Subway Mitigations
Pedestrian Mobility
Bus Service

ESD Community Advisory Committee Working Group Briefing
June 22, 2021
Subway Mitigations
Subway Mitigations Summary

Subway Mitigations

- New easement entrances and stairs: 9
- New internal stairs: 8
- Widened stairs: 15
- Replace station escalators: 8
- New elevators: 2
- New passageways: 4
- New mezzanine: 1
- Widened platforms: 2
- Total mitigations: 49
In-Building Subway Entrances: Examples

- 60 Wall Street (Proposed)
- One Vanderbilt
- Second Avenue Subway 72nd Street
- Times Square
- MetroTech (Brooklyn)
Stair Widening: 7th Avenue IRT 32nd Street entrance from Penn Station
Platform Widening: 7th Avenue IRT uptown local platform
8th Avenue Subway Station: Mitigation summary

- New easement entrance
- Widen N/B platform
- New stair/rebuilt widened express platform stairs and relocated BOH
- Widen express platform stair
- New stair to N/B platform
- New easement entrance
- New paid-zone path connecting PS to subway mezzanine, new N/B platform stair
8th Avenue Subway Station: Mezzanine level mitigations

1. Build new 20' passageway to connect 33rd st Penn Station concourse with IND mezzanine between 33rd & 34th st. Includes new 10' stair up to uptown local platform. Flairs to 30' wide for fare control line.
2. Build new 7.5' stair to express platform south of 34th st. Requires relocation of NYCT BOH space.
3. Flip and widen stair M27 (express platform at 34th st). New width to be 7.5'. Requires relocation of NYCT BOH space.
4. Widen stair M24 (express platform at 33rd st underpass) from 8.7' to 10'.
5. Build new 10' stair from N067 paid-zone (33rd st. underpass) to uptown local platform.
6. Widen uptown local platform between 33rd and 34th street. Width to be confirmed.
7. New eastbound street stair to N072 at northeast corner of 33rd and 34th at 8th ave. Can be combined with new Penn Station entrance.
8. New 10' eastbound street stair and ADA elevator to N070 elevator to N070 at southeast corner of 34th and 8th.
8th Avenue Subway Station: Platform level mitigations

1. Build new 20’ passageway to connect 33rd st Penn Station concourse with IND mezzanine between 33rd & 34th st. Includes new 10’ stair up to uptown local platform. Flairs to 30’ wide for fare control line.

2. Build new 7.5’ stair to express platform south of 34th st. Requires relocation of NYCT B&H space.

3. Flip and widen stair M2 in express platform at 34th st. New width to be 7.5’. Requires relocation of NYCT B&H space.

4. Widen stair M24 express platform at 33rd st underpass) from 8.7’ to 10’.

5. Build new 10’ stair from N077 paid-zone (33rd st. underpass) to uptown local platform.

6. Widen uptown local platform between 33rd and 34th street. Width to be confirmed.

7. New easement street stair to N072 at northeast corner of 33rd and 34th at 8th ave. Can be combined with new Penn Station entrance.

8. New 10’ easement street stair and ADA elevator to N070 elevator to N070 at southeast corner of 34th and 8th.
7th Avenue Subway Station: Mitigation summary

3 - Connect underpass to PS, add fare control
5 - New easement entrance
6 - New free-zone stair to PS
8 - Widen S/B platform stair
7 - New easement entrance
9 - Convert free zone to paid zone, reconfigure fare control
1 - New express platform stair
21 - New direct access from S/B platform to underpass
20 - Widen S/B paid-zone platform stair to underpass
19 - Widen underpass stair
4 - New free-zone esplanade
11 - New easement entrance
12 - Widen N/B platform
13 - Shift paid elevator & shift Widen platform stairs
14 - New easement entrance
15 - New easement entrance
16 - Widen N/B platform
17 - New easement entrance
18 - Shift & widen N/B stairs to underpass
2 - New express platform stair
7th Avenue Subway Station: Mezzanine level mitigations

7th Avenue Above

Penn Station Master Plan – Subway Mitigations, Pedestrian Mobility and Bus Service
7th Avenue Subway Station: Platform level mitigations
7th Avenue IRT Subway Station: Mitigation descriptions

1. New 10' stair to express platform at 33rd st. underpass
2. New 10' stair to express platform at 32nd st. underpass
3. New connecting Passageway and fare control from PS level A to existing 34th st subway underpass. 20' wide.
4. Free-zone passageway from PS level A to Herald Square subway station. Passageway to connect with PS below 32nd st.
5. New easement street stair fro control area R1.42 up to southwest corner of 34th & 7th. May be combined with relocated entrance to PS
6. New 10' free-zone stair from R1.42 down to PS level A. Part of new PS entry.
7. New 10' easement street stair from fair control area serving downtown local platform to northwest corner of 33rd & 7th.
8. Relocate and widen paid-zone stair from R138 up to downtown local platform. Expand up to 15' wide & include ADA elevator
9. Expand & reconfigure R138 control line westerly PS level A. Convert 33rd st underpass to paid zone. Possible second free-zone passageway North connecting under 7th ave.
10. Not used.
11. Replace easement street stair from control area R1.41 up to southeast corner of 34th & 7th. Stair to be 10 wide for subway, wider if concourse system is adopted.
12. Widen uptown local platform from 33rd to 34th into basement of redeveloped block 809. Shift paid zone ADA elevator accordingly.
13. Widen & combine ML2 & ML6 from R138 to uptown platform & R139. Final width depends on adoption of concourse system & number 7.
14. Replace easement stair & sidewalk stair from R139 northeast corner of 33rd & 7th. 10' wide
15. Replace easement street stair & elevator up to southeast corner 0.33rd & 7th. 10'-15' wide.
16. Widen uptown local platform from 32nd to 33rd st in basement of 15 Penn
17. Replace easement stair from R1.37 up to northeast corner of 32nd & 7th. 10'-15' wide.
18. Widen paid-zone stair system 08, 09, 010 connecting 32nd underpass with uptown local platform
19. Widen paid-zone stair U.10/14 at west end of 32nd st underpass. Widen stair by 7.5'
20. Widen stair 05/06 downtown platform down to 32nd st underpass and R135) from 5' to 10'
21. New direct access from reopened Guastavino/downlwm local platform up to westside of 7th ave & 32nd. Can be part of PS entrance.
Herald Square Subway Station: Mitigation summary

1. Widen & speed up IND escalators
2. Shift & widen street stair
3. Rationalize easement entrance, add capacity & connect with esplanade
4. Widen free-zone stair between PATH & BMT mezzanines
5. Consolidate street stairs & widen
6. Build new mezzanine to BMT with new street access
7. Shift & widen IND platform stairs
Herald Square Subway Station: New mezzanine level mitigations
Herald Square Subway Station: 6th Ave. mezzanine level mitigations
Herald Square Subway Station: Mitigation details

1. Replace all IND platform escalators. Existing escalators are 24” tread 90 fpm speed. New escalators would be 32” tread, 120 fpm speed, if engineering allows. Total of eight escalators.

2. At southwest corner of 6th Ave & 34th st. relocate and widen street stair serving N506 free-zone and PATH corridor.

3. Rationalize and expand capacity of easement entrances in Manhattan Mall serving both PATH mezz and IND mezz levels. Design and capacity dependent upon if an underground concourse to Penn Station is adopted. Would include escalators between IND mezz and 34th street level and additional street access at 33rd street.

4. Widen stair HM302 between PATH mezz and A025 free-zone (Broadway at 32nd st). Additional width about 10 feet.

5. Consolidate and expand three stairs on the northside of 32nd St at HM300, BMT S2 and BMT S1. Consolidated stair would be 25 feet wide.

6. Build new mezzanine above BMT platforms and drop down new 7 ft stairs to each island platform. Mezzanine would connect with PATH mezzanine (new turnstiles to access free-zone) and with paid-zone transfer to IND. Mezzanine could include a new 10 ft street stair ascending north, along with fare control.

7. On south end of IND platforms widen stairs P11 and P12 up to N507 mezzanine. Stairs would grow from 8.5 ft to 10 ft wide.
Pedestrian Mobility
Shared Streets and Sidewalk Widenings
2038 Full Build: Pedestrian Level-of-Service – AM peak

[Map of urban area with symbols for crosswalks, sidewalks, and corners, with Penn Station indicated]

**LEGEND**
- F crosswalk
- D sidewalk
- ○ corner
2038 Full Build: Pedestrian Level-of-Service - PM peak
Penn Station Customer Desire Lines

Where are they walking from and to?

- West Side: 30%
- East Side: 70%

Where are they boarding trains?

- West Side: 29%
- East Side: 67%

- Main Gate and NJT Concourse: 67%
- Upper Level: 12%
- Exit Concourse: 17%
- Central Concourse: 3%
15 Penn Special Permit: Re-opening the Gimbels passageway

Source: Stantec / Vornado
### 2038 With Action Condition – Significant Adverse Subway Line-Haul Impacts

<table>
<thead>
<tr>
<th>Analysis Peak Hour</th>
<th>Direction of Travel</th>
<th>34th-Herald Square</th>
<th>34th-Seventh Avenue</th>
<th>34th-Eighth Avenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday AM Northbound</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekday AM Southbound</td>
<td>D</td>
<td>2/3</td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Weekday PM Northbound</td>
<td></td>
<td></td>
<td>1. 2/3</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** The 34th Street–Herald Square Subway Station serves the B, D, F, M, N, Q, R, and W Subway Lines; the 34th Street (Seventh Avenue)–Penn Station Subway Station serves the Nos. 1, 2, and 3 Subway Lines; and the 34th Street (Eighth Avenue)–Penn Station Subway Station serves the A, C, and E Subway Lines.

Source: Empire Station Complex Draft EIS, Transportation Chapter
Gimbels Passageway: Alternative 1 (VNO/Stantec)
Underground Pedestrian Concourses: Examples

Rockefeller Center

Dey Street Passageway

42nd Street Connector

Rockefeller Center

Grand Central Connector

Essen, Germany
Underground Concourse: Alternative 2
Underground Concourse: Alternative 3
2038 Full Build: Pedestrian crossings of 7th Avenue captured - AM peak

Eastbound Demand from Penn Station: 29,200

Eastbound Capture: 22,400 (75%)

Westbound Demand from Herald Square: 3,800

Westbound Capture: 2,900 (75%)
Underground Concourse: Segment 1
Segment 1: 7th Avenue undercrossing and north-south passageway

Upstairs to continue north

Match Line

To Herald Square

33rd Street Concourse

Match Line
Segment 1: Section of 7th Avenue Underpass between 31st and 32nd Streets
Segment 1: Alternative 2
Segment 1: Alternative 3

Entirely inside 15 Penn and Manhattan Mall

IND mezzanine
Segment 1: Option 3 – Section at 6th Avenue
Segment 1: Herald Square Connector at Sixth Avenue

Plan at Manhattan Mall Cellar Level 1

Plan at Manhattan Mall Street Level
Underground Concourse: Segment 2
Segment 2
Underground Concourse: Segment 3
Underground Concourse: Segment 3

Re-configure existing 33rd Street subway undercrossing below
Segment 3: Use existing free-zone passage under 7th Avenue

- Reconfigure subway entry
- Move stairs and elevator
- Reconfigure 33rd Street free zone undercrossing
- New platform stair and fare control array

34th Street

1 Penn East

East End Gateway

33rd Street
Segment 1: Existing free zone undercrossing at 33rd Street
### 2038 Incremental Bus Trips

#### Table TA-T:2

<table>
<thead>
<tr>
<th>Bus Route</th>
<th>Weekday Peak Hour Net Incremental Bus Trips by Route and Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port Authority Bus Terminal Bus Routes</td>
<td></td>
</tr>
<tr>
<td>TOTAL - Port Authority Bus Terminal Bus Routes (67 NJ Transit bus routes, with additional private operator bus routes)</td>
<td>1,715 70 79 1,571</td>
</tr>
<tr>
<td>NYCT Express Bus Routes</td>
<td></td>
</tr>
<tr>
<td>TOTAL - Brooklyn Express Bus Routes</td>
<td>200 0 0 200</td>
</tr>
<tr>
<td>TOTAL - Queens Express Bus Routes</td>
<td>319 0 0 239</td>
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<tr>
<td>TOTAL - Bronx Express Bus Routes</td>
<td>160 0 0 162</td>
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<tr>
<td>TOTAL - Staten Island Express Bus Routes</td>
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<tr>
<td>Manhattan Local Bus Routes</td>
<td></td>
</tr>
<tr>
<td>M34/M44 Eastbound</td>
<td>19 1 2 11</td>
</tr>
<tr>
<td>M34/M44 Westbound</td>
<td>0 0 4 20</td>
</tr>
<tr>
<td>M1 Northbound</td>
<td>21 4 5 5</td>
</tr>
<tr>
<td>M1 Southbound</td>
<td>8 0 8 21</td>
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<tr>
<td>M2 Northbound</td>
<td>21 4 6 21</td>
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<tr>
<td>M2 Southbound</td>
<td>8 0 1 21</td>
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<tr>
<td>M3 Northbound</td>
<td>21 0 1 8</td>
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<td>M3 Southbound</td>
<td>0 1 1 21</td>
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<tr>
<td>M4 Northbound</td>
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<tr>
<td>M5 Southbound</td>
<td>11 0 1 24</td>
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<tr>
<td>M7 Northbound</td>
<td>21 0 3 21</td>
</tr>
<tr>
<td>M7 Southbound</td>
<td>0 1 1 21</td>
</tr>
<tr>
<td>M10 Northbound</td>
<td>21 0 0 8</td>
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<tr>
<td>M10 Southbound</td>
<td>8 1 1 21</td>
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<tr>
<td>M16 Northbound</td>
<td>21 0 15 8</td>
</tr>
<tr>
<td>M16 Southbound</td>
<td>0 1 1 21</td>
</tr>
<tr>
<td>D33 Westbound (to Manhattan)</td>
<td>14 0 0 9</td>
</tr>
<tr>
<td>320 Eastbound (to Queens)</td>
<td>0 0 0 12</td>
</tr>
<tr>
<td>TOTAL - Manhattan Local Bus Routes</td>
<td>206 29 53 294</td>
</tr>
</tbody>
</table>

**Notes:**

No outbound trips were assigned to express bus service in AM peak hour or inbound trips were assigned to express bus service in PM peak hour.

*List of express bus routes with assigned trips include the following:

Brooklyn – BM1, BM2, BM3, BM4, BM5, X27, X37, X38

Queens – QM1, QM2, QM5, QM4, QM5, QM6, QM10, QM12, QM13, QM14, QM15, QM16, QM17, QM18, QM20, QM24, QM31, QM32, QM33, QM34, QM35, QM40, QM42

Bronx – BX2, BX3, BX4, BX5, BX6, BX7, BX8, BX9, BX10, BX11

34th Street Corridor: Buses
Bus Network Redesign

For languages other than English, use the Google Translate tool at the bottom of this page.

Projects on pause

The Borough Bus Network Redesigns are on pause due to the COVID-19 pandemic. We'll let you know when we resume so we can continue our work to create a better bus network together.
NTCDOT’s Plan

Better Buses Action Plan

Bus Priority Tools

- New Bus Lane
- Bus Queue Jump Signal
- Bus Stop Accessibility
- Upgraded Bus Lane
- Traffic Flow Improvement
- Turn Restriction
- Potential Protected Bus Lane
- Curb Management
- Busway
- Bus Boarder
- Pedestrian Safety
Thank You!