



34th Street Transitway – Traffic Analysis Summary

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The New York City Department of Transportation (DOT) is working with MTA New York City Transit and MTA Bus to implement a project to improve bus service on 34th Street. As part of implementing this project, DOT plans to make a large change to the general (non-bus) traffic patterns on 34th Street. The street currently carries two-way traffic for its full length; under this project, general traffic would be restricted to one-way use. Vehicles would be able to travel eastbound only from Fifth Avenue and westbound only from Sixth Avenue; buses would be able to travel in both directions for the full length of the corridor.

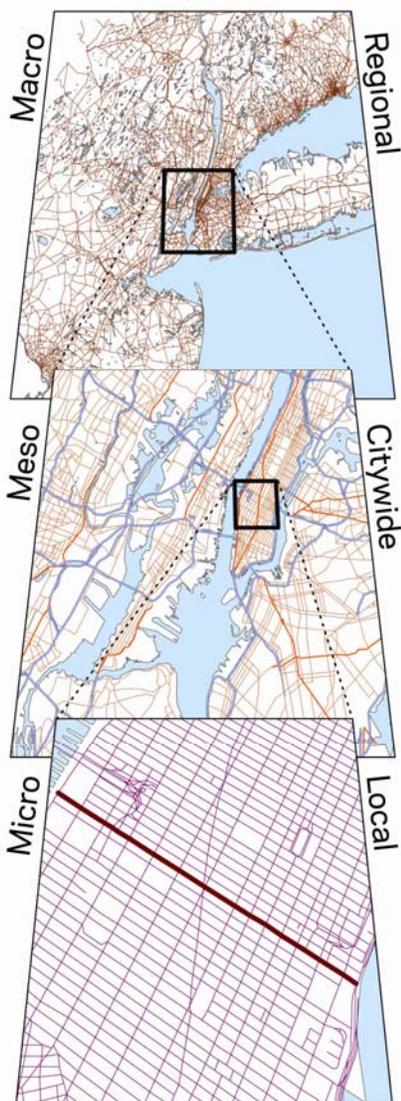
This type of traffic change is difficult to analyze using either operational traffic analysis tools, such as the Highway Capacity Manual method, or regional traffic models, such as NYMTC's Best Practices Model (BPM). While 34th Street actually carries relatively low traffic volumes (300-400 non-bus vehicles per direction in peak hours), it is part of a highly congested midtown traffic network, and provides connections to the Lincoln Tunnel, Holland Tunnel, Franklin Delano Roosevelt Drive, and Route 9A. Furthermore, there are complicated needs for traffic analysis, since the project will need to be analyzed both in detail in the immediate vicinity of the project, and also to understand potential impacts to regional travel patterns.

To properly analyze the traffic effects of the 34th Street Transitway project, DOT has developed an integrated traffic modeling program that evaluates traffic at the macroscopic (regional) level, mesoscopic (citywide) level, and at the microscopic (local) level – together called the Manhattan Traffic Model (MTM). This modeling program is designed both to provide DOT with information to inform project design and implementation, as well as any environmental review necessary for the corridor. The MTM will incorporate:

- NYMTC's BPM;
- A mesoscopic traffic model covering Manhattan south of 179th Street and regional facilities to/from Queens, Brooklyn, Staten Island, Bronx and New Jersey; and
- A microscopic traffic model covering a corridor bounded by 37th Street, the East River, the Hudson River and 32nd Street.

The mesoscopic and microscopic elements will be developed utilizing the Aimsun software platform, which was previously used by DOT to evaluate the potential effects of changes to Broadway in midtown ("Green Light for Midtown").

The initial trip table for the mesoscopic study area will be extracted from the BPM model. Given the regional focus of the BPM it is anticipated that there will be a need to adjust this trip table to reflect more detailed traffic counts in the project area using Origin-Destination Matrix Estimation (ODME) techniques, utilizing the subarea extracted trip table as an input (“seed”) to the ODME process. This type of trip table adjustment encompasses techniques that range from proportional fitting to sophisticated linear programs and pays closer attention to those observations that have the greatest value (e.g., measured link volumes). The “seed” trip will be further enhanced with origin-destination surveys conducted at regional transportation facilities.



Model replication of observed conditions ensures that the base scenario represents reality, which will allow confidence in the analysis of operations resulting from the BRT implementation. The processes used to do this replication are collectively referred to as calibration and validation. The calibration/validation process generally entails the adjustment of network attributes, trip tables, and coefficients of embedded relationships in order to replicate a certain set of observed conditions.

The calibration/validation process requires a diversified set of data, including the following:

- Traffic flows at individual links and at screenlines;
- Traffic flows at the boundaries of the travel demand/meso and meso/micro models;
- Travel times/speeds along critical corridors; and
- Queue observations along critical corridors.

As part of the preparatory work for this model, DOT has begun to collect a significant amount of data. All data to be used for this model will have been collected following the 2009 set of traffic changes on Broadway, which have affected Midtown Manhattan traffic patterns.

Once the model is fully calibrated, the network will be adjusted to reflect projected conditions in 2012, without the implementation of the 34th Street project, as well as travel growth due to development in the study area. The model will then be run using this adjusted network and demand set. This “no-build” scenario will serve as the baseline for evaluating the project.

The Transitway traffic changes will then be coded into the MTM, which will then be run through the model to reflect the “build” scenario for the project. Based on these model outputs, DOT will identify other adjustments to the traffic network that need to be made as part of the project. These adjustments will then be brought back into the model, for a “build with adjustments” scenario, which will reflect what will really be implemented as part of the project. These outputs will serve as the basis for project evaluation and environmental review.