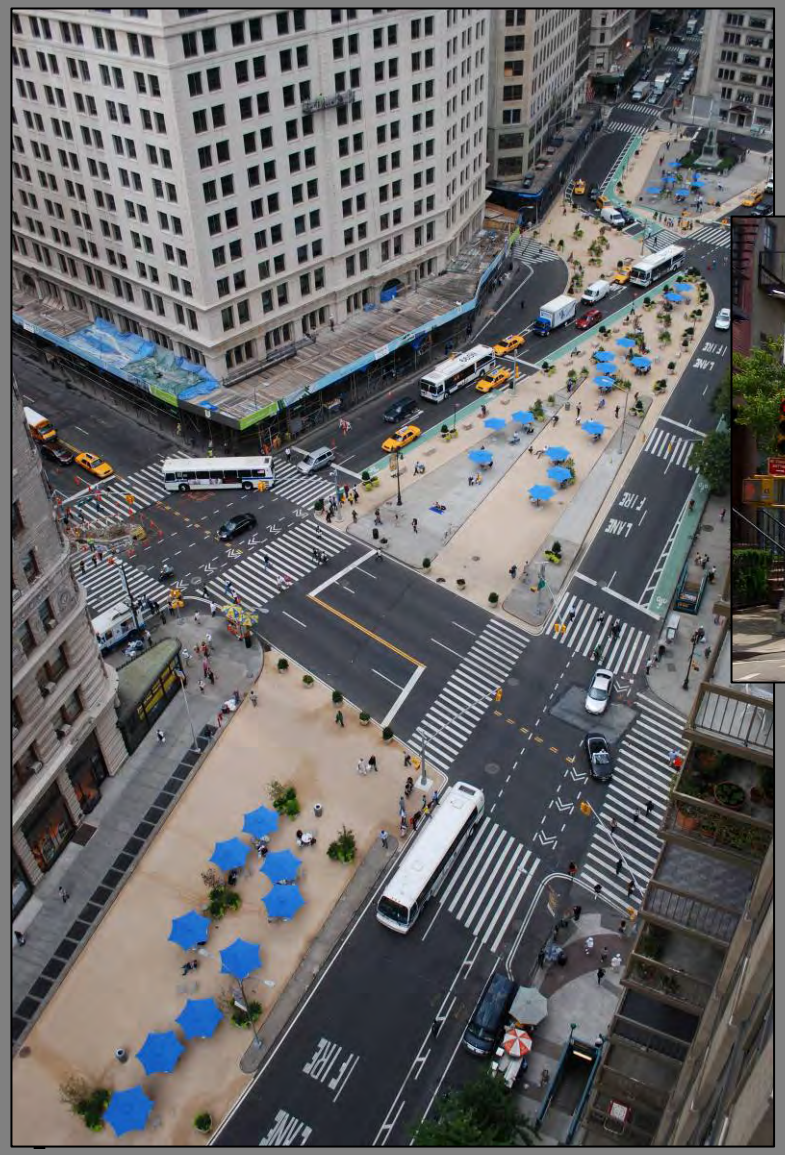
NYC Bicycle & Pedestrian Programs



If you can do it here,
can you do it anywhere?

WALK21
APBP Professional
Development
Seminar

2009

Janette Sadik-Khan
Commissioner

NEW YORK CITY DOT

Outline

- Approach & Keys to Success - *Ryan Russo*
- The Details
  - On-Street Bicycle Routes - *Hayes Lord*
  - Protected On-Street Bicycle Paths - *Joshua Benson*
  - Pedestrian Projects - *Randy Wade*

12th Ave – 135th Street
Pedestrian & Circulation Enhancement

Manhattan, 2009

Vision, Leadership & Policy

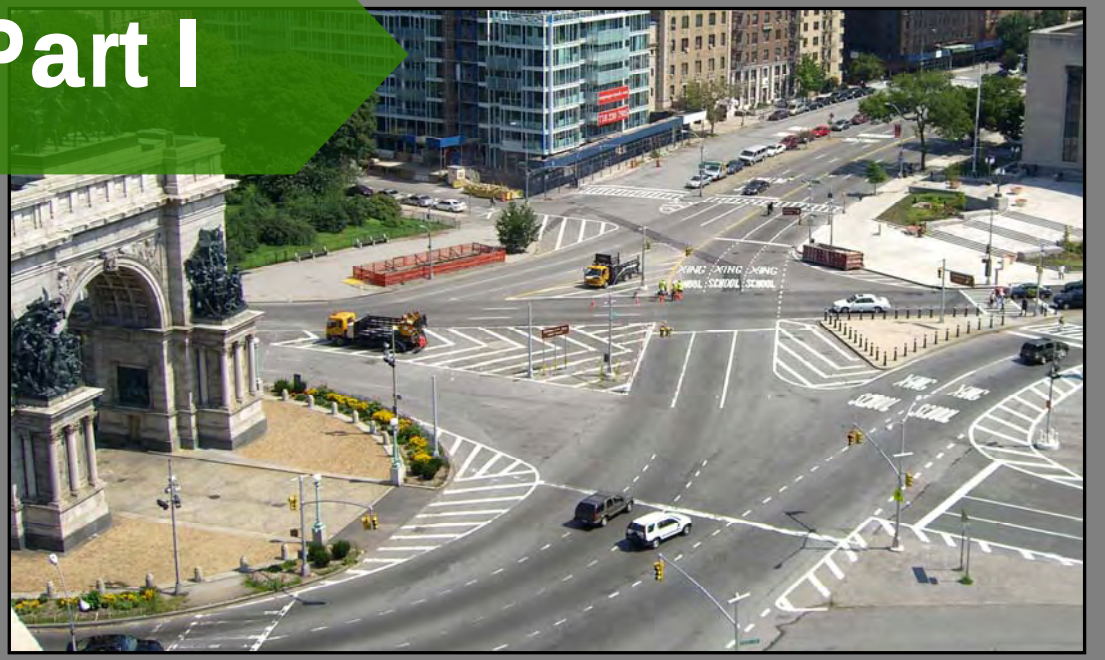
Do-It-Yourself, Part I

DOT Ped-Bike Project Managers

- Mid-2006: 6
- Mid-2009: 21

Close Relationships

- Planning-Operations
- Planners-Engineers



Grand Army Plaza
Southeastern Improvements

Brooklyn, 2007

Do-It-Yourself, Part II

DOT Operational Project

- DOT
- Parks / Greenstreets

9th Avenue Complete Street

Manhattan, 2007

DOT Capital Project

- DOT
- Dept. of Design & Construction
- Parks
- Public Design Commission
- Office of Management & Budget
- Contractors

Implemented Projects Build Momentum

PlaNYC Targets

- 200 Miles of Bicycle Routes in 3 Years
- 4 Public Space Projects / Year

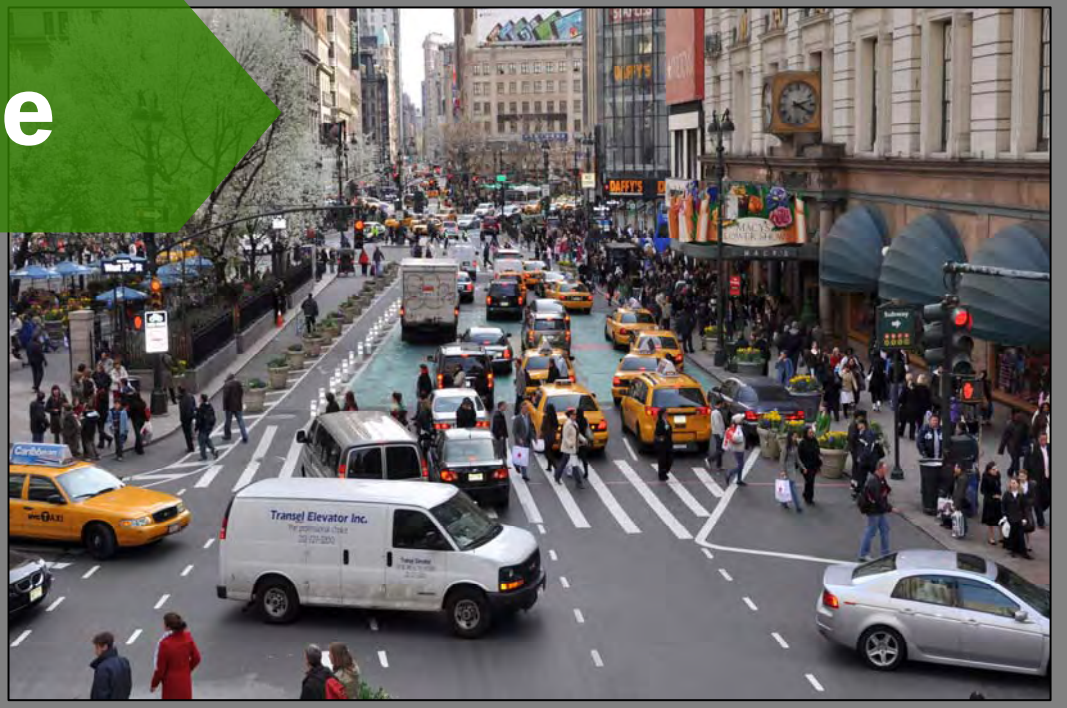
- **Projects Designed for All Users**

Ninth Avenue at 14th Street
Safety Improvement & Plazas

Manhattan, 2007

Manage Change

- Put vision/project forward, listen carefully
- Outreach capacity is limiting factor
- Safety is primary message



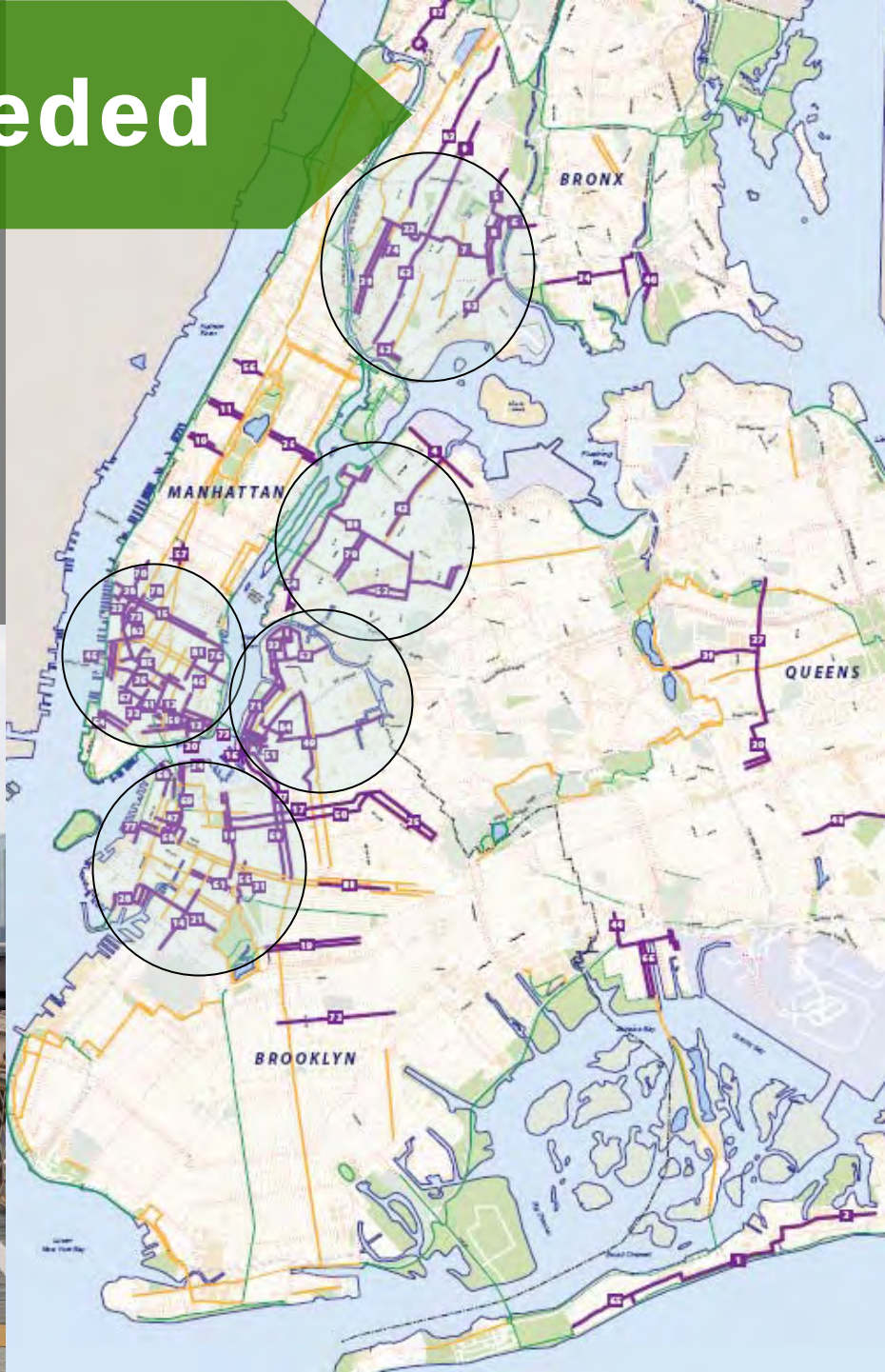
Broadway at 34th Street
Herald Square

Manhattan, 2009

Network Where Needed

Bicycle Project Development Criteria

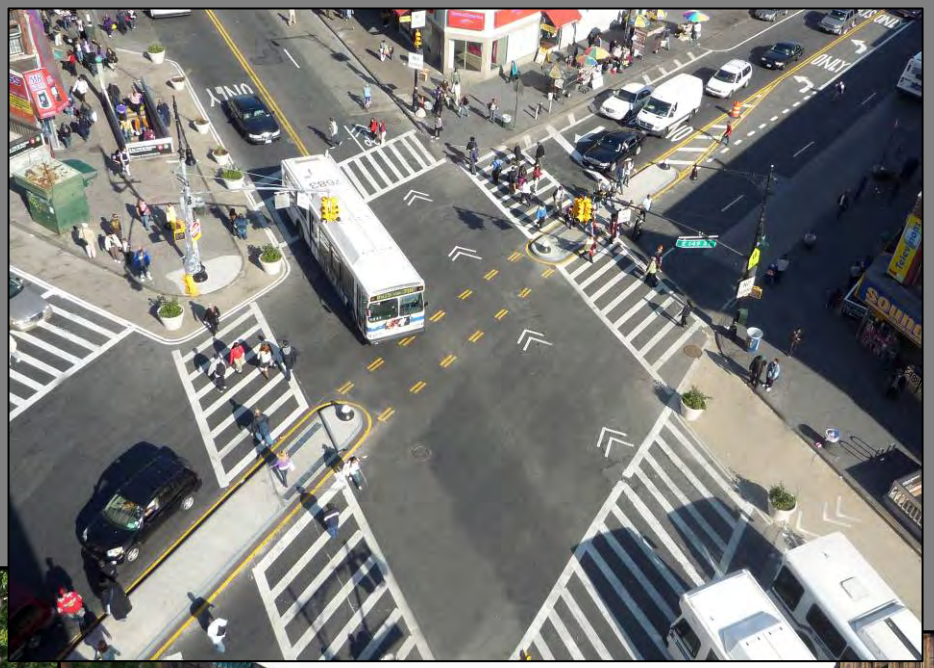
- Ridership
- Connectivity
- Economic Development
- Backbone System
- Safety



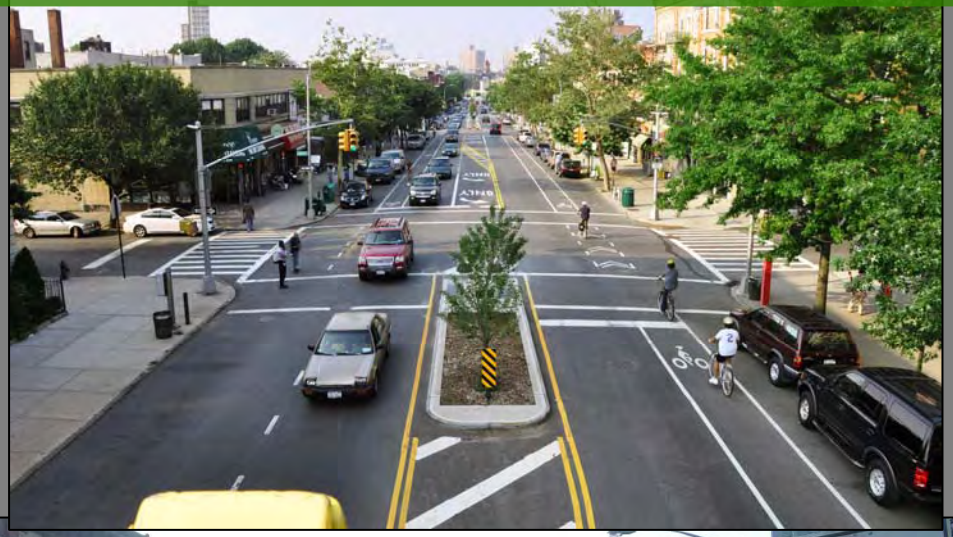
Intersections, Not Cross-Sections

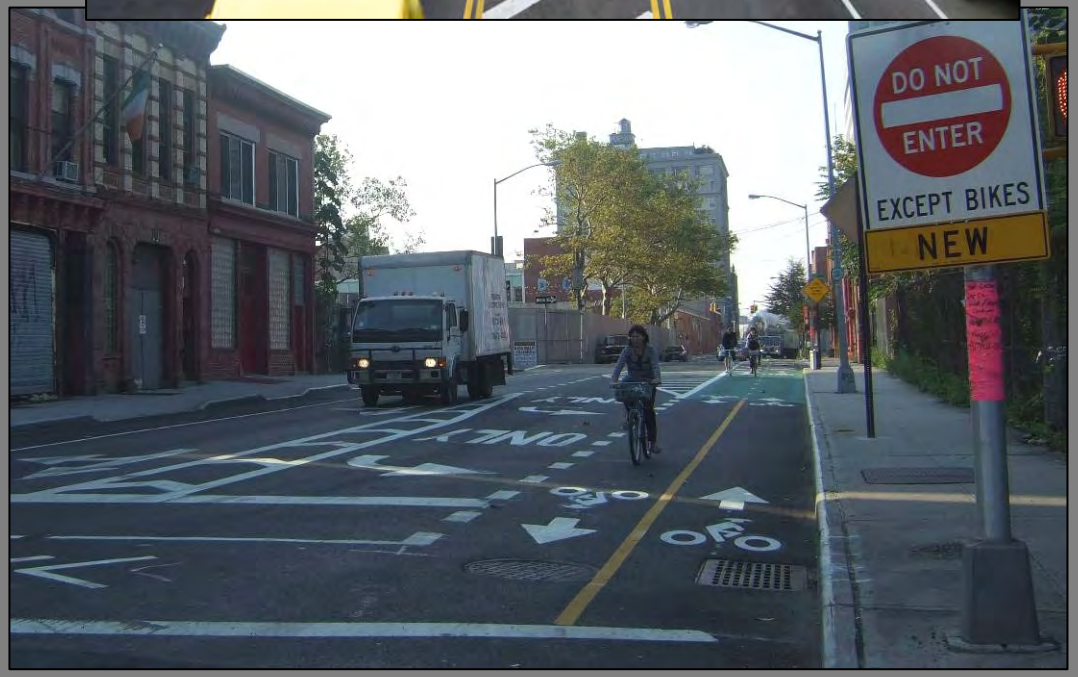
Our successful designs:

- Vary mid-block vs at the intersection
- Have innovative signalization and signage, along with geometry

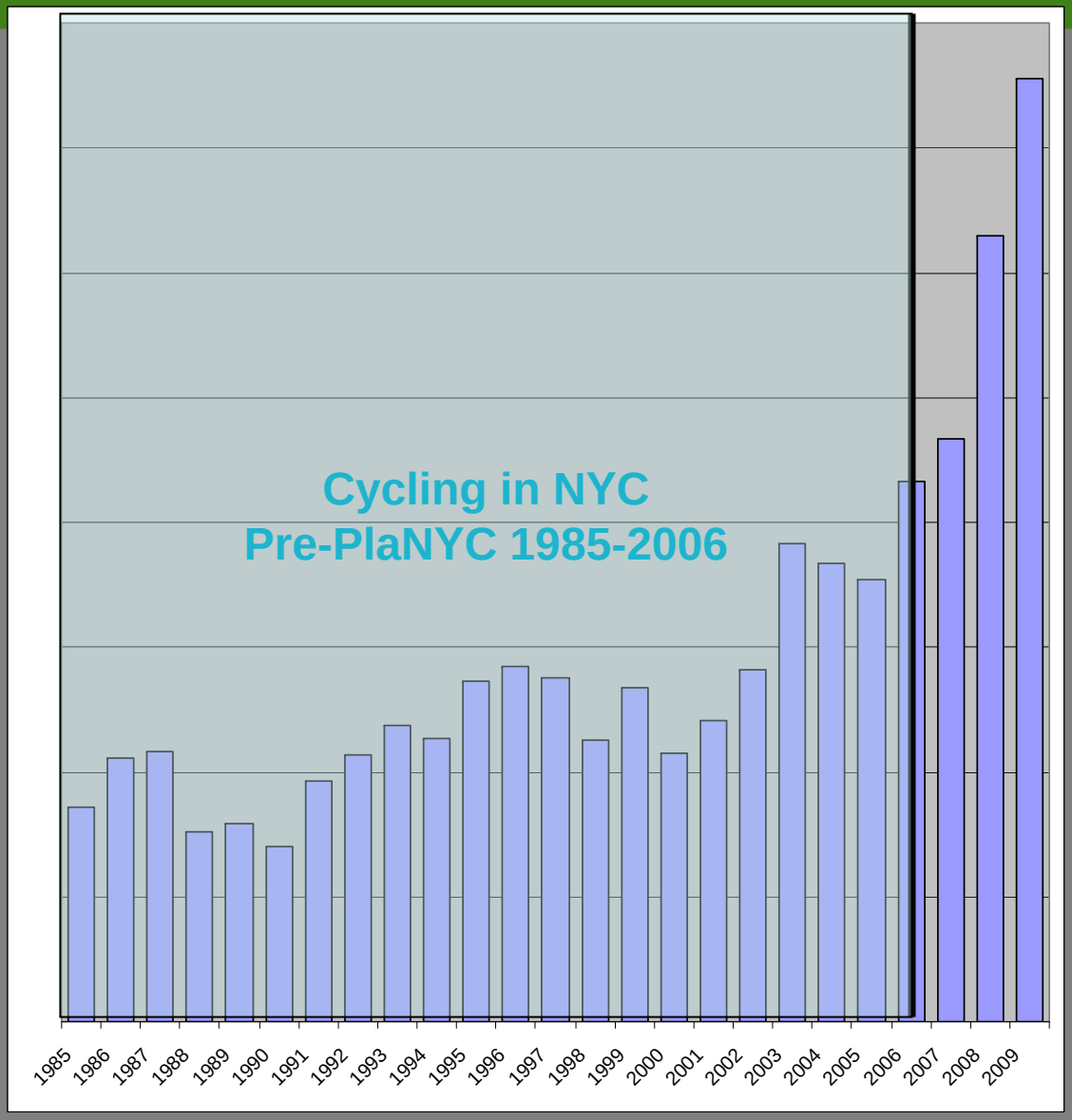


It’s New York, not Copenhagen





Moving in the Right Direction



Pedestrian Fatality Rates

- USA:
  - 14 per million residents
- NACTO Cities:
  - 22 per million residents
- NYC:
  - 1991: 41 per million
  - 2008: 18 per million


MES SQUARE
HERSHEY
HSBC
SAMSUNG
ERSHEY'S
Sherwood Outdoor
Kodak
LG

On-Street Bicycle Routes

Bicycle Lanes

Wide Parking Lane

– Reduces the chance of bicyclists getting “doored”

Travel Lane Widths

– Vehicular speed reduction

Green Bicycle Lane

– Increases motorist awareness

Vanderbilt Avenue, Brooklyn

Bleecker Street, Manhattan

On-Street Bicycle Routes

Buffered Bicycle Lanes

De Kalb Av, Brooklyn

Warren Street, Manhattan

On-Street Bicycle Routes

Shared Lanes

- Used when no excess road space exists
- Adjacent to parking or curbside
- Clear, easy to follow bicycle route
- Heightens driver awareness of cyclists

Shared Lane Next to Parking

Thompson Street, Manhattan

Shared Lane Next to Curb

Clinton Street, Manhattan

Intersection Treatments – Peg-a-Tracking

Signal / Stop Control / Dropped Buffer

- Reduces turning collisions at intersections

Signal Controlled Intersection

Schermerhorn Street, Brooklyn

Stop Controlled Intersection

South Railroad Av, Staten Island

On-Street Bicycle Routes

Intersection Treatments

Dropped Buffer

Smith Street, Brooklyn

Stop Bar Placement

W. 10th Street, Manhattan

Intersection Treatments – Bicycle Box

- Places a cyclist in front of the vehicle to make the turn

Bicycle Lane Bike Box

Smith St, Brooklyn

Shared Lane Bike Box

5th Ave, Brooklyn

Intersection Treatments – Markings

- Cyclists are guided through an intersection
- Alerts turning motorists to cyclists
- Channelizes traffic through intersection

Bicycle Lane Markings

Vanderbilt Avenue, Brooklyn

Shared Lane Markings

Schermerhorn Street, Brooklyn

Bicycle Lane to Shared Transition Markings

Ave A, Manhattan

Intersection Treatments – Markings

Non-Turning Conflict Markings

Jay Street, Manhattan

Two-Way Bicycle Path Markings

Canal Street, Manhattan

On-Street Bicycle Routes

Bicycle Lanes – Driveway Treatments

- Raises awareness to motorists entering and exiting a driveway

Bike Lane Treatment

Jay Street, Brooklyn

Green Bike Lane Treatment

9th Street, Brooklyn

On-Street Bicycle Routes

Other Treatments

Queue Jump

- Provides space along narrow roadways for cyclists to move to the front of the queue

Bicycle Stamp

- Provides guidance to cyclists along park paths and sidewalks

Queue Jump

Dean Street, Brooklyn

Bicycle Stamp

W. 106th Street path from Central Park, Manhattan

On-Street Bicycle Routes

Signs

Guide Signs

- Guides cyclists along the network

Clinton Street, Manhattan

Broadway, Manhattan

Warning Signs

- Warns cyclists of potential conflicts with pedestrians

Broadway, Manhattan

Brooklyn Bridge

On-Street Protected Bicycle Paths

9th Avenue, Manhattan

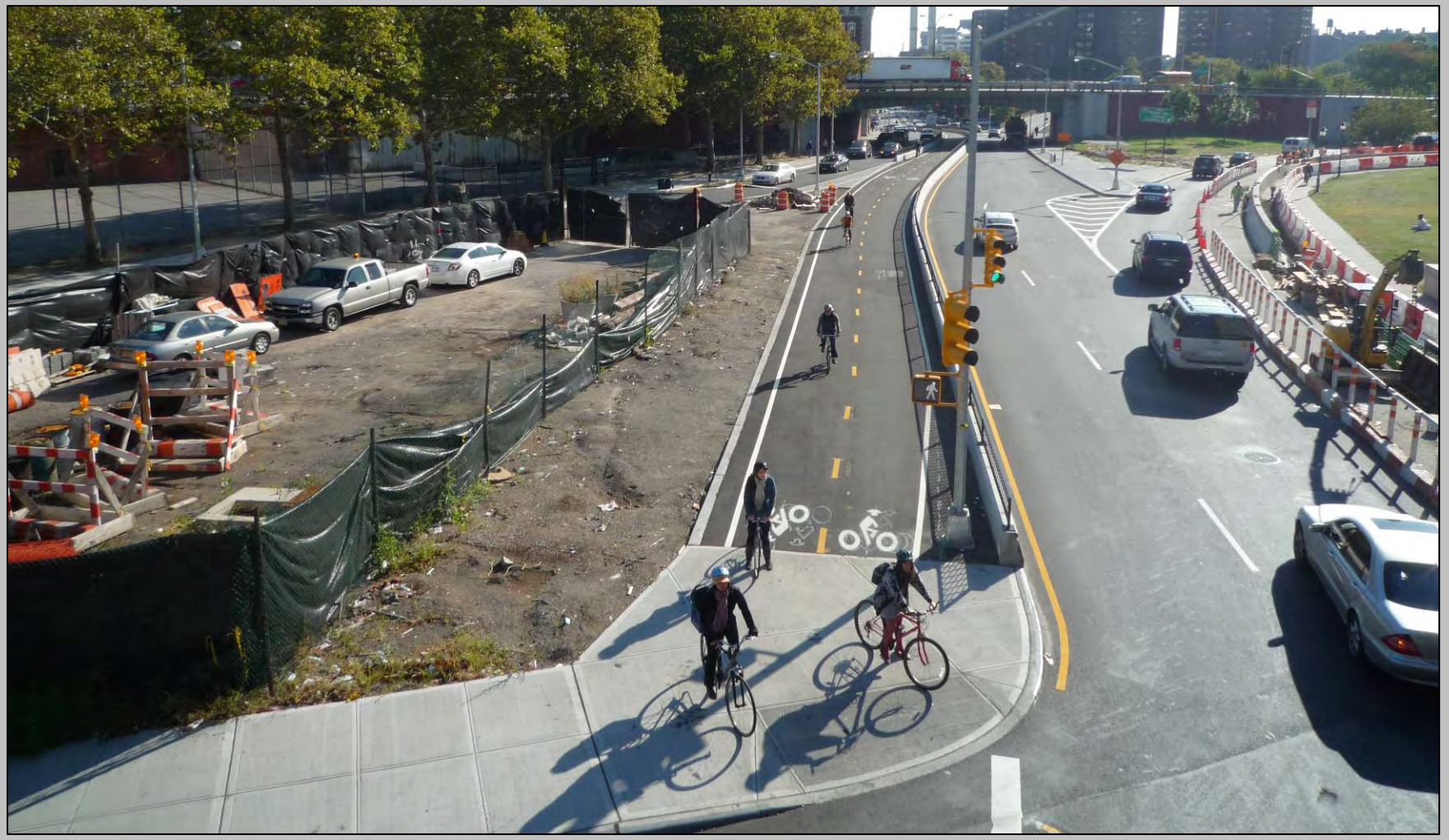
Unique Designs for Safe, Comfortable, Complete Streets

On-Street Protected Bicycle Paths

Canal Street, Manhattan

Not from AASHTO or MUTCD, but not Anti-AASHTO or Anti-MUTCD

On-Street Protected Bicycle Paths



Sands Street, Brooklyn

Toolbox of Design Treatments for Overcoming Potential Obstacles

On-Street Protected Bicycle Path: What Does AASHTO Say?

- AASHTO: “Bike lanes between the curb and parking lane can create obstacles for bicyclists from **opening car doors** and **poor visibility at intersections** and driveways and they **prohibit bicyclists from making left turns**” (p 23).

Grand Street, Manhattan

On-Street Protected Bicycle Path: NYCDOT Design Toolbox

Design Treatments Address Issues Raised by AASHTO:

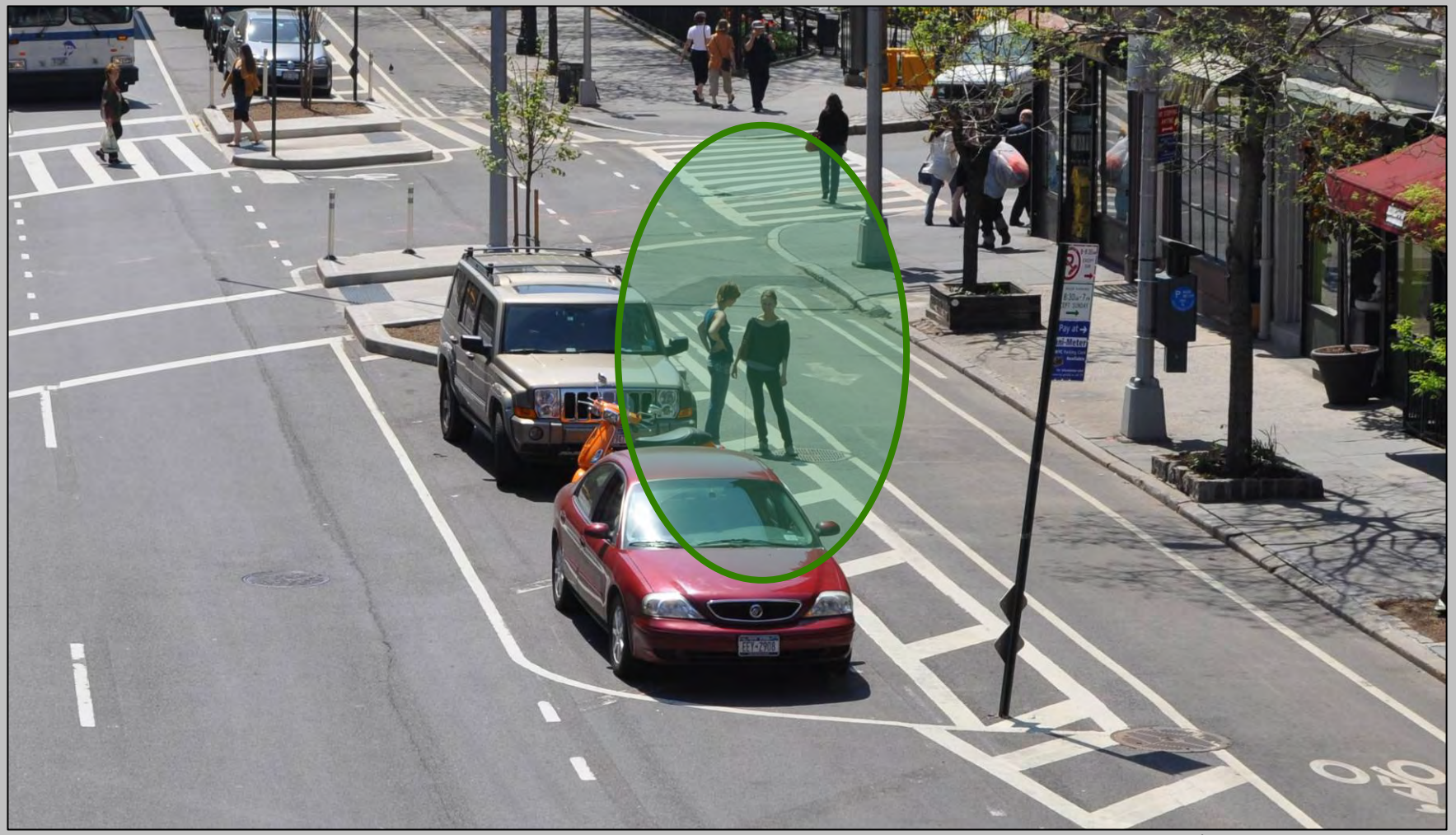
- Floating Parking & Buffer Zone
- Concrete Islands
- Turn Lanes & Split Signal Phases
- Mixing Zones
- Bike Boxes & Turn Areas
- Turn Restrictions & Mall Connections

When All Else Fails:

- Creativity & Determination

Broadway, Manhattan

Floating Parking & Buffer Zone



8th Avenue, Manhattan

- Floating Parking Protects Bike Path from Intrusion
- Buffer Provides Space for Door Swing & Vehicle Occupants

Concrete Islands

- Safe & Robust Pedestrian Refuge
- Shortened Pedestrian Crossing
- Greening Opportunity
- Strong & Clear Definition for New Roadway Geometry

8th Avenue, Manhattan

Turn Lanes & Split Signal Phases

9th Avenue, Manhattan

- Separate Signal Phases for Turns Across Bike Path
- Protected Phase for Cyclists & Pedestrians
- Eliminates Turning Conflicts on Roadways with Higher Traffic Speeds

Mixing Zones

Grand Street, Manhattan

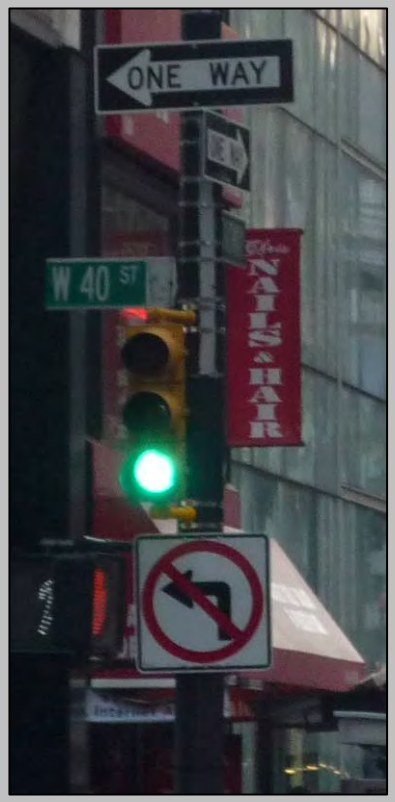
- Shared Space for Cyclists & Motorists to Negotiate Turning Conflicts
- Maximizes Visibility to Prevent “Hook” Type Crashes

Bike Boxes & Turn Areas

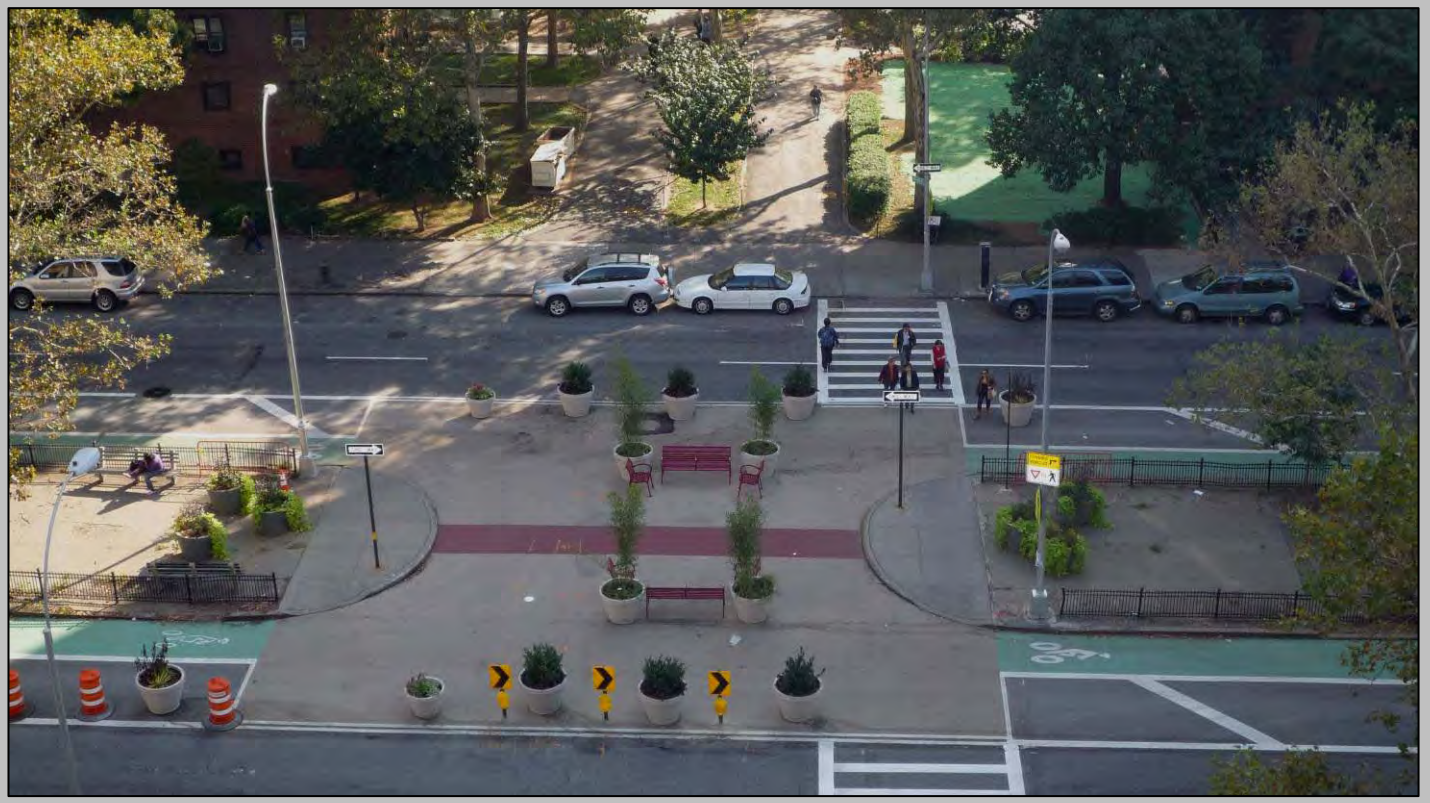
9th Avenue, Manhattan

- Bike Turn Area Provides for Safe Turns from Bike Path on the Cross Street Phase
- Bike Box Allows Cyclist to Position for a Turn During the Red Phase

Motor Vehicle Turn Restrictions & Mall Connections

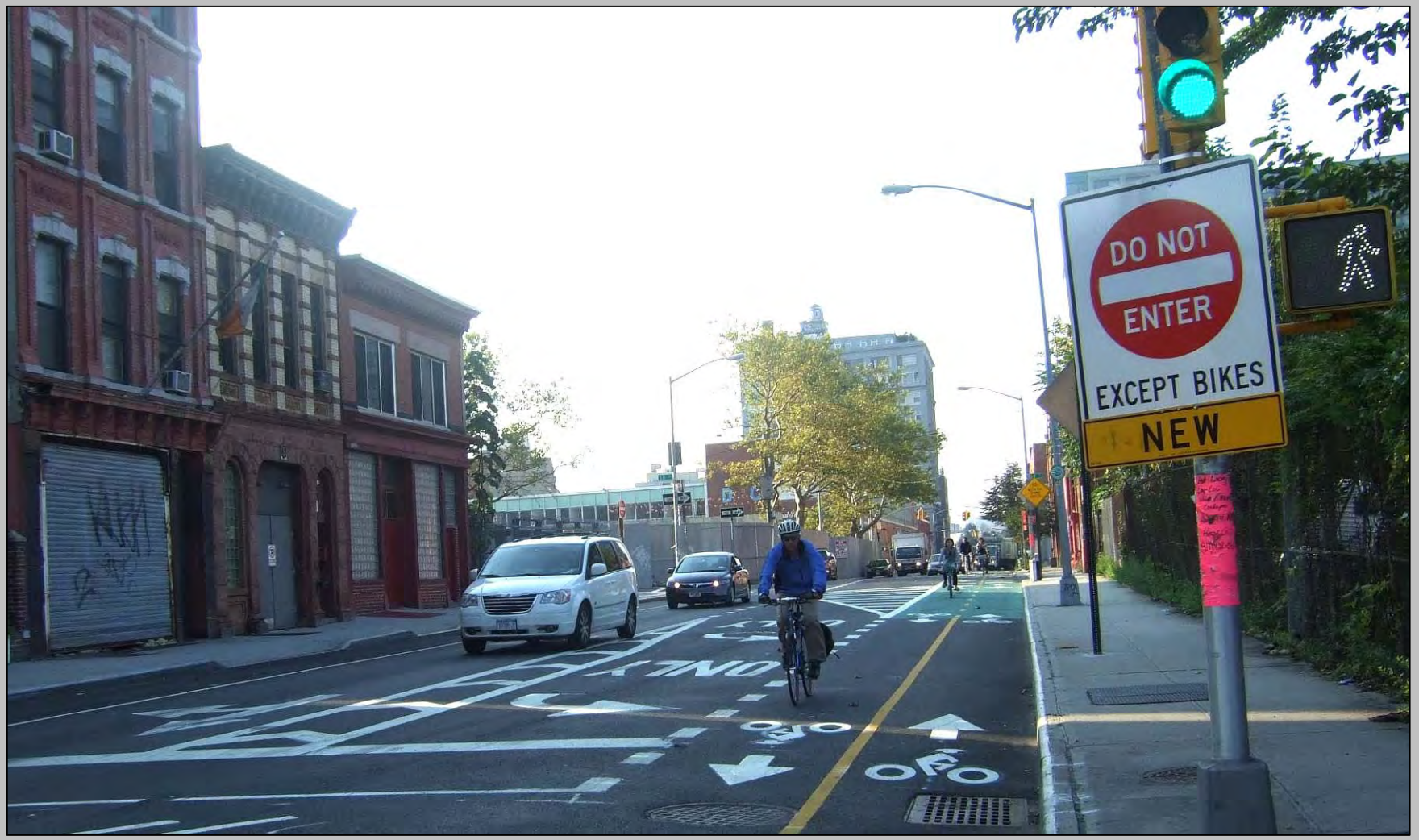


Broadway, Manhattan


Pike Street, Manhattan

- Banning Turns Eliminates Hook Crash Potential
- Connecting Center Malls Reinforces Turn Restriction & Creates Greening Opportunity

Creativity & Determination



Kent Avenue, Brooklyn

One-Way Street Conversion to Make Space for Two-Way Bike Path

Creativity & Determination

Grand Army Plaza, Brooklyn

Protected Cycling Space in a High Traffic Intersection to Connect Prospect Park to the Bicycle Network

NYC's Reclaimed Pedestrian Spaces

Collaborate with experts…

Fight fire with fire…know geometry

Doodle with digital trucks…adjust

Then overnight…

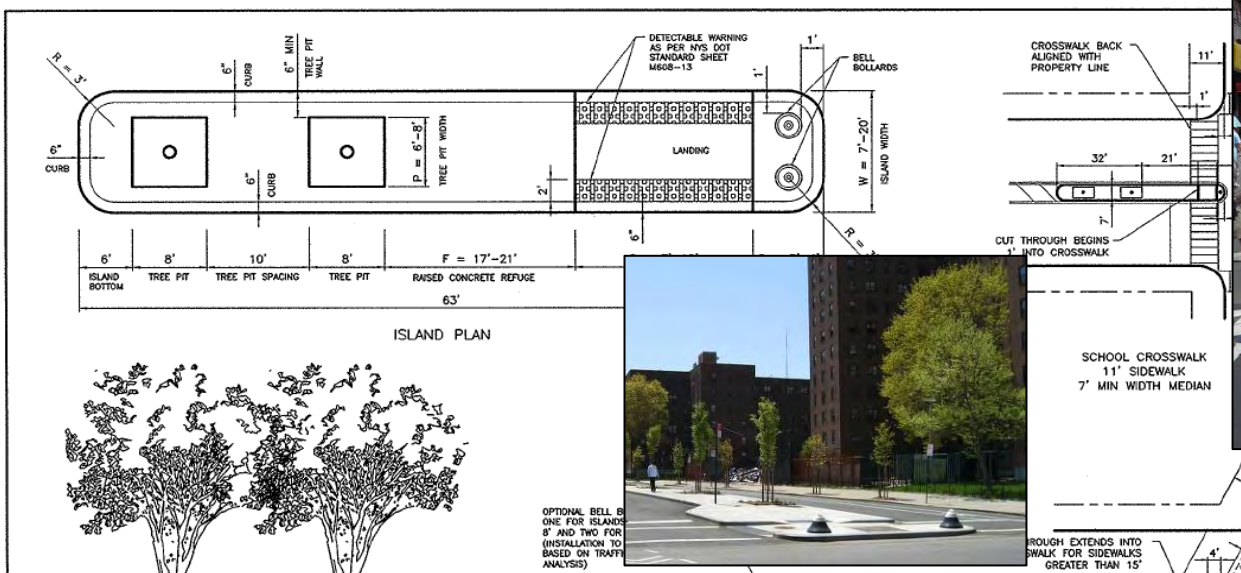
Change happens

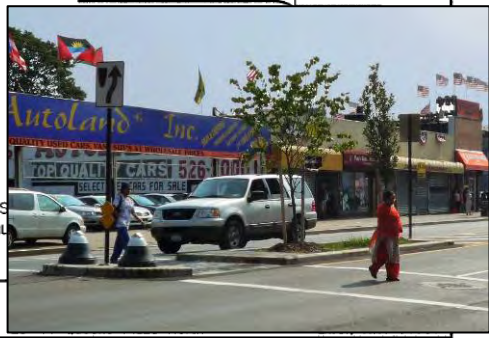
Protective Planters

Bollards


TATTOO
MR WIRELESS
Janice
NO TURNS
DO NOT ENTER
ONE WAY
FURNITURE
ARF
COMPREHENSIVE C
Flatbush Ave
SOUTH

Green Refuge Island Typical





Green Refuge Island And Crosswalk Dimensions For Variou									
A	Sidewalk Width	10	11	12	13	14	15	16	
B	Crosswalk Width	8	9	10	11	12	13	14	
C	Island Top	3	3	3	4	4	4	4	
D	Cut Through	7	7	8	8	9	10	10	
F	Raised Refuge	21	21	20	19	18	17	17	

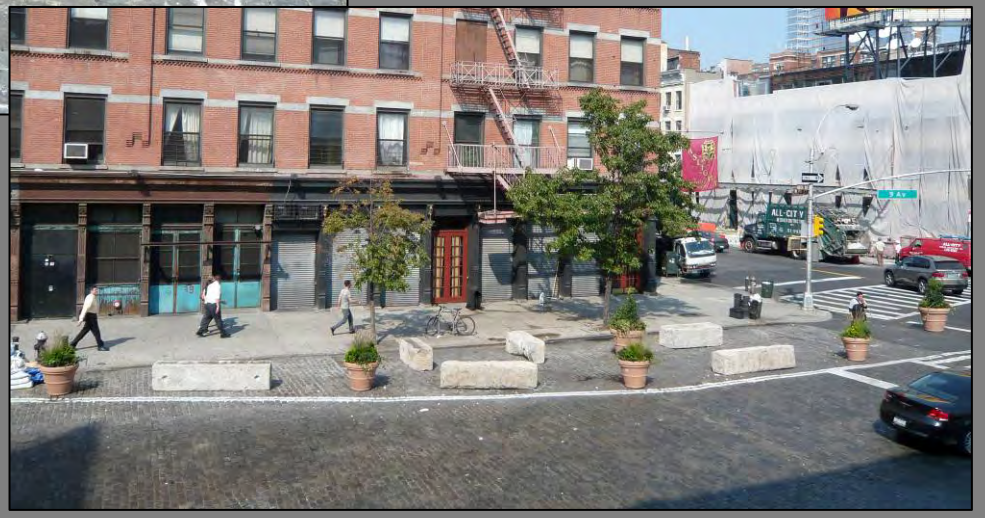
GREEN REFUGE ISLAND TYPICAL GEOMETRY

APPROVED BY A. LAZER, P.E.

Drawn by M. FRIDMAN
Checked by T. ISHEE
Borough ALL
Scale N.T.S.
Date 10/01/2009

DRAWING NO. TRF-2

Salvaged bridge granite

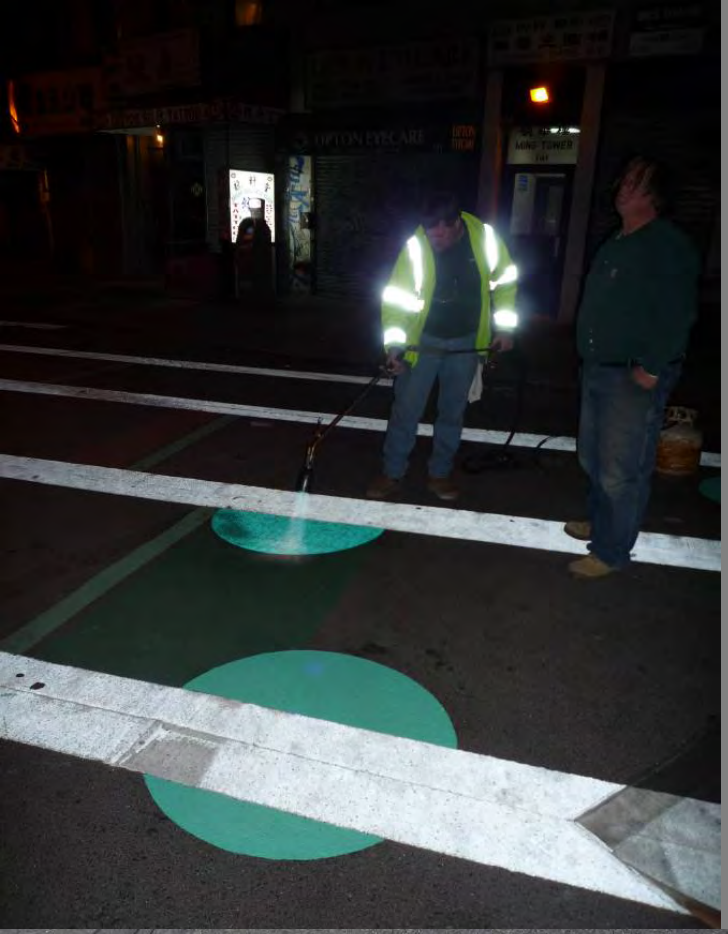


Purchased granite blocks

Pedestrian protective devices

Experiment

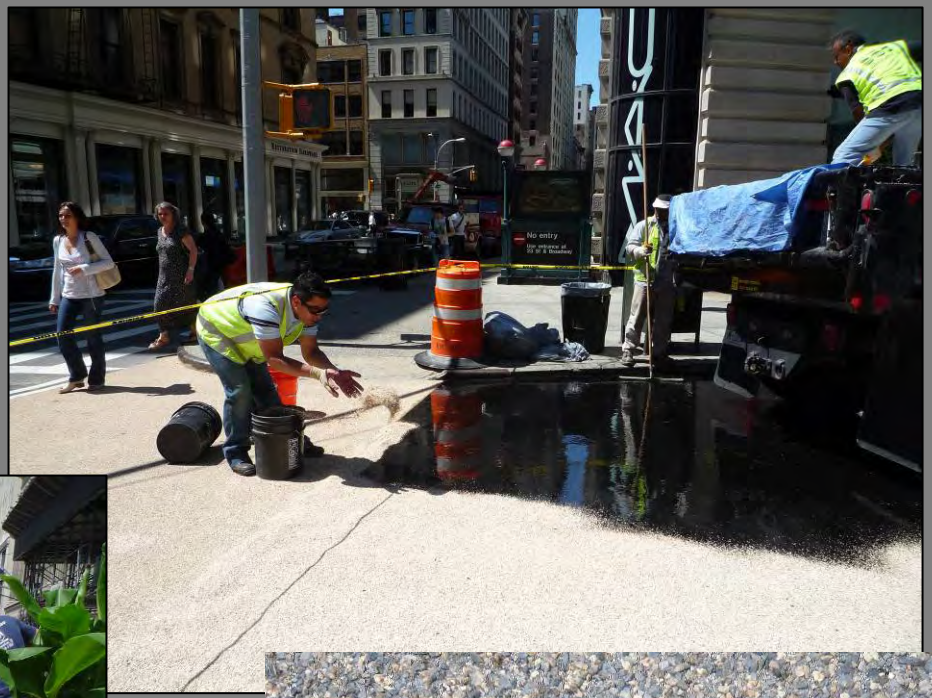
Torch Down Plastic



Experiment thoroughly

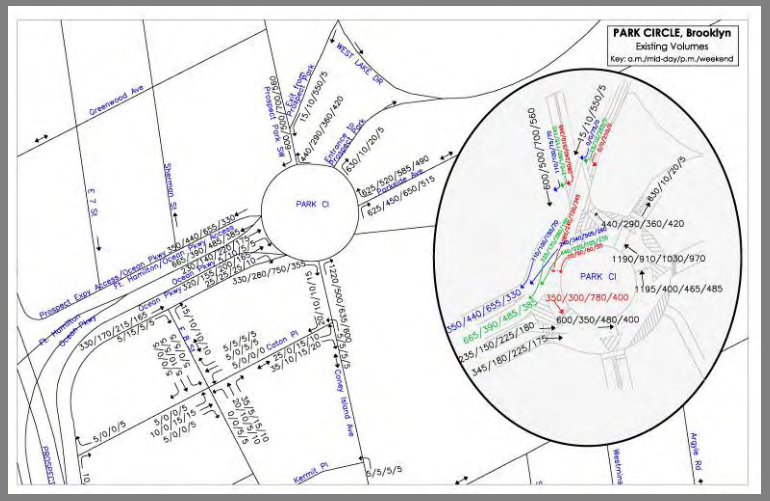
Painted sidewalks

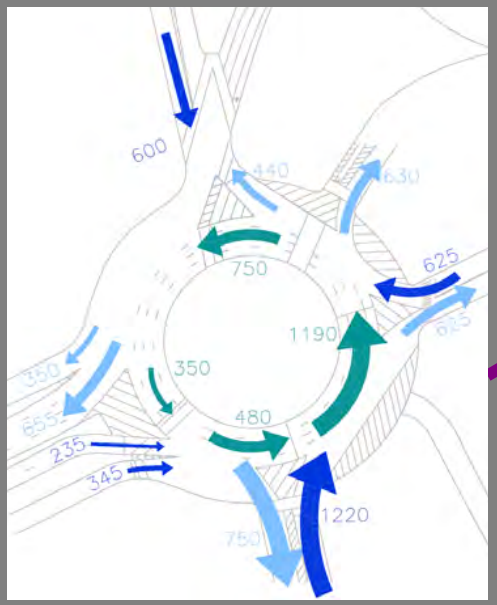
Epoxied gravel

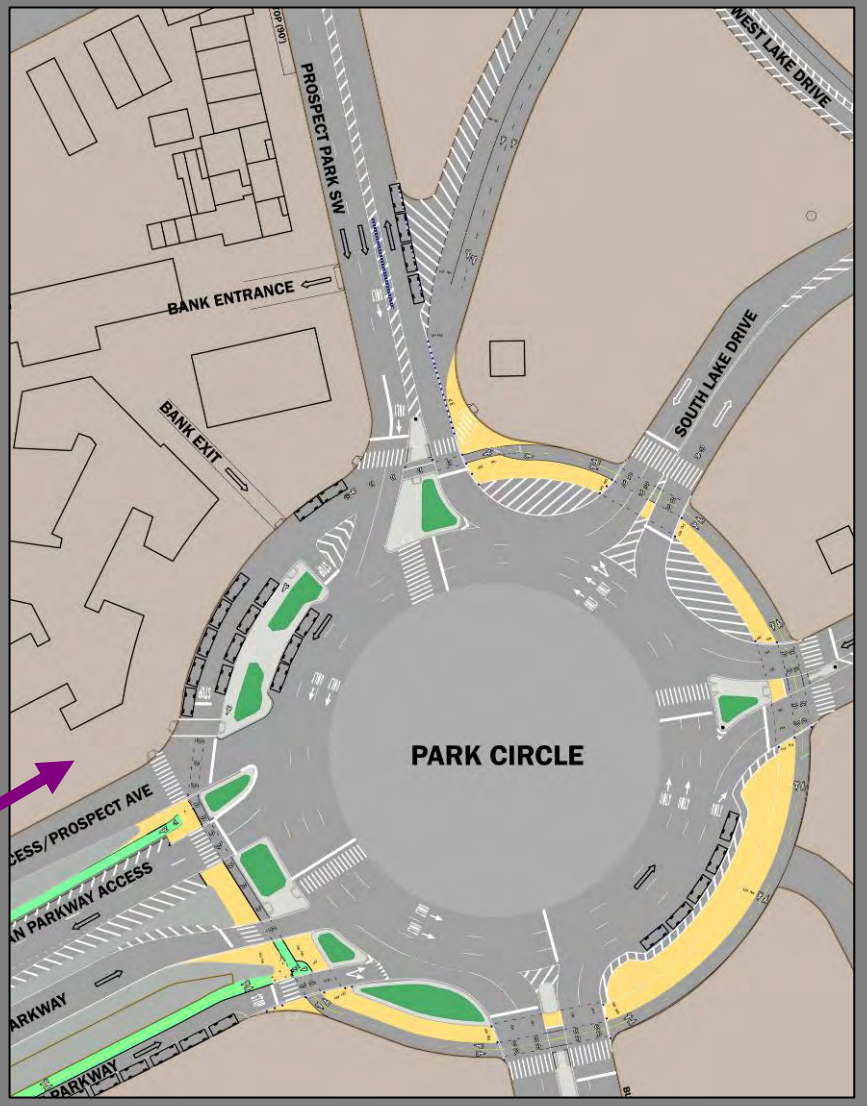



Fishing &
Outdoor Gear
Urban Angler
MEMORIES
ups
Worldwide Services
Jeep
AXI

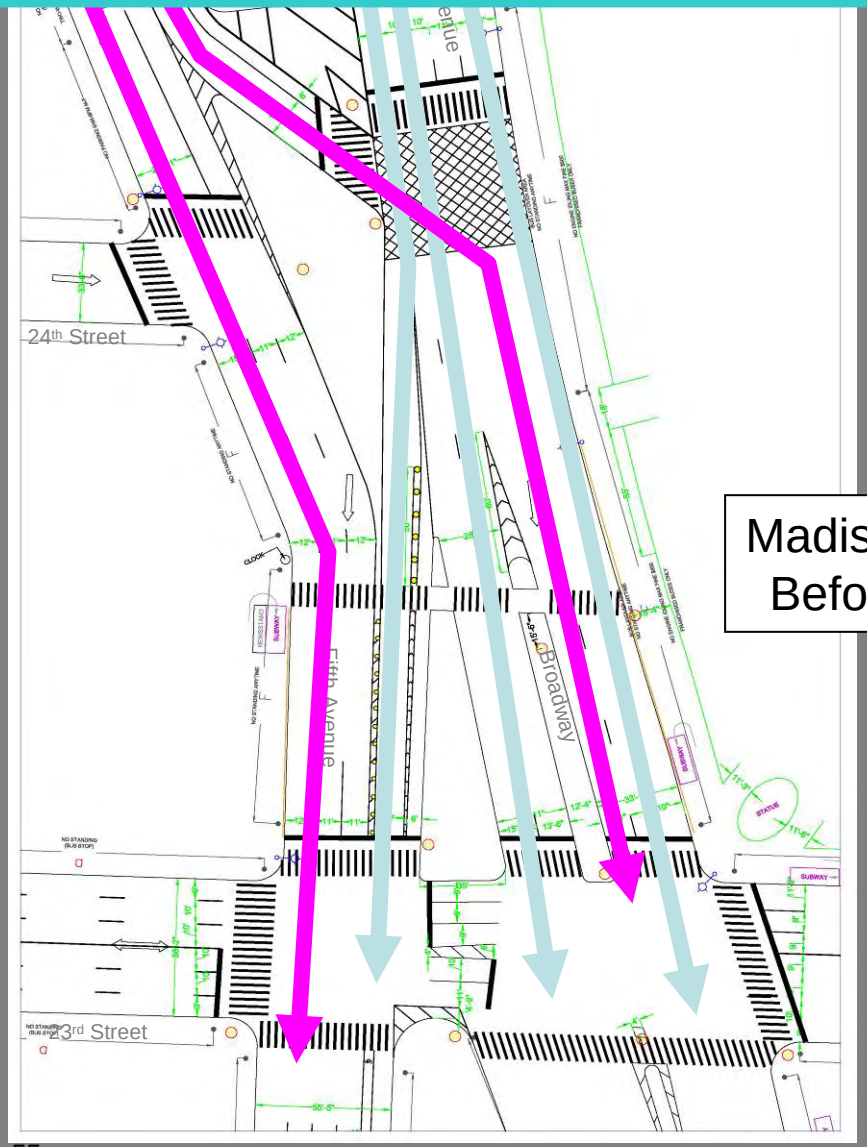
Pedestrian's Friend: Traffic Data



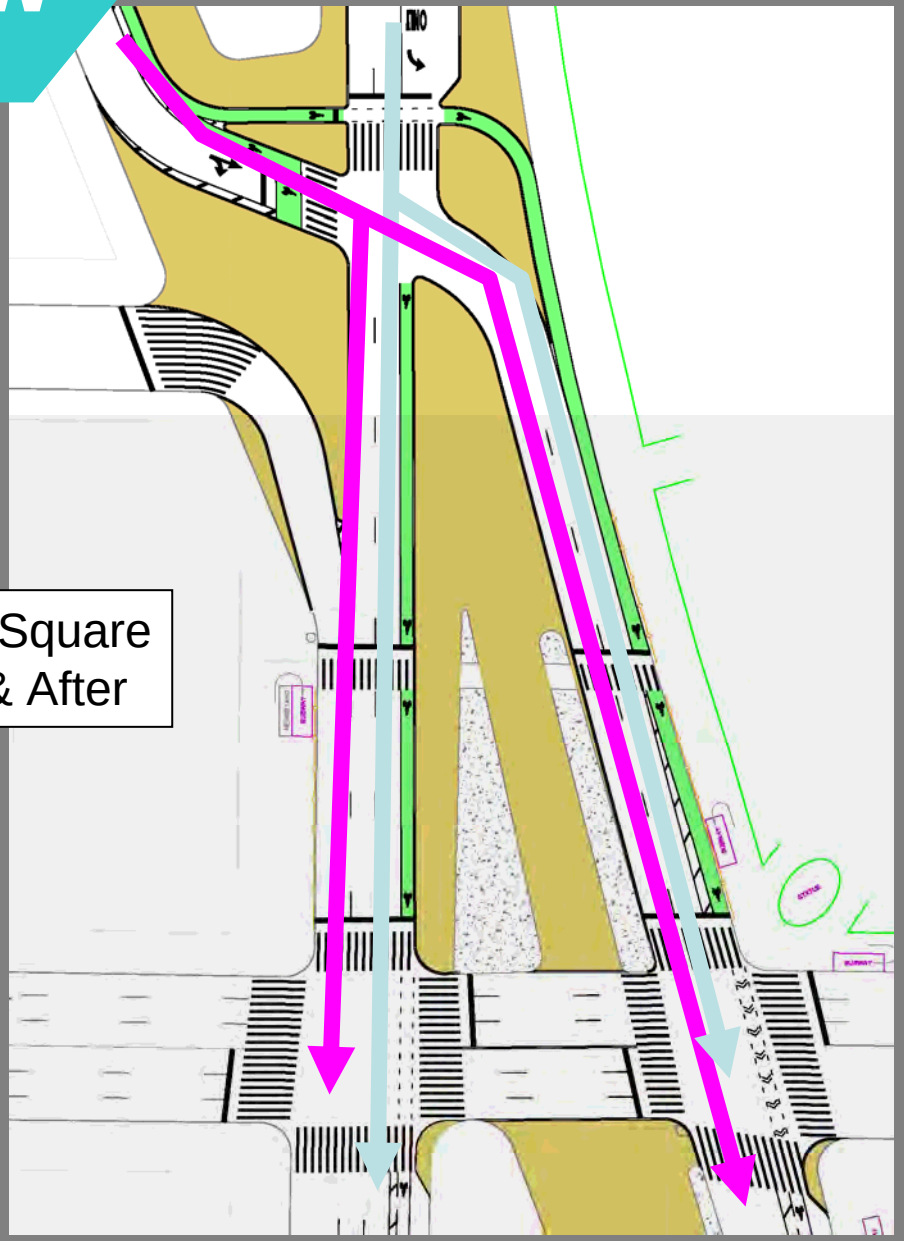




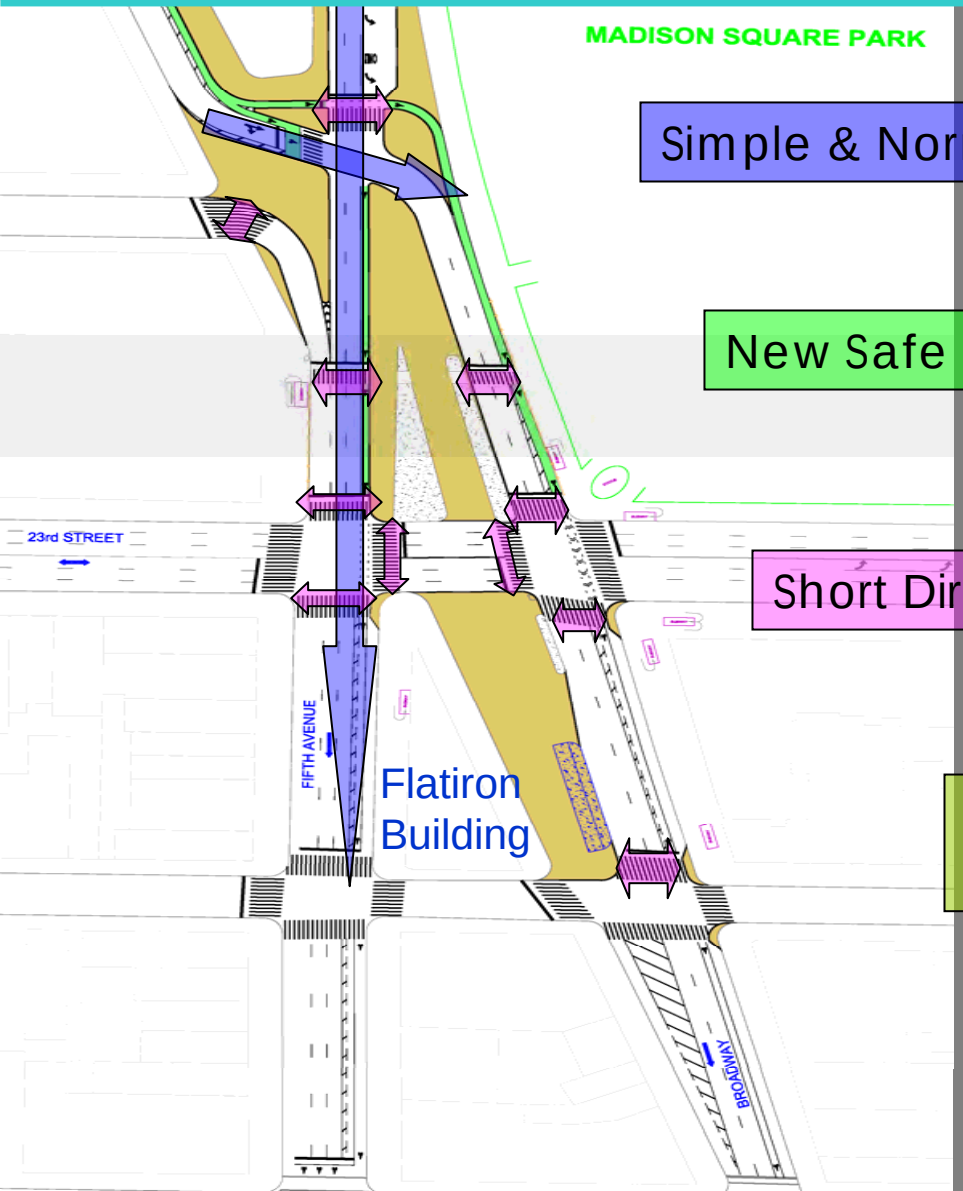
Visualize Traffic Flow



Madison Square
Before & After



Simplify – Patterns + Message



Simple & Normal Traffic Patterns

New Safe Bike Lane Connections

Short Direct Crosswalks

38,000+ sq. ft.
of New Public Space

Play with the road

Anything can be changed

Island cut back to close street

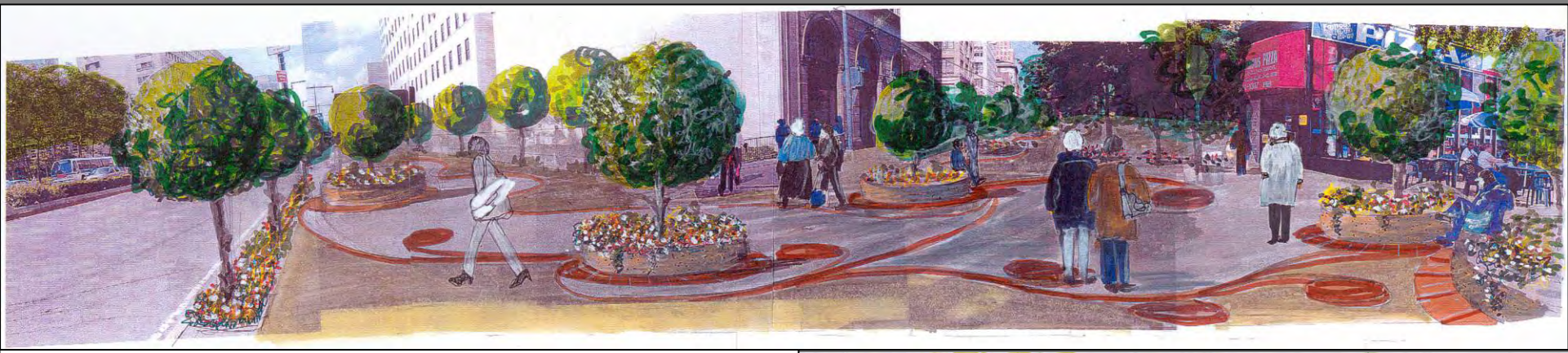
New concrete road for bus turns

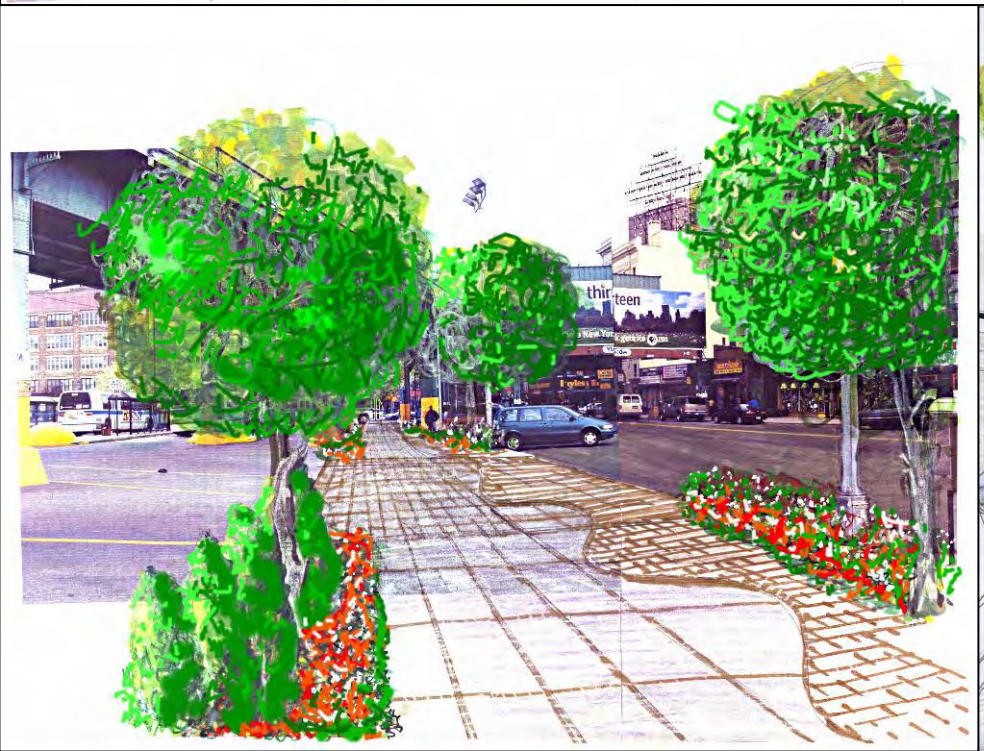
Future landscaped plaza

Expect traffic complaints

- Implementation messy
- Make adjustments
- Only panic after traffic patterns settle
- Pedestrians benefit Day 1

Explain with Renderings





People sit when chairs go down

While still unpacking & in the rain…

Bike racks = Off the shelf whimsy

Experiment with objects

Let the public weigh in

Don’t expect applause

Sit back and enjoy


PASTIS
LUNCH
PASTIS
DINNER