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Yarmouth Route 28 – Living Streets Study

Final Recommendations

Presentation to Yarmouth Planning Board

October 16, 2013

This presentation



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- **Background Information**
- **Work to Date**
- **Findings**
- **Priority Recommendations**
- **Additional Recommendations**
- **Next Steps**

Study Area



GOALS OF THIS STUDY:

CCC for MASS DOT Unified Planning (UPWP) TASK 3.3



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- **Reduce conflicts, improve traffic flow** and incorporate multi-modal transportation options along the Route 28 corridor
- Further the creation of **vibrant, mixed-use centers** along the roadway.
- Provide **safe accommodation of pedestrians and bicycles**
- Incorporate **Low Impact Development (LID) techniques to mitigate stormwater runoff.**
- Establish a **preferred roadway redesign** which addresses the above and reflects a planning window of 2033.
- Ensure preferred alternatives are transferrable to a Massachusetts Department of Transportation (MassDOT) Project Need Form (PNF) and Project Initiation form (PIF) at project completion.

Work to Date



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- Kickoff Taskforce Meeting
- Data Collection/Site Visits
- Mapping and Analysis
- Identification of Opportunities
- Focus Group Meetings
- Planning Board Presentation of Interim Concepts
- Board of Selectmen Endorsement of Concepts
- Refinement and Technical Review
- **Final Reporting**

Findings & Considerations

- Crash History and Level of Service
- Bike & Pedestrian connectivity
- Signal performance
- Problematic Intersections
- Community Character goals
- Roadway Constraints
- Stormwater Constraints

Crash History and Level of Service



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- Crashes spread along the corridor - related to the many driveways and curb cuts
 - Mainly rear-end crashes, also a significant number of angle crashes
 - High crash totals at the Winslow Gray Road and South Sea Avenue intersections
 - Congestion along the corridor causes failing Level-of-Service at unsignalized locations

Finding: Poor access management combined with high volumes results in corridor-wide safety and congestion issues.

Bike & Pedestrian Connectivity



ROUTE 28 YARMOUTH | SIDEWALK CONNECTIVITY

 **SIDEWALK INCOMPLETE OR IMPASSABLE**



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Created by: TR
Reviewed by: GC

Finding: There is a high volume of users- both bike and pedestrian, along the roadway, but poor accommodation. This is a character and a safety issue.

Traffic Signal Performance



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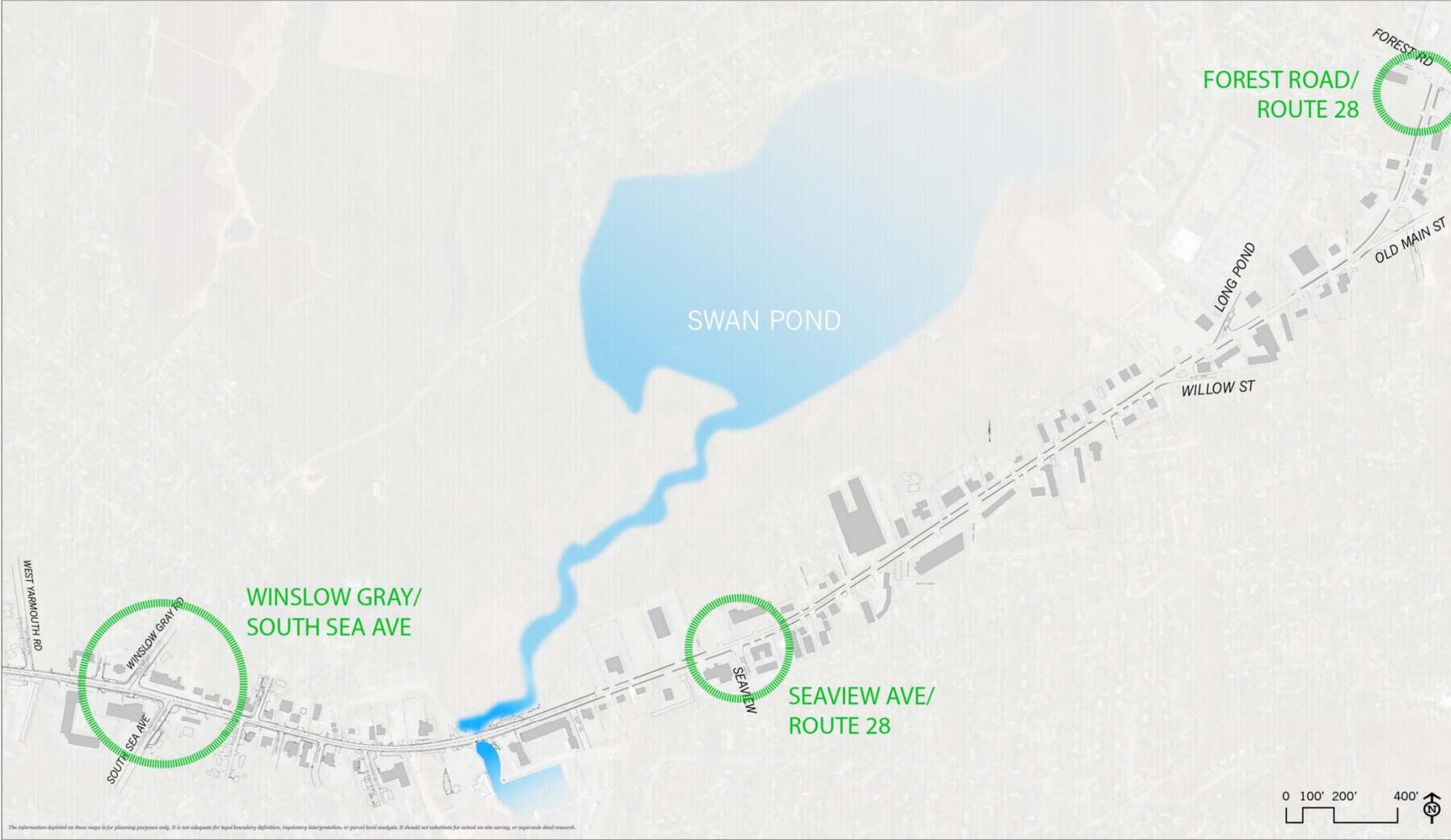


- **All Existing study area Traffic Signal Equipment is limited in effectiveness:**
 - Over 30 years old
 - Timing schemes cannot be optimized
 - Certain detection (loops) areas unavailable
- **Seaview Avenue intersection meets warrants for signalization**
 - Meets 5 warrants* based on various patterns of traffic volumes

* *Manual on Uniform Traffic Control Devices*

Finding: Traffic signal equipment should be upgraded at all intersections within the study area.

Problematic Intersections



ROUTE 28 YARMOUTH | PRIORITY INTERSECTIONS



Created by: TH
Reviewed by: CC
Source: AutoCAD
modified with GIS

Land Use goals & Community Character

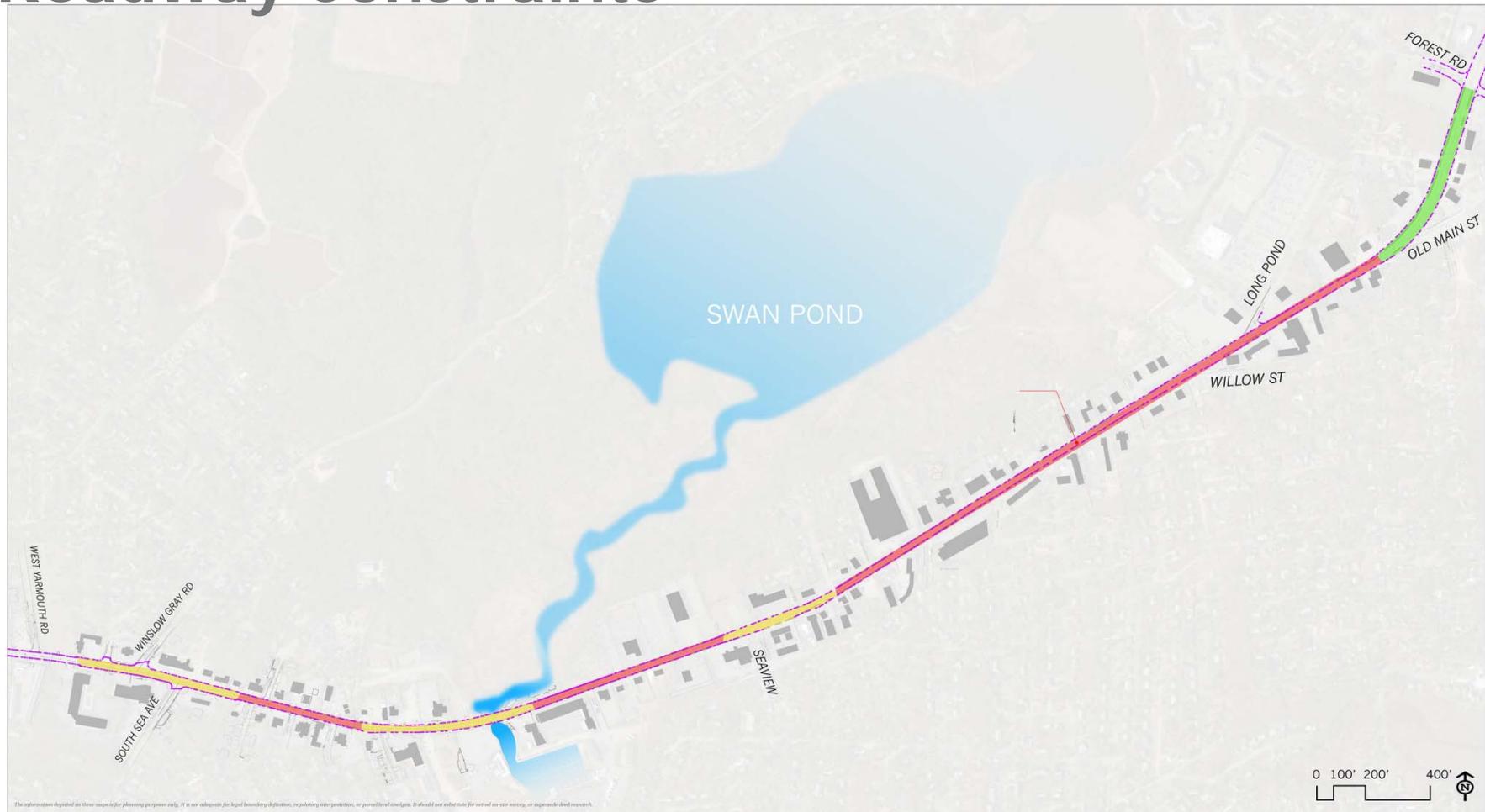


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- Streetscaping is essential to Economic Development and Village Center revitalization goals, as it creates a sense of place. The current sidewalks are disconnected, and much of the road frontage lacks landscaping or tree canopy
- The investment that a community makes in implementing Complete Streets can stimulate private investment, especially in retail districts and downtowns where pedestrians and cyclists feel unwelcome.

Finding: The current roadway is incongruous and disconnected, and does not provide much pedestrian amenity of safe lighting.

Roadway Constraints



ROUTE 28 YARMOUTH | RIGHT OF WAY CONSIDERATIONS

-  APPROXIMATE ROW BOUNDARY
-  40 FEET ROW
-  50 FEET ROW
-  80 FEET ROW



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Created by: TFC
Reviewed by: TFC
Source: Aerial/CAD,
modified with GIS.

Finding: State Right of Way is constrained to 40' in most areas, and improvements beyond the current configuration would require takings.



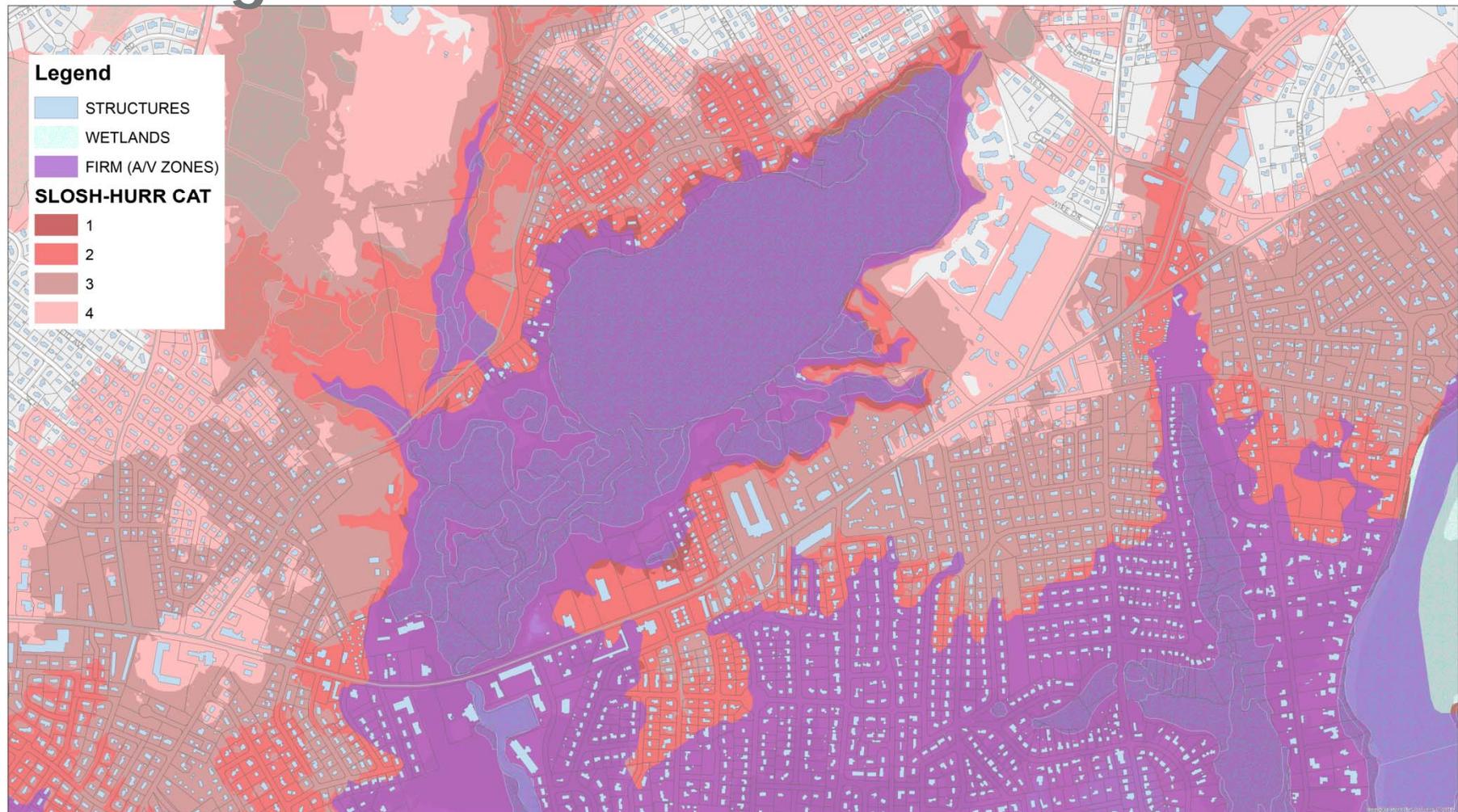
Route 28 Yarmouth | Potentially Affected Properties



Findings:

- Utilities present conflict primarily on North Side
- North side properties have higher ratio of buffered frontage to parking in front
- Greater # of takings would be required east of Parkers River Bridge

Flooding Considerations



Route 28 Yarmouth | STORM INUNDATION AND FLOOD POTENTIAL

0 0.15 0.3 0.6 Miles



Finding: The entirety of the study area lies in an area subject to inundation. Increasing pervious surface and landscaping would improve road safety by decreasing the risk of standing water.

Priority Recommendations as endorsed by Board of Selectmen 8/6

- 50' Streetscape cross section in selected areas
- Potential Realignment at Winslow Gray/South Sea Ave.
- Signal Upgrade and coordination at Forest Road
- Signalization of Seaview Avenue.

Improving the cross section of the roadway:

Improve/expand to accommodate bike/pedestrian safety, community character

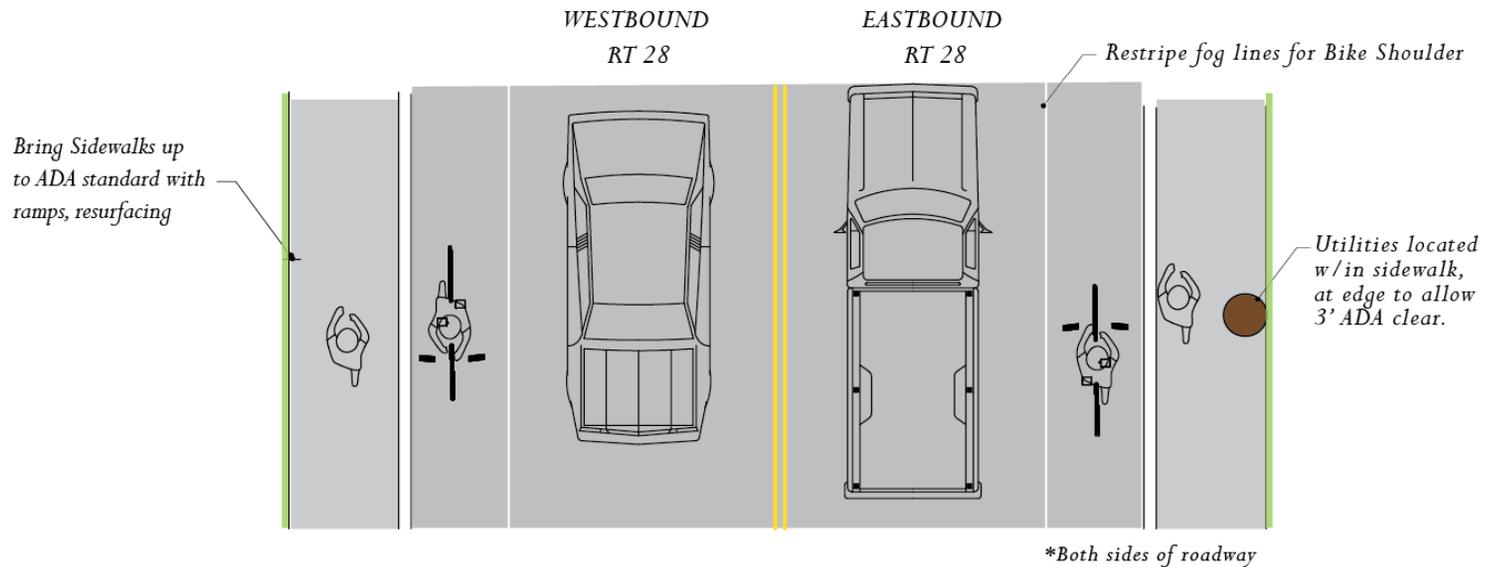
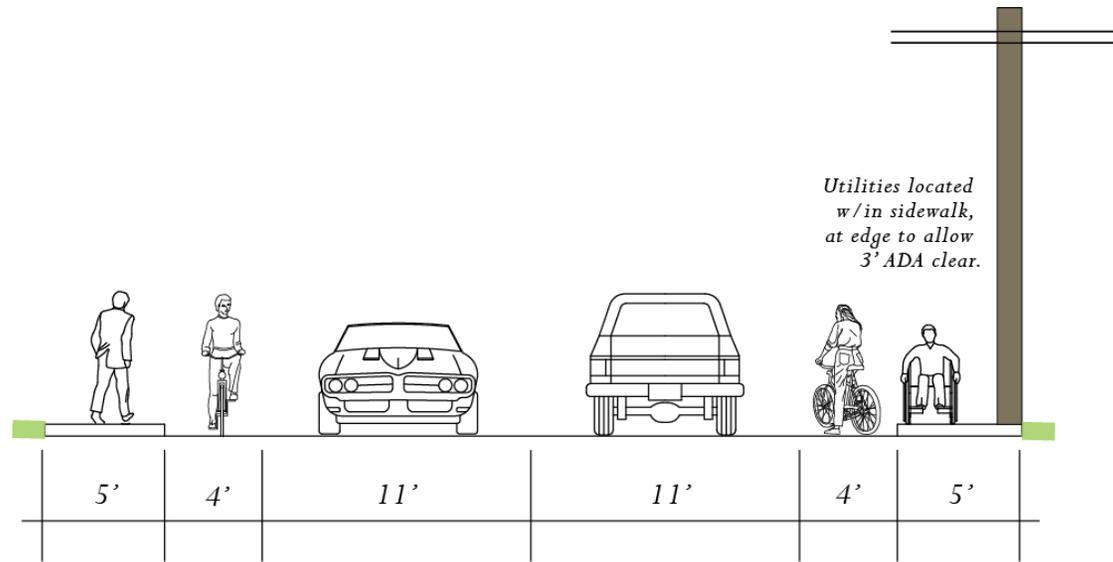


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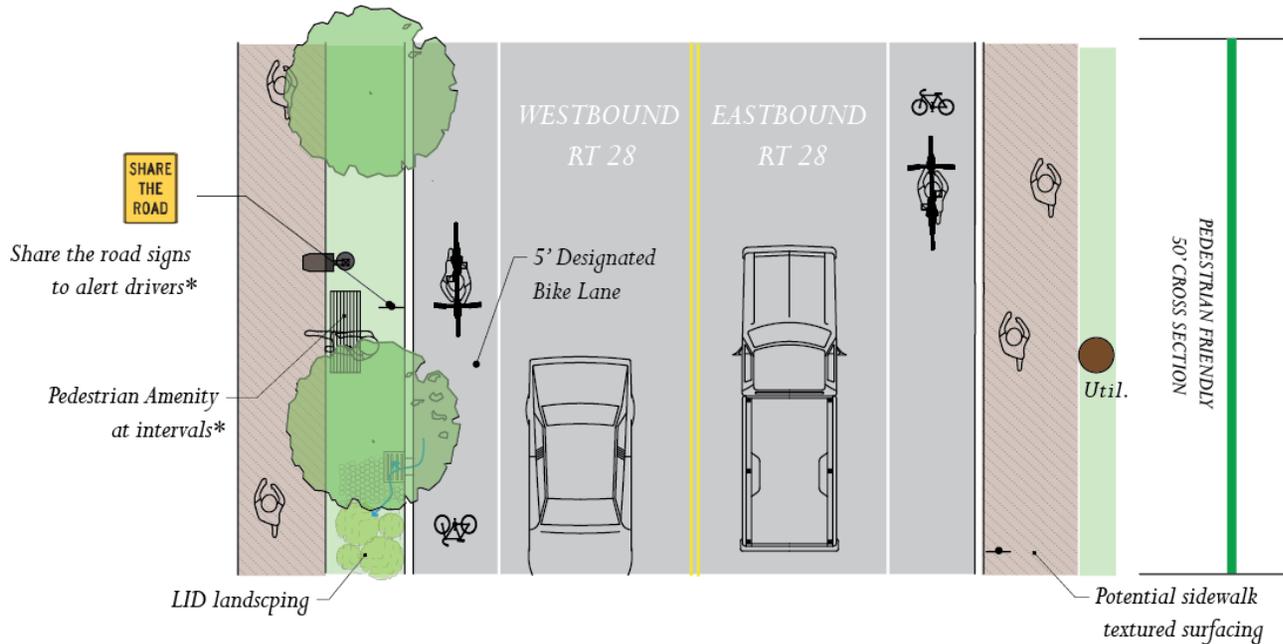
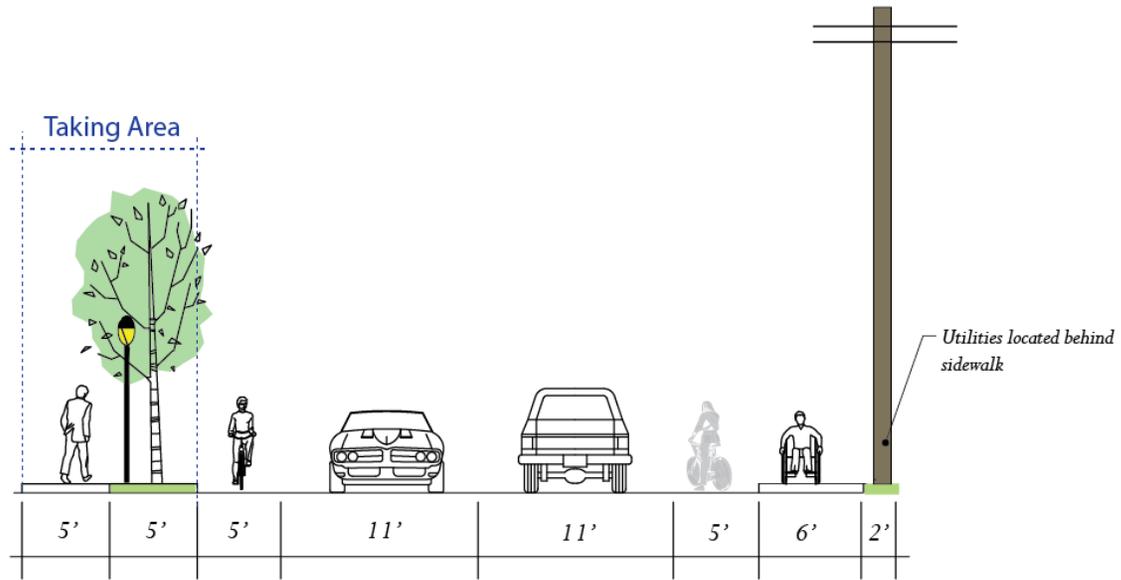
- **Current Road layout at 40' in most areas, 50' at turning lanes.**
- **Current Road layout would require ADA upgrades to accommodate bike/ped. *See left***
- **Any expansion above the 40' ROW would require takings.**
- **MassDOT has right to take land, or pay a fee taking.**
- **Strip takings evaluated at an average of \$6 per square foot**

Easiest Fix:
 Upgrade all sidewalks to ADA standards & restripe roadway for bikes, maintaining the existing Right of Way



Streetscape Option A:

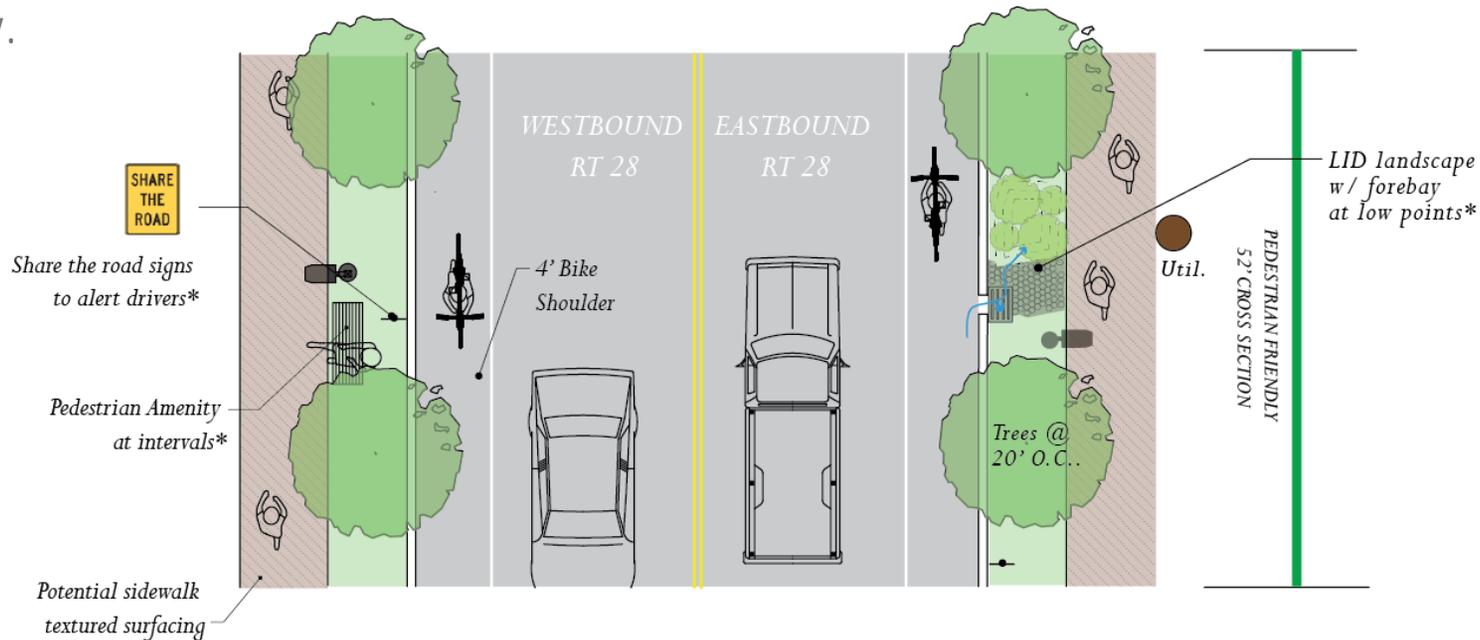
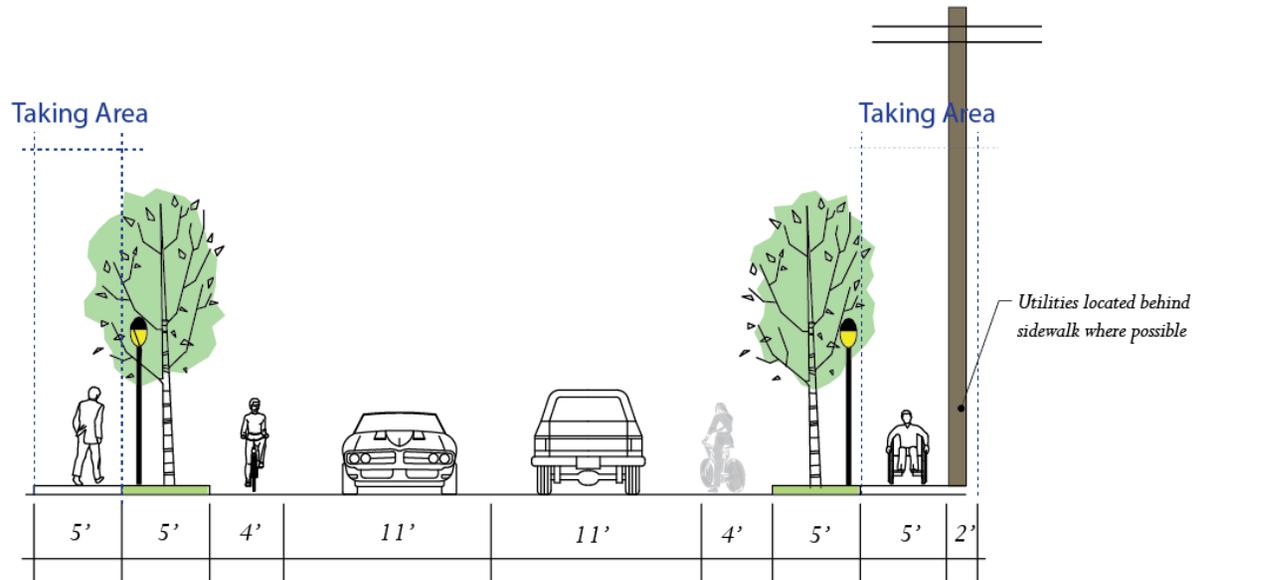
Expand Right of Way in select areas with strip takings to accommodate landscaping on South side of the roadway.



Rt 28 Yarmouth
PROPOSED OPTION B: +/-50' STREETScape LAYOUT

Streetscape Option B:

Expand Right of Way with strip takings in select areas to accommodate landscaping on both sides of the roadway.



Rt 28 Yarmouth
PROPOSED OPTION A: +/-52' STREETSCAPE LAYOUT

Estimated Street Cross Section Costs:

Expand to Accommodate Bike/Ped, Community Character
 (Costs per mile – West Yarmouth Rd to Forest Rd = 1.7 mi.)



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Order of Magnitude Cost of Resurfacing/ Sidewalk upgrades for ADA compliance (keeping w/in ROW):	\$1.7 Million	Per Mile
Order of Magnitude Cost of expansion to 50' with green strip on one side , ADA sidewalks, resurfacing and strip taking (assumes \$6/s.f. for takings):	\$2.3 Million	Per Mile
Order of Magnitude Cost of expansion to 52' with green strip on both sides , ADA sidewalks, resurfacing and strip taking (assumes \$6/s.f. for takings):	\$2.7 Million	Per Mile
Order of Magnitude Cost of Streetlights/Benches/Trash Cans/Signage	\$130,000	Per Mile
Order of Magnitude cost for landscaping over and above MassDOT Standard (LID)	\$20,000	Per Mile

**MassDOT will maintain basic design elements as specified in their design manual, and will not fund or maintain additional amenities, including electricity to privately funded fixtures.*

Winslow Gray/South Sea

Potential Realignment to create gateway, reduce conflict



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Build Option 1

- New traffic signal controller
- Add video detection approaches
- Retime traffic signal
- Add pedestrian- actuated count down signal heads
- Add accessible ramps
- Move sidewalk obstructions or diverting sidewalk around obstructions



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 field research.

Winslow Gray/South Sea

Potential Realignment to create gateway, reduce conflict



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Build Option 2

- Realign intersection into a single 4-way intersection
- Keep the number of lanes on each approach the same as existing
- Employ access management strategies to limit curb cuts in the vicinity of the new signal
- Provide full bicycle and pedestrian accommodations
- Consider redevelopment options for the reorganized lots north of Route 28



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.

Winslow Gray/South Sea

Potential Realignment to create gateway, reduce conflict



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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.

Build Option 3

- Realign intersection into a single 4-way intersection
- Flare Route 28 approaches to accommodate dedicated left, through, and right lanes
- Employ access management strategies to limit curb cuts in the vicinity of the new signal
- Provide full bicycle and pedestrian accommodations
- Consider redevelopment options for the reorganized lots north of Route 28

Winslow Gray/South Sea

Potential Realignment to create gateway, reduce conflict



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Build Options	Approx. Cost*	ROW Impacts	Safety Improvement	Congestion Improvement	Bike/Ped Improvement
1 Signal & ADA Upgrades	\$500,000	Minimal - related to sidewalk obstacles	Minimal	Minimal	Ped – Significant Bike - Minimal
2 Realign to single 4-Leg	\$3.0 Million	Reorganization + small strip taking	Significant	Moderate	Significant
3 Realign to single expanded 4-Leg	\$3.5 Million	Reorganization + significant strip taking	Significant (additional conflicts over Option 2)	Moderate (minimal improvement over Option 2)	Significant (additional conflicts over Option 2)

*Approx. cost does not include Right-of-Way (ROW) costs

Winslow Gray/South Sea

Parcel based considerations
Assessed Land Values



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Average Assessed
value for strip
takings: \$6/SF

Intersection
realignment would
require strategic
parcel takings to
the magnitude of
approx. **\$810,900**



Route 28 Yarmouth | Potentially Affected Properties

Forest Road and Seaview Ave.

Proposed upgrades and signalization



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- **Seaview Avenue: Install traffic signal.** Estimated cost including signal heads, controllers, detection, lane markings, crosswalks, etc.: \$1.5 Million
 - **Forest Road: Upgrade of signal equipment including new signal heads, controllers, some additional detection: \$500,000**
 - **Forest Road: Allow Right Turn on Red.**
 - 12%+ reduction in delay
 - Modify pedestrian phase from exclusive to concurrent
 - May compromise safety if bicyclist & pedestrian activity increase

Additional Recommendations

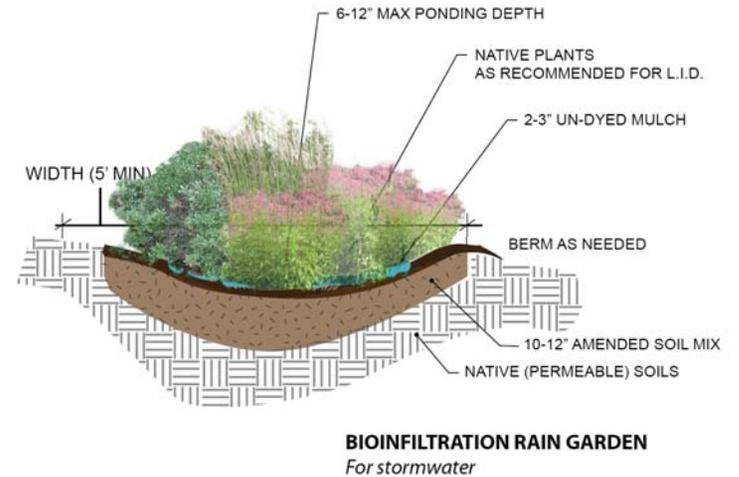
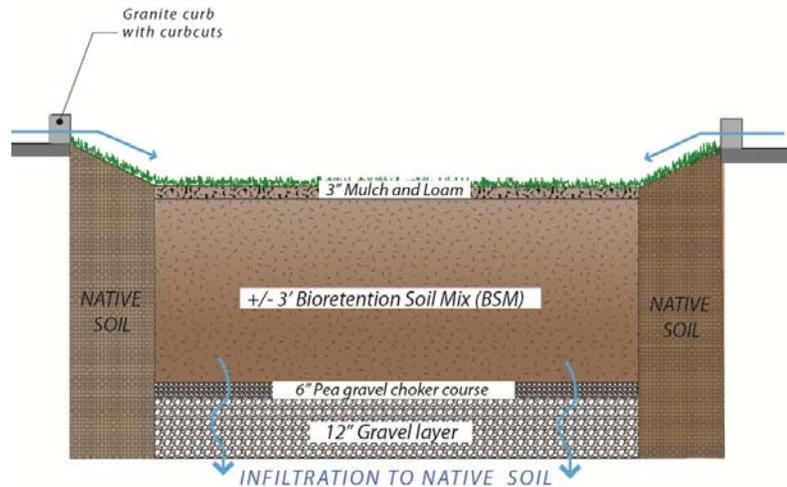
- Stormwater Mitigation
- Bus Accommodation
- Access Management

Stormwater Mitigation

Trees, Infiltration planters and buffer strips



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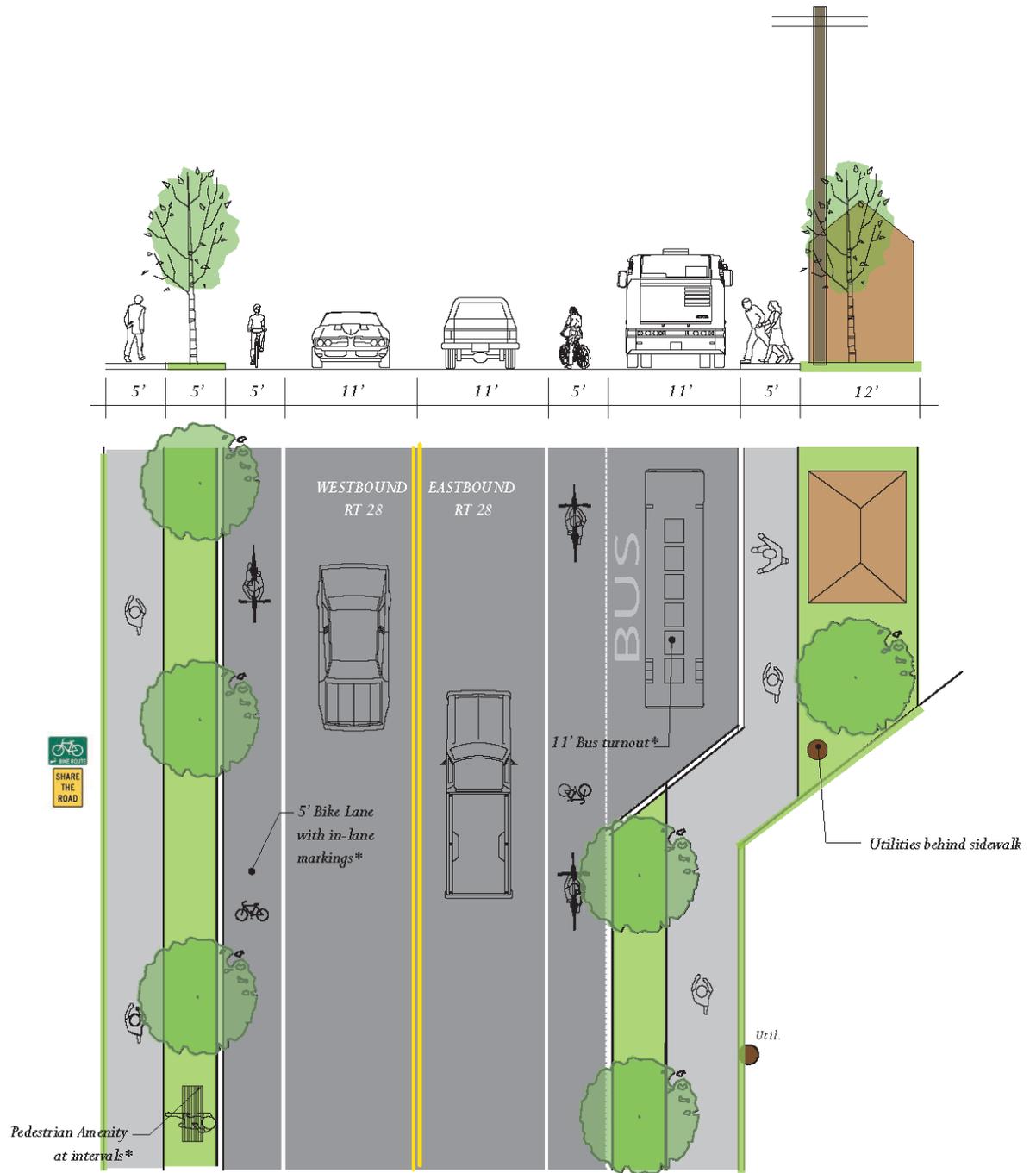
In proposed landscaped areas:

- Where possible around existing drains
- As Buffer plantings
- Swales in lieu of grass strips at road edge

Buss Accomodation

70' Bus Turnout Layout:

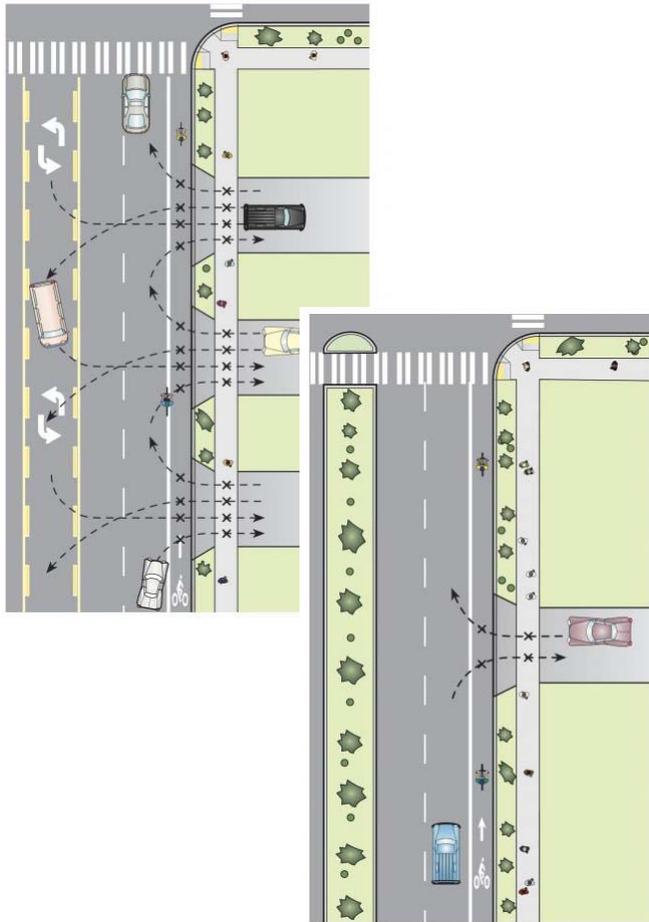
Inside state
layout between
Main and Forest



Additional Consideration: Access Management



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- Recommendation to coordinate efforts of layout alteration with access management protocol
- Further study needed to assess individual curb cuts, search permits and determine non-conforming lots according to MassDOT standards (Ch. 15 of Design Guide)
- Development of a access management plan is a recommendation for future study, can be integrated with corridor parking study

To Recap:



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- A combination of all considerations results in a funding request of approximately **\$5 to \$11 million**
- The approximate Transportation Improvement Project (TIP) budget for Cape Cod is 7.5 million, with the average project at **\$3-4 million**
- Consideration should be given to **breaking the project into subcomponents** that could spread over several TIP years

Next Steps



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- **Seeking Planning Board endorsement & prioritization of options presented**
- **Board of Selectmen presentation in November**
- **Final Report to MassDOT for UPWP task 3.4: will be made public after BOS presentation**
- **Town approval process**
- **Recommendation to complete Project Notification Form (PNF) & Project Initiation Form (PIF) filing for proposed concepts as approved to advance project to the TIP**

Feedback?



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Thank You for attending!

Project materials available at:
www.capecodcommission.org

