

Alternatives Workshop



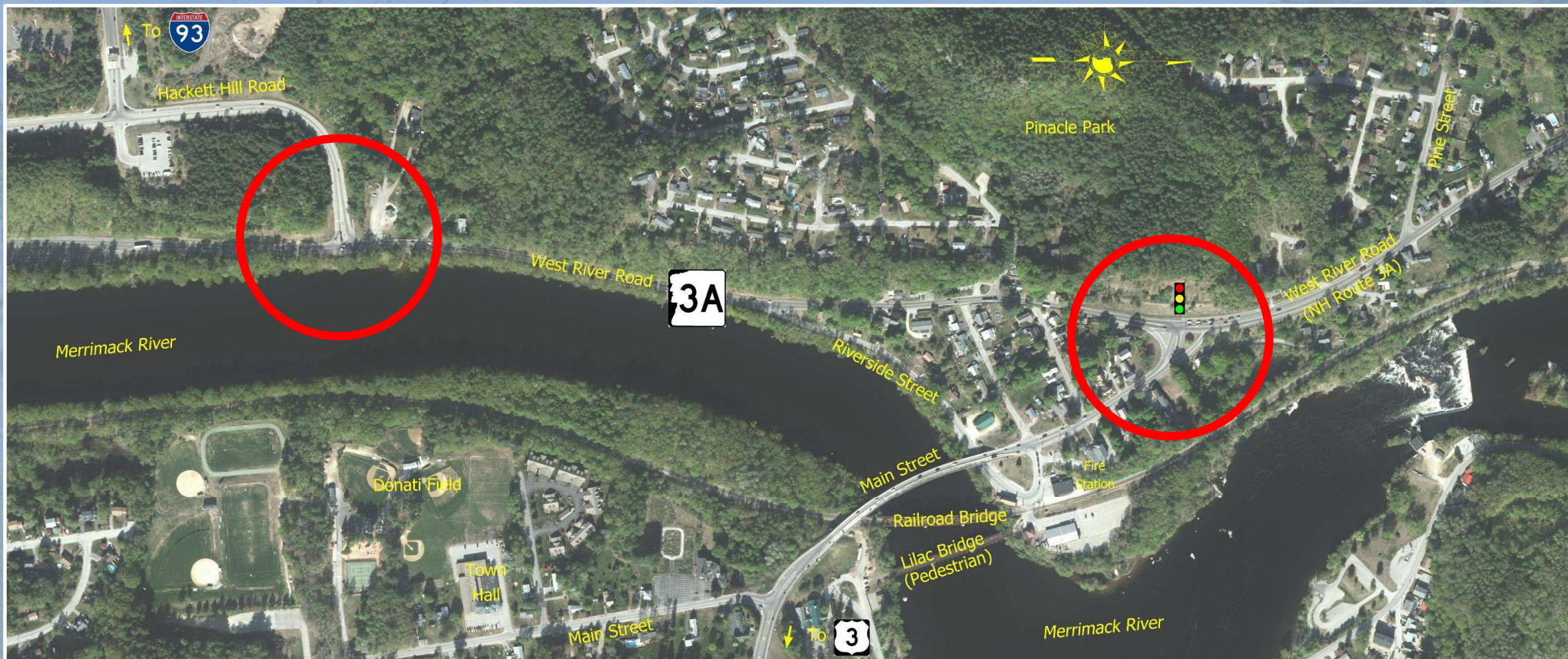
March 21, 2024

Meeting Agenda

1. Opening / Introductions
2. Project Overview
3. Project Purpose and Need
4. Traffic Evaluation
5. Alternatives Development
6. Questions / Discussion
7. Next Steps
8. Adjourn

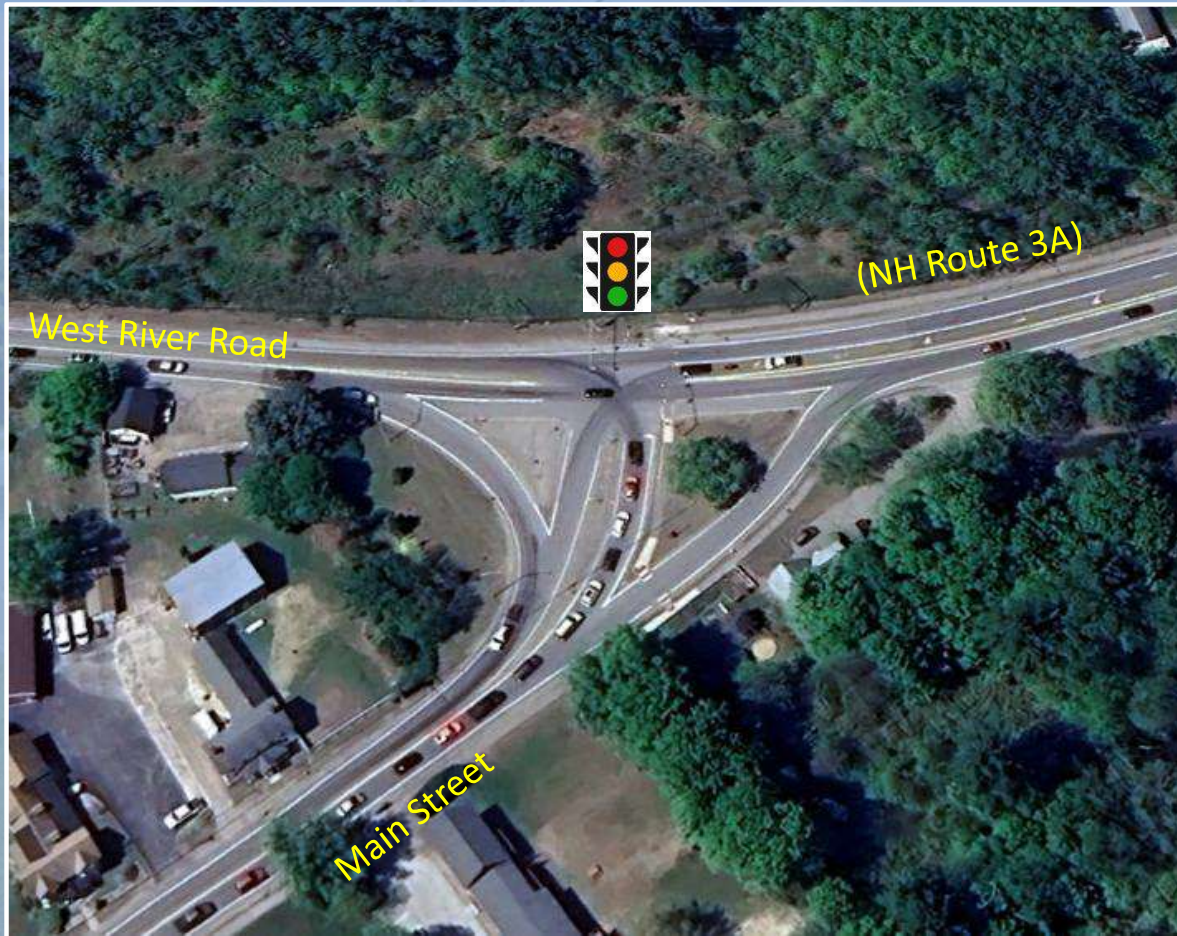


Project Limits





Route 3A / Hackett Hill Road



Route 3A / Main Street

Engineering Study Phase

- A. Information Gathering/Base Maps
- B. Detailed Survey
- C. Resource Identification
- D. Project Definition
- E. Alternatives Development
- F. Brickyard Brook Structure Studies
- G. Right-of-Way Abstracting
- H. Public Involvement
- J. Utility Coordination



Engineering Study Report

Project Purpose and Need

Purpose

The purpose of the project is to address daily congestion and delay at two intersections where Hackett Hill Road and Main Street connect to NH Route 3A in the Town of Hooksett. Improving safety, aesthetics and access to local streets for all users are essential goals of the project.

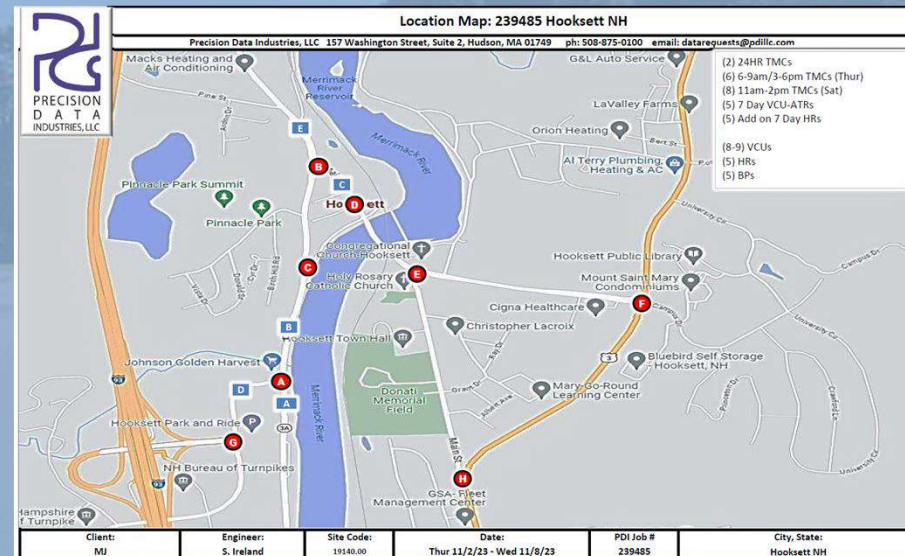
Project Purpose and Need

Need

- The high volume of turning traffic at the 2 intersections connecting to Route 3A cause excessive queues and delay.
- Delays accessing Route 3A at Hackett Hill Road lead to unsafe behavior with near miss collisions.
- Side street access is a challenge due to traffic volume, speed and sight line obstructions.
- Speed changes along Route 3A are a safety concern.
- Traffic diversions to Riverside Street create delays at its intersection with Main Street.
- Pedestrian and Bicycle facilities are lacking at the two intersections.
- Access to Town cultural and recreational opportunities are lacking.

Traffic Evaluation

- Existing Traffic Counts – November 2023
 - Peak Hour Counts (AM/PM/SAT) at 8 Intersections
 - 24-Hour Counts at 5 Locations
- Established Base Year 2024 Peak Hour Volumes
- Determine Anticipated Growth to Project Traffic
- Establish Opening Year 2028 Peak Hour Volumes
- Establish Design Year 2048 Peak Hour Volumes
- Conduct Traffic Analysis using 2048 Volumes

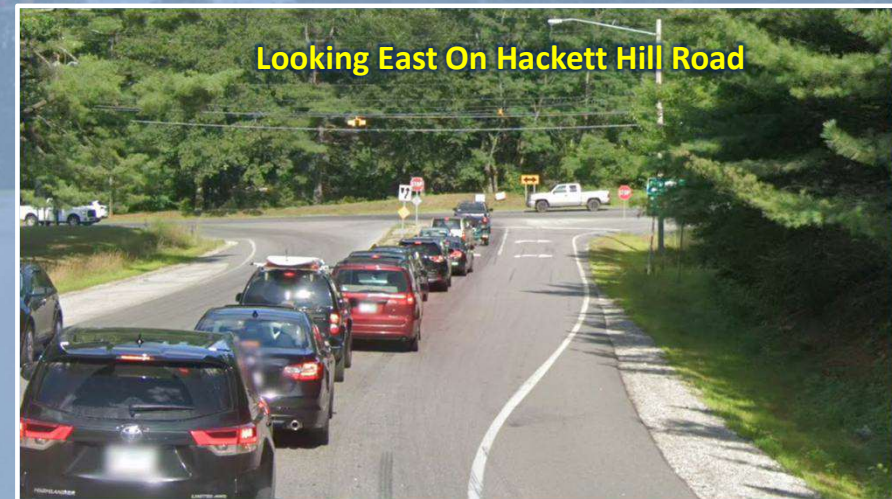


Traffic Evaluation


**Level of Service (LOS)
Measure of Average Delay
(seconds per vehicle)**

A		< 10 seconds
B		10 – 20 seconds
C		20 – 35 seconds
D		35 – 55 seconds
E		55 – 80 seconds
F		> 80 seconds

Note: Based on a Signalized Intersection



Route 3A / Hackett Hill Road


Existing Conditions										
2024 No Build Alternative										
Hackett Hill Rd at NH 3A										
 TRAFFIC OPERATIONS		AM PEAK HOUR			PM PEAK HOUR			SAT PEAK HOUR		
	Approach	LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE
	NH-3A (NB)	-	0.0	5	-	0.0	6	-	0.0	8
	NH-3A (SB)	-	0.0	1	-	0.0	0	-	0.0	0
	Hackett Hill Rd °	F	330.2	53	F	1807.6	53	F	1758.2**	54

* Queue Length exceeds capacity and may be longer

** Delay exceeds capacity and may be longer

° Queue Length Determined by Left Turn Movement

Route 3A / Main Street

Existing Conditions										
2024 No Build Alternative										
Main St at NH 3A										
 TRAFFIC OPERATIONS		AM PEAK HOUR			PM PEAK HOUR			SAT PEAK HOUR		
	Approach	LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE
	NH-3A (NB)	F	111.2	13	F	116.4	13	F	107.3	8
	NH-3A (SB)	F	92.9	12	E	56.2	8	B	15.2	6
	Main St °	E	68.3	41	F	90.5	18	F	126.0	43

- * Queue Length exceeds capacity and may be longer
- ** Delay exceeds capacity and may be longer
- ° Queue Length Determined by Left Turn Movement

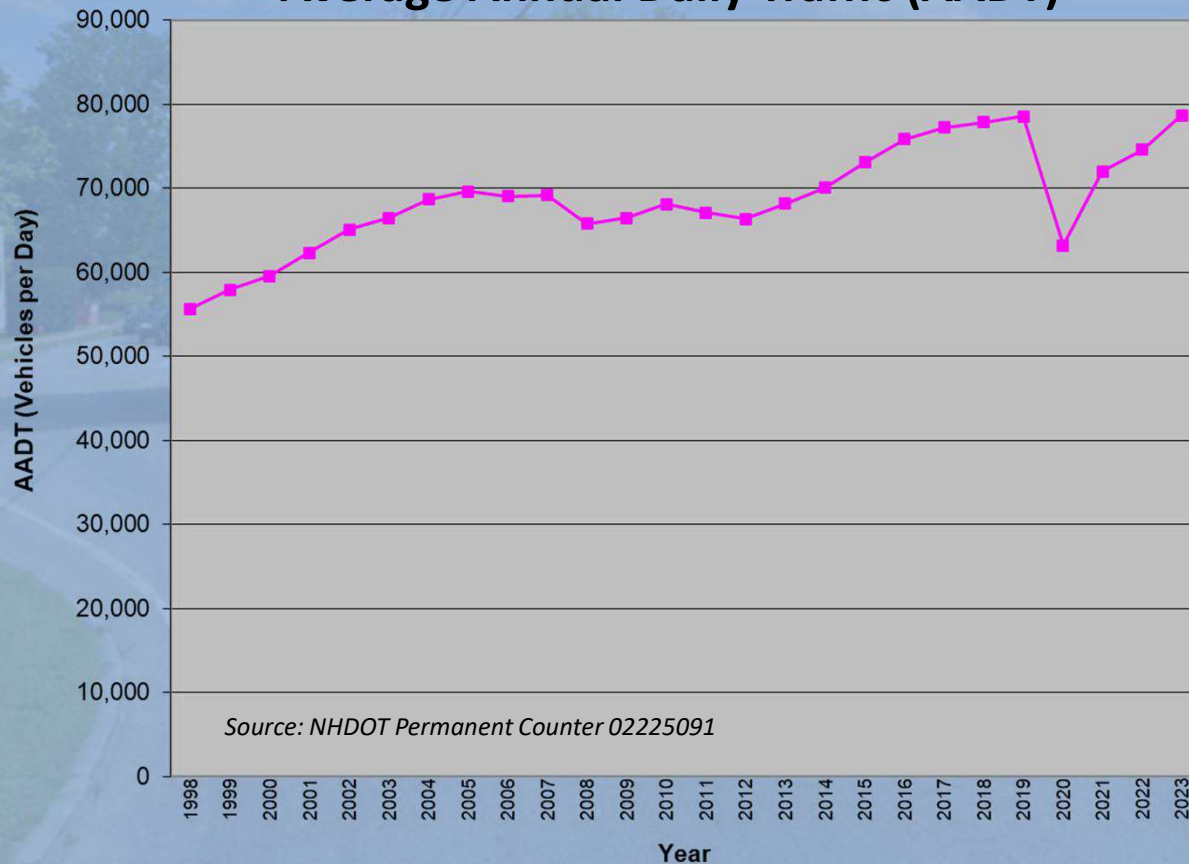
Traffic Projections

NH Department of Transportation
Recommends:

Assume 1% Growth Per Year



**Interstate 93 Toll Plaza in Hooksett
Average Annual Daily Traffic (AADT)**



Traffic Projections

NH Department of Transportation
Recommends:


Assume 1% Growth Per Year

Traffic Evaluation

Route 3A / Hackett Hill Road No Build

2048 No Build Alternative

Hackett Hill Rd at NH 3A

 TRAFFIC OPERATIONS		AM PEAK HOUR			PM PEAK HOUR			SAT PEAK HOUR		
	Approach	LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE
	NH-3A (NB)	-	0.0	97	-	0.0	51	-	0.0	38
	NH-3A (SB)	-	0.0	1	-	0.0	1	-	0.0	1
	Hackett Hill Rd °	F	1663.6**	53	F	1810.8**	52	F	1757.7**	53

* Queue Length exceeds capacity and may be longer

** Delay exceeds capacity and may be longer


° Queue Length Determined by Left Turn Movement

Traffic Evaluation

Route 3A / Main Street No Build

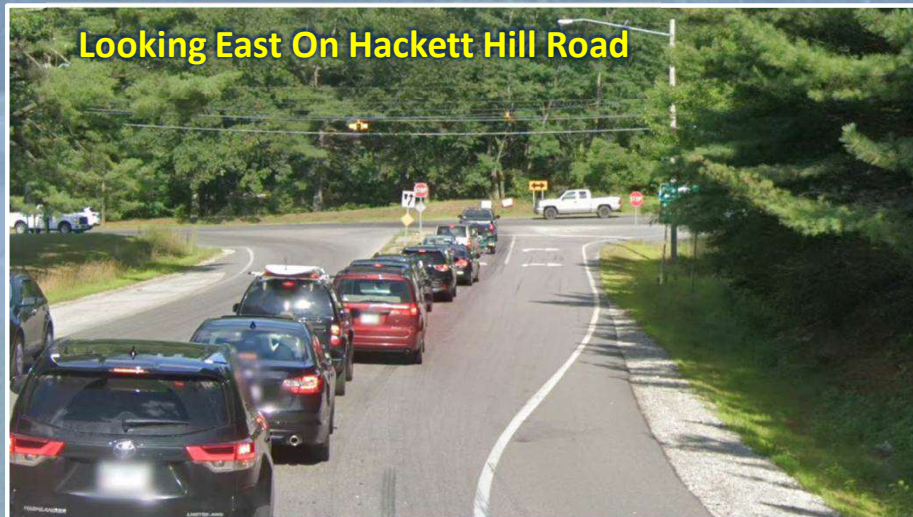
2048 No Build Alternative

Main St at NH 3A

 TRAFFIC OPERATIONS		AM PEAK HOUR			PM PEAK HOUR			SAT PEAK HOUR		
	Approach	LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE
	NH-3A (NB)	F	220.3	44	F	250.3	25	F	274.1	21
	NH-3A (SB)	D	50.2	13	F	91.6	15	C	22.2	8
	Main St °	F	199.8	195	F	186.4	71	F	229.1	87

- * Queue Length exceeds capacity and may be longer
- ** Delay exceeds capacity and may be longer
- ° Queue Length Determined by Left Turn Movement

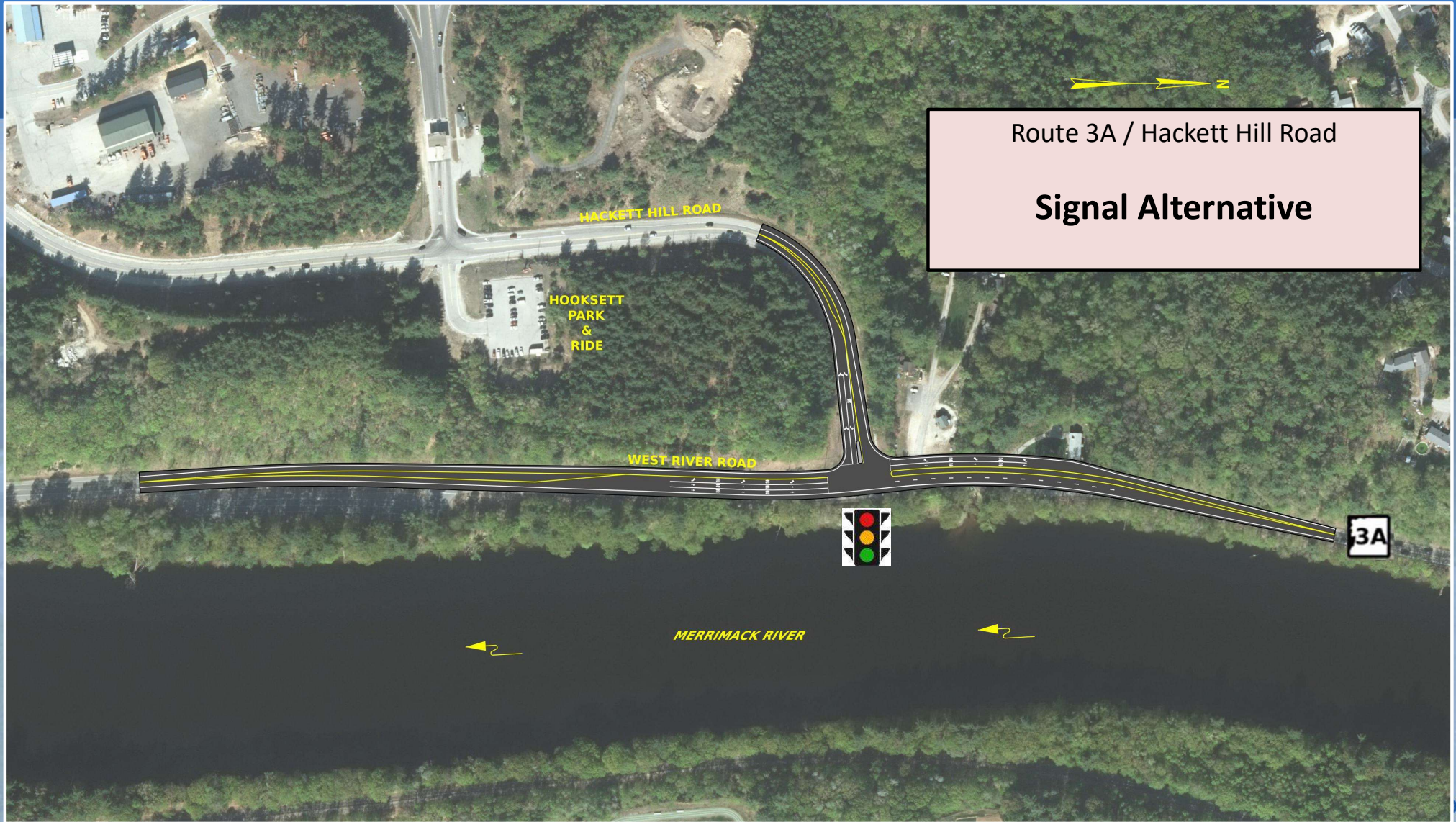
Alternatives Development





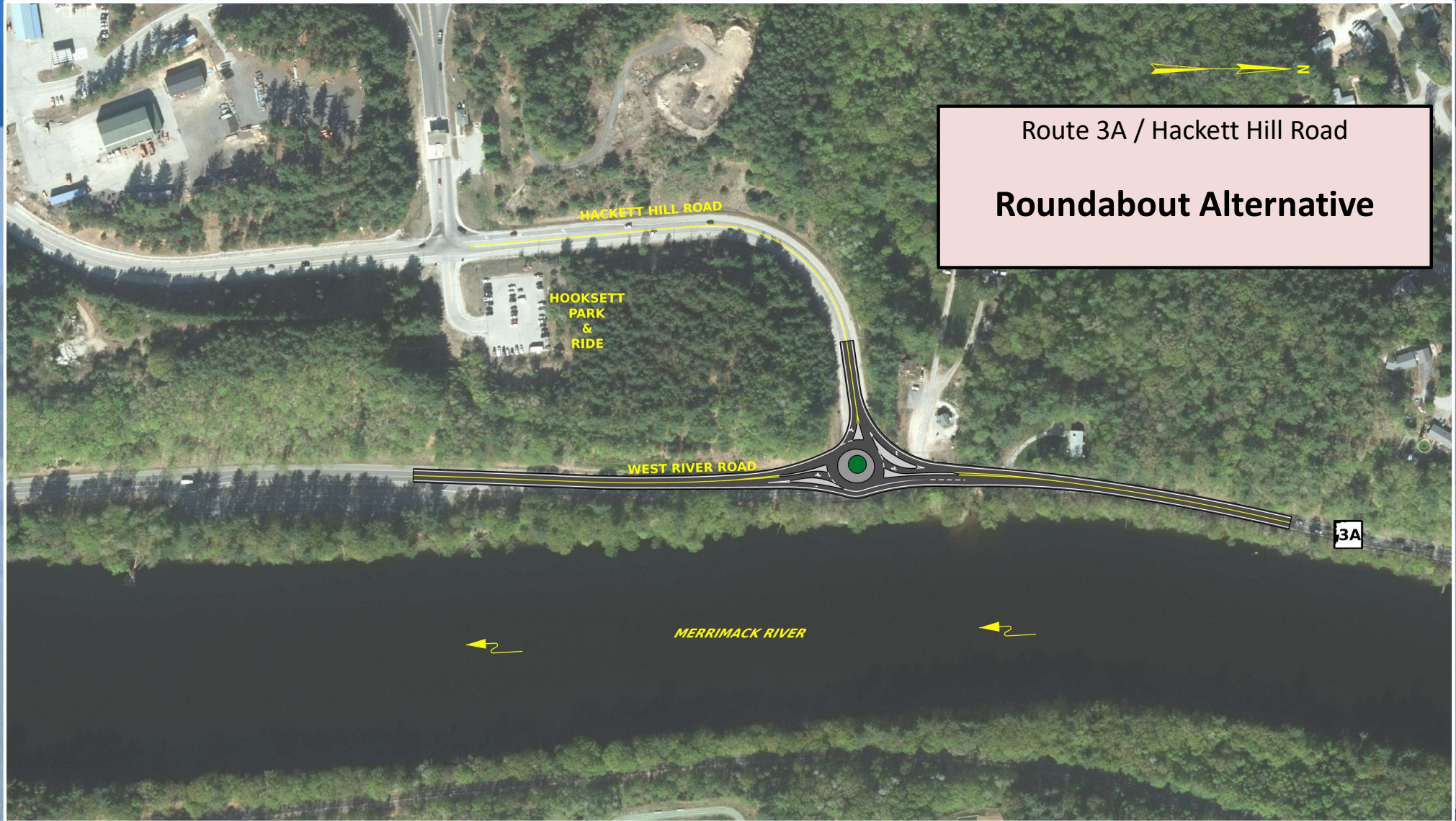
Alternatives Development

Route 3A / Hackett Hill Road



Route 3A / Hackett Hill Road

Signal Alternative



Route 3A / Hackett Hill Road

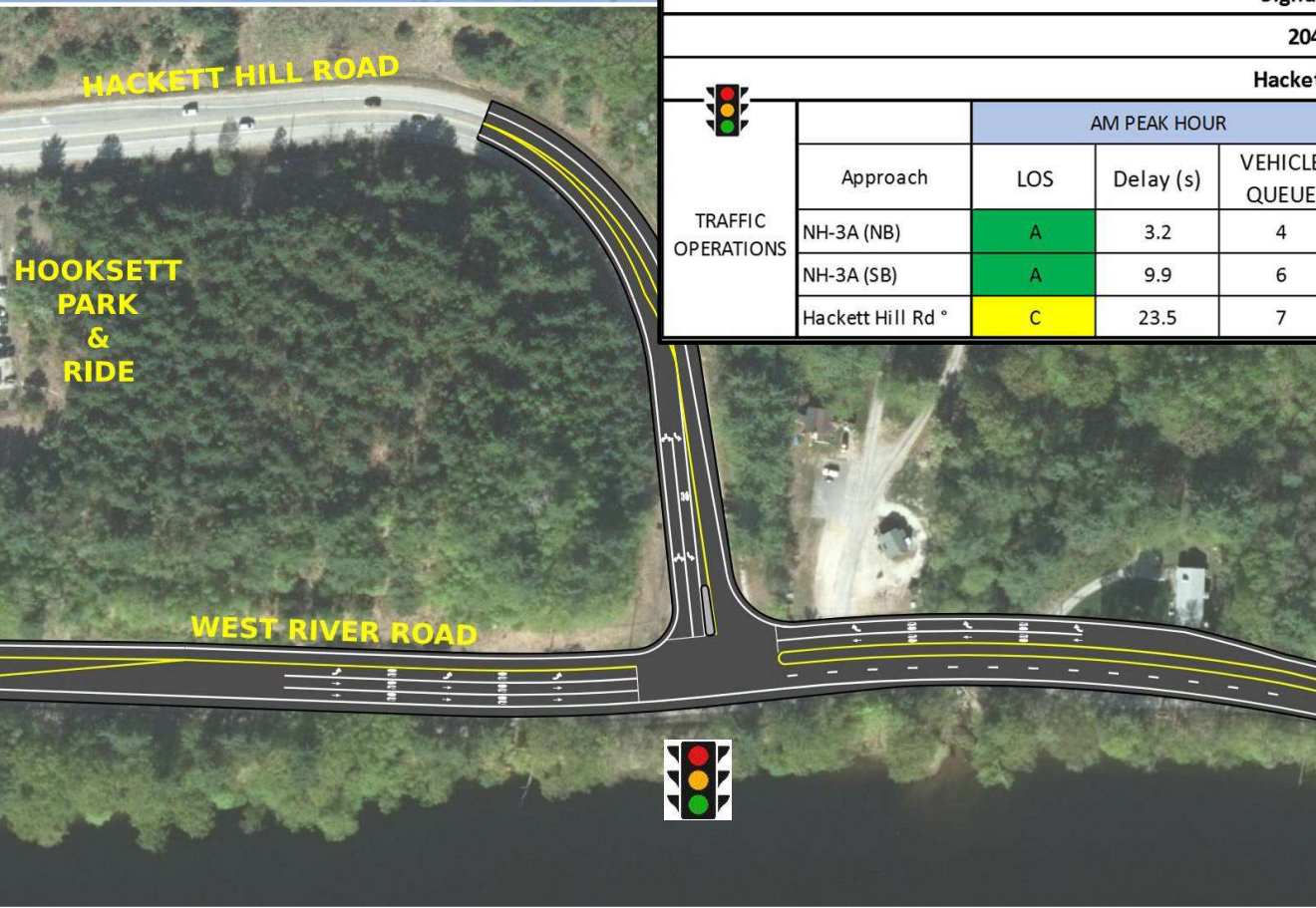
Roundabout Alternative



Route 3A / Hackett Hill Road

Signal Alternative

Route 3A Intersections with Hackett Hill Road and Main Street Project



Signalized Alternative										
2048 Design Year										
Hackett Hill Rd at NH 3A										
TRAFFIC OPERATIONS		AM PEAK HOUR			PM PEAK HOUR			SAT PEAK HOUR		
		LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE
	NH-3A (NB)	A	3.2	4	A	5.4	6	A	3.5	6
	NH-3A (SB)	A	9.9	6	B	11.0	6	B	11.9	6
	Hackett Hill Rd °	C	23.5	7	C	23.1	7	D	41.0	9

Route 3A / Hackett Hill Road

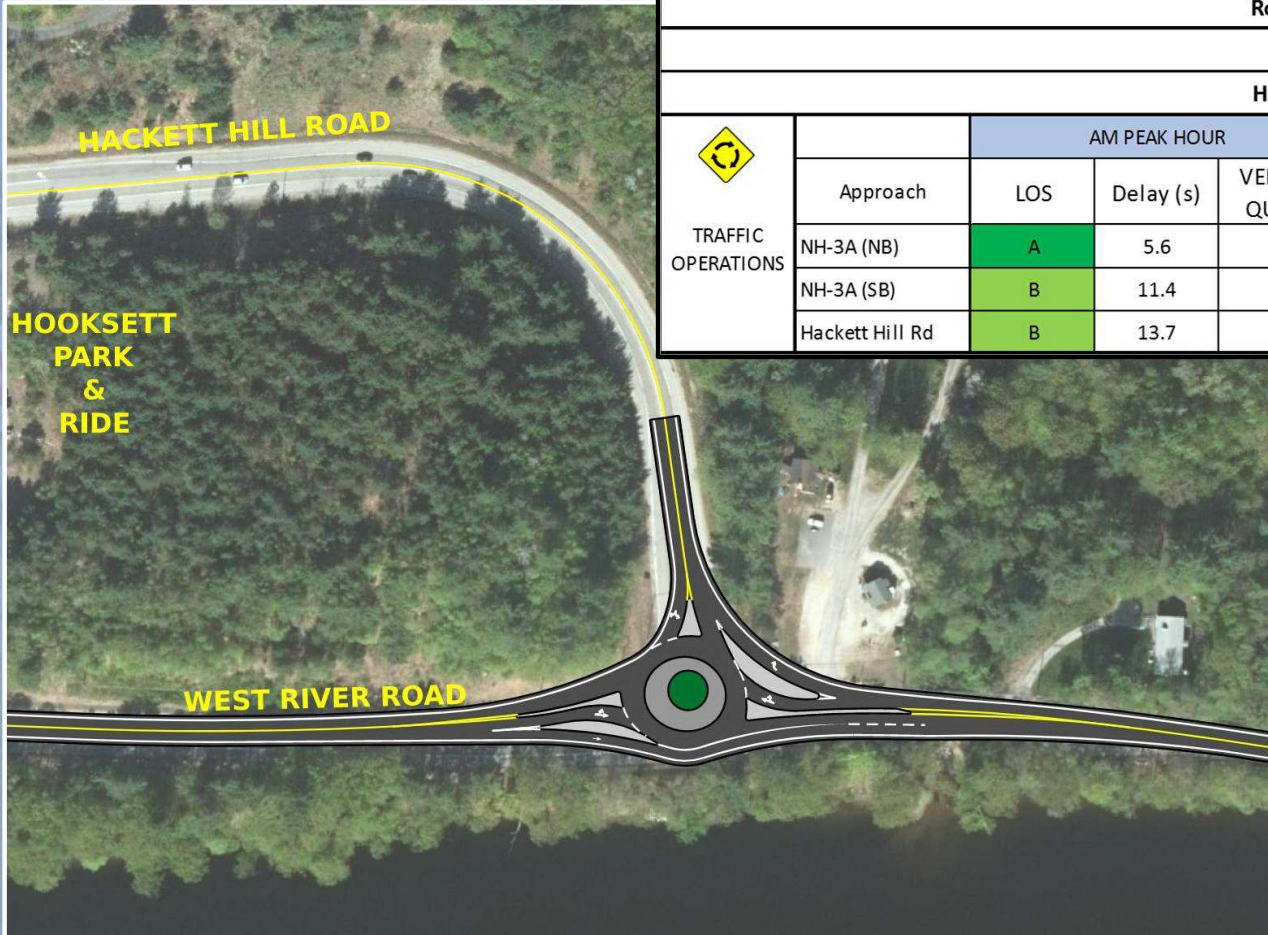
Signal Alternative




Route 3A / Hackett Hill Road

Roundabout Alternative

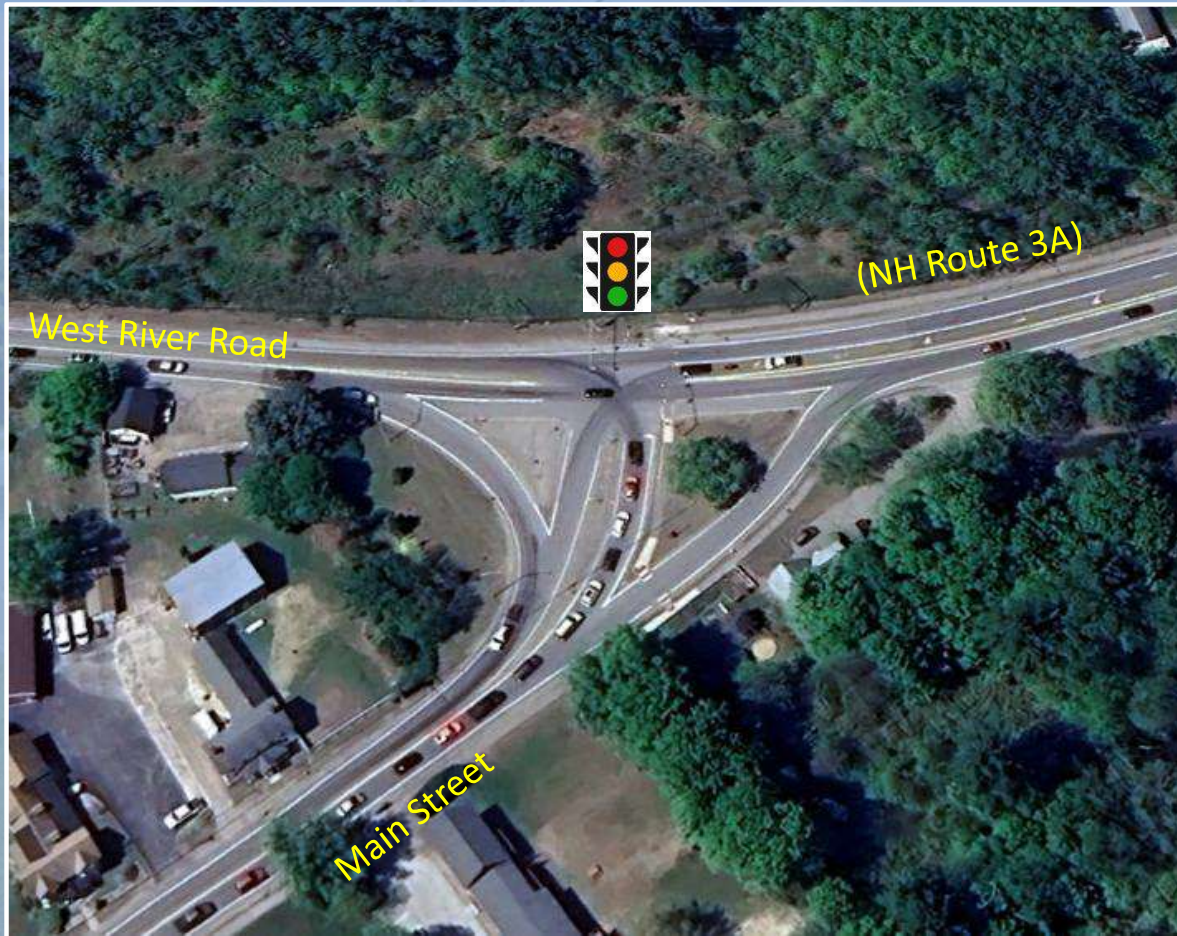
Route 3A Intersections with Hackett Hill Road and Main Street Project



Roundabout Alternative										
2048 Design Year										
Hackett Hill Rd at NH 3A										
 TRAFFIC OPERATIONS	Approach	AM PEAK HOUR			PM PEAK HOUR			SAT PEAK HOUR		
		LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE
	NH-3A (NB)	A	5.6	1	B	10.7	3	A	8.2	2
	NH-3A (SB)	B	11.4	8	A	7.7	4	A	8.7	6
	Hackett Hill Rd	B	13.7	4	C	21.9	9	E	36.4	11

Route 3A / Hackett Hill Road

Roundabout Alternative

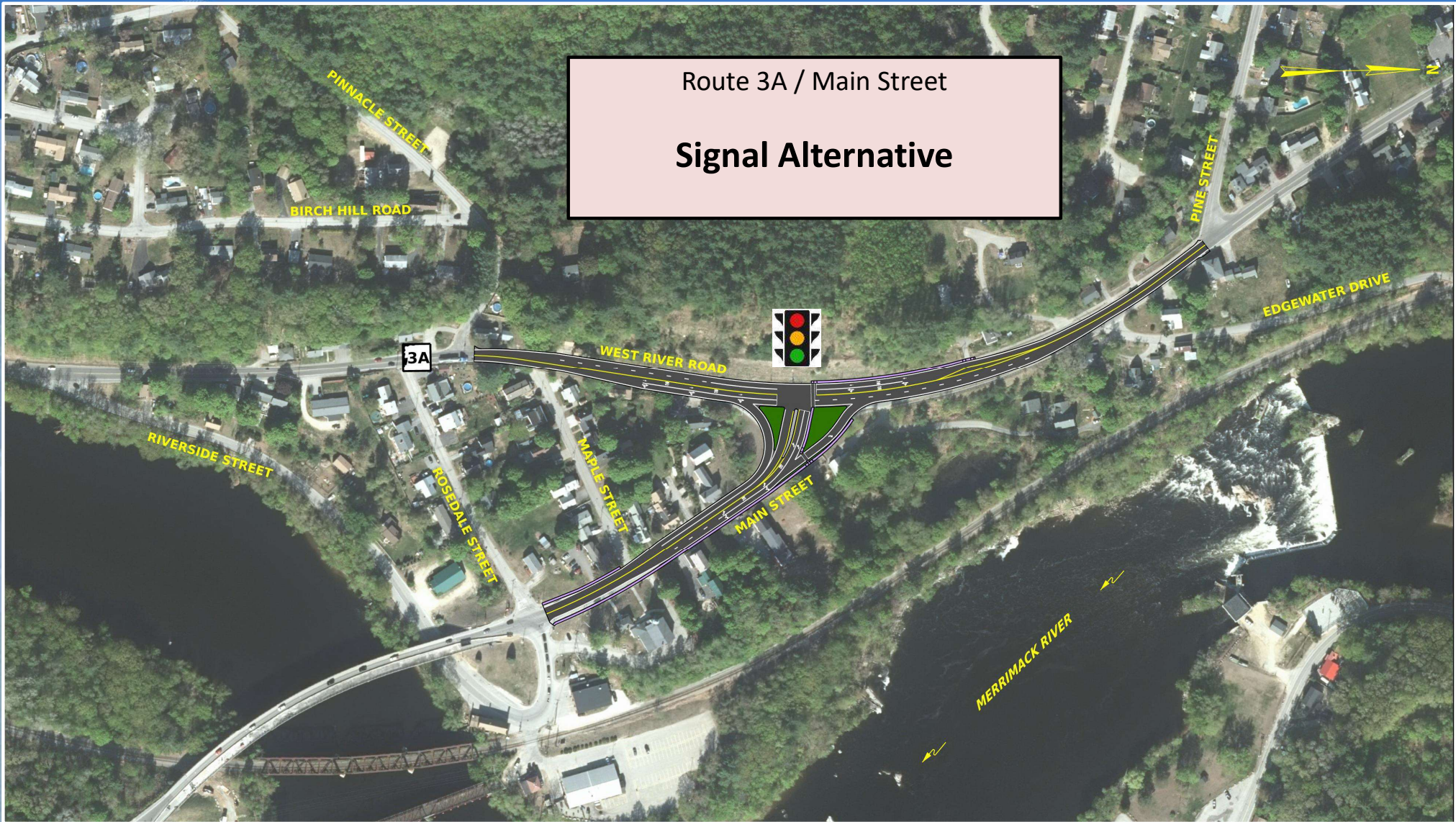


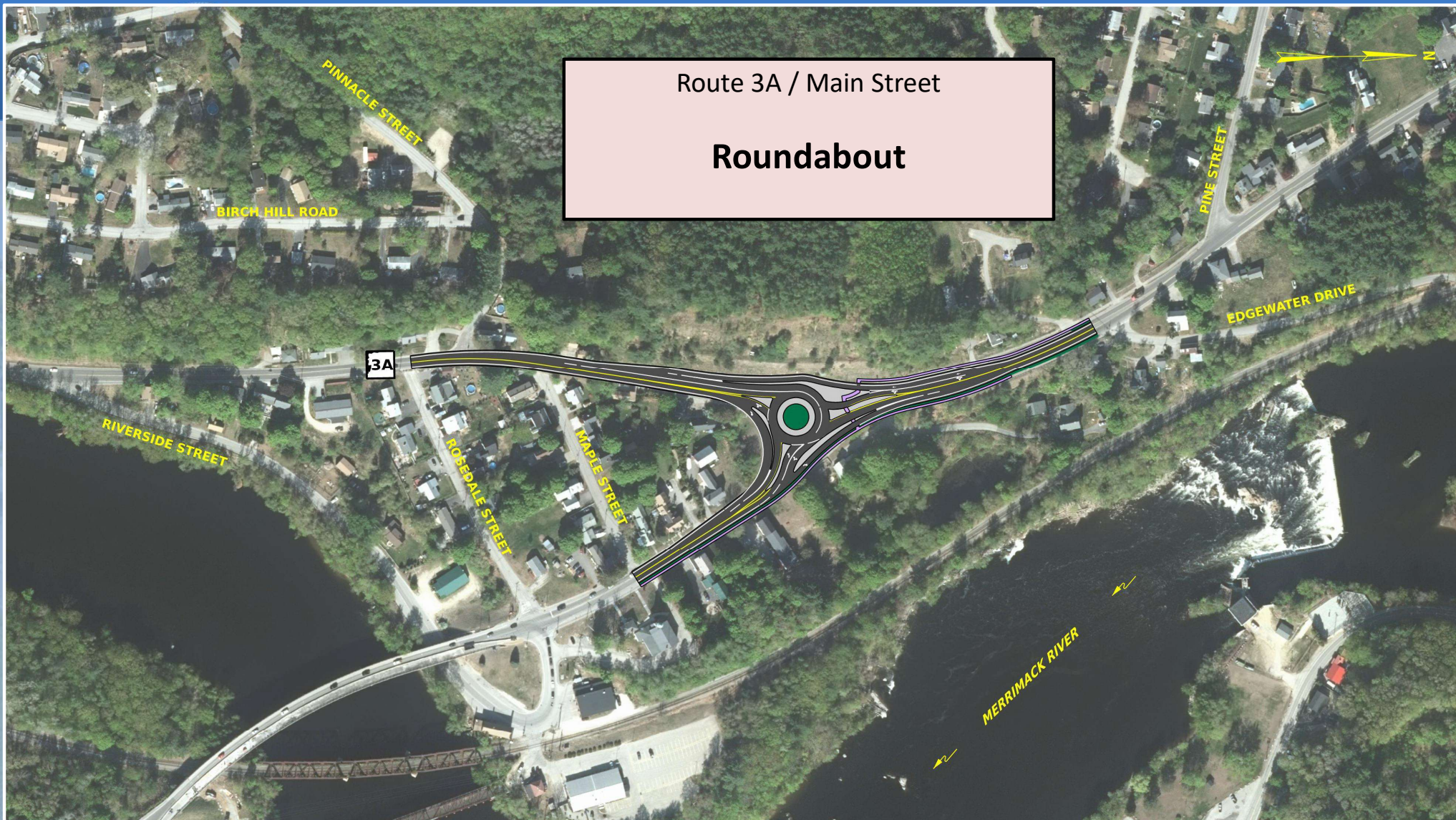
Alternatives Development

Route 3A / Main Street

Route 3A / Main Street

Signal Alternative





Route 3A / Main Street

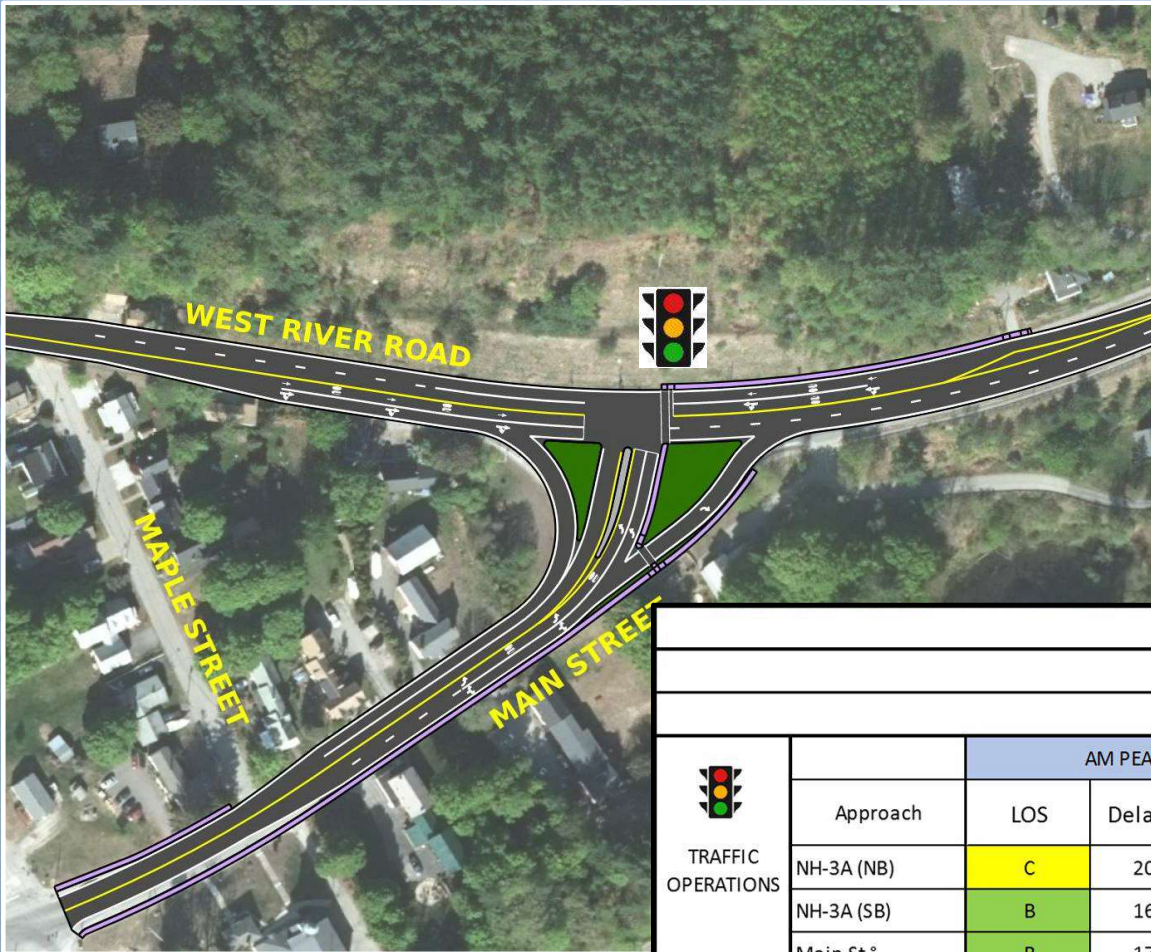
Roundabout



Route 3A / Main Street

Signal Alternative

Route 3A Intersections with Hackett Hill Road and Main Street Project



Route 3A / Main Street

Signal Alternative

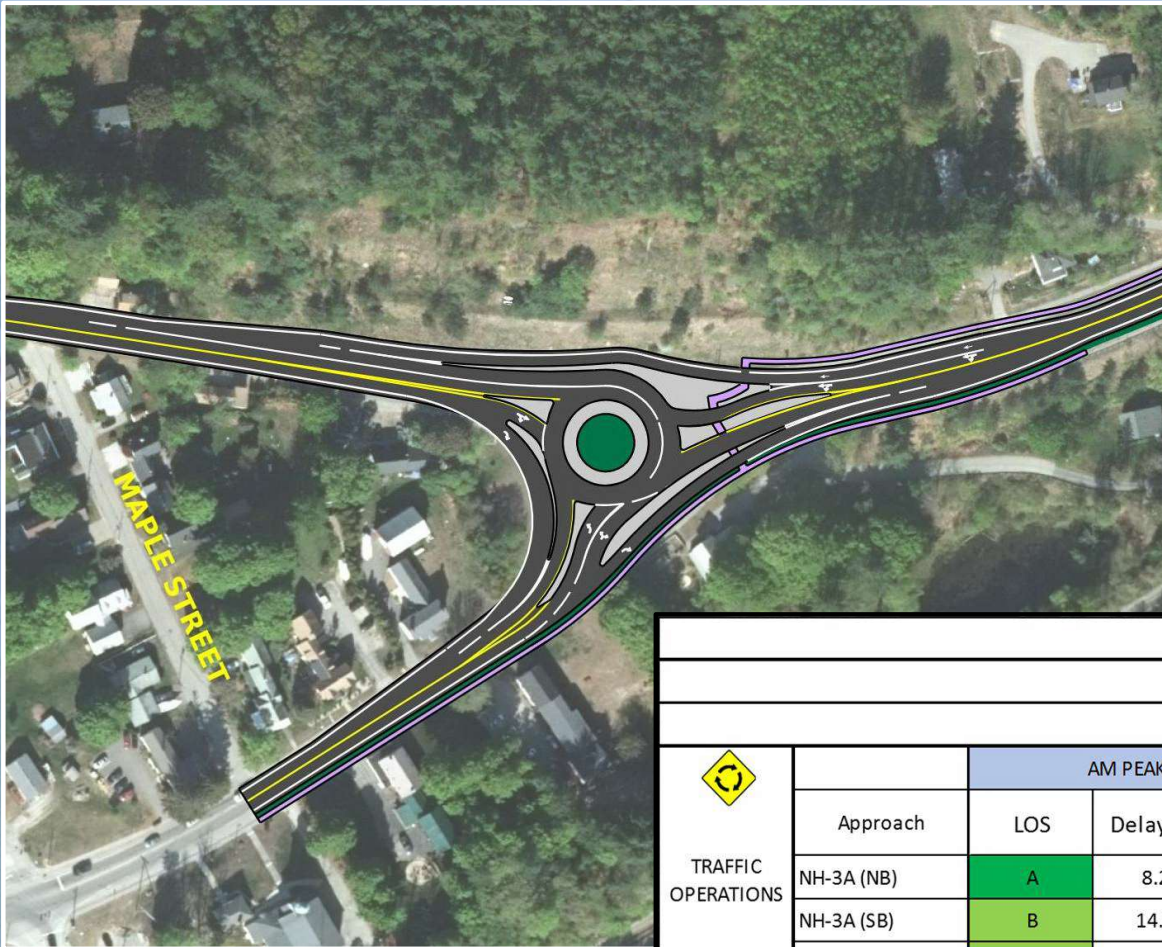
Signalized Alternative										
2048 Design Year										
Main St at NH 3A										
TRAFFIC OPERATIONS	Approach	AM PEAK HOUR			PM PEAK HOUR			SAT PEAK HOUR		
		LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE
	NH-3A (NB)	C	20.3	11	C	27.9	8	C	24.7	6
	NH-3A (SB)	B	16.0	10	C	23.6	8	B	10.1	7
	Main St *	B	17.8	11	C	34.5	8	C	21.6	9



Route 3A / Main Street


Roundabout

Route 3A Intersections with Hackett Hill Road and Main Street Project



Route 3A / Main Street

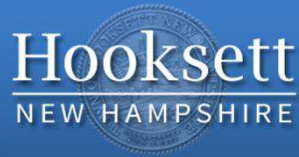
Roundabout

Roundabout Alternative										
2048 Design Year										
Main St at NH 3A										
 TRAFFIC OPERATIONS	Approach	AM PEAK HOUR			PM PEAK HOUR			SAT PEAK HOUR		
		LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE	LOS	Delay (s)	VEHICLE QUEUE
	NH-3A (NB)	A	8.2	4	B	11.0	3	A	7.4	2
	NH-3A (SB)	B	14.9	6	B	10.1	3	B	11.4	4
	Main St	B	13.9	3	B	11.6	4	B	11.4	2

QUESTIONS DISCUSSION

Engineering Study Schedule

December 12, 2023	Public Listening Session
March 21, 2024	Alternatives Workshop
April 2024	Review and Adoption of Preferred Alternative
May 2024	Town Council Presentation
May 2024	Submit Draft Engineering Study Report



Route 3A Intersections with Hackett Hill Road and Main Street Project

Project Contact:

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Route 3A Intersections Project

