Lafayette Street and Fourth Avenue
Parking Protected Bicycle Path

Commissioner Polly Trottenberg, New York City Department of Transportation
Presented by NYCDOT Bicycle Program to CB 2 Transportation Committee on March 6, 2014
• Existing northbound buffered bicycle lane from Spring St to E 14th St
• 1,295 bicyclists counted on a weekday; 784 on a weekend in 2010
• Important Citi Bike corridor
• Heavy pedestrian volume throughout corridor
• 890 vehicles per hour @ am peak; 983 @ pm peak; 1194 @ weekend peak in 2012
• Six pedestrians, one cyclist and five motor vehicle occupants severely injured in crashes from 2007-2011; 12.7 severe injuries per mile
• Lafayette St slated for repaving in 2014
Existing Conditions – Lafayette Street

48 feet curb-to-curb

Bike lane is not separated from traffic and frequently violated

Opportunities for speeding and reckless driving

Lafayette Street @ Bleecker Street
Existing Conditions – 4th Avenue

- 71 feet curb-to-curb
- Long pedestrian wait times to cross
- Long pedestrian crossing distances
Citi Bike

- Lafayette St and 4th Ave form an important Citi Bike corridor
- Stations located near:
  - Spring Street
  - E Houston Street
  - Great Jones Street
  - Astor Place
- Commuter cycling increases of 20% in Citi Bike area
- Additional safety measures warranted for increased volumes
Proposed Bicycle Facilities

Lafayette Street

Bicycle Lane

1st Avenue

Parking Protected Bicycle Path
Proposed Configuration - Lafayette St

**EXISTING**

- West Sidewalk
- 8' Parking Lane
- 5' Buffer
- 4' Moving Lane
- 11.5' Moving Lane
- 11.5' Moving Lane
- 8' Parking Lane
- Total Width: 48'

**PROPOSED**

- West Sidewalk
- 6' Parking Lane/Island
- 3' Buffer
- 9' Moving Lane
- 11' Moving Lane
- 10' Moving Lane
- 9' Parking Lane
- Total Width: 48'
Proposed Configuration - Fourth Ave
E 9th St – E 12th St

EXISTING

<table>
<thead>
<tr>
<th></th>
<th>West Sidewalk</th>
<th>9'</th>
<th>5'</th>
<th>5'</th>
<th>12'</th>
<th>12'</th>
<th>12'</th>
<th>6'</th>
<th>10'</th>
<th>East Sidewalk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Parking Lane</td>
<td></td>
<td></td>
<td></td>
<td>Moving Lane</td>
<td>Moving Lane</td>
<td>Moving Lane</td>
<td>Buffer</td>
<td>Parking Lane</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parking Lane</td>
<td></td>
<td></td>
<td></td>
<td>Moving Lane</td>
<td>Moving Lane</td>
<td>Moving Lane</td>
<td>Buffer</td>
<td>Parking Lane</td>
<td></td>
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</tbody>
</table>

PROPOSED

<table>
<thead>
<tr>
<th></th>
<th>West Sidewalk</th>
<th>6'</th>
<th>5'</th>
<th>10'</th>
<th>11'</th>
<th>11'</th>
<th>11'</th>
<th>7'</th>
<th>10'</th>
<th>East Sidewalk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Parking Lane/Island</td>
<td></td>
<td></td>
<td>Moving Lane</td>
<td>Moving Lane</td>
<td>Moving Lane</td>
<td>Buffer</td>
<td>Parking Lane</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Proposed Configuration - Fourth Ave
E 12th St – E14th St

**EXISTING**

West Sidewalk

- 8’ Parking Lane
- 5’ Moving Lane
- 14’ Combined Parking/Loading Lane

48’

East Sidewalk

**PROPOSED**

West Sidewalk

- 8’ Loading Lane
- 5’ Moving Lane
- 11’ Moving Lane
- 11’ Moving Lane
- 5’ Parking Lane

East Sidewalk
Proposed Design

- Maintain existing buffered bicycle lane between Spring St and Prince St to maintain access to fire house
- “Double-barrel” bike lane design between E 12th St and E 14th St
- Adjust signal timing to reduce pedestrian crossing times
- Accommodate land uses with curbside access requirements
Proposed Design

1st Avenue at E 18th Street

- Parking protected bike lane with buffer
- Shorter pedestrian crossing distances
- New planting beds and tree pits
Protected Bicycle Path Mixing Zone

- **Mixing Zone Provides Space to Negotiate Conflict**
  - Informs cyclist that vehicle is turning, no guesswork
  - Removes vehicle from traffic stream/eliminates “back pressure”
  - Gentle approach angle, vehicle gradually approaches cyclist, no abrupt “hook” turns

- **Mixing Zone Provides Visibility**
  - Eliminates visual obstruction of parked cars
  - Angle improves drivers’ peripheral vision
  - Cyclist & Motorist can see each other and avoid crash
## Parking/Loading Changes

<table>
<thead>
<tr>
<th>West Side Converted Parking Spaces (East side not affected by islands &amp; turn lanes)</th>
<th>Parking Space Equivalents (Approx.) Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn Lanes/ Mixing Zones</td>
<td>-7</td>
</tr>
<tr>
<td>Pedestrian Islands</td>
<td>-12</td>
</tr>
<tr>
<td>Parking Buffers</td>
<td>-6</td>
</tr>
<tr>
<td><strong>Total Spaces Converted</strong></td>
<td><strong>-25</strong></td>
</tr>
</tbody>
</table>

- Curbside access retained for 89% of Lafayette St / 4th Ave corridor
Safe Intersections – Mixing Zones

At Narrow, One-way Cross Streets

1. Sight Line Visibility
2. Mixing Zone Markings
3. Drop Green Paint
# Safety Benefits

## Three Year Before and After Crash Analysis on Parking-Protected Bicycle Paths

<table>
<thead>
<tr>
<th>Avenue</th>
<th>Change in Crashes w/ Injuries</th>
<th>Change in Total Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Avenue</td>
<td>-6%</td>
<td>-11%</td>
</tr>
<tr>
<td>E 1st St - E 33rd St</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Avenue</td>
<td>-11%</td>
<td>-7%</td>
</tr>
<tr>
<td>E 33rd St - E 24th St, E 13th St - E 2nd St</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th Avenue</td>
<td>-20%</td>
<td>-25%</td>
</tr>
<tr>
<td>Bank St - W 23rd St</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9th Avenue</td>
<td>-43%</td>
<td>-46%</td>
</tr>
<tr>
<td>W 33rd St - W 16th St</td>
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<td></td>
</tr>
</tbody>
</table>

1st Ave Before data: 7/1/07-6/30/10  After data: 12/1/10-11/30/13
2nd Ave Before data: 7/1/07-6/30/10  After data: 12/1/10-11/30/13
8th Ave Before data: 8/1/05-7/31/08  After data: 7/1/09-6/30/12
9th Ave Before data: 7/1/04-6/30/07  After data: 11/1/08-10/31/11
- Enhances safety for all street users
- Provides safety treatments at left-turn intersections
- Decreases pedestrian intersection crossing distance
- Reduces pedestrian wait times
- Improves bicycle safety and mobility at E 14th St
- Maintains vehicle traffic capacity
- NYC DOT is working with businesses to ensure appropriate parking regulations
Questions?

Thank You