

Grand Street Parking Protected Bicycle Path

Varick Street to Chrystie Street

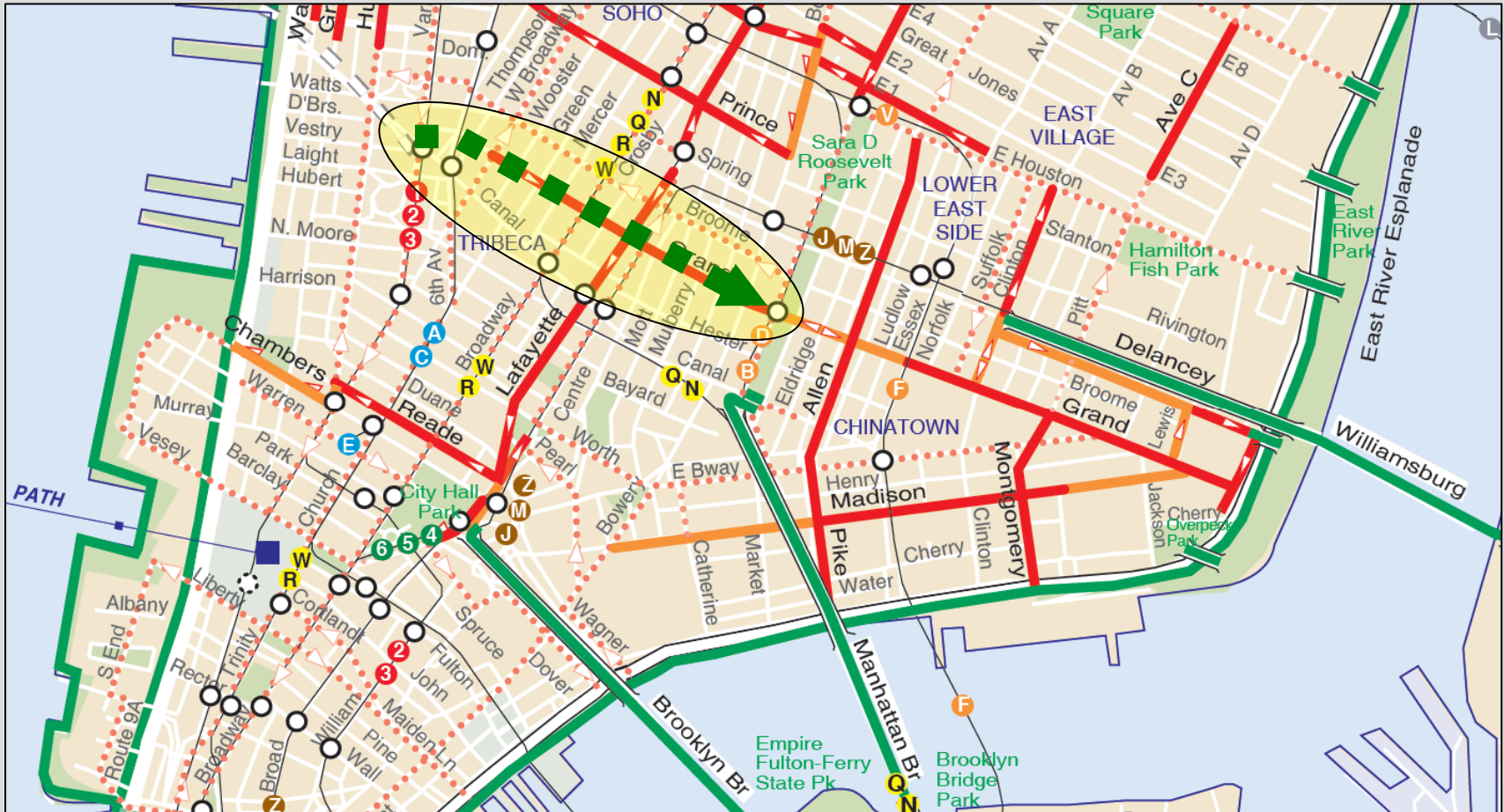


Bicycle Program
Traffic Operations Bureau



Presentation to
Manhattan CB 2 & 3
July 2008

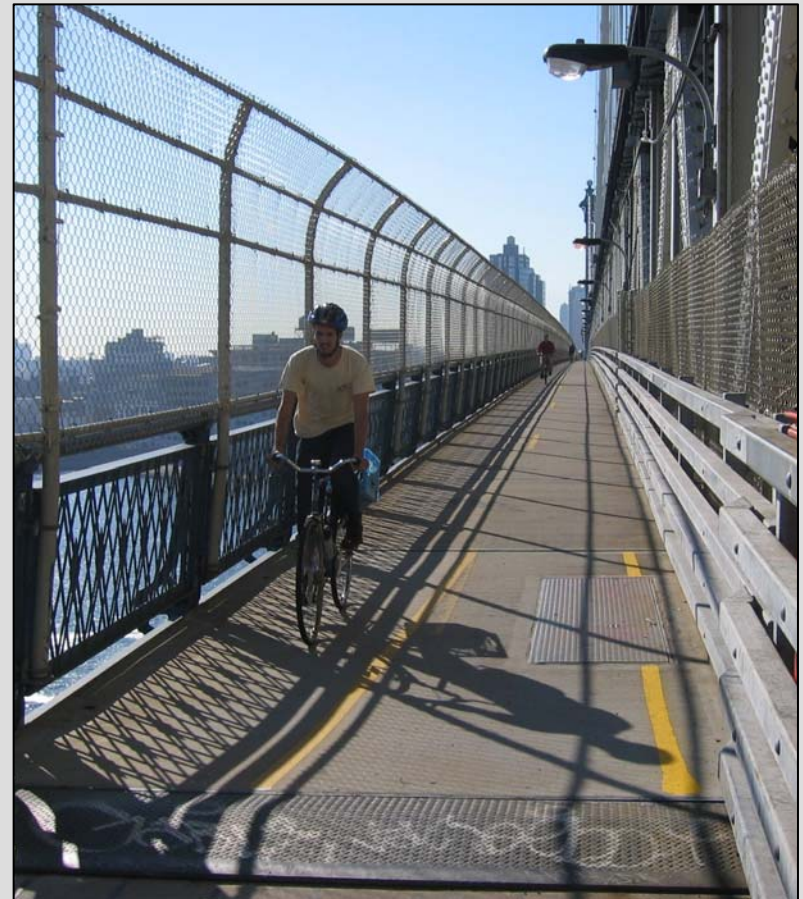
Grand Street: Project Area



Grand Street: Varick Street to Chrystie Street

Grand Street: Project Background

- Popular cross-town bicycle route
- Essential bicycle network link to Manhattan Bridge and Williamsburg Bridge
- Safety issues with current operations:
 - Motorists encroaching into the bicycle lane
 - Cyclists must weave into travel lane



Manhattan Bridge Bicycle Path

Grand Street: Current Roadway Operations

Issues:

- Double Parking
- Driving in Bike Lane
- Disorderly Traffic
- Cut-Through Traffic



Grand Street : Design Objectives

- Robust Cross-town Bicycle Route
- Safe & Comfortable Cycling Experience
- Pilot Protected Bicycle Path for Narrow Streets



9th Avenue Bicycle Path, Manhattan

Grand Street: Design Elements

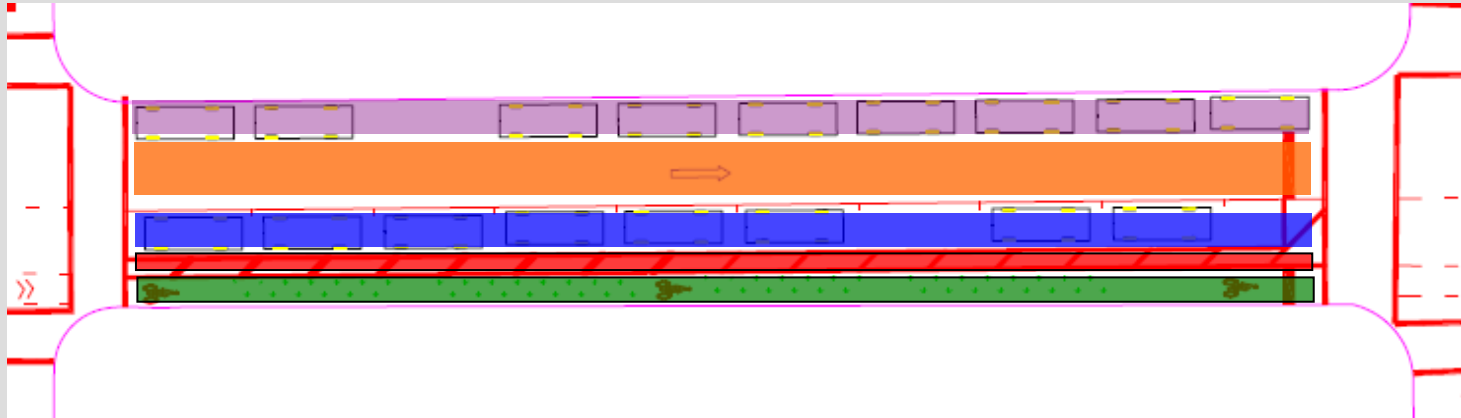
- Protected Bicycle Path
- “Mixing Zones” to Provide Intersection Safety
- Green Bicycle Lane
- Floating Parking Lane



Cycletrack with Mixing Zone, Copenhagen, Denmark

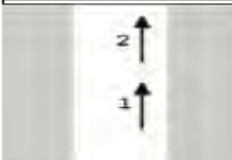
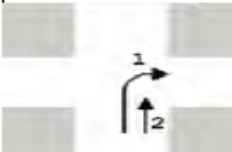
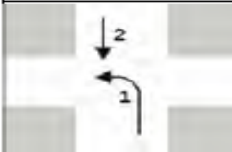

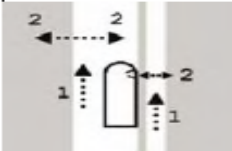
Grand Street :

Parking Protected Bicycle Path



- Loading Lane: 8-9 ft
- Travel Lane: 10-11 ft
- Floating Parking Lane: 8-9 ft
- Buffer Area: 3 ft
- Protected Bicycle Path: 5-6 ft

Copenhagen – Safety Issues of Cycle Tracks Identified

Typical accident situation	Specific type of accident and manoeuvre	Results	
		Accidents	Injuries
	car against c/m in the same direction	-63 %	-68 %
	c/m against c/m in the same direction	+120 %	+201 %
	car against right-turning car	+78 %	+177 %
	right-turning car against c/m	+129 %	+161 %
	right-turning car against pedestrian	+77 %	+84 %
	left-turning car against c/m	+48 %	+61 %
	left-turning c/m	-41 %	-45 %
	c/m against parked car	-38 %	-56 %
	entering and exiting bus passengers	+1951 %	+1762 %
	c/m against pedestrians	+88 %	+63 %

c/m = cyclists/moped riders. NB the category of mopeds in Denmark confined to driving on cycle tracks is limited to a top speed of 30 kph.

Table 1. Significant safety effects in accidents and injuries categorised by accident situation. About 90% of those involved in accidents in category c/m are cyclists. The figures for c/m could therefore be read as for cyclists.

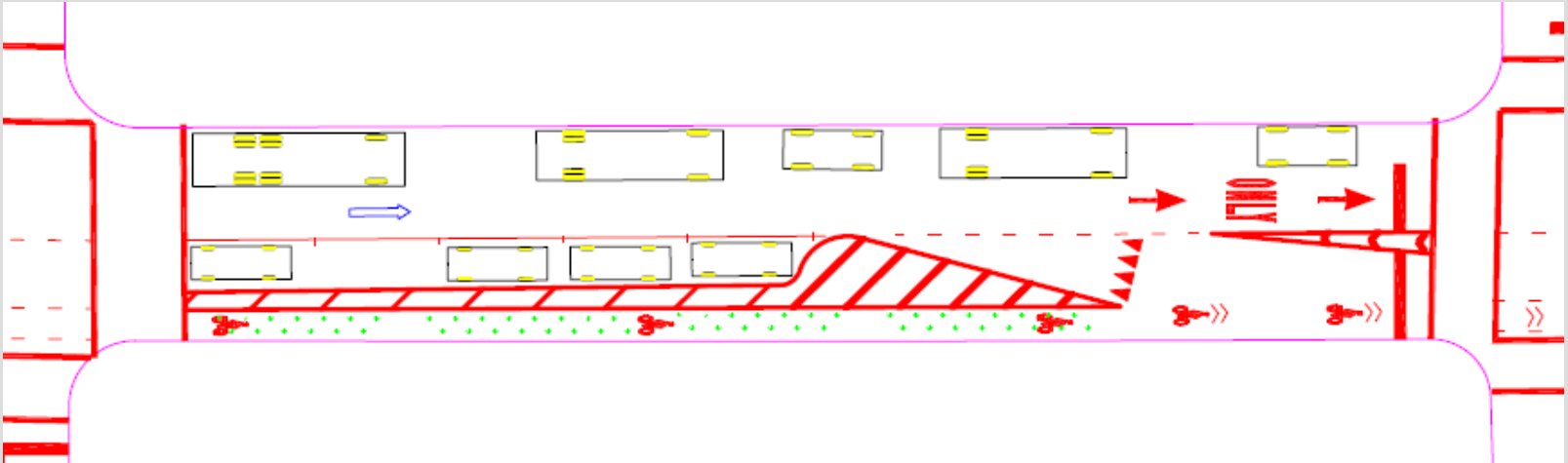
Copenhagen – Adjusting Designs for Safety

- Mixing Auto Turn Lanes and Bikes at Intersection Approach
- Shortening Cycle Tracks
- Dedicated Bicycle Phases where Appropriate



Figure 2. Photos of a shortened cycle track extended into a narrow cycle lane (left), an advanced cycle track with a blue cycle crossing and a pre-green light for cyclists (middle), a shortened cycle track extended into a right turn-lane (right).

Grand Street : Right Turn “Mixing Zone”

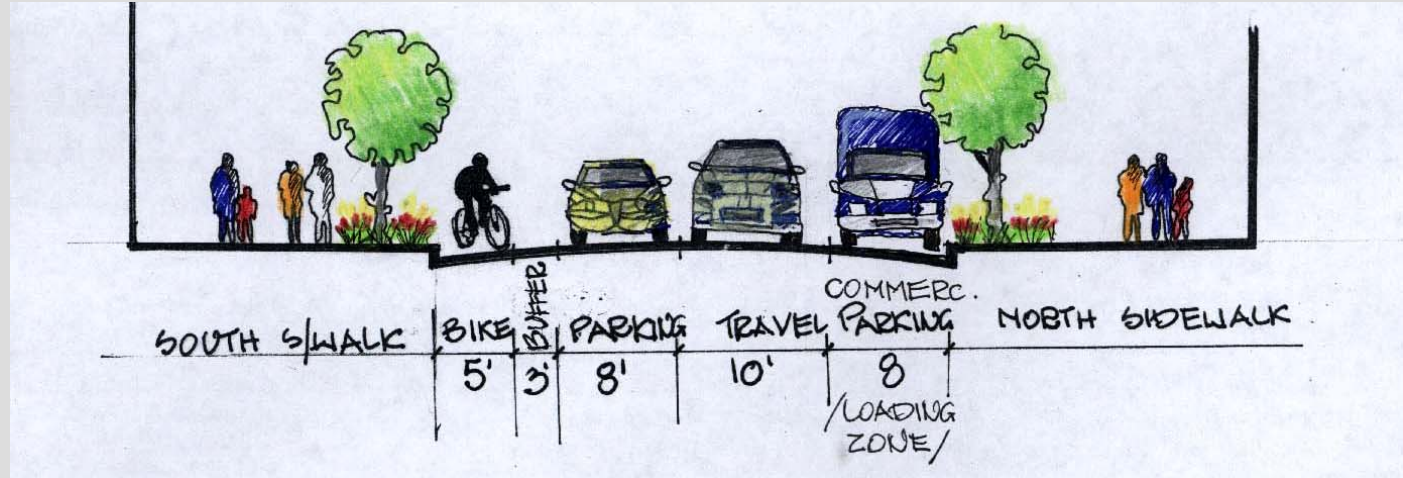


“Mixing zones” at right turn opportunities

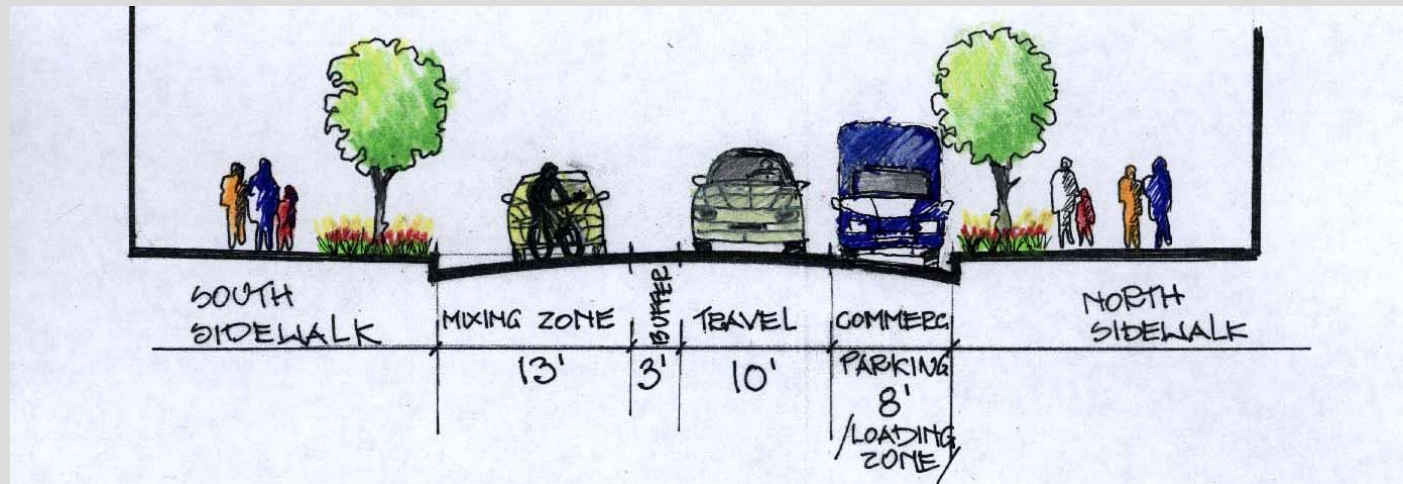
- Space to negotiate turning conflict
- Mutual visibility for cyclists and turning motorists
- Stress-free right turns for motorists

Grand Street : The Proposed Design

Midblock
Cross-section



Mixing Zone
Cross-section



Grand Street : Parking Zones and Regulations

Parking regulations

- North Side
 - Daytime: (9am-7pm) commercial vehicle meter paid parking
 - Nighttime: (11pm-7am) no standing
- South Side
 - Street cleaning regulations 3a-6a
 - New floating parking zone



Enhanced Signs for Floating Parking Regulation



“Floating” Parking Regulation

Enhanced Signs for Mixing Zone



Warning/Regulatory Sign for Motorists



Warning Sign for Cyclists

Next Steps

- Community Feedback
- Refine Design
- Public Notification (Flyers)
- Roadway Repaving
- Implementation Fall 2008