BEFORE/AFTER ANALYSIS
Fletcher Avenue Complete Streets Project

PRESENTED TO: HILLSBOROUGH COUNTY COMMUNITY TRAFFIC SAFETY TEAM
BEFORE/AFTER ANALYSIS
Traffic Volumes, Pedestrian/Bicycle Crossings, Travel Times, and Safety Before/After Analysis
Fletcher Avenue Complete Streets Project

SARA BERESHEIM, PE, PTOE
Agenda

- Complete Streets Improvements
- Traffic Volume Data
- Pedestrian & Bicycle Crossing Locations
- Pedestrian & Bicycle Crossing Data
- Travel Time Data
- Crash Analysis
- Before/After Conclusions
Complete Streets Improvements

- Construction began in 2014; officially opened in February 2015
- Fletcher Avenue Complete Streets Project – From Nebraska Avenue to Bruce B. Downs Boulevard
- Notable changes/improvements:
  - five mid-block pedestrian crossings added with overhead and ground-mounted RRFBs
  - one mid-block pedestrian crossing with a traffic control signal
  - LED lighting added at pedestrian crossings
  - Raised pedestrian refuge islands and raised traffic separators installed
  - Landscaping features incorporated into median
  - Bicycle lanes added to both sides of road
  - Speed limit reduced from 45 mph to 35 mph
  - Media outreach & education of the public
  - High visibility enforcement
Complete Streets Improvements

- Added Bicycle Lanes
- Added Raised Traffic Separators
- Replaced Two-Way Left Turn Lanes (TWLFL)
- Added Ped Refuge Islands & Mid-Block Crosswalks
Traffic Volume Data

- Portable Traffic Monitoring Site AADT Data:
  - +2% on Fletcher Ave and Bearss Ave
  - +7% on Fowler Ave
  - +9% on Busch Blvd
Pedestrian & Bicycle Crossing Count Locations
Pedestrian & Bicycle Crossing Data

Compliancy per Zone with Controlled Mid-Block Crossings

<table>
<thead>
<tr>
<th>Study Zone</th>
<th>Traffic Control</th>
<th>People Crossing Within Crosswalk</th>
<th>People Within Crosswalk That Used Pushbutton</th>
<th>Vehicles Yielding For People Within Crosswalk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>RRFB</td>
<td>74 (81%)</td>
<td>95%</td>
<td>96%</td>
</tr>
<tr>
<td>4</td>
<td>RRFB</td>
<td>123 (87%)</td>
<td>95%</td>
<td>96%</td>
</tr>
<tr>
<td>5</td>
<td>RRFB</td>
<td>131 (66%)</td>
<td>92%</td>
<td>96%</td>
</tr>
<tr>
<td>7</td>
<td>RRFB</td>
<td>188 (75%)</td>
<td>90%</td>
<td>95%</td>
</tr>
<tr>
<td>8</td>
<td>RRFB</td>
<td>137 (77%)</td>
<td>88%</td>
<td>89%</td>
</tr>
<tr>
<td>9</td>
<td>Mid-Block Traffic Signal</td>
<td>358 (76%)</td>
<td>87%</td>
<td>83%</td>
</tr>
<tr>
<td>Total Average</td>
<td></td>
<td>168.5 (77%)</td>
<td>89.5%</td>
<td>92.5%</td>
</tr>
</tbody>
</table>
Travel Time Data

Before Project Construction

After Project Construction

**Average Speed - Eastbound**

- Location (Length Between Nodes)

- AM Average Speed
- MD Average Speed
- PM Average Speed
Travel Time Data

Before Project Construction

After Project Construction
### Travel Time Data

<table>
<thead>
<tr>
<th>Peak Time</th>
<th>Before (Seconds)</th>
<th>After (Seconds)</th>
<th>Average Difference (Seconds)</th>
<th>Percent Difference (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Eastbound</td>
<td>Westbound</td>
<td>Average</td>
<td>Eastbound</td>
</tr>
<tr>
<td>7 AM – 9 AM</td>
<td>289 (4.8 min)</td>
<td>216 (3.6 min)</td>
<td>253</td>
<td>268 (4.5 min)</td>
</tr>
<tr>
<td>11 AM – 1 PM</td>
<td>214 (3.6 min)</td>
<td>268 (4.5 min)</td>
<td>241</td>
<td>240 (4.0 min)</td>
</tr>
<tr>
<td>4 PM – 6 PM</td>
<td>247 (4.1 min)</td>
<td>399 (6.7 min)</td>
<td>323</td>
<td>334 (5.6 min)</td>
</tr>
</tbody>
</table>

- Predominant direction in AM Peak is eastbound
  - EB travel time decreased (-21 sec avg)
  - WB travel time remained about the same (+3 sec avg)
- No predominant direction in Midday Peak
- Predominant direction in PM Peak is westbound
  - EB travel time increased (+87 sec avg)
  - WB travel time increased (+31 sec avg)
Crash Analysis

Before:
- 632 total crashes
- 319 rear ends
- 119 left turns
- 31 pedestrian crashes
- 20 bicycle crashes
- Avg crash rate = 6.697 crashes/MVM

After:
- 602 total crashes (-5%)
- 308 rear ends (-3%)
- 62 left turns (-48%)
- 34 pedestrian crashes (+10%)
- 23 bicycle crashes (+15%)
- Avg crash rate = 6.402 crashes/MVM (-4%)
Crash Analysis

Severe Crashes

Before:
- 73 non-incapacitating injuries
- 37 incapacitating injuries
- 5 fatalities

After:
- 46 non-incapacitating injuries (-37%)
- 20 incapacitating injuries (-46%)
- 2 fatalities (-60%)
Crash Analysis

- Ped/Bike crashes increased by 6 total (3 ped, 3 bike)
- Ped/Bike volumes increased by 13% (186 additional crossings per day)
- Ped/Bike non-incapacitating injuries were reduced by 10% (20 > 18)
- Ped/Bike incapacitating injuries were reduced by 18% (11 > 9)
- Ped/Bike fatalities were reduced by 50% (4 > 2)
Conclusions

- Average daily traffic volumes on Fletcher Avenue have increased since the completion of the project, but at a lower rate than other parallel roadways.

- Overall, the average speeds of vehicles decreased within the study segment and the average travel times increased.

- Pedestrian and bicyclist volumes along the corridor also increased after the project was completed.

- A majority of the pedestrians, bicyclists, and vehicles utilize the installed facilities properly.

- Overall total number of vehicle crashes was reduced as well as crash severity.

- There was an increase in pedestrian and bicycle crashes. However, taking into account the additional volume of pedestrian and bicycle activity, the pedestrian/bicycle crash rate decreased.

- The severity of the pedestrian and bicycle crashes was also reduced within the project area.