

Welcome!

Route 28 at Chickatawbut Road Intersection
Improvements Project
Milton, MA

Public Information Meeting
Milton, MA
July 23, 2019 | 6:30 PM

Introduction

MassDOT

- Michael Trepanier
- Joshua Bartus

Howard Stein Hudson – MassDOT's Design Consultant

- Jessica Lizza
- Mark Gravallese

Agenda

- **Project Overview**
- **Existing Conditions**
- **Alternative Designs**
- **Preferred Alternative Design**
- **Questions & Answers**

Project Overview

The intersection of Randolph Avenue (Route 28) at Chickatawbut Road is a high crash location.

The goal of this project is to provide improvements at Randolph Avenue (Route 28)/Chickatawbut Road to enhance safety.

Location and Context



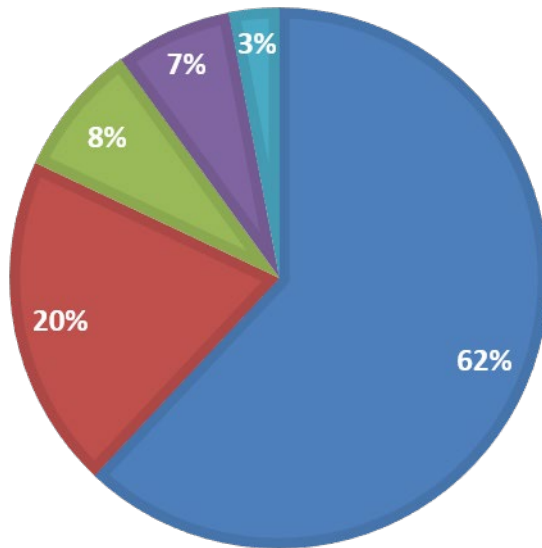
Location and Context



Crash Data

2012-2015 CRASHES

■ Angle ■ Rear-End ■ Sideswipe ■ Head-on ■ Single crash



- #7 on list of Statewide Top 200 Crash Locations
- 68% of crashes involved left-turning northbound and southbound colliding with through traffic
- 60 crashes: 34 injuries, 1 fatality
- One crash involved a cyclist
- Most crashes occurred during morning and evening peak periods

Existing Safety Concerns

High
Vehicle
Speeds



Existing Safety Concerns

Congestion



Existing Safety Concerns

Permissive
Left Turns



Existing Safety Concerns

Solar
Glare



Existing Safety Concerns

Intersection Approach Grades



Existing Safety Concerns

Poor Pedestrian Facilities



Existing Safety Concerns

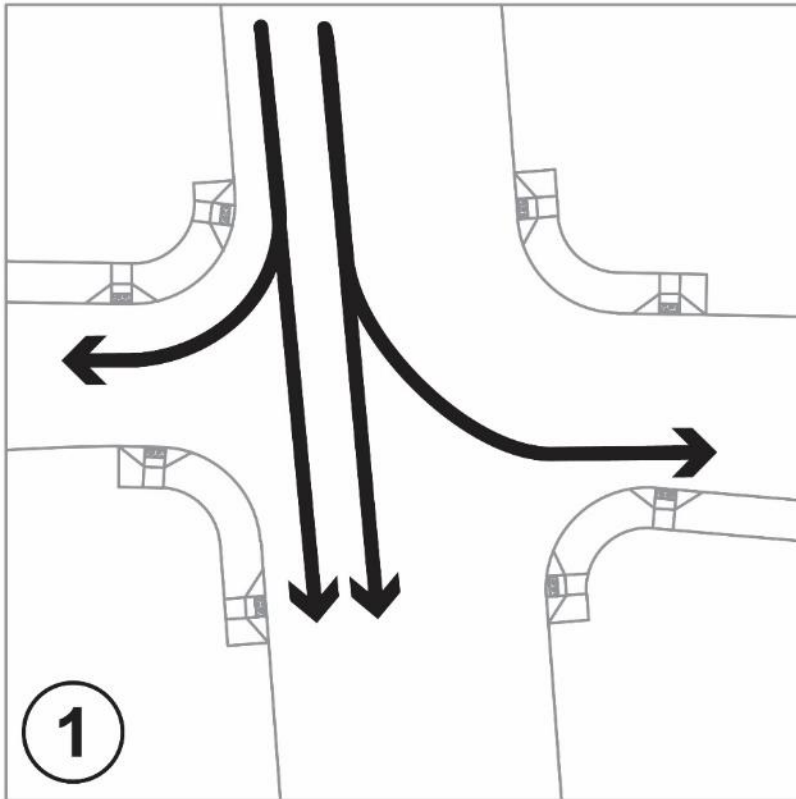
Lack of Cyclist Facilities



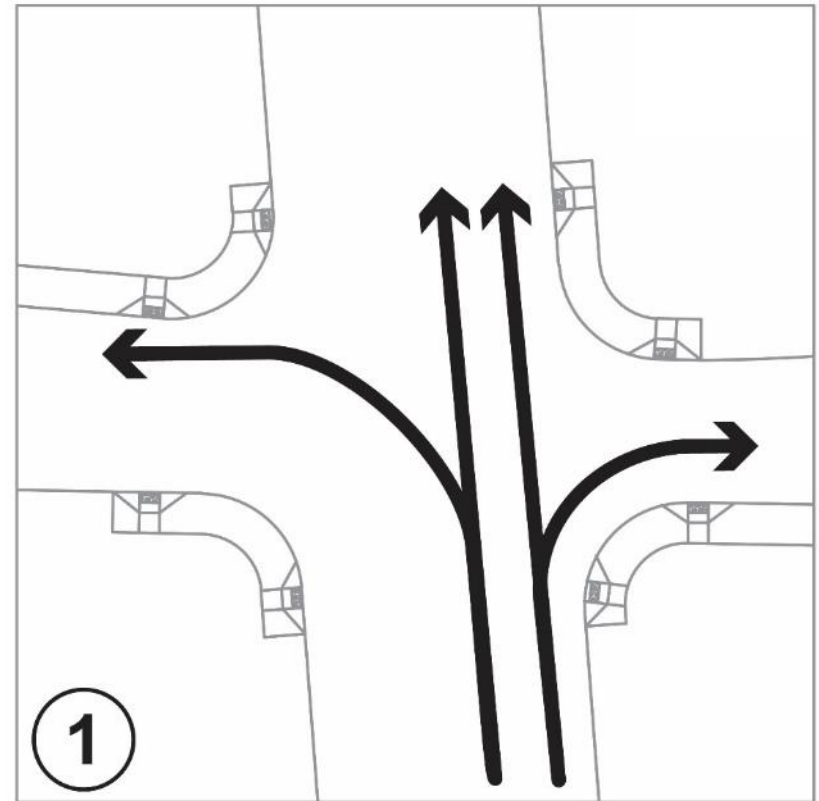
Existing Deficiencies



Existing Signal Phasing

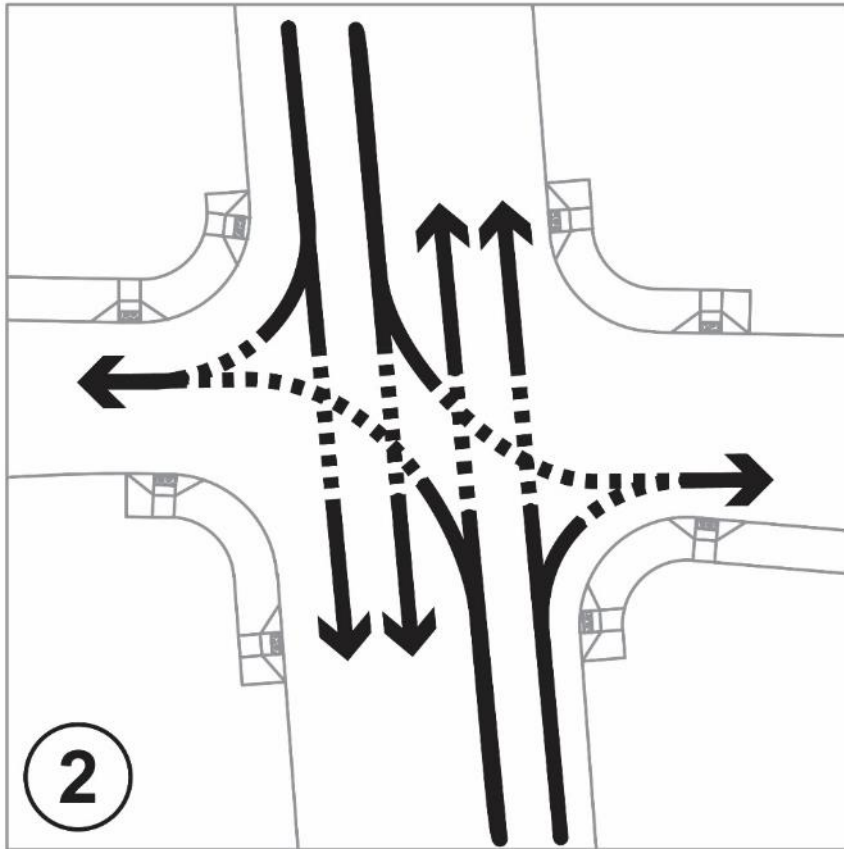


3:00-6:00 PM



ALL OTHER TIMES

Existing Signal Phasing



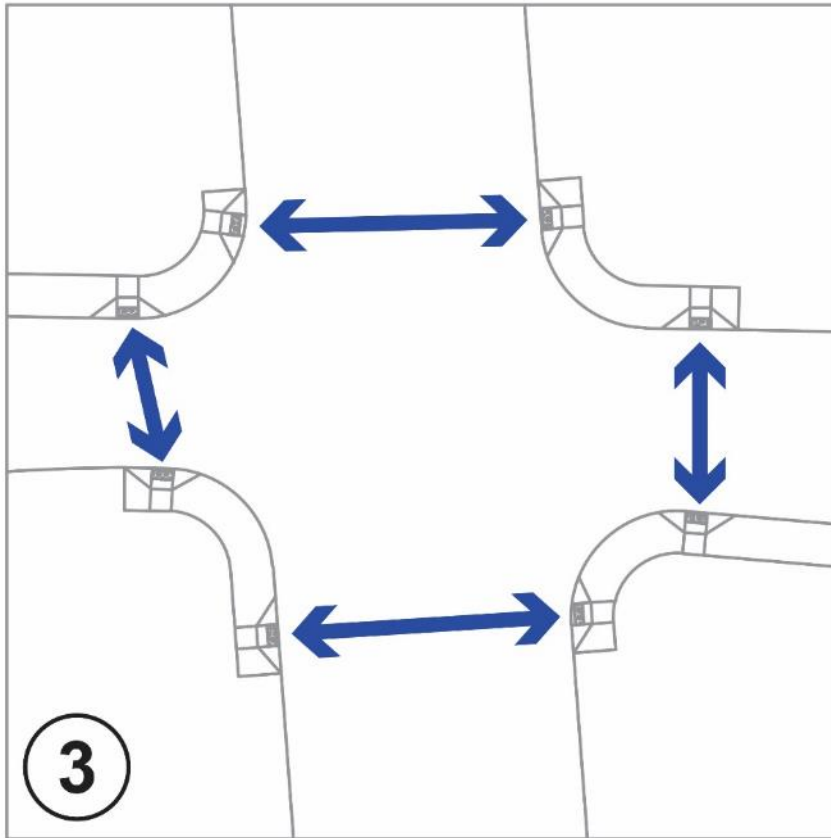
CHICKATAWBUT RD

ROUTE 28



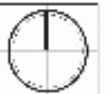
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Existing Signal Phasing



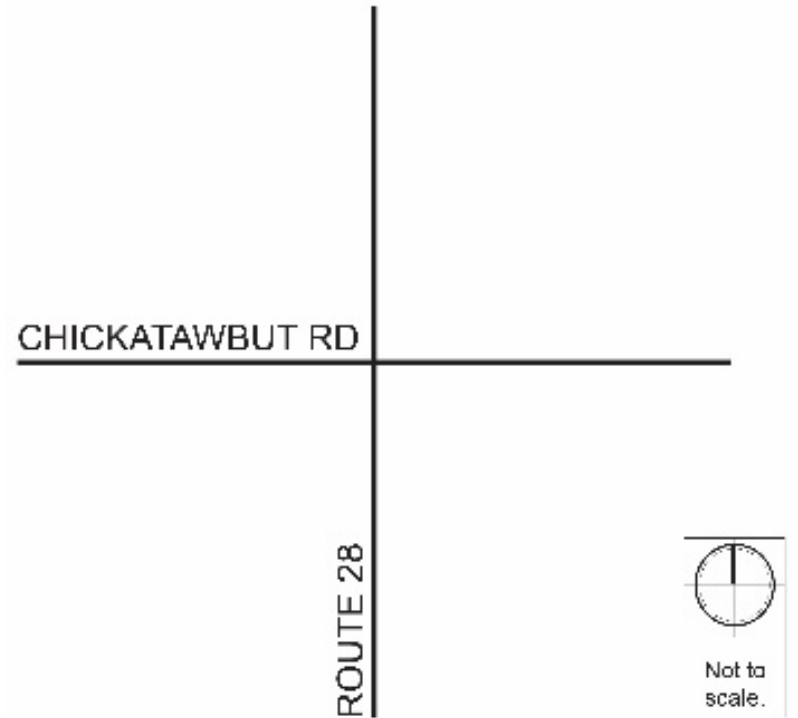
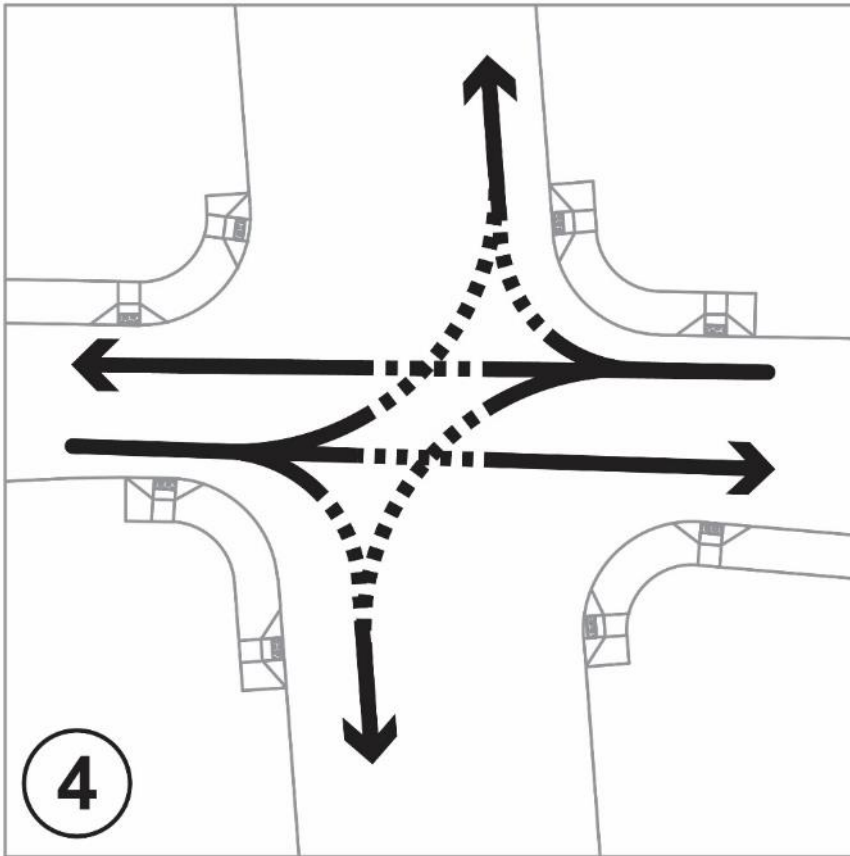
CHICKATAWBUT RD

ROUTE 28

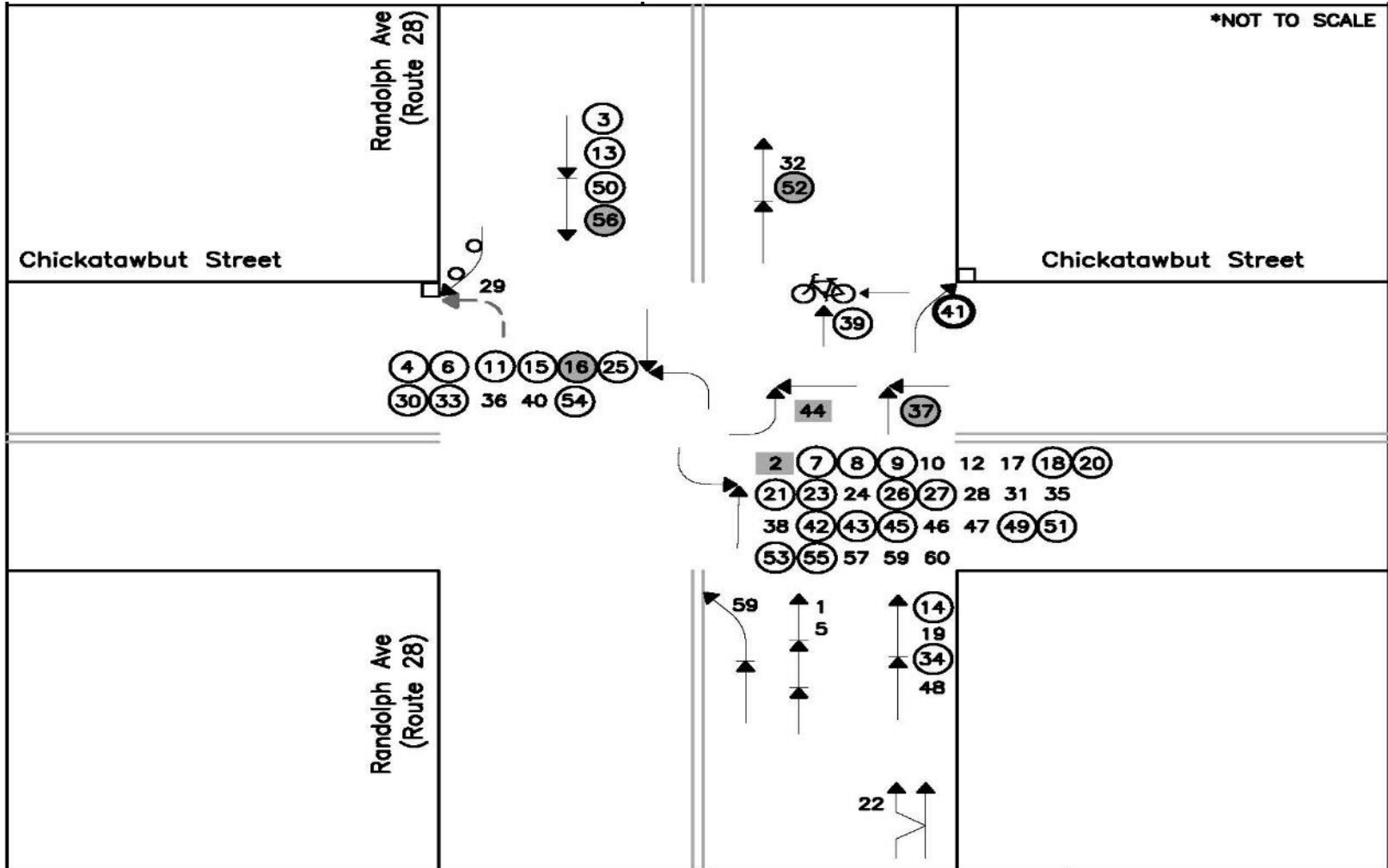


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Existing Signal Phasing



Crash Data 2012-2015

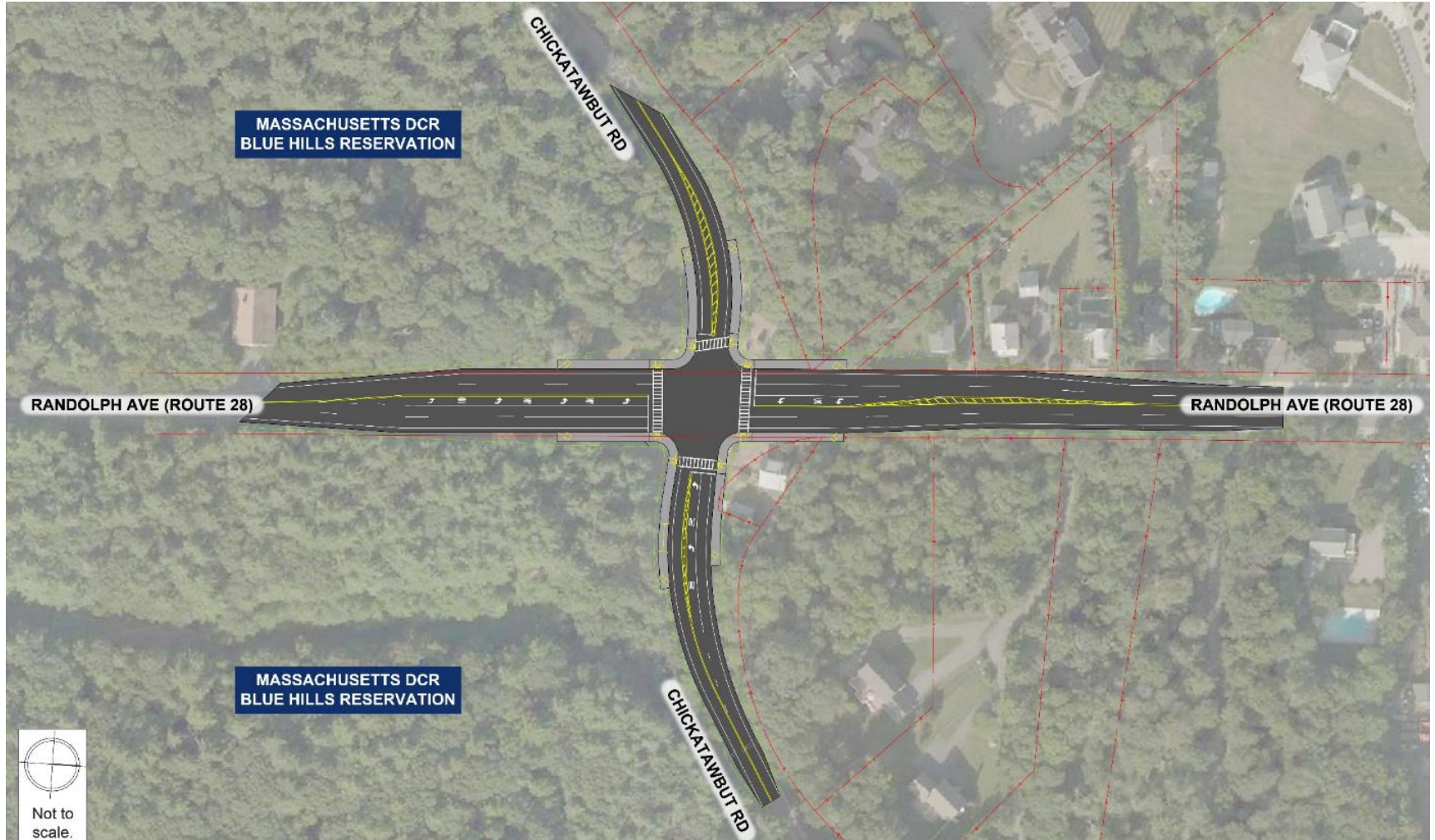


Future Improvements

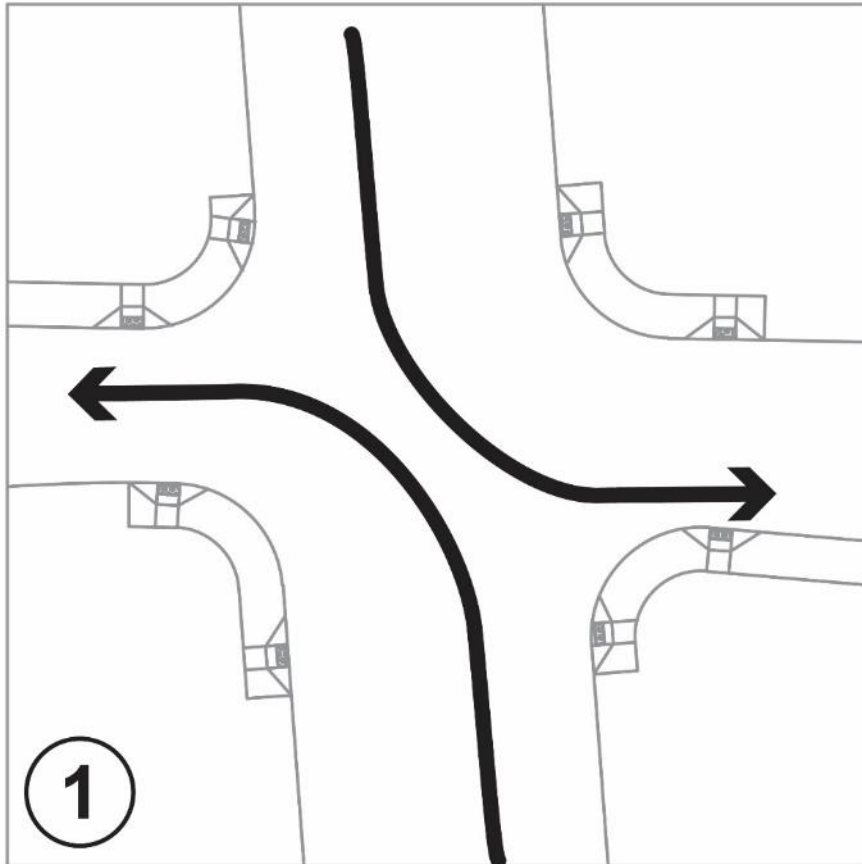
Project Team developed two potential designs to solve existing issues:

1. Improved signalized design
2. Roundabout design – *Preferred Option*

Existing Signal Phasing

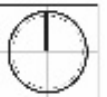


Proposed Signal Phasing



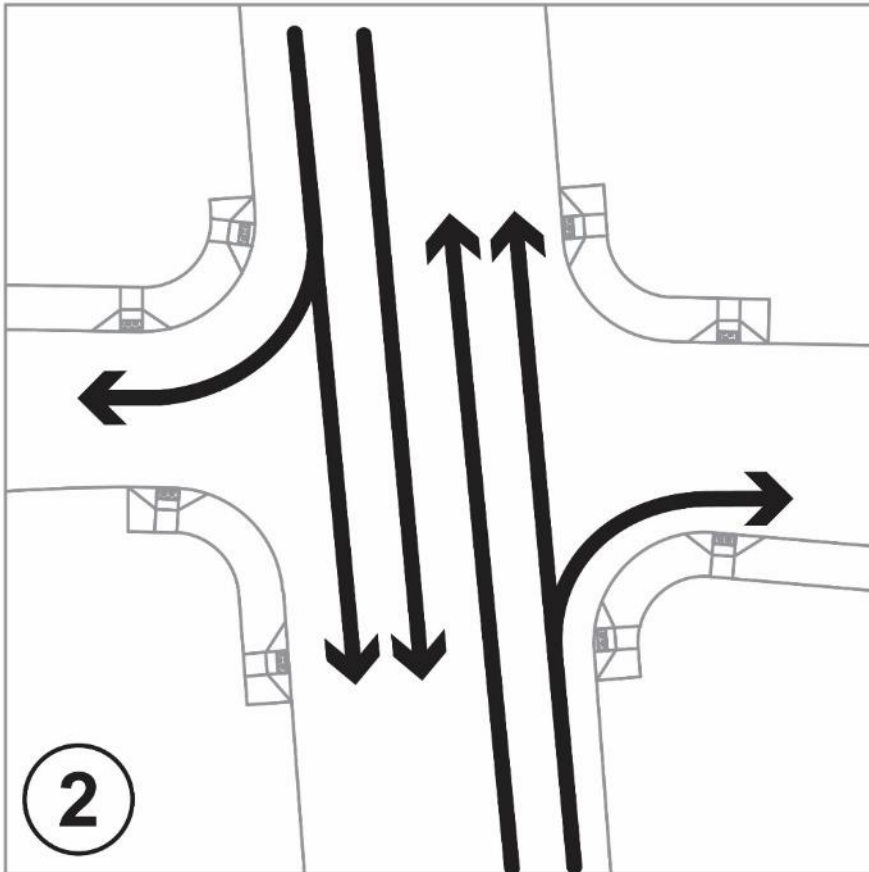
CHICKATAWBUT RD

ROUTE 28



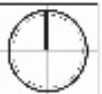
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Proposed Signal Phasing



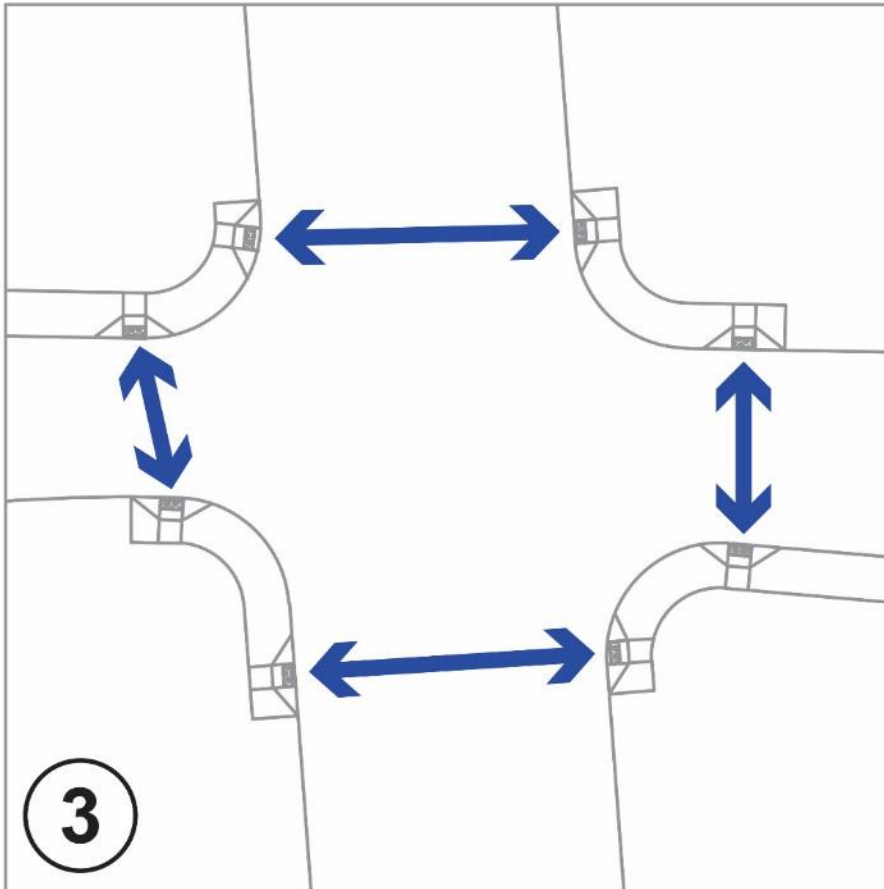
CHICKATAWBUT RD

ROUTE 28



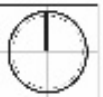
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Proposed Signal Phasing



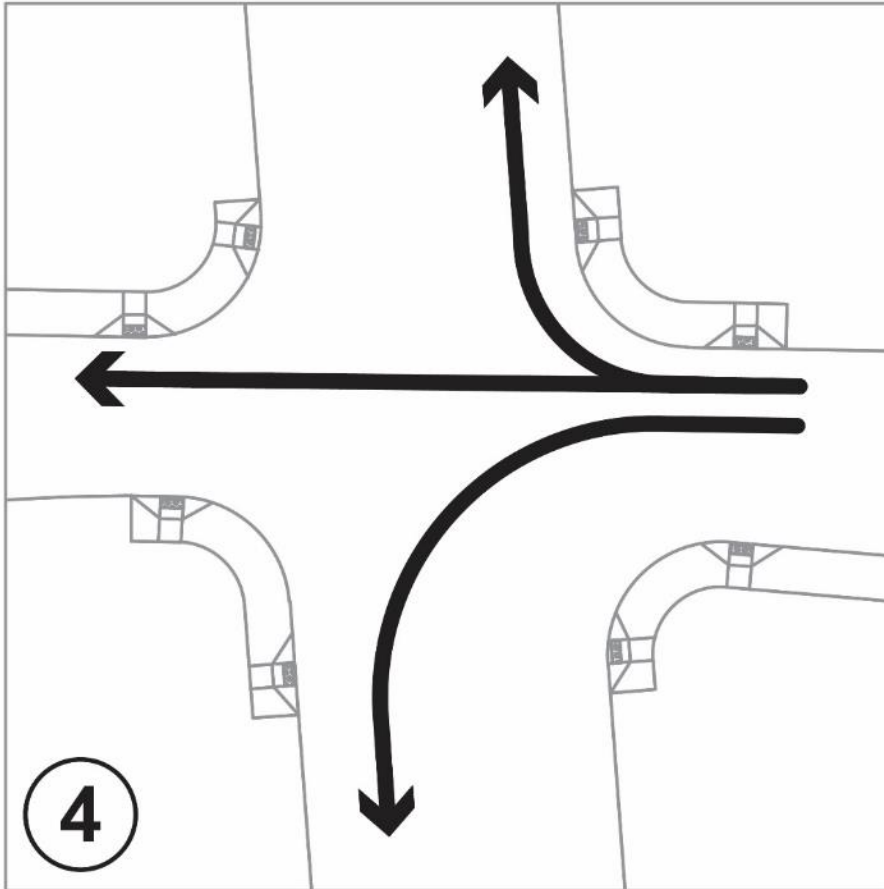
CHICKATAWBUT RD

ROUTE 28



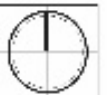
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Proposed Signal Phasing



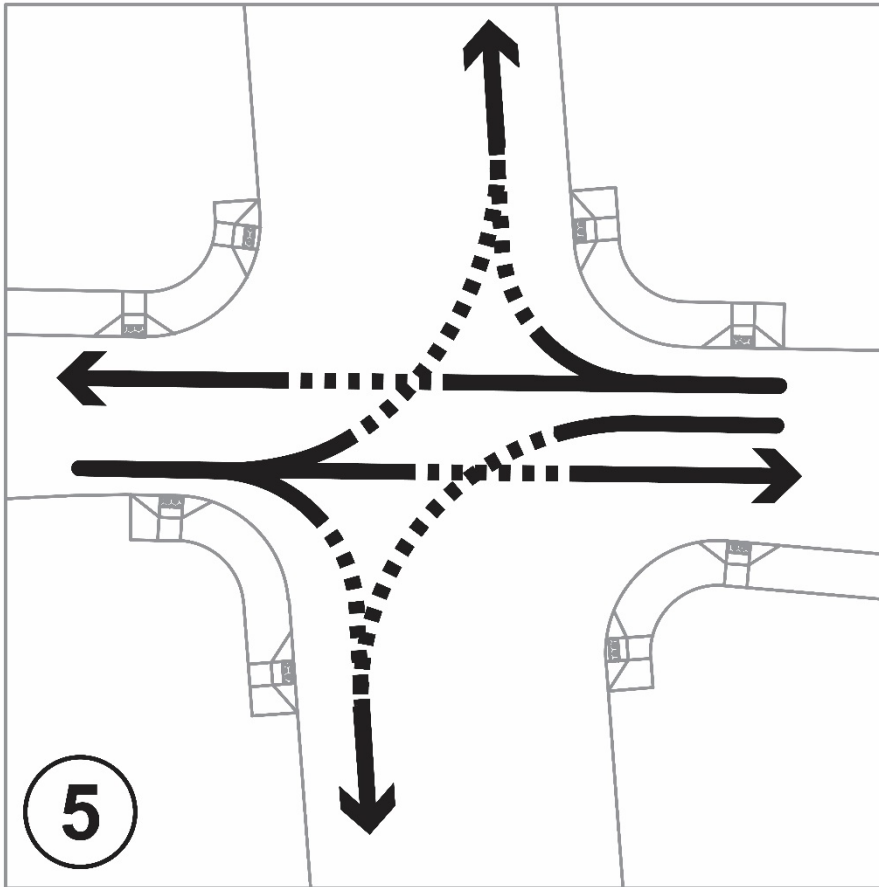
CHICKATAWBUT RD

ROUTE 28



Not to scale.

Proposed Signal Phasing



CHICKATAWBUT RD

ROUTE 28



Not to scale.

Signalized Alternative

Benefits

- Safety improvements for left-turns
- Improved clearance times
- Improved pedestrian and cycle accommodation in intersection

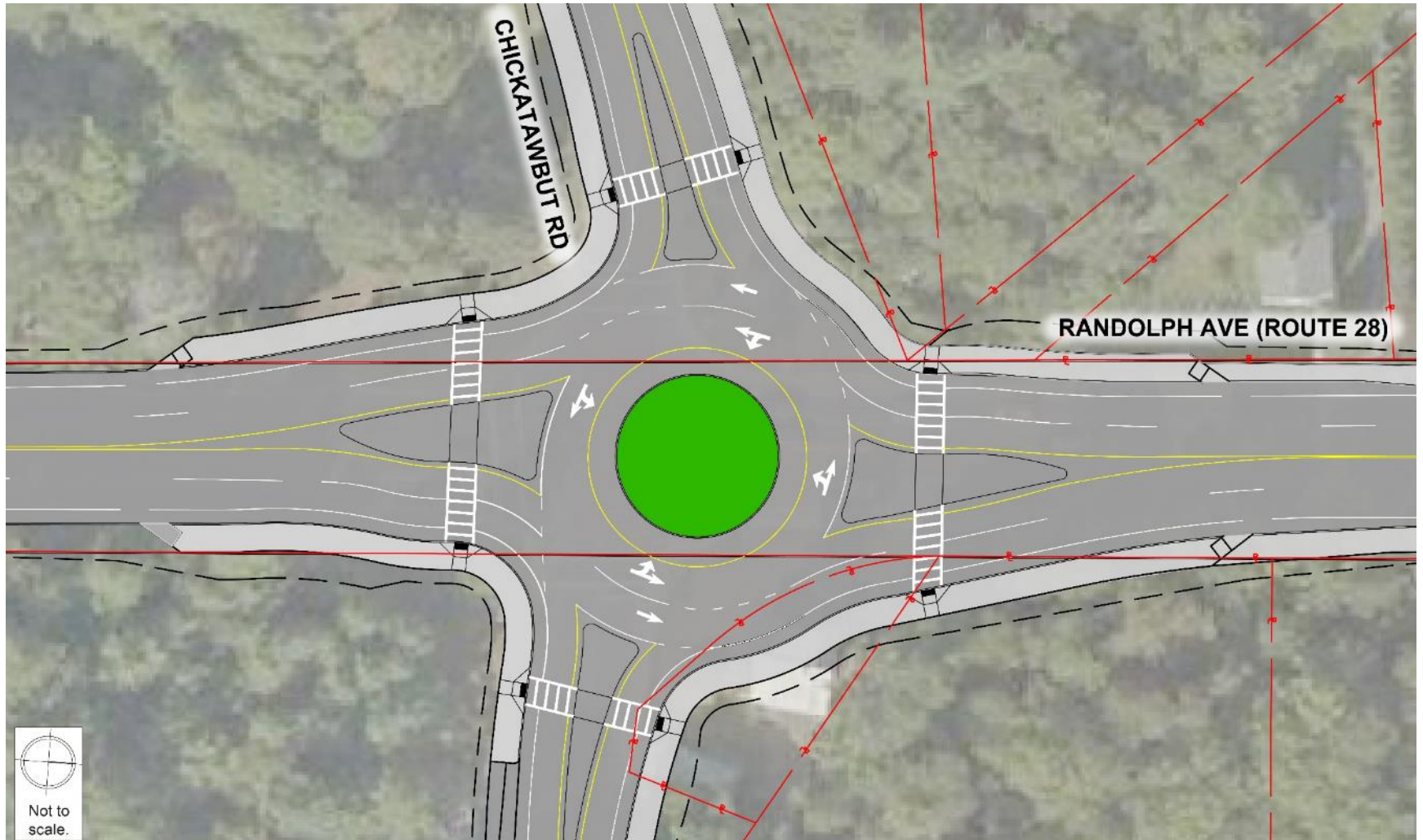
Considerations

- Does not address speeding
- Traffic congestion remains along Route 28
- Right of Way/Property Impacts

Roundabout Alternative



Roundabout Alternative



Rectangular Rapid Flashing Beacon (RRFB)



- Address accessibility challenges of uncontrolled crosswalks
- Provide a high-visibility strobe-like warning to drivers when pedestrians use crosswalk

Roundabout Alternative

Benefits

- Speed Reduction through intersection
- Significant reduction of fatal and injury crashes
- Traffic operations along Route 28 improves
- Improved pedestrian and cyclist accommodations through intersection
- Life cycle cost benefits

Considerations

- Higher level construction difficulty
- Chickatawbut Rd queuing worsens
- Right of Way/Property Impacts
- Unprotected pedestrian crossings

Safety Analysis

Percent of Crashes Reduced Compared to No-Build

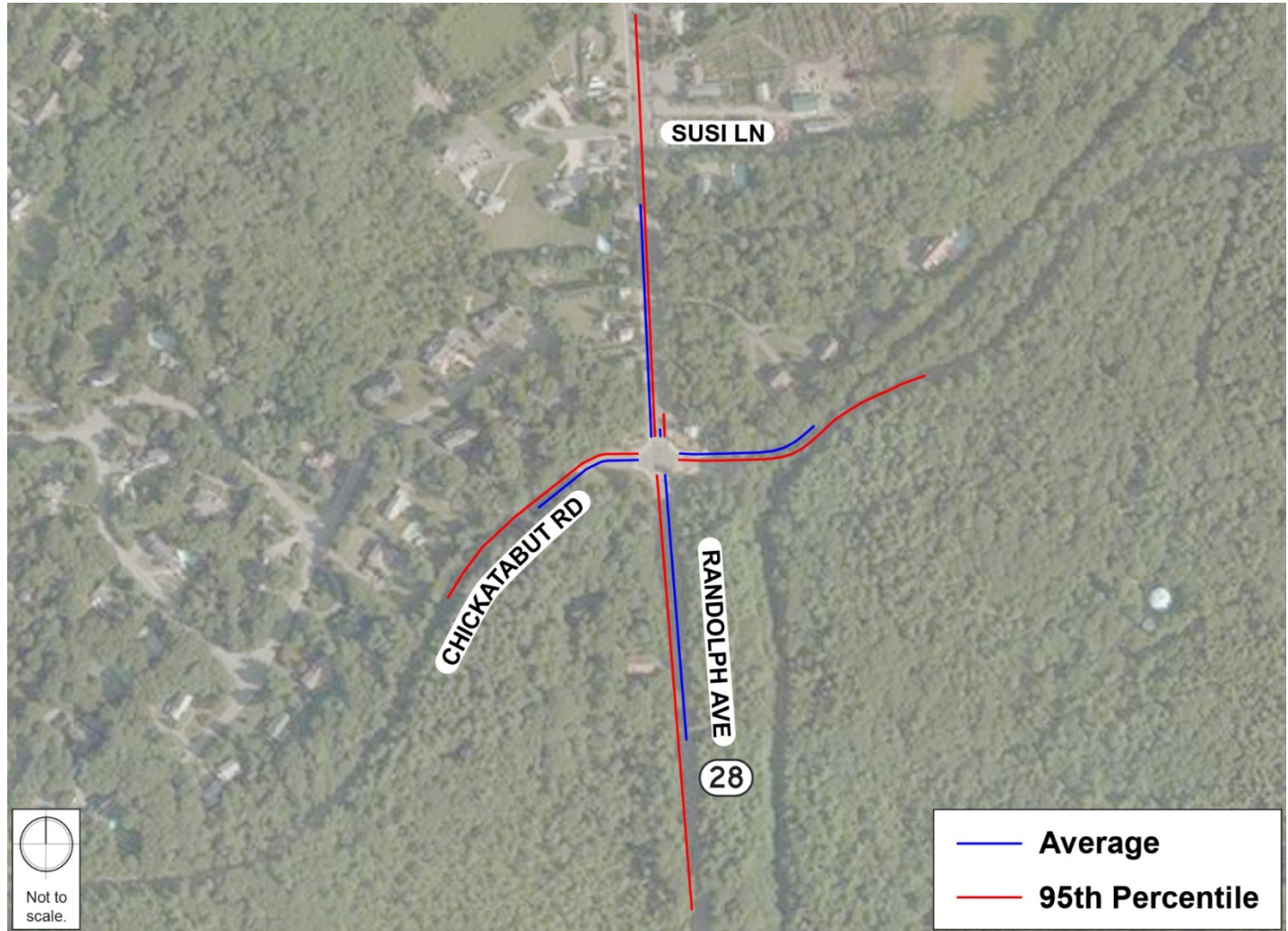
Type of Crash	Signal	Roundabout
All crashes	43%	48%
Fatal and Injury	44%	73%
Property Damage	42%	30%

Traffic Queues

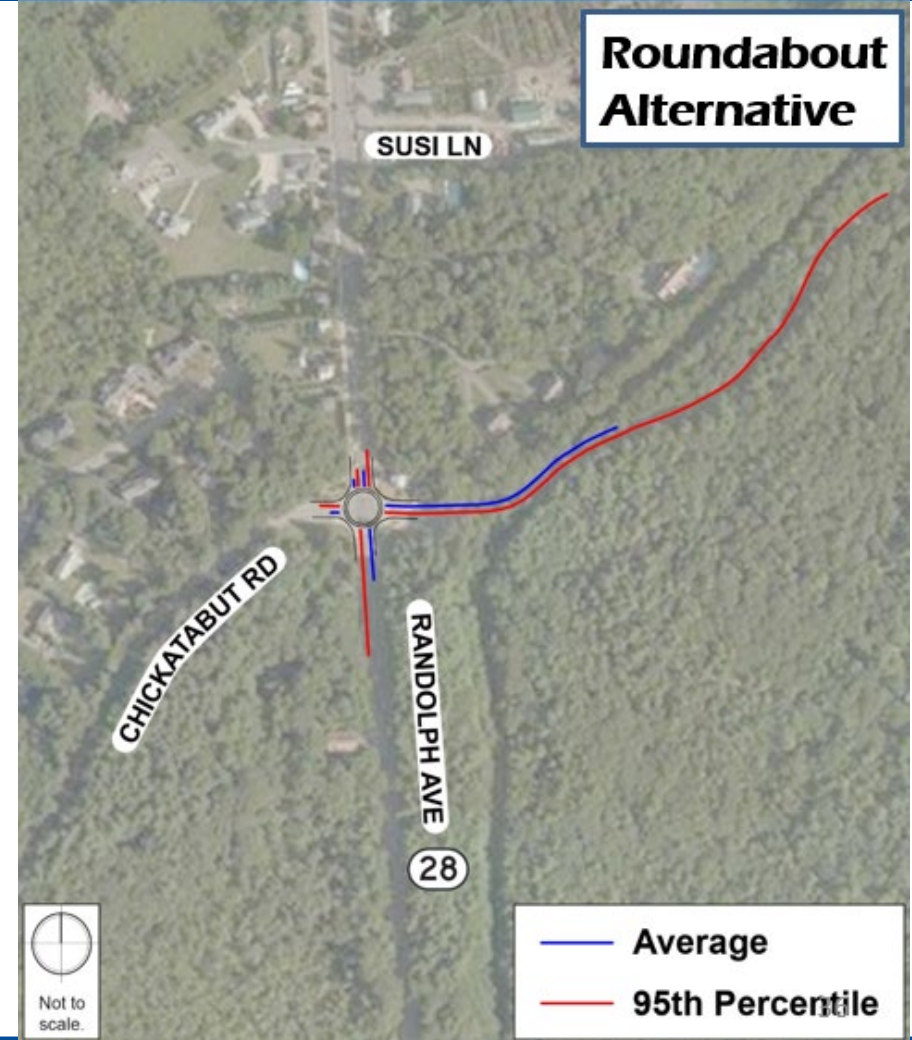
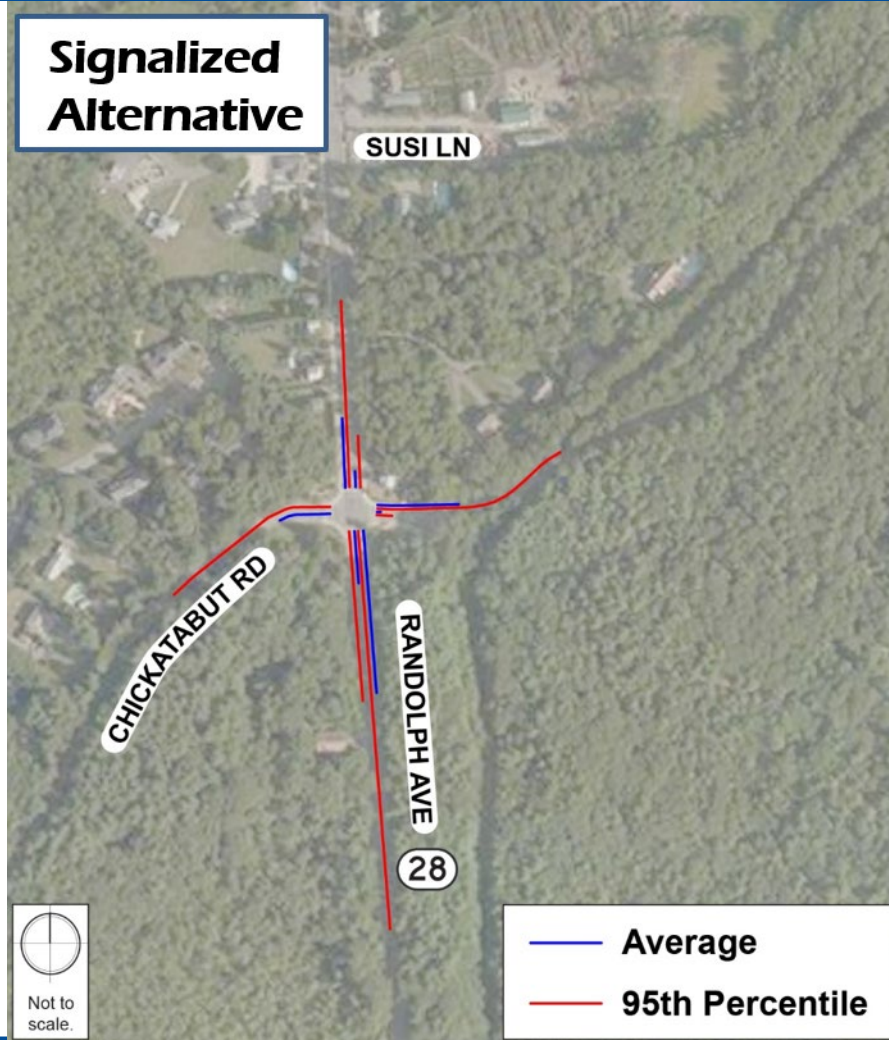
- **What is a traffic queue?**
 - Predicted number of vehicles which will be waiting at the intersection when the traffic light turns from red to green
 - Presented in terms of 50th and 95th percentiles
 - 50th percentile is the average queue throughout the analyzed hour
 - 95th percentile queues occur approximately 5% of the peak hour (~2 signal cycles out of the peak hour and lasts under 5 minutes but can take up to 15 minutes to resolve)

Predicted 2027 AM Traffic

No-build



Predicted 2027 AM Traffic



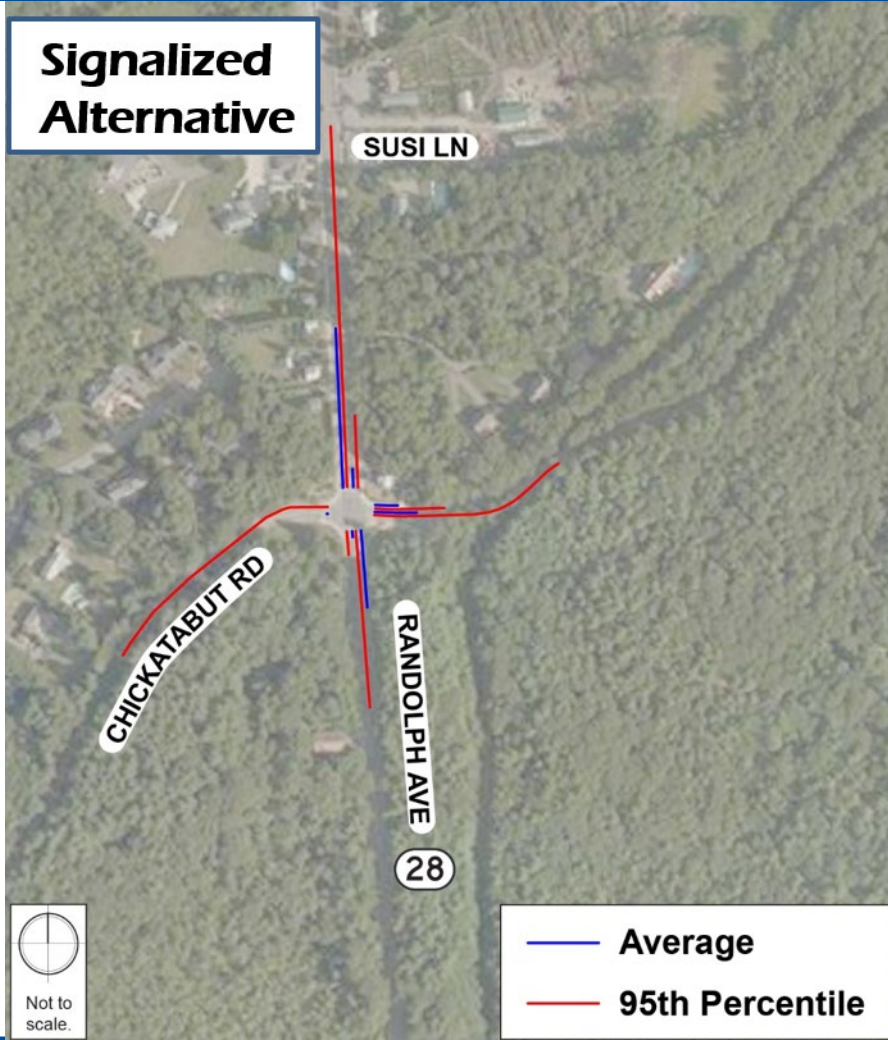
Predicted 2027 PM Traffic

No-build

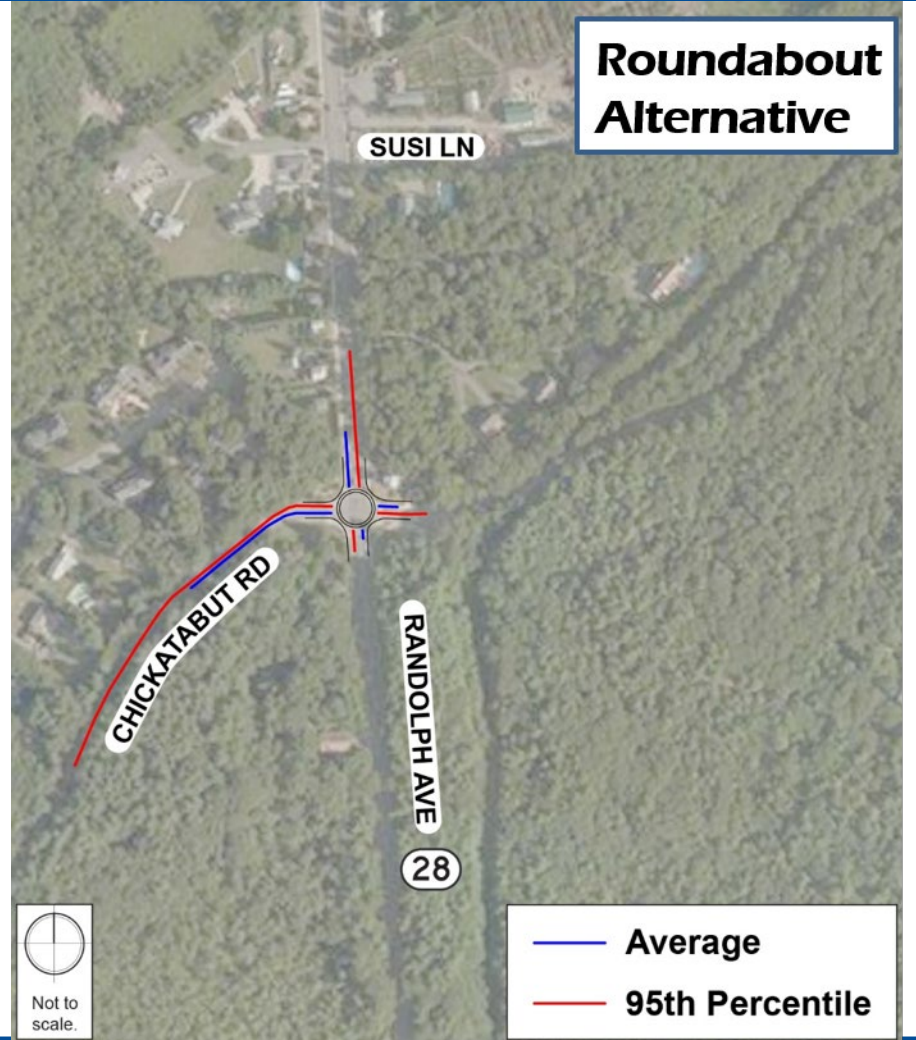


Predicted 2027 PM Traffic

**Signalized
Alternative**



**Roundabout
Alternative**



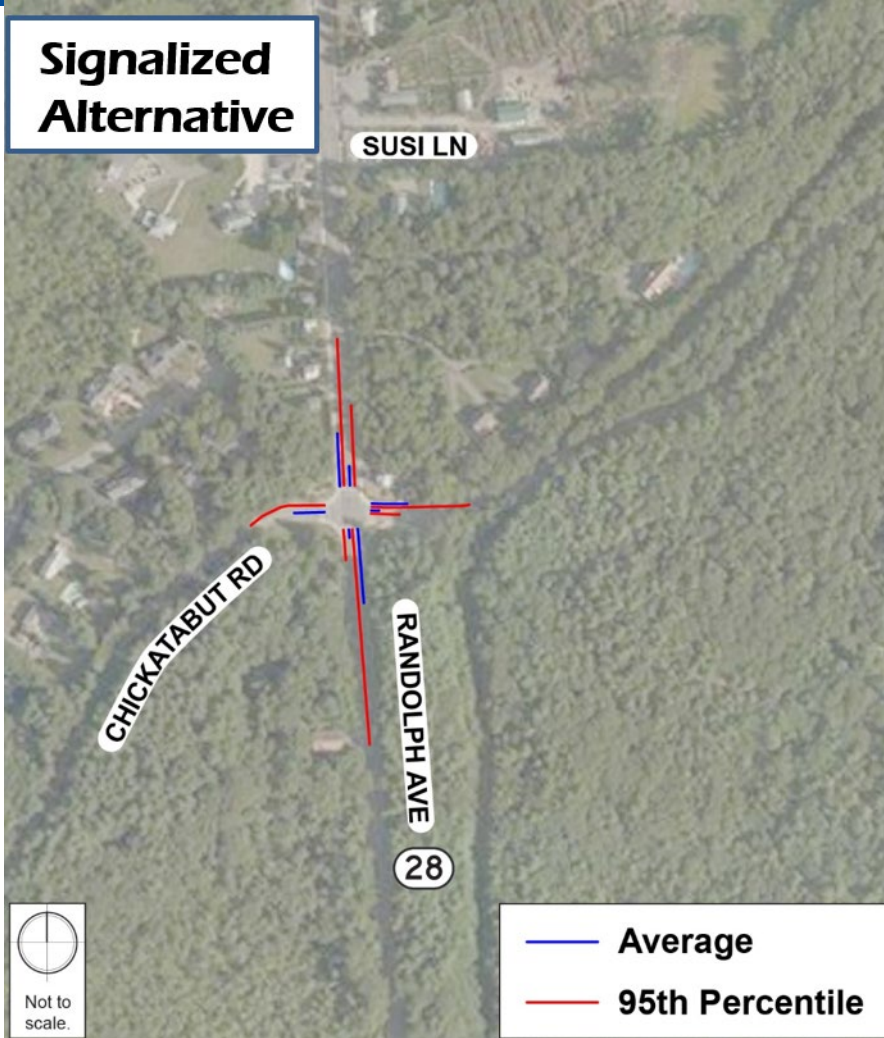
Predicted 2027 SAT Traffic

No-build

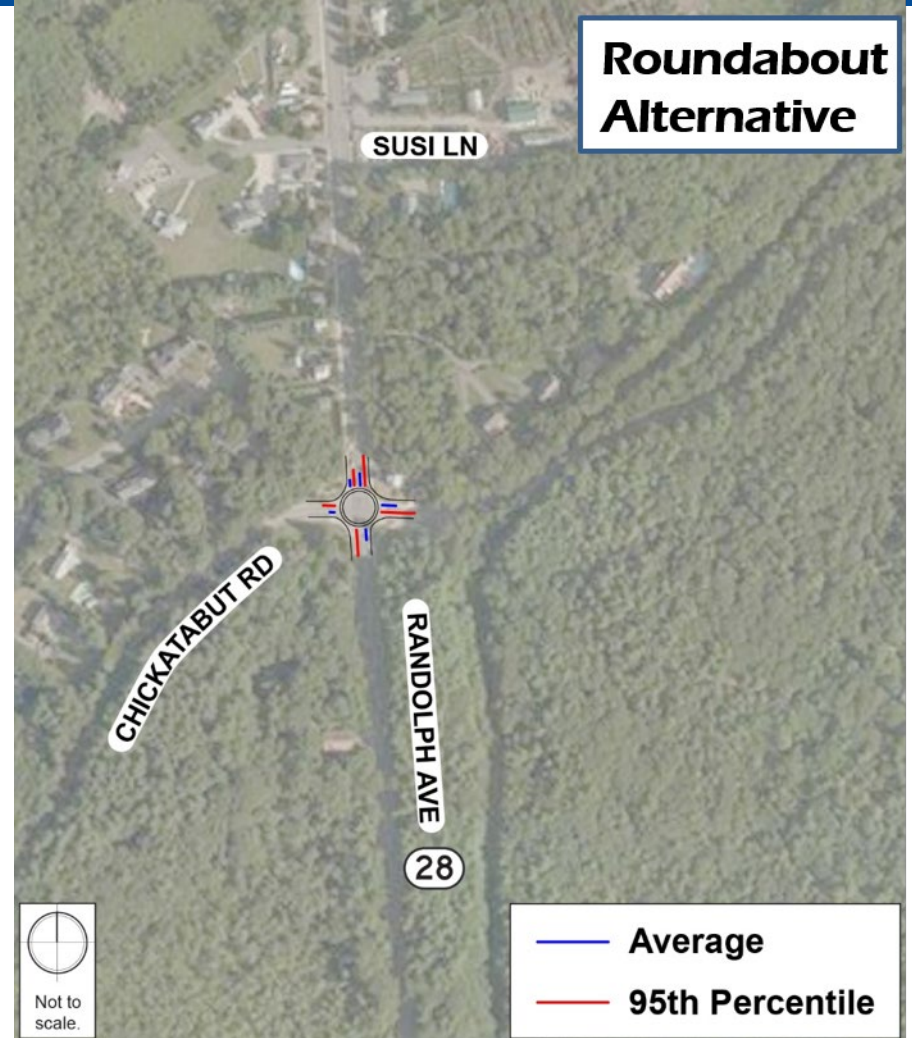


Predicted 2027 SAT Traffic

**Signalized
Alternative**



**Roundabout
Alternative**



Operational Analysis

No-build

Approach/ Movement	Average Queue (VEHICLES)		
	AM PEAK HOUR	PM PEAK HOUR	SAT PEAK HOUR
Chickatawbut Rd EB	6	11	2
Chickatawbut Rd WB	9	14	3
Route 28 NB	26	26	4
Route 28 SB de facto left	1	1	-
Route 28 SB thru/right	9	23	4

Roundabout Alternative

Approach	Average Queue (VEHICLES)		
	AM PEAK HOUR	PM PEAK HOUR	SAT PEAK HOUR
Chickatawbut Rd EB	1	14	1
Chickatawbut Rd WB	22	2	1
Route 28 NB	5	1	1
Route 28 SB	2	5	1

Signalized Alternative

Approach/ Movement	Average Queue (VEHICLES)		
	AM PEAK HOUR	PM PEAK HOUR	SAT PEAK HOUR
Chickatawbut Rd EB	5	9	3
Chickatawbut Rd WB left	1	4	1
Chickatawbut Rd WB thru/right	7	2	3
Route 28 NB left	5	1	1
Route 28 NB thru/right	14	7	7
Route 28 SB left	2	2	2
Route 28 SB thru/right	6	14	5

Operational Analysis

No-build

Approach/Movement	Level of Service		
	AM PEAK HOUR	PM PEAK HOUR	SAT PEAK HOUR
Chickatawbut Rd EB	D	F	B
Chickatawbut Rd WB	D	F	B
Route 28 NB	F	F	B
Route 28 SB de facto left	F	C	-
Route 28 SB thru/right	B	F	B
OVERALL	F	F	B

Roundabout Alternative

Approach	Level of Service		
	AM PEAK HOUR	PM PEAK HOUR	SAT PEAK HOUR
Chickatawbut Rd EB	A	F	A
Chickatawbut Rd WB	F	B	B
Route 28 NB	B	A	A
Route 28 SB	A	B	A
OVERALL	F	E	A

Signalized Alternative

Approach/Movement	Level of Service		
	AM PEAK HOUR	PM PEAK HOUR	SAT PEAK HOUR
Chickatawbut Rd EB	F	F	C
Chickatawbut Rd WB left	C	F	C
Chickatawbut Rd WB thru/right	D	C	C
Route 28 NB left	F	F	D
Route 28 NB thru/right	D	C	C
Route 28 SB left	D	E	D
Route 28 SB thru/right	C	F	B
OVERALL	E	F	C

Existing Intersection View



Looking East on Chickatawbut Rd

Proposed Intersection View

Looking East on Chickatawbut Rd



Existing Intersection View



Looking West on Chickatawbut Rd

Proposed Intersection View

Looking West on Chickatawbut Rd



Existing Intersection View



Looking North on Route 28

Proposed Intersection View



Looking North on Route 28

Existing Intersection View



Looking South on Route 28

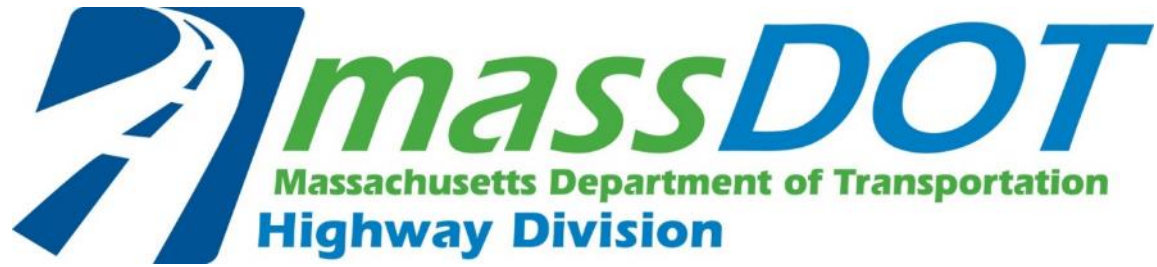
Proposed Intersection View



Looking South on Route 28

Next Steps

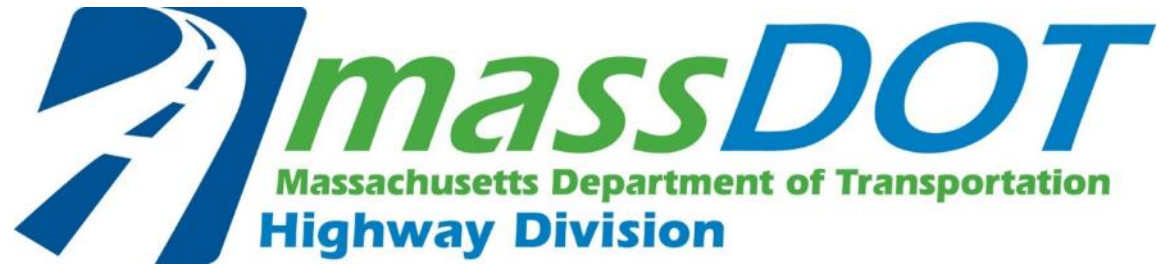
- **MassDOT review public input**
- **Advance Roundabout Alternative Design to 25%**
- **Coordinate with MBTA/BAT and DCR**
- **Present refined 25% design to public during Design Public Hearing**



Contact

Email your questions, general inquiries, and comments to
Joshua.Bartus@dot.state.ma.us

- MassDOT will answer all inquiries in a timely fashion



Thank You

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