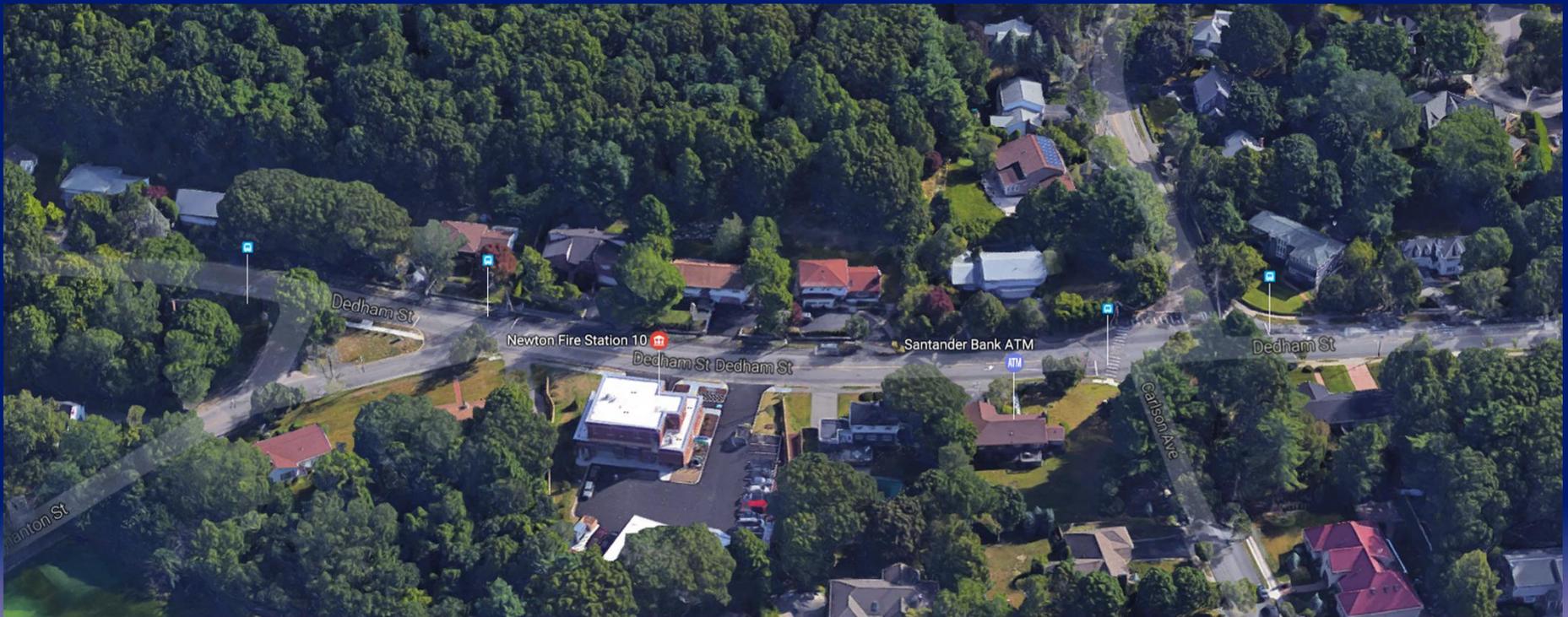


CITY OF NEWTON

Dedham Street Intersection Improvements



February 1, 2017

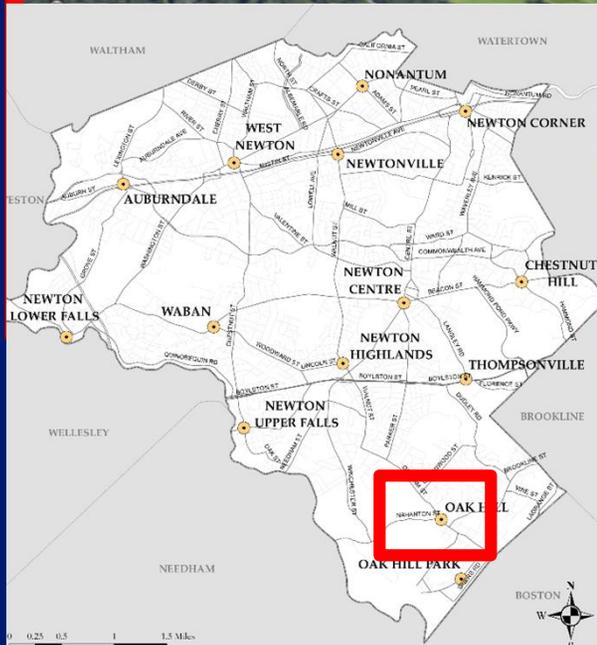
Environmental  Partners

GROUP

A partnership for engineering solutions.

www.envpartners.com

Project Location



A partnership for engineering solutions.



Project Goal

To improve safety for *all* users...

“ **Motorists**

“ **Pedestrians**

“ **Bicyclists**

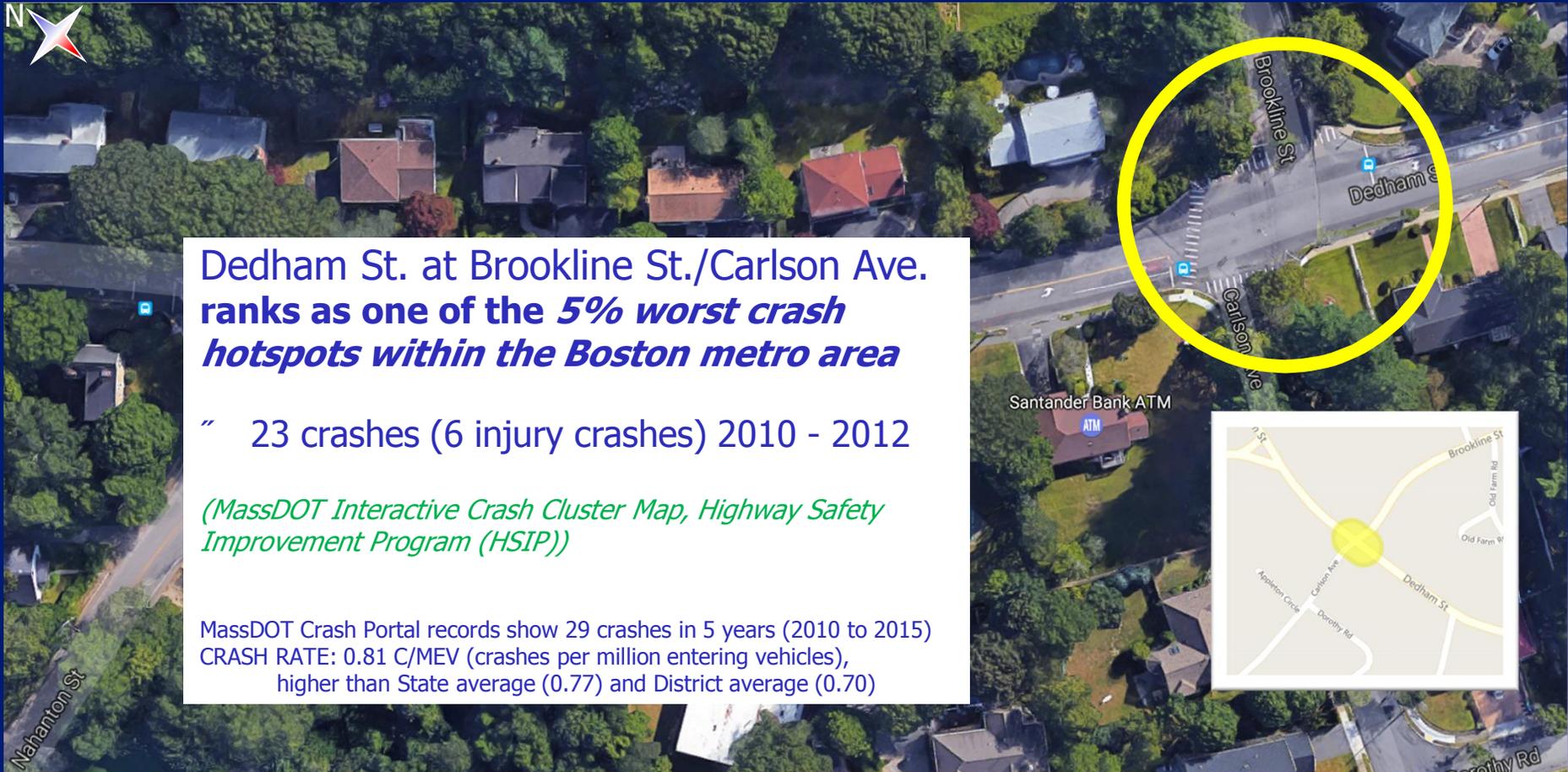
To address crash history and local concerns



Crash History — Dedham St. at Nahanton St.



Crash History — Dedham St. at Carlson Ave. and Brookline St.



Existing Conditions

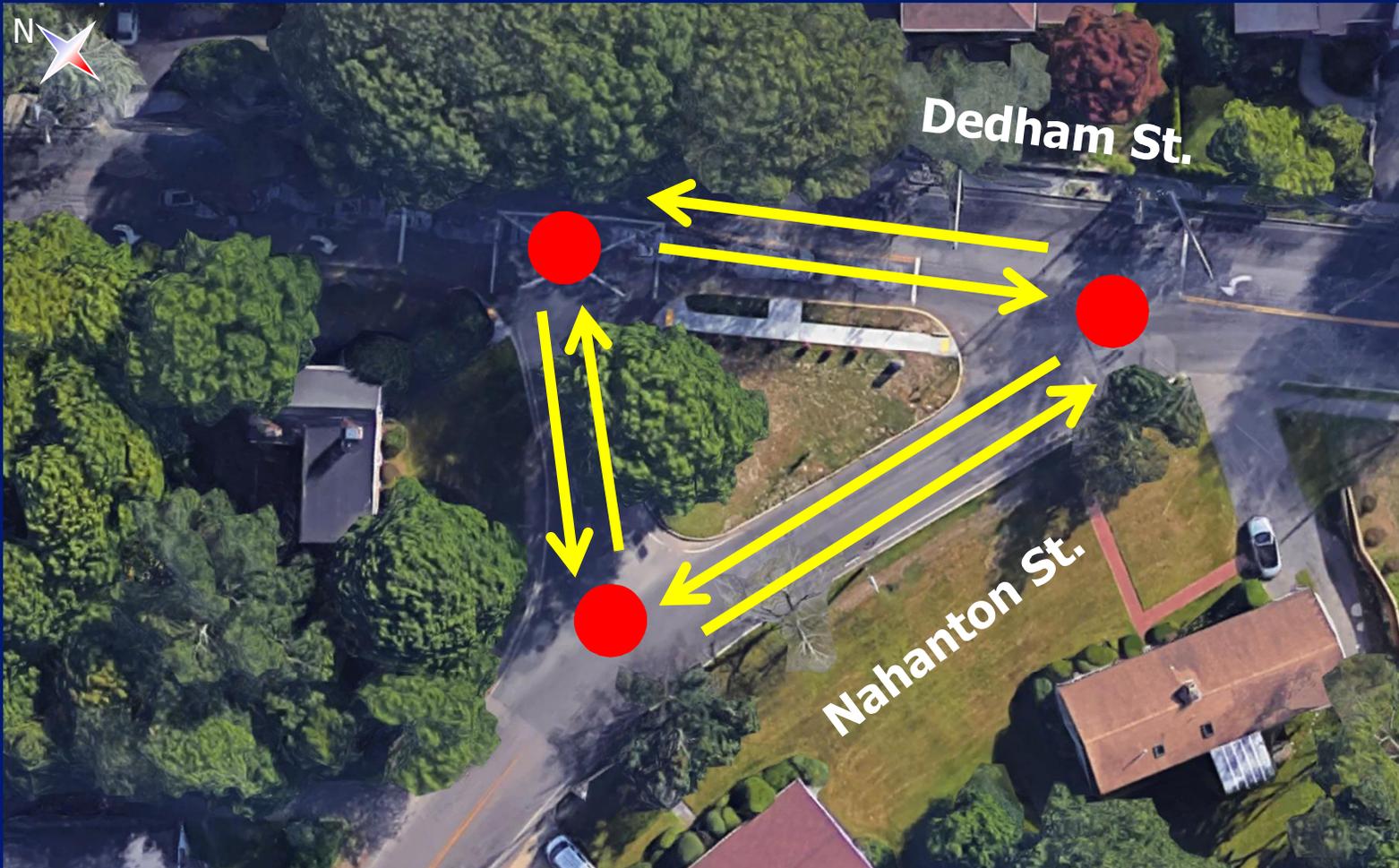


Existing Conditions — Dedham St. at Nahanton St.



Existing Conditions – Dedham St. at Nahanton St.

- **Deficiency 1: Unnecessary Points of Conflict**



Existing Conditions – Dedham St. at Nahanton St.

- **Deficiency 2: Difficult Left Turn from Nahanton St.**



Existing Conditions – Dedham St. at Nahanton St.

- **Deficiency 3: Grade Differential on Nahanton St.**



Existing Conditions – Dedham St. at Nahanton St.

▪ Deficiency 4: Non-continuous Pedestrian Accommodations



- " Missing crosswalks
- " Sidewalk and wheel chair ramp with no connections



Existing Conditions — Dedham St. at Nahanton St.

- **Deficiency 5: Utility Restrictions**



Existing Conditions

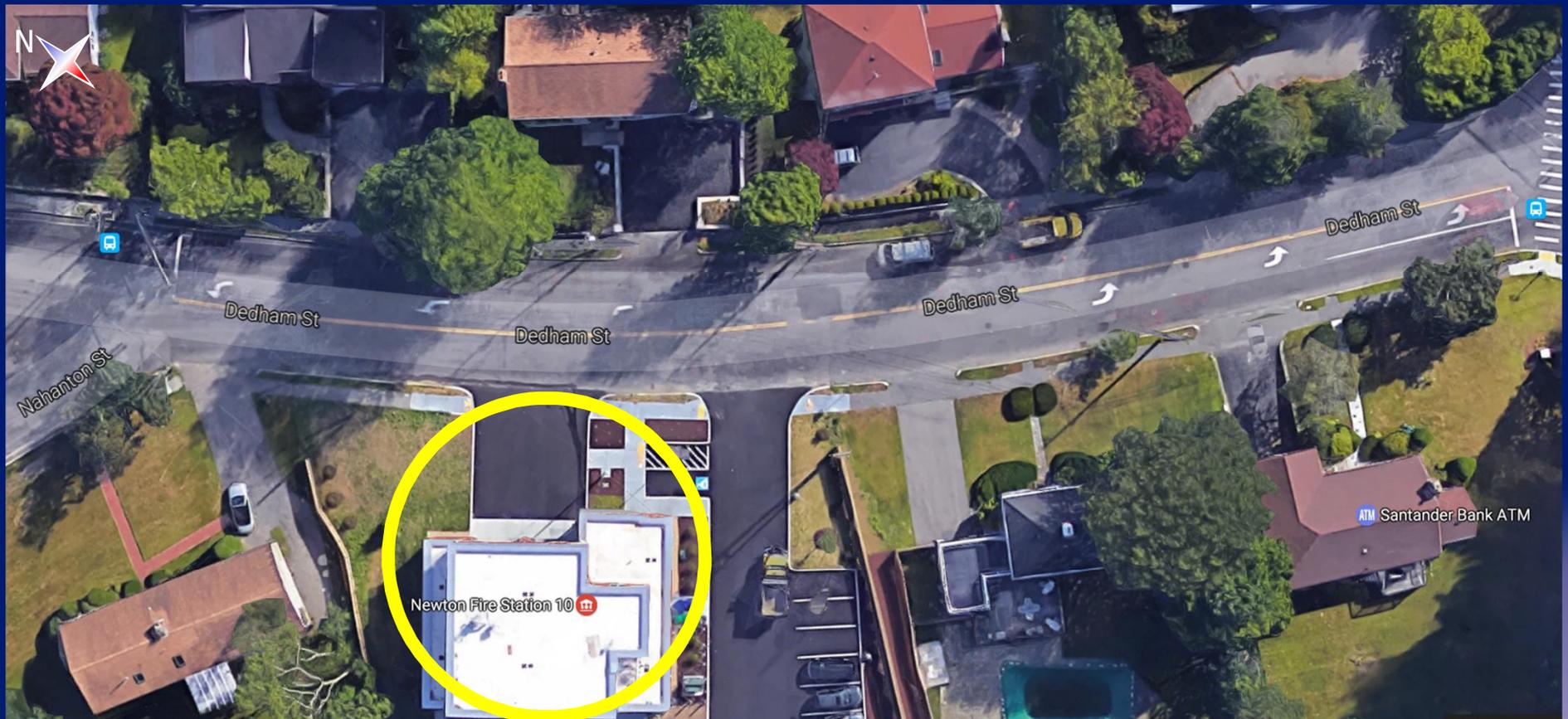


Existing Conditions – Dedham Street



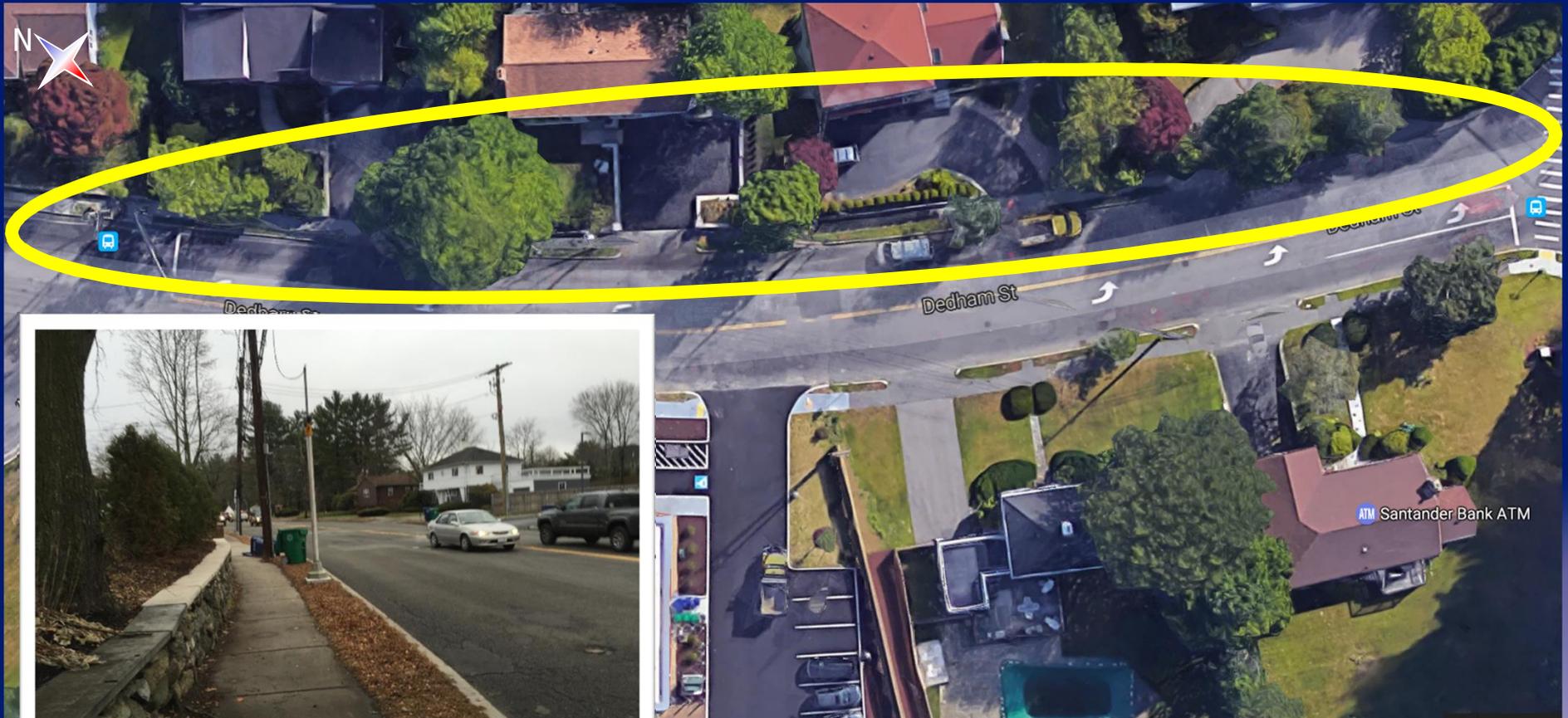
Existing Conditions – Dedham Street

- **Design Consideration: Emergency Access to Fire Station**



Existing Conditions – Dedham Street

- **Site Constraint: Retaining Walls**



Existing Conditions – Dedham Street

- **Site Constraint: Utility Poles**



Existing Conditions

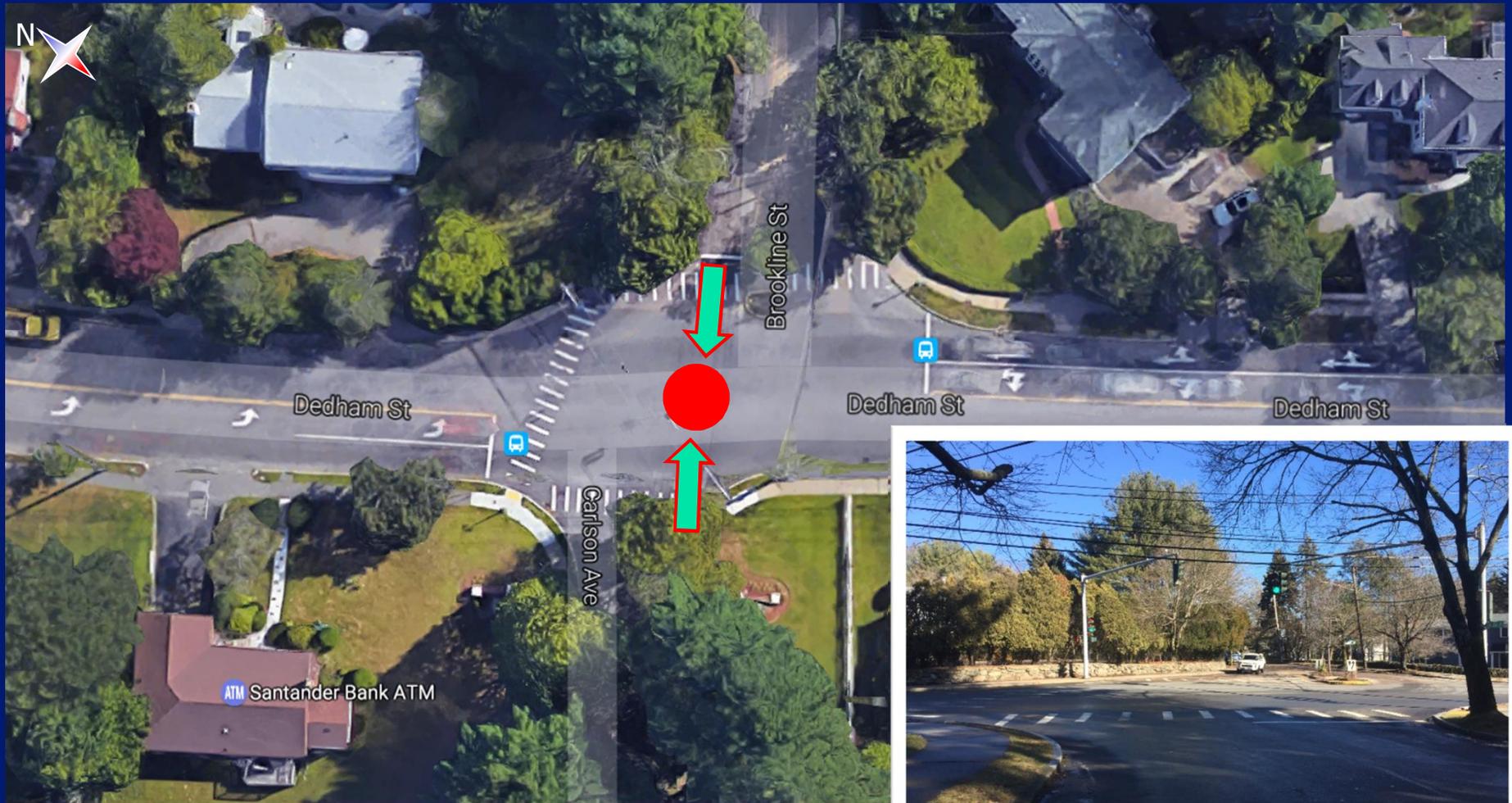


Existing Conditions – Dedham St. at Carlson Ave and Brookline St.



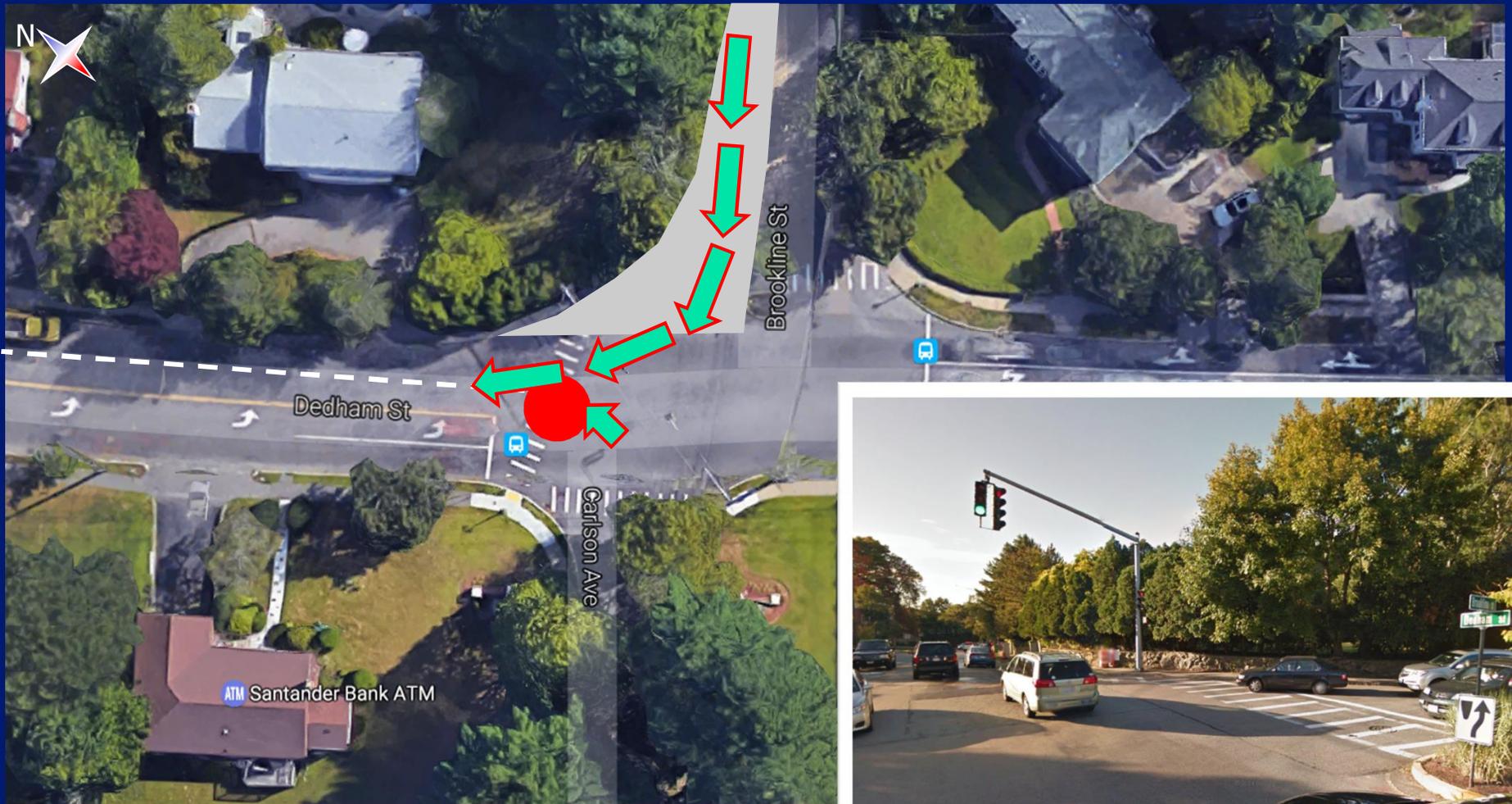
Existing Conditions – Dedham St. at Carlson Ave and Brookline St.

- **Deficiency 1: Offset Intersection**



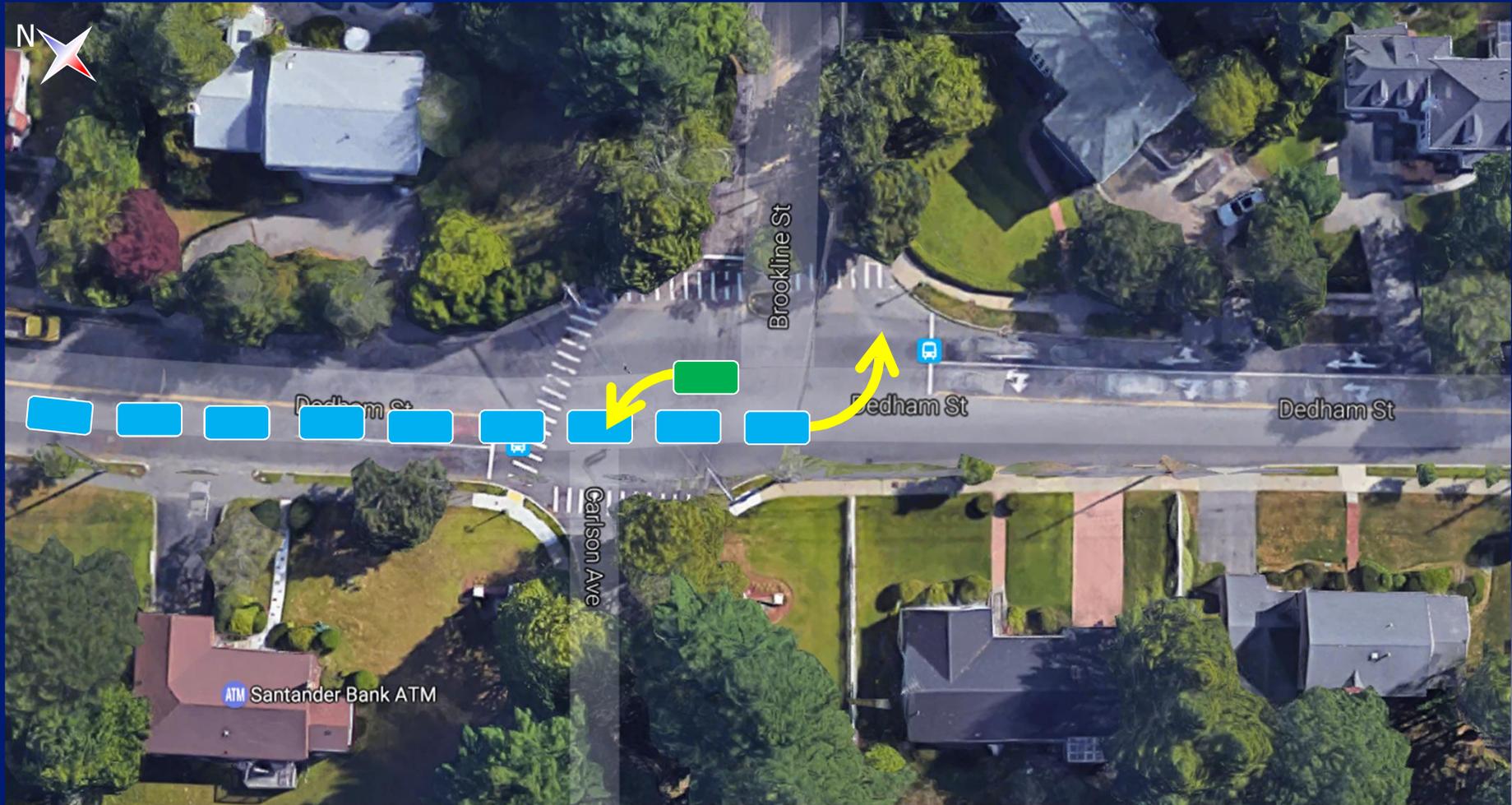
Existing Conditions – Dedham St. at Carlson Ave and Brookline St.

- **Deficiency 2: Heavy Right from Brookline with Poor Delineation**



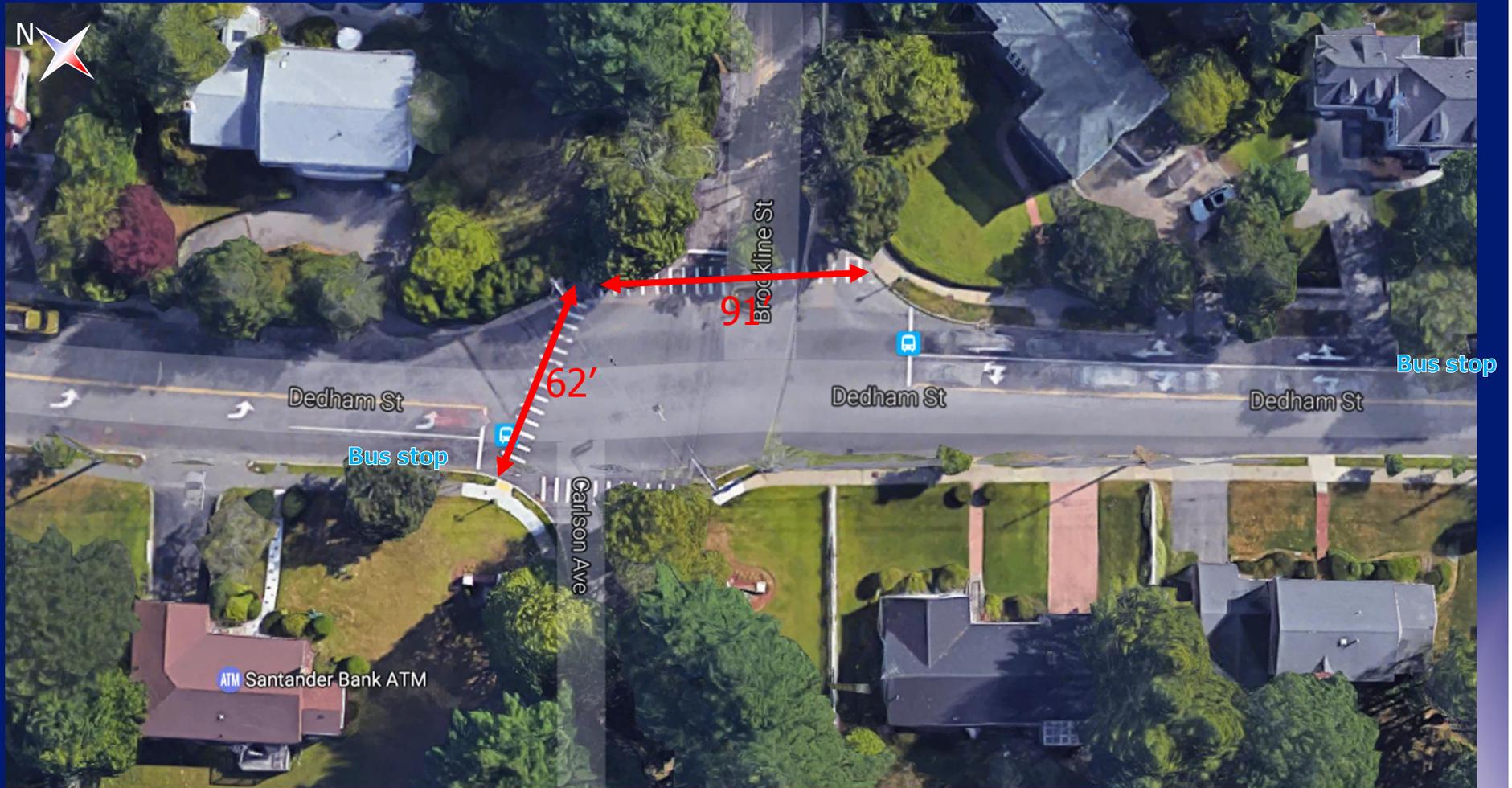
Existing Conditions – Dedham St. at Carlson Ave and Brookline St.

- **Deficiency 3: Difficult Left onto Carlson Avenue**



Existing Conditions – Dedham St. at Carlson Ave and Brookline St.

- **Deficiency 4: Skewed & Long Pedestrian Crossings**

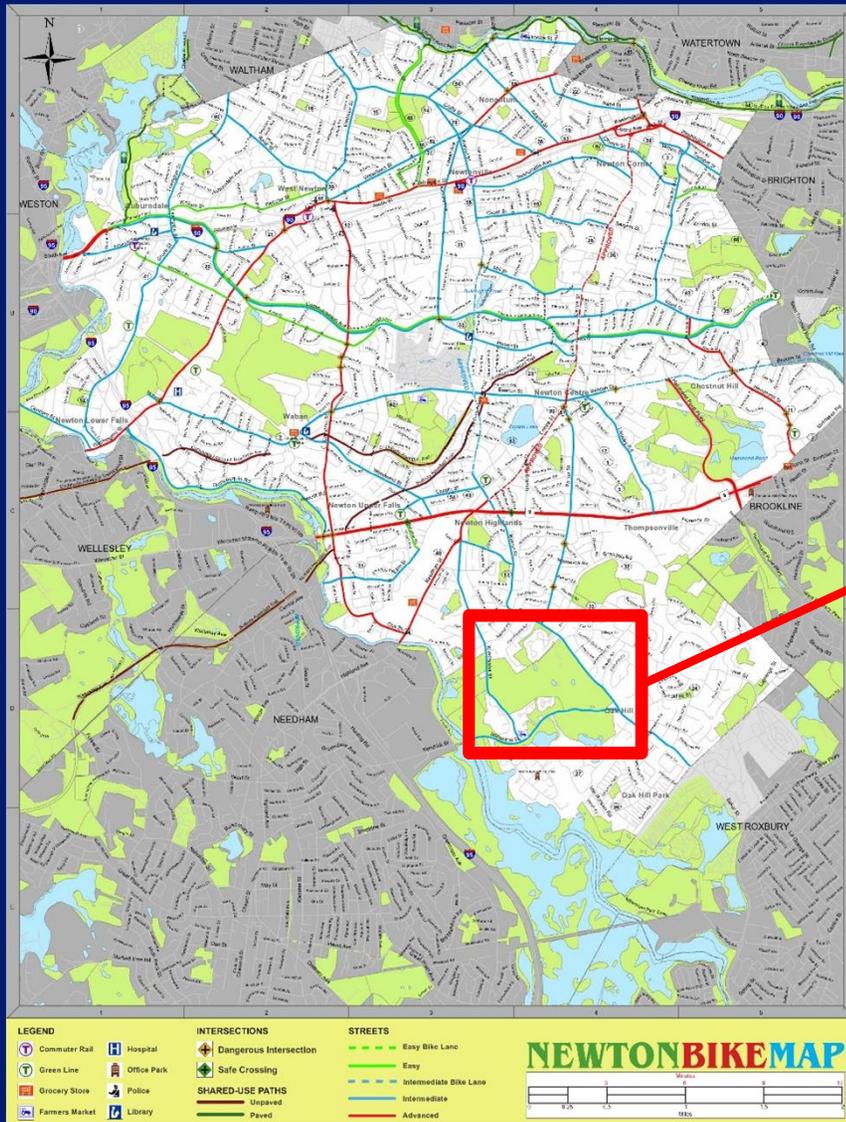


Existing Conditions – Dedham St. at Carlson Ave and Brookline St.

- **Site Restriction: Mt. Ida Gateway**



Existing Conditions – Bicycle Accommodations



Dedham Street

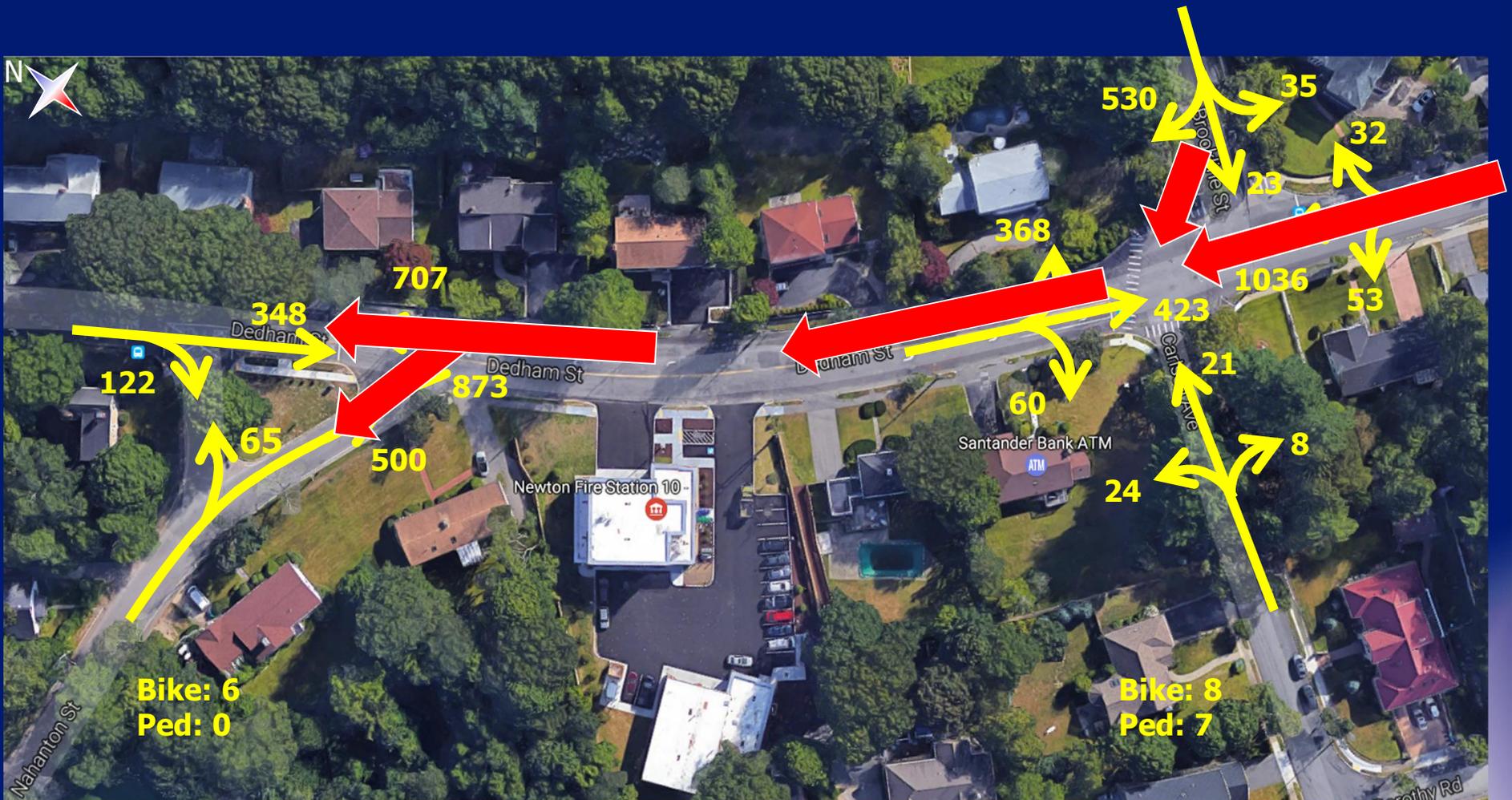
Nahanton Street

Categorized as
Intermediate Bike Routes
(Newton Bike Map)

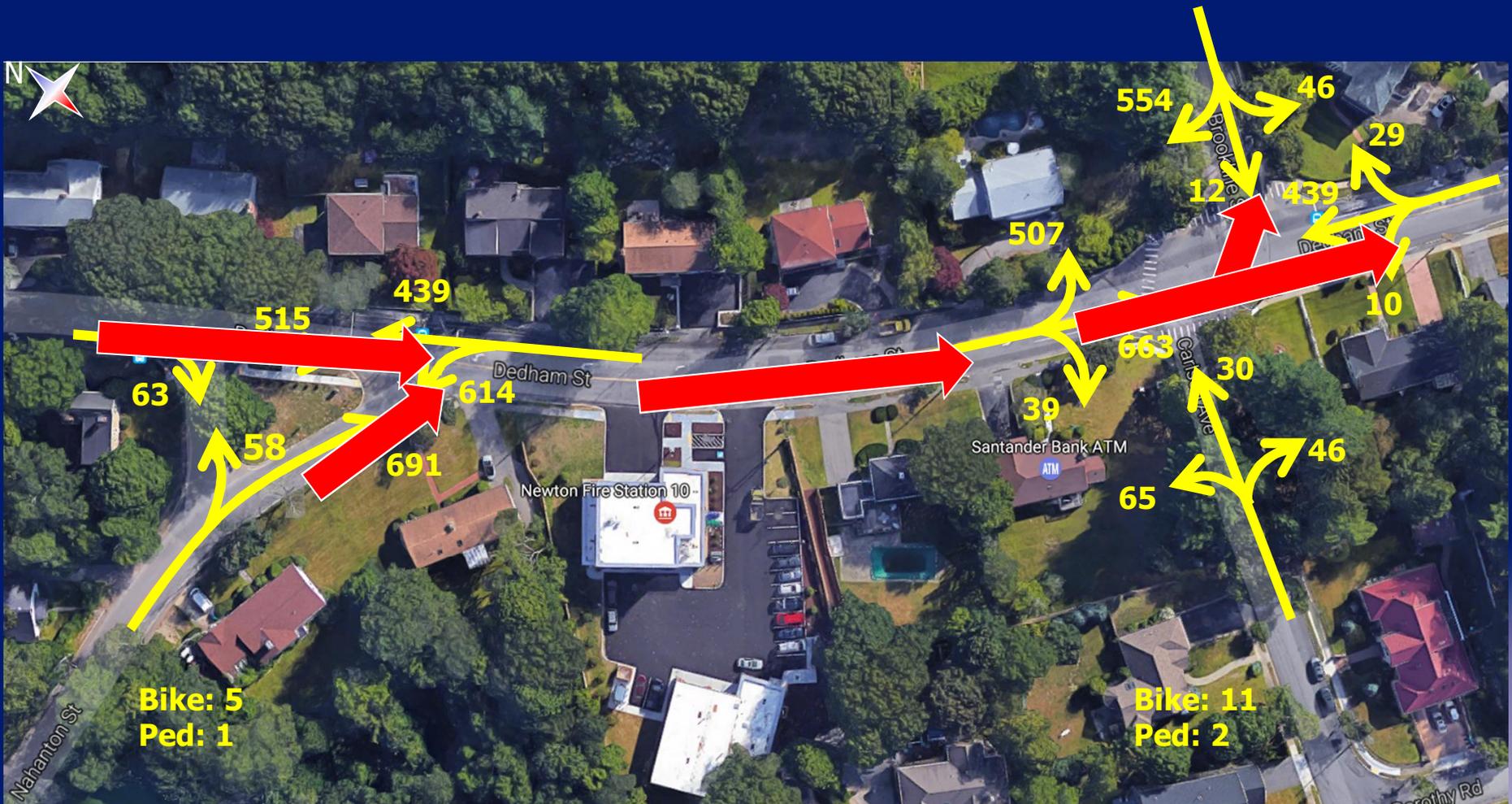
**Neither currently have
bicycle accommodations**



Existing Conditions – AM Traffic Volumes



Existing Conditions – PM Traffic Volumes





Proposed Alternatives *(Both Intersections)*

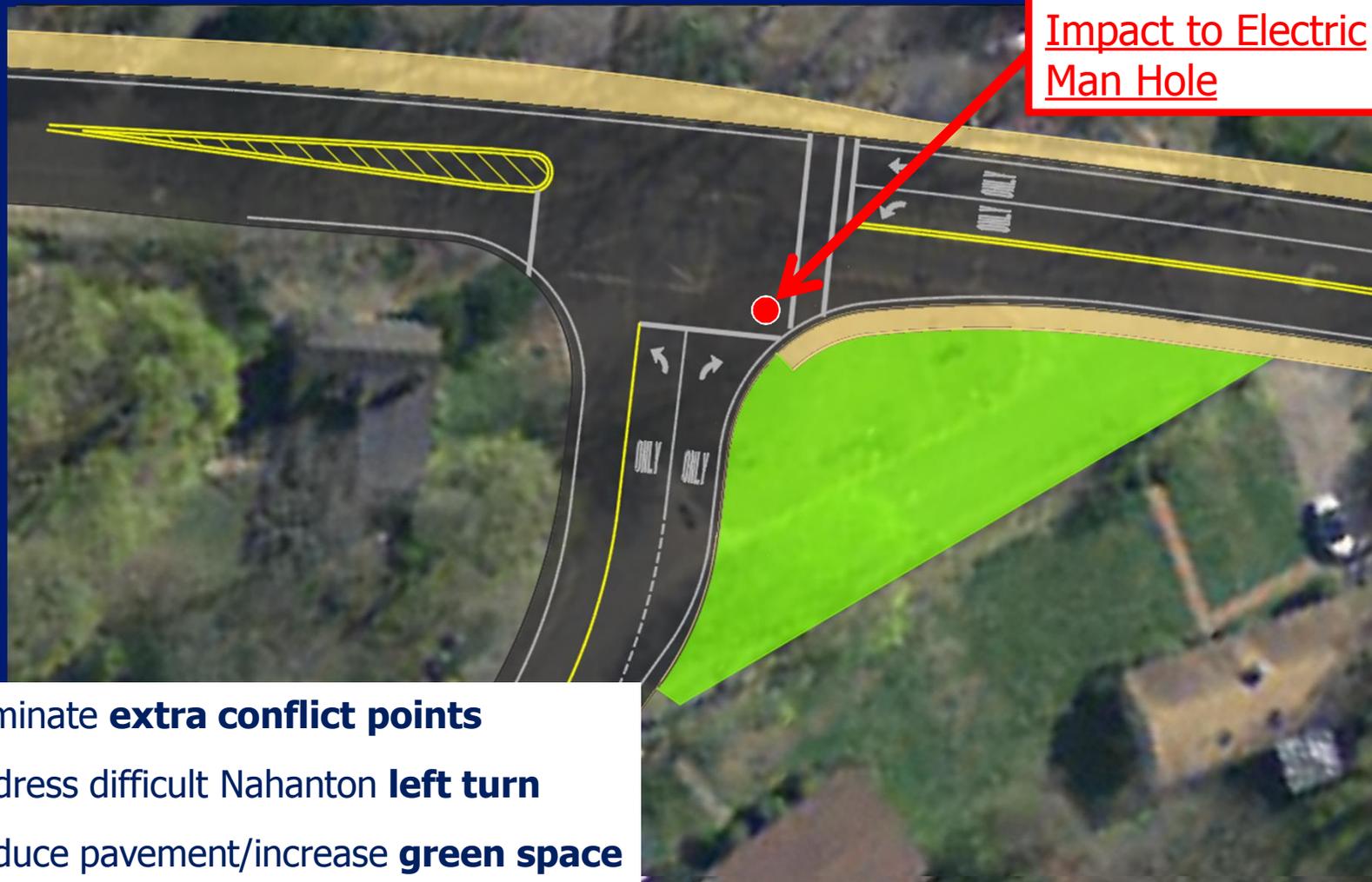
- **Fully Actuated Traffic Signals**
- **Coordination**
- **Emergency Pre-Emption**
- **Accessible Pedestrian Signals**
- **ADA Compliant Ramps**

Alternative 1 — Dedham St. at Nahanton St.



- “ Eliminate **extra conflict points**
- “ Address difficult Nahanton **left turn**
- “ Reduce pavement/increase **green space**
- “ Continuous **ped. accommodations**

Alternative 2 — Dedham St. at Nahanton St.



- “ Eliminate **extra conflict points**
- “ Address difficult Nahanton **left turn**
- “ Reduce pavement/increase **green space**
- “ Continuous **ped. accommodations**

Alternative 1



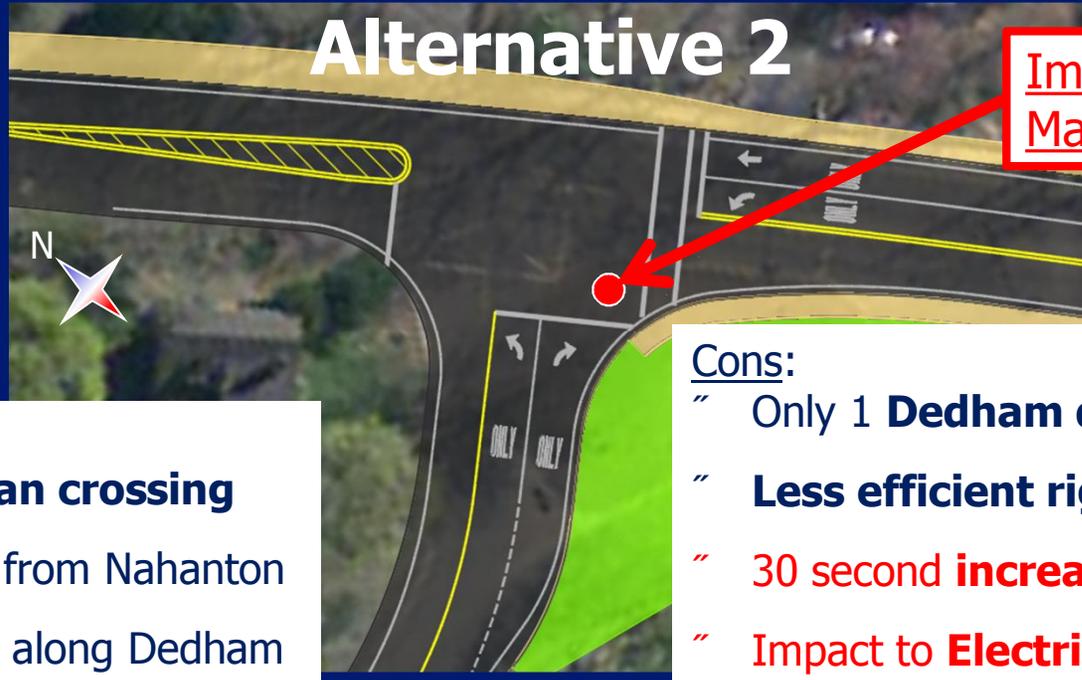
Pros:

- “ **Efficient right** turn from Nahanton
- “ More **capacity** along Dedham

Cons:

- “ **Ped. crossing** channelized right lane
- “ **Two Crosswalks** to cross Dedham

Alternative 2



Impact to Electric Man Hole

Pros:

- “ Only one **pedestrian crossing**
- “ **Slower right** turn from Nahanton
- “ Retain **road width** along Dedham

Cons:

- “ Only 1 **Dedham departure lane**
- “ **Less efficient right** from Nahanton
- “ 30 second **increase in delay** (PM)
- “ Impact to **Electric MH**

Alternative 1 — Dedham St. at Carlson Ave. and Brookline St.



- “ Brookline & Carlson **aligned**
- “ New **left turn lane** along Dedham
- “ **Aligned left turns** along Dedham
- “ **Delineation** for side street turns
- “ Efficient use of **Brookline** width
- “ Shorter **pedestrian crossings**
- “ **Impacts:** Mount Ida property
Utility poles



Alternative 2 — Dedham St. at Carlson Ave. and Brookline St.



- “ Brookline & Carlson **aligned**
- “ New **left turn lane** along Dedham
- “ **Aligned left turns** along Dedham
- “ **Delineation** for side street turns
- “ Efficient use of **Brookline** width
- “ Shorter **pedestrian crossings**
- “ **Impacts:** Mount Ida property
Utility poles





Alternative 1

Pros:

- “ **Efficient right** turn from Brookline
- “ **More queuing** for Brookline lefts

Cons:

- “ **Ped. crossing** channelized right lane
- “ **Two Crosswalks** to cross Brookline



Alternative 2

Pros:

- “ Only one **pedestrian crossing**
- “ **Slower right** turn from Brookline

Cons:

- “ **Less efficient right** from Brookline
- “ **Less queuing** for Brookline lefts
- “ **45 second increase in delay (AM)**

Traffic Operations

Alternative 1



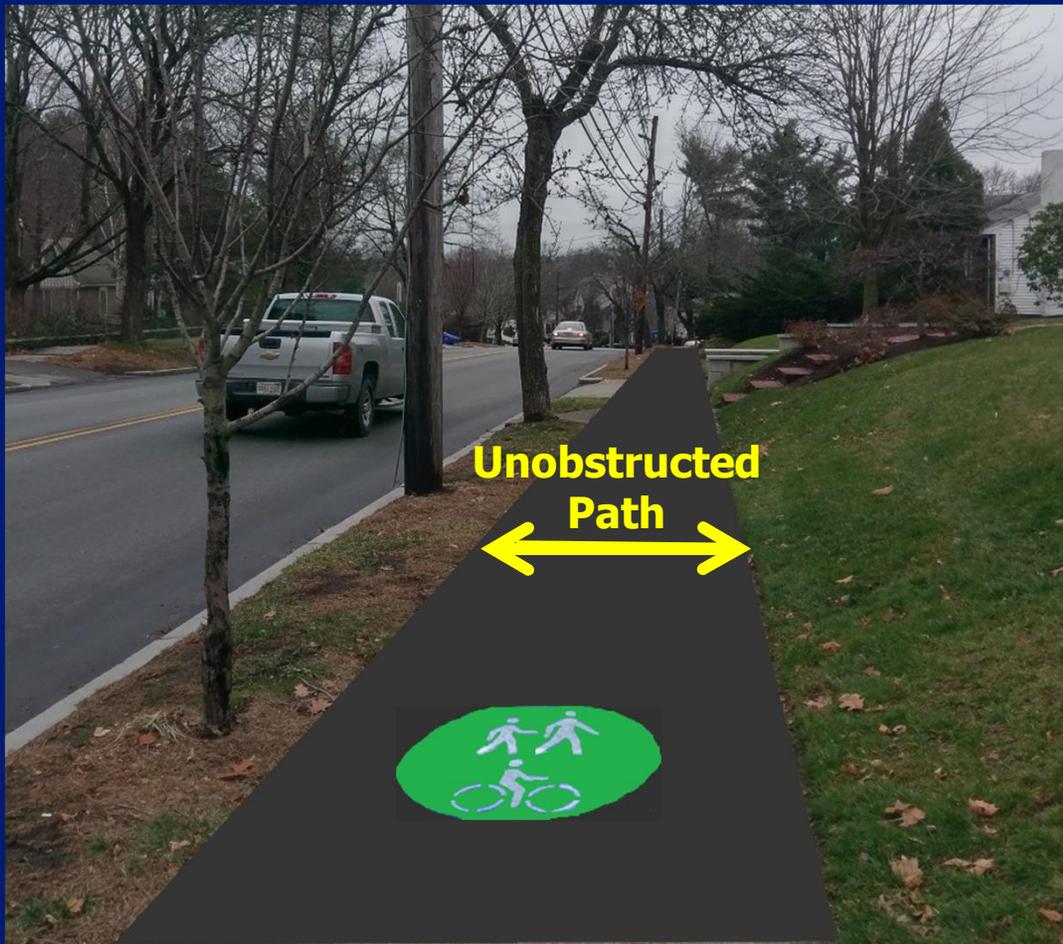
Alternative 2



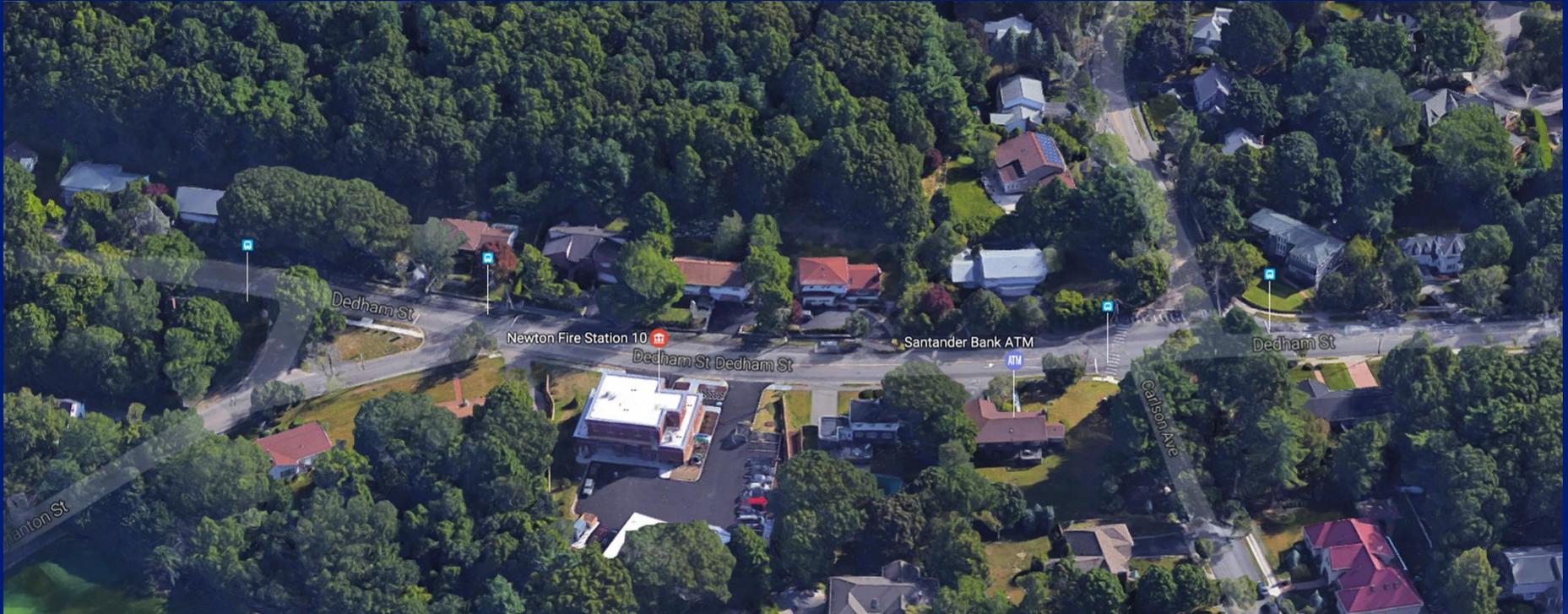
Bicycle Accommodations- *Option 1*



Bicycle Accommodations- *Option 2*



Thank you!



Nicole Freedman
Director of Transportation
City of Newton
nfreedman@newtonma.gov

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Environmental Partners Group
jdf@envpartners.com



A partnership for engineering solutions.