Town of Windham

ROCKINGHAM PLANNING COMMISSION

NH 111 Corridor & Wall St Connector Feasibility Study

Project Advisory Committee Meeting
July 1, 2010

McFarland Johnson



Agenda

- Welcome/Introductions
- Public Comment
- PAC Meeting 7 Summary
- Revised Existing Conditions Memorandum
- Roundabout Primer
- Range of Reasonable Alternatives Discussion
- Recurring Business
  - Project Schedule
  - Project Website
  - Contract Extension
  - Tracking
- Next Meeting
- Adjourn





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What is a Roundabout?

Circular One-Way Intersection


Main Street, Nashua

It Is *NOT* a Traffic Circle or Rotary !!!

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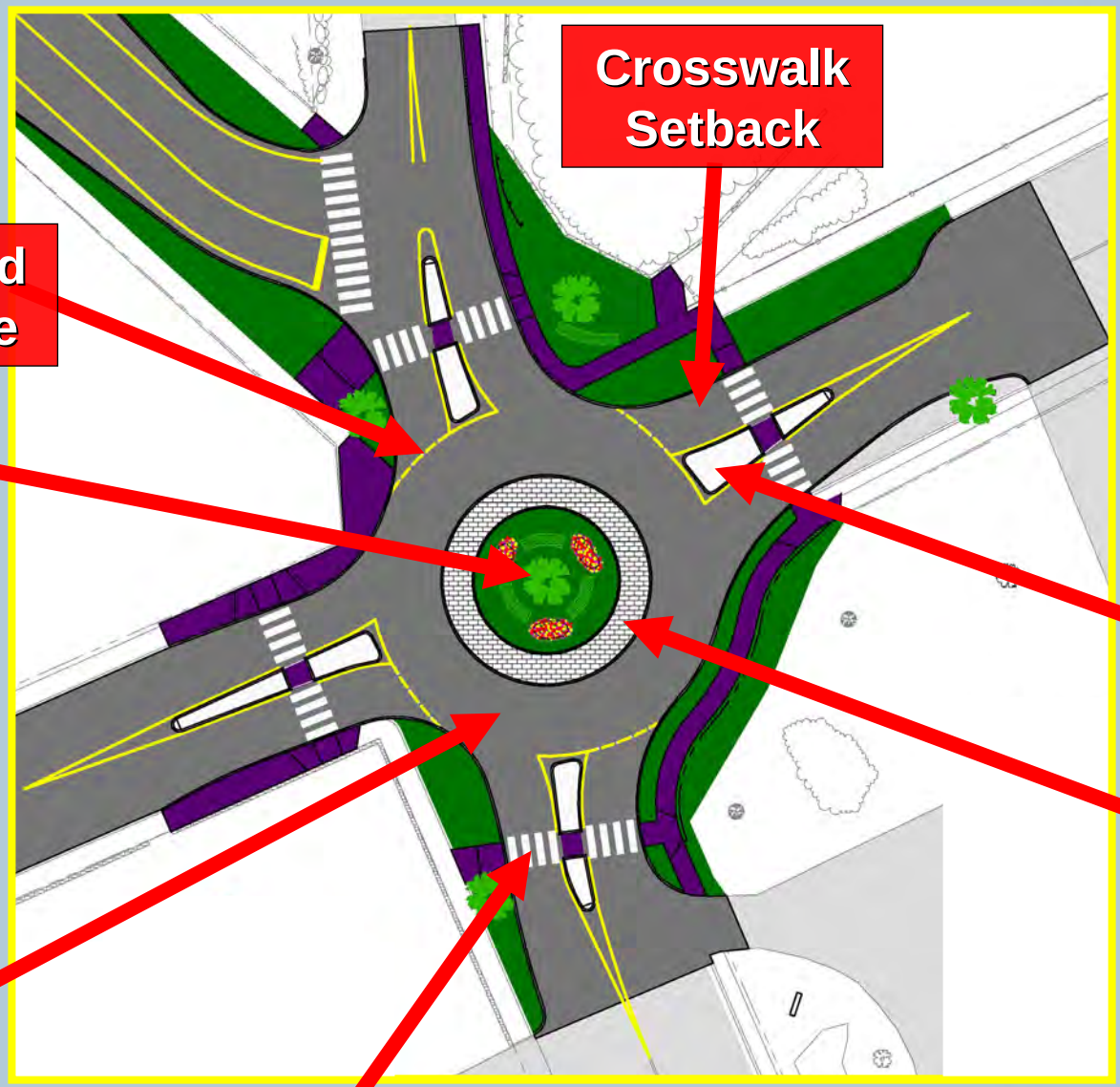
They are not Traffic Circles!



Kingston, NY

Wall St Extension





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Why Roundabouts?

- Higher capacity
- Smoother flow
- Safe (Save Lives)
- Aesthetic
- Reduced Pollution
- Slows all traffic
- Quicker and safer for pedestrians



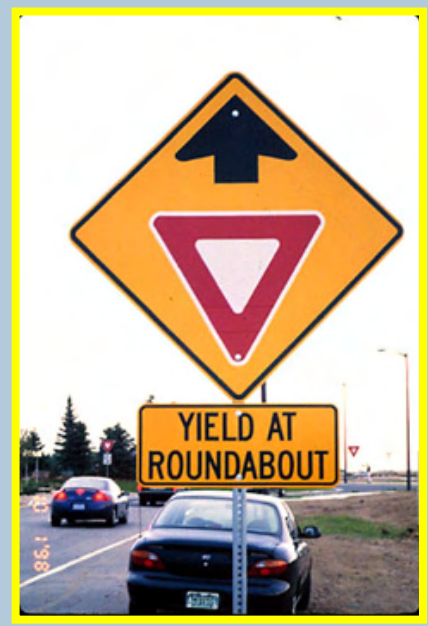
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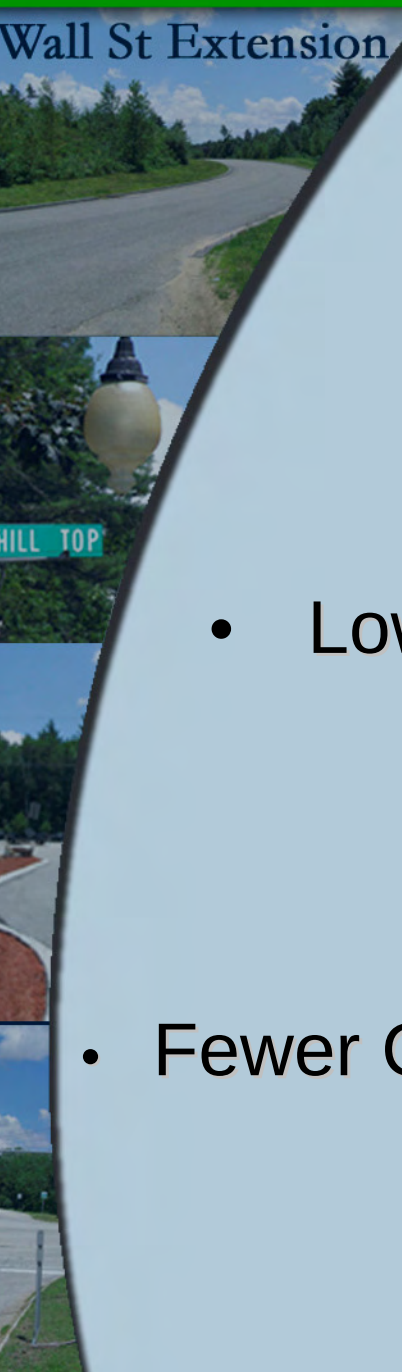
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How to Drive a Roundabout

- Yield to Vehicles in the Roundabout
- Choose a Gap
- Enter the Roundabout
- Yield to Pedestrians When Entering and Exiting



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Roundabouts are Safer because:

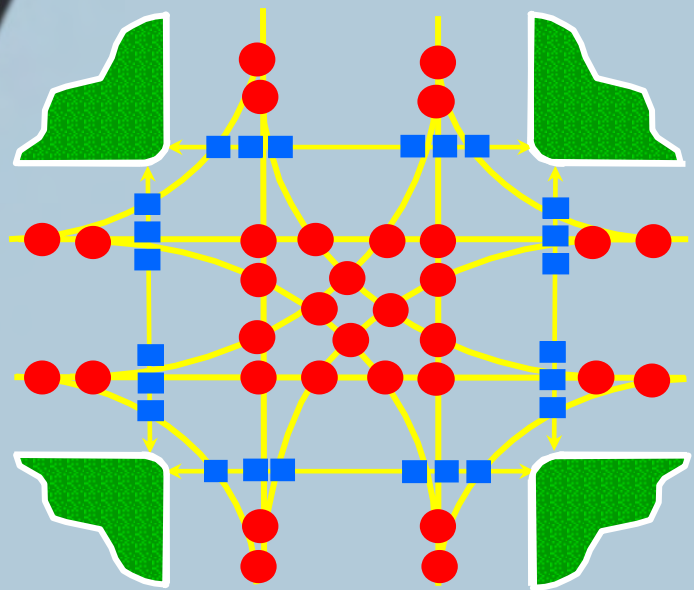
- Shorter Crosswalks
- Lower Speeds
- Fewer Conflicts



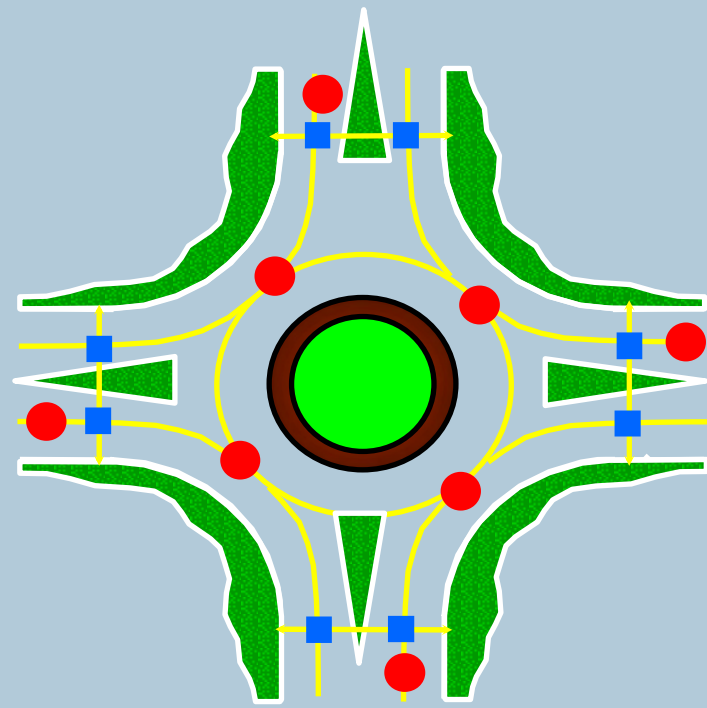


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Fewer Conflicts



- 32 Vehicle to vehicle conflicts
- 24 Vehicle to pedestrian conflicts



- 8 Vehicle to vehicle conflicts
- 8 Vehicle to pedestrian conflicts

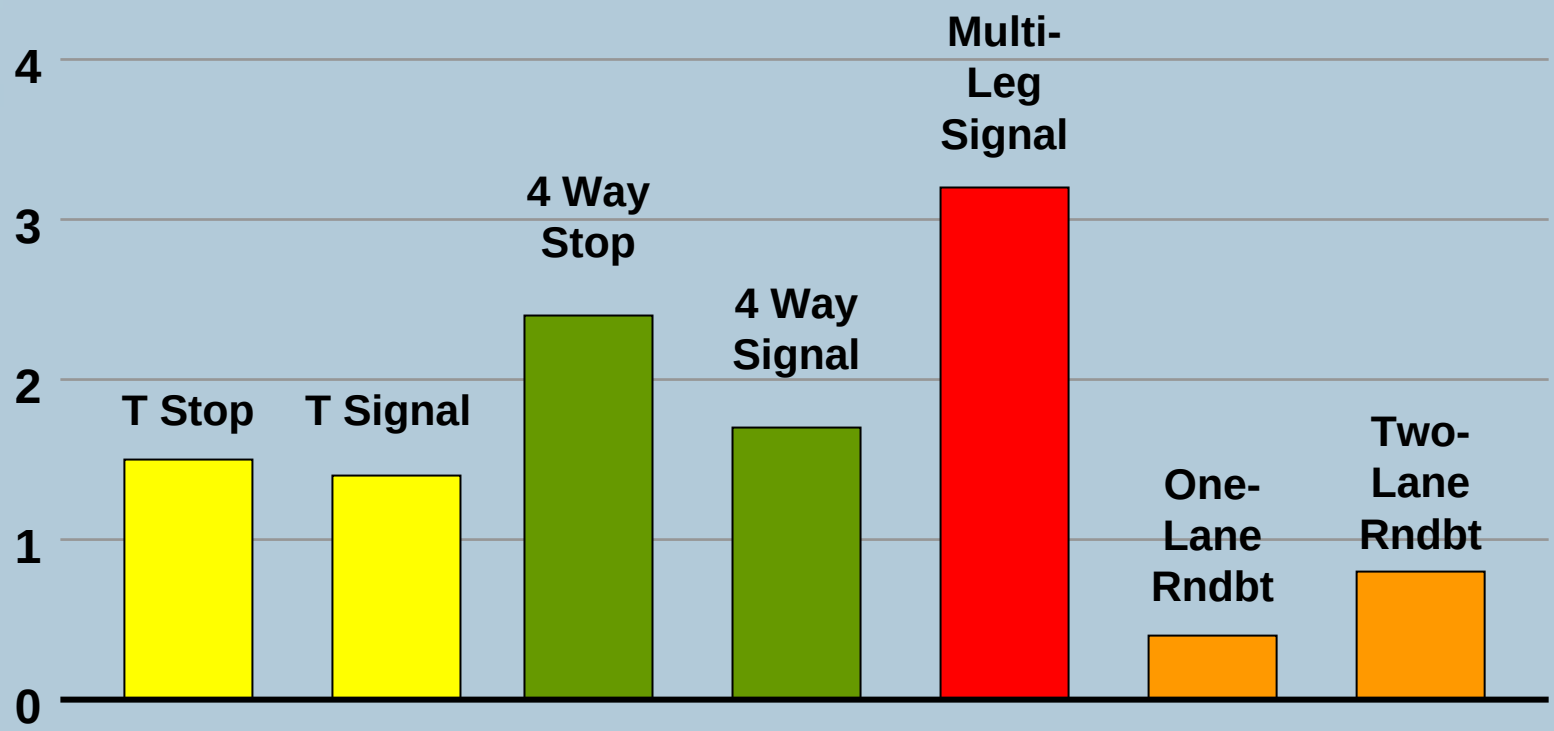
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If we compare crash rates

Crashes per Million Vehicles



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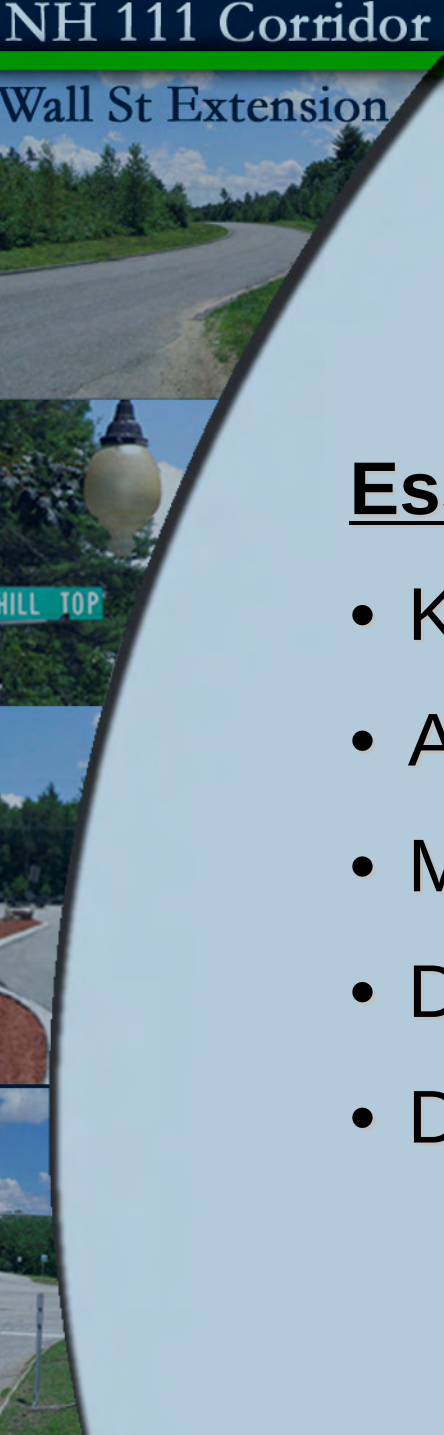


Roundabout Safety United States

Decrease in crashes:

- Overall: 35%
- Injury-producing: 75%
- Fatal or incapacitating: 90%
- Pedestrian: 35%
- Bicycle: 10%

Source: FHWA Study



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Pedestrian Safety

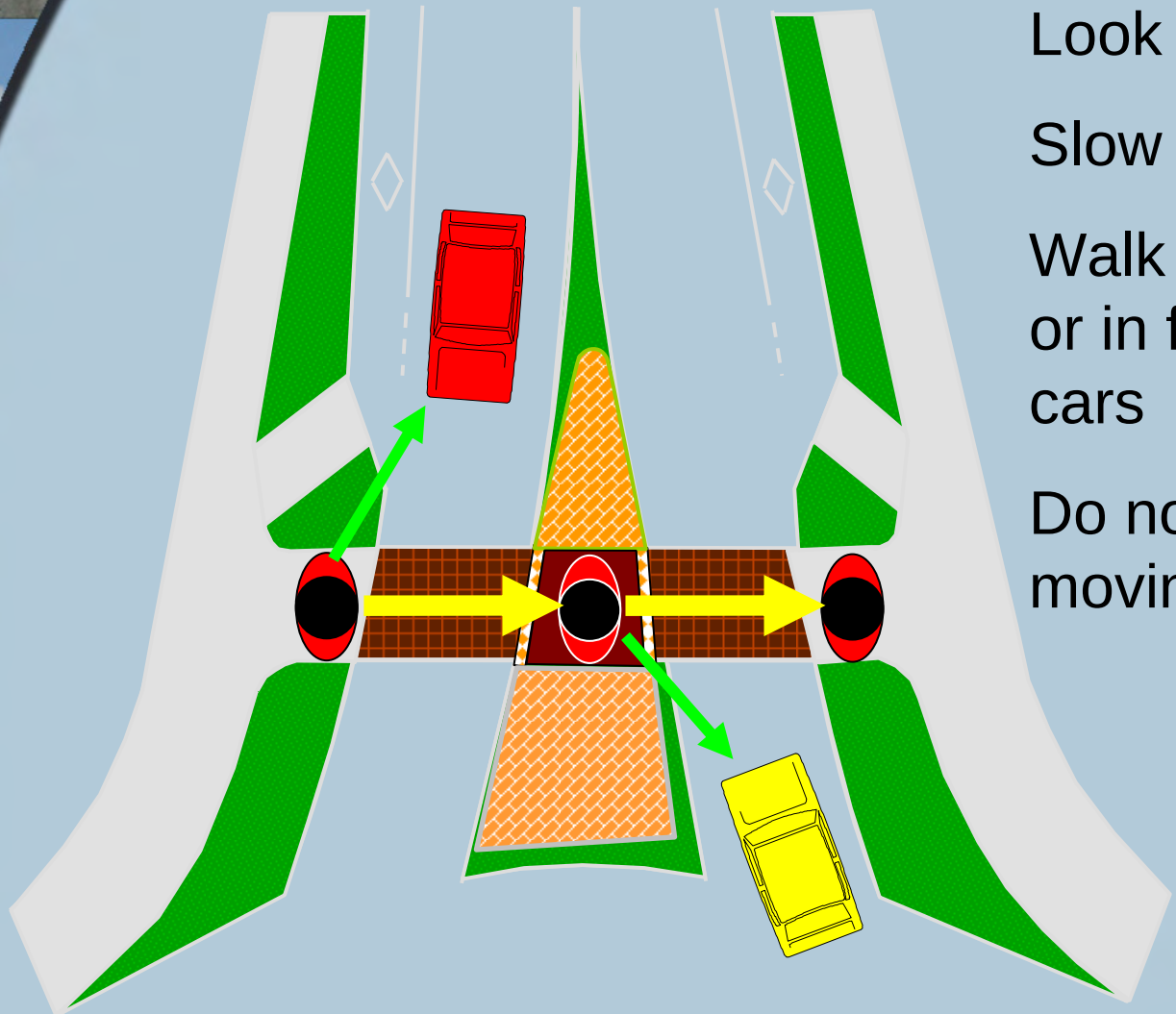
Essential design elements:

- Keep vehicle speeds low
- Adequate size splitter islands
- Move crossings back from yield line
- Define crossing areas
- Discourage crossings to central island



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Pedestrians area safer - cross from curb to island, island to curb



Look one-way,

Slow cars

Walk behind moving, or in front of stopped cars

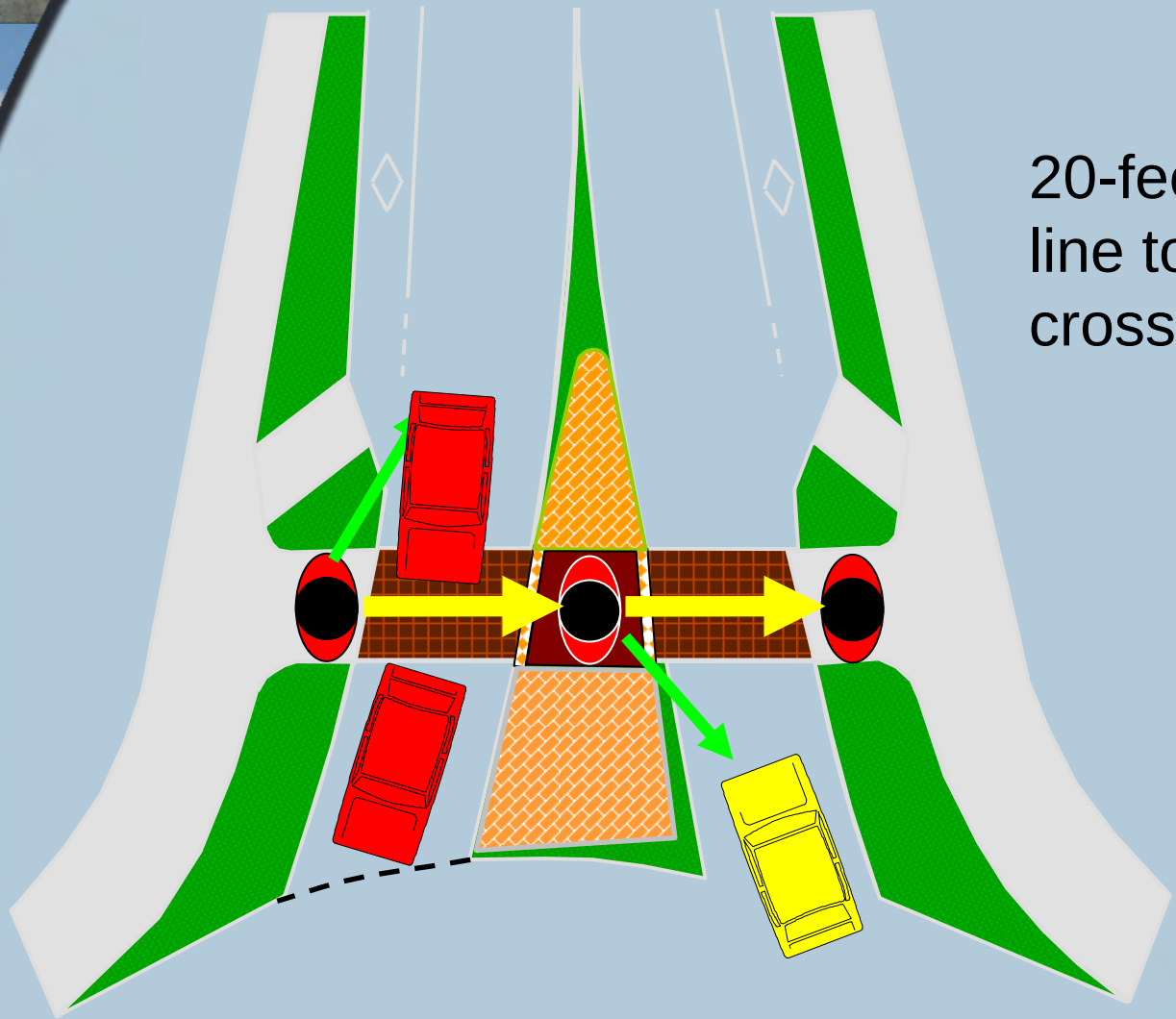
Do not walk in front of moving cars

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Pedestrian Crossing Location



20-feet from yield line to pedestrian crossing

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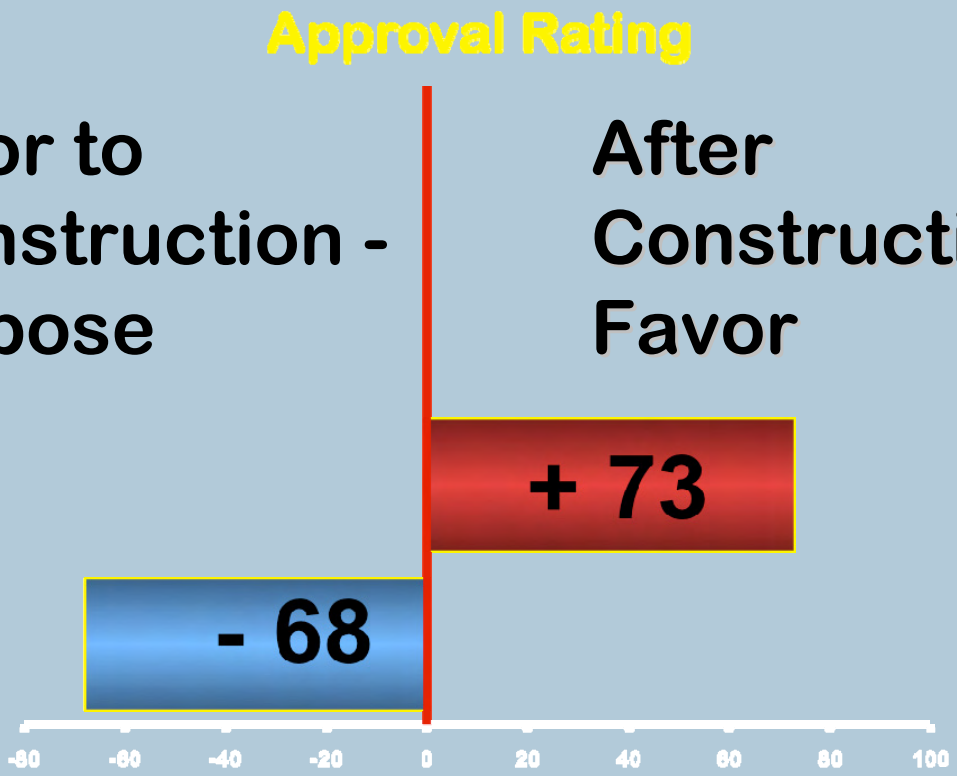
Environmental Sustainability

- Less water run-off – less pavement
- Less energy consumption – signals
- Less gasoline consumption
- Less pollution – vehicles
- Therefore a smaller carbon footprint



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Acceptance



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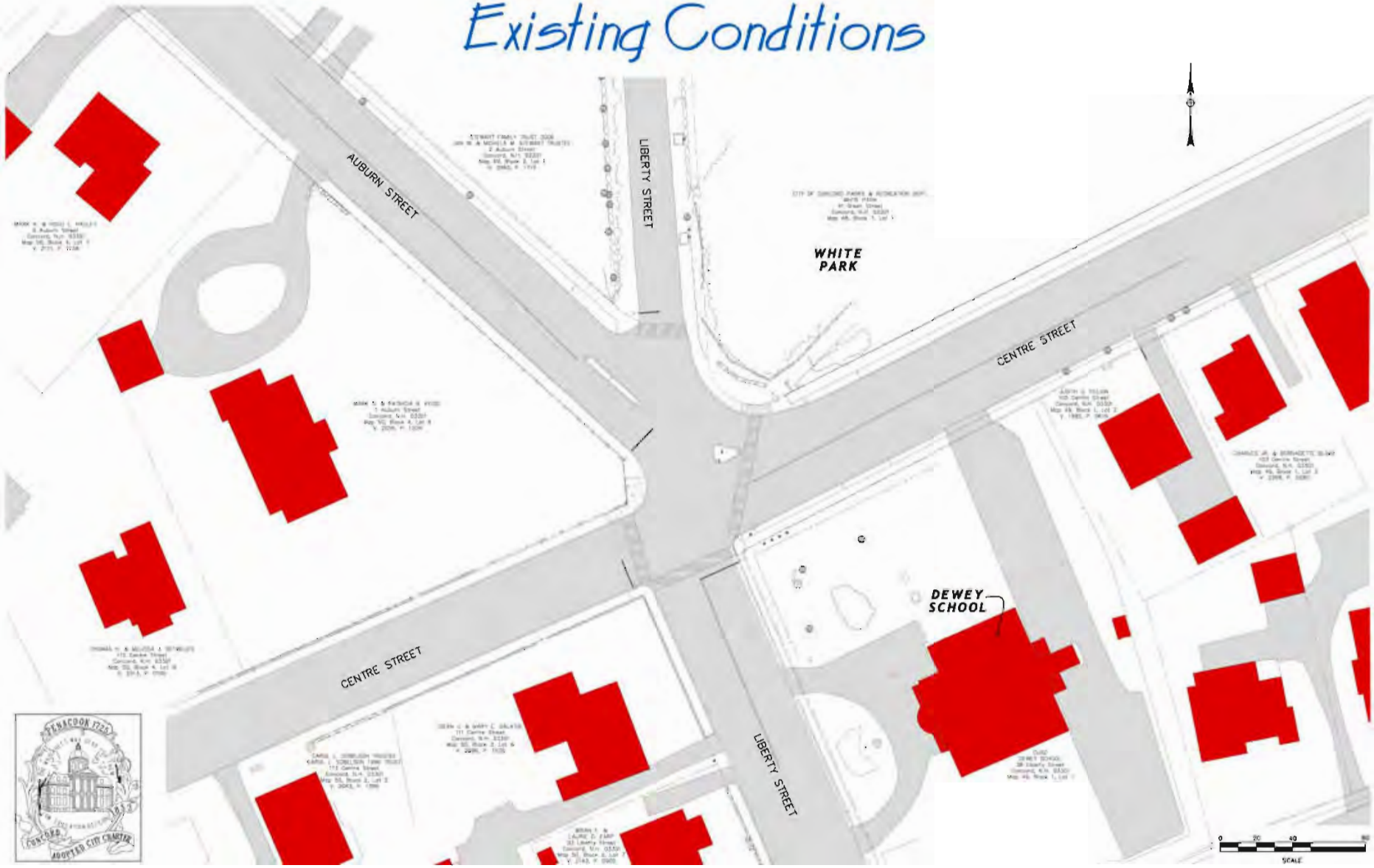




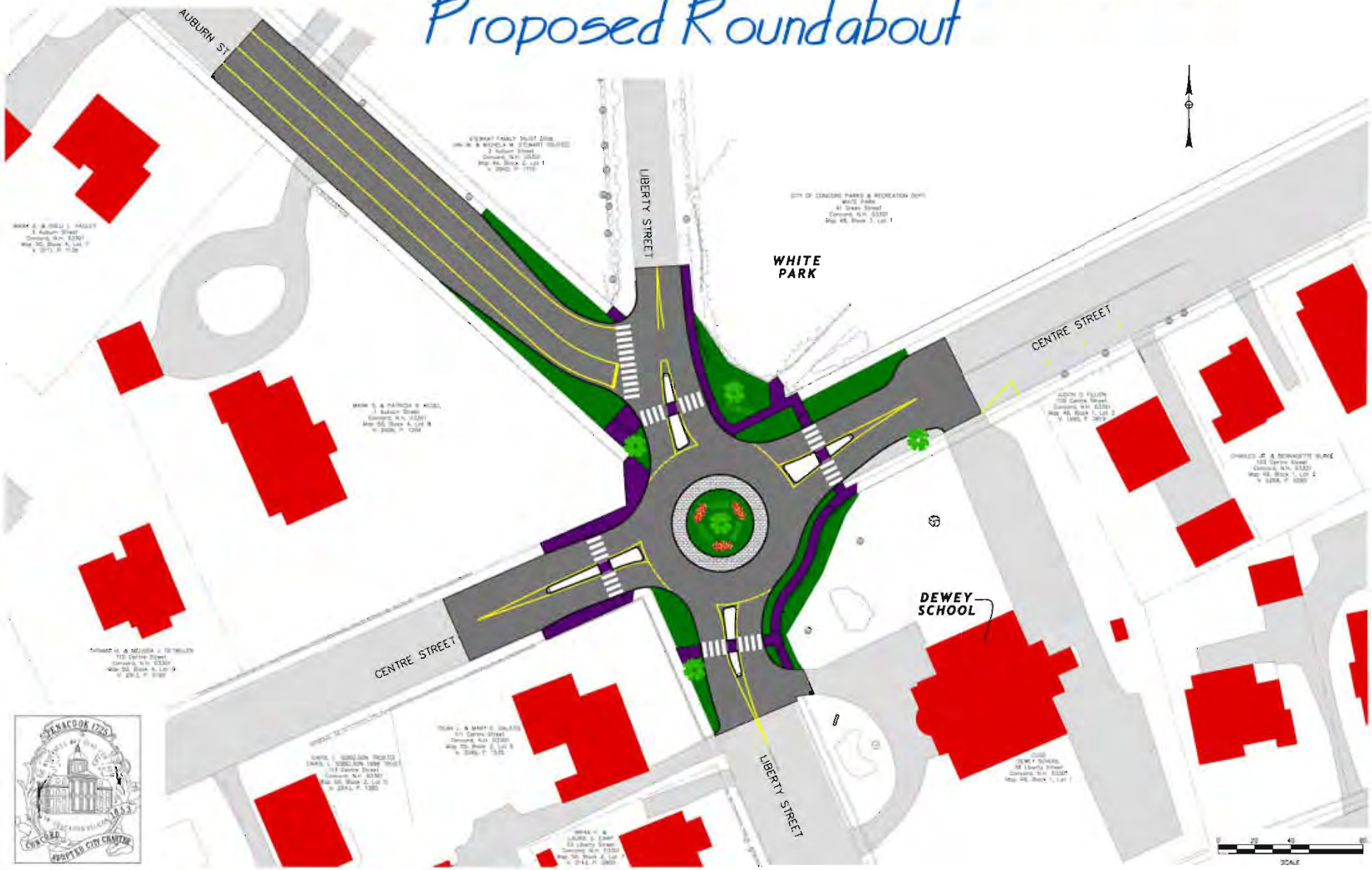
Roundabouts in NH

- Goffstown – Grasmere
- Goffstown – Mast Rd/Wallace Rd. (2010)
- Nashua (2)
- Keene (3)
- Hanover (2)
- Plymouth – Main Street
- Meredith – Parade Road (Route 106)
- Rye – Foyes Corner
- Concord – North State St./Franklin St.
- Concord – Centre St./Liberty St.
- Manchester – MHT Airport (2011)

Centre, Liberty, and Auburn Street Intersection
Existing Conditions



Centre, Liberty, and Auburn Street Intersection
Proposed Roundabout



Wall St Extension









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Concord – Centre/Liberty Streets



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Wall St Extension









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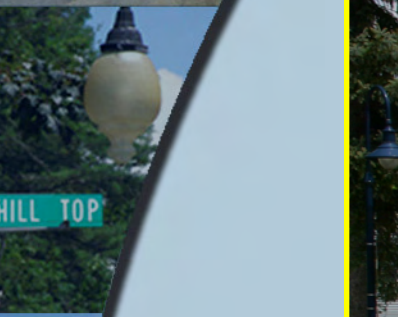
Meredith – Parade Road



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Wall St Extension









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Nashua – Broad Street



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Wall St Extension









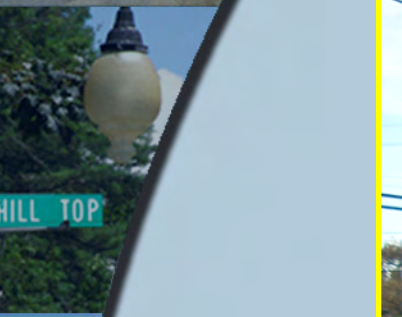
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Nashua – Main Street



Wall St Extension







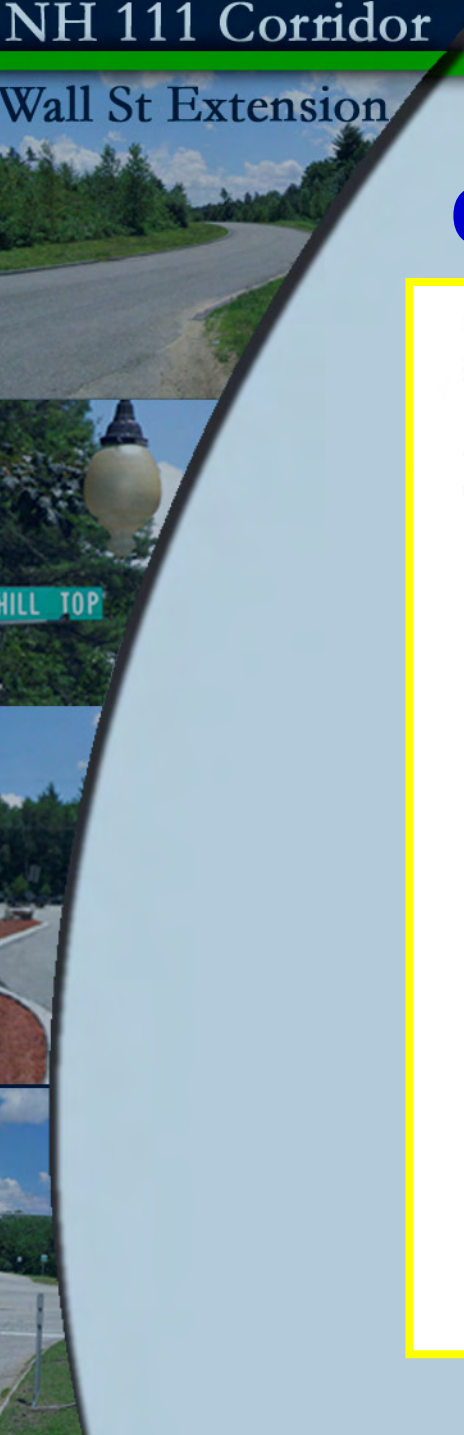


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Goffstown – Grasmere

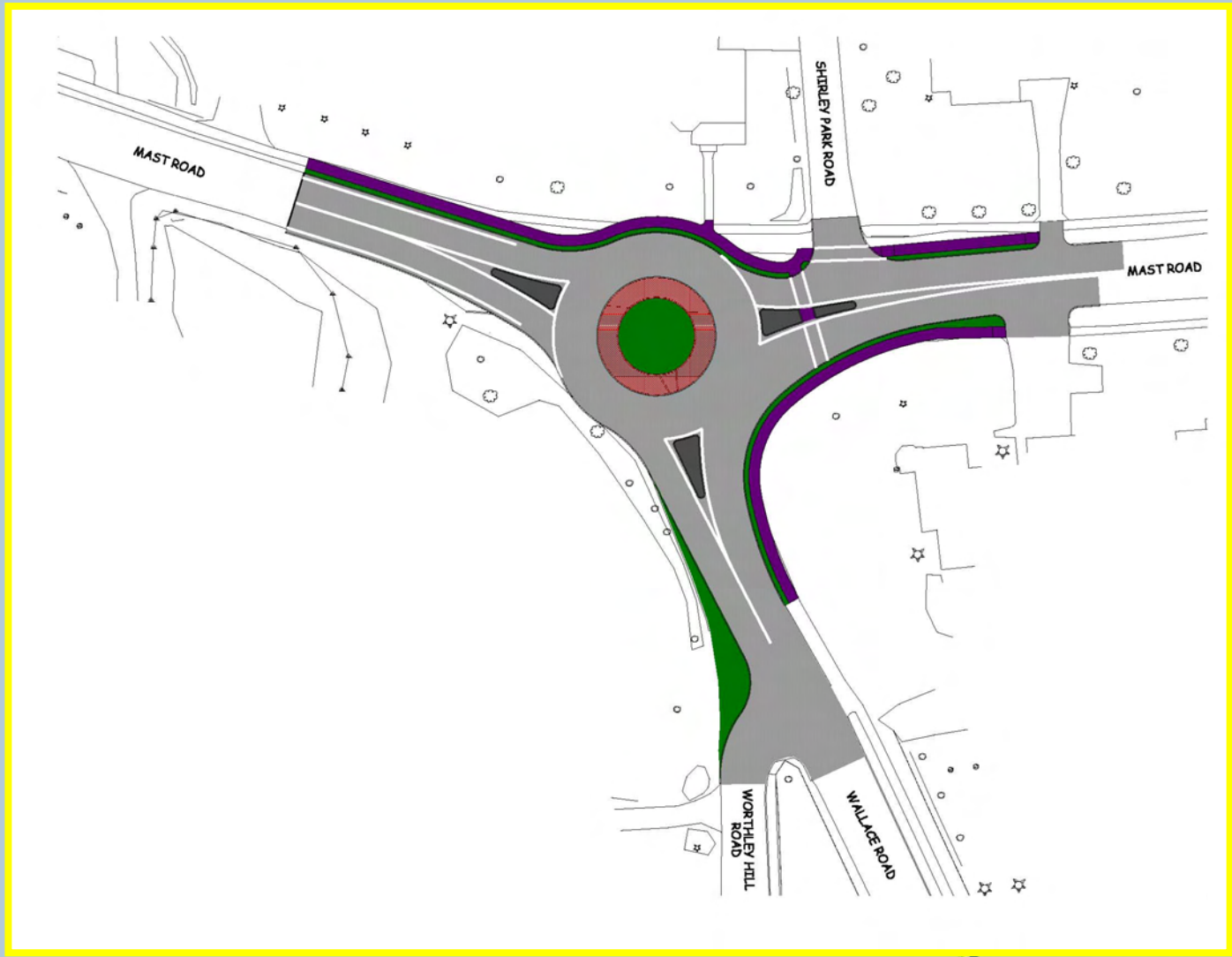


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Goffstown – Mast/Wallace Roads



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Keene – Court Street



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Keene – Main/Marlborough/Winchester Streets



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Wall St Extension









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Keene – Route 101/10



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Roundabouts In Series



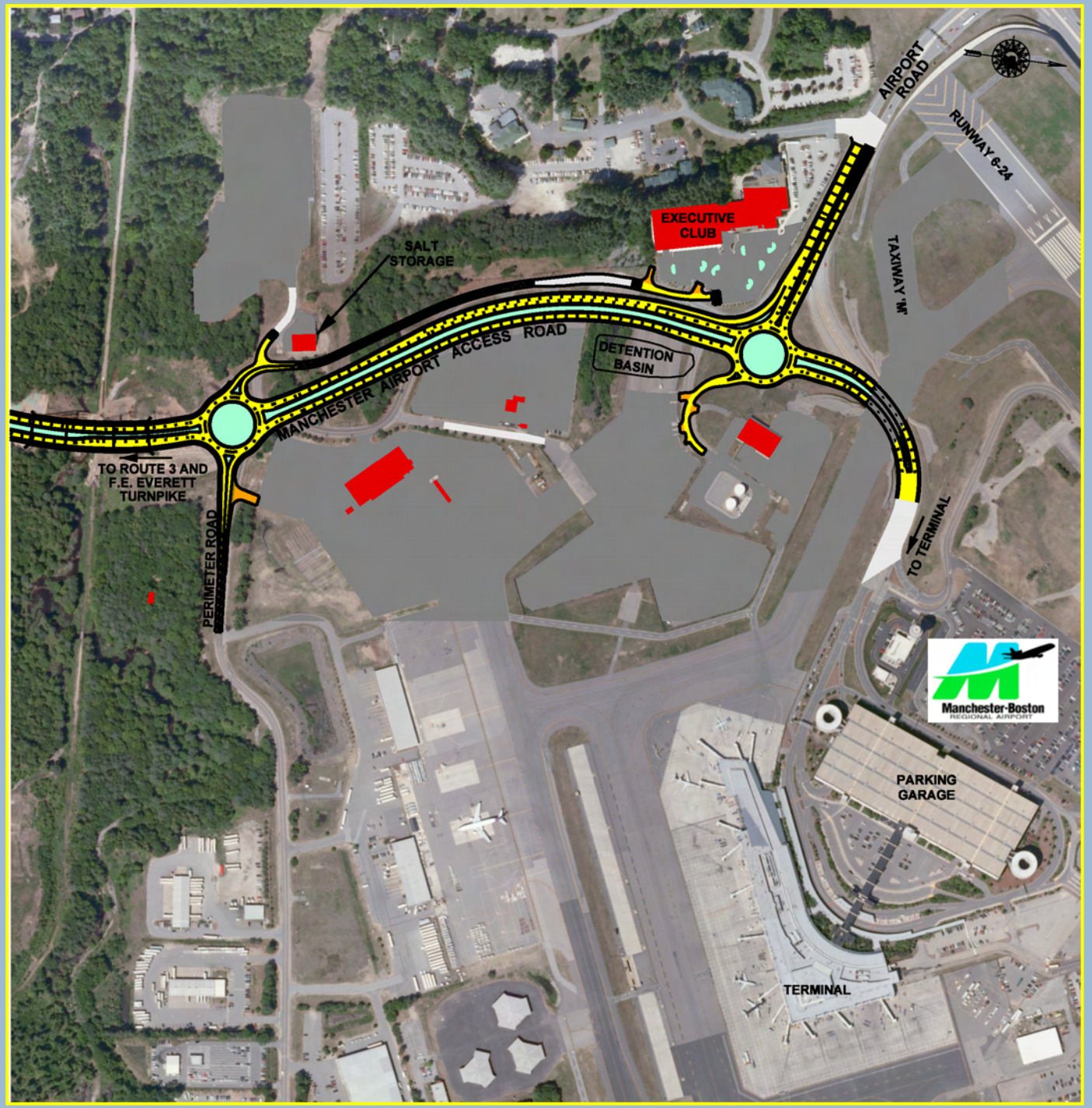
Malta, NY – I-87/Route 67

Roundabouts In Series

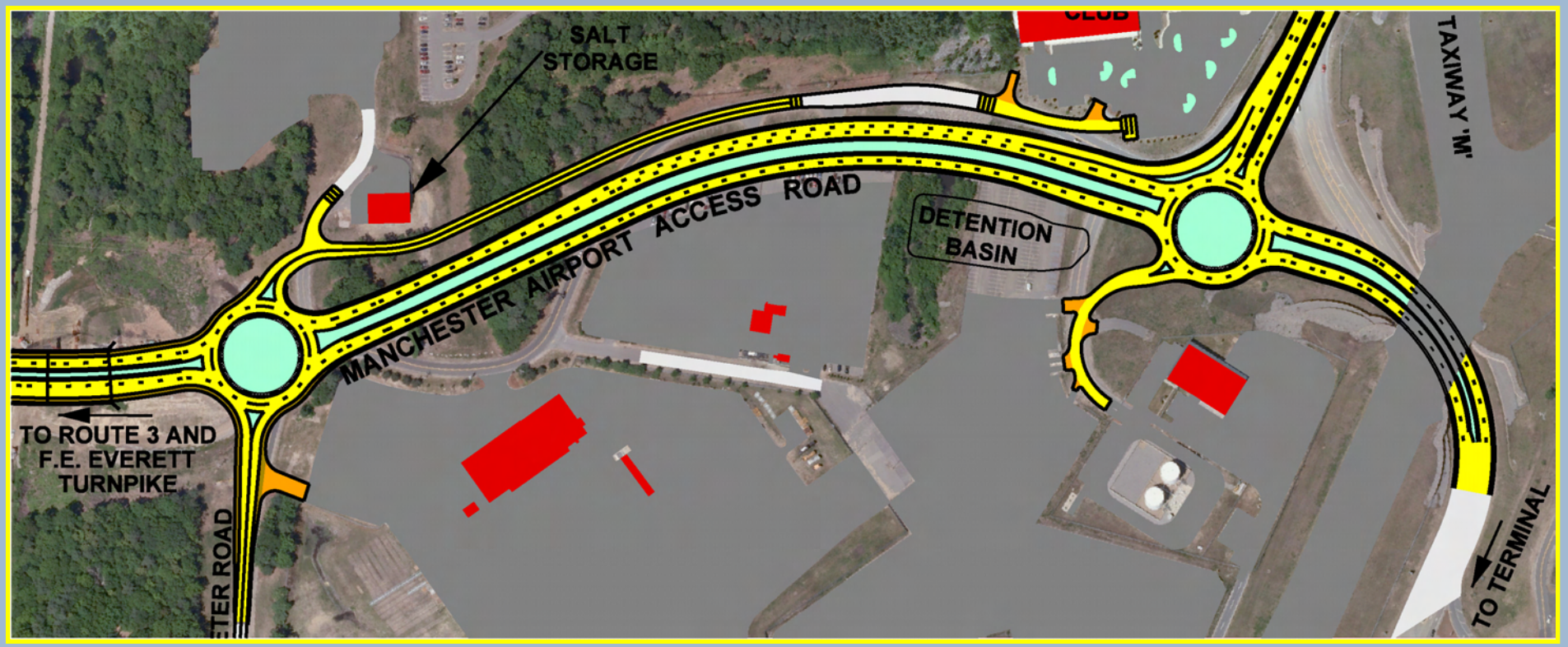
Malta, NY
I-87/Route 67



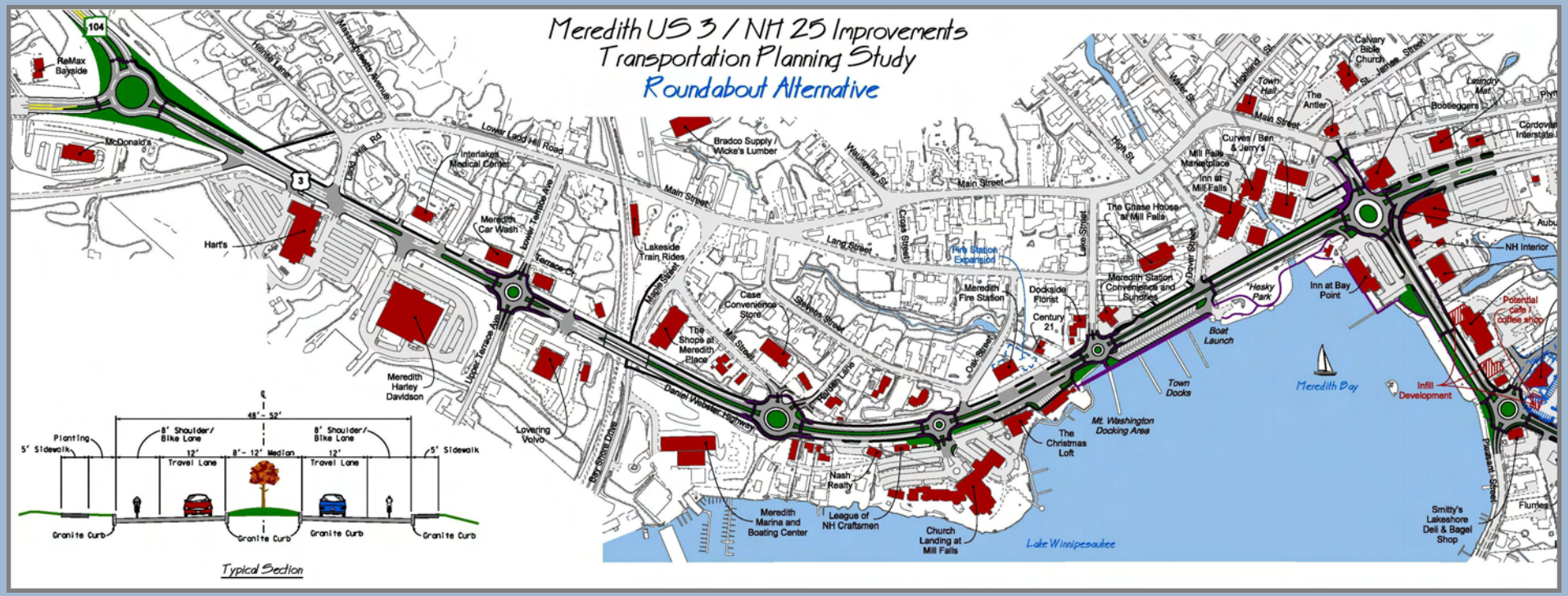
New Airport Access Road



New Airport Access Road



Meredith US 3/NH 25 Corridor











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Alternatives

- No Build
- Wall Street Extension
- NH 111 Bypass
- In-Corridor Improvements
  - Design Speed
  - Lane Configuration
  - Upgraded Signals
  - Roundabouts

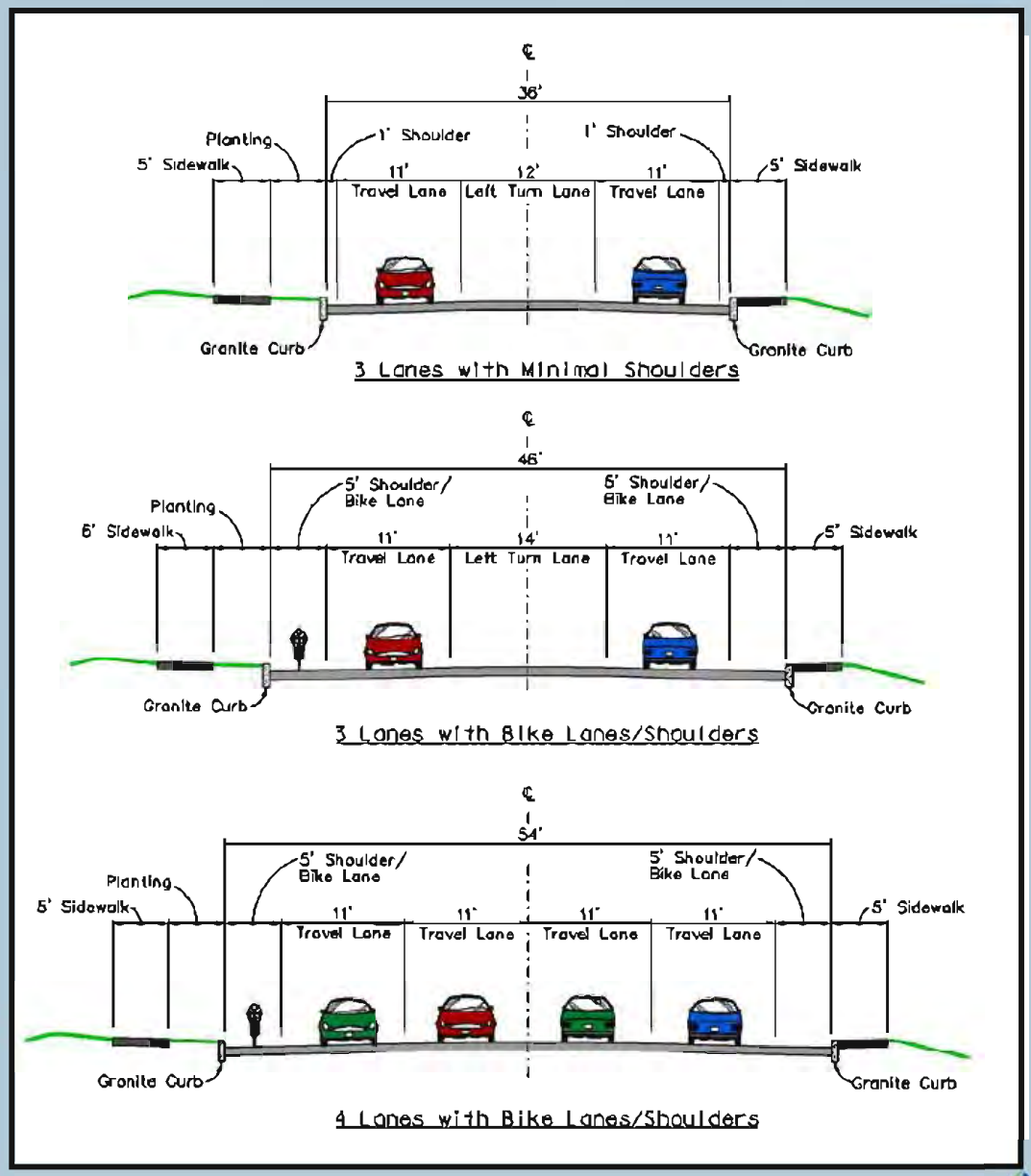


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NH 111 Corridor

Wall St Extension





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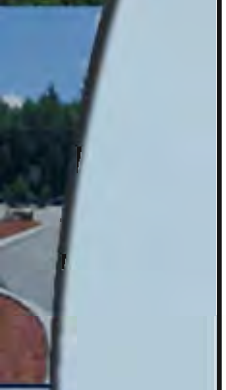
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NH 111 Corridor

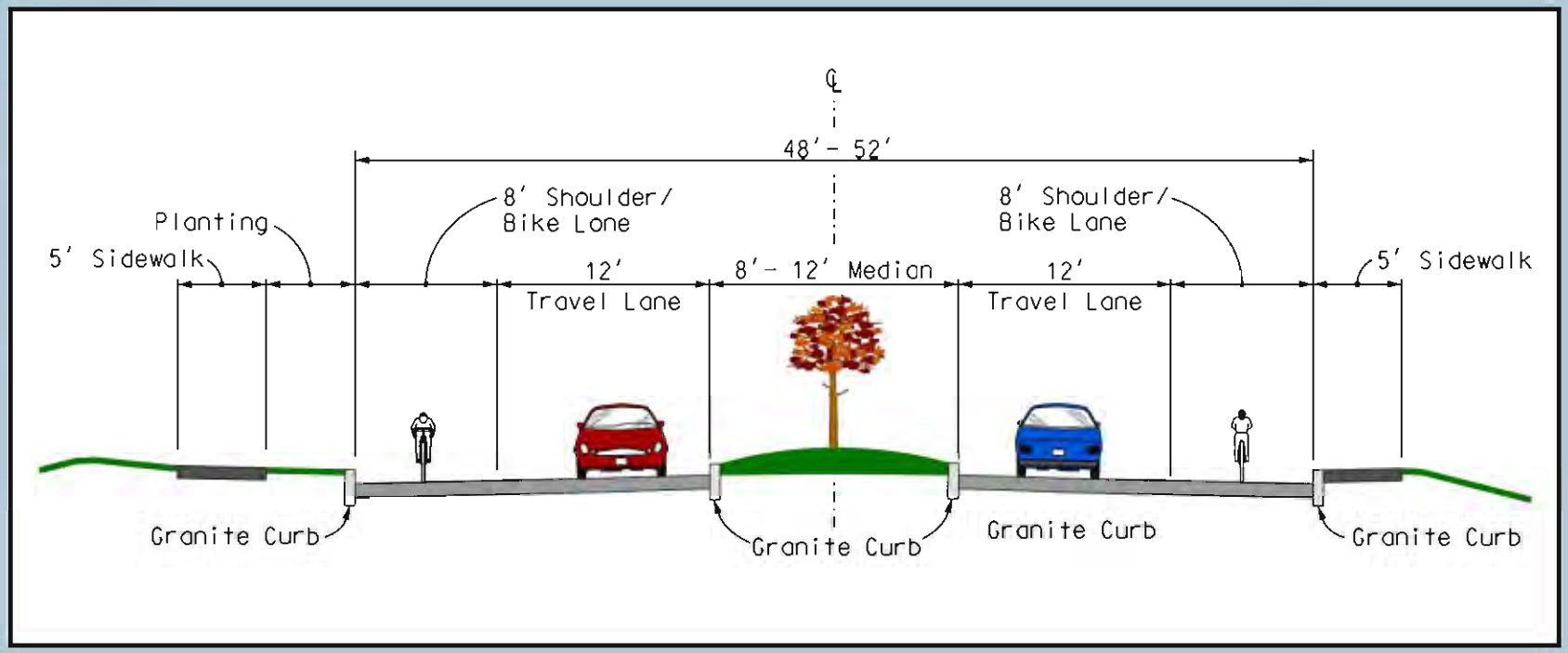
Wall St Extension



















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Level of Service (LOS)

Intersection Level of Service Criteria	
Level of Service	**Controlled Delay (sec/veh)**
A	**≤ 10**
B	**> 10 and ≤ 20**
C	**> 20 and ≤ 35**
D	**> 35 and ≤ 55**
F	**> 80**

The operating level of Service (LOS) for signalized intersections and roundabouts is determined by the computed or measured delay.









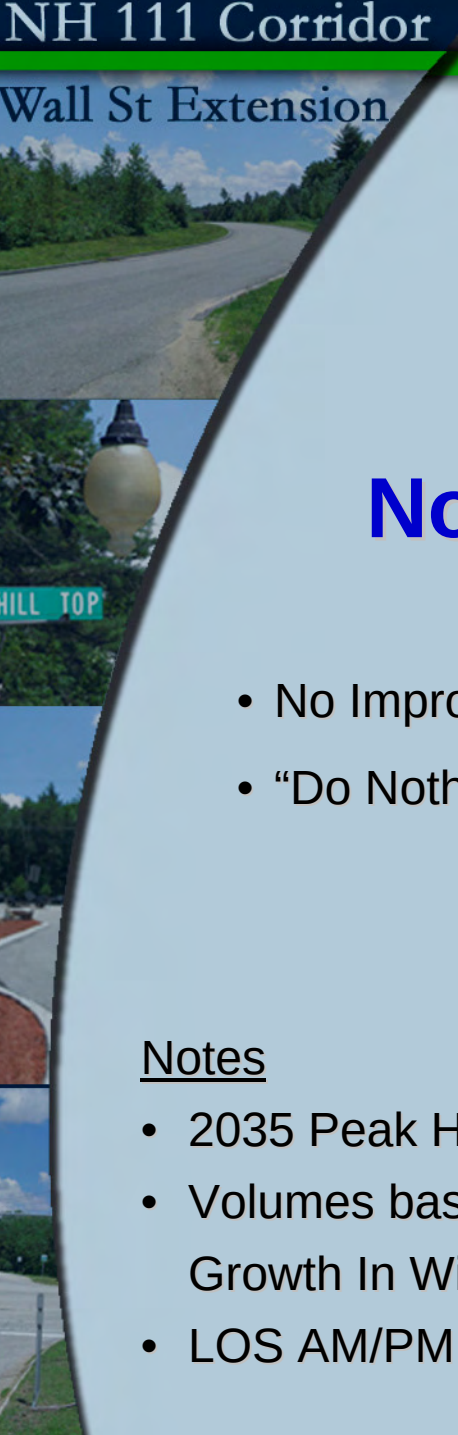
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Wall St Extension

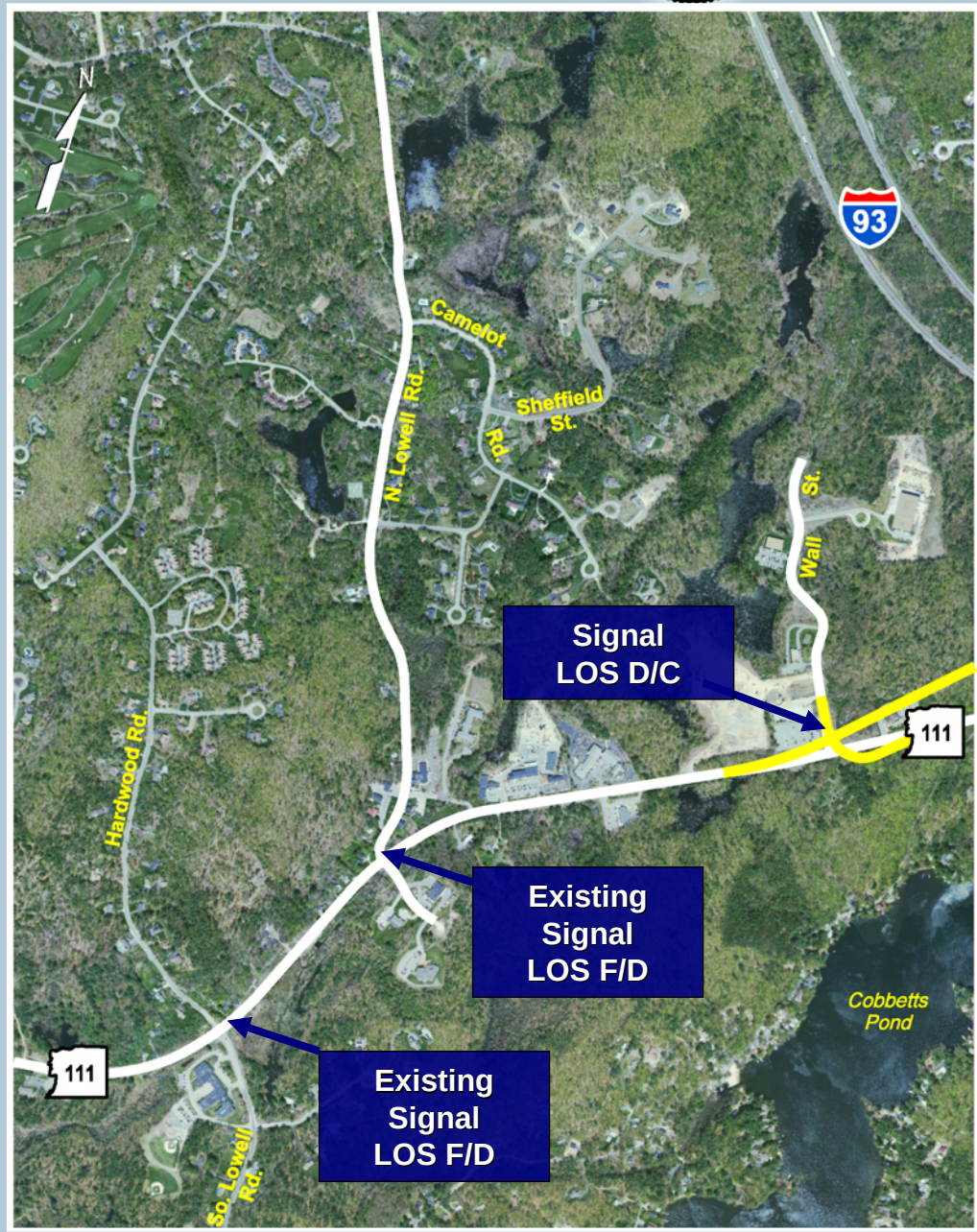


No Build

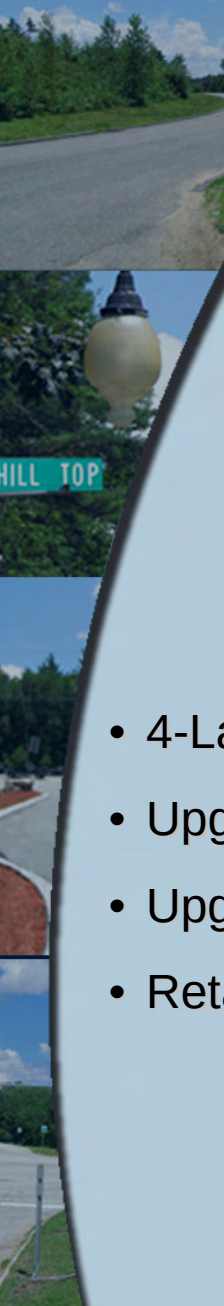
- No Improvements
- "Do Nothing" Alternative

Notes

- 2035 Peak Hour Volumes
- Volumes based on High Growth In Windham
- LOS AM/PM

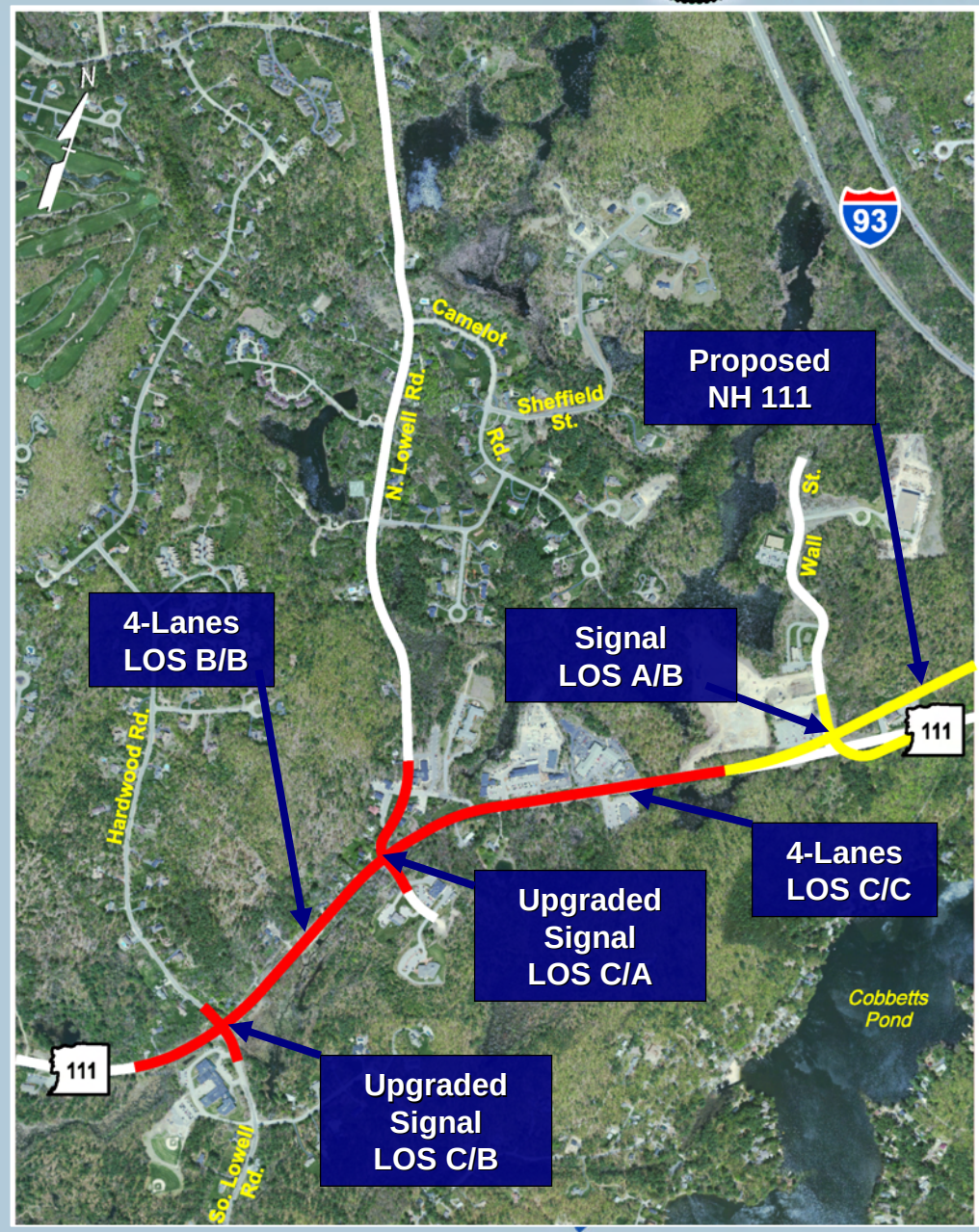


Wall St Extension



In-Corridor Signal Alternative

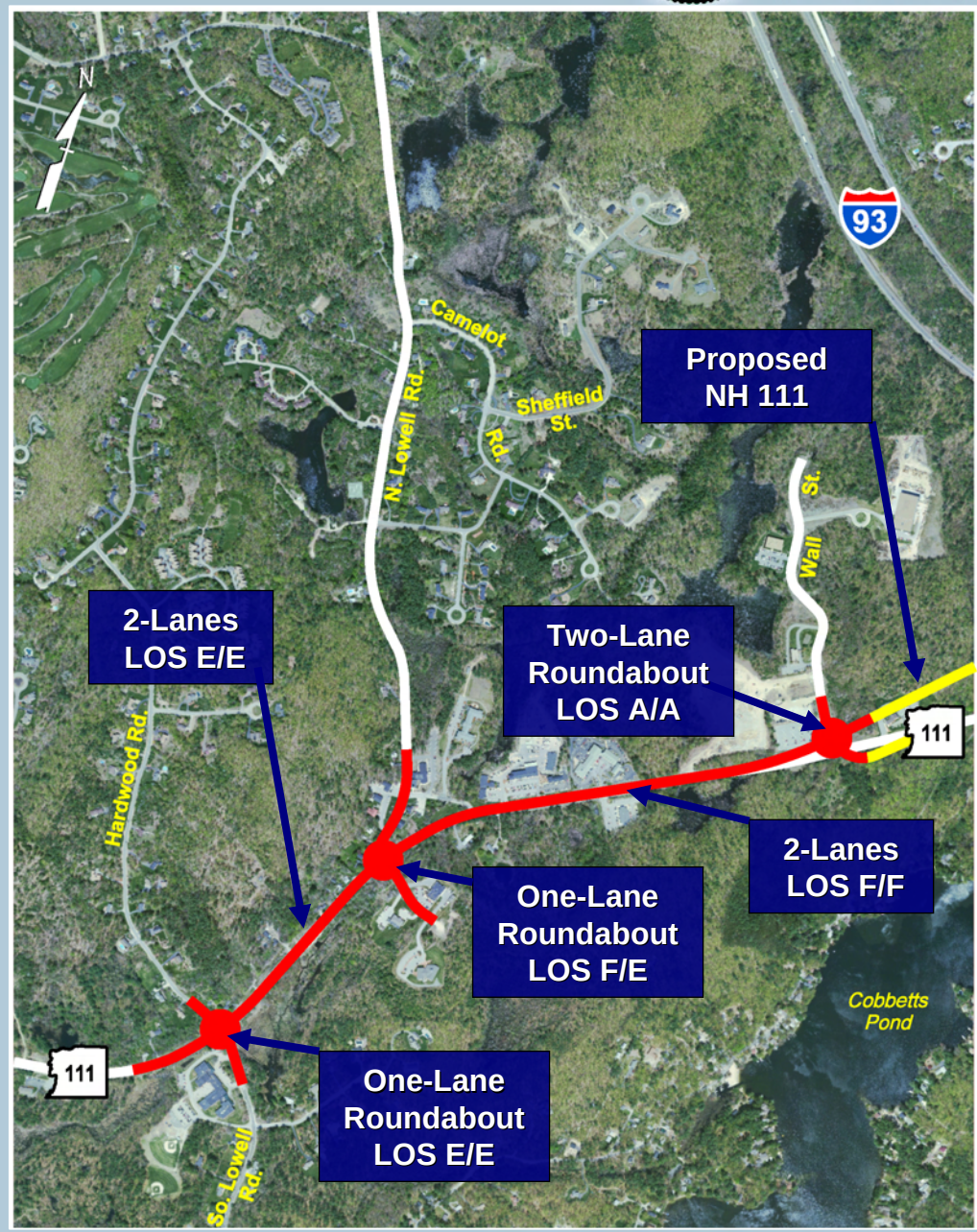
- 4-Lanes on NH 111
- Upgraded Signal at N. Lowell Rd
- Upgraded Signal at S. Lowell Rd
- Retain Proposed Signal at Wall St





In-Corridor One-Lane Roundabout Alternative

- 2-Lanes on NH 111
- One-Lane Roundabout at N. Lowell Rd
- One-Lane Roundabout at S. Lowell Rd
- Two-Lane Roundabout at Wall St

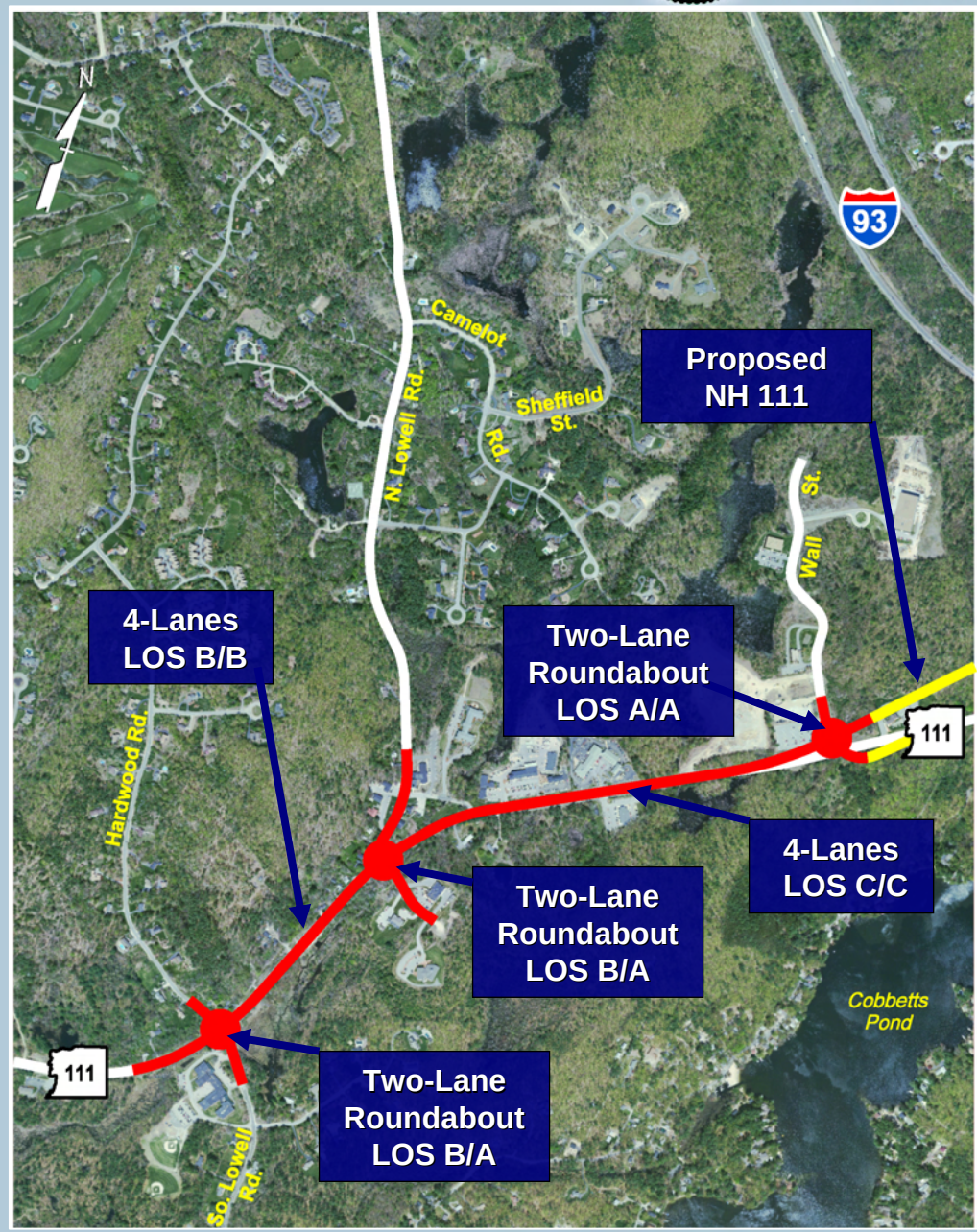


Wall St Extension



In-Corridor 2-Lane Roundabout 4-Lane Corridor Alternative

- 4-Lanes on NH 111
- Two-Lane Roundabout at N. Lowell Rd
- Two-Lane Roundabout at S. Lowell Rd
- Two-Lane Roundabout at Wall St

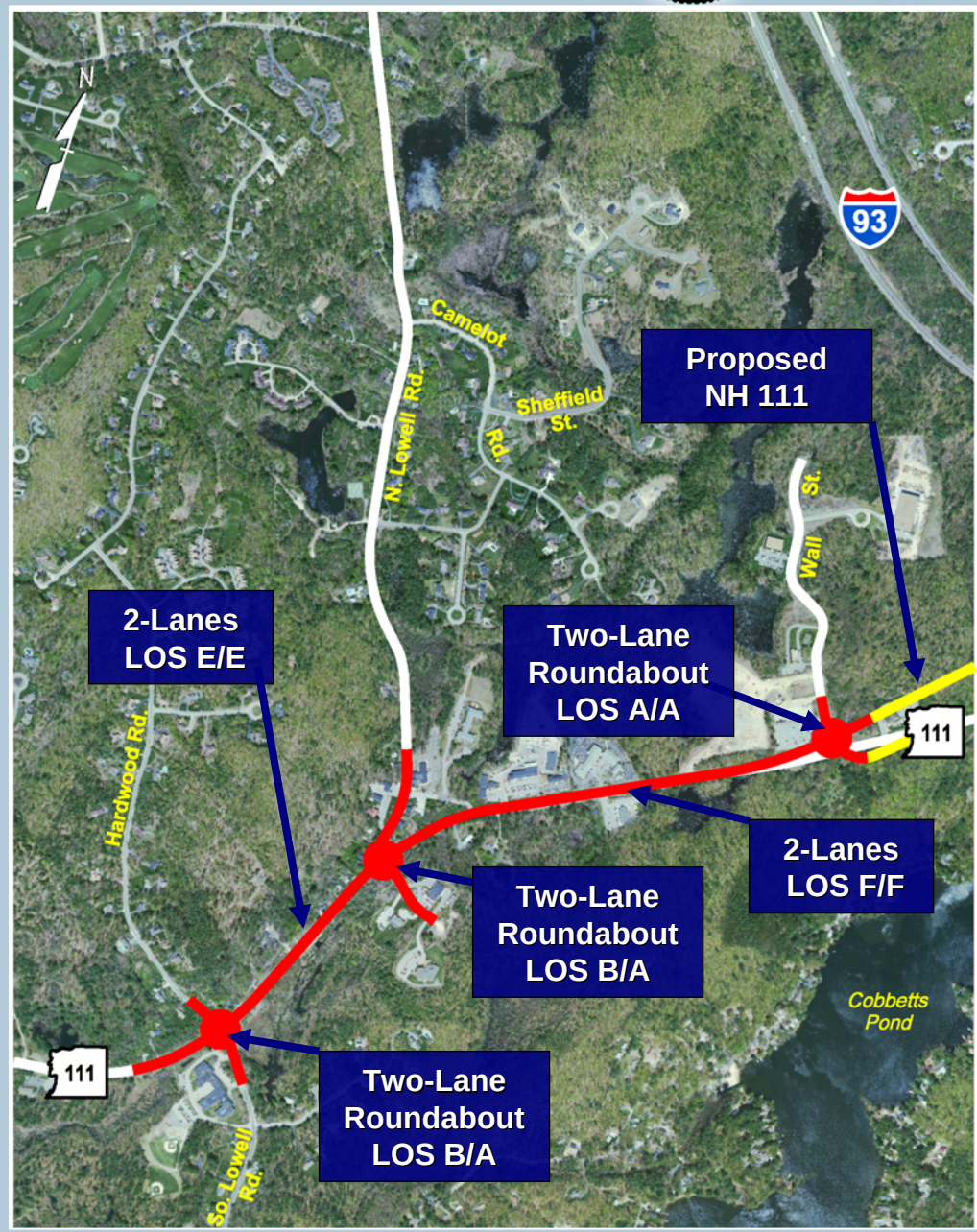


Wall St Extension



In-Corridor 2-Lane Roundabout 2-Lane Corridor Alternative

- 2-Lanes on NH 111
- Two-Lane Roundabout at N. Lowell Rd
- Two-Lane Roundabout at S. Lowell Rd
- Two-Lane Roundabout at Wall St

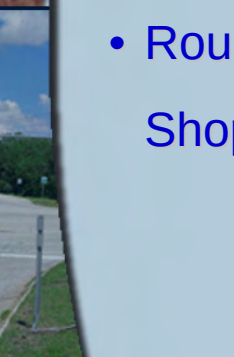


Wall St Extension



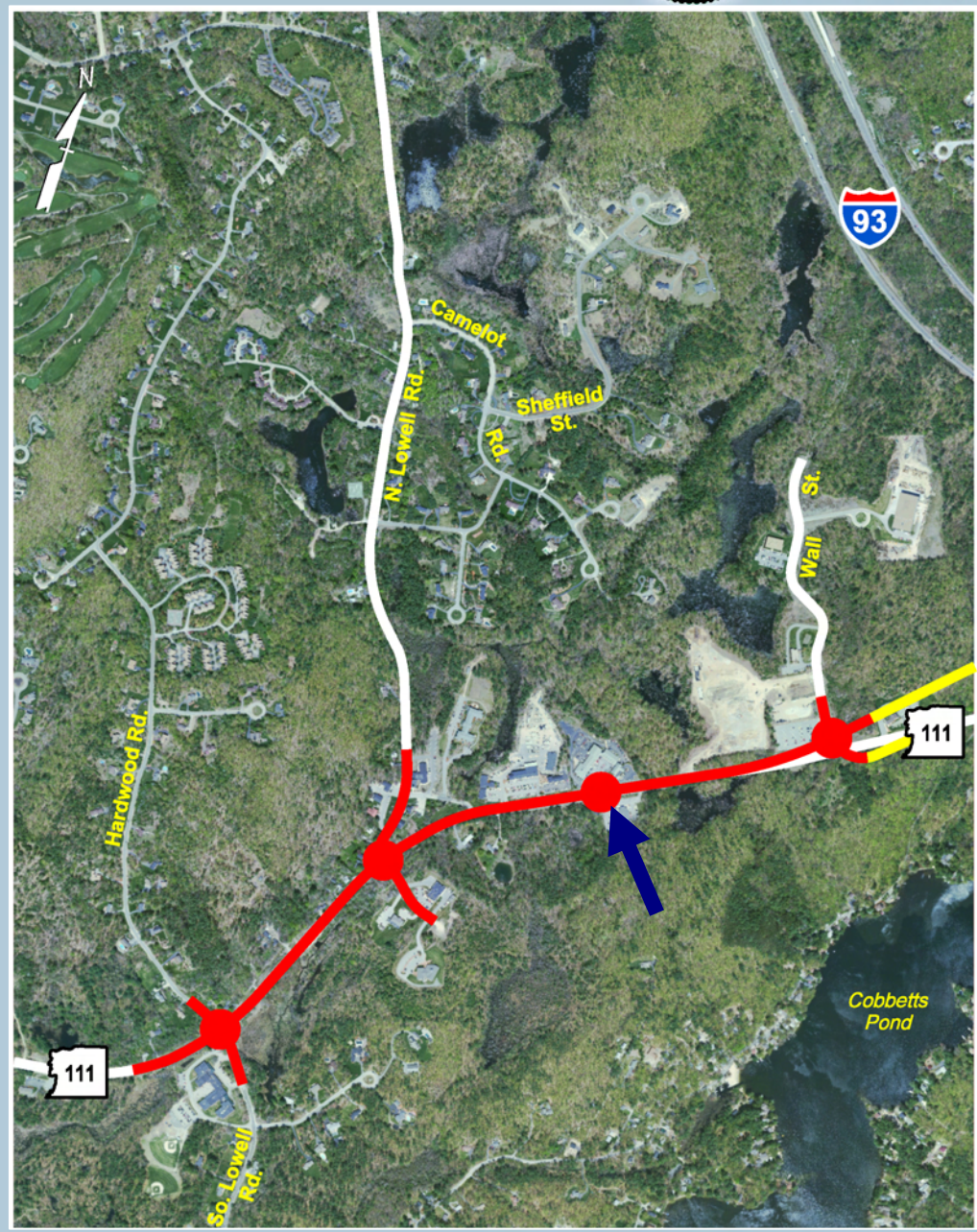






In-Corridor Roundabout Option

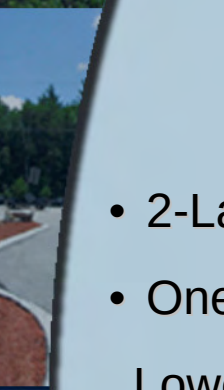
- Roundabout at N. Lowell Rd
- Roundabout at S. Lowell Rd
- Roundabout at Wall St
- Roundabout at USPS/ Shopping Mall

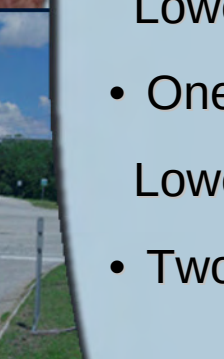


Wall St Extension



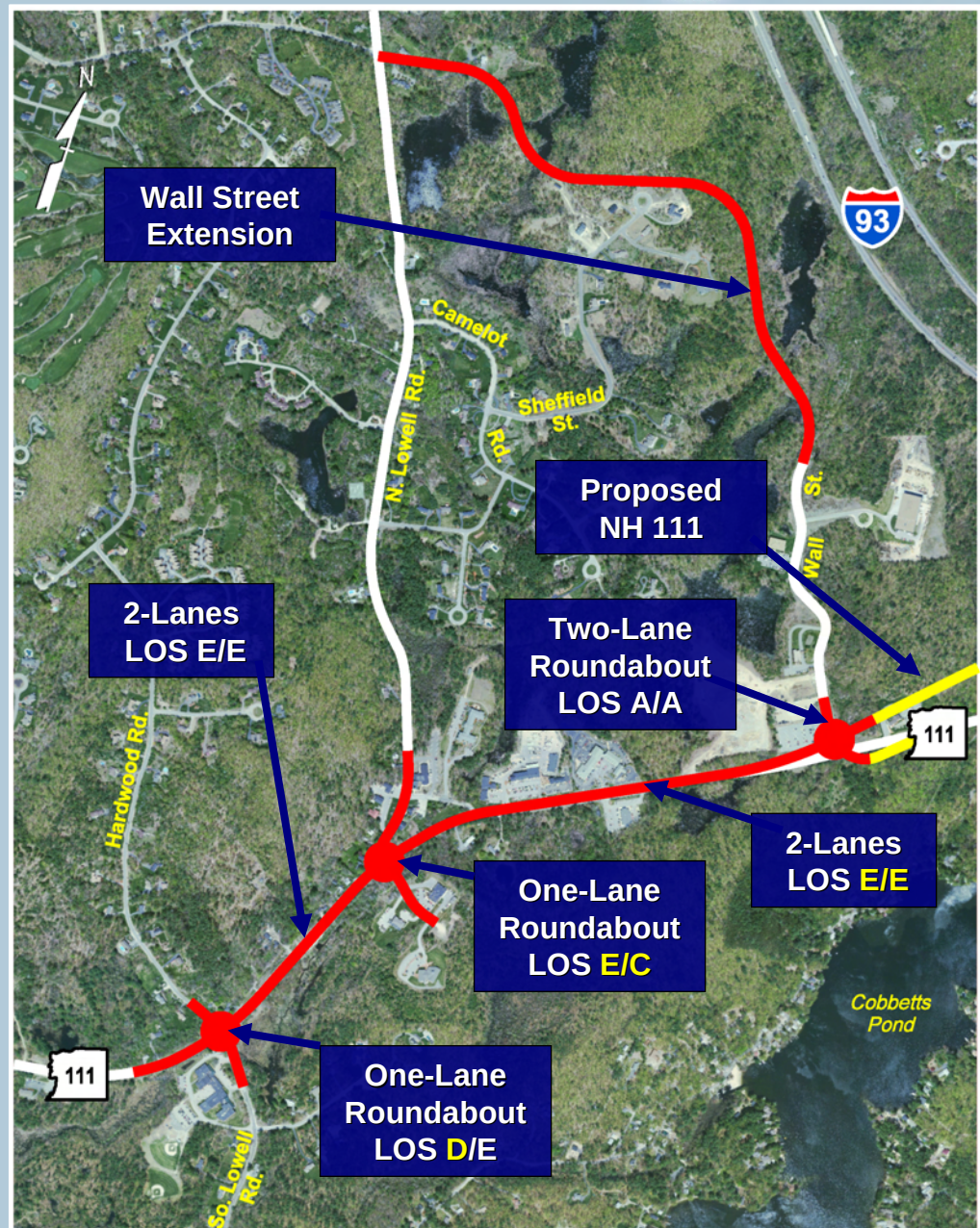






In-Corridor Roundabout with Wall Street Extension Alternative

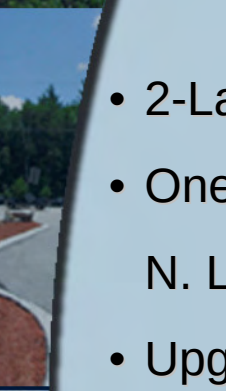
- 2-Lanes on NH 111
- One-Lane Roundabout at N. Lowell Rd
- One-Lane Roundabout at S. Lowell Rd
- Two-Lane Roundabout at Wall St

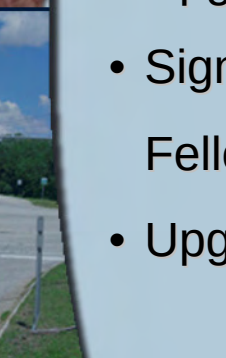


Wall St Extension



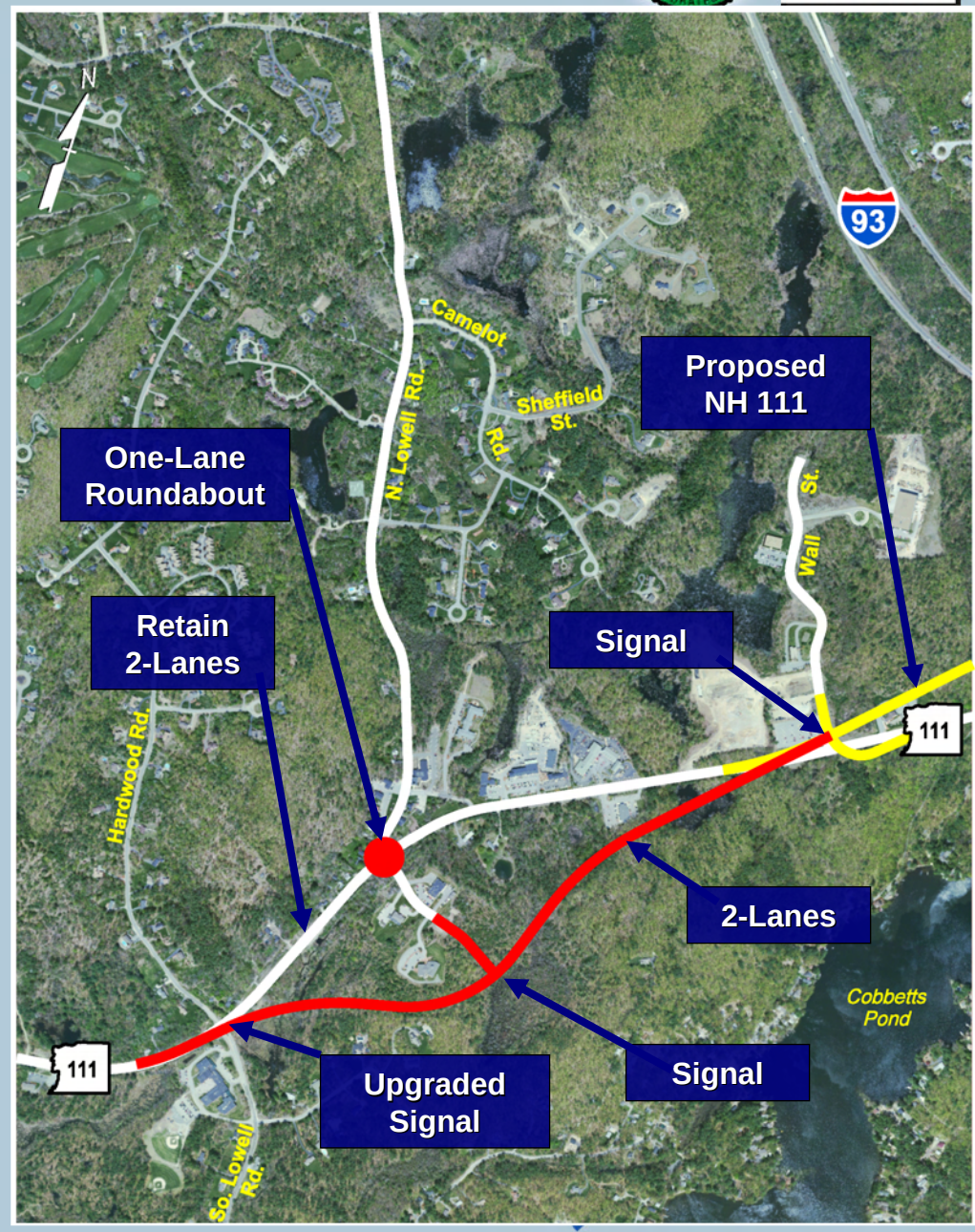






NH 111 Bypass Alternative

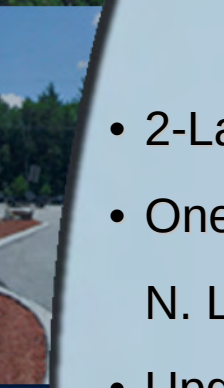
- 2-Lanes on NH 111
- One-Lane Roundabout at Existing N. Lowell Rd
- Upgraded Signal at S. Lowell Rd
- Signal at New NH 1111 and Fellows Rd
- Upgraded Signal at Wall St



Wall St Extension



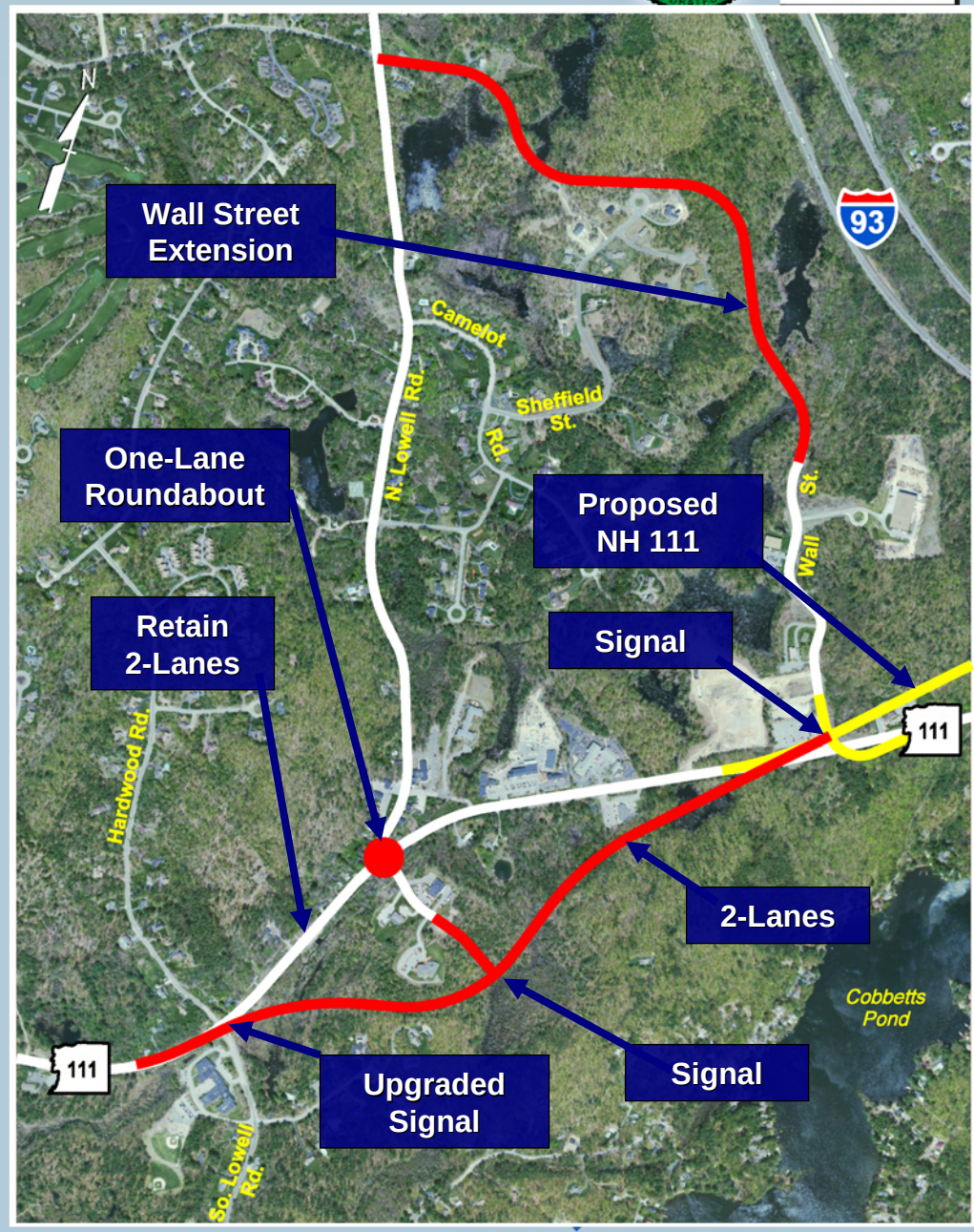






NH 111 Bypass with Wall Street Extension Alternative

- 2-Lanes on NH 111
- One-Lane Roundabout at Existing N. Lowell Rd
- Upgraded Signal at S. Lowell Rd
- Signal at New NH 1111 and Fellows Rd
- Upgraded Signal at Wall St





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Questions / Comments

McFarland Johnson