Project Background
Community Requests

Community and Elected Officials have requested a complete street redesign of 7th Avenue:

- Community Board 2 and Public School 41 (2014)
- NYS Senator Hoylman (2015)
- Joint Letter from Federal, State and Local Elected Officials (2016)
  - US Rep. Nadler
  - NYS Senator Hoylman
  - NYS Assemblymember Glick
  - Borough President Brewer
  - NYC Councilmember Johnson
Safety

- 7th Ave is a Vision Zero Priority Corridor
- Vision Zero Priority Intersections at W 14th St and at Bleecker St
- Excess roadway width and complicated intersections create long, challenging crossings

7th Ave/7th Ave S (W 30th St to Clarkson St), MN
Injury Summary, 2011-2015 (5 years)

<table>
<thead>
<tr>
<th></th>
<th>Total Injuries</th>
<th>Severe Injuries</th>
<th>Fatalities</th>
<th>KSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian</td>
<td>175</td>
<td>19</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Bicyclists</td>
<td>96</td>
<td>9</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Motor Vehicle Occupant</td>
<td>239</td>
<td>10</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>510</td>
<td>38</td>
<td>1</td>
<td>39</td>
</tr>
</tbody>
</table>

Fatalities, 01/01/2011 – 1/9/2017: 1

Source: Fatalities: NYCDOT, Injuries: NYSDOT. KSI: Persons Killed or Severely Injured
Bicycle Network and Ridership

Existing protected bicycle lanes:
- 9th Ave (southbound)
- 8th Ave (northbound)
- 6th Ave (northbound)

High bicycle volumes on 7th Ave:
(14-hour counts, July 2016)
- 1,700 bikes at W 30th St
- 2,350 bikes at W 20th St
- 1,300 bikes at Charles St

Citi Bike launched in 2013, now regularly serves 60,000 trips/day
Previously installed 7th Ave pedestrian safety projects:

- W 23rd St (2011)
- Bleecker St/Barrow St (2012)
- W 4th St (2015)
- W Houston St (2016)

On-going traffic studies:

- 7th Ave, W 34th St to W 30th St: Traffic impacts of closing W 33rd St from 7th Ave to 8th Ave
- Hudson Square/West Village: Traffic impacts of proposed development at 550 Washington St
Proposed Project Scope

Overall Project Area:
7th Ave, W 30th St to Clarkson St

CB 2 Project Proposal:
7th Ave, W 14th St to Clarkson St

- Overall Corridor Redesign
- Intersection Improvements
  - Greenwich Ave / W 11th St
  - Waverly Pl / Perry St
  - W 4th St / Christopher St
  - Bleecker St / Barrow St
  - Clarkson St / Carmine St

Potential future extensions to the north and south

LEGEND
- Proposed Bicycle Route
- Proposed Intersection Improvements
- Future Bicycle Route

7th Avenue Protected Bicycle Lane & Safety Improvements
Project Proposal

7th Avenue Protected Bicycle Lane & Safety Improvements
Overall Corridor - Existing Conditions

7th Avenue Protected Bicycle Lane & Safety Improvements
**Existing Vehicular Capacity**

<table>
<thead>
<tr>
<th>Cross Street</th>
<th>7th Ave 7PM-8PM Peak Volumes (veh/hr)</th>
<th>Average delay/vehicle (sec)</th>
<th>Level of Service</th>
<th>Volume-to-Capacity Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>W 30th St</td>
<td>1,200</td>
<td>9.1</td>
<td>A</td>
<td>0.46</td>
</tr>
<tr>
<td>W 23rd St</td>
<td>1,900</td>
<td>7.9</td>
<td>A</td>
<td>0.60</td>
</tr>
<tr>
<td>W 14th St</td>
<td>2,050</td>
<td>14.3</td>
<td>B</td>
<td>0.72</td>
</tr>
<tr>
<td>W 4th St</td>
<td>1,550</td>
<td>3.1</td>
<td>A</td>
<td>0.54</td>
</tr>
</tbody>
</table>

The **volume-to-capacity** ratio is a measure of how “full” a roadway feels and is calculated as a ratio between the measured traffic volume and calculated capacity of the roadway. The result is expressed as a number between 0 and 1. A value of “1” would indicate that the roadway is “full.”

**Delay** is a measure of the average time a vehicle will spend processing through an intersection.
• Remove one travel lane
• Install a parking-protected bike lane with planted concrete pedestrian islands
• Install split phase signals at W 14th St, Greenwich Ave/W 11th St, W 4th St/Christopher St, Bleecker St/Barrow St
• Install mixing zones at all other intersections
• Requires removal of approximately 50 parking spaces (roughly 27% of corridor parking capacity)
Example of Proposed Corridor Design

7th Avenue Protected Bicycle Lane & Safety Improvements
Proposed Vehicular Capacity

<table>
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<th>Average delay/vehicle (sec)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Existing</td>
<td>Proposed</td>
</tr>
<tr>
<td></td>
<td>Delay</td>
<td>LOS</td>
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<tr>
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<td>9.1</td>
<td>A</td>
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- **W 23rd St** existing split-phase signal operation and number of lanes to remain the same
- **W 14th St** and **W 4th St** benefit from dedicated left-turn phase
Greenwich Ave / W 11th St Intersection: Existing Conditions

- **5 legged intersection** with 3 signal phases
- Recently installed **curb extensions**
- **Indirect pedestrian crossing** for south side of Greenwich Ave
- **Heavy southbound left turn** onto Greenwich Ave
- **Complaints** from Public School 41 parents about **vehicle speed** at southern crosswalk
Greenwich Ave / W 11th St Intersection: Proposed Improvements

- **Implement split-phase signal**, protecting bicyclists and pedestrians from vehicles turning left onto Greenwich Ave

- **Realign southern crosswalk** to follow the Greenwich Ave desire line and be closer to slowed turning vehicles

- **Increase crossing time** on southern crosswalk
Greenwich Ave / W 11th St Intersection: Proposed Improvements

**Existing Signal Phasing**

- 7th Ave S phase
- Greenwich Ave phase
- W 11th St phase

**Proposed Signal Phasing**

- 7th Ave S bike/pedestrian phase
- 7th Ave S protected left
- Greenwich Ave phase
- W 11th St phase
Waverly Pl / Perry St Intersection: Existing Conditions

- Extremely low left turn volume from 7th Ave S to Perry St
- Unsignalized receiving lane on Waverly Pl is a pedestrian hazard
- Long crosswalk on south side of Perry St
The proposal includes the following improvements:

- **Ban left turn from 7th Ave S to Perry St**
  - Pedestrian island on north crosswalk shortens crossing distance by 30%
  - Vehicles can access Perry St by turning right on W 11th St, left on Waverly Pl, left on Perry St

- **Install new traffic signal** at the receiving block of Waverly Pl

- **Build curb extension** to force southbound Waverly Pl vehicles to turn left at Perry St before making the right turn onto 7th Ave S
  - Slows Waverly Pl traffic
  - Improves visibility of traffic signal
  - Discourages fast turns across bike path
  - Lengthens the crossing time for the south crosswalk
  - Shortens pedestrian crossing distance by 50%
Example of Forced Turn-off: Jane St at W 4th St

7th Avenue Protected Bicycle Lane & Safety Improvements
W 4th St / Christopher St Intersection: Existing Conditions

- **Heavy left turn** volume from 7th Ave S to W 4th St

- **2015 NYC DOT pedestrian safety project** included curb extensions, pedestrian refuge island, dedicated southbound left turn lane, leading pedestrian interval for east crosswalk

- **Motorists turning onto W 4th St often drive aggressively** through the eastern crosswalk

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Existing Signal Phasing

- 7 Ave S leading pedestrian phase
- 7 Ave S permitted left
- Christopher St phase
• **Implement split-phase signal** to protect bicyclists and pedestrians from vehicles turning left onto W 4th St.

• **Convert painted pedestrian space** with planters in front of uptown 1-train entrance to bicycle lane and painted buffer.

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**Proposed Signal Phasing**

- 7 Ave S bike/pedestrian phase
- 7 Ave S protected left
- Christopher St phase
Bleecker St / Barrow St Intersection: Existing Conditions

- **Heavy left turn** volume from 7th Ave S to Bleecker St

- **Heavy right turn volume** from Bleecker St to 7th Ave S

- **2012 NYC DOT pedestrian safety project** included curb extensions, dedicated southbound left turn lane

- **Motorists turning onto Bleecker St often drive aggressively** through the eastern crosswalk
Bleecker St / Barrow St Intersection: Proposed Improvements

- **Implement split-phase signal operation** that protects bicyclists and pedestrians from vehicles turning left onto Bleecker St.

- **Combine and widen two crosswalks** on the north side of Bleecker St to improve pedestrian circulation on Bleecker St and to allow for the split-phase signal operation.

- **Build a pedestrian refuge island** on the southern crosswalk.

- **Build a curb extension** on the northwest corner to shorten crossing distances and provide more pedestrian queueing space.
2 - Project Proposal

Bleecker St / Barrow St Intersection: Proposed Improvements

Existing Signal Phasing

Proposed Signal Phasing

7th Ave S phase with flashing amber left turn

Bleecker St leading pedestrian phase

Bleecker St phase

7th Ave S bike/pedestrian phase

7th Ave S protected left

Bleecker St leading pedestrian phase

Bleecker St phase
Clarkson St / Carmine St Intersection: Existing Conditions

- **Skewed intersection** creates awkward vehicle movements and long crosswalks

- **Heavy right turn volume** from Clarkson St to Varick St conflicts with bike lane and southern crosswalk
Clarkson St / Carmine St Intersection: Proposed Improvements

Build a pedestrian refuge island that splits through and right turning traffic on Clarkson St

- Shorten crossing distances
- Protect pedestrians and bicyclists from eastbound right turning traffic
- Better organize eastbound traffic
- Requires loss of 12 parking spaces on Clarkson St
Summary

7th Avenue Protected Bicycle Lane & Safety Improvements
Project Summary

- Install a parking protected bicycle lane with planted concrete pedestrian islands on 7th Ave/7th Ave S between W 30th St and Clarkson St
- Implement split phase signal operation at W 14th St, Greenwich Ave/W 11th St, W 4th St/Christopher St, and Bleecker St/Barrow St
- Install mixing zones at all other conflicting bicycle/vehicle conflicts
- Implement additional safety enhancements at Greenwich Ave, Waverly Pl/Perry St, Bleecker St, and Clarkson St
- Requires the removal of 1 travel lane, and roughly 27% of on-street parking spaces along the corridor within Community Board 2

Project Benefits

- Reduced pedestrian crossing distance
- Split-phase signal operation at intersections with heavy left turns reduces conflicts between pedestrians/bicyclists and turning vehicles
- Parking-protected bicycle lane reduces bicyclists exposure to vehicular traffic
  - Potential future expansion to the north and south
- Narrowed road discourages speeding
- Existing vehicle volumes can fit in 3 lanes
THANK YOU!

Questions?