Agenda

• MTA Commitment
  – **Review** all subway lines
  – **Completed** F, L, G, A, C

• What a Line Review Addresses
• NYC Transit Loading Guidelines
• Operational Feasibility
• Service Design and Scheduling
• Ridership, Crowding, and **C** Train Length
• Recommendations
What a Line Review Addresses

• Adequacy of service design
  – Routing
  – Number of trains scheduled
  – Hours of service

• Reliability of operations
  – Causes of delays
  – Other operational challenges

• Conditions on the line
  – Rolling stock, stations, and infrastructure

• Communications
  – Internal, for service management
  – Between NYCT and our customers

Goal: Identify potential “more bang for the buck” short- to medium-term improvements
NYC Transit Loading Guidelines

- Impartial allocation of service citywide
  - Ridership levels at “peak load points”
  - Maximum time between trains (“headway”)
  - Time of day / Day of week

<table>
<thead>
<tr>
<th>Train Type</th>
<th>Peak</th>
<th>Off-peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passengers Per Train</td>
<td>Max. Avg. Headway</td>
</tr>
<tr>
<td>600’ Train (like A)</td>
<td>1,400</td>
<td>10*</td>
</tr>
<tr>
<td>480’ Train (like C)</td>
<td>1,160</td>
<td>10*</td>
</tr>
</tbody>
</table>

* 20 to 24-min. max. headway for branches and shuttles, like Rockaways.

- Heavier loads rush hours vs. off-peak
- More trains on busy lines than less busy lines (E vs. C)
- Operational feasibility
Operational Feasibility

- Safety
- Infrastructure Capacity – tracks, signals, yards, shops
- Running times
- Number of trains available
- Construction and maintenance work
- Operations and maintenance personnel
Why Is the C Train So Slow?

While the average wait for a C train is longer than that for other local lines, it offers a relatively fast ride.

<table>
<thead>
<tr>
<th>Line</th>
<th>Avg. Speed (mph)</th>
<th>AM Peak Hour</th>
<th>Weekday Off-Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>15.7</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>G</td>
<td>16.8</td>
<td>7</td>
<td>8 - 10</td>
</tr>
<tr>
<td>M</td>
<td>14.9</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>L</td>
<td>14.3</td>
<td>3</td>
<td>4 - 5</td>
</tr>
<tr>
<td>R</td>
<td>13.9</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>13.8</td>
<td>3</td>
<td>5 - 6</td>
</tr>
</tbody>
</table>

Construction and maintenance off-peak may slow trains
- Worker protection
- Capacity loss due to slower speeds
Service Design and Scheduling

Key Constraints
- Shared track segment
- Merges
- Train availability
- Yard locations
- South Channel Bridge
Ridership and Crowding

2014 AM Peak Hour Riders: Frequency vs Guidelines
Selected Lines

<table>
<thead>
<tr>
<th>Line</th>
<th>Frequency (TPH)</th>
<th>Ridership %</th>
<th>Crowding</th>
</tr>
</thead>
<tbody>
<tr>
<td>A SB 125 St</td>
<td>10 TPH</td>
<td>85%</td>
<td>73%</td>
</tr>
<tr>
<td>A NB Hoyt-Sch Sts</td>
<td>18 TPH</td>
<td>73%</td>
<td>75%</td>
</tr>
<tr>
<td>C SB 72 St</td>
<td>7 TPH</td>
<td>75%</td>
<td>81%</td>
</tr>
<tr>
<td>C NB Hoyt-Sch Sts</td>
<td>8 TPH</td>
<td>81%</td>
<td></td>
</tr>
<tr>
<td>E SB Jackson Hts</td>
<td>15 TPH</td>
<td>104%</td>
<td></td>
</tr>
<tr>
<td>4 SB 86 St</td>
<td>27 TPH</td>
<td>105%</td>
<td></td>
</tr>
<tr>
<td>5 SB 72 St</td>
<td>23 TPH</td>
<td>104%</td>
<td></td>
</tr>
<tr>
<td>L NB Bedford Av</td>
<td>20 TPH</td>
<td>98%</td>
<td></td>
</tr>
<tr>
<td>F NB Bergen St</td>
<td>14 TPH</td>
<td>71%</td>
<td></td>
</tr>
</tbody>
</table>

TPH: Scheduled Trains Per AM Peak Hour
%: 2014 Peak Hour Riders as Percentage of Maximum Guideline Capacity
Crowding: Maximum Guideline Capacity at Scheduled Frequency

2014 Peak Hour Trains Overcrowded
Hoyt-Schermerhorn: 18%
Clinton-Washington Avs: 11%
Ridership and \(\text{C}\) Train Length

- All \(\text{C}\) trains are currently 480’ long
- Making \(\text{C}\) trains as long as \(\text{A}\) trains (600’) would require 44 cars
  - Increase \(\text{C}\) capacity by 25%
  - Improve cross-platform transfers
- Longer \(\text{C}\) trains not recommended
  - \(\text{C}\) ridership is currently within Guidelines
    - Forecasts show steady growth, but not enough to exceed capacity
- Not enough cars available to lengthen \(\text{C}\) trains
  - Fleet expansion for \(\text{C}\) not in Capital Program
  - Capital cost of 44 cars – over $100 million
- Adjusting \(\text{C}\) stopping locations to improve convenience
  - 12 of 33 locations completed
  - Also relocating benches to align with stopping locations (completed)
Recommendations & Improvements: Brooklyn

- Platform Controllers at Hoyt-Schermerhorn
- Reopen closed Classon Av entrance at Franklin Av (unfunded)
- Stopping position and bench improvements, various stations
- Changes in schedule for improved regularity, increased Sunday local service
- Dedicated announcers at Jay St-Metrotech
- Cranberry Tube Repairs - Sandy
- R160 train cars prior to R179 deliveries for C

Station Enhancement Initiatives:
- Clinton-Washington Avs
- Kingston-Throop Avs
- Van Siclen Av

Upcoming PA installations, various stations
Improved connection procedures at Broad Channel toward the Rockaways. Efforts to reduce peak South Channel Bridge openings. Coast Guard jurisdiction.

Branching service and JFK communication improvements.

Improved supervision of terminal dispatching.

Upcoming PA installations, various stations.

Schedules changes for regularity and fewer long late morning gaps in service.

Recommendations & Improvements:
Queens
Reopen closed entrances at 168 St and 50 St (unfunded)

8 Av Communications-Based Train Control

Stopping position and bench improvements, various stations

Upcoming PA installations, various stations

Station Enhancement Initiatives:
- 163 St
- 110 St
- 72 St
- 86 St