

# Grand Street Safety and Bicycle Project

## *March 2007*

Traversing several unique neighborhoods (Tribeca, Chinatown, Little Italy and the Lower East Side), Grand Street can be characterized as a neighborhood shopping street. Beginning at Varick Street, the roadway operates in various configurations. At the western end, the roadway is 35' in width and typically features two eastbound travel lanes and parking on each side. Beginning at Chrystie Street, the roadway begins two-way operation and widens to 59' for one block and narrows down to 40' from Forsyth Street to Essex Street. At Essex Street, the roadway widens again to between 56' and 62' eastbound to the FDR Drive.

In terms of bicycle facilities, this corridor was identified as part Bicycle Master Plan Route and provides access to the Williamsburg Bridge, which has the highest daily usage of all East River Bridges. While the bridge provides a direct connection to Delancey Street, this corridor is not bike-friendly or conducive to on-street bike lanes. Accordingly, with the Department's aggressive bike facility program this corridor was identified as a prime candidate for these facilities as well as the ability to do a "Complete Street" design.

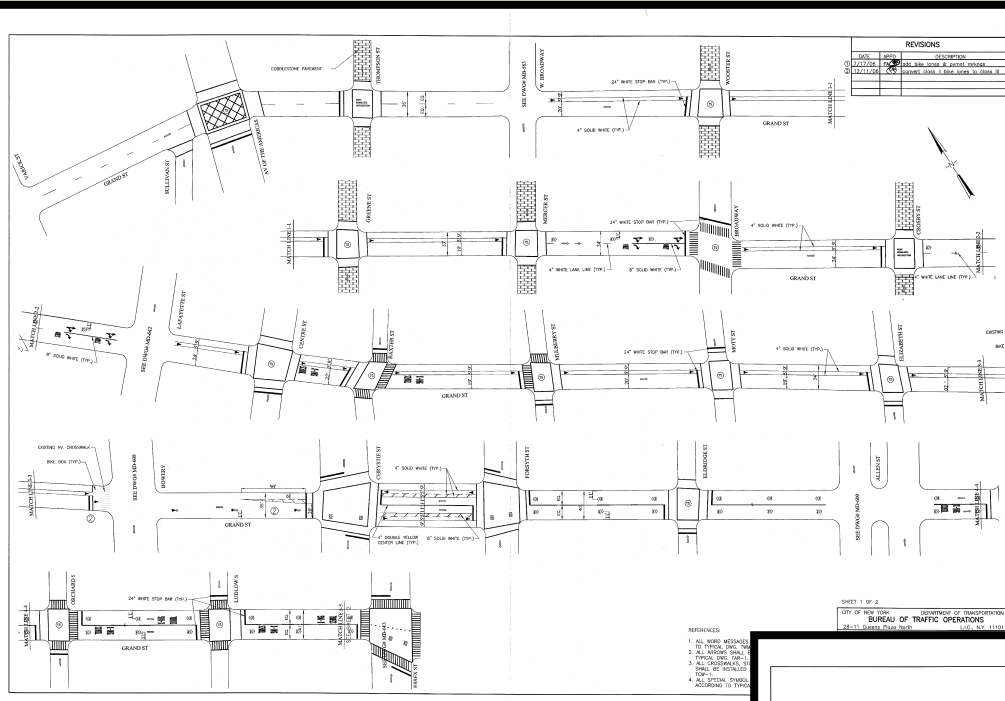
While Grand Street provided a safer, more appealing route, there were still certain safety concerns do to the elements listed, mainly excessive width and low traffic volumes. This contributed to a high incidence of speed, especially along the eastern portion of the corridor. Accordingly, the Department developed a new street design that take into all roadway users; pedestrians, motor vehicle drivers and cyclists alike and provides for a set of safety improvements that provide benefits to all users. Most notably, the reduction in travel lanes and width will lead to decreased speeds and a safer cycling environment. In addition, this program allows for early implementation, with flexibility for future improvements such as a raised median.



Perspective of eastbound Bike Lane at intersection of Grand Street and Forsyth Street

The original elements of this plan were installed in the fall of 2006.

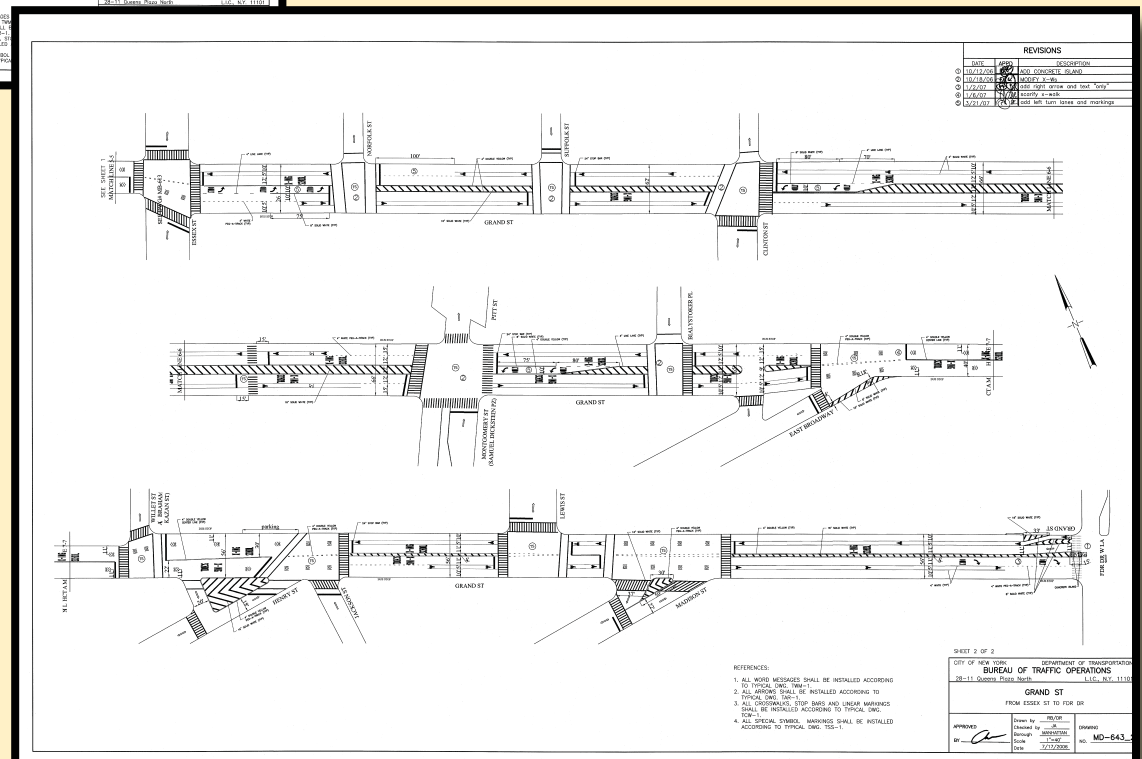
- Beginning on West Broadway, the installation of a Class II Bike Lane effectively narrowed Grand Street into one travel lane. To accommodate for a high volume of turning movements at Broadway, the Bike Lane becomes a Class III - Shared Lane at this intersection. East of Broadway, the Class II lane resumes to Chrystie Street, where Grand Street becomes two-way. This segment, between Chrystie and Forsyth Streets is a Class II lane and a bike lane was installed in both directions. Due to the narrow width of the two-way roadway between Forsyth and Essex Streets, this portion of the lane is marked as a Class III - Shared Use lane.
- Beginning at Essex Street, one travel lane was removed and a flush center median of varying widths was installed. A Class



II bike lane was installed in both directions on Grand Street. This configuration provides for a single lane of travel and has minimal impacts to the Level of Service (LOS) for the corridor. Apart from a small segment between East Broadway and Henry Street, the remainder of the corridor is Class II.

In March 2007, at the request of the community in regard to turning opportunities at several critical intersections, the Department installed turning bays at several critical intersections. This was made possible by a street repaving which allowed for the new markings to be installed, as opposed to the scarification of the old markings.

Overall, these improvements provide for improved conditions for all street users and have been effective in reducing speed and improving both pedestrian and bicycle safety.



In addition to the Bike lanes and Complete Streets redesign, we also investigated the intersection of Grand Street and the FDR Drive. Over the past few years, several improvements were implemented at this location, including the installation of a traffic barrier on the FDR Drive off-ramp, as well as the provision of a dedicated turning lane. However, there were still concerns about the operation of this intersection, as the traffic signal at this intersection has three phases (for eastbound traffic on Grand Street, westbound turns off the service road and right turns off the FDR Drive off-ramp). Under this operation, there was no opportunity for pedestrians to cross Grand Street free from oncoming vehicular traffic.

Accordingly, the Department constructed a raised pedestrian refuge at the center of the median, as well as daylighted the corner of Grand Street to provide for improved site distance. These improvements necessitated a slight realignment of the Class II bike lane, providing for improved safety for cyclists. These improvements were completed in early March 2007 and are depicted to the right.

