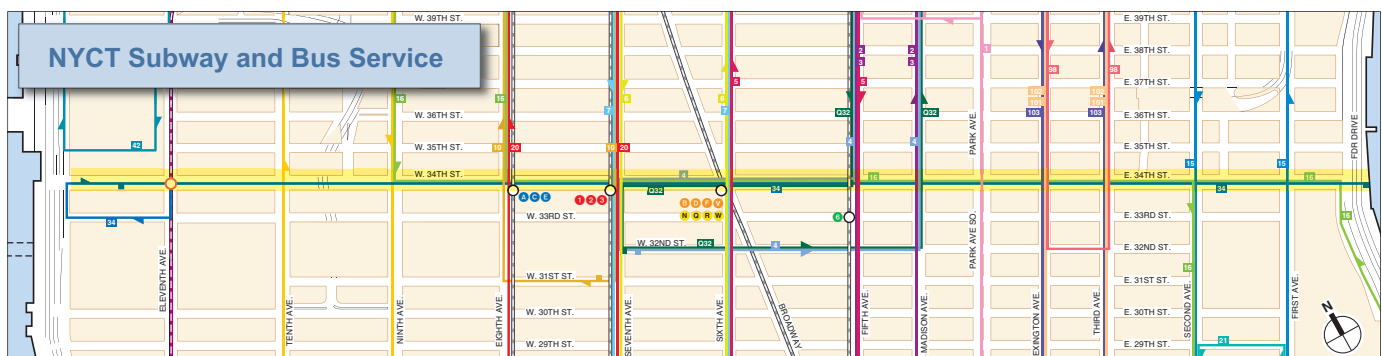
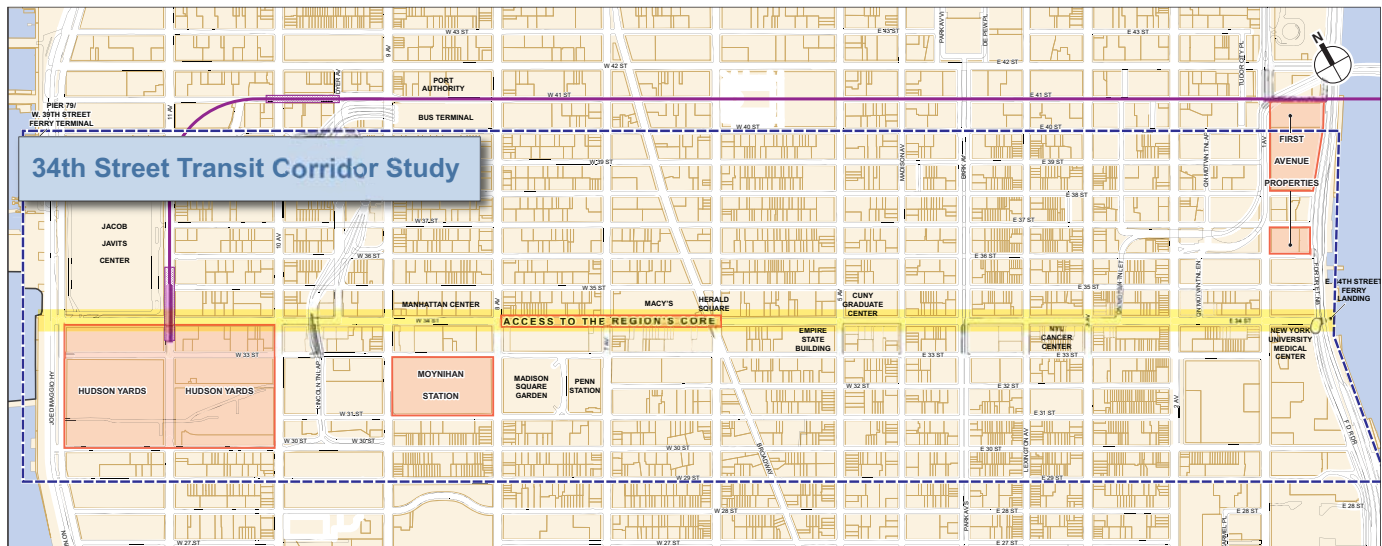


# 34th Street Transit Corridor Alternatives Analysis

- The New York City Department of Transportation, in collaboration with MTA New York City Transit and with MTA Bus Company, is sponsoring a project to implement new or enhanced transit service along 34th Street from the Hudson River to the East River in Manhattan.
- As part of PlaNYC, the City is working to improve travel times by adding transit capacity – for existing residents, visitors, and workers, and to accommodate growth.
- An Alternatives Analysis is currently beginning to consider transit options to decrease travel times for transit riders, to reduce vehicular and pedestrian congestion along 34th Street, and to provide convenient connections to the major land uses and transportation facilities along the corridor.

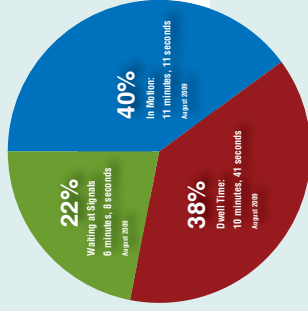


- 34th Street is a key transportation corridor with heavy bus service, heavy pedestrian traffic, key rail and ferry connections, and important regional vehicular connections.
- DOT is looking for feedback on the **Goals and Objectives** for the project, and on the **Alternatives under Consideration**.

# 34th Street Transit Corridor Alternatives Analysis

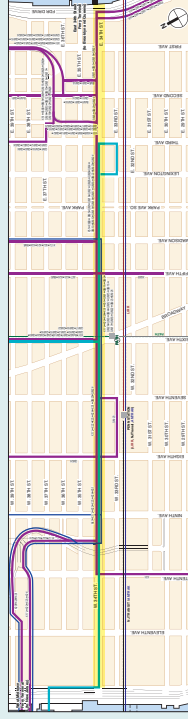
## Purpose and Need

### Improve Crosstown Traffic



- The M34 takes 28 minutes to travel end to end – an average of 4.5 miles per hour

### Consider Express Bus Operations



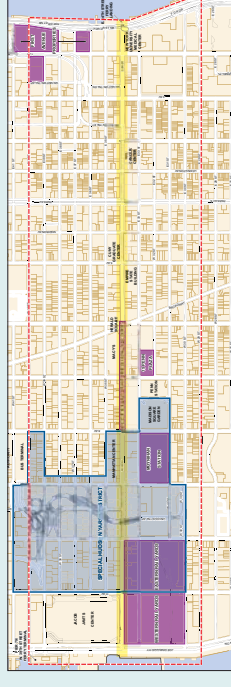
- 34th Street is a key route for bus commuters into Manhattan, with over 75 express buses during rush hour

### Decrease Pedestrian Congestion



- 34th Street is one of the busiest pedestrian streets in the city, with Penn Station, Herald Square, and the Empire State Building as major attractions

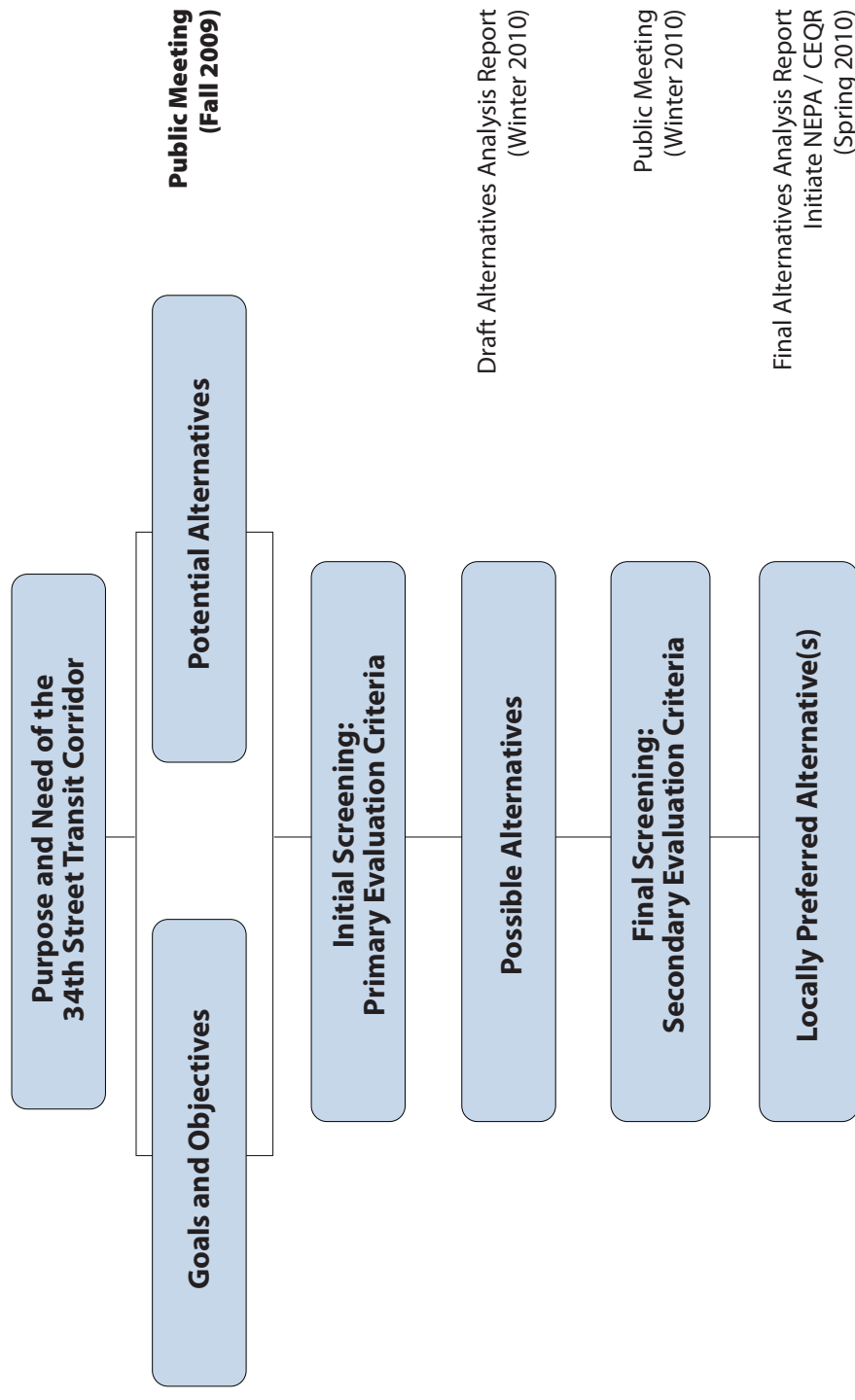
### Accommodate Future Development



- New developments include a new rail tunnel to New Jersey, and a projected 17 million square feet of office space and 12,000 new dwelling units, all of which will increase demands on the transit, pedestrian, and vehicular networks along 34th Street.

# 34th Street Transit Corridor Alternatives Analysis

## Alternatives Analysis Process



# 34th Street Transit Corridor Alternatives Analysis

## Goals and Objectives

### Improve Crosstown Mobility

- Reduce transit travel time for crosstown trips
- Improve transit reliability
- Reduce pedestrian congestion
- Provide convenient connections to existing and future transit service
- Improve express bus operations along 34th Street
- Accommodate future transit demand

### Minimize Capital and Operating Concerns

- Implement within a reasonable construction timeframe
- Implement within a reasonable construction cost
- Be consistent with MTA operating procedures
- Avoid conflicts with existing and proposed infrastructure
- Avoid effects on critical roadway functions

# 34th Street Transit Corridor Alternatives Analysis

## Goals and Objectives

### Enhance Community Character

- Support existing and proposed development
- Improve connections between residential and commercial destinations
- Improve pedestrian circulation and safety

### Minimize Adverse Impacts on Built and Natural Environment

- Avoid, minimize, or mitigate adverse impacts on historic resources
- Minimize encroachment on view corridors
- Maintain access to existing and future uses on 34th Street
- Avoid property acquisition to the maximum extent feasible
- Reduce vehicular congestion, emissions, and noise
- Minimize construction impacts to the extent feasible
- Avoid impacts on natural features and coastal waters

# 34th Street Transit Corridor Alternatives Analysis

## Alternatives under Consideration



No Improvements



Light Rail Transit



Minor Bus Improvements



Automated Guideway Transit



Bus Rapid Transit



Heavy-rail



Streetcar

# 34th Street Transit Corridor Alternatives Analysis

|                                                          | Existing/Improved Bus Operations                                                                                                                                                                                                                              | Bus Rapid Transit                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Capacity (Persons per Vehicle)</b>                    |  <ul style="list-style-type: none"> <li>• Standard: 80 (40 seated, 40 standing)</li> <li>• Articulated: 120 (60 seated, 60 standing)</li> </ul>                             |  <ul style="list-style-type: none"> <li>• Standard: 80 (40 seated, 40 standing)</li> <li>• Articulated: 120 (60 seated, 60 standing)</li> </ul>                                                                                                                                                                                                                               |
| <b>Vehicles per Set</b>                                  | 1                                                                                                                                                                                                                                                             | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Power Supply</b>                                      | Diesel, Electric, Hybrid or Alternative Fuels                                                                                                                                                                                                                 | Diesel, Electric, Hybrid or Alternative Fuels                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Suspension</b>                                        | Rubber tire on pavement                                                                                                                                                                                                                                       | Rubber tire on pavement                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Guideway</b>                                          | Mixed traffic                                                                                                                                                                                                                                                 | Exclusive right-of-way may have portions in mixed traffic                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Capital Cost*</b>                                     | Vehicle: \$350K - \$1.2M                                                                                                                                                                                                                                      | Vehicle: \$600K - \$1.2M<br>Construction: \$7M - \$12M per mile                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Operating Cost ***<br/>(per Vehicle Revenue Hour)</b> | \$109.20                                                                                                                                                                                                                                                      | \$109.20****                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Key Characteristics</b>                               | <ul style="list-style-type: none"> <li>• High flexibility</li> <li>• Low capital costs</li> <li>• Limited capacity</li> <li>• Generally attains slower travel times &amp; speeds than other modes</li> <li>• Stops generally spaced close together</li> </ul> | <ul style="list-style-type: none"> <li>• Features off-board fare payment; distinct stations/stops; unique branding; &amp; real-time passenger information on/off-board</li> <li>• Stops can be located curbside or along street median</li> <li>• Improved operating speeds &amp; reliability due to elimination of various types of delay</li> <li>• Traffic conditions may slow operating speeds</li> <li>• Stops generally spaced close together</li> </ul> |

\* Capital Cost: Data based on average Capital costs of built projects in the USA (Source: FTA)

\*\* Estimated Capital Costs for 2nd Avenue Subway: \$2.4 - \$3.1 Billion per Mile (Source: MTA and FTA)

\*\*\* Source: FTA's 2007 National Transit Database

\*\*\*\* Cost shown is for buses in general. Bus Rapid Transit operating cost may be slightly higher due to additional amenities.

# 34th Street Transit Corridor Alternatives Analysis

|                                                          |  <b>Streetcar</b>                                                                                                                                                            |  <b>Light Rail Transit</b>                                                                                                                                                                                                                                                                               |  <b>Automated Guideway Transit</b>                                                                                                                                                                         |  <b>Heavy Rail</b>                                                                                                                                                                                                      |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Capacity (Persons per Vehicle)</b>                    | 127 (35 seated, 92 standing)                                                                                                                                                                                                                                    | 160 (90 seated, 70 standing)                                                                                                                                                                                                                                                                                                                                                              | 20-55                                                                                                                                                                                                                                                                                       | 170-300                                                                                                                                                                                                                                                                                                 |
| <b>Vehicles per Set</b>                                  | 1-2                                                                                                                                                                                                                                                             | 1-2                                                                                                                                                                                                                                                                                                                                                                                       | 1-6                                                                                                                                                                                                                                                                                         | 4-10                                                                                                                                                                                                                                                                                                    |
| <b>Power Supply</b>                                      | Electrically powered via overhead wires                                                                                                                                                                                                                         | Electrically powered via overhead wires, Diesel                                                                                                                                                                                                                                                                                                                                           | Electrified third rail                                                                                                                                                                                                                                                                      | Electrified third rail or overhead wires                                                                                                                                                                                                                                                                |
| <b>Suspension</b>                                        | Steel wheel on steel rail                                                                                                                                                                                                                                       | Steel wheel on steel rail                                                                                                                                                                                                                                                                                                                                                                 | Steel wheel on steel rail or rubber tired                                                                                                                                                                                                                                                   | Steel wheel on steel rail                                                                                                                                                                                                                                                                               |
| <b>Guideway</b>                                          | Mixed traffic or Exclusive right-of-way                                                                                                                                                                                                                         | Mixed traffic or Exclusive right-of-way                                                                                                                                                                                                                                                                                                                                                   | Exclusive fixed guideway                                                                                                                                                                                                                                                                    | Exclusive fixed guideway                                                                                                                                                                                                                                                                                |
| <b>Capital Cost*</b>                                     | \$20M-\$100M per mile                                                                                                                                                                                                                                           | \$20M - \$180M per mile                                                                                                                                                                                                                                                                                                                                                                   | \$70M - \$180M per mile                                                                                                                                                                                                                                                                     | \$90M - \$380M per mile**                                                                                                                                                                                                                                                                               |
| <b>Operating Cost ***<br/>(per Vehicle Revenue Hour)</b> | \$213.70                                                                                                                                                                                                                                                        | \$213.70                                                                                                                                                                                                                                                                                                                                                                                  | \$474                                                                                                                                                                                                                                                                                       | \$185.10                                                                                                                                                                                                                                                                                                |
| <b>Key Characteristics</b>                               | <ul style="list-style-type: none"> <li>• Can complement pedestrian-friendly development &amp; activity circulation in dense urban centers</li> <li>• Can negotiate sharp turns &amp; narrow streets</li> <li>• Stops generally spaced close together</li> </ul> | <ul style="list-style-type: none"> <li>• Suitable for medium distance trips in suburbs as well as trips between central business districts &amp; other major activity centers</li> <li>• Highly flexible rail mode can operate in a variety of conditions</li> <li>• Stops generally spaced further apart than bus modes, but typically closer than higher capacity rail modes</li> </ul> | <ul style="list-style-type: none"> <li>• Also known as "people mover"</li> <li>• Good for areas where there are high volumes of trips concentrated over short distances</li> <li>• Short distance between stops</li> <li>• Must be grade-separated</li> <li>• High capital costs</li> </ul> | <ul style="list-style-type: none"> <li>• Provides good service for short &amp; long distance travel</li> <li>• Of the modes under consideration, has the longest distance between stops</li> <li>• Very high capacity system</li> <li>• Can attain high speeds</li> <li>• High capital costs</li> </ul> |

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\*\* Estimated Capital Costs for 2nd Avenue Subway: \$2.4 - \$3.1 Billion per Mile (Source: MTA and FTA)

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