Congested Corridors
Project
Woodhaven Boulevard, Queens
Queens Boulevard to Liberty Avenue

September 24, 2009

New York City Department of Transportation
Meeting Overview

- Summary of Existing Conditions
- Future without Improvements
- Key Issues
- Preliminary Improvement Ideas
Study Area

• 3.2-mile north-south corridor from Queens Blvd. to Rockaway Blvd./Liberty Ave.

• Community Boards 4, 5, 6, 9 and 10

• 16 Intersections Studied
Corridor Traffic Patterns

- Southbound volumes increase significantly at the LIE interchange
- PM volume is significantly higher in the southbound direction
Corridor Traffic Patterns

- Northbound volumes decrease significantly at the LIE interchange
- AM volumes are higher than other peak hour volumes
## Travel Time & Speeds

<table>
<thead>
<tr>
<th></th>
<th>AM</th>
<th>MD</th>
<th>PM</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Travel time</strong></td>
<td>16.2</td>
<td>9.6</td>
<td>12.8</td>
<td>9.2</td>
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<tr>
<td><strong>Avg. Speed</strong></td>
<td>12.9</td>
<td>21.8</td>
<td>16.6</td>
<td>22.8</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>AM</th>
<th>MD</th>
<th>PM</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Travel time</strong></td>
<td>12.4</td>
<td>10.2</td>
<td>14.0</td>
<td>10.5</td>
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<tr>
<td><strong>Avg. Speed</strong></td>
<td>17.0</td>
<td>20.6</td>
<td>15.4</td>
<td>20.1</td>
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</tbody>
</table>

Northbound Woodhaven Blvd

Southbound Woodhaven Blvd
Level of Service by Approach (Future w/o Improvements AM)

Approach Level of Service - Future (without improvements) AM

Legend
- Blue: Mid LOS D (45-55 seconds vehicle delay)
- Red: LOS E or F (>55 seconds vehicle delay)

Existing
- Queens Boulevard North Service Road: 7
- Queens Boulevard South Service Road: 1
- Weehawken Street: 4

Future
- Queens Boulevard North Service Road: 4
- Queens Boulevard South Service Road: 2
- Weehawken Street: 8

* Not to Scale
Level of Service by Approach (Existing PM)
Level of Service by Approach (Future w/o Improvements PM)

Approach Level of Service - Future (without improvements) PM

<table>
<thead>
<tr>
<th>Queens Boulevard North Service Road</th>
<th>Queens Boulevard South Service Road</th>
<th>Wetherole Street</th>
<th>Elliot Avenue</th>
<th>Yellowstone Blvd</th>
<th>Metropolitan Avenue</th>
<th>Union Turnpike</th>
<th>Myrtle Avenue</th>
<th>Jamaica Avenue</th>
<th>Atlantic Avenue</th>
<th>Rockaway Boulevard</th>
<th>Liberty Avenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing 4</td>
<td>2</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Future 3</td>
<td>2</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- Blue arrow: Mid LOS D (45-55 seconds vehicle delay)
- Red arrow: LOS E or F (>55 seconds vehicle delay)

* Not to Scale
### Safety

<table>
<thead>
<tr>
<th>Year</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>3-Year Total</th>
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<tbody>
<tr>
<td>No. of Reportable Accidents</td>
<td>136</td>
<td>162</td>
<td>197</td>
<td>495</td>
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</table>
Reportable Accidents by Severity

Accidents By Severity at Woodhaven Blvd Study Intersections

No. of Accidents

Intersection

Queens Blvd  LIE Exit  Elot Ave-61st Ave  Dry Harbor Rd  Yellowstone Blvd  Metropolitan Ave  Union Tpk  Myrtle Ave  Jamaica Ave  Atlantic Ave  Rockaway Blvd  Liberty Ave  Rockaway Blvd/94th St

Fatal Injury PDO*
Accident Types
(Union Turnpike)

Accident Types: Union Turnpike

- Overtaking: 15
- Rear End: 11
- Right Angle: 14
- Left Turn: 13
- Other: 15

Legend:
- Overtaking
- Rear End
- Fixed Object
- Head-On
- Driveway
- Backing
- Right Angle
- Left Turn
- Pedestrian
- Side Swipe
- Bicycle
- Right Turn
- Parked Vehicle
- Other
- Unknown

NB service road left lane transitions to right lane of mainline
SB mainline right lane transitions to left lane of service road
Accident Types
(Jamaica Avenue)

Accident Types: Jamaica Avenue

- Other: 9
- Overtaking: 10
- Rear End: 5
- Bicycle: 3
- Pedestrian: 13
- Left Turn: 7
- Right Angle: 20

Legend:
- Overtaking
- Rear End
- Fixed Object
- Head-On
- Driveway
- Backing
- Right Angle
- Left Turn
- Side Swipe
- Bicycle
- Pedestrian
- Right Turn
- Unknown
Accident Types
(Queens Blvd No. & So. Service Roads)

Accident Types: Queens Boulevard

- Overtaking: 27
- Rear End: 11
- Right Angle: 5
- Left Turn: 1
- Fixed Object: 2
- Other: 7
- Driveway: 3
- Side Swipe: 2
- Head-On: 1
- Pedestrian: 1
- Backing: 1
- Bicycle: 1
- Other: 1
- Unknown: 1
Accident Types
(Rockaway Blvd/Liberty Ave/94 St)

Accident Types: Rockaway Blvd/Liberty Ave/94 St

- Other: 30
- Rear End: 18
- Right Angle: 8
- Left Turn: 2
- Overtaking: 6

Legend:
- Overtaking
- Rear End
- Right Angle
- Left Turn
- Parking
- Fixed Object
- Head-On
- Driveway
- Backing
- Side Swipe
- Bicycle
- Pedestrian
- Right Turn
- Unknown

Other

Rear End

Right Angle

Left Turn

Parking

Fixed Object

Head-On

Driveway

Backing

Side Swipe

Bicycle

Pedestrian

Right Turn

Unknown
On-Street Parking Utilization

- AM: 213
- MD: 223
- PM: 225
- SAT: 229

Legend:
- Yellow: West Side
- Blue: East Side
- Green: Parking Capacity - West Side
- Blue Dash: Parking Capacity - East Side

*Capacity is based on assumption that all legal parking spaces were available at time of survey i.e. temporal parking regulations did not reduce capacity.
Truck Routes in Study Area
Goods Movement (MD)

- Truck observations conducted at the north end of corridor
Heaviest Pedestrian Volumes (Peak Hour)

- Crosswalks:
  - Queens Blvd No. Service Rd (PM): 5,400 total pedestrians
  - Queens Blvd No. Service Rd (AM): 3,500 total pedestrians
Transit
Existing Conditions & Issues

- Localized Traffic Congestion
  - Alternate route to Van Wyck Expressway
  - Local truck route
  - Roadway configuration (mainline/service)
  - Major traffic generators
- Vehicle-pedestrian conflicts
- Poor levels of service – failing conditions
Existing Conditions & Issues

- Conflicts between Vehicles & Pedestrians
  - Heavy traffic turning movements
  - Lack of exclusive pedestrian phasing/LPI
Existing Conditions & Issues

- Complex Intersection Geometries
  - Mainline & service roads
  - Closely-spaced Intersections
  - Lane continuity & alignment (e.g. Union Tpk)
  - No crossovers between mainline & service roads
Existing Conditions & Issues

- Discontinuous Service Roads
  - Between Union Tpk and Metropolitan Ave

- Bottleneck at the LIRR Overpass
  - Lane reduction in both directions
  - Highly-trafficked area due to LIE
Existing Conditions & Issues

- **High Frequency of Vehicle Crashes**
  - Highest number of intersection accidents
    - Rockaway Blvd / Liberty Ave / 94 St
    - Union Tpk, Jamaica Ave, Queens Blvd
  - 76% of accidents involve injuries
  - Contributing factors to accidents:
    - Complex intersection geometry
    - Concurrent vehicle-pedestrian movements
    - Recurring congestion
    - Lane configuration & alignment
    - Narrow lanes
Existing Conditions & Issues

- **Transit**
  - Local (3), limited-stop (1) and express (4) bus routes serve the *entire* corridor
  - Buses operating in mixed traffic
  - Bus-pedestrian conflicts
  - Locations of bus stops
Existing Conditions & Issues

- Lack of Pedestrian Amenities
  - No preferential treatments for crossing pedestrians
  - Pedestrians exposed to high volume of conflicting turning vehicles
  - Poor visibility of pedestrians to drivers
  - Narrow sidewalks at LIRR overpass
  - Long crossing distances across Woodhaven Boulevard
Existing Conditions & Issues

- Geometric Issues, Signage & Signalization
  - Narrow travel lanes at some locations (e.g. 9’ or 10’; SB at Rockaway Blvd)
  - Insufficient signage re: lane and alignment changes
  - Inadequate storage length in left-turn bays resulting in spillback to through lanes (e.g. Metropolitan Ave)
  - Vertical & horizontal curvature (No. of Yellowstone Blv)
  - Pre-timed traffic signals with variations by time of day
Preliminary Improvement Ideas (Early Action)

- Traffic Operations
  - Modify signal timings
  - Restripe / Revise pavement markings
  - Add Left turn lanes/phasing
  - Localized parking restrictions
  - Turn restrictions

- Signage along the Corridor
  - Lane usage signs
  - Way-finding signs
Preliminary Improvement Ideas
(Early Action)

- Pedestrians
  - Improve/install refuge islands
  - Modify signal timings
  - High-visibility crosswalks
Preliminary Improvement Ideas
(Long Term)

- Reconfigure intersections
- Install crossovers between mainline and service roads
Preliminary Improvement Ideas
(Long Term)

- Provide curb extensions (Eliot, Jamaica, Rockaway, Liberty Aves)
- Coordinate with NYCT on bus routes and schedules
- Improve pedestrian access to A-train subway station
- Exclusive bus lanes / BRT lanes
- Additional transit service
Questions?