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Yarmouth Route 28 – Livable Street Study

Feedback & Initial Concepts

Yarmouth Planning Board

June 19, 2013

This presentation



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- **Background Information**
- **Work to Date**
- **Public Feedback Received**
- **Design Concepts**
- **Next Steps**

GOALS OF THIS STUDY:

MASS DOT UPWP TASK 3.3



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The purpose of this study is to explore transportation improvement alternatives that will reduce conflicts, improve traffic flow and incorporate multi-modal transportation options along the Route 28 corridor while furthering the creation of vibrant, pedestrian and bicycle oriented mixed-use centers along the roadway. The safe accommodation of pedestrians and bicycles has been previously identified by the Cape Cod Commission as critical to achieving the goals of the town to create nodes of mixed-use development. Complete Streets design strategies will be incorporated into any alternatives proposed in addition to Low Impact Development (LID) techniques to mitigate stormwater runoff.

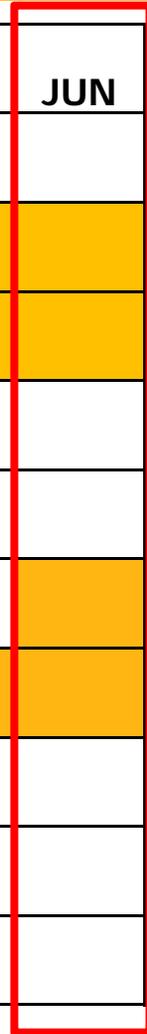
The project aims to establish a preferred roadway redesign which addresses multi-modal transportation improvements, including pedestrian and bicycle connectivity. The project will explore the potential impact of proposed land use and zoning changes under consideration by the town and make recommendations for roadway changes that accommodate projected traffic volumes while accommodating all users of the roadway. This evaluation of preferred alternatives should be transferrable to a Massachusetts Department of Transportation (MassDOT) Project Need Forms (PNF) at later stages.

Project Timeline



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AC Attend	Tasks	MAR	APR	MAY	JUN	JUL	AUG	SEP
	Task 1: Project Initiation Mtg (Mar 22)	Yellow						
	Task 2: Data Collection/Mapping	Yellow	Yellow	Yellow	Yellow	Yellow		
	Task 3: On-Site Reconnaissance	Yellow	Yellow	Yellow	Yellow	Yellow		
Teal	Task 4: Identify Opportunities and Constraints	Yellow						
Teal	Task 5: Focus Groups (May 2)		Yellow					
Teal	Task 6: Presentation to Planning Brd/ BOS				Yellow			
	Task 7: Initial design			Yellow	Yellow	Yellow		
	Task 8: Technical Review					Yellow	Yellow	
Teal	Task 9: Draft report/public presentation						Yellow	Yellow
	Task 10: Final report and plan							Yellow



What is a Living Street?



Living Streets: **What are they?**



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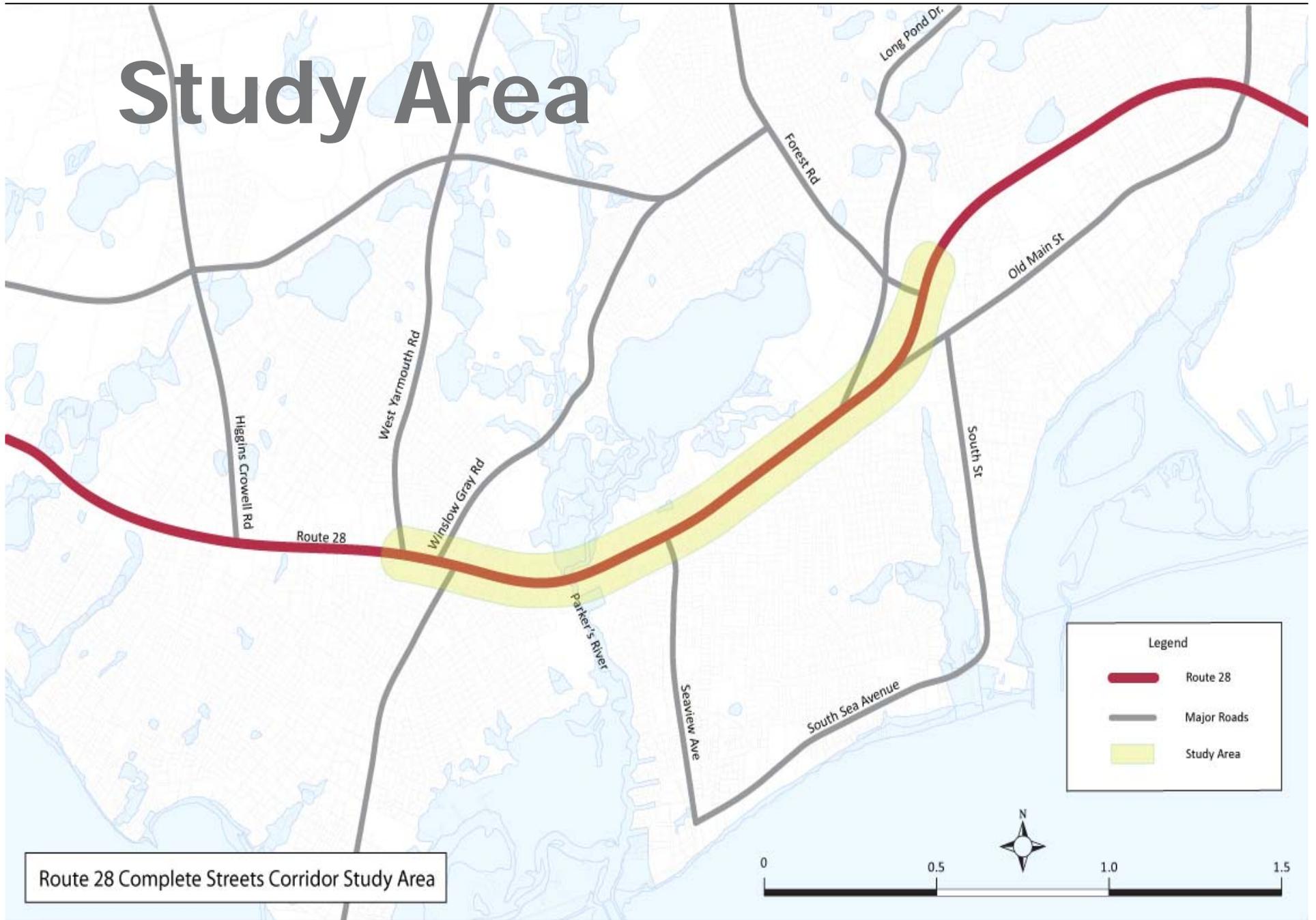
A Living Street considers the needs of all users (Children, bicyclists, the disabled, motorists) to design context-sensitive solutions to improve the streetscape.

- **Living Street Design can help to improve:**
 - Roadway performance
 - Streets that are unsafe for pedestrians and bicyclists
 - Inconvenient street crossings
 - Uninviting or unsightly streets
 - Street water runoff systems that funnel water into the street or into impaired waterbodies (On-site Stormwater management can remove 40-60% of the Nitrogen in runoff)



Background Information

Study Area



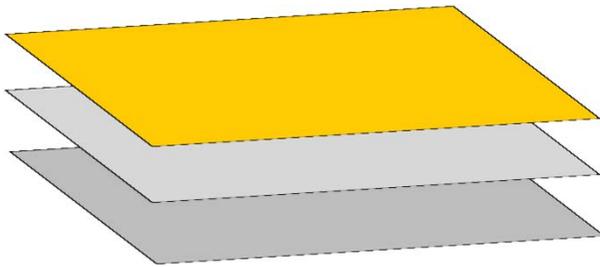
Route 28 Complete Streets Corridor Study Area

Geographic Information System (GIS) Analysis/Survey Data



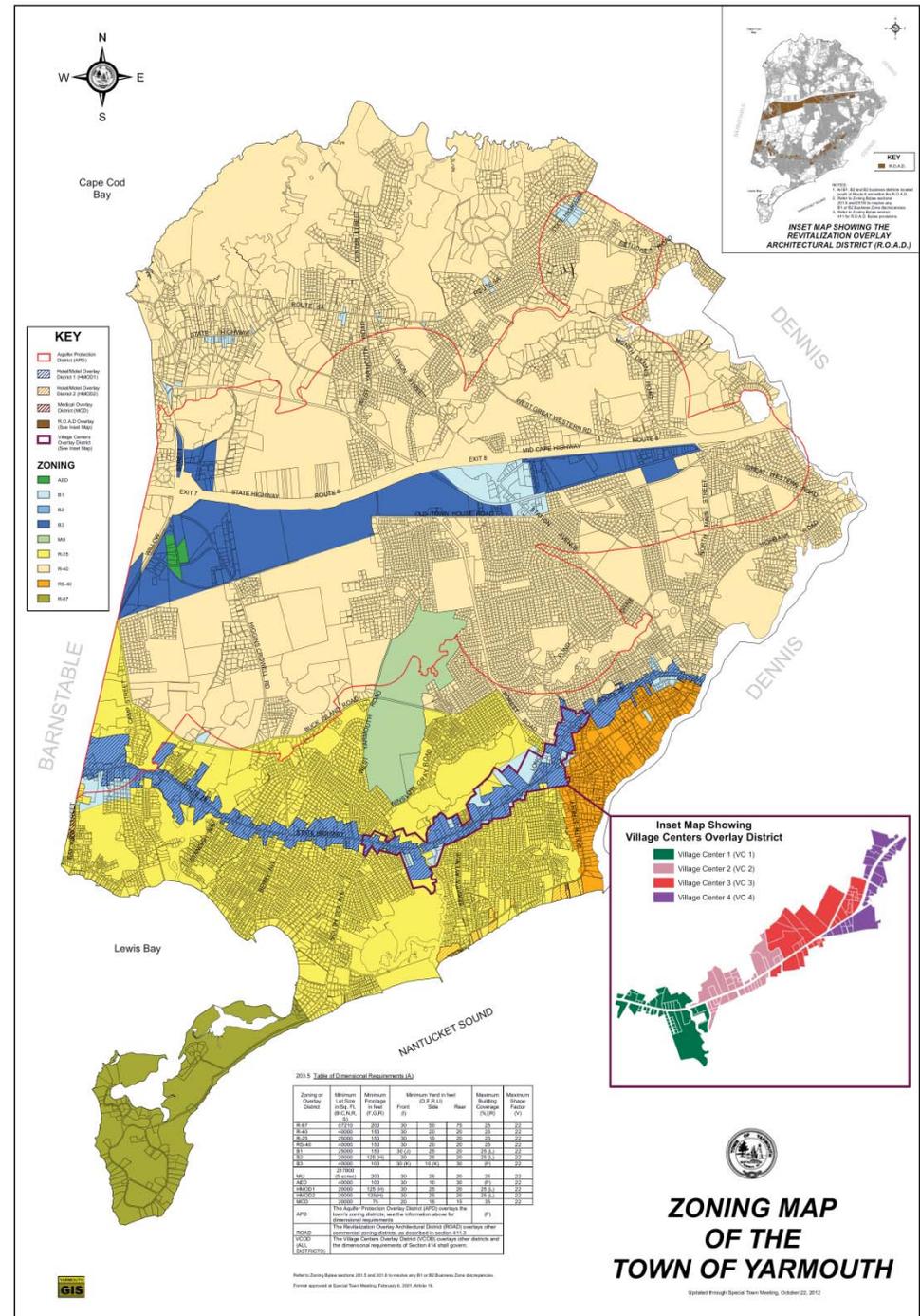
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- Building Footprints/Current Land Uses
- New Village Zoning
- Infrastructure Considerations (Power poles, storm drains, existing sidewalks)
- Points of Interest/Bus lines
- ROW survey from DPW



Land Use/Zoning

- Study area zoned B2 with Village Center Overlay District:
 - Additional Uses (Mixed Use encouraged)
 - Increased height
 - Greater coverage
 - Closer setbacks



Land Use/Zoning

Additional Considerations



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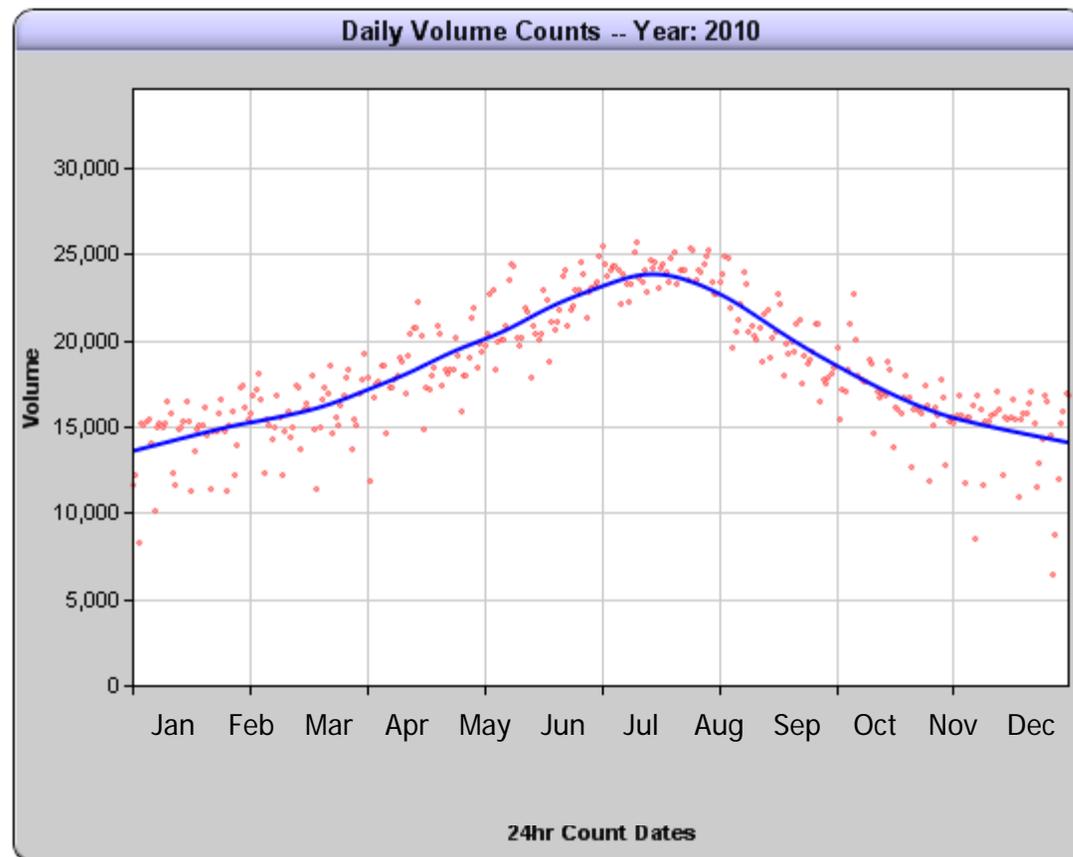
- Village Center Overlay District zones covered in this study area:
- **VC1:** Enhance Character, promote public recreation, **encourage pedestrian activity**
- **VC2:** Smaller commercial uses which encourage people to live, work and shop, and promote **walkable live-able neighborhood**
- **VC3:** Promote year-round family activity, create jobs
- **VC4:** Focus on commercial uses that support year-round commercial uses

Traffic Counts: Traffic Volumes on Route 28



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- Average Daily Traffic volumes exceed 25,000 vph during the peak month (July)

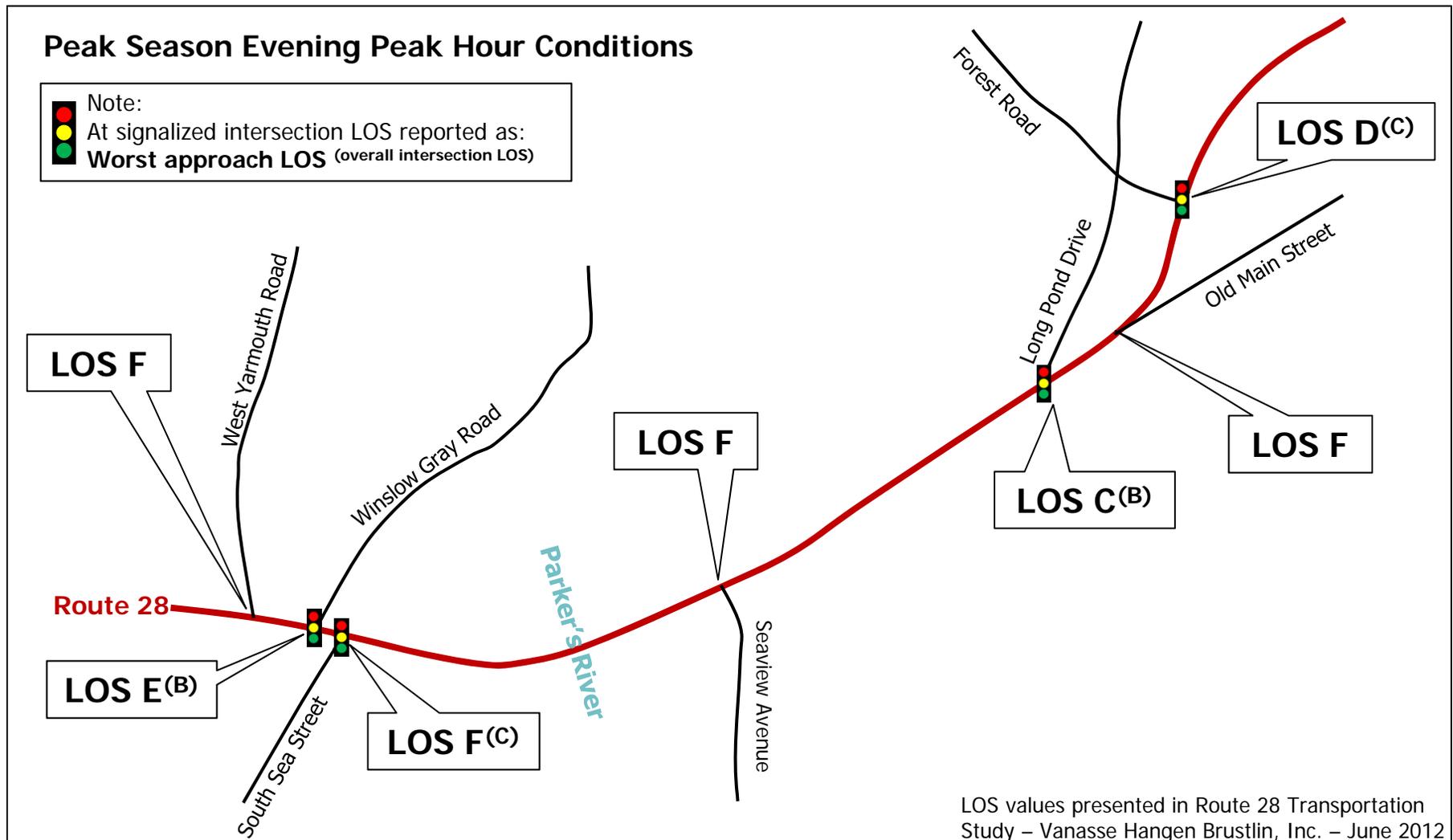


Traffic volumes collected as MassDOT permanent count station on Route 28 west of West Yarmouth Road

Traffic Counts: Intersection Level of Service (LOS)



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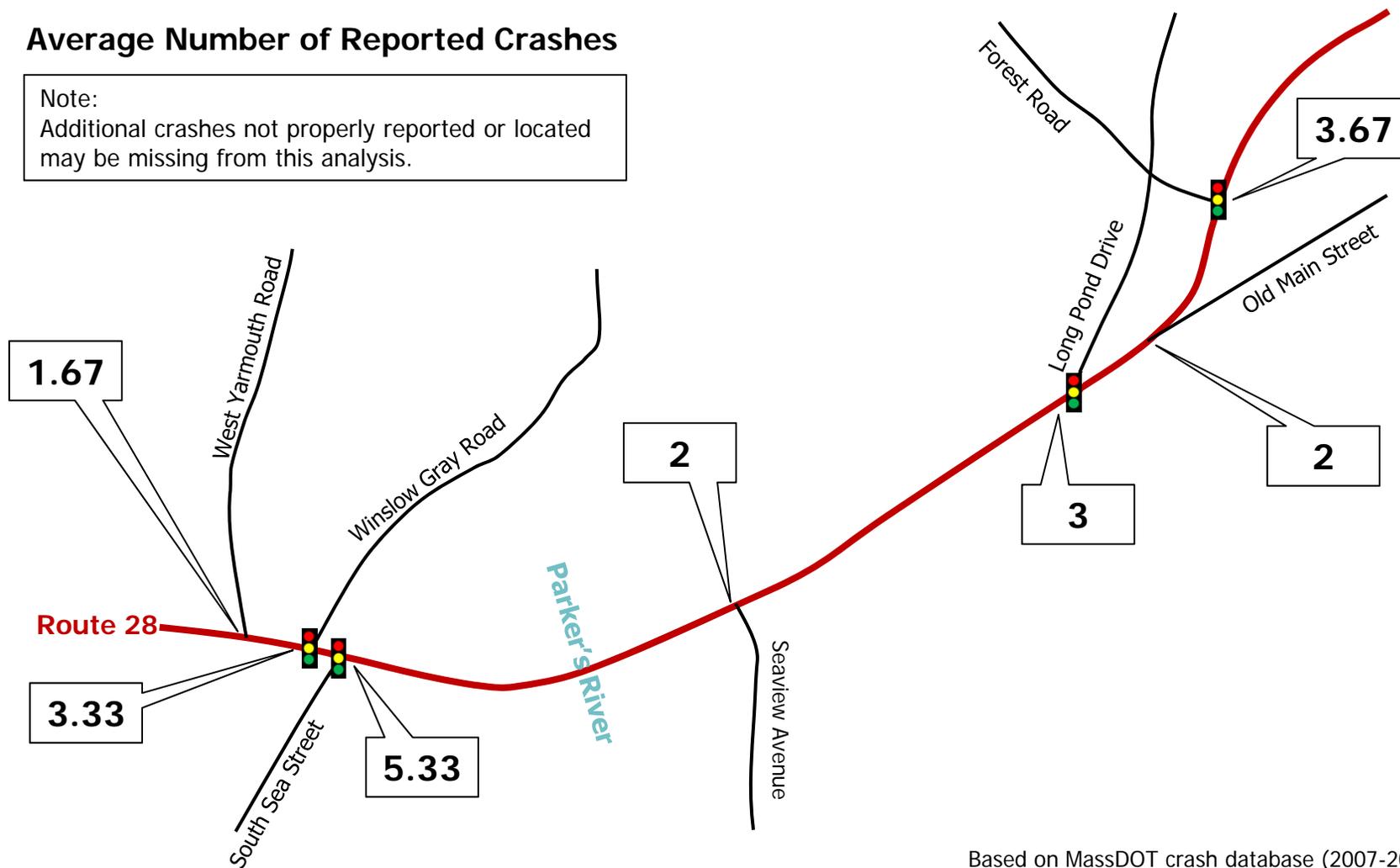
Crash History: Reported Crashes at Intersections



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Average Number of Reported Crashes

Note:
Additional crashes not properly reported or located
may be missing from this analysis.



Based on MassDOT crash database (2007-2009 data)

Crash History



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- There were 170 crashes reported on the Route 28 corridor within the study area from 2007 through 2009



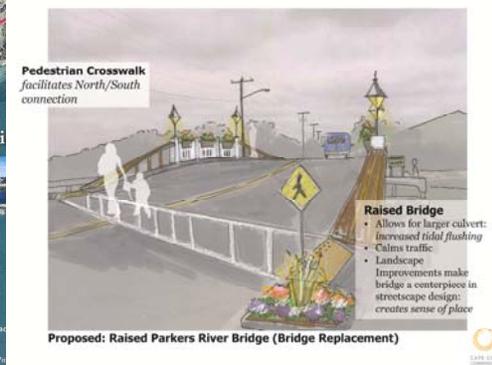
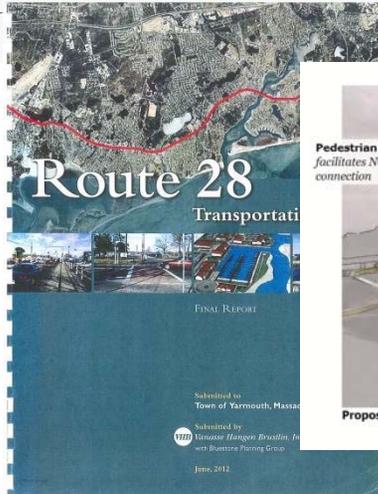
Previous Studies and Plans

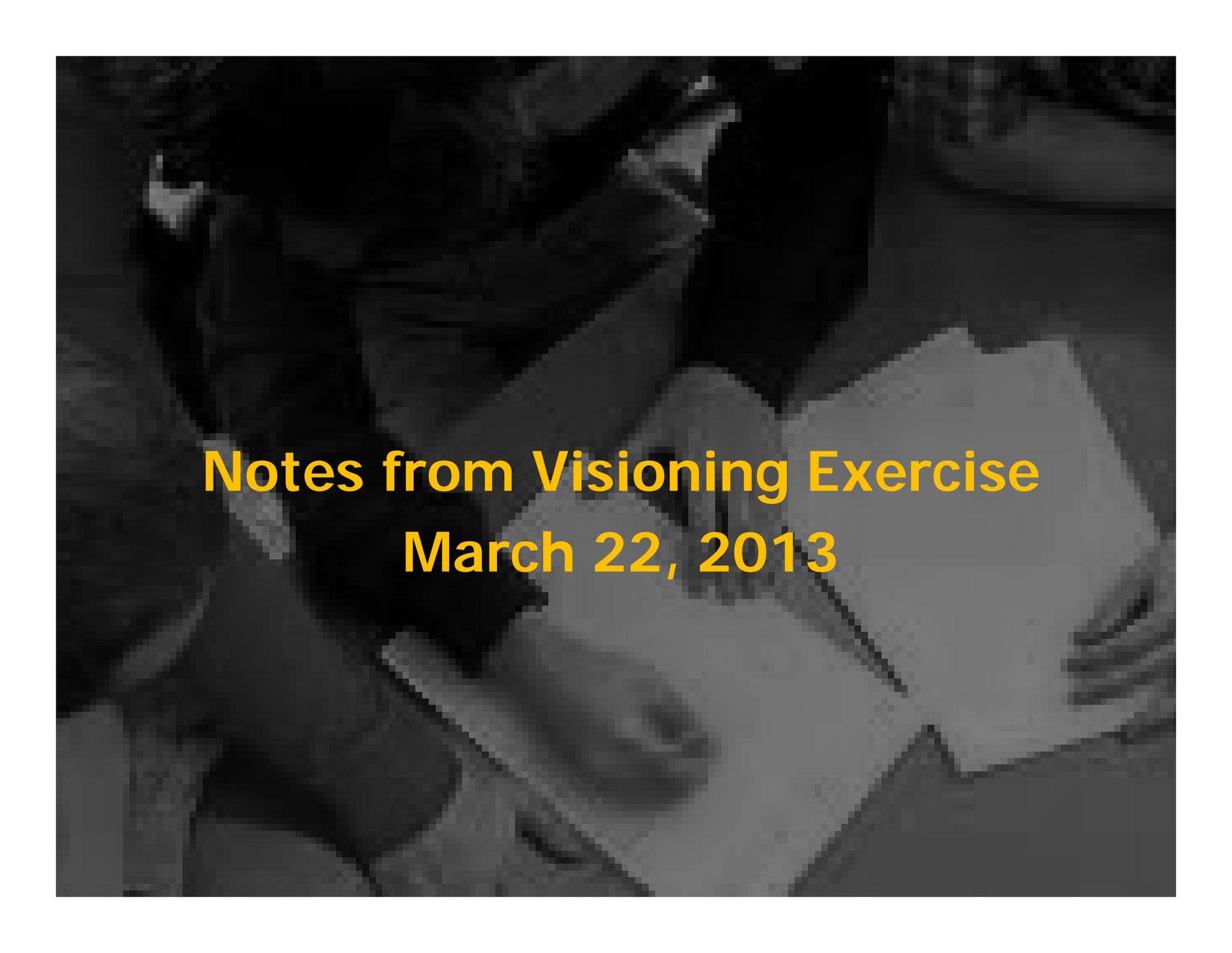


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- Design Plans for Forest Road/Long Pond
- Cape Cod Commission RESET Work 2010-11
- VHB Study of Route 28
- Bluestone Group Study
- Cecil Group Study





Notes from Visioning Exercise
March 22, 2013

ADDITIONAL NOTES

- REDUCE CURB CUTS
- MINIMIZE IMPACTS TO ABUTTING PROPERTY OWNERS
- TURNING LANES AT SPECIFIC LOCATIONS
- TROLLEY?
- INATTENTION/DISTRACTION & ALCOHOL IMPAIRMENT ISSUES
- SIGNAL PROGRESSION

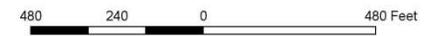


**Yarmouth Route 28 Study: AREA 1
(West Yarmouth Road to Seaview)**

NOTES FROM MARCH 21 WORKSHOP

Legend

- Telephone Pole
- Base_Layers.DBO.yaw_Footprints
- Yarmouth Parcel Lines, 2011



ADDITIONAL NOTES

- REDUCE CURB CUTS
- MINIMIZE IMPACTS TO ABUTTING PROPERTY OWNERS
- TURNING LANES AT SPECIFIC LOCATIONS
- SHUTTLE BUSES
- SIDEWALKS



**Yarmouth Route 28 Study: AREA 2
(Seaview Ave to Willow Street)**

NOTES FROM MARCH 21 WORKSHOP

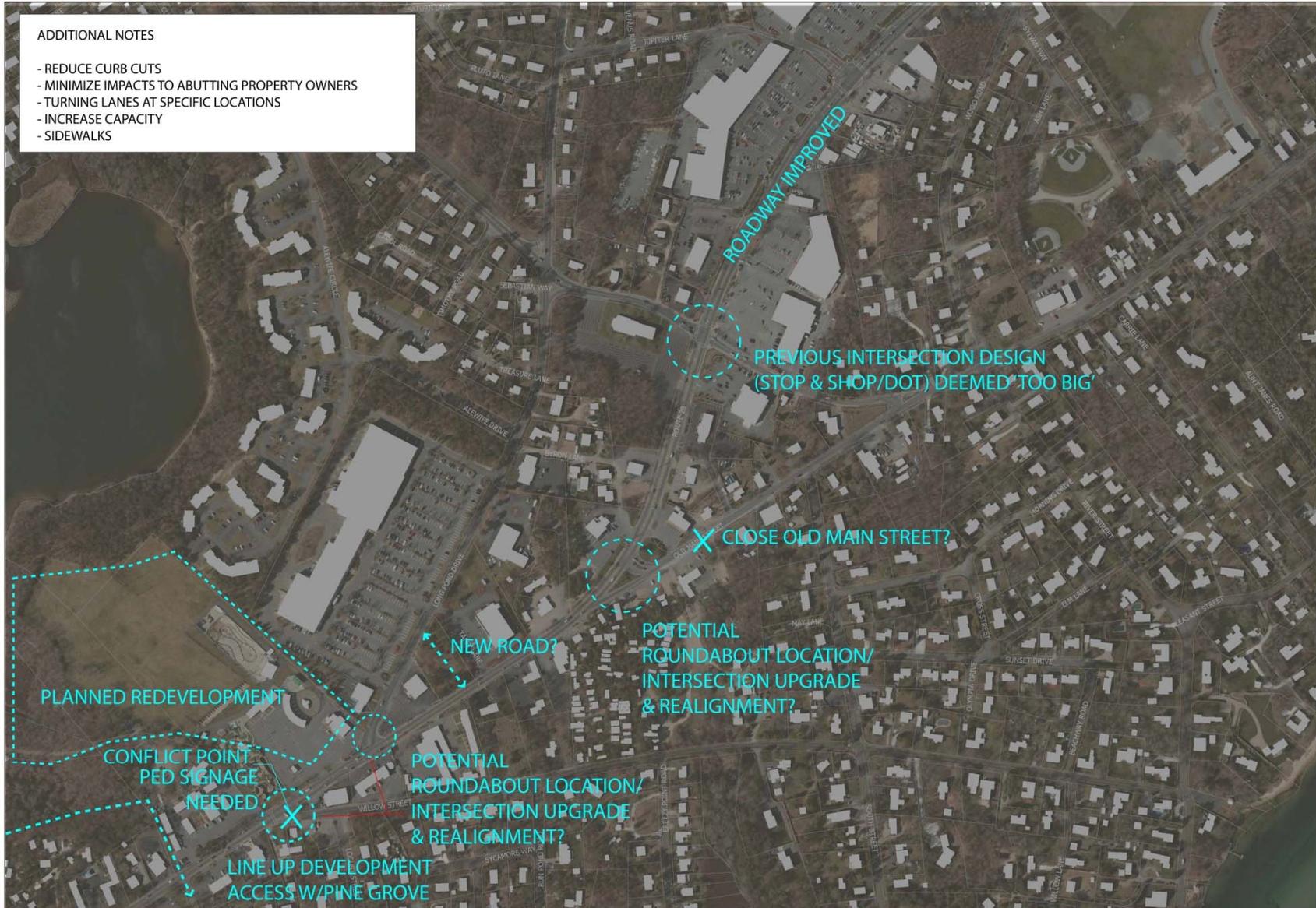
Legend

- Telephone Pole
- Base_Layers.DBO.yaw_Footprints
- Yarmouth Parcel Lines, 2011



ADDITIONAL NOTES

- REDUCE CURB CUTS
- MINIMIZE IMPACTS TO ABUTTING PROPERTY OWNERS
- TURNING LANES AT SPECIFIC LOCATIONS
- INCREASE CAPACITY
- SIDEWALKS



**Yarmouth Route 28 Study: AREA 3
(Willow St to Forest Rd)**

NOTES FROM MARCH 21 WORKSHOP

Legend

- Telephone Pole
- Base_Layers.DBO.yaw_Footprints
- Yarmouth Parcel Lines, 2011



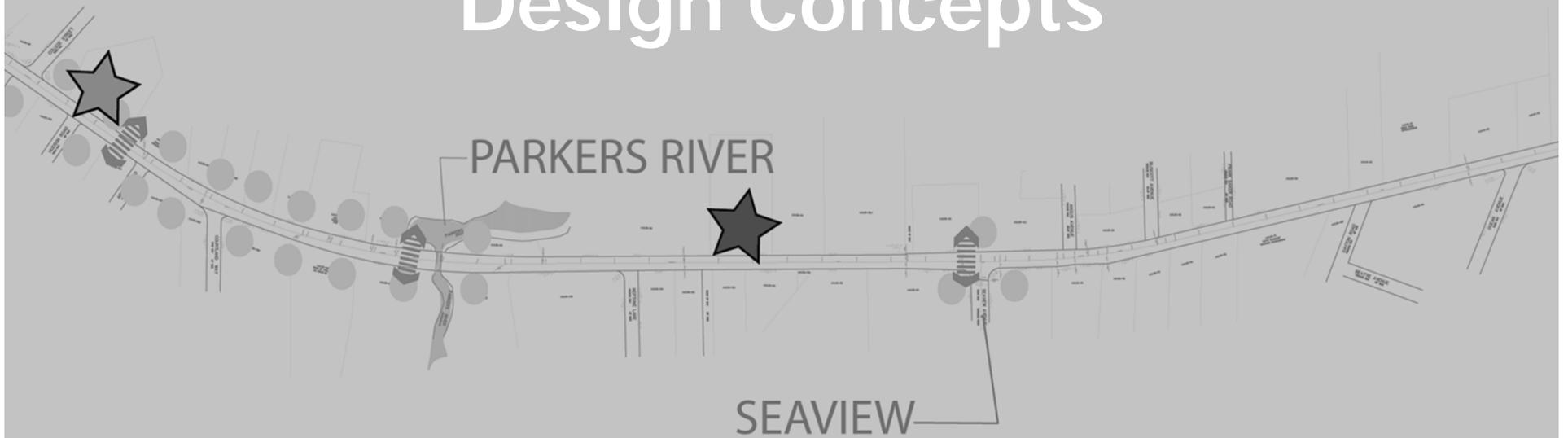


What We Heard at the Focus Groups
May 2, 2013

OUTH RD

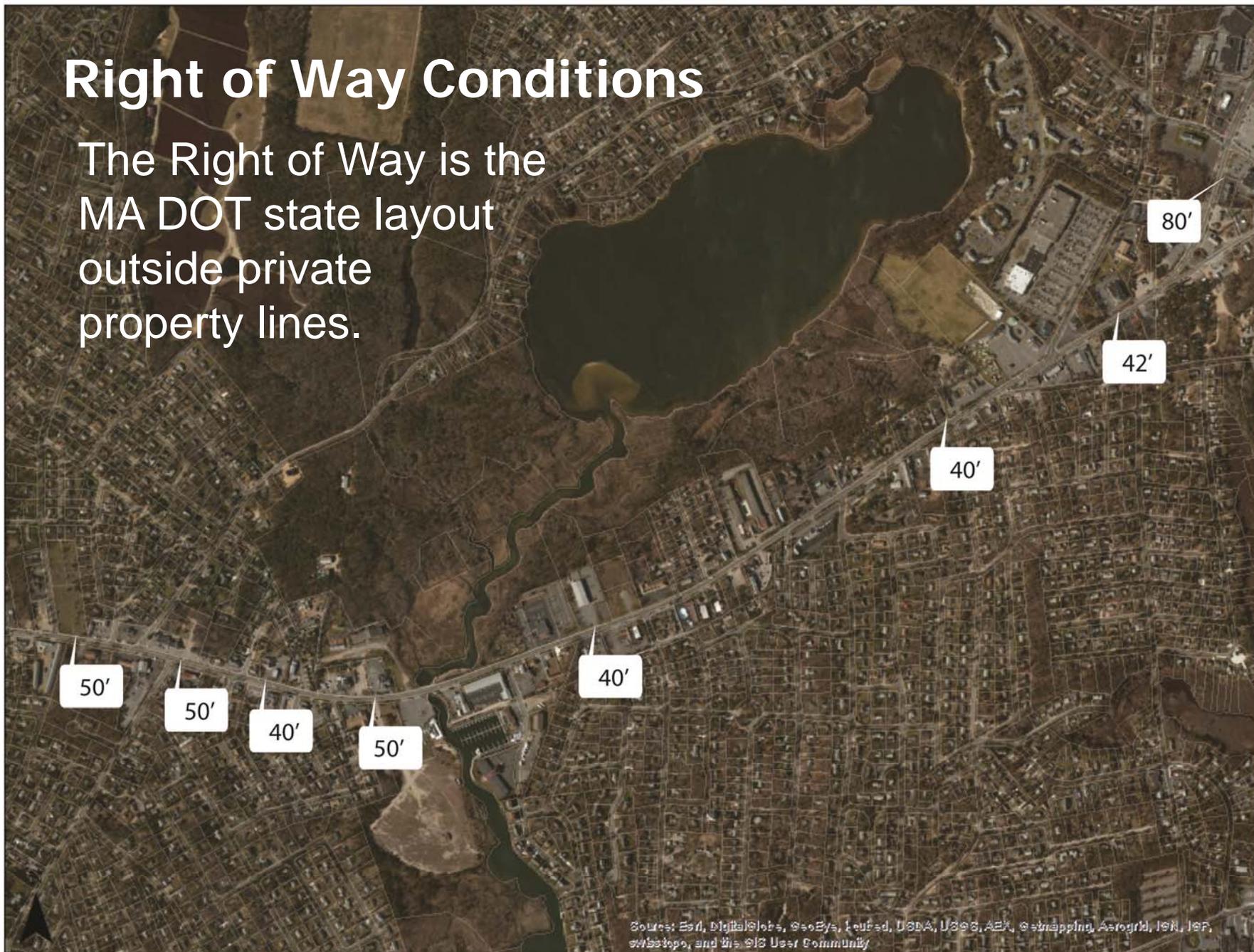
LOW GRAY

Initial Design Concepts



Right of Way Conditions

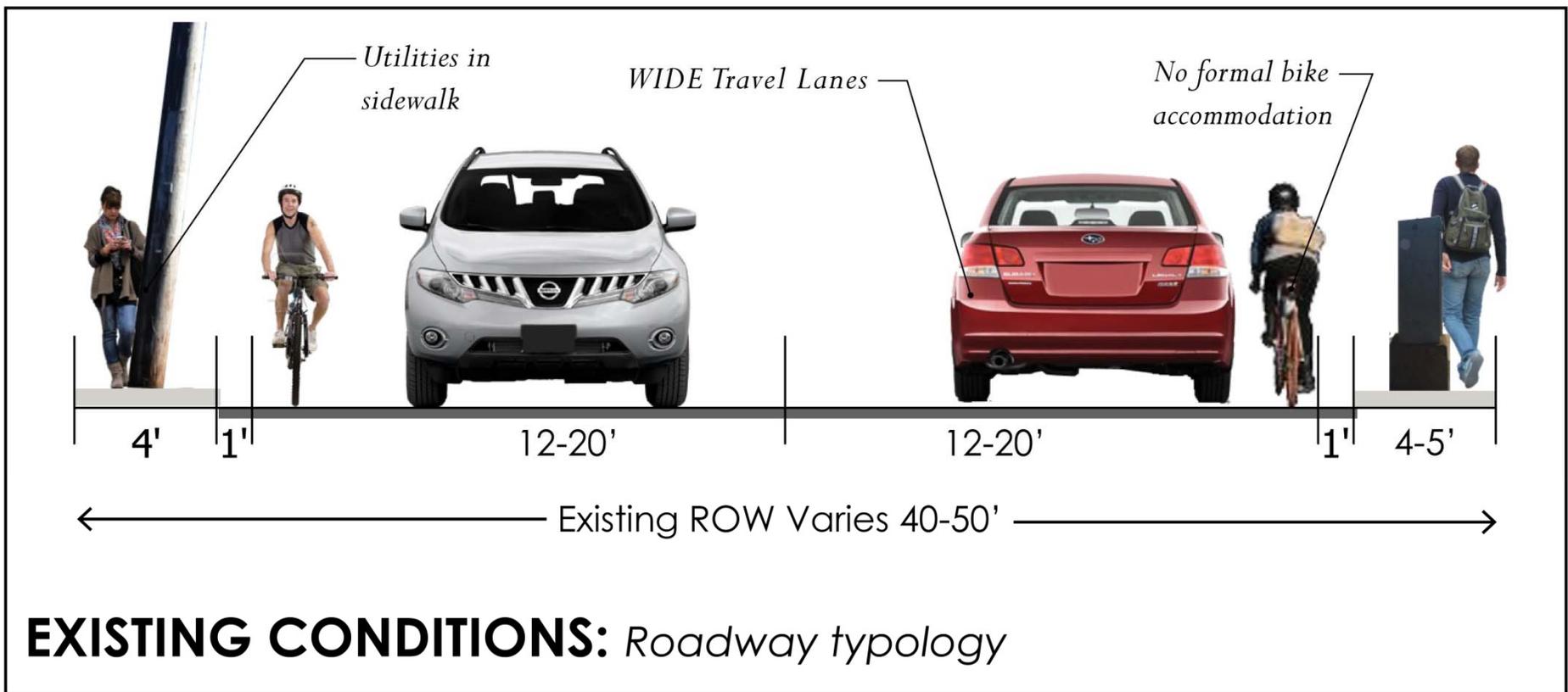
The Right of Way is the MA DOT state layout outside private property lines.



Current Configuration: All Areas



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Sidewalk Conditions

NORTH SIDE: SIDEWALKS MISSING

SOUTH SIDE: SIDEWALKS MISSING

Source: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, U.S.G.S, AeroGRID, IGN, IGP, Swire, and the GIS User Community

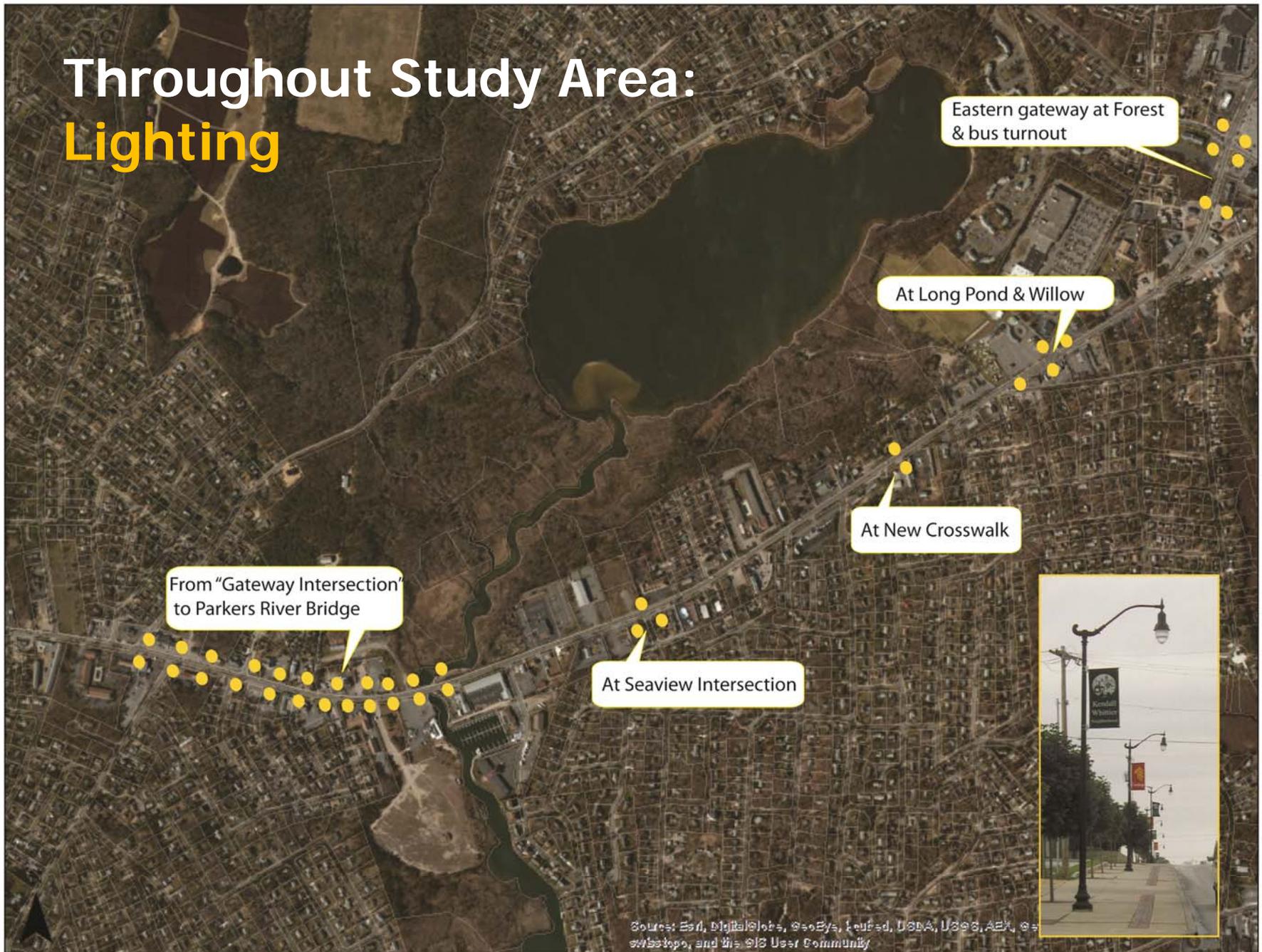
Recommendations for All Areas



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-
- **Concepts include a mix of reasonable public suggestion and CCC Staff Recommendations**
 - **Encourage typical roadway cross-section that allows for bike/ped accommodations, adequate travel lanes, and emergency vehicles to pass**
 - **Encourage amenities and beautification throughout**
 - **Support coordinated signalization**
 - **Turning pockets at high-traffic areas rather than continuous turn lane**
 - **Eliminate Curb Cuts where possible throughout**

Throughout Study Area: Lighting



Throughout Study Area: Dedicated **Bus Stops/Shelters**

Between Willow/Forest



At Nickenello



At Cumberland Farms



At Pirates Cove



Bus Stop (Bench only)

Bus Shelter



Source: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Throughout Study Area: Crosswalk Upgrades/New Crosswalks

New & Upgraded
crosswalks

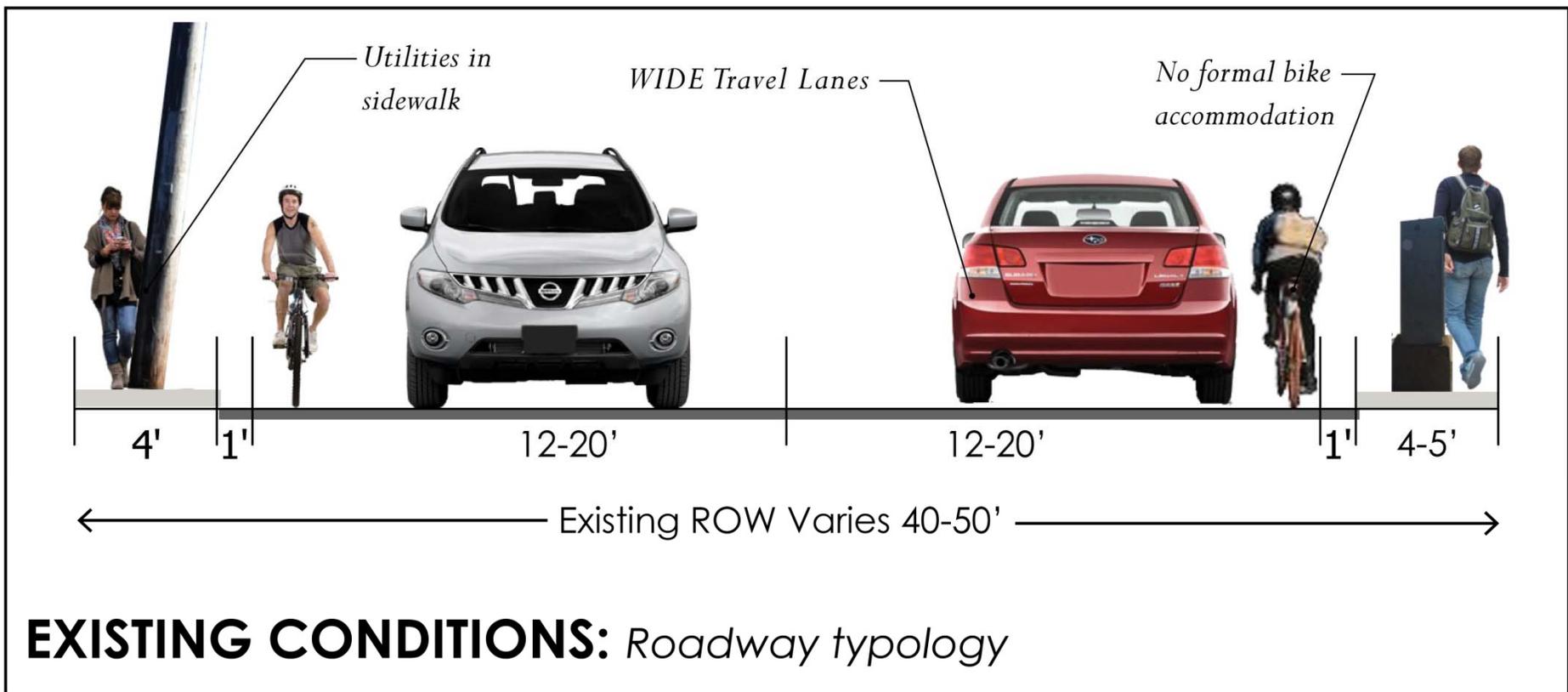


Source: Esri, DigitalGlobe, GeoEye, IGN, GeoEye, and the GIS User Community

Current Configuration: All Areas



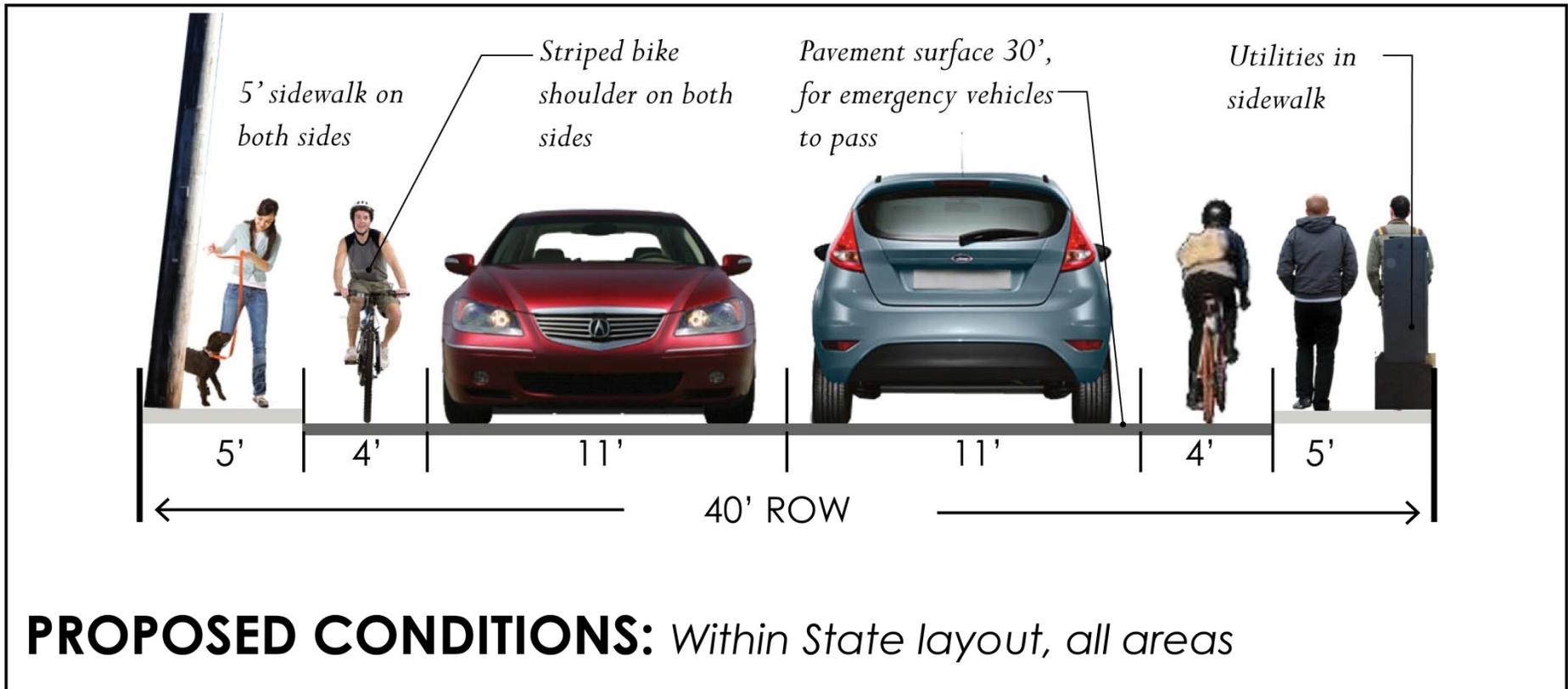
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Proposed (typical) Cross Section: Option A: within state layout



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Proposed (typical) Cross Section: Option B: Areas without constraint



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Bike Path vs. Bike Route



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Bike Path: 

- Bike LANE
- Off Road Bike Path

Bike Route: 

- Bike Shoulder/Share the Rd
- Sharrow (no shoulder)

"Streetscape" Treatment at Key Locations

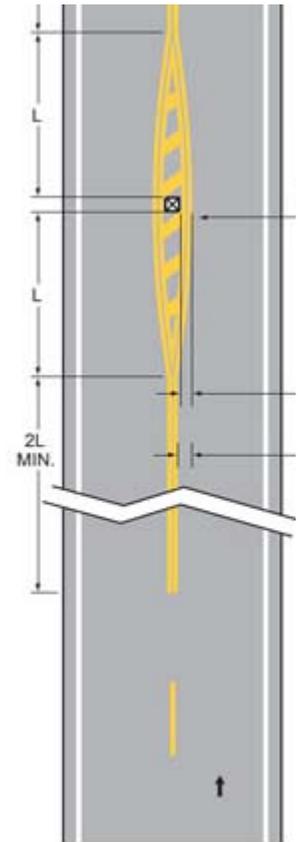
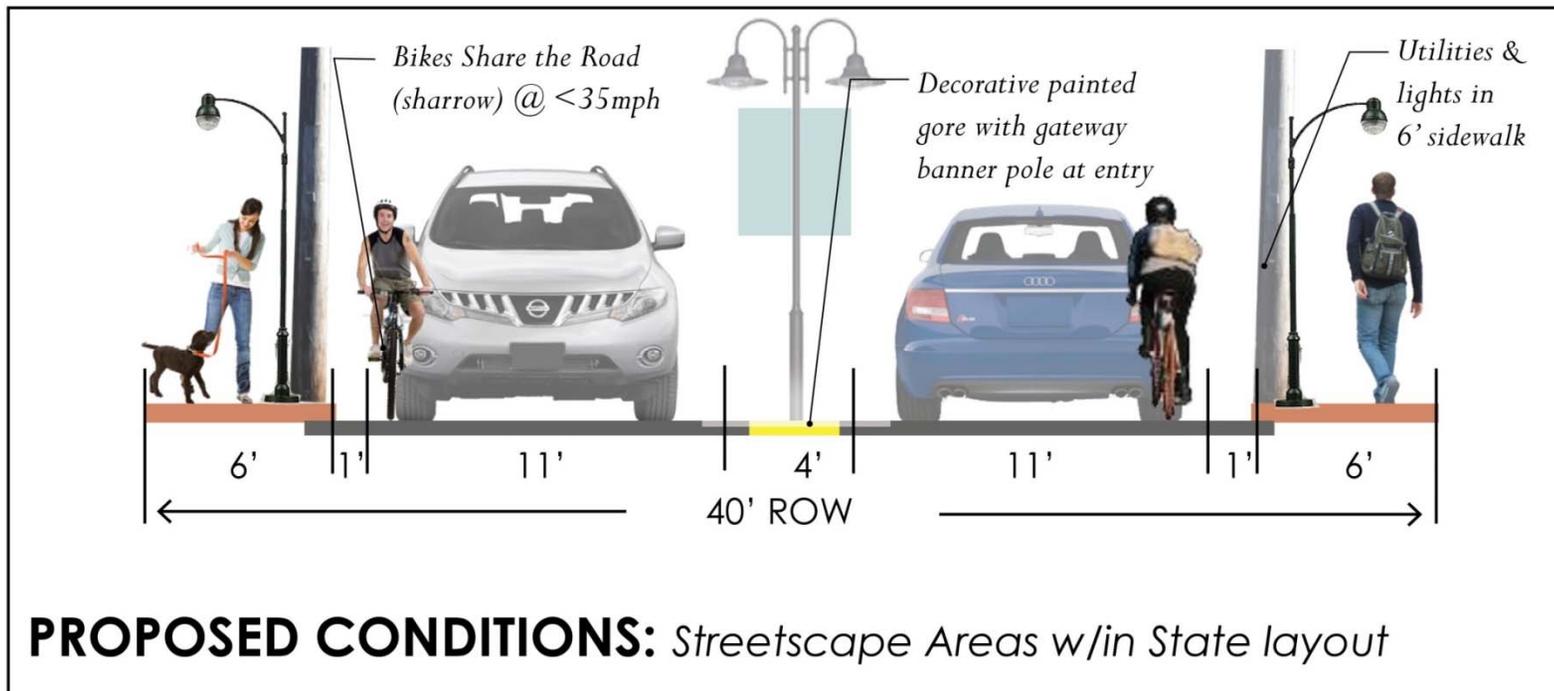
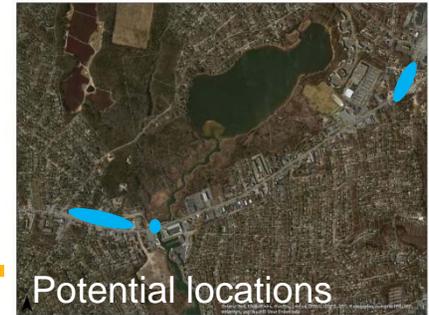
Enhanced
Access

Enhanced
Character

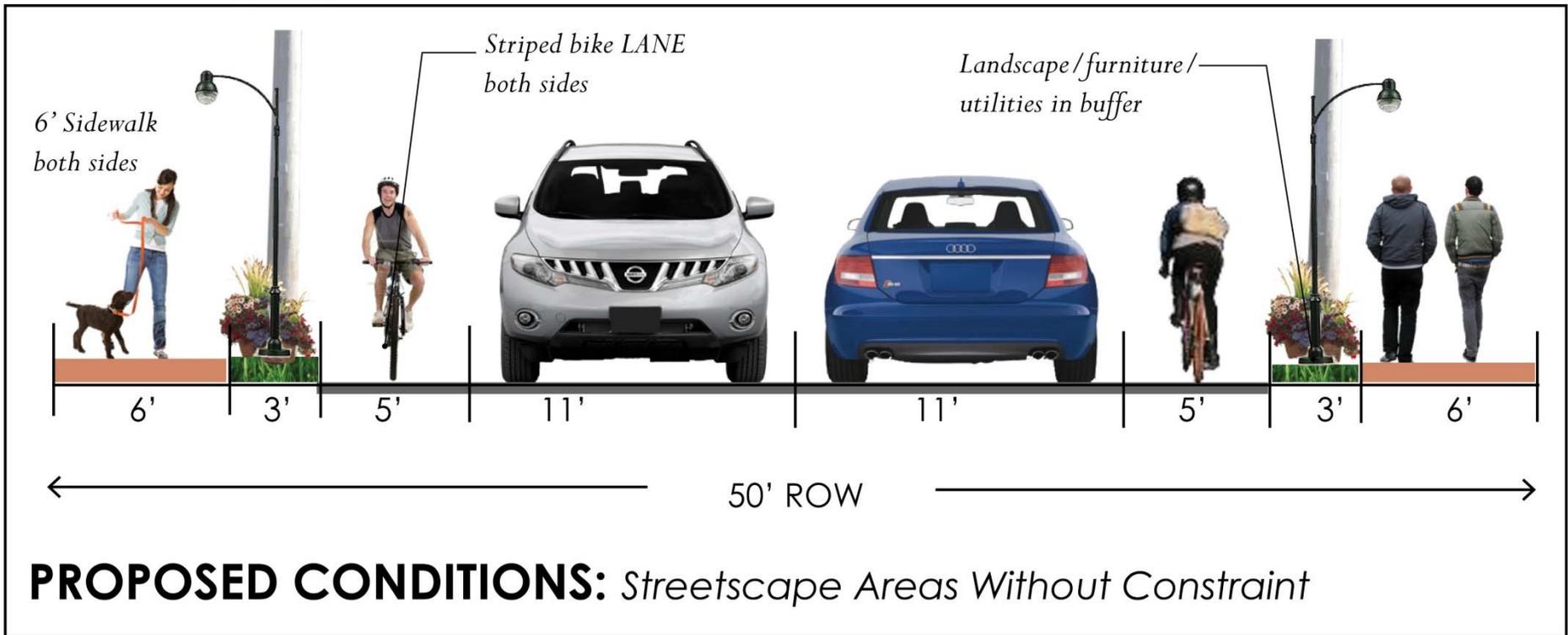
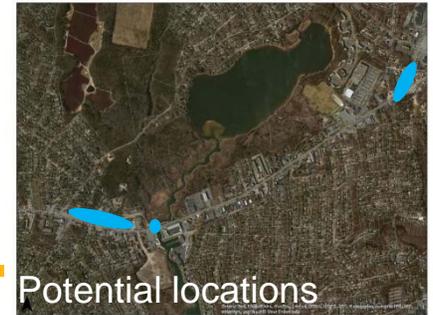
Enhanced Focal Point
at Parkers
River Bridge

Source: Esri, DigitalGlobe, GeoEye, IGN, USDA, USAF, AeroGRID, IGN, Esri, Swire, and the GIS User Community

Proposed "Streetscape" Cross Section: Option A (Within state layout)



Proposed "Streetscape" Cross Section: Option 2 (areas without constraint)



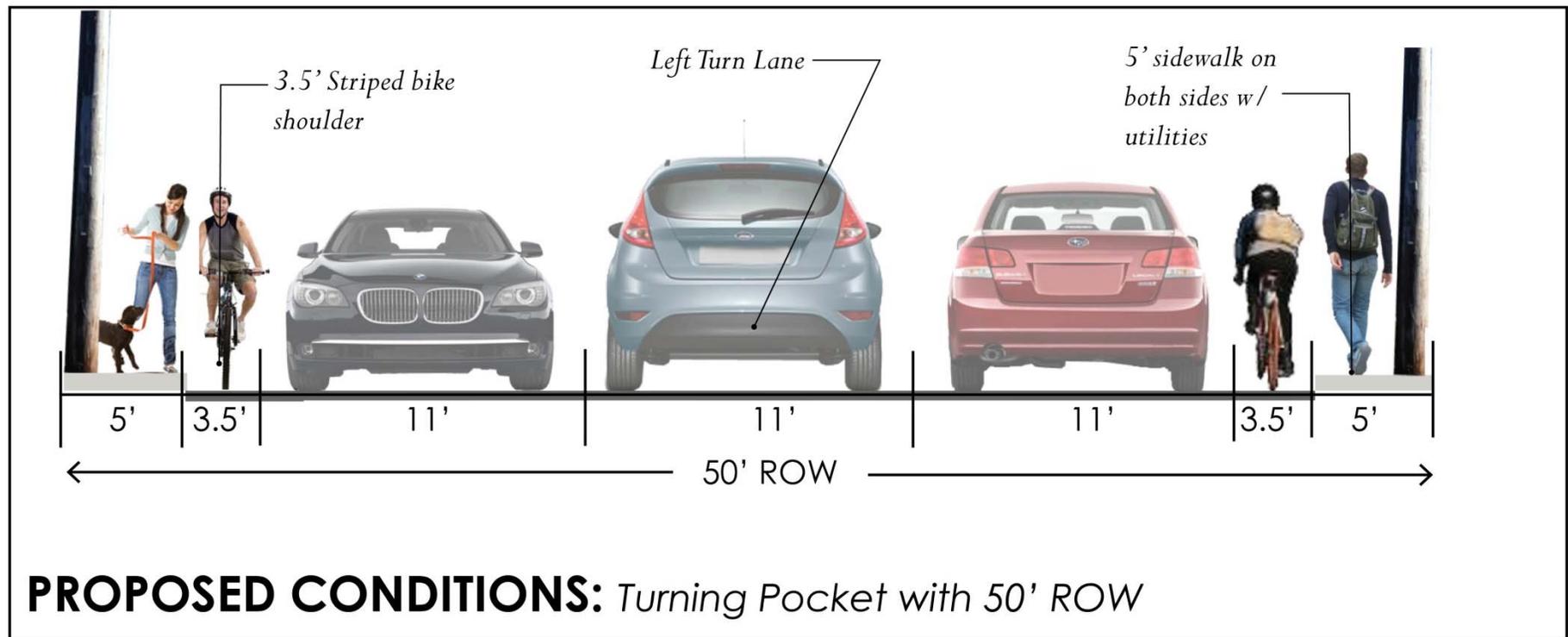
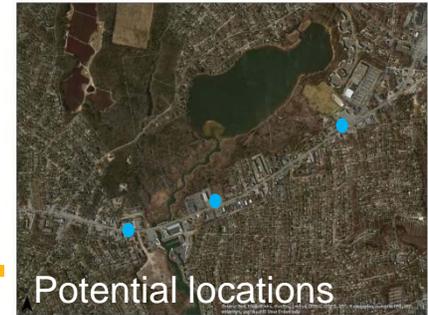
Turning Pockets at specific, high traffic properties

At Future Development?

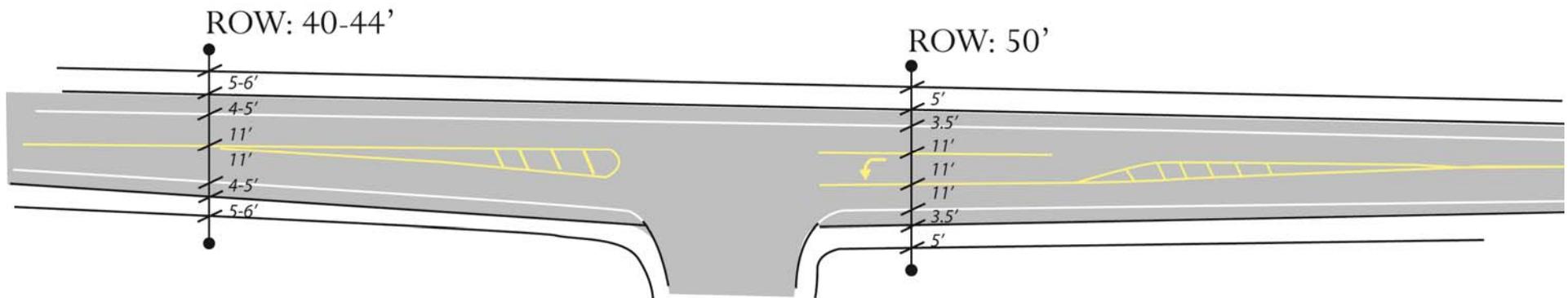
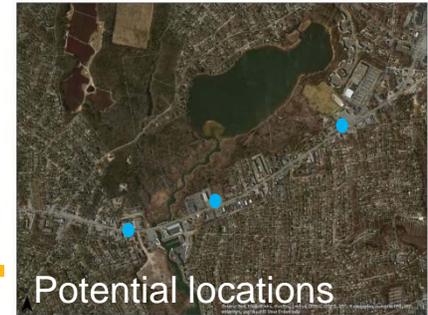
At Pirates Cove

At Marina
(Public Parking)

Typical Cross-section: Left turning Pocket



Typical Cross-section: Left turning Pocket



Property w/ high
traffic generation

Intersection Upgrades and Crosswalks

Upgrade at
Forest Road/Rt 28

Long Pond Road
Signal Head
Relocation

Upgrade at
Winslow/South Sea

New Signal
warranted
at Seaview?



INTERSECTION 1:
WINSLOW/SOUTH SEA



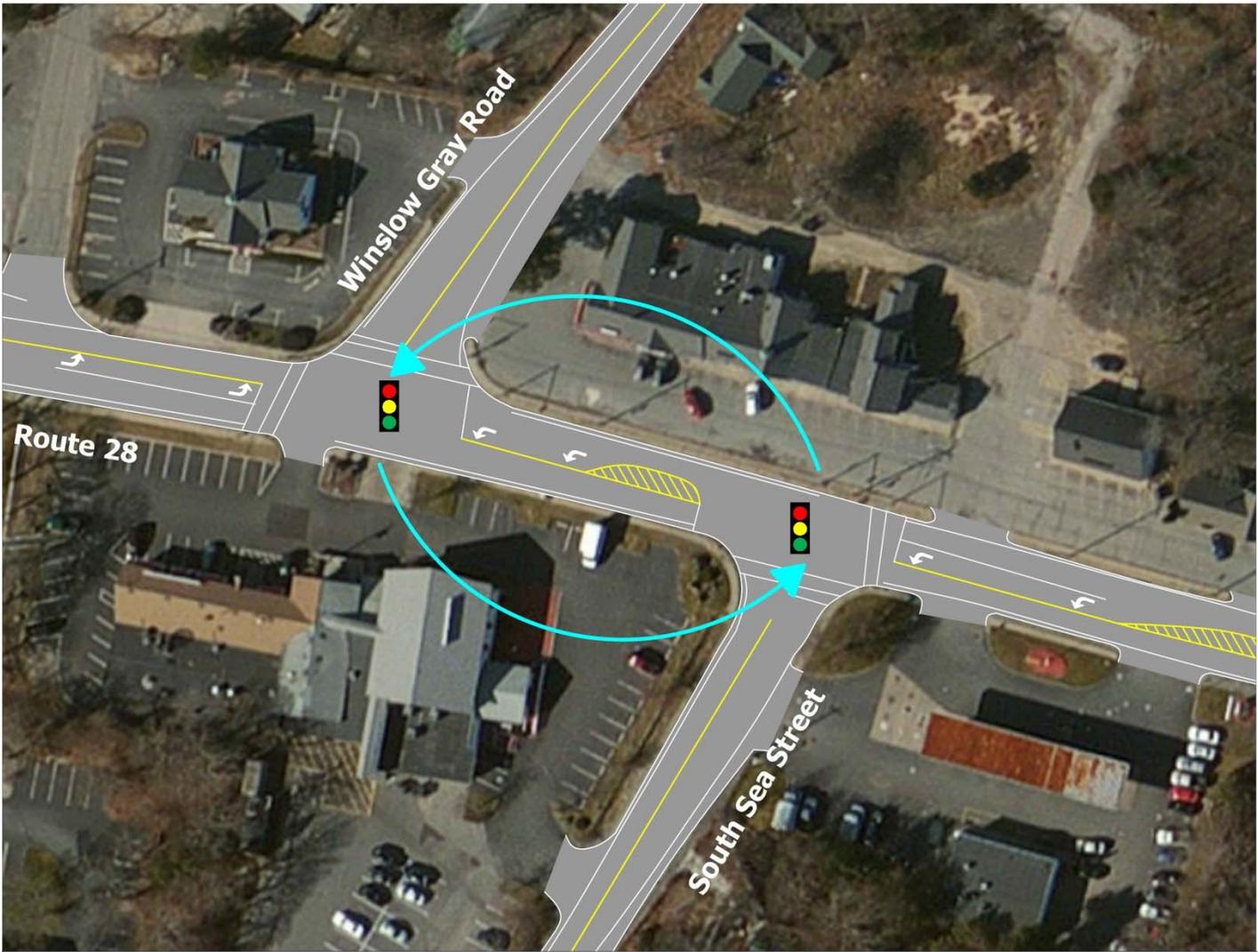
Note: Graphical depicts of design ideas and are conceptual in nature; intersection geometries have not been considered in detail at this point.

Intersection 1 - Rte. 28 at Winslow Gray Rd. and South Sea St.



The information depicted on these maps is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel level analysis. It should not substitute for actual on-site survey, or supersede deed research.





Design Ideas

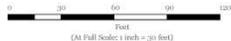
1. Update & re-time signals

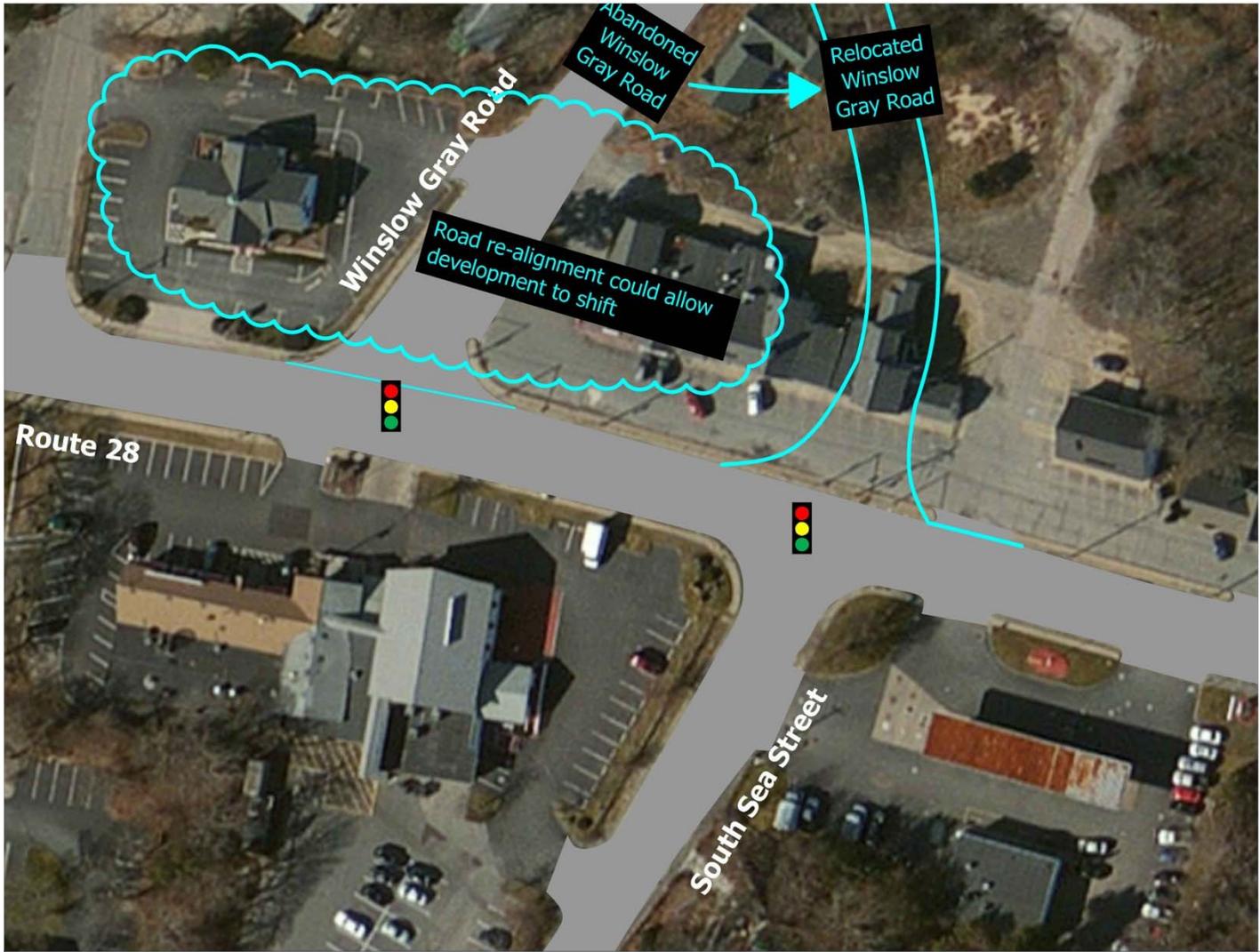
- Improved bicycle and pedestrian accommodations as well as access managements improvements should be included in any redesign

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Design Ideas

1. Update & re-time signals
2. Re-align intersections into a single traffic signal

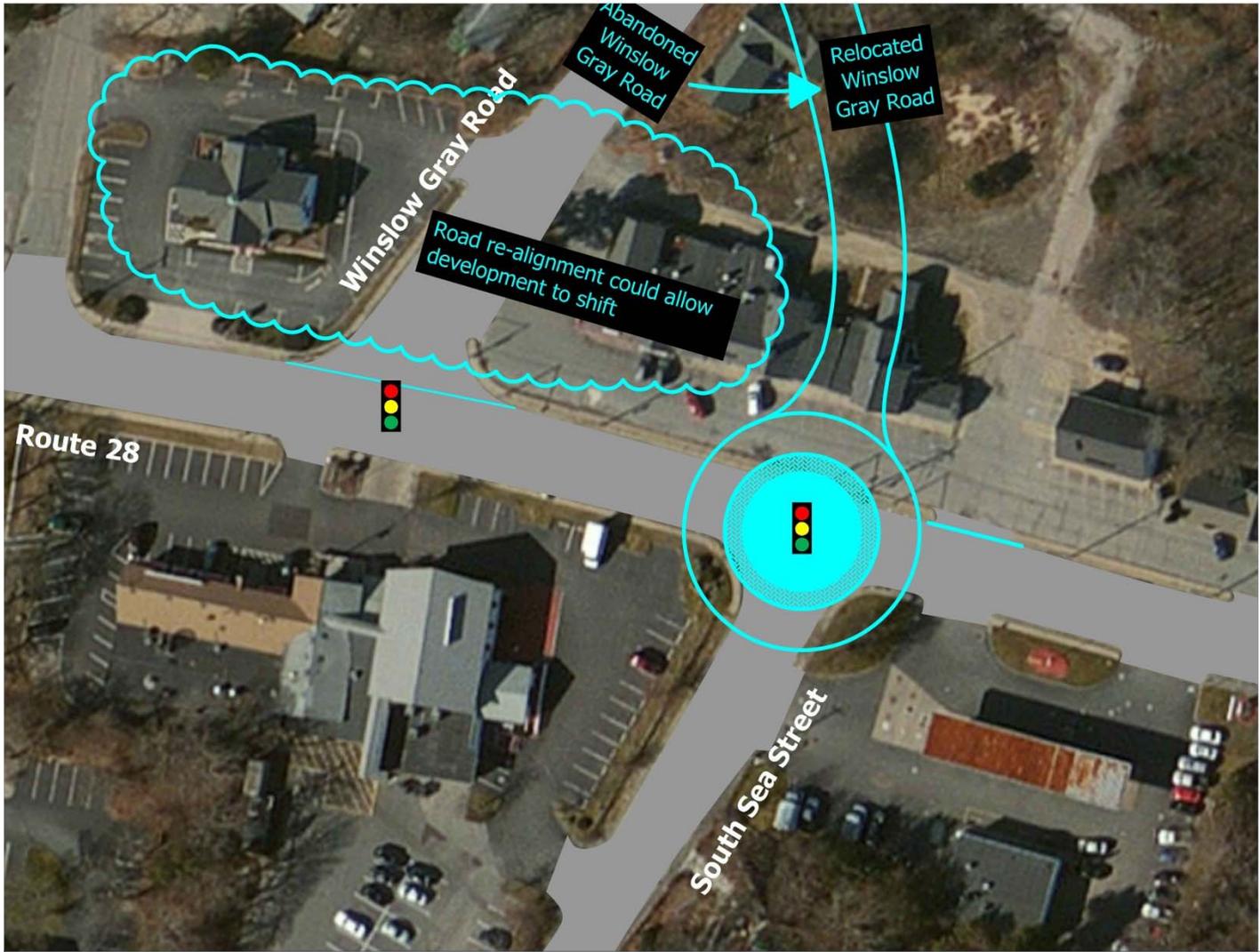
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Design Ideas

1. Update & re-time signals
 2. Re-align intersections into a single traffic signal
 3. Re-align intersections into a roundabout
- Improved bicycle and pedestrian accommodations as well as access managements improvements should be included in any redesign

Note: Graphical depicts of design ideas and are conceptual in nature; intersection geometries have not been considered in detail at this point.

Intersection 1 - Rte. 28 at Winslow Gray Rd. and South Sea St.

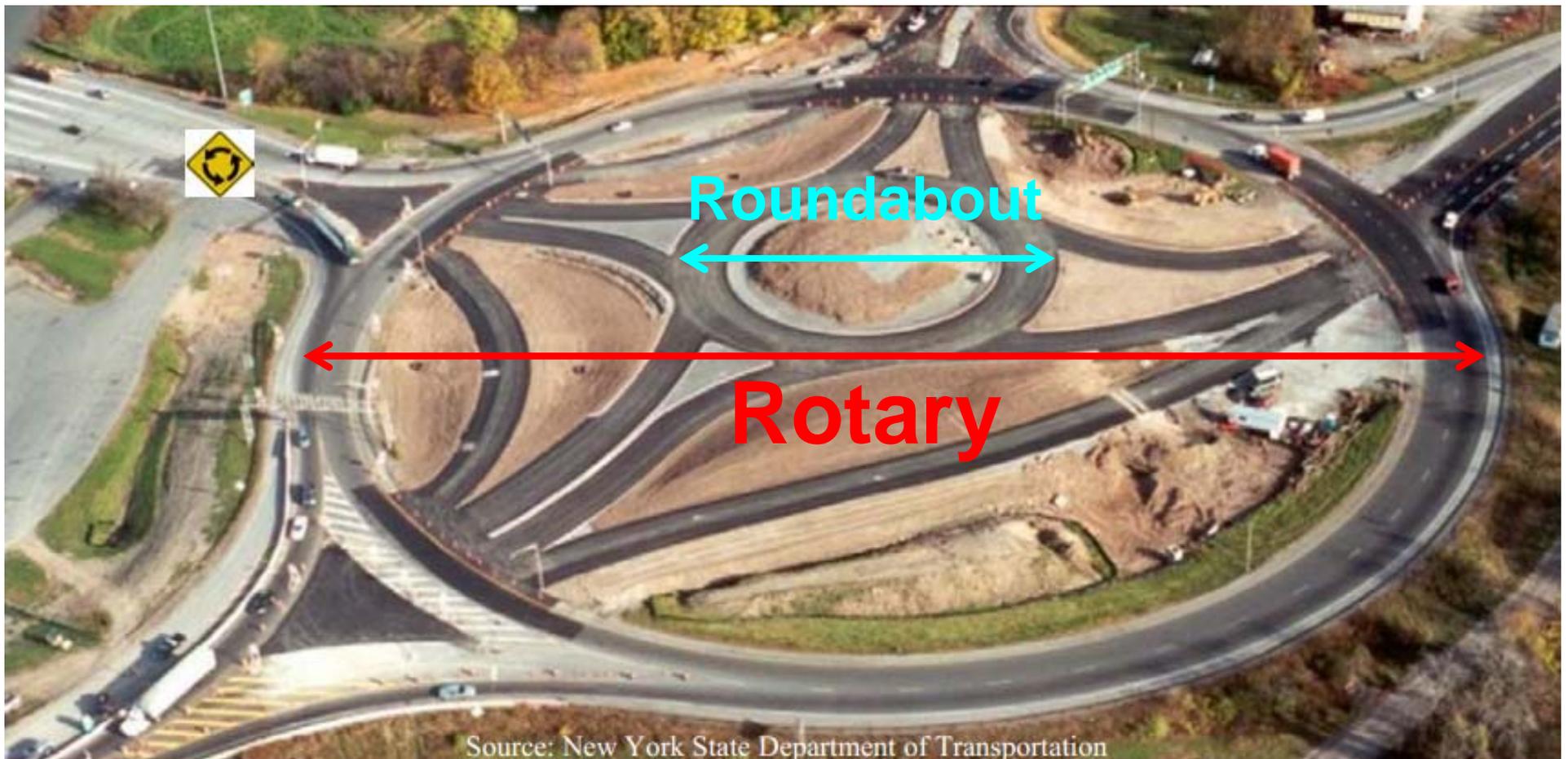
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Roundabouts v. Rotaries: Kingston, NY Example



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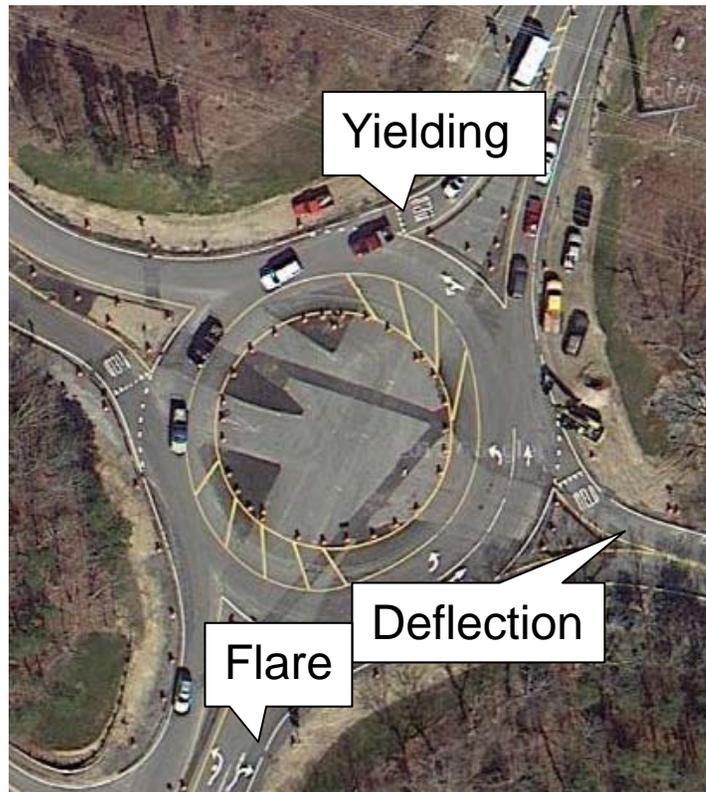


Roundabouts v. Rotaries: size, speed, turning movements

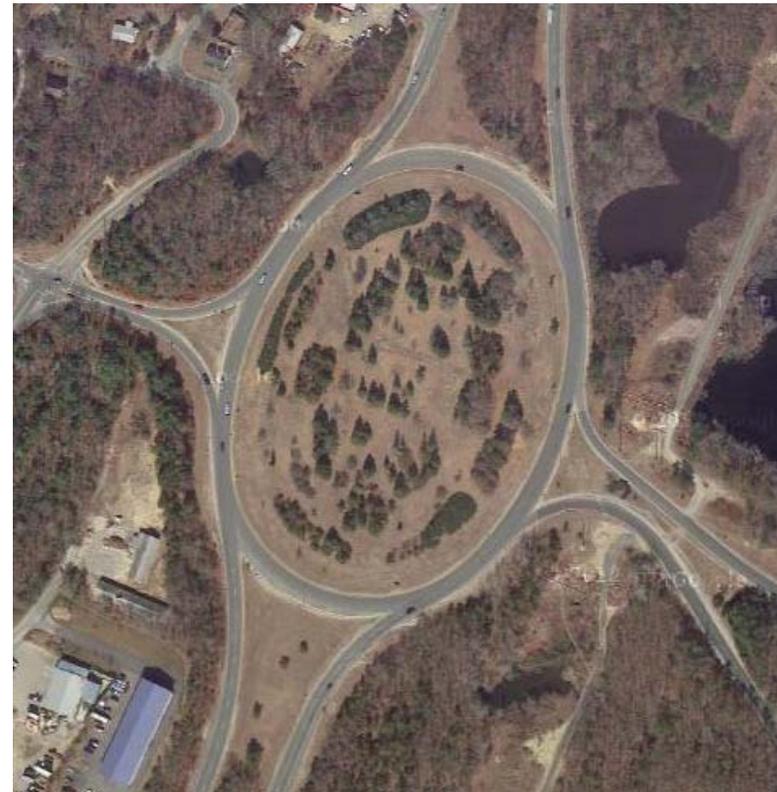


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Rt 6 Exit 5/Rt 149



Rt 28 Otis Rotary





INTERSECTION 2:
FOREST ROAD



Note: Graphical depicts of design ideas and are conceptual in nature; intersection geometries have not been considered in detail at this point.

Intersection 2 - Rte. 28 at Forest St.

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User: stunner

Date: 6/9/19





Design Ideas

1. Update signal equipment and timing

- Improved bicycle and pedestrian accommodations as well as access managements improvements should be included in any redesign

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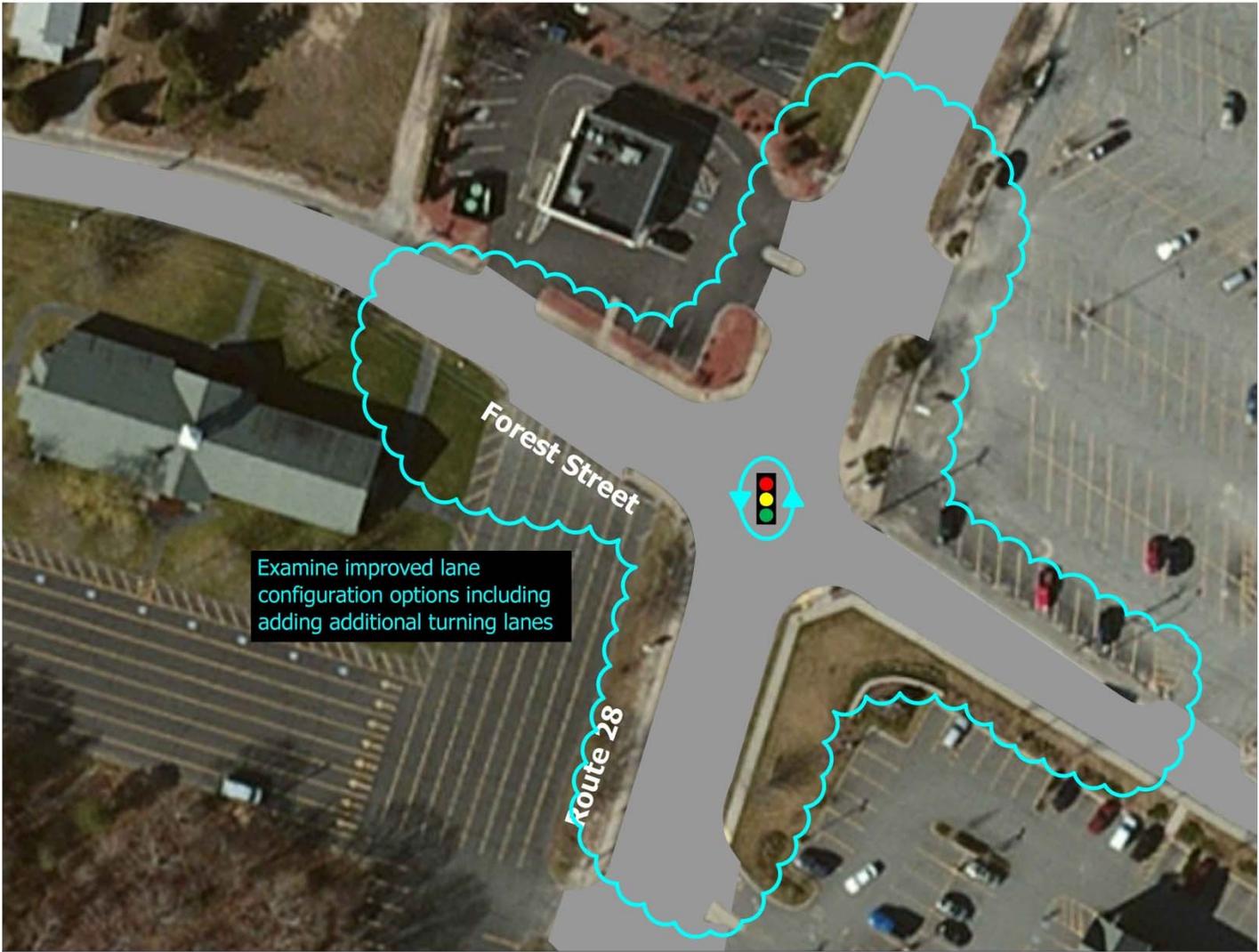
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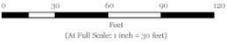


Design Ideas

1. Update signal equipment and timing
 2. Update traffic signal and include geometric improvements
- Improved bicycle and pedestrian accommodations as well as access managements improvements should be included in any redesign

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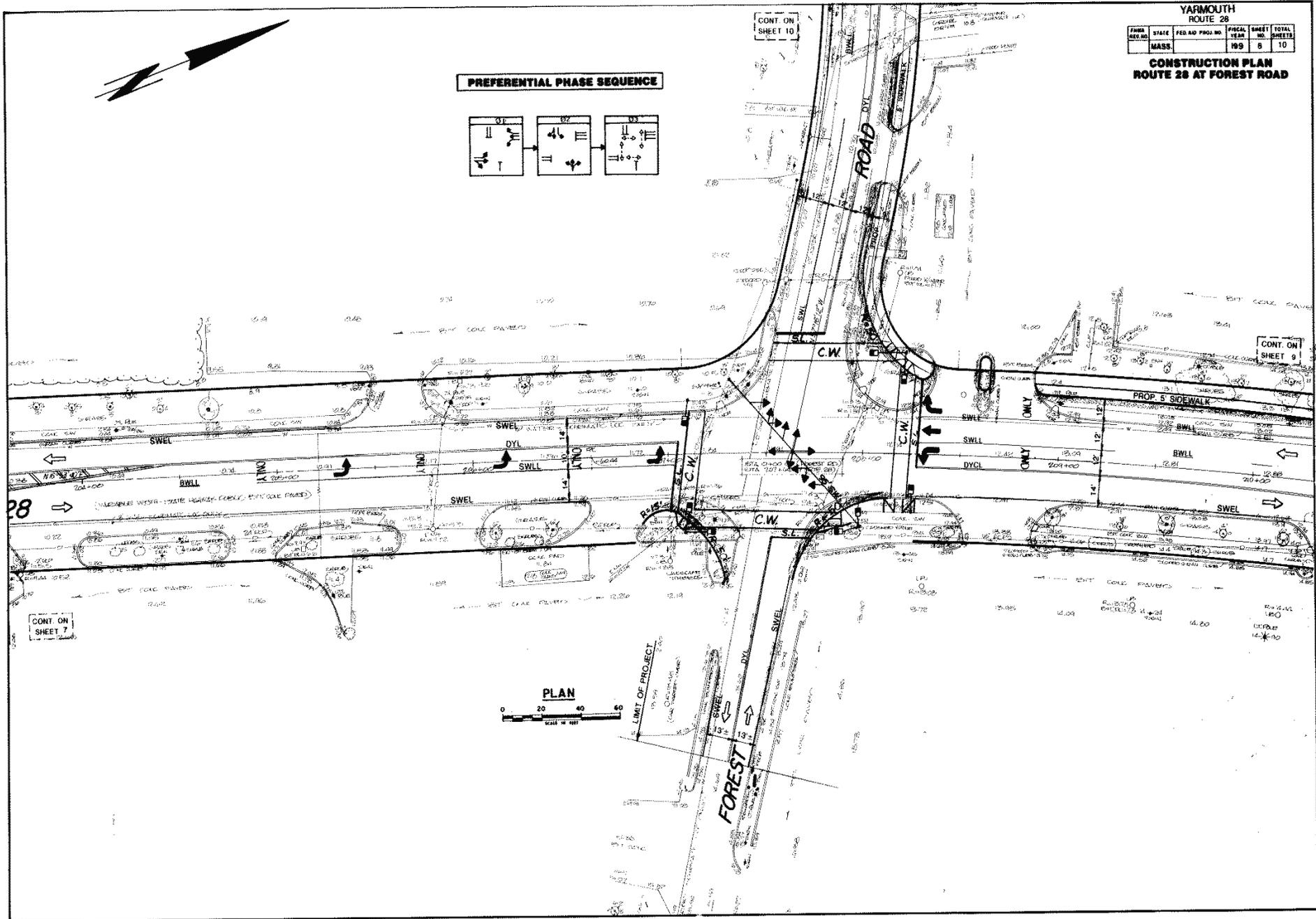
Intersection 2 - Rte. 28 at Forest St.



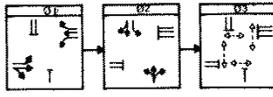
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Previous Design Plans (1992) – Massachusetts Highway Department



PREFERENTIAL PHASE SEQUENCE



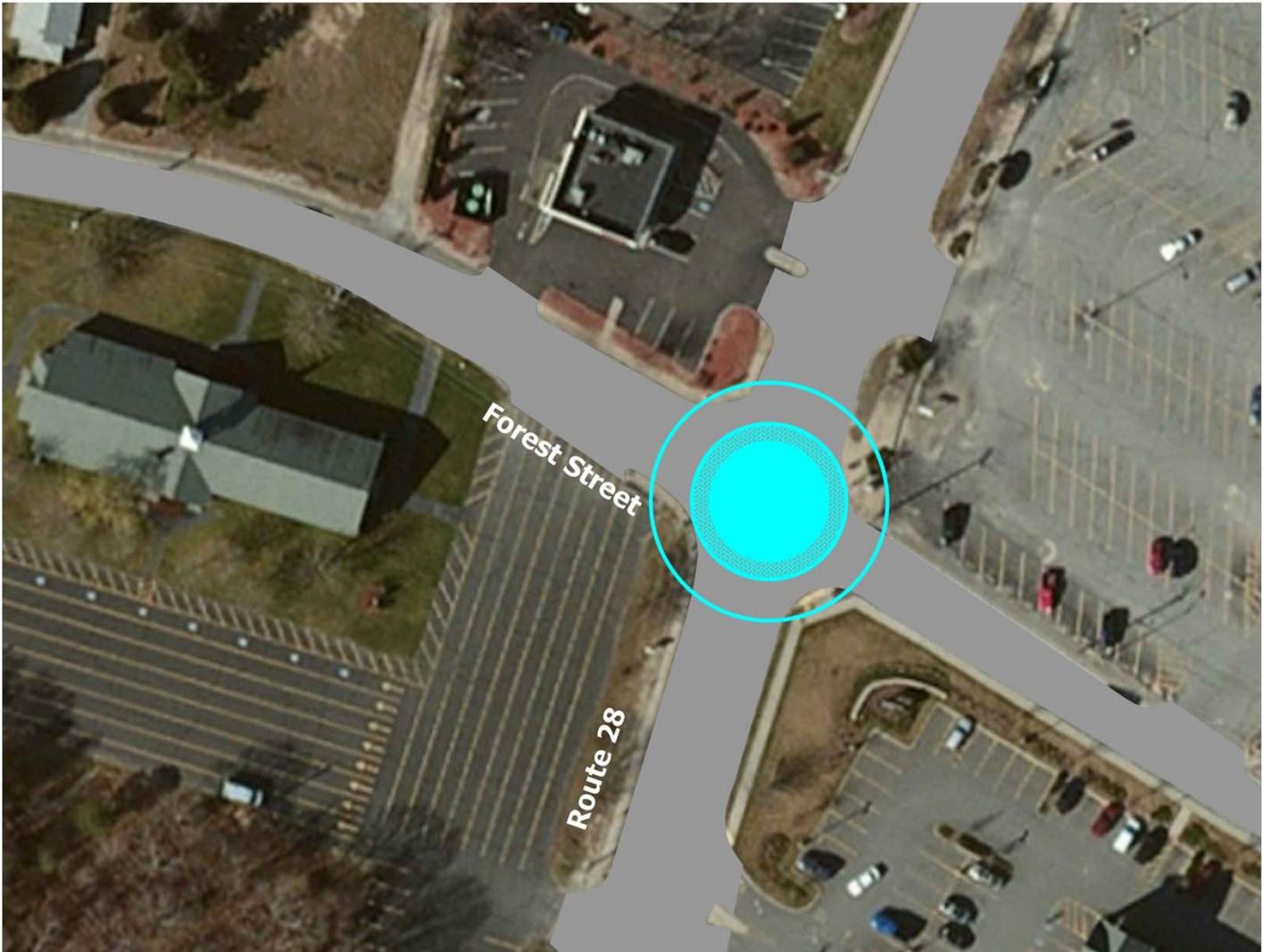
YARMOUTH ROUTE 28

FUND. REV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	MASS.		199	8	10

CONSTRUCTION PLAN ROUTE 28 AT FOREST ROAD

PLAN





Design Ideas

1. Update signal equipment and timing
 2. Update traffic signal and include geometric improvements
 3. Replace traffic signal with a roundabout
- Improved bicycle and pedestrian accommodations as well as access managements improvements should be included in any redesign

Note: Graphical depicts of design ideas and are conceptual in nature; intersection geometries have not been considered in detail at this point.

Intersection 2 - Rte. 28 at Forest St.

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User: stunner

Date: 6/9/19



Low Impact Development Treatment & Infiltration planters



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- **In landscaped areas:**
 - Where possible at low points
 - Median plantings
 - Roundabout plantings



Massachusetts Green DOT goals met with these concepts



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- ✓ Complete Streets Bike/Pedestrian Accommodation
- ✓ Downturned, energy efficient lights
- ✓ Transit opportunities & Express bus turnouts
- ✓ Tree canopy planting in ROW
- ✓ Use of Native/drought tolerant plants (decreased use of grass)
- ✓ Encourage use of recycled materials in aggregated, furniture, and paving
- ✓ Increased albedo factor in pathway surfaces
- ✓ LID increases infiltration & reduces stormwater volume

Next Steps



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- **Presentation to Board of Selectmen (progress report) -- June-July**
- **Detailed Conceptual Design for Corridor -- July-August**
- **Technical Review meeting -- August**
- **Public Presentation and Report -- September**

Feedback?



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Contact

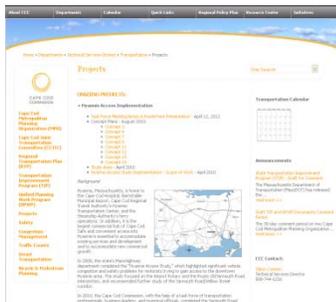
Tabitha Harkin

Community Design Planner

Phone: 508-362-3828

tharkin@capecodcommission.org

Thank You for attending!



Project materials available at:
www.capecodcommission.org