

# CITY OF NEWTON

## Dedham Street Intersection Improvements



*March 28, 2017*

**Environmental  Partners**  
GROUP

*A partnership for engineering solutions.*

[www.envpartners.com](http://www.envpartners.com)

# Project Location



## Project Goal

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**To improve safety for *all* users...**

“ **Motorists**

“ **Pedestrians**

“ **Bicyclists**

**To address crash history and local concerns**

*(predominantly vehicle to vehicle crashes)*

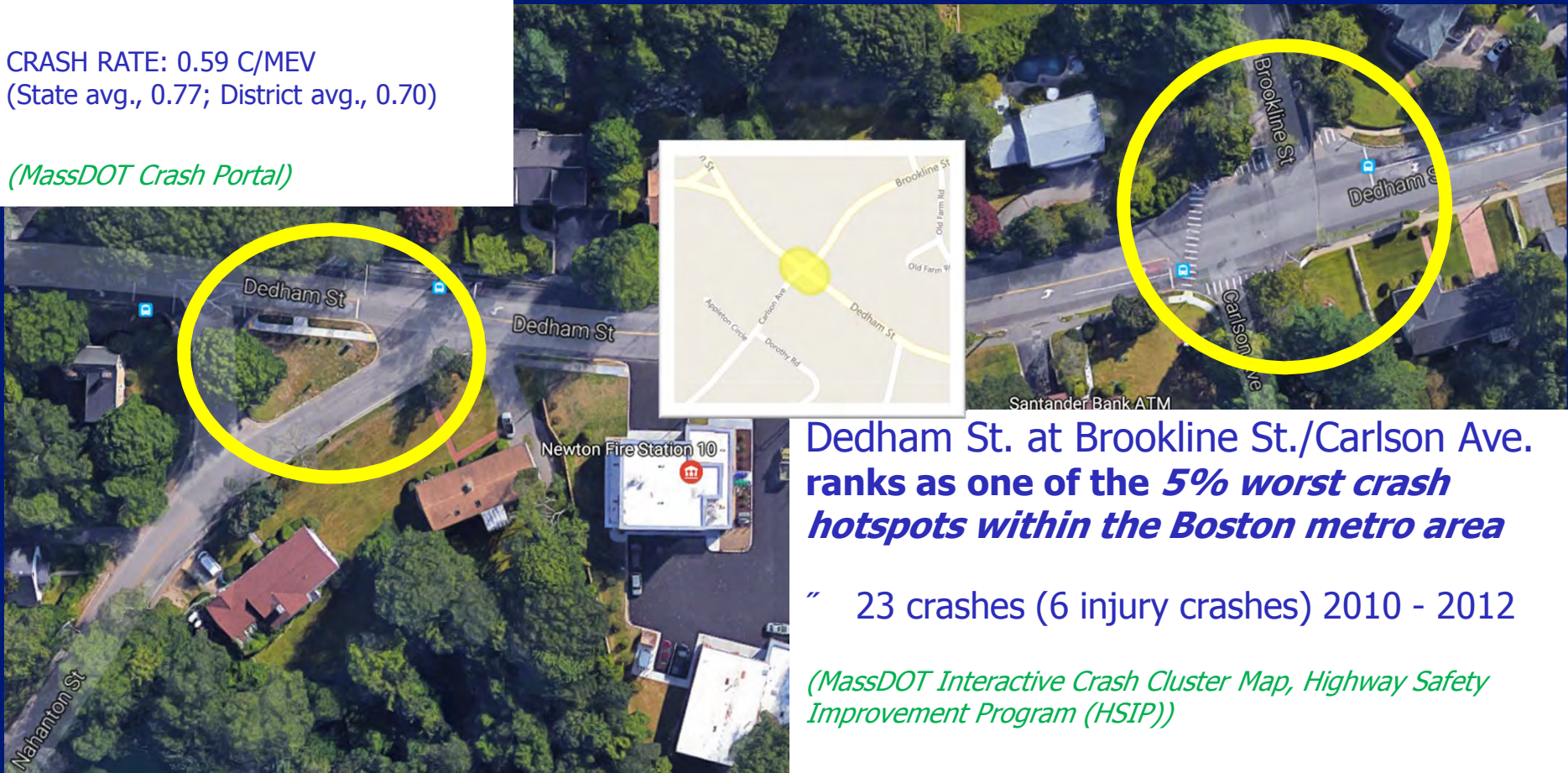


# Crash History — Dedham St. at Nahanton St.

**16 crashes in 5 years**  
(2010 to 2015)

CRASH RATE: 0.59 C/MEV  
(State avg., 0.77; District avg., 0.70)

*(MassDOT Crash Portal)*



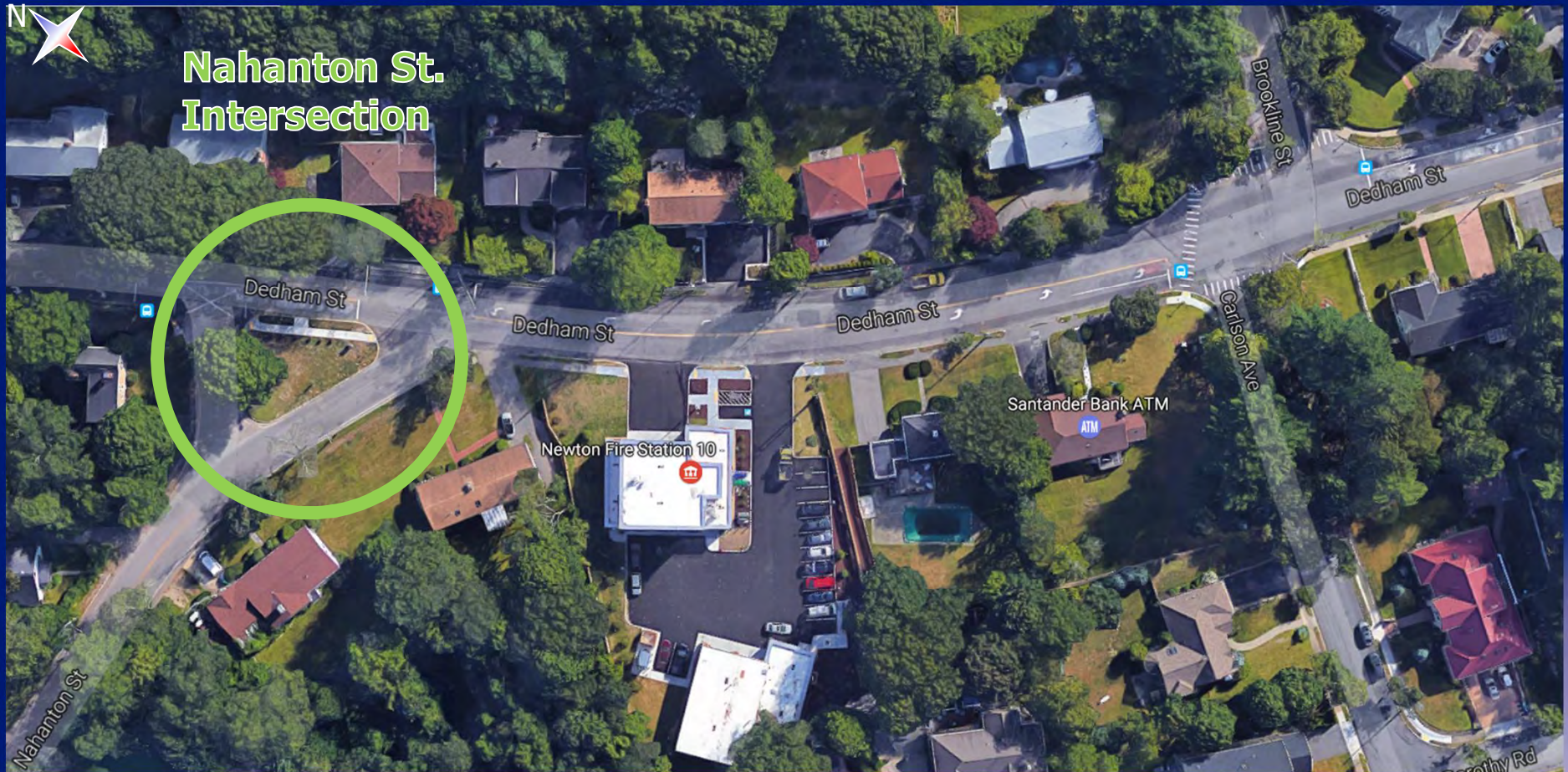
**Dedham St. at Brookline St./Carlson Ave. ranks as one of the 5% worst crash hotspots within the Boston metro area**

“ 23 crashes (6 injury crashes) 2010 - 2012

*(MassDOT Interactive Crash Cluster Map, Highway Safety Improvement Program (HSIP))*

MassDOT Crash Portal records show 29 crashes in 5 years (2010 to 2015)  
CRASH RATE: 0.81 C/MEV (crashes per million entering vehicles),  
higher than State average (0.77) and District average (0.70)

# Existing Conditions



# Existing Conditions — Dedham St. at Nahanton St.

## Deficiencies:

- Unnecessary Points of Conflict
- Difficult Left Turn from Nahanton St.
- Grade Differential on Nahanton St.
- Non-continuous Ped. Accommodations

## Restrictions:

- Utilities (Electric & Gas)



# Existing Conditions



# Existing Conditions — Dedham Street

## Considerations:

- Fire Station / Emergency Access
- Lacking Bicycle Accommodations

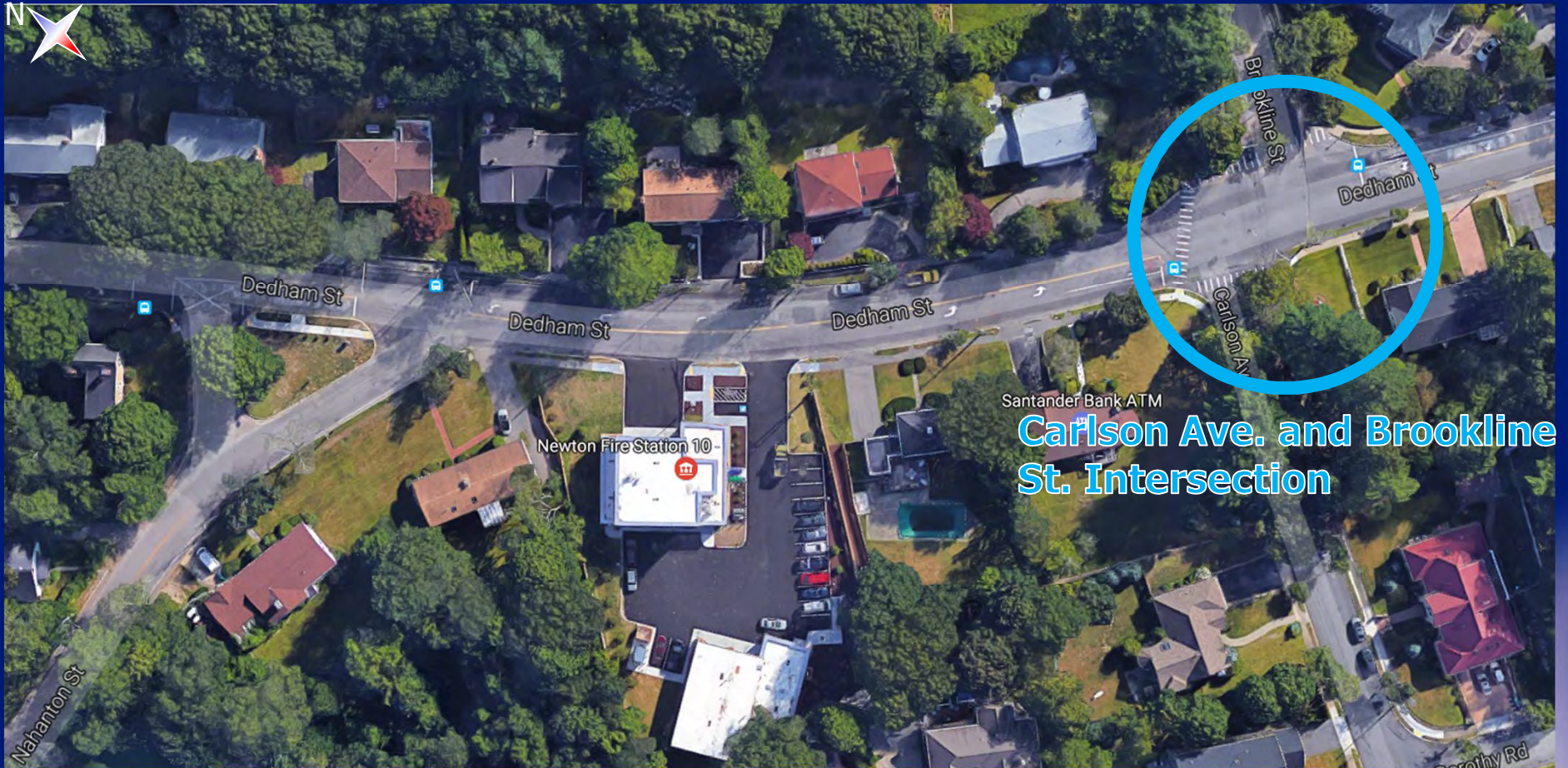
## Restrictions:

- Retaining Walls
- Utility Poles





# Existing Conditions



Carlson Ave. and Brookline St. Intersection



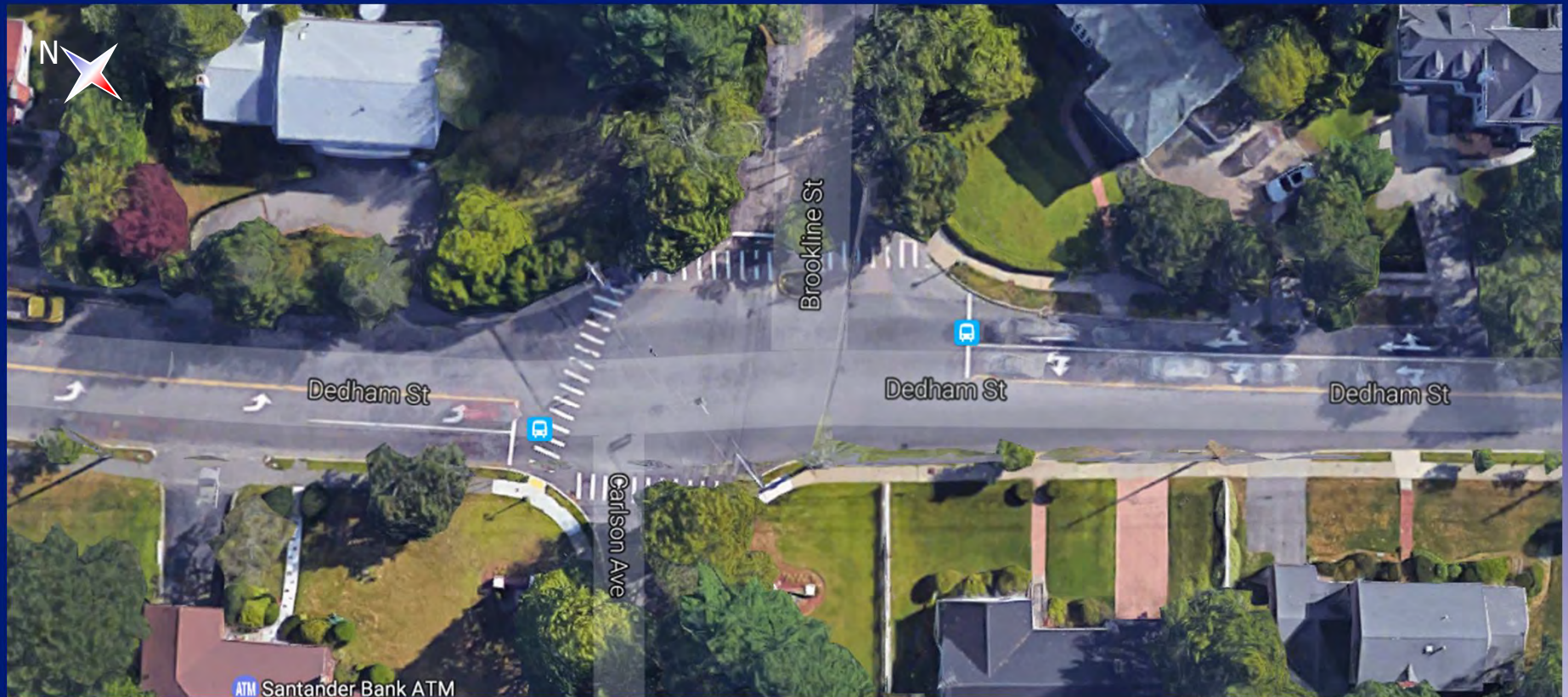
# Existing Conditions – Dedham St. at Carlson Ave and Brookline St.

## Deficiencies:

- **Offset T-Intersections**
- **Brookline Rights- Poor Delineation**
- **Difficult Left onto Carlson**
- **Skewed & Long Pedestrian Crossing (62',91')**

## Restrictions:

- **Mt. Ida Gateway**

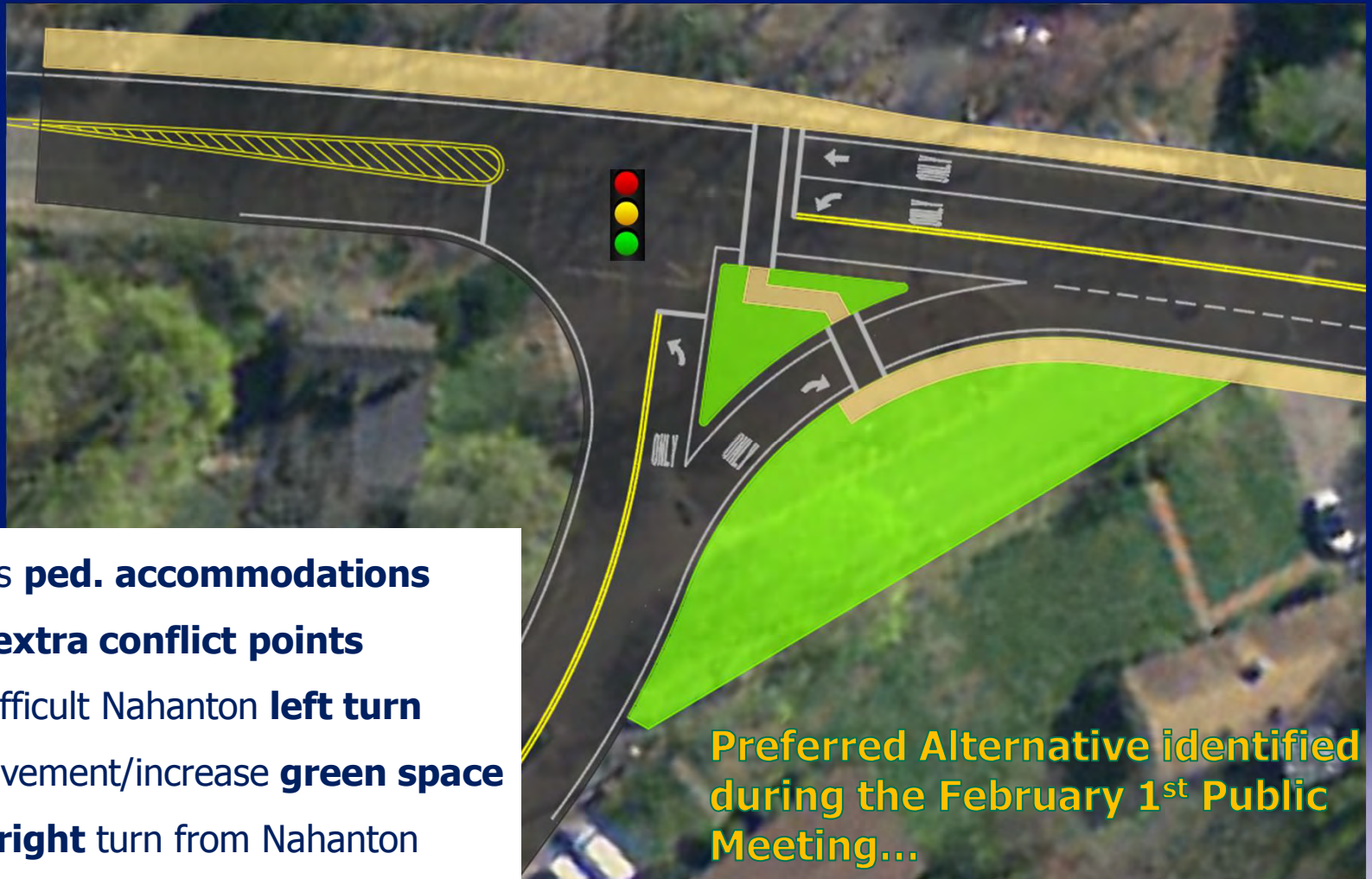


## Proposed Improvements:

- Alignment Improvements
- Shorter Pedestrian Crossings
- Accessible Pedestrian Signals
- ADA Compliant Ramps
- Fully Actuated Traffic Signals
- Coordination
- Emergency Pre-Emption

**Preferred Alternative identified during the February 1<sup>st</sup> Public Meeting...**

# Preferred Alternative — Dedham St. at Nahanton St.



- “ Continuous **ped. accommodations**
- “ Eliminate **extra conflict points**
- “ Address difficult Nahanton **left turn**
- “ Reduce pavement/increase **green space**
- “ **Efficient right** turn from Nahanton
- “ More **capacity** along Dedham

Preferred Alternative identified during the February 1<sup>st</sup> Public Meeting...



# Preferred Alternative — Dedham St. at Carlson Ave. and Brookline St.



- " Shorter/safer **pedestrian crossings**
- " Brookline & Carlson **aligned**
- " New **left turn lane** along Dedham
- " **Aligned left turns** along Dedham
- " **Delineation** for side street turns
- " Efficient use of **Brookline** width
- " **Efficient right** turn from Brookline
- " **More queuing** for Brookline lefts
- " **Impacts:** Mount Ida property  
Utility pole



# Feedback – February 1, 2017 Public Meeting

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## COMMENT:

Improve pedestrian safety at channelized right turn lanes:

- ” Signalization or
- ” Visible Crossings; Straighter Alignment

## RESPONSE:

### **Nahanton St. Intersection**

Preference to shift Nahanton traffic south

Extend sidewalk down Nahanton St.

Maintenance of added green

Queues from Winchester St. intersection

### **Brookline/Carlson Intersection**

Consider eliminating a crosswalk

Brush overgrowth along northern corner



# Feedback – February 1, 2017 Public Meeting

## COMMENT:

Improve pedestrian safety at channelized right turn lanes:  
" Signalization or  
" Visible Crossings; Straighter Alignment



## RESPONSE:

Altered Alignment;  
Options for Highly Visible Crossings



# Highly Visible Crossing Options



Colored Textured Pavement with Shark Teeth Markings



Longitudinal Markings

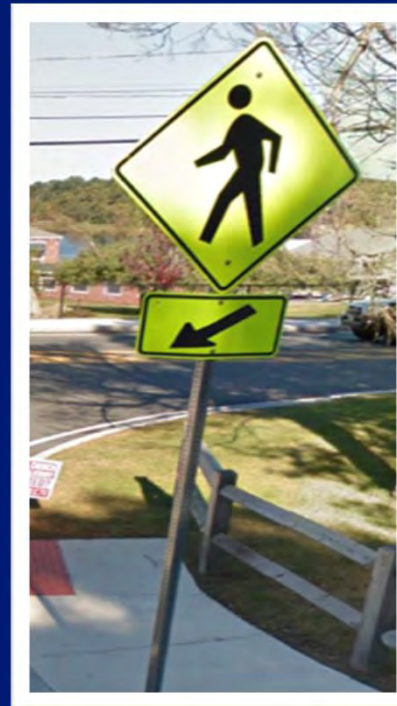


Colored Textured Pavement with Transverse Lines



# Highly Visible Crossing Options

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# Channelized Alignment

**Before** (Preferred Alt. at 2/1 Public Meeting)



**Before** (Preferred Alt. at 2/1 Public Meeting)



**Tighter = Slower  
Speeds**

**Alignment into  
proper lane &  
visibility**

**After** (Preliminary Design)



**Mountable Option  
for Trucks**

**After** (Prelim. Design)





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## Nahanton St. Intersection

Preference to shift Nahanton traffic south



Slight shift to extent possible

Extend sidewalk down Nahanton St.

Maintenance of added green

Queues from Winchester St. intersection

## Brookline/Carlson Intersection

Consider eliminating a crosswalk

Brush overgrowth along northern corner





## Nahanton St. Intersection

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Extend sidewalk down Nahanton St.



Granite curb provided for future sidewalk

Maintenance of added green

Queues from Winchester St. intersection

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City maintenance

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City maintenance



Being investigated by the City

## Brookline/Carlson Intersection

Consider eliminating a crosswalk

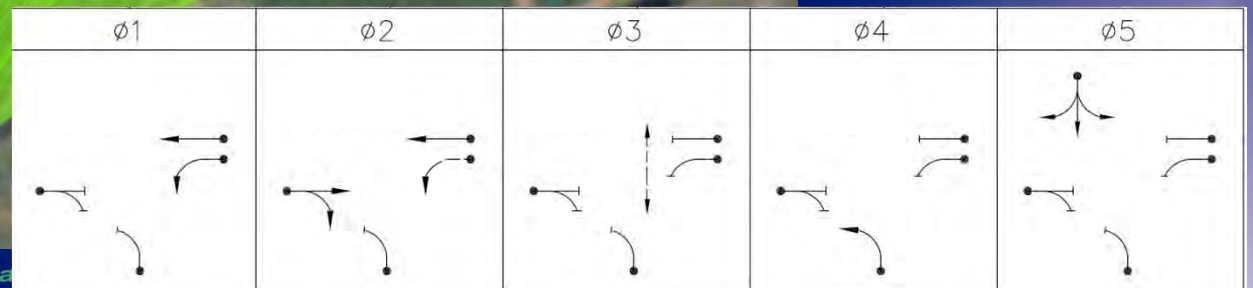
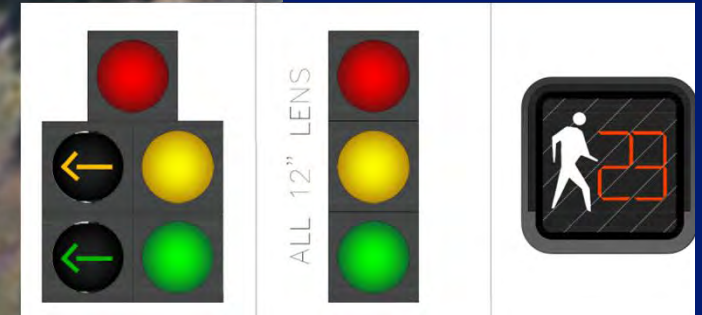
Brush overgrowth along northern corner



# Preliminary Design- Signal Design/Phasing



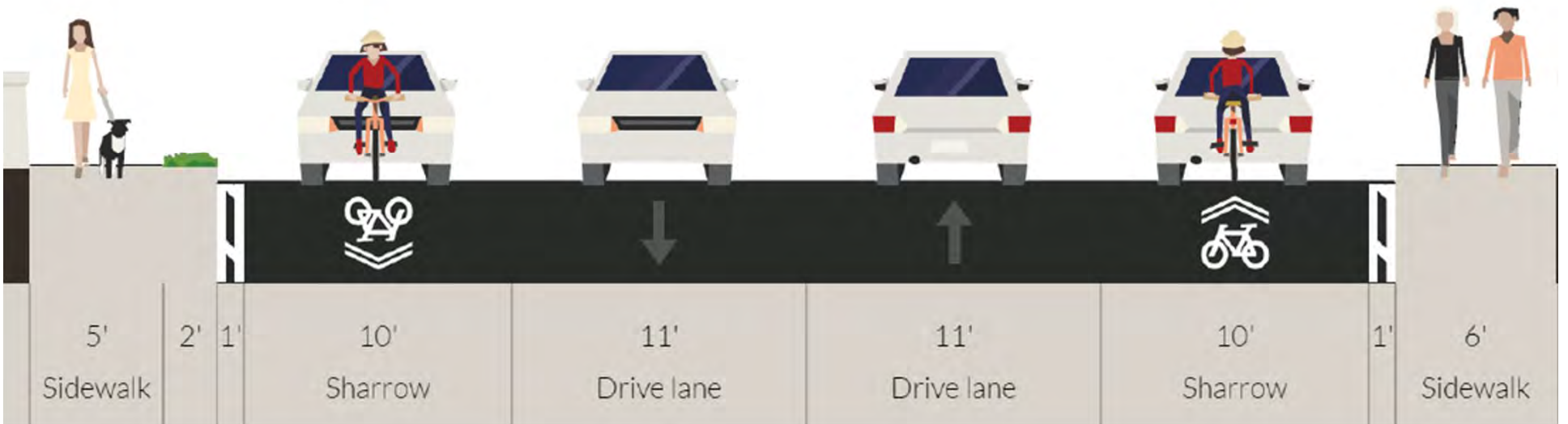
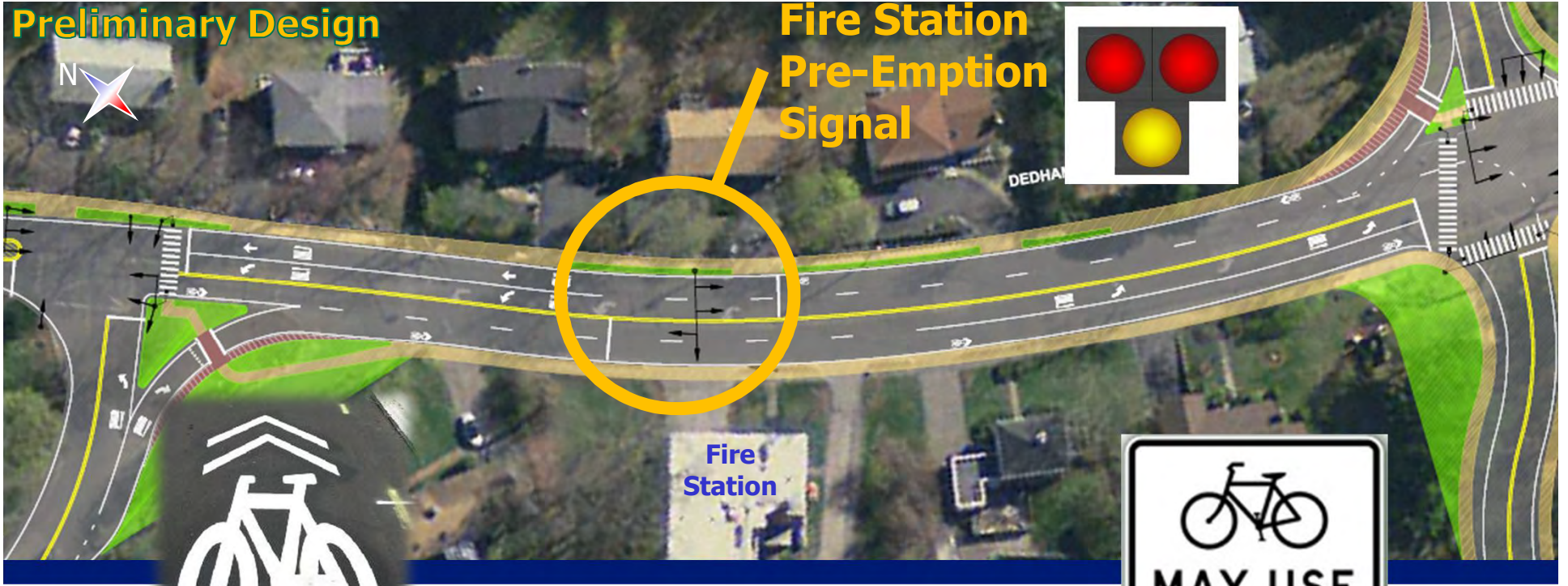
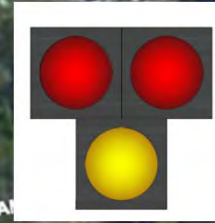
Preliminary Design





# Preliminary Design

## Fire Station Pre-Emption Signal





## Nahanton St. Intersection

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City maintenance

Queues from Winchester St. intersection



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## Brookline/Carlson Intersection

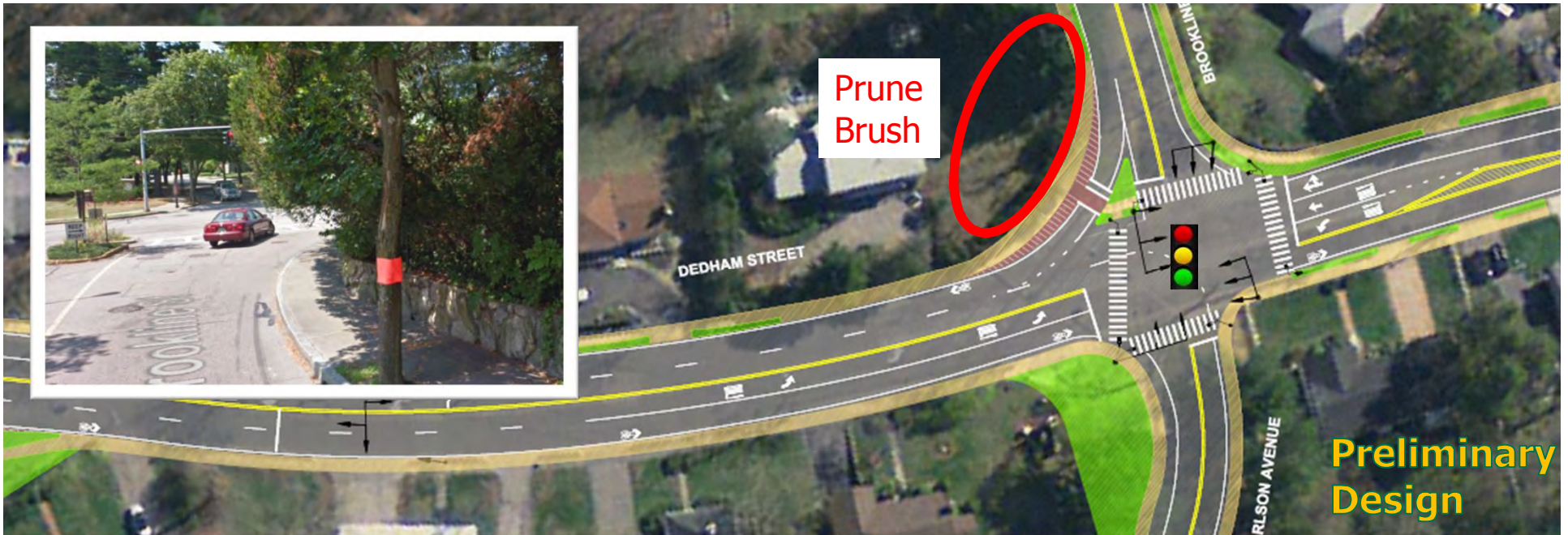
Consider eliminating a crosswalk



Would limit pedestrian circulation

Brush overgrowth along northern corner





### Nahanton St. Intersection

- Preference to shift Nahanton traffic south ➡ Slight shift to extent possible
- Extend sidewalk down Nahanton St. ➡ Granite curb provided for future sidewalk
- Maintenance of added green ➡ City maintenance
- Queues from Winchester St. intersection ➡ Being investigated by the City

### Brookline/Carlson Intersection

- Consider eliminating a crosswalk ➡ Would limit pedestrian circulation
- Brush overgrowth along northern corner ➡ Pruning proposed





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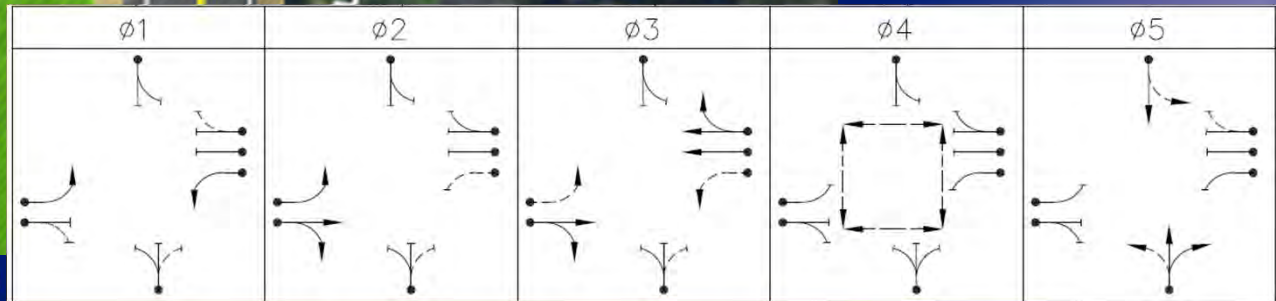
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# Preliminary Design- Signal Design/Phasing



Preliminary Design

## **Next Steps...**

**Preliminary Design (Nearing Completion)**

**Final Design/Bid Document Preparation**

**Bid Phase (Advertise/Bid Review & Award)**

**Construction Phase**



# Construction

**WHEN:** July thru November 2017 (estimated)

**TIMES:** Monday thru Friday  
Off-peak hours (typ. 9am-3pm) within road

**TRAFFIC:** Encourage alternate routes

**ACCESS:** Maintain 1 lane (min.) open each direction  
Maintain Emergency Access  
Maintain driveway access (except during limited periods)

**COMMUNICATIONS:** City notices to abutters  
Website

**QUESTIONS/CONCERNS:**

Contact Nicole Freedman  
City's Director of Transportation  
[nfreedman@newtonma.gov](mailto:nfreedman@newtonma.gov)

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# *Thank you!*



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