

**GPI** Greenman-Pedersen, Inc.  
Engineering and Construction Services

**K** KITTELSON & ASSOCIATES, INC.  
TRANSPORTATION ENGINEERING/PLANNING



**Proposed Bicycle Route  
Preliminary Design  
Lafayette Road/Middle Street  
Portsmouth, NH**

Presented By  
Jason DeGray, PE, PTOE



September 30, 2015



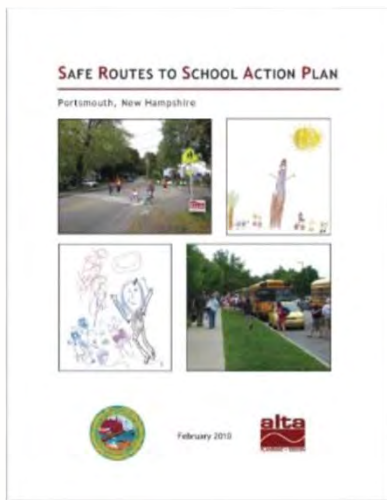
# Agenda:

- How did we get here?
- What have we heard?
- Preliminary Design
- **Public Input**





# How did we get here?

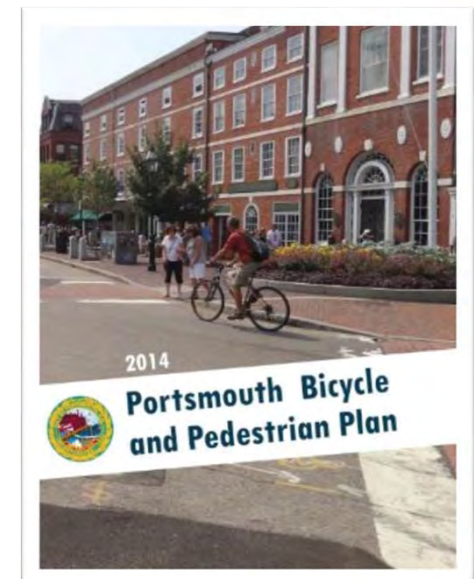


**“Walk Friendly Community Policy”**

**“Bicycle Friendly Community Policy”**

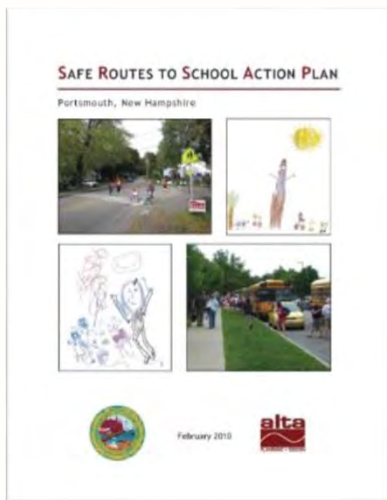
**“Complete Street Policy”**

*Streets and roadways in the City of Portsmouth will be convenient, safe and accessible for all transportation users, including pedestrians, bicyclists, transit vehicles and riders, children, the elderly, and people with disabilities.*



2010 Safe Routes to School Action Plan, illustrated here, identified this corridor for an on-road bike route in order to increase utilization by school age children to get to and from school and other activities.

## How did we get here?

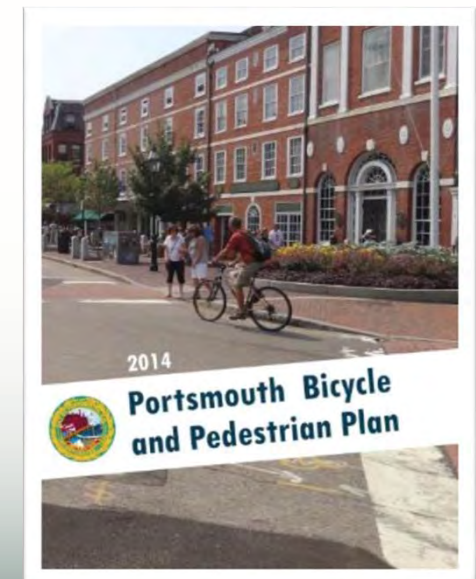


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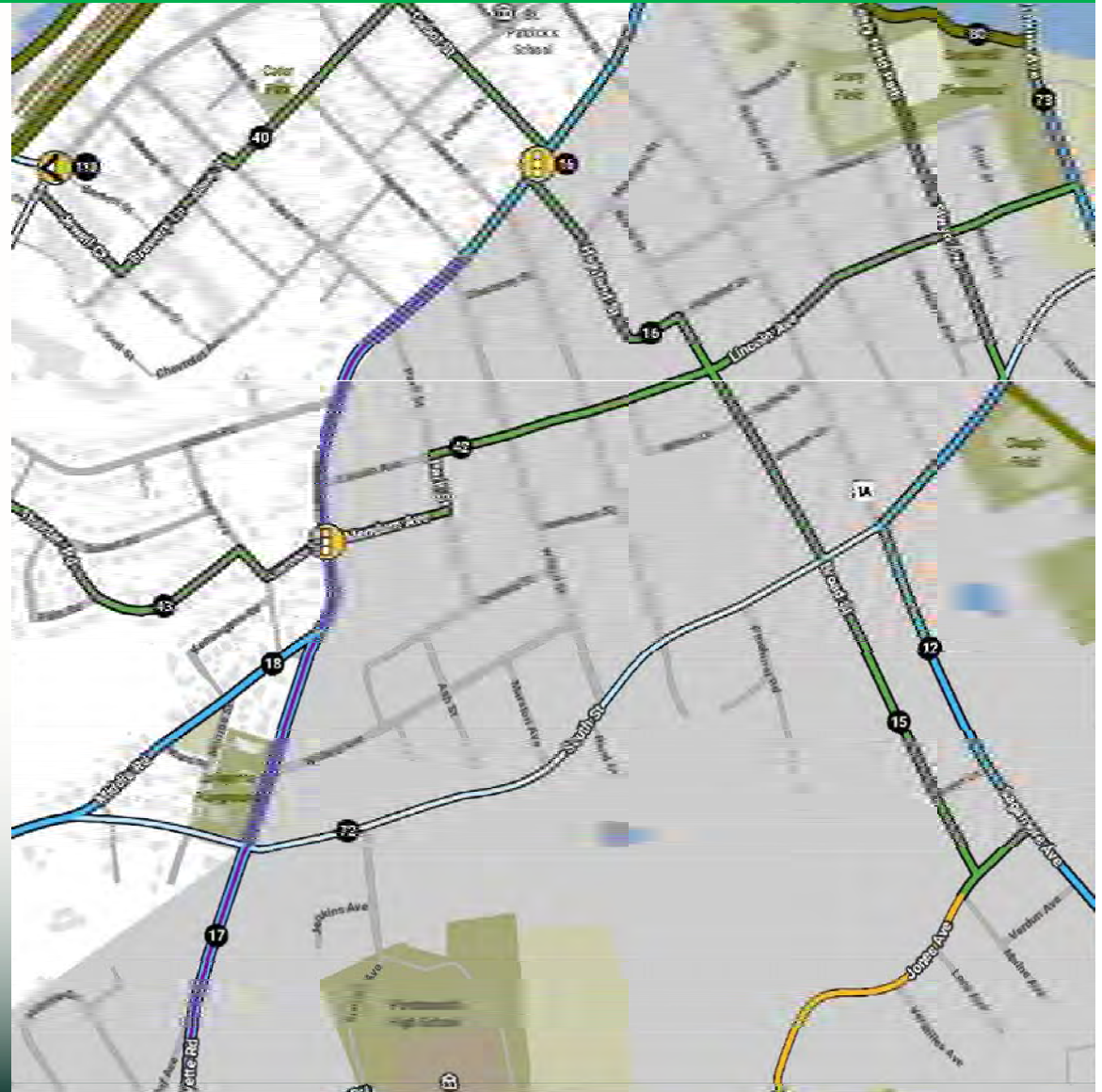
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2014 Bicycle and Pedestrian Plan, illustrated on this slide, reiterated this recommendation indicating that such improvements could improve safety for all travelers and connect gaps in the bicycle and pedestrian network. This plan also suggested that the City consider buffered bicycle lanes rather than simply traditional bicycle lanes due to the motor vehicle volume and traffic speeds along this roadway.

#### PROPOSED BIKE IMPROVEMENTS

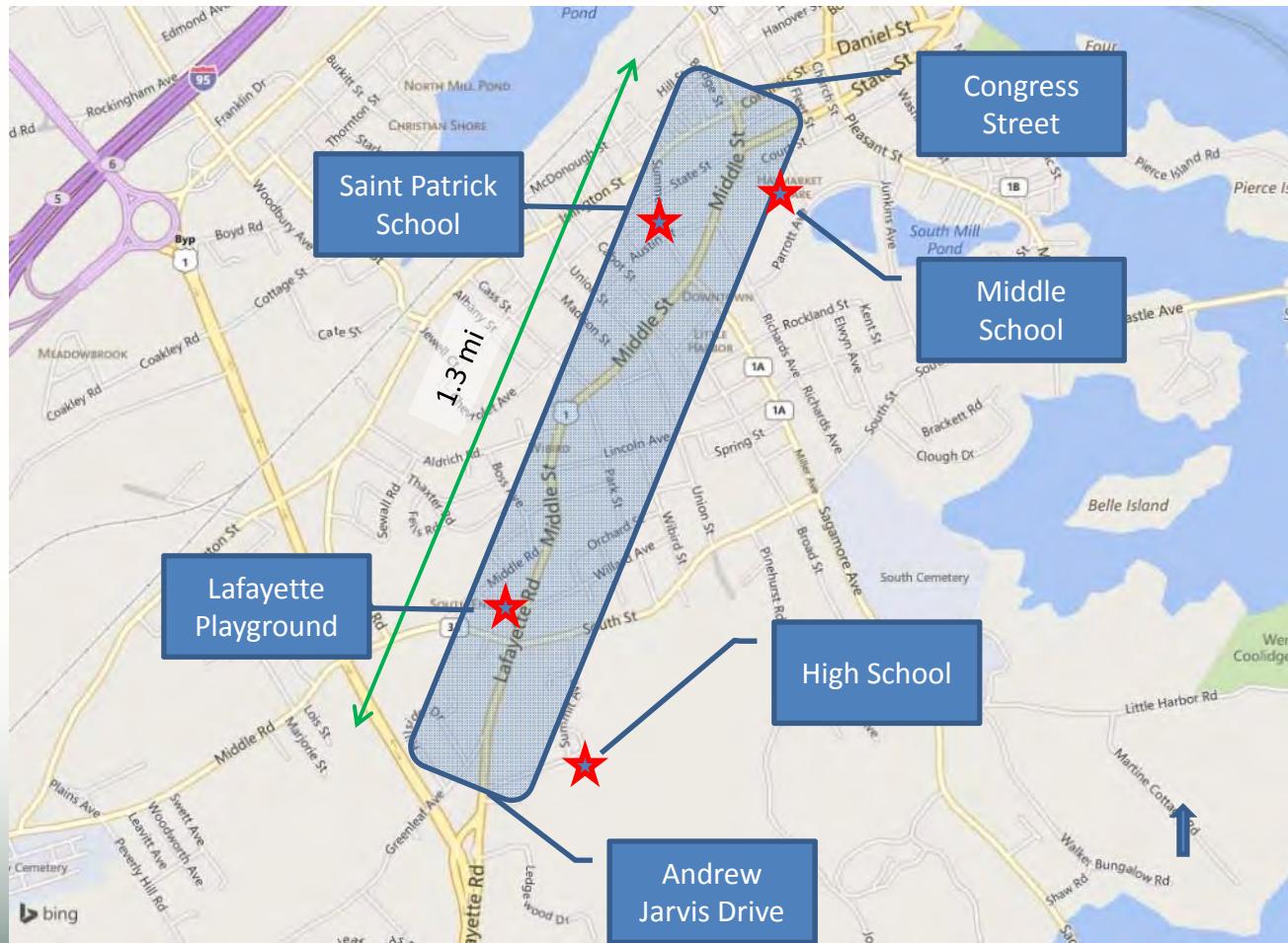
-  Shared-Use Path
-  Side Path
-  Cycle Track
-  Buffered Bike Lane
-  Bike Lane
-  Contraflow Bike Lane
-  Shared-Lane Marking
-  Shared Street
-  Pedestrian Street
-  Bike Boulevard
-  Signed Route





# Project Limits

“In addition to connecting neighborhoods to the middle school and St. Patrick School, students in grades K through 8 and their families will likely use all or portions of this route to travel to the public library, athletic facilities at the high school, and the Lafayette Park and Playground.” (NH DOT SRTS Grant Application, 2013)



# Project Purpose...

- Improve Safety for Cyclists & Pedestrians
- Expand Connectivity
- Provide Bicycle Route Utilized by All Ages
- Enhance Pedestrian Crossings





# Existing Conditions

- Cars...11,000 ADT
- Pedestrians
- Bicycles
- Residential & Commercial
- Schools & Civic Uses
- Entry to Downtown
- On-Street Parking





## What we heard from you:

- Provide a safe and desirable route for kids to and from schools and nearby destinations
- Slow traffic speeds
- Improve pedestrian crossings
- Retain some on-street parking
- Make this corridor more appealing for all users
- Maintain emergency response ability

# Alternatives Considered

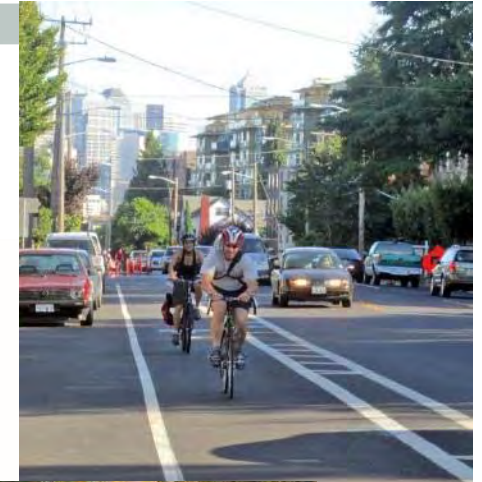
- Traditional Bike Lanes
- Buffered and Protected Bike Lanes
- Two-Way Cycle Track





# Preferred Alternative: Protected and Buffered Bike Lanes

- Buffered -- a bicycle lane with additional lateral separation from motor vehicle travel ways
- Protected – a bicycle lane with vertical separation (parked cars, flexible bollards, plantings, or curbing) from motor vehicle travel ways



# Protected and Buffered Bike Lanes

- **Advantages**

- Increases space and comfort for bicyclists
- Provides passing space for bicyclists
- Bicyclists travel same direction as motor vehicle traffic

- **Challenges**

- Requires more space than a standard bike lane
- Higher installation and maintenance costs
- Specialized intersection treatments may be necessary
- Potential parking restrictions to maintain sight lines
- Education / Learning curve

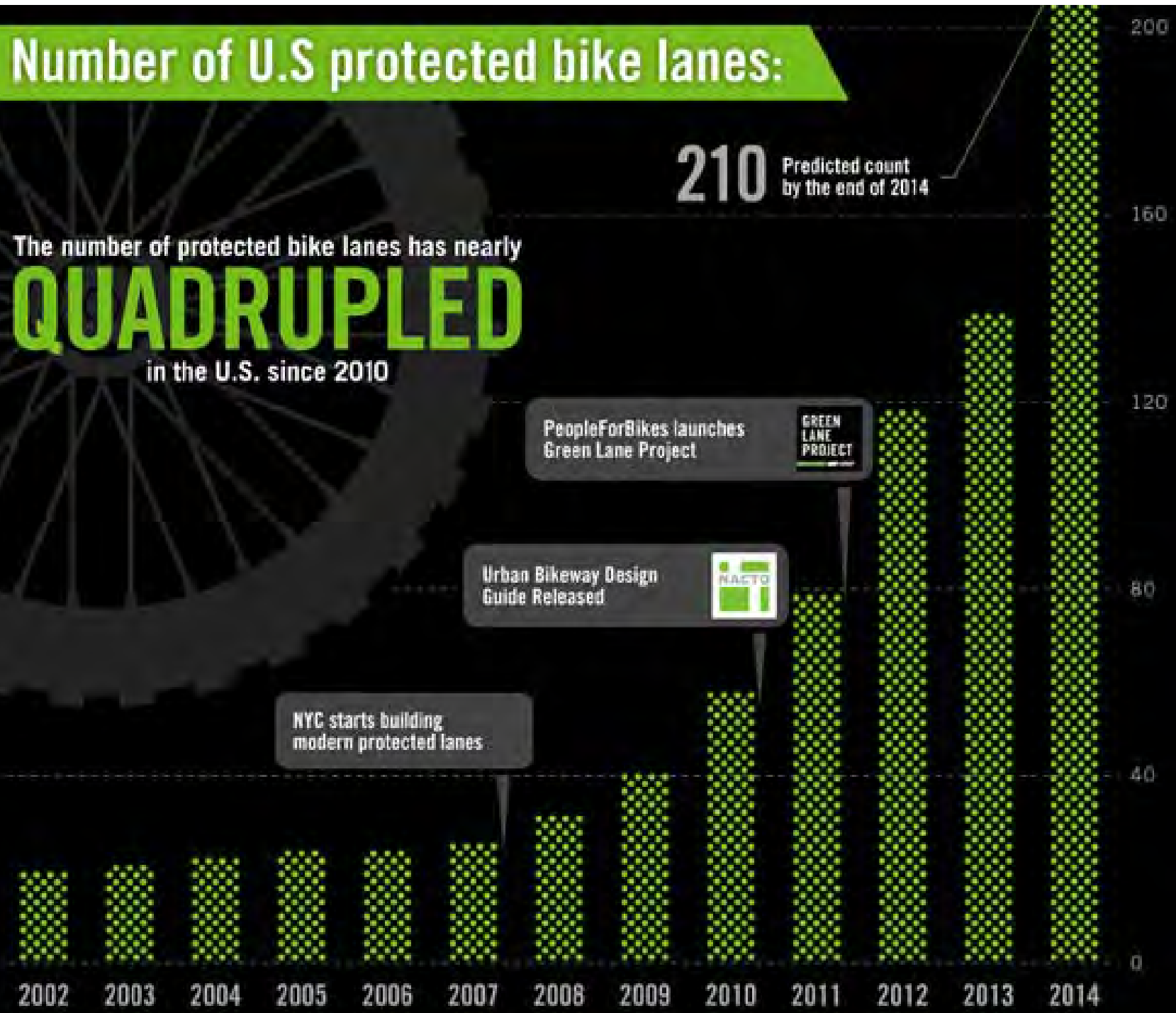




# Number of U.S protected bike lanes:

The number of protected bike lanes has nearly  
**QUADRUPLED**  
in the U.S. since 2010

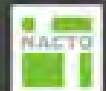
**210** Predicted count  
by the end of 2014



PeopleForBikes launches Green Lane Project



Urban Bikeway Design Guide Released



NYC starts building modern protected lanes

## Types of protected bike lane separation:

**1/3**

USE PARKED CARS



**1/3**

USE PLASTIC POSTS



**1/3**

USE CURBS



**A FEW**

USE PLANTERS



THE SHORTEST  
PROTECTED BIKE LANE:  
**.03 OF A MILE**

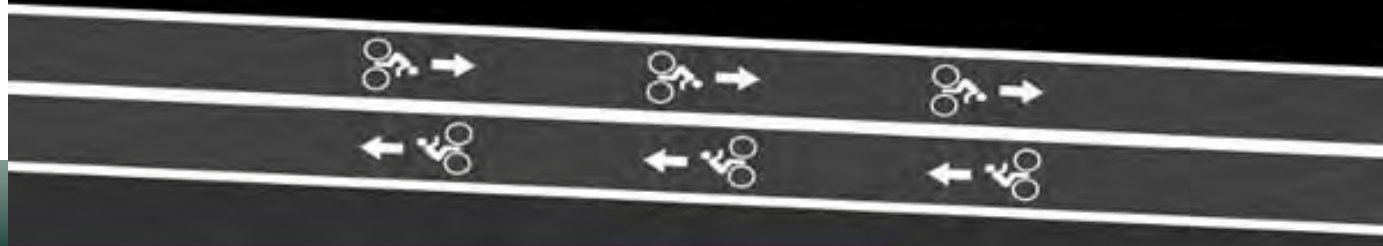
THE LONGEST  
PROTECTED BIKE LANE:  
**10.4 MILES**

THE AVERAGE  
PROTECTED BIKE LANE:  
**0.92 OF A MILE**

**2/3 ARE 1 WAY**



**1/3 ARE 2 WAY**





# Where are protected bike lanes?

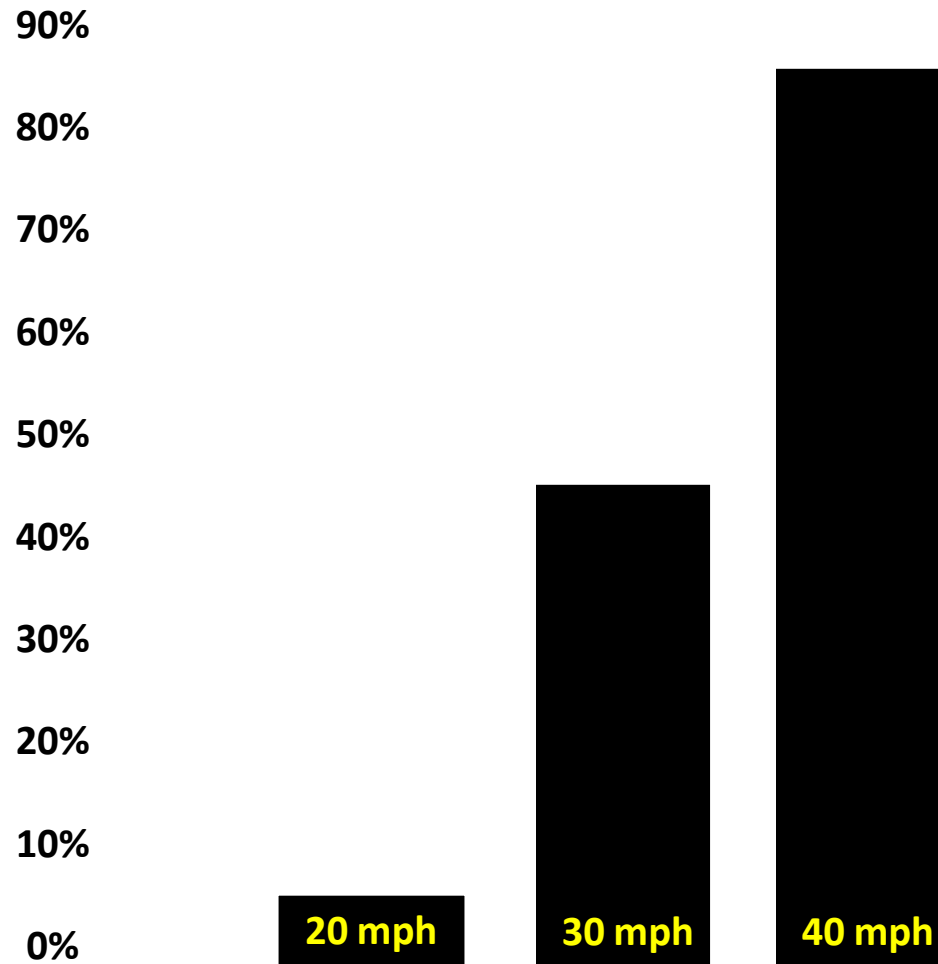


# Traffic Calming



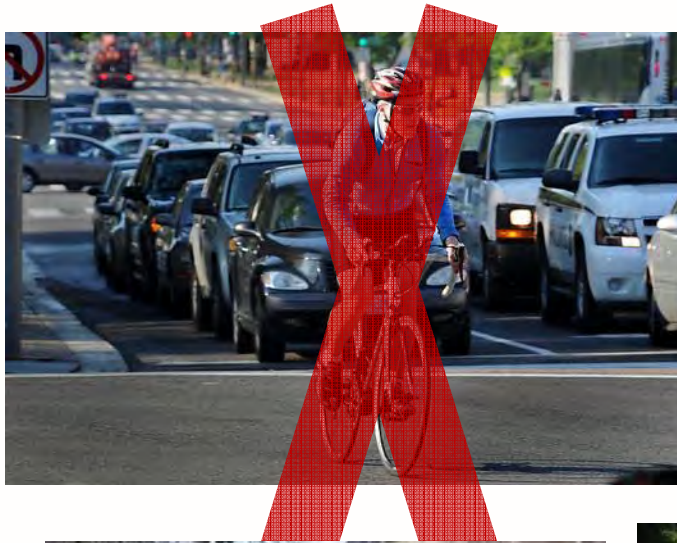
# Safe Speeds

## Pedestrian's risk of fatality if hit by a motorist





# Who are we designing for?



## Concept Goals:

- Provide a safe and desirable route for kids to and from schools and nearby destinations
- Calm traffic
- Shorten pedestrian crossings
- Narrow 'street'
- Formalize parking
- Maintain emergency response ability
- Incremental Steps

# Where do Buffered Bike Lanes Exist?

Commonwealth Avenue - Boston





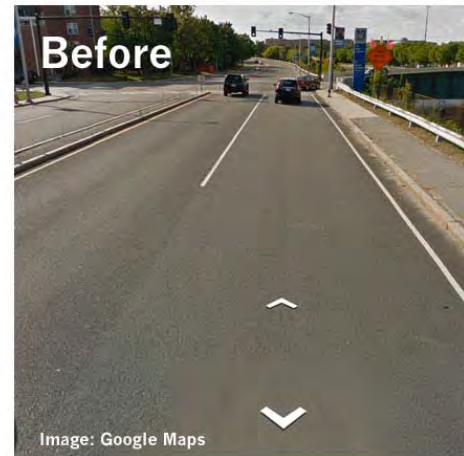
# Where do Buffered Bike Lanes Exist?

Morton Street - Boston



# Where do Buffered Bike Lanes Exist?

Father Morissette Blvd - Lowell





# Where do Buffered Bike Lanes Exist?

Western Avenue - Boston



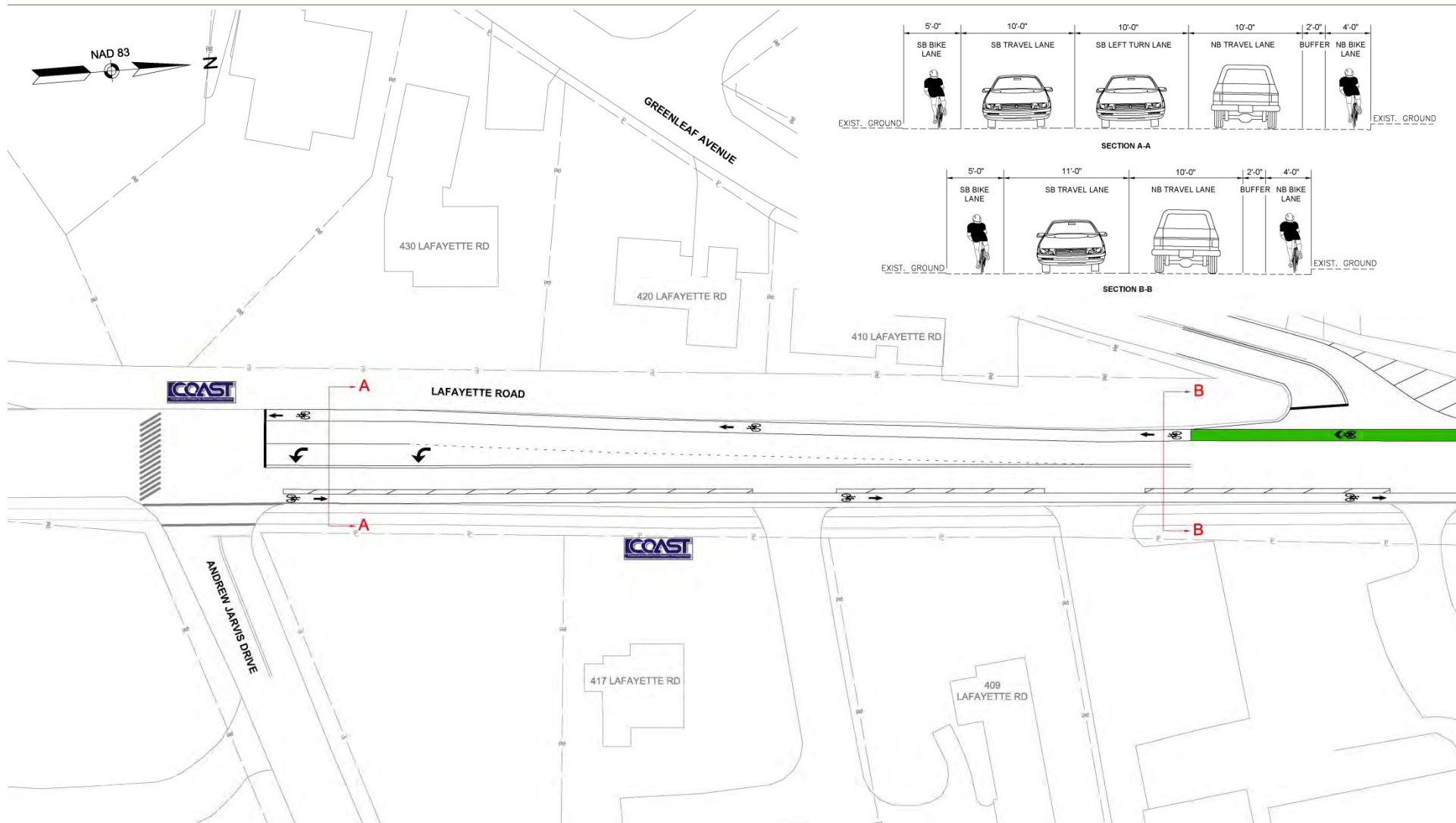


# Where do Buffered Bike Lanes Exist?

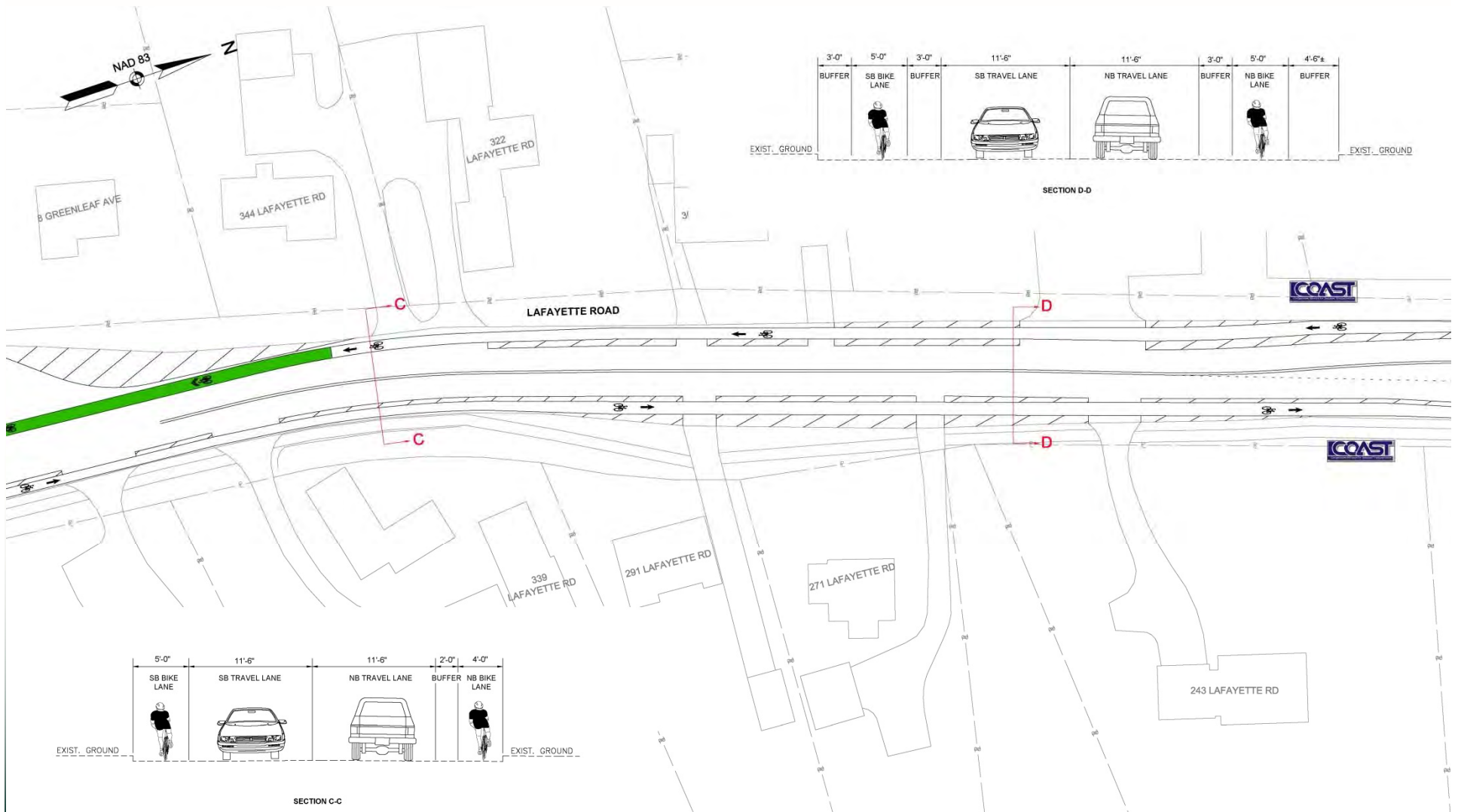
Western Avenue - Boston



# Preliminary Design

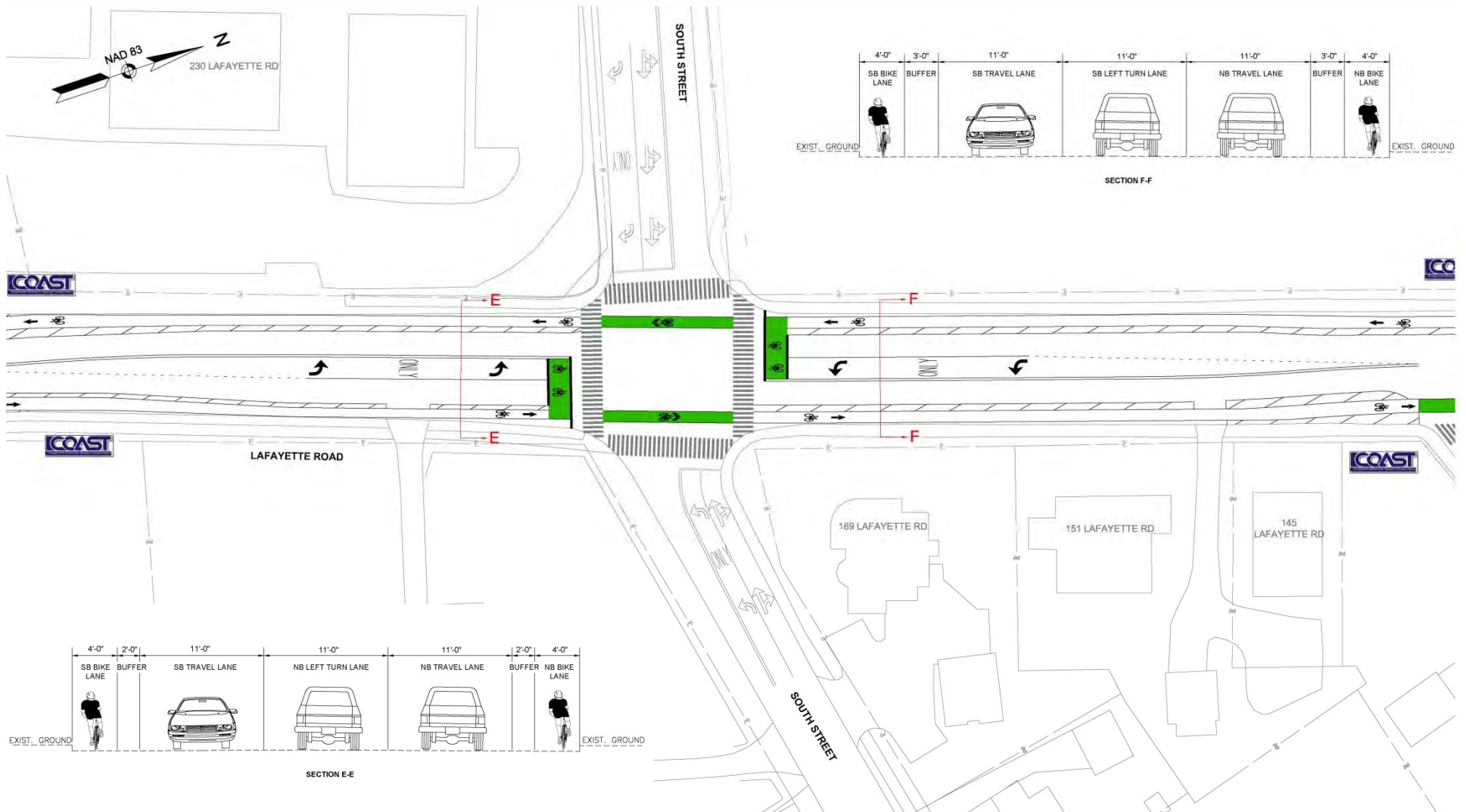


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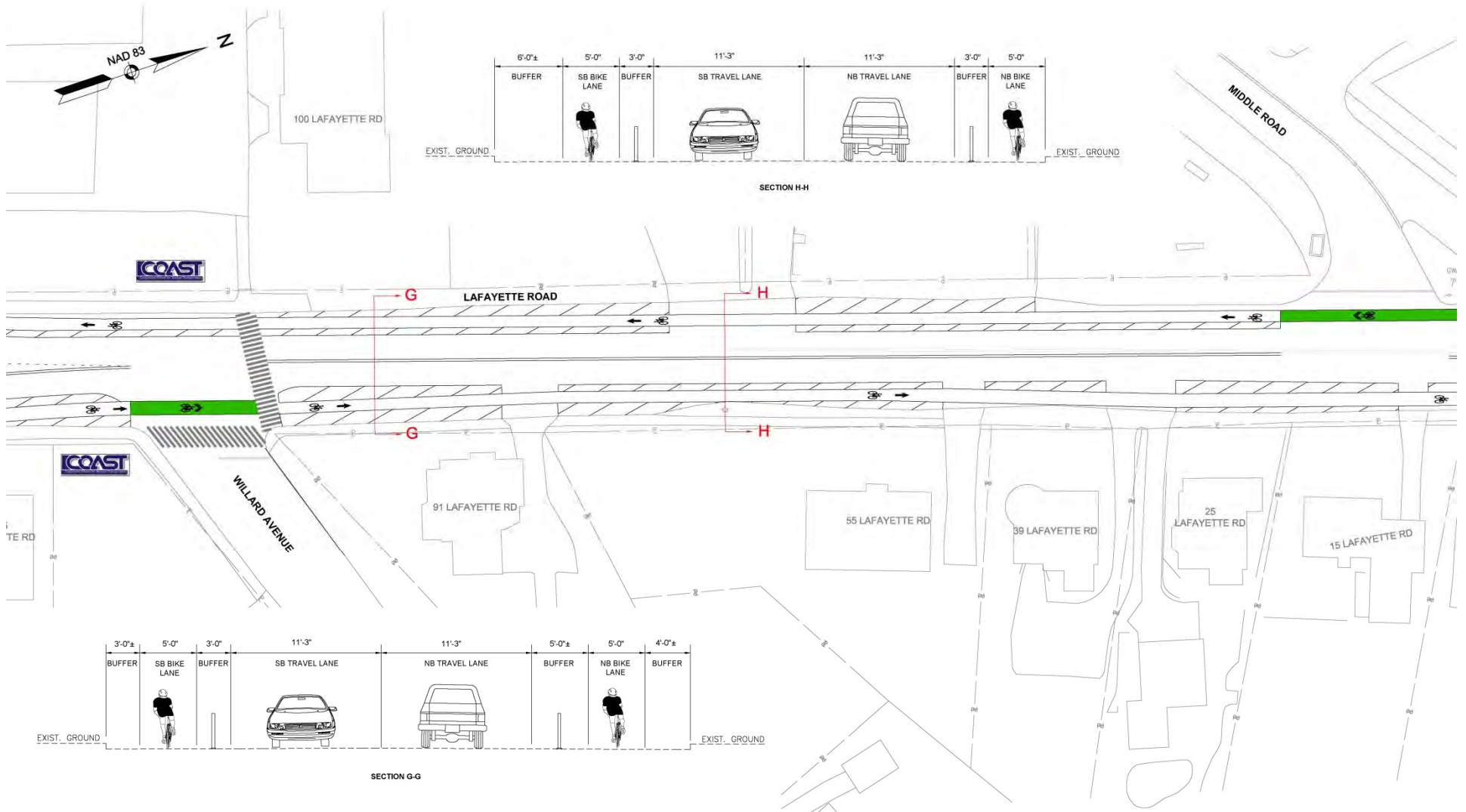




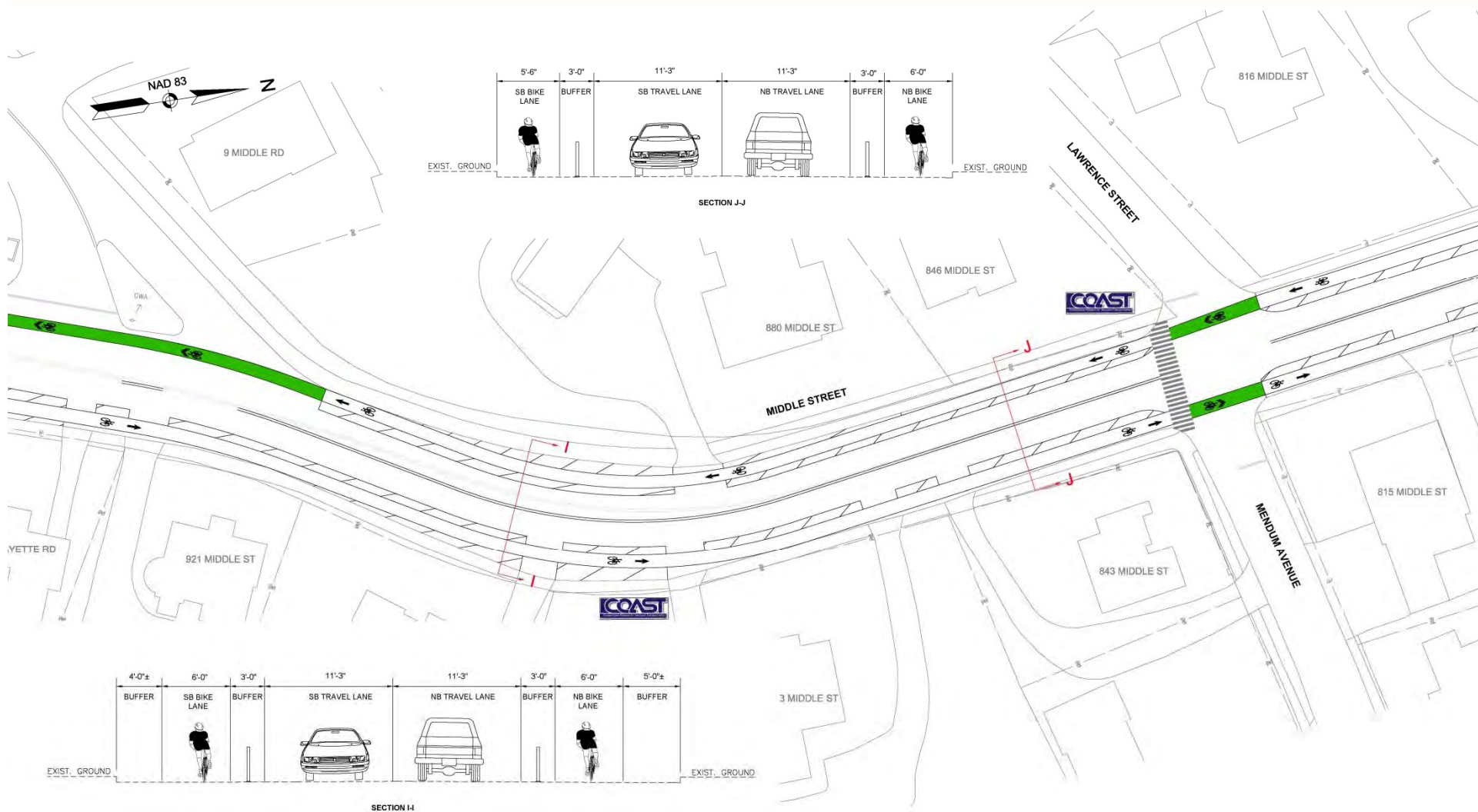
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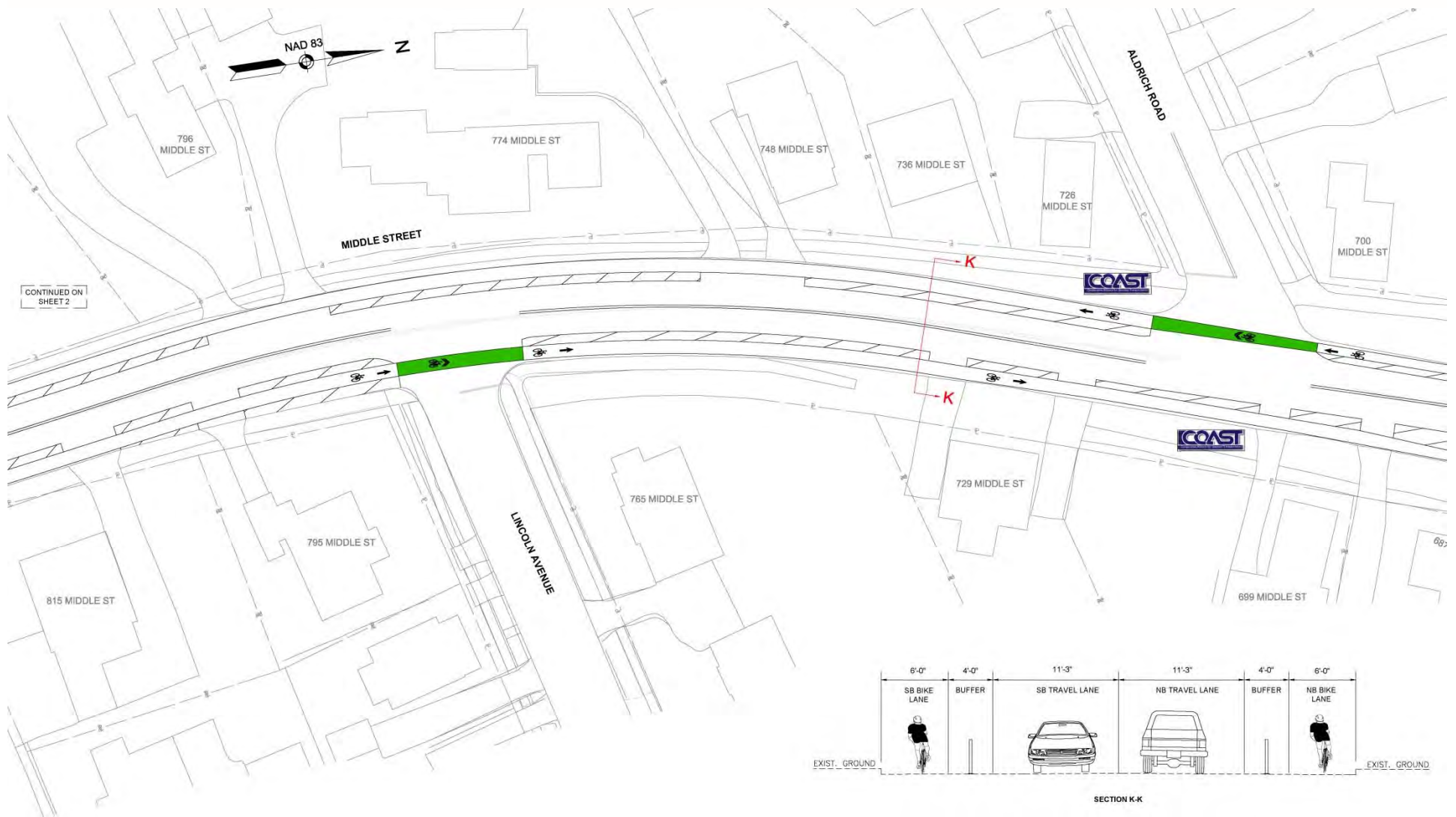


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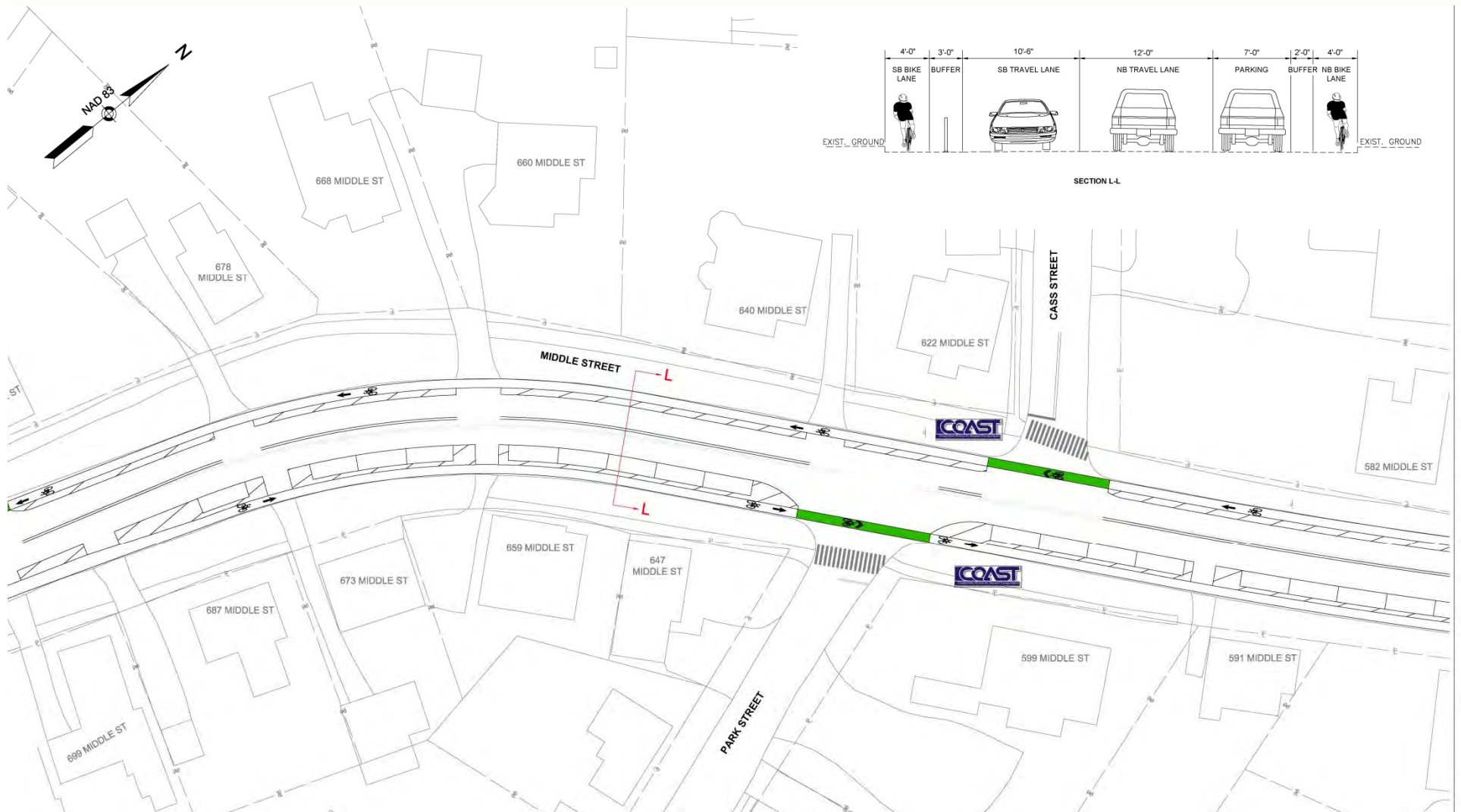




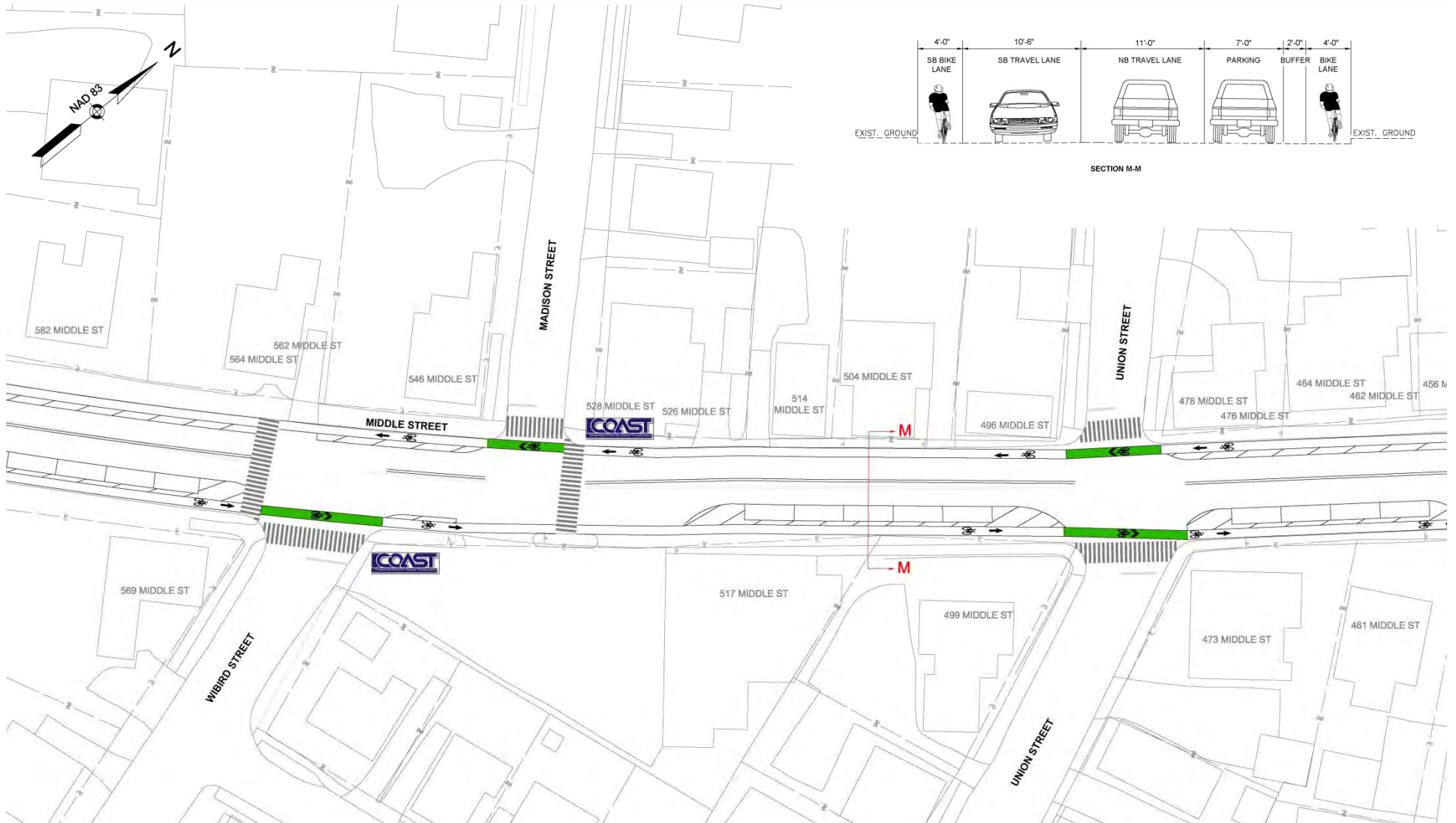
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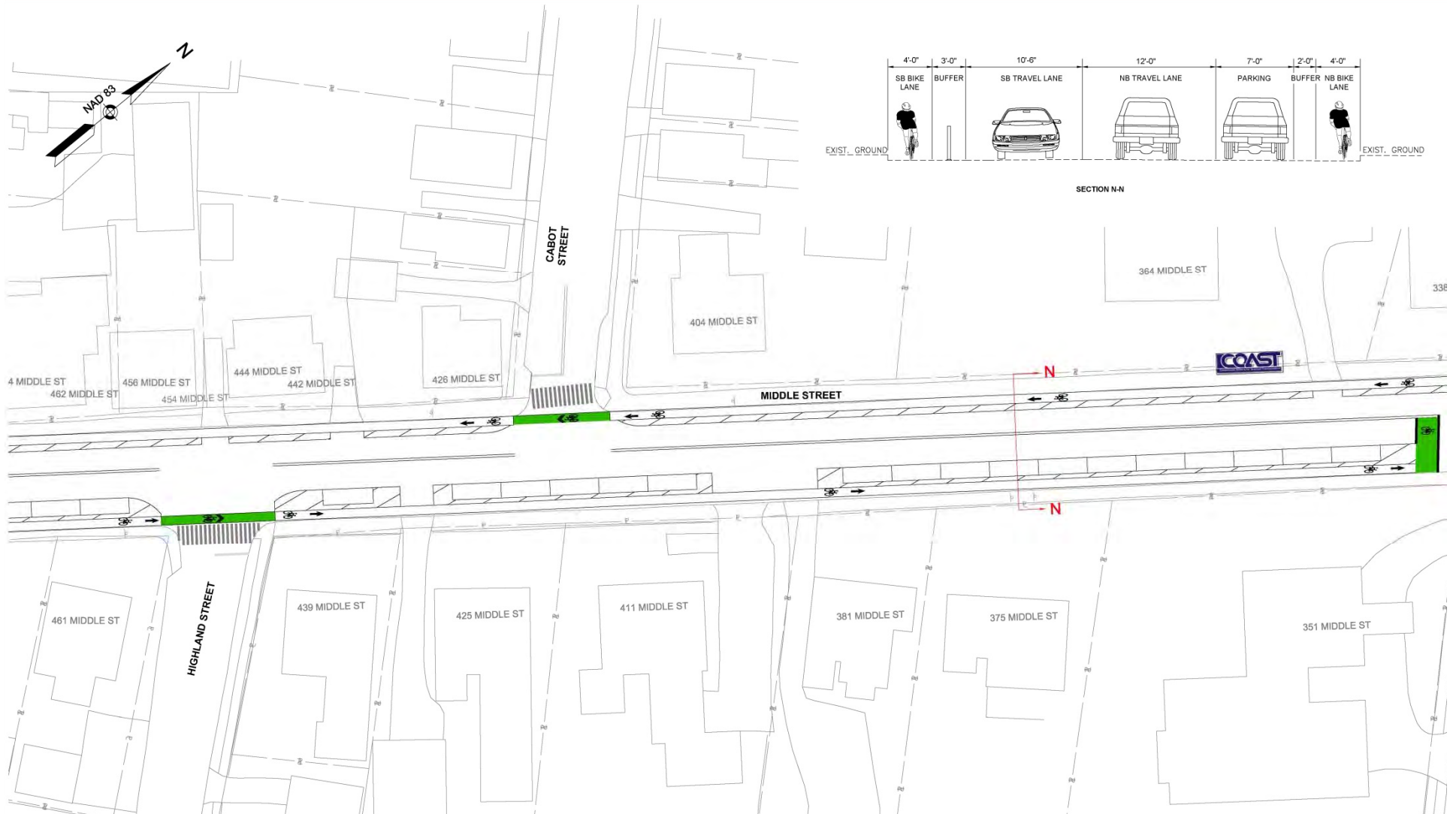


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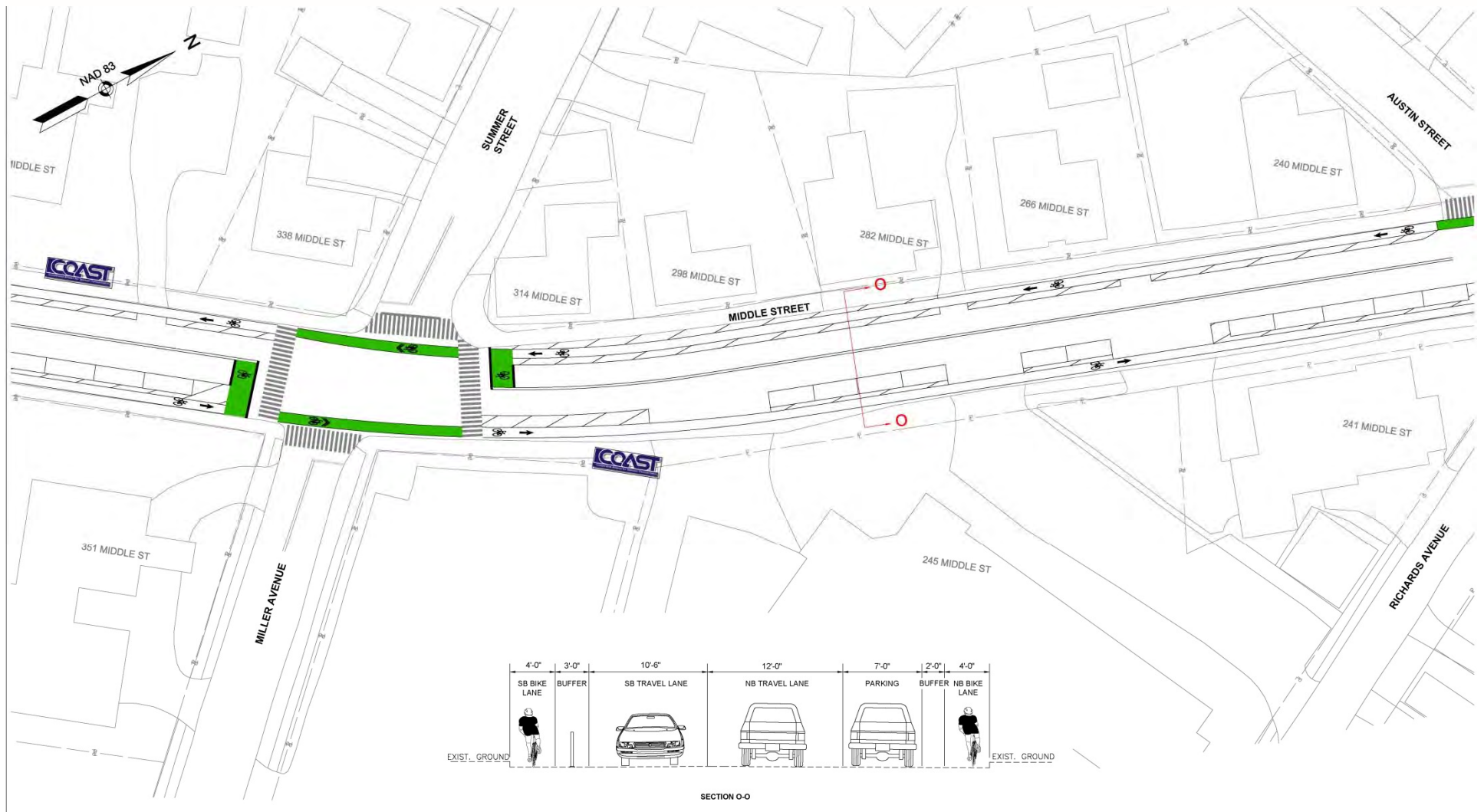




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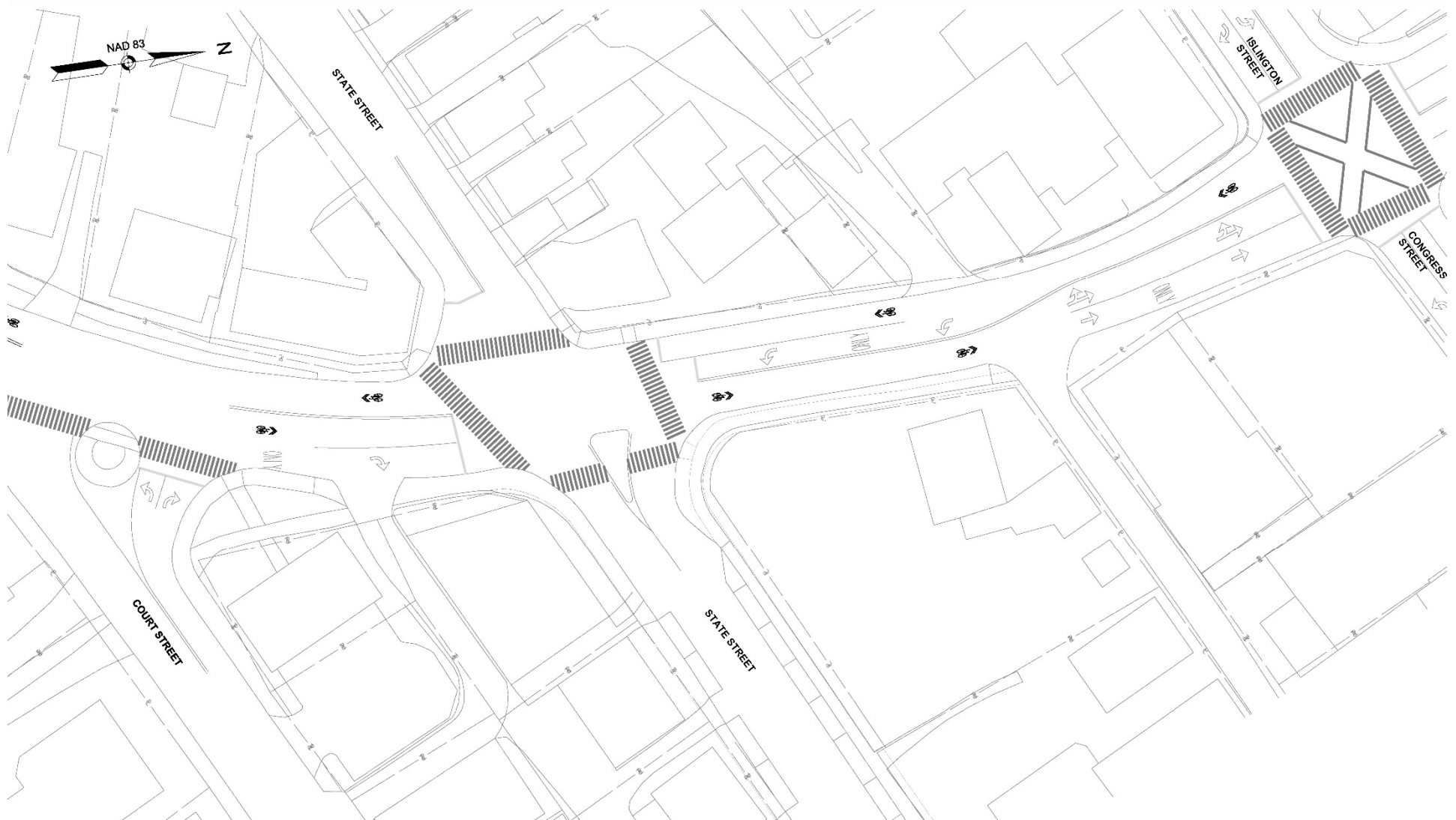


# Preliminary Design





# Preliminary Design



# Pop-up Demonstration





# Pop-up Demonstration





# Pop-up Demonstration





# Pop-up Demonstration







Questions?

