk/bike/transit

Mode Split for Work Trips in Palm Beach County, Actual vs. LRTP Goal

<table>
<thead>
<tr>
<th>2040 LRTP</th>
<th>Actual</th>
<th>Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk</td>
<td>1%</td>
<td>5%</td>
</tr>
<tr>
<td>Bicycle</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Transit</td>
<td>2%</td>
<td>5%</td>
</tr>
</tbody>
</table>
Pedestrian Facilities

- Three zone approach
  - Frontage, Pedestrian, Furnishing
- Wider is better
Types of Cyclists

- 2016 National research: four types of cyclists

- 7% Strong & Fearless (Sharrow / Bicycle Lane)
- 5% Enthused & Confident (Buffered Bicycle Lane)
- 51% Interested but Concerned (Raised / Separated Bicycle Lane)
- 37% No Way No How (N/A)

Source: Dill & McNeil, TRB 2016
Separated Bicycle Lanes

Separated bicycle lane in Tampa, Florida

Parking separated bicycle lane
Motorized Vehicle Lanes

- Lane Width
  - Buses and Trucks
  - All other vehicles

- Appropriate Speed

- Curb Zone/Drainage
<table>
<thead>
<tr>
<th>Typical (Constrained)</th>
<th>Pedestrian Zone (ft)</th>
<th>Peds + Bikes Zone (ft)</th>
<th>Curb Zone (ft)</th>
<th>Bicycle Facility (ft)</th>
<th>Through Lane (ft)</th>
<th>Through Lane (ft)</th>
<th>Through Lane (ft)</th>
<th>Hall of Center Median (ft)</th>
<th>Total ROW Width (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Core</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Urban General</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td>2</td>
<td>8</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>120 (10)</td>
</tr>
<tr>
<td>Suburban</td>
<td>0</td>
<td>7 (6)</td>
<td>0</td>
<td>2</td>
<td>8 (4)</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>120</td>
</tr>
<tr>
<td>Rural Town</td>
<td>2</td>
<td>10</td>
<td>6</td>
<td>2</td>
<td>8</td>
<td>11</td>
<td>11</td>
<td>N/A</td>
<td>120</td>
</tr>
<tr>
<td>Rural</td>
<td>5</td>
<td>12</td>
<td>5</td>
<td>24</td>
<td>10</td>
<td>12</td>
<td>12</td>
<td>N/A</td>
<td>220</td>
</tr>
<tr>
<td>Natural</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**NOTES**
- Dimensions shown in the table reflect typical values with constrained values shown in parentheses.
- Separated bicycle lanes are preferred because they are most likely to attract a wider range of bicyclists.
- Design speeds of 50 mph or greater may require greater separation between through lane and a raised separator.
- Where driveway density and/or drainage concerns prevent the introduction of separated bicycle lanes, buffered bicycle lanes are acceptable.
- Turn lane will exist in median space where applicable.
- When used, on-street parking should be provided in the roadway realm with a total width of 6 feet, which may be inclusive of an 18-inch gutter pan on curb-and-gutter roadways.
- N/A refers to street type and land use typology combinations that do not occur within Palm Beach County.
- In Rural areas, curb zone accommodates swale and drainage.
## MAIN CONNECTOR

<table>
<thead>
<tr>
<th></th>
<th>Typical (Constrained)</th>
<th>Frontage Zone (ft)</th>
<th>Pedestrian Zone (ft)</th>
<th>Furnishing Zone (ft)</th>
<th>Curb Zone (ft)</th>
<th>Bicycle Facility (ft)</th>
<th>Through Lane (ft)</th>
<th>Through Lane (ft)</th>
<th>Half of Center Median (ft)</th>
<th>Total ROW Width (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Core</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>10</td>
<td>5</td>
<td>80</td>
</tr>
<tr>
<td>Urban General</td>
<td>3 (1)</td>
<td>8</td>
<td>4</td>
<td>2</td>
<td>8 (4)</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>110 (80)</td>
</tr>
<tr>
<td>Suburban</td>
<td>3 (1)</td>
<td>10</td>
<td>5 (2)</td>
<td>2</td>
<td>8</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>10</td>
<td>120 (80)</td>
</tr>
<tr>
<td>Rural Town</td>
<td>3</td>
<td>12</td>
<td>9</td>
<td>2</td>
<td>8</td>
<td>11</td>
<td>N/A</td>
<td>N/A</td>
<td>15</td>
<td>120</td>
</tr>
<tr>
<td>Rural</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>15</td>
<td>8</td>
<td>11</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>120</td>
</tr>
<tr>
<td>Natural</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**NOTES**
- Dimensions shown in the table reflect typical values with constrained values shown in parentheses.
- Design speed in urban core and urban general areas is assumed to be 35 mph or less.
- Separated bicycle lanes are preferred because they are most likely to attract a wider range of bicyclists.
- Where driveway density and/or drainage concerns prevent the introduction of raised bicycle lanes, buffered bicycle lanes are acceptable.
- Turn lane will exist in median space where applicable.
- When used, on-street parking should be provided in the roadway realm with a total width of 8 feet, which may be inclusive of an 18-inch gutter pan on curb-and-gutter roadways.
- N/A refers to street type and land use typology combinations that do not occur within Palm Beach County.
- In Rural areas, curb zone accommodates swale and drainage.
**Community Connector**

<table>
<thead>
<tr>
<th>Type</th>
<th>Frontage Zone (ft)</th>
<th>Pedestrian Zone (ft)</th>
<th>Furnishing Zone (ft)</th>
<th>Curb Zone (ft)</th>
<th>Bicycle Facility (ft)</th>
<th>Through Lane (ft)</th>
<th>Half of Center Median (ft)</th>
<th>Total ROW Width (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Core</td>
<td>4</td>
<td>10</td>
<td>6</td>
<td>2</td>
<td>8</td>
<td>10</td>
<td>*</td>
<td>80</td>
</tr>
<tr>
<td>Urban General</td>
<td>3</td>
<td>10</td>
<td>6</td>
<td>2</td>
<td>8</td>
<td>11</td>
<td>*</td>
<td>80</td>
</tr>
<tr>
<td>Suburban</td>
<td>3 (1)</td>
<td>10 (3)</td>
<td>6 (3)</td>
<td>2</td>
<td>8 (5)</td>
<td>11</td>
<td>*</td>
<td>80 (60)</td>
</tr>
<tr>
<td>Rural Town</td>
<td>3</td>
<td>12</td>
<td>9 (4)</td>
<td>2</td>
<td>8</td>
<td>11</td>
<td>15</td>
<td>120 (110)</td>
</tr>
<tr>
<td>Rural</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>15 (13)</td>
<td>8 (5)</td>
<td>11</td>
<td>15 (5)</td>
<td>120 (60)</td>
</tr>
</tbody>
</table>

**NOTES**
- Dimensions shown in the table reflect typical values with constrained values shown in parentheses.
- Design speed in any land use with 10’ lanes is assumed to be 35 mph or less.
- Separated or raised bicycle lanes are preferred because they are most likely to attract a wider range of bicyclists.
- Where driveway density and/or drainage concerns prevent the introduction of separated or raised bicycle lanes, buffered bicycle lanes are acceptable.
- When used, on-street parking should be provided in the roadway realm with a total width of 8 feet, which may be inclusive of an 18-inch gutter pan on curb-and-gutter roadways.
- N/A refers to street type and land use typology combinations that do not occur within Palm Beach County.
- Median not applicable for urban core, urban general, and suburban land uses. Opposing directions may be separated by traffic striping.
Intersections

- Traffic Control Elements
- Intersection Geometry
- Intersection Safety
- Pedestrian Elements
- Bicycle Elements
- Transit Elements
- Placemaking

Example of a curb extension reducing the pedestrian crossing distance;
Source: FHWA
Curb Radii

- **Message to Peds:**
  - Safety is the priority
- **Message to Vehicles:**
  - Slow Down
  - Pay Attention
Using the Guidelines - Where?

- Applicability by Roadway Mileage

Thoroughfare Centerline Miles by Roadway Owner

1,132 miles out of 1,286 are owned by FDOT or County
Applicability to Existing Projects?

- Ensure Projects in the FY 18-22 TIP in your area are as consistent as possible

<table>
<thead>
<tr>
<th>Project Type</th>
<th># of Projects</th>
<th>Total Cost (in $M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIS Capacity</td>
<td>36</td>
<td>$ 926.3</td>
</tr>
<tr>
<td>Major MPO Projects</td>
<td>11</td>
<td>$ 298.2</td>
</tr>
<tr>
<td>Local Initiatives Program</td>
<td>33</td>
<td>$ 95.3</td>
</tr>
<tr>
<td>Transportation Alternatives Program</td>
<td>14</td>
<td>$ 18.6</td>
</tr>
<tr>
<td>SUN Trail</td>
<td>1</td>
<td>$ 1.4</td>
</tr>
<tr>
<td>Major Maintenance</td>
<td>94</td>
<td>$ 309.7</td>
</tr>
<tr>
<td>Other FDOT &amp; Local Projects</td>
<td>89</td>
<td>$ 265.5</td>
</tr>
</tbody>
</table>

Grand Total 278 $ 1,915.1
Identification of New Projects?

• Look at your existing Capital Program
  • Infrastructure Surtax Projects
  • Maintenance
  • Safety

• Apply to the MPO for Funding in March
  • Lane Elimination Candidates
  • Flexible Right of Way Corridors
Legend

- Lane Elimination Candidates
- Potential Lane Elimination Candidate*

*Potential Lane Elimination Candidate meet daily traffic criteria but not peak hour peak direction criteria.

A Lane Elimination Candidate is:
- 4L with 20,000 vpd (Current or Future) and < 1,000 vphpd
- 5L with 40,000 vpd (Current or Future) and < 2,000 vphpd
- 8L with 60,000 vpd (Current or Future) and < 3,000 vphpd

vpd = vehicles per day
vphpd = vehicles per hour per day
Requested MPO Action

• Approve the Complete Streets Design Guidelines
  • This is **not** a standard
  • It is a **resource** to advance the implementation of Complete Streets in Palm Beach County

• Champion Complete Streets in your Community
  • Support adoption of local Complete Streets Policy