

CLARENDON HILL:

# **Traffic Impact Summary**

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February 8, 2017

# ***General Trends – Ways of getting around***

- **In the Clarendon Hill census tract (the site and the broader neighborhood)**
  - **43% drive**
  - **40% public transportation**
  - **6% carpool**
  - **5% walk**
  - **3% bicycle, 2% work at home**
- **Car ownership rates on the decline – car registration is growing more slowly than population**
  - **In recent years car ownership has actually gone down**

# Study Intersections



# Existing Traffic Data

	East-West Road	North-South Road	Lane	Existing	
				AM Peak Hour	PM Peak Hour
1	Broadway	Alewife Brook Parkway	EB LTR	F	F
			WB LTR	F	F
			NB LTR	F	F
			SB LTR	F	F
			Overall	F	F
2	Powder House Boulevard	Alewife Brook Parkway	EB LT	D	F
			NB R	C	F
			SB TL	F	C
			Overall	--	--
3	Powder House Boulevard	North Street	EB LTR	F	F
			WB LTR	C	E
			NB LTR	F	E
			SB LTR	F	D
			Overall	F	F
4	Broadway	North Street	EB LT	C	C
			WB TR	B	B
			SB LR	F	E
			Overall	E	C
5	Powder House Boulevard	Curtis Street	WB TR	C	F
			NB LTR	D	D
			SB LR	E	D
			EB LT	D	F
			Overall	D	E

	East-West Road	North-South Road	Lane	Existing	
				AM Peak Hour	PM Peak Hour
6	Broadway	Curtis Street and Holland Street	EB LT	C	C
			EB R	B	A
			WB TR	C	C
			NB LT	E	F
			NB R	A	A
Overall	C	E			
7	Site Driveway	North Street	EB LR	B	B
			NB LT	A	A
			SB TR	--	--
			Overall	--	--
8	Site Driveway	Powder House Boulevard	EB LR	C	C
			NB LT	A	A
			SB TR	--	--
Overall	--	--			
9	Site Driveway	Alewife Brook Parkway	WB R	N/A	N/A
			NB TR	N/A	N/A
			SB T	N/A	N/A
			Overall	N/A	N/A

# Number of New Commuters

Net New Trips	AM Peak Hour	PM Peak Hour
Proposed Trips (531 Dwelling Units)	264	309
Existing Trips (216 Dwelling Units)	110	136
<b>Net Trips</b>	<b>154</b>	<b>173</b>

This includes ALL projected trips: by car, transit, foot, or bicycle

MEANS OF TRANSPORTATION TO WORK	Census Tract 3507	Avg. of 3 Census Tracts*
Car, truck, or van	49.3%	<b>62.1%</b>
Drove alone	43.3%	<b>57.2%</b>
Carpooled:	6.0%	<b>4.9%</b>
In 2-person carpool	4.6%	<b>4.1%</b>
In 3-person carpool	0.0%	<b>0.2%</b>
In 4 person carpool	1.4%	<b>0.6%</b>
Public transportation	40.4%	<b>25.7%</b>
Walked	5.2%	<b>4.0%</b>
Bicycle	3.1%	<b>4.2%</b>
Other means	0.0%	<b>0.6%</b>
Worked at home	2.0%	<b>3.4%</b>

\*Census Tracts 3563 and 3567.01 were averaged with Census Tract 3507 to provide a more conservative analysis.



# *Number of Commuters - Vehicles*

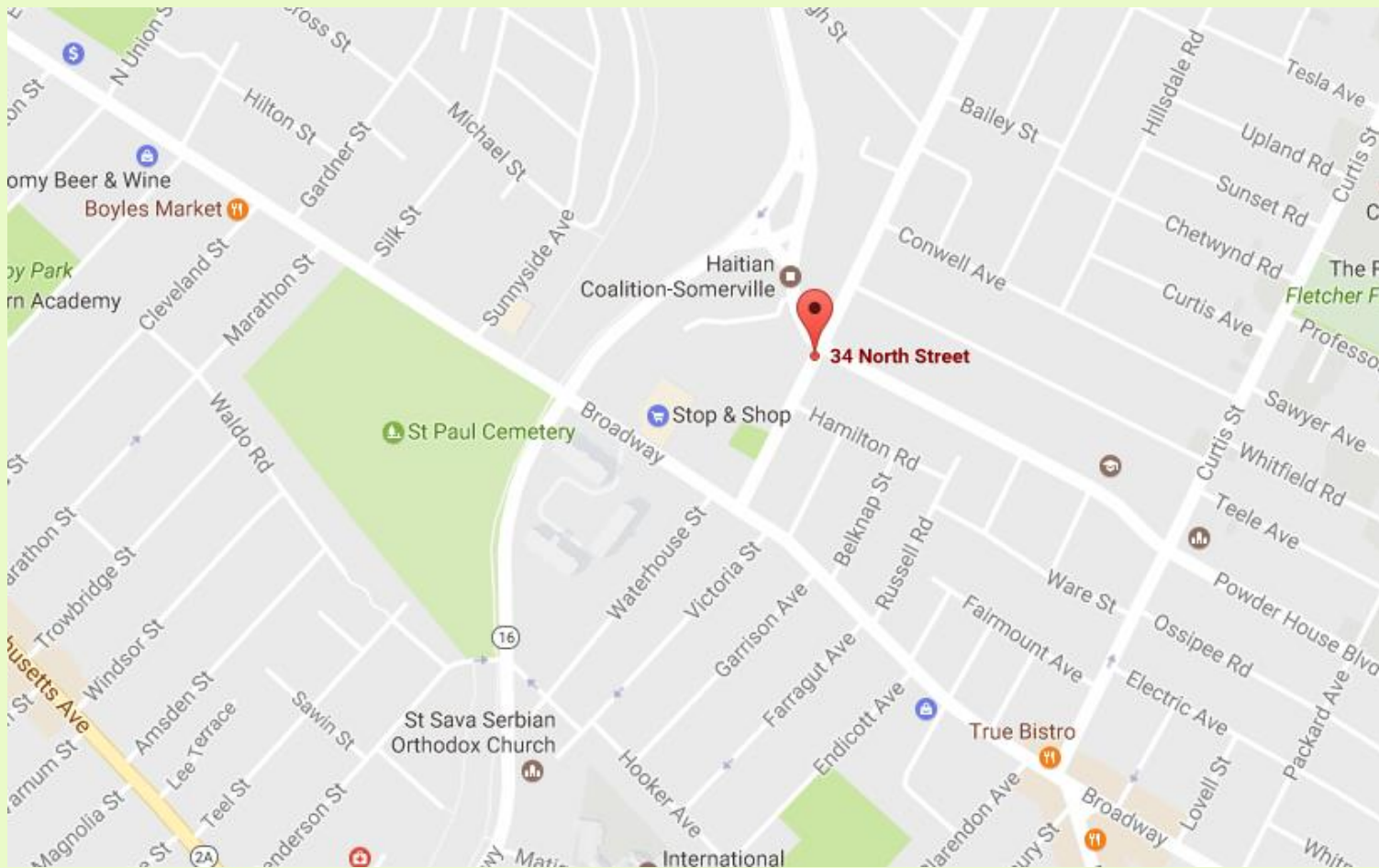
96 Vehicle-Trips during AM Peak Hour – one trip every 40 seconds

108 Vehicle-Trips during PM Peak Hour – one trip every 30 seconds

	AM Peak Hour	PM Peak Hour	Daily
Base Trips	154	173	1910
Total Person-Trips	169	190	2101
Total Person-Vehicle-Trips	105	118	1305
<b>Total Vehicle-Trips</b>	<b>96</b>	<b>108</b>	<b>1186</b>
Entering Vehicle-Trips	19	70	593
Exiting Vehicle-Trips	77	38	593
Total Public Transportation Trips	43	48	540
Total Bicycle Trips	7	8	88
Total Walking Trips	7	8	84
Total Other Trips	7	8	84

# *Number of Commuters - Vehicles*

96 vehicle trips in peak AM & 108 vehicle trips in peak PM, but...through multiple intersections.



## ***Number of Commuters – Public Transportation***

- 43 new riders on the bus during AM Peak Hour
- 48 new riders on the bus during PM Peak Hour
- There are currently 13 buses per hour at Clarendon Hills during both AM and PM Peak Hours. There will be less than 4 people per bus (total capacity of 13 buses is 910).

	<b>AM Peak Hour</b>	<b>PM Peak Hour</b>	<b>Daily</b>
Base Trips	154	173	1910
Total Person-Trips	169	190	2101
<b>Total Public Transportation Trips</b>	<b>43</b>	<b>48</b>	<b>540</b>

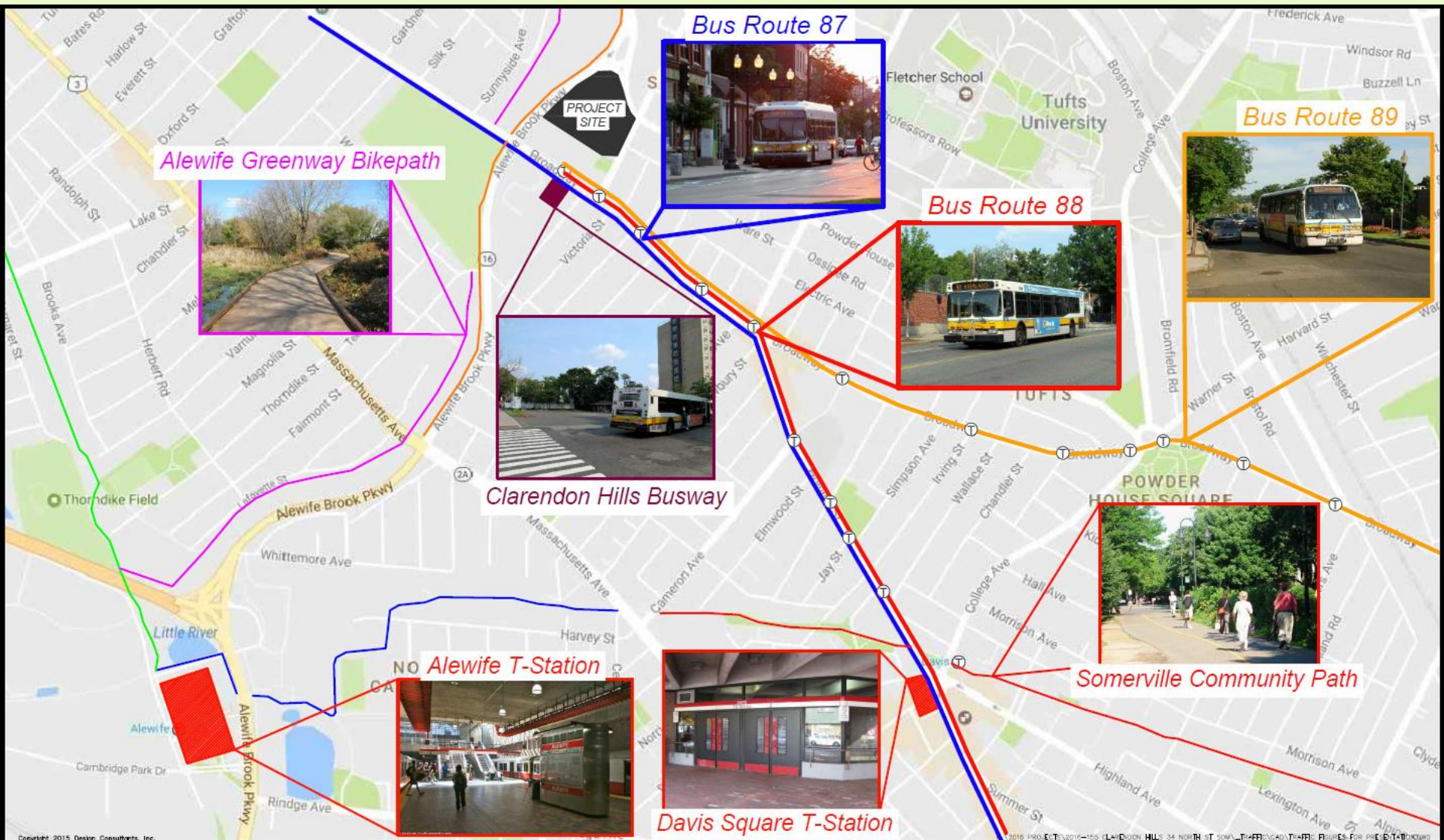


## ***Number of Commuters – Biking and Walking***

- **7 Bicycle trips during the AM Peak Hour and 8 bicycle trips during the PM Peak Hour.**
- **7 Walking Trips during the AM Peak Hour and 8 Walking Trips during the PM Peak Hour**

	<b>AM Peak Hour</b>	<b>PM Peak Hour</b>	<b>Daily</b>
Base Trips	154	173	1910
Total Person-Trips	169	190	2101
<b>Total Bicycle Trips</b>	<b>7</b>	<b>8</b>	<b>88</b>
<b>Total Walking Trips</b>	<b>7</b>	<b>8</b>	<b>84</b>

# Bicycle and Public Transit Facilities



# Example intersection: North Street

AM – Peak Hour

PM – Peak Hour

## North & Powderhouse

NORTH STREET  
 $173 + 3 = 176$



$803 + 28 = 831$   
 POWDER HOUSE  
 BLVD



$396 + 8 = 404$   
 POWDER HOUSE  
 BLVD



$100 + 7 = 107$   
 NORTH STREET

NORTH STREET  
 $112 + 8 = 120$



$609 + 17 = 626$   
 POWDER HOUSE  
 BLVD



$657 + 46 = 703$   
 POWDER HOUSE  
 BLVD



$102 + 4 = 106$   
 NORTH STREET

## North & Broadway

NORTH STREET  
 $346 + 28 = 374$



$546 + 0 = 546$   
 BROADWAY



$479 + 1 = 480$   
 BROADWAY

NORTH STREET  
 $197 + 5 = 202$



$588 + 0 = 588$   
 BROADWAY



$491 + 2 = 493$   
 BROADWAY



# Things that can be done to help

## Rapid Flashing Beacon



## Hawk Signal



## Improved Signal Timing



## Improved Signage





# *Things that can be done to help*

Raised Crosswalks



Speed Table



Bump Outs



ZipCars





# Questions & Observations - Traffic





# CLARENDON HILL: **Traffic Impact Mitigation**

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January 29, 2018

# Traffic – Level of Service

## SIGNALIZED INTERSECTION

Level of Service	Experience for Driver
A	Delay < 10 seconds
B	Delay > 10-20 seconds
C	Delay > 20-35 seconds
D	Delay > 35-55 seconds
E	Delay > 55-80 seconds
F	Delay > 80 seconds

## UNSIGNALIZED INTERSECTION

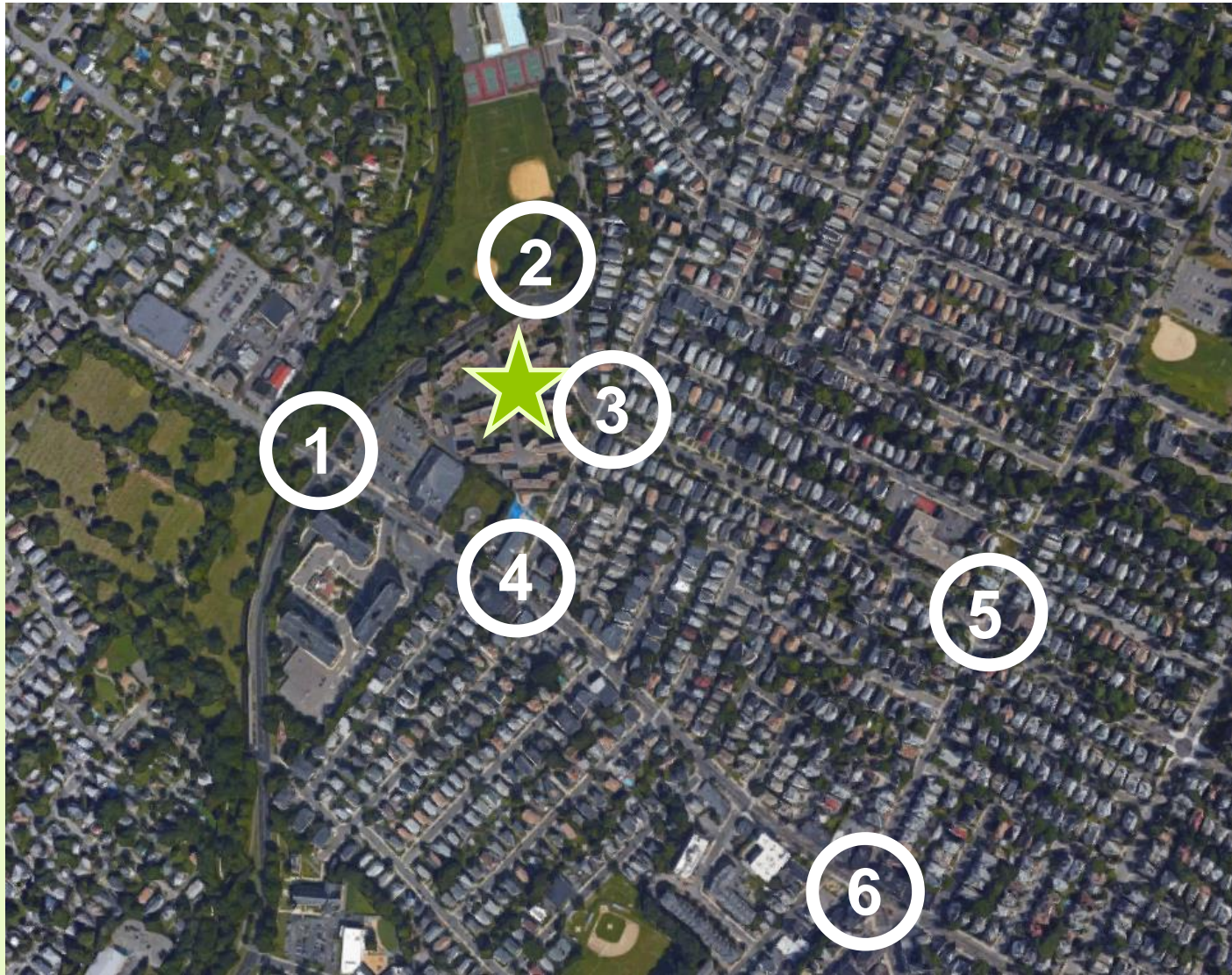
Level of Service	Experience for Driver
A	Delay < 10 seconds
B	Delay > 10-15 seconds
C	Delay > 15-25 seconds
D	Delay > 25-35 seconds
E	Delay > 35-50 seconds
F	Delay > 50 seconds

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# Traffic

## STUDY AREA

1. Alewife Brook Parkway at Broadway
2. Alewife Brook Parkway at Powder House Boulevard
3. Powder House Boulevard at North Street
4. Broadway at North Street
5. Powder House Boulevard at Curtis Street
6. Broadway at Holland Street and Curtis Street (Teele Square)



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# Traffic

## AM PEAK HOUR

- Baseline/Build with Mitigation LOS



1	Broadway / Alewife	F → F
2	Powder House / Alewife	F → C
3	Powder House / North	F → E
4	Broadway / North	E → C
5	Powder House / Curtis	D → C
6	Broadway / Curtis	C → B

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# Traffic

## AM PEAK HOUR

- Four (4) overall intersections have an improvement in level of service after mitigation is applied

1	Alewife / Broadway	--
2	Alewife / Powder House	+1
3	Powder House / North	+1
4	Broadway / North	+1
5	Powder House / Curtis	+1
6	Broadway / Curtis	+1



Improvement is measured from Existing Conditions to Build with Mitigation Conditions

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# Traffic

## PM PEAK HOUR

- Baseline/Build with Mitigation LOS



1	Broadway / Alewife	F → F
2	Powder House / Alewife	F → C
3	Powder House / North	F → D
4	Broadway / North	C → B
5	Powder House / Curtis	E → D
6	Broadway / Curtis	E → C

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# Traffic

## PM PEAK HOUR

- Four (4) overall intersections have an improvement in level of service after mitigation is applied

1	Alewife / Broadway	--
2	Alewife / Powder House	--
3	Powder House / North	+1
4	Broadway / North	+1
5	Powder House / Curtis	+1
6	Broadway / Curtis	+1



Improvement is measured from Existing Conditions to Build with Mitigation Conditions

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# Traffic – Proposed “T” Intersection



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# Traffic – Proposed Mitigation

## New Pedestrian Ramps



## New Pedestrian Push Buttons



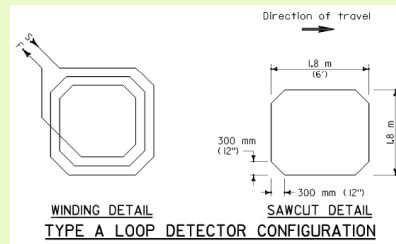
## Improved Signage



## New Pedestrian Signal Heads



## Improved Vehicle Detection



## New Traffic Control Cabinets



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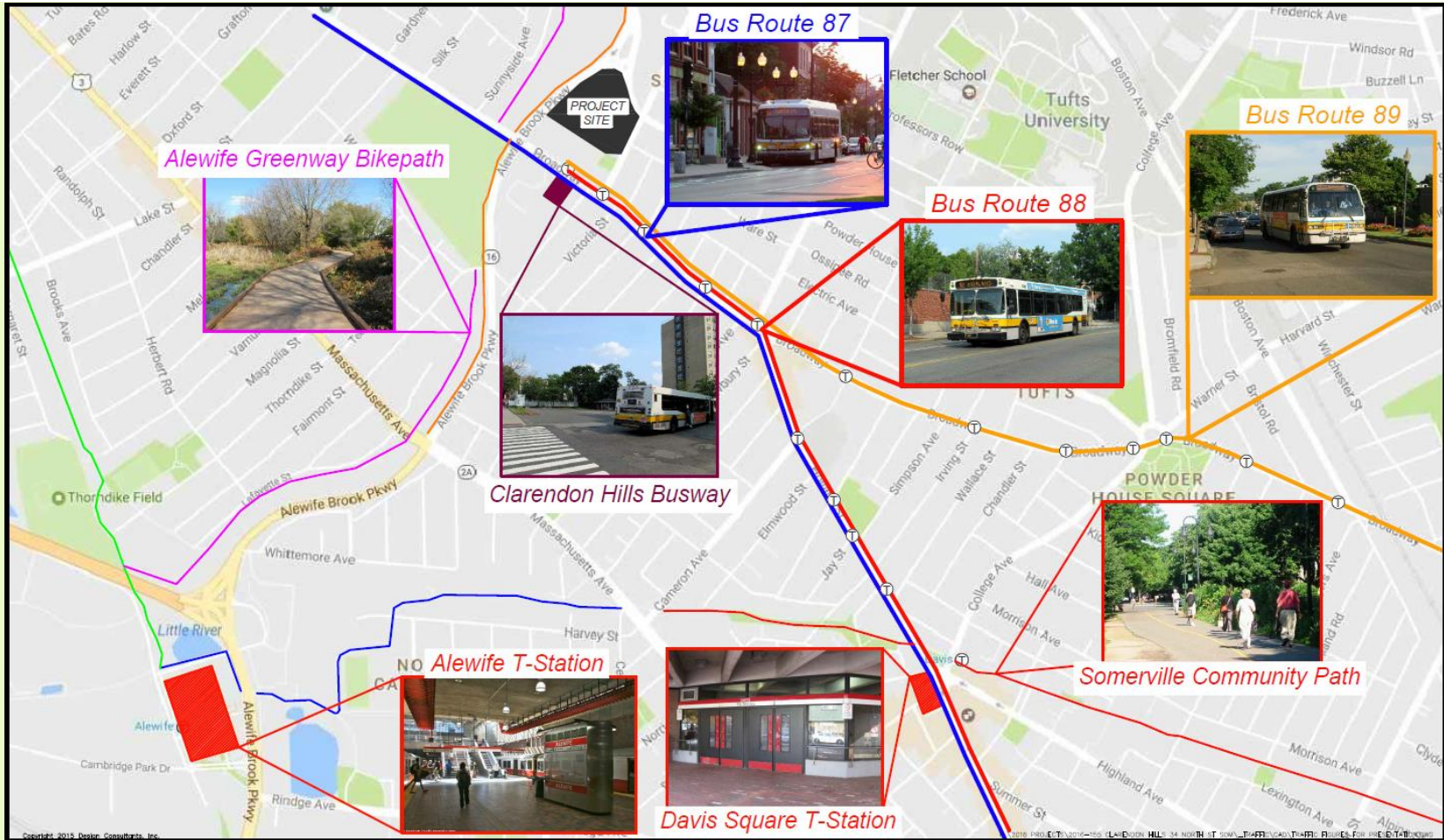
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# Bus, Walking, Biking



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