

Exeter Intersection Evaluations

May 31, 2022



Project Purpose:

Conduct a town wide evaluation of existing town roadway intersections to inform decisions on future expenditure of Capital Improvement Plan (CIP) funds and provide a base for further future evaluation.

Methodology:

Primarily evaluated:

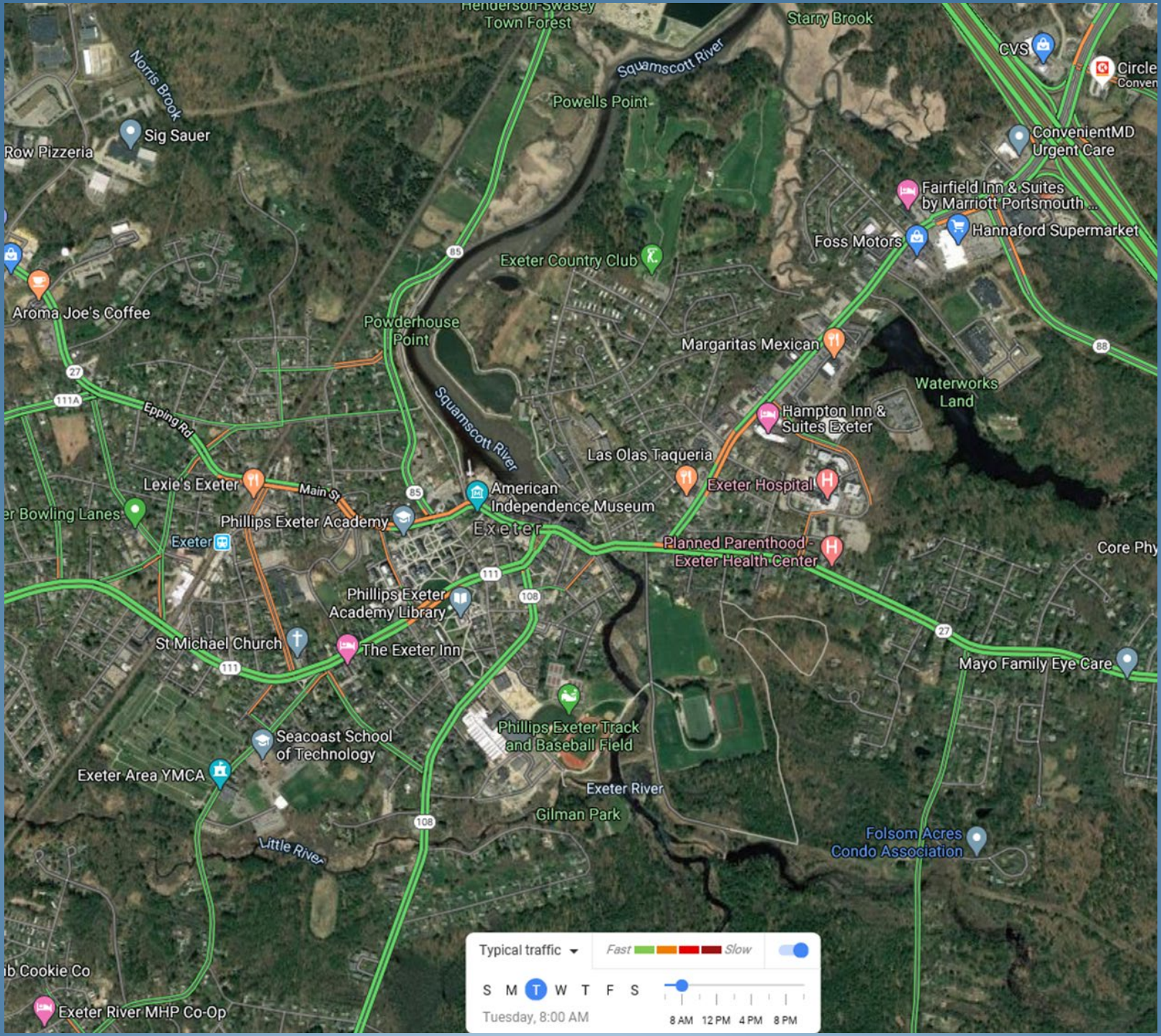
- Traffic Operations
- Safety Concerns

Methodology:

Narrowed the focus starting with crash data, then the 2018 Master Plan and the 2019 Warrant Article intersections.

Traffic Operations:

- High level overview of intersection delay based on historical peak hour data
- Field observations
- Town input



Typical traffic ▾ Fast ■ ■ ■ Slow

S M **T** W T F S

Tuesday, 8:00 AM

8 AM 12 PM 4 PM 8 PM

Safety Analysis:

- Collected crash data for 88 intersections
- Received input from Town police and Town staff
- Conducted field observations for contributing factors such as geometry, traffic controls and sight lines

Safety Analysis:

- Ranked all 88 intersections based on 5-year crash history
- Cross-referenced with the 2018 Master Plan and 2019 Warrant Article 23 intersections

Rank	Main Roadway	Intersecting Road	Crashes
1	Epping	Rt. 101	41
2	Front	Water	36
3	Portsmouth	Holland	27
4	Newfields	RR Bridge	27
5	Epping	Brentwood	25
6	North Hampton	Rt. 101	20
7	Hampton	Holland	19
8	Portsmouth	Alumni	19
9	Epping	Industrial (Front Row)	17
10	Epping	Beech Hill	15
11	Epping	Cronin (AllTown)	14
12	High	Portsmouth	13
13	Newfields	Rt. 101	13
14	Epping	Park	9
15	Epping	Winter St.	9
16	High	Gilman	9
17	High	Pleasant	9
18	Epping	Blue Hawk	8
19	Hampton	Ashbrook	8
20	Front	Court	8
21	Epping	Watson	7
22	High	Buzzel	7
23	Portsmouth	Auburn	7
24	Front	Arches	7
25	Hampton Falls	Ashbrook	6
26	Front	Lincoln	6
27	Front	Linden / Pine	6
28	Water	Clifford	6
29	Kingston	Powder Mill	6
30	Main	Winter / Epping	6
31	Portsmouth	Greenhill	5
32	Main	Tan	5
33	Main	Lincoln	5
34	Epping	Kings Way	4
35	Epping	Continental	4
36	Epping	Pine	4
37	High	Drinkwater	4
38	Brentwood	Washington	4
39	Front	Washington	4
40	Court	Gary	4
41	Newfields	Walter's Way	4
42	Hampton	Guinea	3
43	Hampton	North Hampton	3
44	Front	Elm / Spring	3

Rank	Main Roadway	Intersecting Road	Crashes
45	Front	Elliot	3
46	Front	Center	3
47	Water	Summer	3
48	Water	Center	3
49	Water	Main	3
50	Kingston	John West	3
51	Court	Maple	3
52	Linden	Gary	3
53	Winter	Columbus / Railroad	3
54	Newfields	Swasey	3
55	Epping	Old Town Farm	2
56	Epping	Colcord Pond	2
57	North Hampton	Nathaniel	2
58	High	Hall Ct	2
59	High	Hampton Falls	2
60	Portsmouth	Highland	2
61	Brentwood	Crestview	2
62	Front	Winter St.	2
63	Front	Tan	2
64	Front	Gukk	2
65	Kingston	Ernest	2
66	Kingston	Tamirind	2
67	Kingston	Cross	2
68	Court	Gilman	2
69	Linden	Gill	2
70	Epping	Comings Ct.	1
71	Epping	Anna Louise	1
72	Epping	McKay	1
73	Epping	Brookside	1
74	Hampton	Exeter Farms	1
75	Hampton	Acadia	1
76	Hampton	Fuller	1
77	High	Windmere	1
78	High	Appledore	1
79	High	Marlboro	1
80	High	Wheelwright	1
81	High	Folsum	1
82	Brentwood	Little River	1
83	Brentwood	Dollof Farm	1
84	Brentwood	Greenleaf	1
85	Brentwood	Dogtown	1
86	Front	Hobart	1
87	Front	School	1
88	Linden	Kimball	1

2018 Master Plan Intersections:

<u>Intersections</u>	<u>Crash Rank</u>	<u>Collisions per Year</u>
Epping Rd at Brentwood & Columbus Ave	5	4.0
Hampton Rd, High St & Holland Way	7	3.1
Epping Rd, Park St & Winter St	14	1.4
Front St at Pine & Linden St	27	1.0
Hampton Rd at Guinea Rd	42	0.5
Brentwood Rd at Dogtown Rd	85	0.2

2019 Warrant Article 23 Intersections:

<u>Intersections</u>	<u>Crash Rank</u>	<u>Collisions per Year</u>
Water St at Front St	2	5.8
Front St at Pine and Linden St	27	1.0
Water St at High, Clifford & Franklin St	28	1.0
Winter St at Railroad & Columbus Ave	58	0.5

Water Street at Front Street

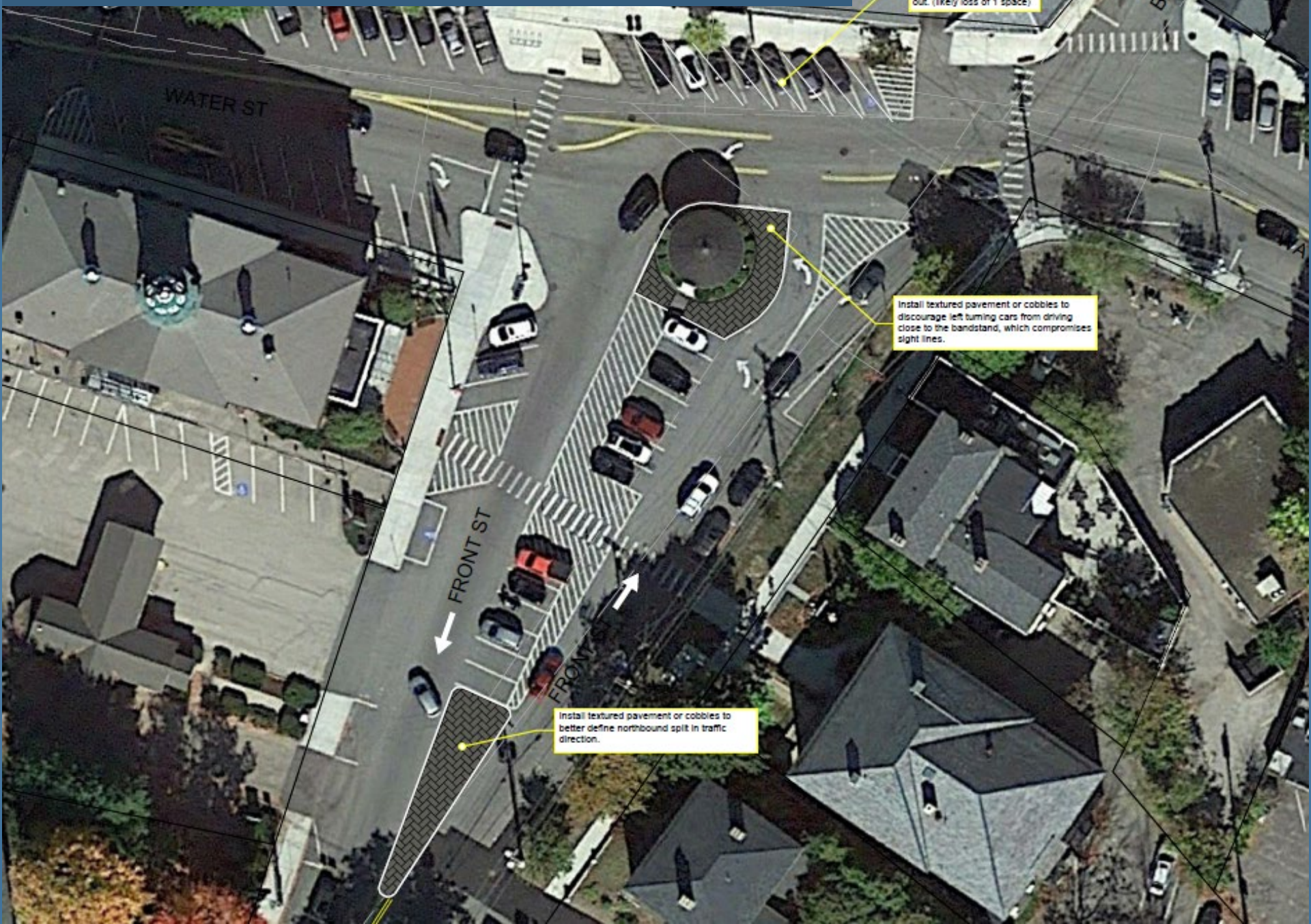


Water St

String Bridge

Front St

Water Street at Front Street



Modify angled parking to 45 degrees to reduce lane width required for backing out. (likely loss of 1 space)

Install textured pavement or cobbles to discourage left turning cars from driving close to the bandstand, which compromises sight lines.

Install textured pavement or cobbles to better define northbound split in traffic direction.

Water Street at Front Street

- Minimal improvement potential without major reconfiguration
- Low cost
- Diagonal parking realignment could reduce crashes with minor loss of parking

Front Street at Pine and Linden Streets



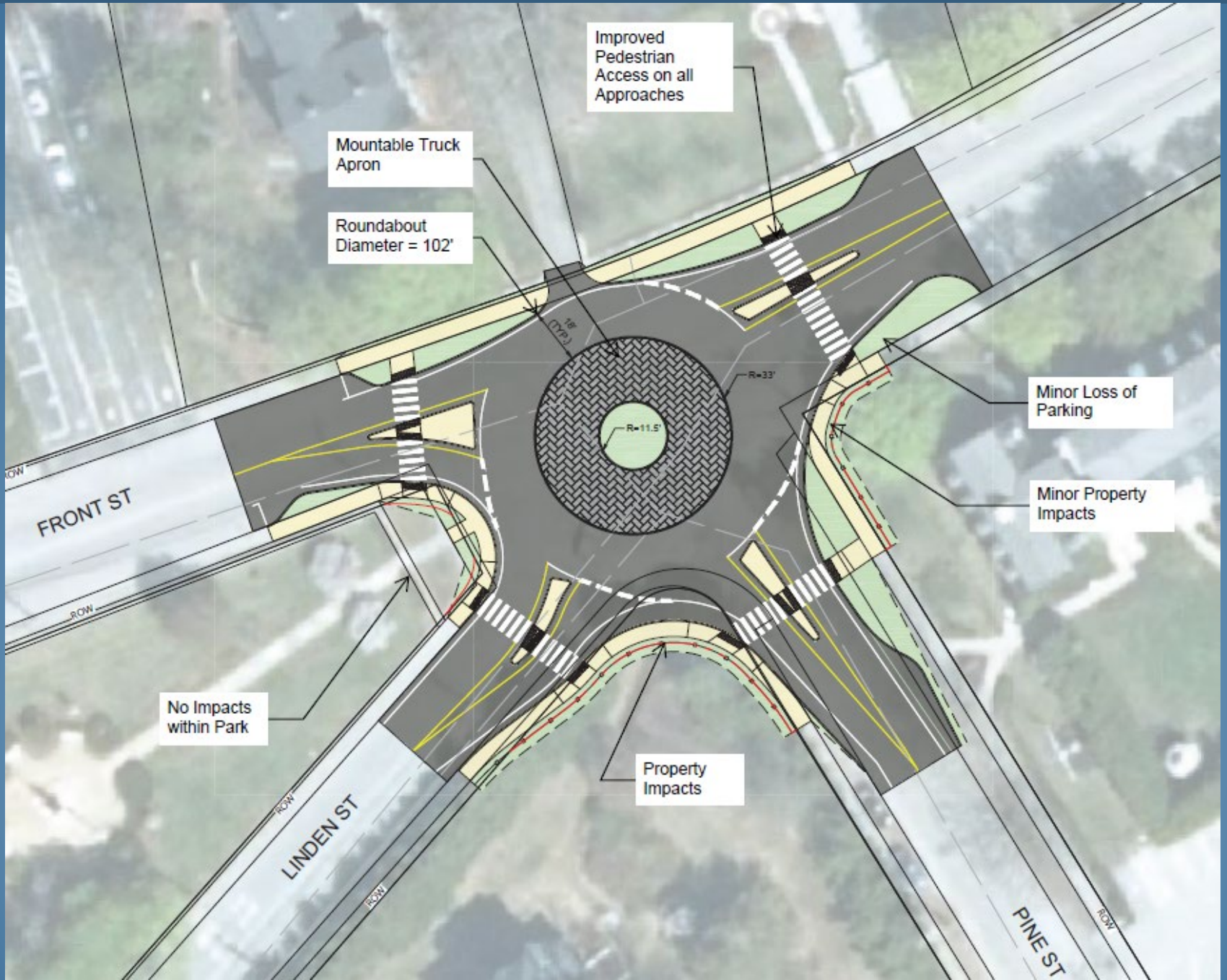
Lincoln St

Front St

Linden St

Pine St

Front Street at Pine and Linden Streets



Front Street at Pine and Linden Streets

- Slows Front Street traffic
- Improves access from Pine and Linden Streets
- Improves pedestrian access
- Expected to greatly reduce crash severity
- Minor property impacts
- Relatively costly (est: \$550,000 in 2021)
- Low cost alternatives not found

Water Street at High, Clifford and Franklin Streets



Water Street at High, Clifford and Franklin Streets



Construct Bumpout to Shorten Crossing Distances and Improve Visibility of Pedestrians

Construct Bumpout to Shorten Crossing Distances and to Move Clifford Stop Line Further into the Intersection

Prohibit Parking to Allow Space for Right Turning Trucks from Clifford St.

Water Street at High, Clifford and Franklin Streets



Water Street at High, Clifford and Franklin Streets

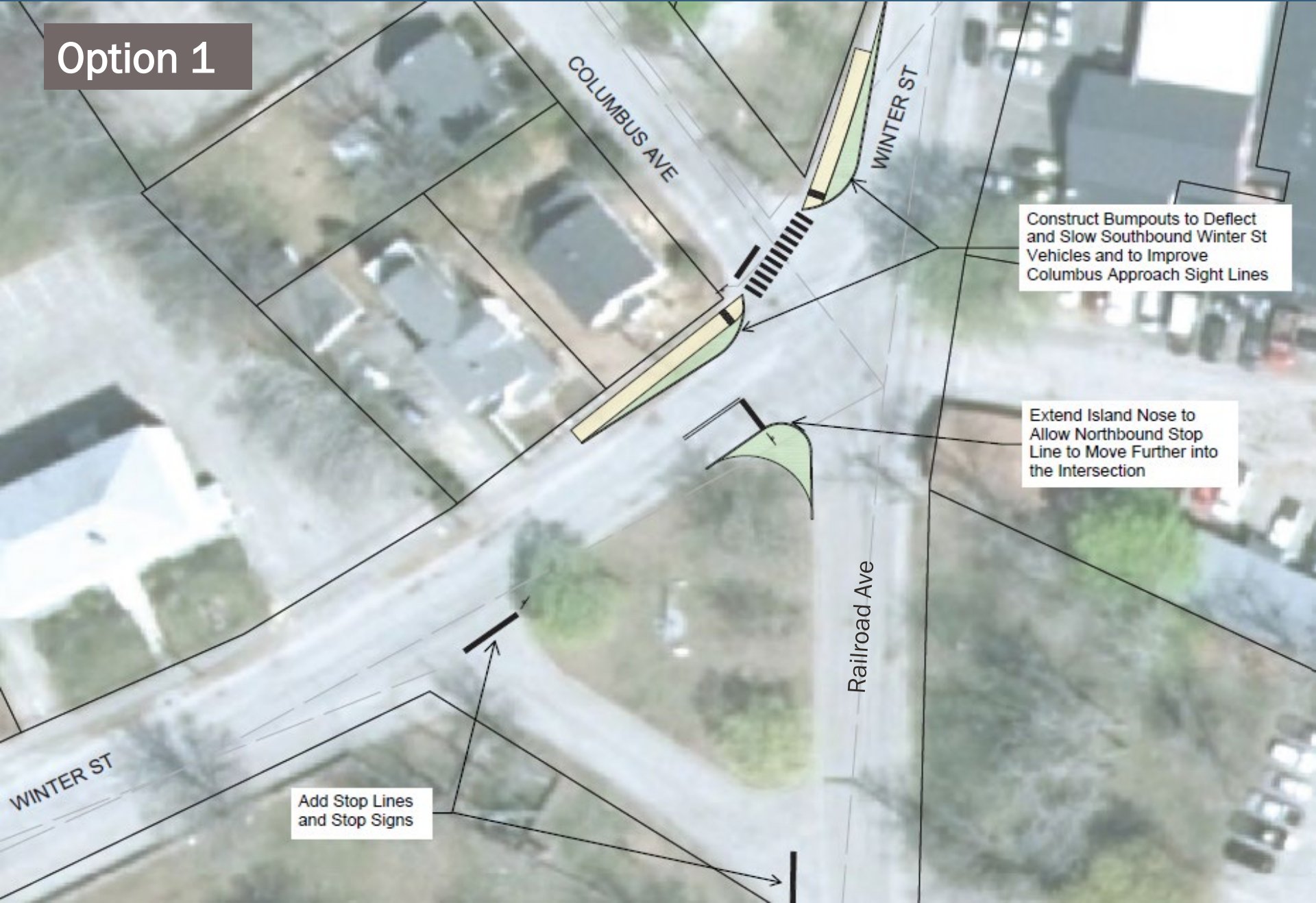
- Geometric alterations would provide minor benefit with low cost
- Reverse direction alternative would reduce conflicts in intersection for very little cost, however it would likely introduce undesirable delay on High Street.

Winter Street at Railroad and Columbus Avenues



Winter Street at Railroad and Columbus Avenues

Option 1



Construct Bumpouts to Deflect and Slow Southbound Winter St Vehicles and to Improve Columbus Approach Sight Lines

Extend Island Nose to Allow Northbound Stop Line to Move Further into the Intersection

Add Stop Lines and Stop Signs

Winter Street at Railroad and Columbus Avenues

Option 2



Winter Street at Railroad and Columbus Avenues

Option 3



RELOCATE CANNON AND ADD TREES TO NEW GREEN SPACE

Winter Street at Railroad and Columbus Avenues

Minor Improvements (Option 1):

- Minimal costs and improvements

Roundabout (Option 2):

- Slows traffic
- Reduces conflicts
- Expected to greatly reduce crash severity
- Minor property impacts
- Relatively costly (est: \$630,000 in 2021)

TEE intersection (Option 3):

- Eliminates skewed conflicts
- Medium cost (est: 350,000 in 2021)

Discussion

