Bicycle and Pedestrian Plan for Gadsden & Etowah County

2013 Annual Conference
Alabama Chapter – APA
May 1, 2013
Bicycle Pedestrian Plan Goals

• Provide safe routes to schools
• Increase Connectivity to Greenway and Trail options
• Provide accessibility and mobility for people and goods
• Enhance system performance and operations
• Preserve and maintain the existing system
• Address all modes providing framework for modal connectivity that enhances mobility options for the community
• Coordinate with land use development to support economic development and community

Source: Gadsden / Etowah LRTP
A Major Client Concern
Project Strategy

• Develop a performance-based plan grounded in level of service measures
• Provide realistic construction cost estimates
• Prioritize in high, medium, low “buckets” based on performance/cost/demand scores
• Provide a tool for making priority decisions --- NOT A WISH LIST
• Encourage implementation inside other highway projects
Bicycle Pedestrian Plan Elements

- Existing Bicycling and Walking Conditions
- Demand Analysis
- Public Input
- Facility Improvement Needs Identification & Costs
- Prioritization of Projects
Existing Conditions
Bicycle and Pedestrian LOS

- Methodologies used to evaluate hundreds of thousands of miles of roads nationwide
- Included in the 2010 *Highway Capacity Manual*
Understanding Level of Service

Typical Bicycling Conditions:
- A
- B
- C
- D
- E
- F

Typical Walking Conditions:
- A
- B
- C
- D
- E
- F

Gadsden Etowah MPO
Bicycle and Pedestrian Plan

SAIN associates
consulting engineers
& surveyors

Sprinkle Consulting
Active Transportation
Planners + Engineers
Data Collection / Inventory
Relevant roadway data include:

- Traffic volume
- Lanes on roadway
- Speed of traffic
- Heavy vehicle mix
- Pavement condition
- Outside lane width (including shoulder)
Pedestrian Roadway Segment LOS Model

Relevant roadway data include:

- Bicycle model data and...
- On street parking
- Buffer width
- Sidewalk width
- Tree spacing
# LOS Categories

<table>
<thead>
<tr>
<th>Level-of-Service</th>
<th>LOS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>( \leq 1.5 )</td>
</tr>
<tr>
<td>B</td>
<td>( &gt; 1.5 ) and ( \leq 2.5 )</td>
</tr>
<tr>
<td>C</td>
<td>( &gt; 2.5 ) and ( \leq 3.5 )</td>
</tr>
<tr>
<td>D</td>
<td>( &gt; 3.5 ) and ( \leq 4.5 )</td>
</tr>
<tr>
<td>E</td>
<td>( &gt; 4.5 ) and ( \leq 5.5 )</td>
</tr>
<tr>
<td>F</td>
<td>( &gt; 5.5 )</td>
</tr>
</tbody>
</table>
Existing Conditions Results

Legend
- ELOD_Roads_AADT3
- ELOD
- A
- B
- C
- D
- E
- F
- Under Construction

Downtown Attala

Downtown Gadsden
Existing Conditions Results

• Distance weighted average = 2.93 = “C”

• Distance weighted average = 3.83 = “D”
 Participant Feedback:

 Level of Service Target

<table>
<thead>
<tr>
<th>General Bicycling Conditions</th>
<th>Level of Service (circle one)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please indicate which bicycling conditions represent a minimum standard that still meets your general needs.</td>
<td>A B C D E F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Walking Conditions</th>
<th>Level of Service (circle one)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please indicate which walking conditions represent a minimum standard that still meets your general needs.</td>
<td>A B C D E F</td>
</tr>
</tbody>
</table>
Public Input

- Participant Feedback: Level of Service Target

<table>
<thead>
<tr>
<th></th>
<th>Bike</th>
<th>Walking</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>B</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>C</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>E</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>??</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>28</td>
</tr>
</tbody>
</table>

- MPO approved performance thresholds of “C” for both Bike and Ped modes.
Estimation of Potential Bike Demand

- Projected School Enrollment
Estimation of Potential Pedestrian Demand

- Projected School Enrollment
Public Input

- Participant Feedback:
- “Votes” for Specific Facilities

<table>
<thead>
<tr>
<th>Road Name</th>
<th>From</th>
<th>To</th>
<th>Facility Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Revealed Demand

- Public Votes Bike
Revealed Demand

- Public Votes Ped

Figure 4: Pedestrian Facility Improvements Identified by Public Vote
Gadsden-Etowah Bike and Pedestrian Plan
## Identification of Potential Facility Improvements

<table>
<thead>
<tr>
<th>BICYCLE MODE</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Existing/Programmed</td>
<td>9.43</td>
<td>2.8%</td>
<td></td>
</tr>
<tr>
<td>2 LOS Met</td>
<td>196.24</td>
<td>59.3%</td>
<td></td>
</tr>
<tr>
<td>3 Re-stripe</td>
<td>1.7</td>
<td>0.5%</td>
<td></td>
</tr>
<tr>
<td>4 Road Diet</td>
<td>0</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>5 Add shoulder 1</td>
<td>0.5</td>
<td>0.2%</td>
<td></td>
</tr>
<tr>
<td>6 Add Shoulder 2</td>
<td>6.62</td>
<td>2.0%</td>
<td></td>
</tr>
<tr>
<td>7 DCSN Add shoulder 3</td>
<td>67</td>
<td>20.2%</td>
<td></td>
</tr>
<tr>
<td>8 DCSN</td>
<td>47</td>
<td>14.2%</td>
<td></td>
</tr>
<tr>
<td>(under construction)</td>
<td>2.49</td>
<td>0.8%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>330.98</strong></td>
<td><strong>100.0%</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PEDESTRIAN MODE</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Existing 100% coverage</td>
<td>16.25</td>
<td>4.9%</td>
<td></td>
</tr>
<tr>
<td>2 LOS MET</td>
<td>132.99</td>
<td>40.1%</td>
<td></td>
</tr>
<tr>
<td>3 Add Sidewalk</td>
<td>17.28</td>
<td>5.2%</td>
<td></td>
</tr>
<tr>
<td>4 Add Sidewalk 2</td>
<td>15.71</td>
<td>4.7%</td>
<td></td>
</tr>
<tr>
<td>5 DCSN</td>
<td>146.69</td>
<td>44.3%</td>
<td></td>
</tr>
<tr>
<td>UC</td>
<td>2.49</td>
<td>0.8%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>331.41</strong></td>
<td><strong>100.0%</strong></td>
<td></td>
</tr>
</tbody>
</table>
Prioritization Weighting

50% Existing Conditions +
40% Potential Demand +
10% Public Input/ Prior Plans +

Facility Construction Cost
Identification of Potential Bike Facility Improvements

Legend
Recommended Bike Facility Improvements
Categories
- Leave Existing Facility
- LOS Mat
- Redline for Bike Lanes
- Road Diet
- Add/Remove Shoulder
- DCIR
- Union Construction
- Interstate
- Local Roads (not studied in this project)
- Municipalities
- MPO Area

Figure 7: Recommended Bike Facility Improvements
Gadsden-Etowah Bike and Pedestrian Plan

SAIN associates
Sprinkle Consulting
Active Transportation Planners & Engineers
Identification of Potential Pedestrian Facility Improvements
# Identification of Potential Facility Improvements

## Costs and Mileage by Priority Tier - Bicycle

<table>
<thead>
<tr>
<th>Tier</th>
<th>Segments</th>
<th>Miles</th>
<th>Cost</th>
<th>Cost/Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1</td>
<td>25</td>
<td>12.23</td>
<td>$4,557,880</td>
<td>$372,680</td>
</tr>
<tr>
<td>Tier 2</td>
<td>25</td>
<td>15.19</td>
<td>$16,045,960</td>
<td>$1,056,350</td>
</tr>
<tr>
<td>Tier 3</td>
<td>24</td>
<td>23.96</td>
<td>$26,888,594</td>
<td>$1,122,228</td>
</tr>
<tr>
<td>Tier 4</td>
<td>25</td>
<td>34.45</td>
<td>$44,119,848</td>
<td>$1,280,692</td>
</tr>
<tr>
<td>Tier 5</td>
<td>25</td>
<td>37.43</td>
<td>$52,206,659</td>
<td>$1,394,781</td>
</tr>
</tbody>
</table>

$143,818,941

## Costs and Mileage by Priority Tier - Pedestrian

<table>
<thead>
<tr>
<th>Tier</th>
<th>Segments</th>
<th>Miles</th>
<th>Cost</th>
<th>Cost/Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1</td>
<td>33</td>
<td>14.74</td>
<td>$5,803,935</td>
<td>$393,754</td>
</tr>
<tr>
<td>Tier 2</td>
<td>33</td>
<td>27.75</td>
<td>$34,197,456</td>
<td>$1,232,341</td>
</tr>
<tr>
<td>Tier 3</td>
<td>32</td>
<td>29.80</td>
<td>$54,238,033</td>
<td>$1,820,068</td>
</tr>
<tr>
<td>Tier 4</td>
<td>33</td>
<td>46.98</td>
<td>$84,583,383</td>
<td>$1,800,413</td>
</tr>
<tr>
<td>Tier 5</td>
<td>33</td>
<td>60.41</td>
<td>$107,470,763</td>
<td>$1,779,023</td>
</tr>
</tbody>
</table>

$286,293,570
Final Project Prioritization

- Segment ID
- Bike / Ped LOS Existing
- Facility Recommendation for Bike & Ped to reach LOS C
- Benefit Cost Index Score based on LOS Delta, Demand & Cost
- Priority Tier 1 - 5
Bicycle Pedestrian Plan Elements

- Funding sources
- Policy proposals
  - Commit to meeting with performance measures
  - Develop bike parking
  - Develop a bike map
  - Develop routes/ wayfinding
- Crash report analysis and countermeasures
Observations from the Project

- Pay attention to Funding Concerns
- Public interest and recreational trails
- Estimating demand is tricky
- Share the road signs
- Tie need to economic benefits
Questions???

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