Ninth Avenue Bicycle Path & Complete Street

2008 ITE Transportation Planning Council Best Program

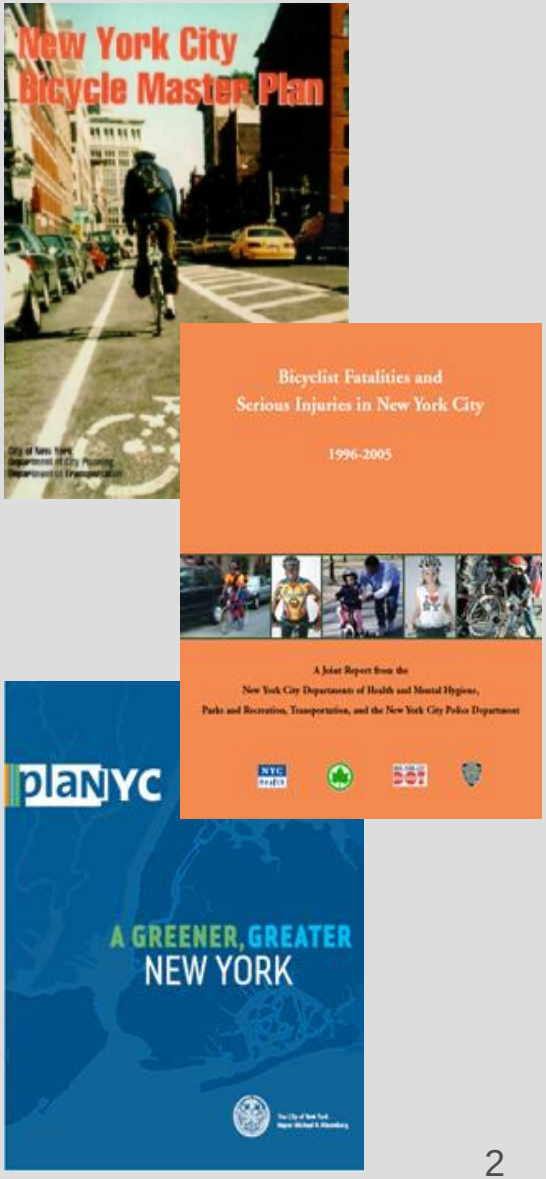
NEW YORK CITY DOT

Office of Alternative Modes
Traffic Operations Bureau

August 2008
ITE Annual Meeting & Exhibit
Anaheim, CA

Project Background

- Building a **Citywide Bicycle Network**: 1997 Bicycle Master Plan
- Pedestrian Safety
- 2006 Bicycle Fatality Study -**Improve Safety**
- Mayor's PlaNYC – A **Greener Transportation** Network - 2007



Design Approach

1. Study Best Practices
2. Interpret Standards & Guidelines to Constrained NYC Environment
3. “Complete Streets” Design Philosophy

Project Area

Pre-Project Configuration

<u>Cyclist Experience</u> – **Poor**
- No Bicycle Facility
- Close overtaking by motorists
- Turning conflicts

<u>Pedestrian Experience</u> – **Fair**
- Pleasant Sidewalks
- Wide Street
- Turning Vehicle Conflicts
- Long Crossing Distance (70’)

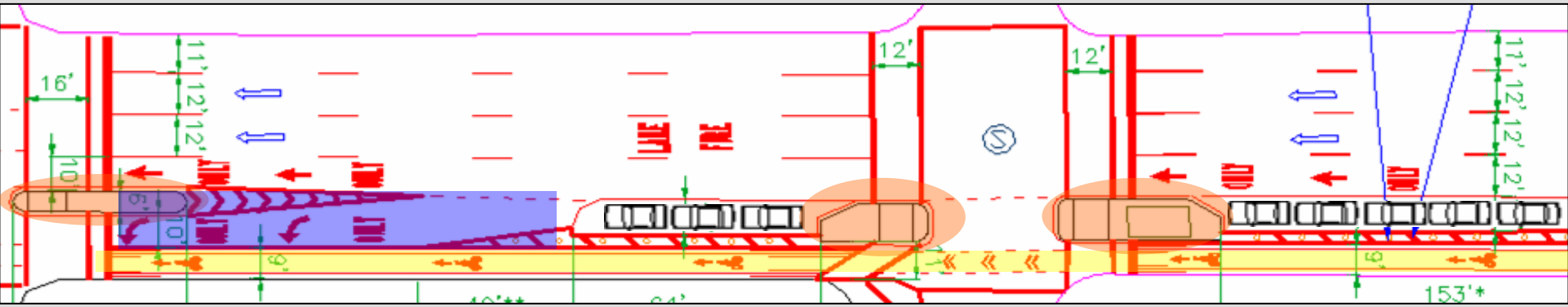
<u>Motorist Experience</u> – **Acceptable**
- Congestion is Low
- Turning Vehicles Block Thru Lanes While Yielding

Complete Street Design Objectives

A **Safe** and **Comfortable** Street for All Users:

1. Higher quality cycling experience for all levels
2. Secure and pleasant pedestrian experience
3. Safe turning movements

Ninth Avenue Geometric Design



- Bicycle lane between sidewalk and parked vehicles
- Concrete pedestrian refuge islands at intersections
- Dedicated turn bays where turns cross bicycle path

1. Higher quality cycling experience for all levels

Standard Bicycle Lane Designs

- Bicycle lane between moving lane and parking lanes
- Susceptible to motor vehicle intrusion
- Little sense of safety and comfort on busy streets
- Few benefits to pedestrians

1. Higher Quality Experience for Cyclists of All Levels

Fully Protected On-Street Bicycle Path

- Parking Protects Bicycle Lane from Double Parking Intrusion
- Signal Phases Protect Cyclists from Turning Vehicles

1. Higher Quality Experience for Cyclists of All Levels

Attracting New Cyclists

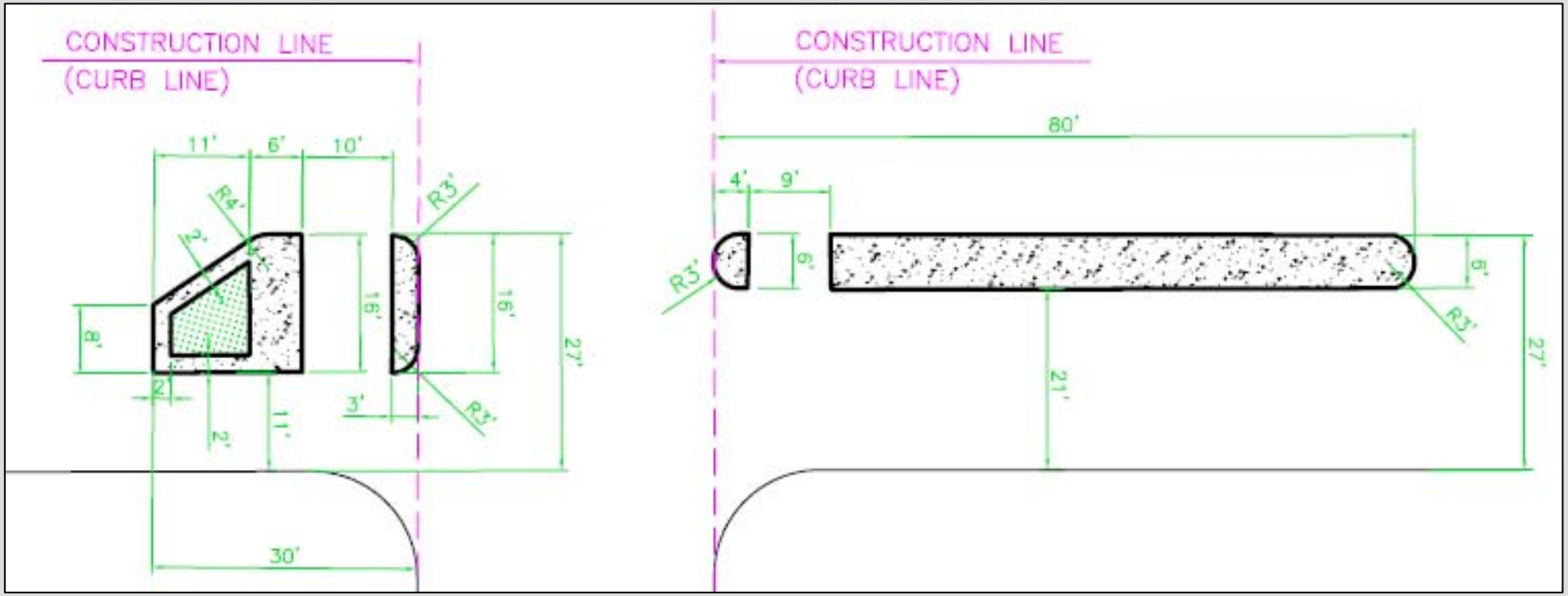
- 9 months after completion, cycling up **40%**
- 12 hour weekday
  - 780 cyclists before
  - 1,100 cyclists after
- Sidewalk cycling down

2. Secure & Pleasant Pedestrian Experience

- Pedestrian Refuges Shorten Crosswalks
- Greener Streetscape
- Conflict-Free Crosswalks on Side Streets

2. Secure & Pleasant Pedestrian Experience

Concrete Refuge Island Design



2. Secure & Pleasant Pedestrian Experience

3. Safe Turning Movements

- 9 in 10 NYC Cyclist Fatalities Occur at Intersections
- Turning Crashes are Major Source of Pedestrian Serious Injuries and Fatalities
- Turning Conflicts are Could be Exacerbated by Bike Lanes Placed Behind Parking Lanes

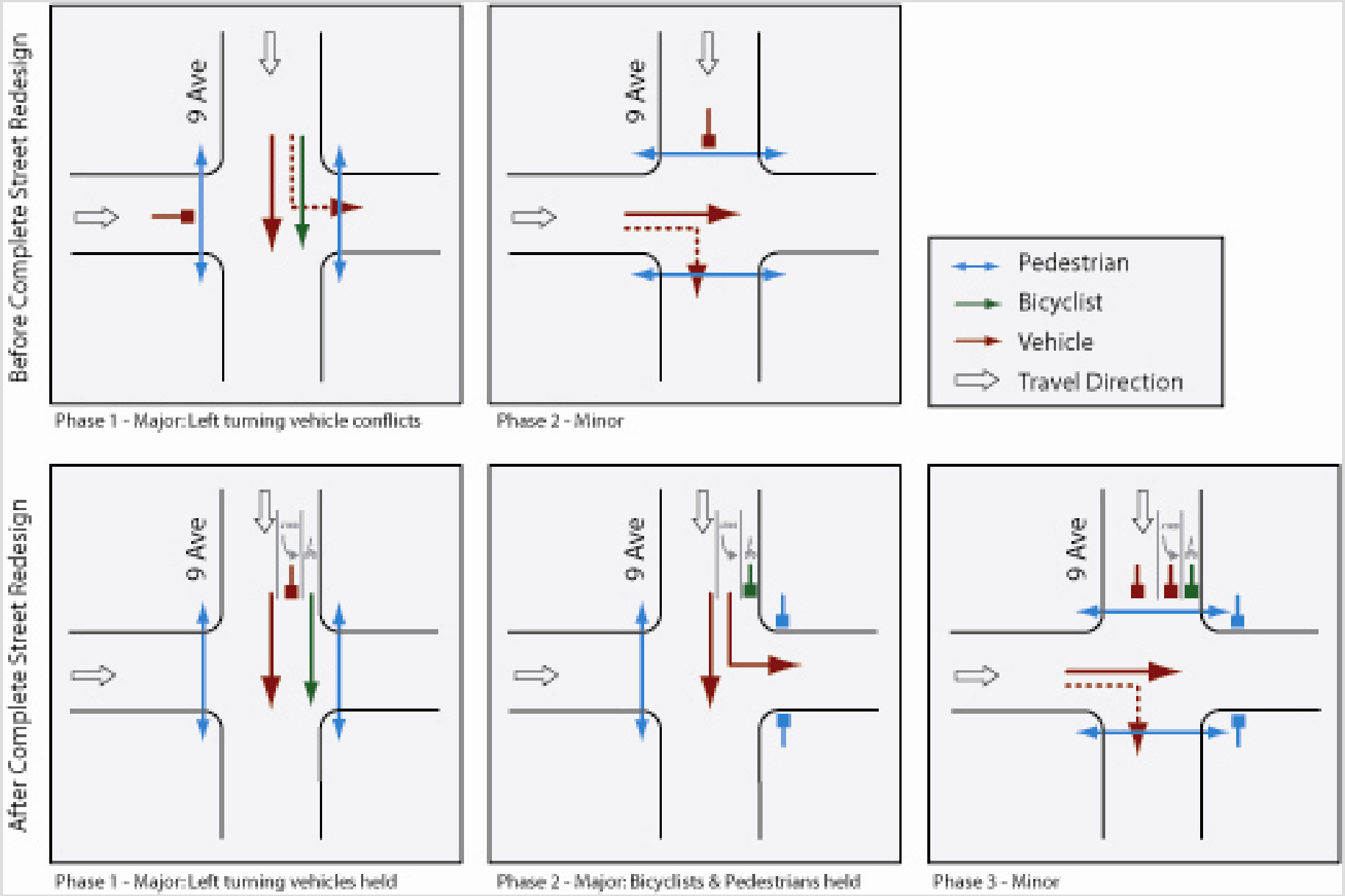
Ninth Avenue Before

3. Safe Turning Movements

Configuration After Project

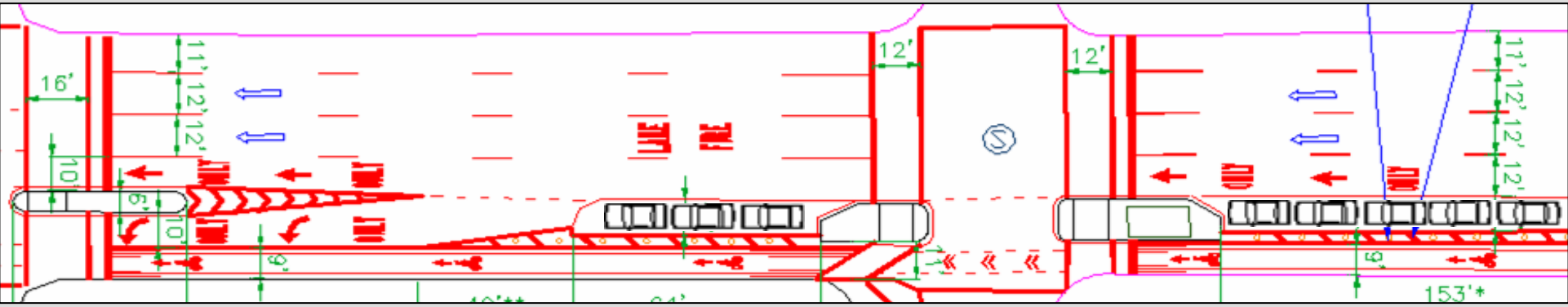
- Left Turn Bays
- Signal Protected: Bicycle and Pedestrian Crossings Conflict-free
- Clear & Stress-free Left Turns

3. Safe Turning Movements: 9th Avenue Signalization



3. Safe Turning Movements

Ninth Ave: Complete Street Design



Pedestrian Experience
Very Good
– Shortens crosswalks by 20’ or more
– Greener streetscape

Cyclist Experience
Excellent
– Fully protected bicycle path
– Bicycle signal phases

Motorist Experience
Very Good
– New left turn lanes
– Parking loss at left turn lanes

Project Challenges

- Unfamiliar Configuration & Rapid Installation
- Motorist Compliance
- Sanitation Access
- Emergency Vehicle Access
- Curbside Access & Parking Impacts

Conclusion: Success Worth Replicating