

A computerized ridership forecasting model was used to predict the number of people who would use the new Second Avenue Subway. This model used existing ridership data; census information on the location of residents, jobs, and travel modes that employees use to get to work; and future projections of population, housing, and employment to determine future travel patterns throughout New York City both with and without a new Second Avenue Subway. The modeling process used for this effort is described briefly below. More information is provided in Appendix D, “Transportation.”

The modeling process MTA New York City Transit (NYCT) developed for the Second Avenue Subway’s ridership predictions uses regional and local socioeconomic forecasts for travel demand and regional and local models to depict the current and proposed supply of transit service. The travel demand is based on county-level forecasts of trips to work made by the New York Metropolitan Transportation Council (NYMTC), together with an allocation of those trips to specific census tracts within Manhattan, based on planned or projected growth. The primary model used is the Transit Demand Forecasting Model (TDFM) for New York City developed by NYCT; this model is supplemented with information from the Regional Transit Forecasting Model (RTFM) developed by the MTA. Both models use TransCAD 4.0, a transportation planning software package that combines a geographic information system (GIS) with travel demand models and analysis tools.

The TDFM is a detailed model of subway and bus service within New York City that was designed to account for the system’s numerous routes and transfer connections and peak period capacity constraints. It estimates how people use the subway and bus system in New York City during the morning (AM) peak hour. The TDFM was used to predict changes in AM peak hour route choice with the addition of Second Avenue Subway service and the associated alleviation of crowding on the Lexington Avenue Line. Heavy use of this model was made during the process of selecting and evaluating proposed route alignments, station locations, and transfer connections for the new subway. The TDFM was used for the 1999 Manhattan East Side Transit Alternatives (MESA) Study as well; since that study, however, the model has been enhanced: MetroCard data was used for demand updates and calibration, and a major revision of the model structure was made to take advantage of the route coding and demand modeling improvements available in TransCAD 4.0. These enhancements allowed NYCT to increase the accuracy and detail of its modeling results to meet the requirements of the project for both route and station usage forecasts.

The RTFM is a model of regional travel in the New York metropolitan area, including NYCT subway and bus riders; commuters using Metro-North Railroad, Long Island Rail Road (LIRR), and New Jersey Transit; automobile travelers; and people using other travel modes, including taxi, bicycle, and walk. For this FEIS, the RTFM was used to provide station-by-station forecasts of commuter rail riders who would use the subway and estimates of changes in mode usage (e.g., people who would switch from auto to transit). *