

ROUTE 28 EASTERN MASHPEE STUDY ROUTE 130 TO ORCHARD ROAD CORRIDOR STUDY FINAL REPORT



FEBRUARY 2017

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PROJECT FUNDING

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The information depicted on the maps and figures in this report are for planning purposes only. They are not adequate for legal boundary definition, regulatory interpretation, or parcel level analysis. They should not substitute for actual on-site survey, or supersede deed research. Unless otherwise noted, the source for road data and information for maps and figures in this report is the Massachusetts Department of Transportation (MassDOT) (2015) and Cape Cod Commission planimetric data (2014). Unless otherwise noted, parcel data is from a Cape Cod Commission regional parcel data set (2012-2016).

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EXECUTIVE SUMMARY

Route 28 in ~~Barnstable Eastern Mashpee~~ is a major regional east-west transportation corridor on Cape Cod owned and maintained by the Massachusetts Department of Transportation (MassDOT). The section of Route 28 from Route 130 to Orchard Road was identified as a priority for investigation. This section of road is often congested, particularly in the summer months, and exhibits many safety issues. Particularly problematic are the ~~five major~~ three major intersections: Route 28 at ~~Cape Drive, Bowdoin Road, Noisy Hole Road, Sampsons Mill Road, and Orchard Road~~ Santuit Newtown Road, Main Street, and Route 130.

The purpose of this study is to develop alternatives that will provide safe and convenient access within the study area for all users of the roadway system including pedestrians, bicyclists, and motorists.

With the benefit of active participation by members of the community, a detailed analysis of existing conditions was conducted to pinpoint issues along the corridor. Beginning with recommendations from the public and working closely with Town staff, a host of potential improvement options were developed throughout the corridor. Based on technical review and feedback from a public review of the alternatives, these improvement options were refined and organized into the following sets of key short- and long-term recommendations.

SHORT-TERM RECOMMENDATIONS

- Adjust signal timing at the Route 28 at ~~Route 130~~ Orchard Road traffic signal
- Install “Don’t Block the Box” pavement marking and signs at the intersections of Route 28 at Main Street and Route 28 at Sandalwood Drive
- Work with the Cape Cod Regional Transit Authority to establish a bus stop on Route 28 near the existing crosswalk east of Main Street
- Conduct a Road Safety Audit for the intersections of Route 28 at Route 130 and Route 28 at Santuit-Newtown Road

LONG-TERM RECOMMENDATIONS

- Install a signal or roundabout at the intersection of Route 28 at ~~Santuit-Newtown~~ Bowdoin Road
- Install sidewalks to close the gaps in the existing pedestrian network within the study area
- Relocate and improve the intersection of Route 28 at Route 130 to the west
- Consider changes to Route 28 to reduce vehicle speeds and improve the accommodation of pedestrians and bicyclists

Beyond these key recommendations, this report outlines the host of improvement options to consider and advance as funding becomes available. To assist in prioritizing improvements, the report identifies the relative time frame, cost, and expected benefit in terms of safety and congestion, including bicycle and pedestrian accommodation, for each potential improvement. A summary of all improvement options is presented on the following page.



4 | EXECUTIVE SUMMARY SUMMARY OF ALTERNATIVES

INTERSECTION ALTERNATIVES	TIME FRAME	COST	ANTICIPATED IMPACT				
			SAFETY	CONGESTION		BICYCLE/ PEDESTRIAN	PRIVATE PROPERTY
				ROUTE 28	CROSS STREET		
ROUTE 28 AT ROUTE 130							
Retime traffic signal	Short	\$		●●● ●●●	●●● ●●●		
Widen Route 130 approach	Long	\$\$		●●● ●●●	●●● ●●●		

Relocate/realign intersection to the west	Long	\$\$\$	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●
ROUTE 28 AT MAIN STREET AND ROUTE 28 AT SANDALWOOD DRIVE							
"Don't Block the Box" markings	Short	\$			●●●● ●●●●		
Improvements to Route 130 intersection	Short-Long	\$-\$\$\$			●●●● ●●●●		
Improvements to Santuit-Newton Road intersection	Long	\$\$\$			●●●● ●●●●		
ROUTE 28 AT SANTUIT-NEWTOWN ROAD							
Traffic signal: one Route 28 through lane	Long	\$\$\$	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●
Traffic signal: two Route 28 through lanes	Long	\$\$\$	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●
Roundabout: one Route 28 through lane	Long	\$\$\$	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●
Roundabout: two Route 28 through lanes	Long	\$\$\$	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●

CORRIDOR CONCEPTS

PEDESTRIAN CONCEPTS	BICYCLE CONCEPTS	TRANSIT CONCEPTS	OTHER CONCEPTS
<ul style="list-style-type: none"> Close sidewalk gaps Sidewalks on both sides of Route 28 for entire corridor 	<ul style="list-style-type: none"> Expanded shoulders where possible for bicycle accommodation Alternate bike routes 	<ul style="list-style-type: none"> Bus stop with signage Bus bench/shelter Bus pull-outs 	<ul style="list-style-type: none"> Follow-up safety analyses Improved stormwater management and treatment Improved vegetation management Speed management on Route 28: visual narrowing and gateway treatments



INTRODUCTION

Route 28 in ~~Eastern Mashpee~~Barnstable is a major regional east-west transportation corridor on Cape Cod owned and maintained by the Massachusetts Department of Transportation (MassDOT). The section of Route 28 from ~~Santuit Newtown Road to Route 130~~Route 130 to Orchard Road was identified as a priority for investigation. This section of road is often congested, particularly in the summer months. The corridor includes ~~three-five~~ busy intersections on Route 28 including at ~~Cape Drive, Bowdoin Road, Noisy Hole Road, Sampsons Mill Road, and Orchard Road~~ Santuit Newtown Road, Main Street, and Route 130 that are often functionally deficient.

There are safety concerns in addition to congestion issues. The intersection of Route 28 and Noisy Hole Road is an unsignalized four-way intersection with challenging geometry. The intersection of Route 28 and Orchard Road is a signalized intersection with challenging issues as well. Both intersections have been identified as facilitating a high percentage of injury crashes. Additionally, the intersections of Bowdoin Road and Cape Drive are of concern as it is difficult for cars to make a left onto and off of Route 28, which can result in traffic congestion or unsafe maneuvers.

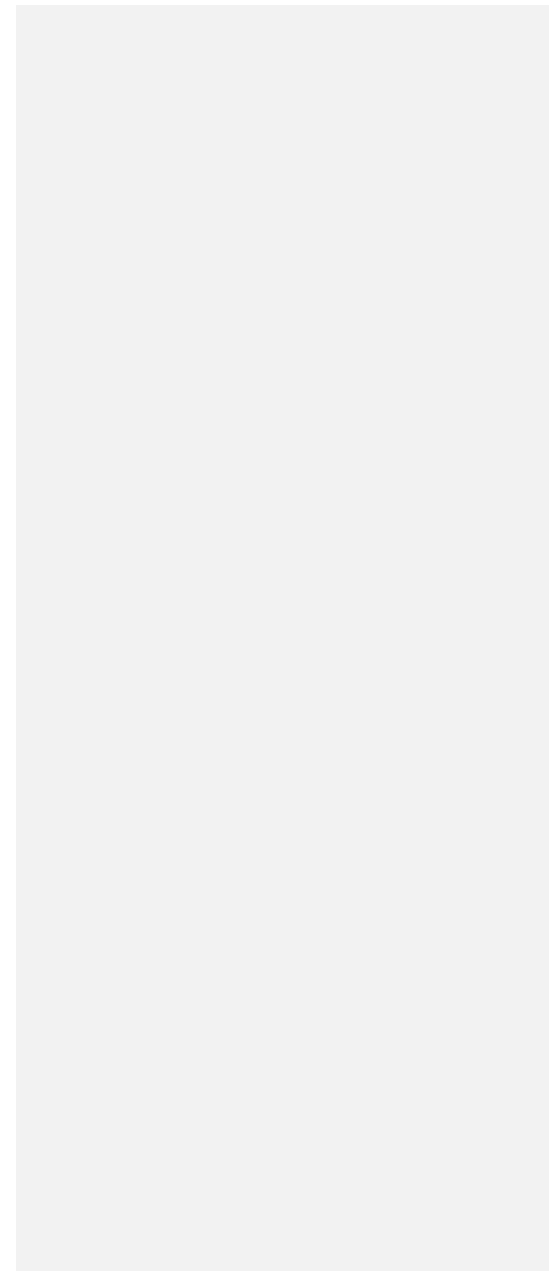
Also of key concern is accommodation for all road users including motorists, pedestrians, bicyclists, and transit users. This is a heavily used corridor for non-motorized users looking to access jobs and retail destinations from their neighborhoods.

Despite there being significant concerns with this corridor there has been limited study to identify solutions. Any potential improvements along this corridor must be balanced with impacts on the environment and neighboring properties.

STUDY AREA

As shown in Figure 1, the segment of Route 28 in ~~Eastern Mashpee~~Barnstable identified as the study area is approximately ~~1.3-1.35~~ miles in length extending from ~~Santuit Newtown Road to Route 130~~Route 130 to Orchard Road.

FIGURE 1. STUDY AREA





STUDY GOALS

The purpose of this study is to develop alternatives that will provide safe and convenient access within the study area for all users of the roadway system including pedestrians, bicyclists, and motorists.

The goals of this study are to:

- Improve safety
- Reduce congestion
- Improve accommodation of all users

PREVIOUS AND ONGOING STUDIES AND PLANS

The following studies and plans were reviewed:

- Route 28 & Route 132 Traffic Circulation Study: Barnstable Area – 1992
- Cotuit Village Plan (Town of Barnstable Comprehensive Plan) – 2005
- Barnstable Historic Preservation Plan – 2010 Update
- Route 28 Cotuit Corridor Study -- 2017

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STUDY PROCESS

The study began with the development of a project scope in the spring of 2015 for consideration of funding under the Cape Cod Unified Planning Work Program for Federal Fiscal Year 2017. The project scope and funding, from the Massachusetts Department of Transportation, was approved in August 2015. Following data collection and background research, the project kicked off with a meeting with Town of Barnstable staff in the spring of 2016. At that meeting a public participation plan was developed for this study with goals of:

- Gathering input from community stakeholders and the public to establish a vision for the corridor
- Soliciting feedback of potential alternatives

As formalized in the public participation plan, the study process included two public meetings as shown in Figure 2.

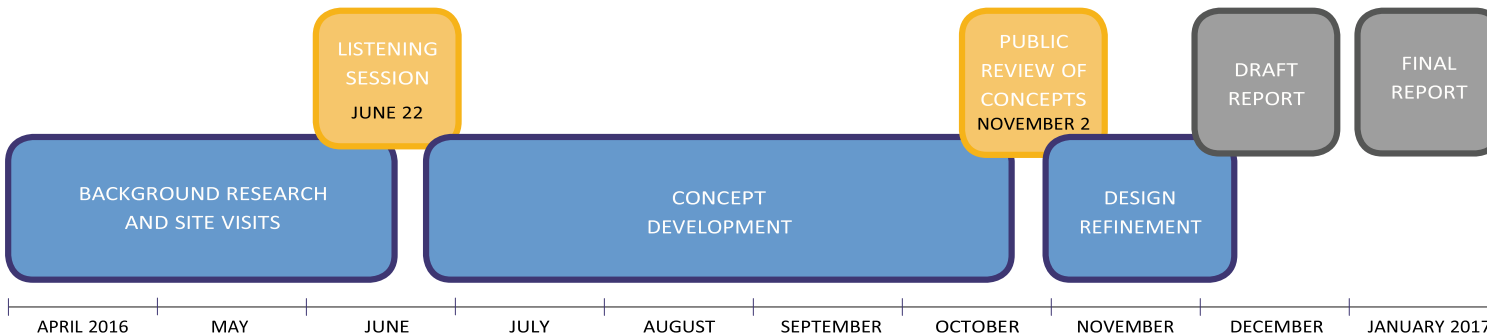
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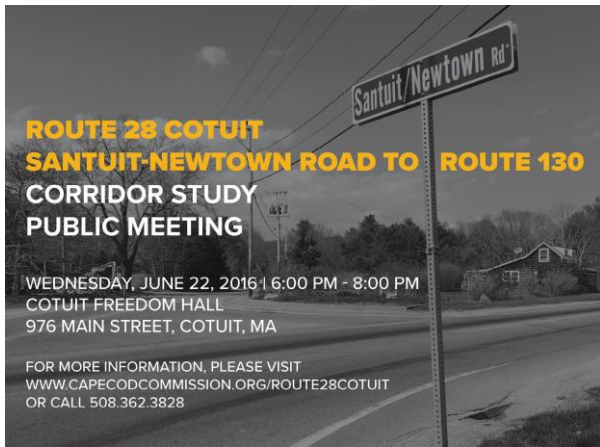
To solicit input and to alert stakeholders to the public meetings on the project, Commission staff conducted targeted outreach campaigns. These included posting flyers about the listening session, sending postcards to residents in the area in advance of the public meetings, press releases about the two public meetings, creation and maintenance of a webpage about the project, and email updates about the project. For stakeholders that could not attend the public meetings, materials were made available on the website. Commission staff also spoke on the phone, in person, and via email with stakeholders that could not attend the meetings but wanted to provide comments and input on the project. Figures 3 and 4 show examples of outreach materials.

FIGURE 3. POSTCARDS FOR PUBLIC MEETINGS

FIGURE 4. POSTED FLYER FOR PUBLIC MEETING

FIGURE 2. STUDY PROCESS



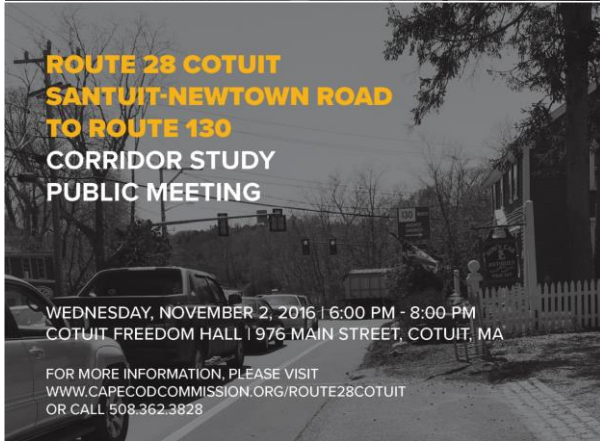


**ROUTE 28 COTUIT
SANTUIT-NEWTOWN ROAD TO ROUTE 130**

**CORRIDOR STUDY
PUBLIC MEETING**

WEDNESDAY, JUNE 22, 2016 | 6:00 PM - 8:00 PM
COTUIT FREEDOM HALL
976 MAIN STREET, COTUIT, MA

FOR MORE INFORMATION, PLEASE VISIT
WWW.CAPECODCOMMISSION.ORG/ROUTE28COTUIT
OR CALL 508.362.3828



**ROUTE 28 COTUIT
SANTUIT-NEWTOWN ROAD
TO ROUTE 130**

**CORRIDOR STUDY
PUBLIC MEETING**

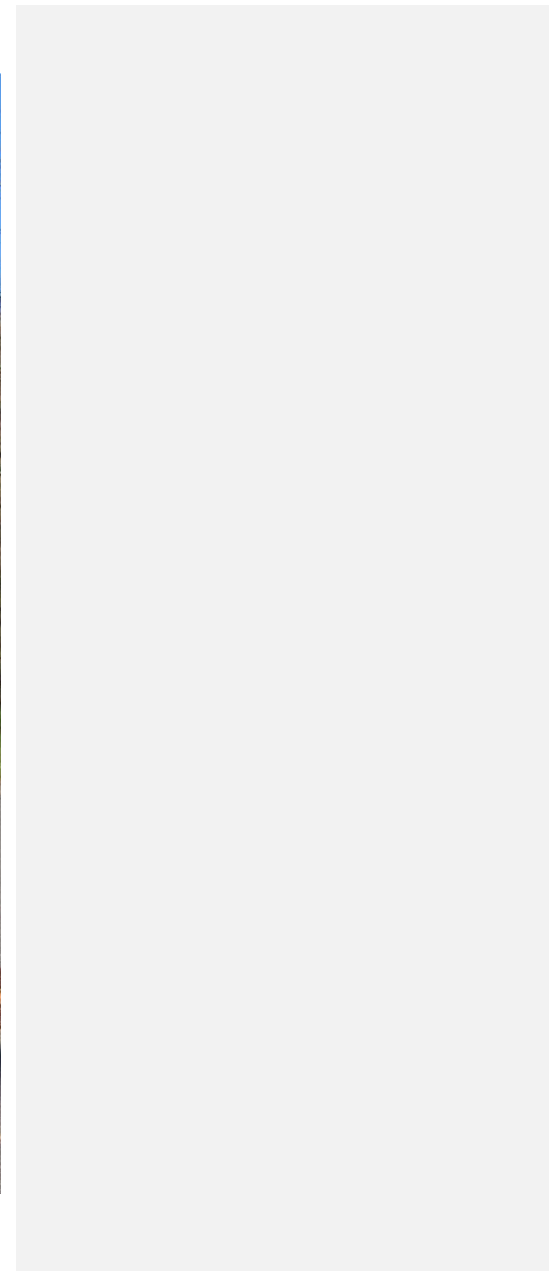
WEDNESDAY, NOVEMBER 2, 2016 | 6:00 PM - 8:00 PM
COTUIT FREEDOM HALL | 976 MAIN STREET, COTUIT, MA

FOR MORE INFORMATION, PLEASE VISIT
WWW.CAPECODCOMMISSION.ORG/ROUTE28COTUIT
OR CALL 508.362.3828





EXISTING CONDITIONS



To begin this study, Commission staff conducted an existing conditions analysis for the study area. During this analysis, staff reviewed the zoning, land use, bicycle and pedestrian accommodations, transit connections, traffic volumes, speed limits, and crash history for the study area.

ZONING AND LAND USE

Zoning and land use through the corridor are shown in the Figure 5. The area is almost entirely residentially zoned (Residence F District) with a Resource Protection Overlay District. Figure 6 highlights that the predominant land use in the area is residential, with a concentration of commercial uses on Route 28.

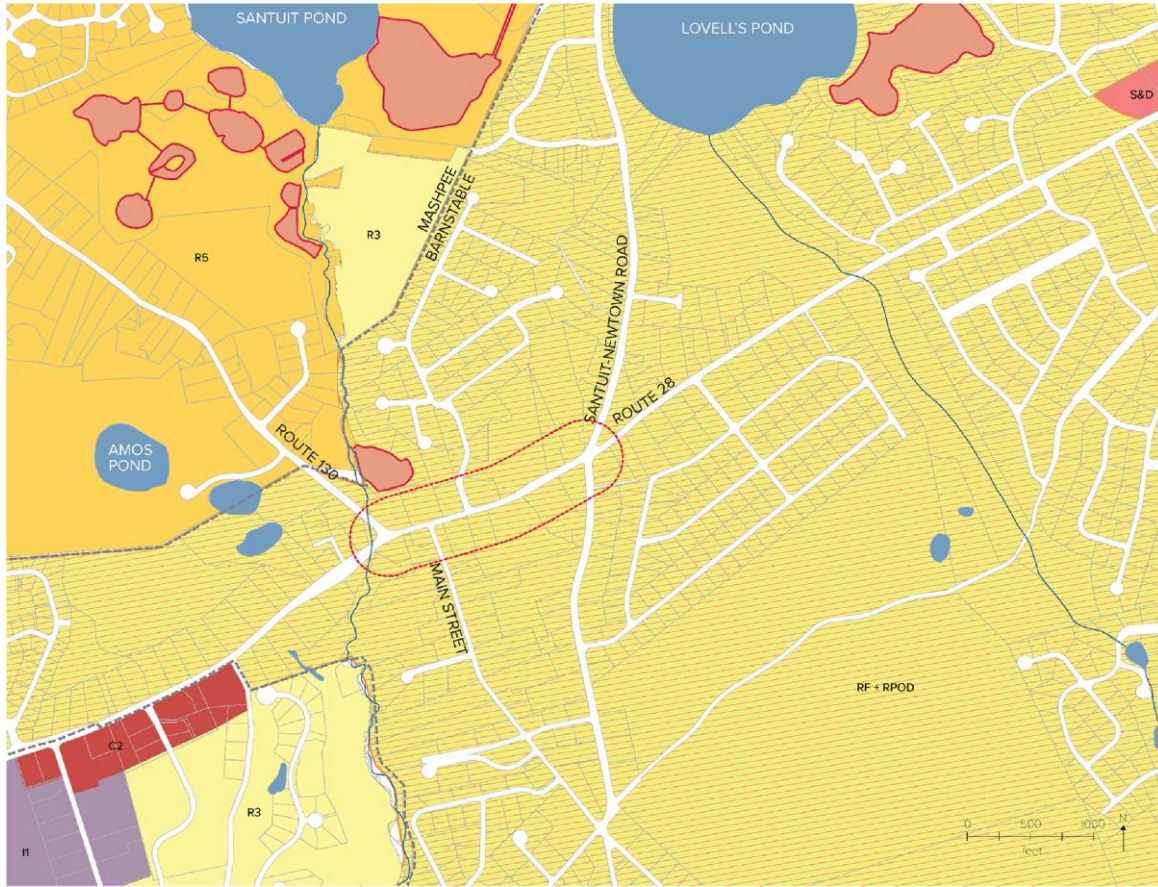


FIGURE 5. EXISTING ZONING

MASHPEE ZONING

- R5 (RESIDENCE DISTRICT)
- R3 (RESIDENCE DISTRICT)
- C2 (COMMERCIAL DISTRICT)
- I1 (INDUSTRIAL DISTRICT)

BARNSTABLE ZONING

- RF (RESIDENCE F DISTRICT)
- S&D (SERVICE AND DISTRIBUTION DISTRICT)
- RPOD (RESOURCE PROTECTION OVERLAY DISTRICT)

- STUDY AREA
- RIVERS
- PONDS
- ACTIVE CRANBERRY BOGS

Map Data: Barnstable and Mashpee Town Zoning Maps



FIGURE 6. EXISTING LAND USE

- COMMERCIAL - DEVELOPED
- COMMERCIAL - VACANT
- RESIDENTIAL - DEVELOPED
- RESIDENTIAL - VACANT
- PUBLIC/INSTITUTIONAL
- PROTECTED OPEN SPACE/
NON-DEVELOPABLE
- OPEN SPACE/RECREATION/
AGRICULTURE
- INDUSTRIAL - DEVELOPED
- STUDY AREA
- RIVERS
- PONDS
- ACTIVE CRANBERRY BOGS

Map Data: MassGIS

HISTORIC AREAS, WETLAND, AND OPEN SPACE

As shown in Figure 7, the area features a wealth of historic resources. Within the study area, the Santuit National Register Historic District contains a number of historic buildings dating back to the 1700s. South of the study area, the Cotuit National Register Historic District contains a vast collection of well-preserved historic buildings.

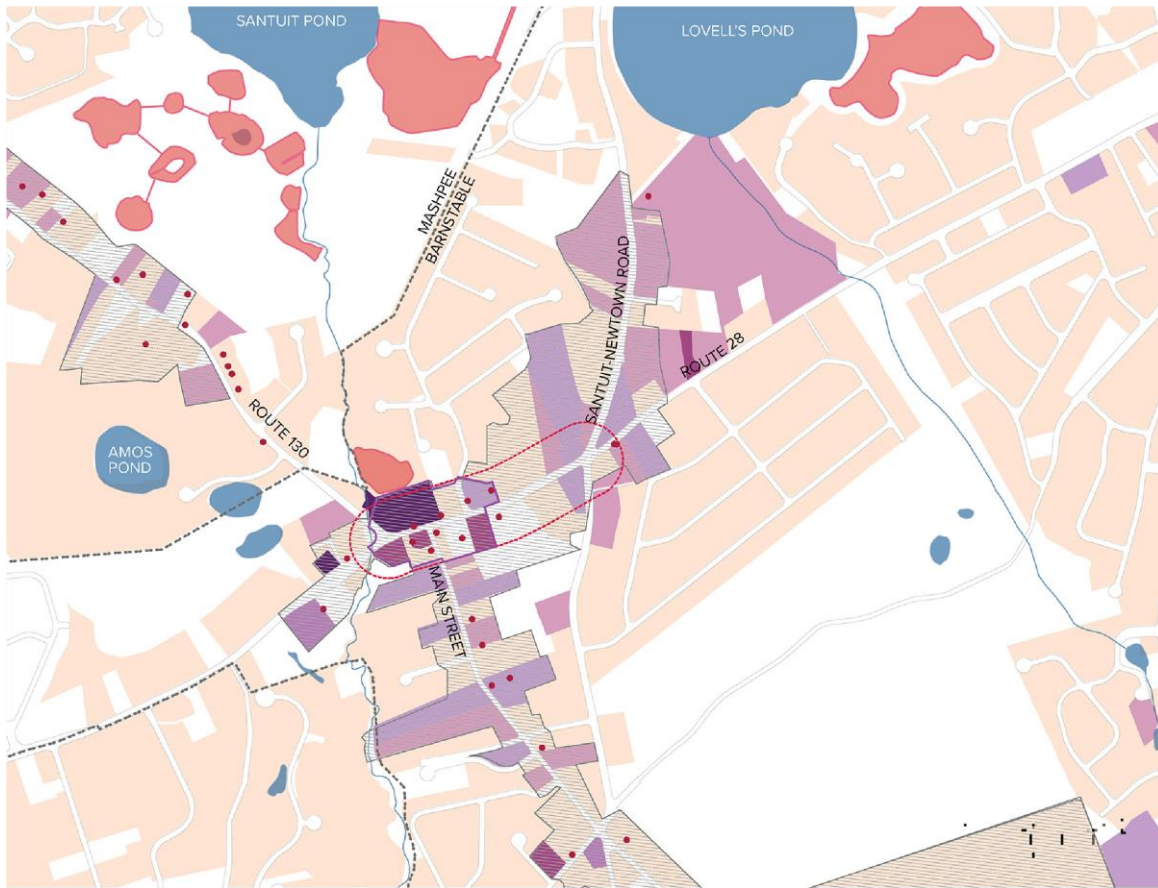
















FIGURE 7. HISTORIC AREAS AND POINTS

-  MHC HISTORIC INVENTORY AREAS
 -  MHC INVENTORY PROPERTIES
 -  NATIONAL REGISTER DISTRICT
- AGE OF PROPERTIES (ASSESSOR'S DATA)
-  N/A OR NO DATA
 -  1750 OR EARLIER
 -  1751-1800
 -  1801-1850
 -  1851-1900
 -  1901-1940
 -  1941-PRESENT
-  STUDY AREA
 -  RIVERS
 -  PONDS
 -  ACTIVE CRANBERRY BOGS

Map Data: Massachusetts Historical Commission Inventory (MACRIS); Barnstable and Mashpee Assessors' Data

The most notable wetlands resource within the study area, as shown in Figure 8, is the Santuit River, which flows under Route 130 and Route 28 to the north and west of the signalized intersection. Another significant wetland area exists to the north of Route 28 roughly halfway between Sandalwood Drive and Santuit-Newtown Road. While there is no permanently protected open space within the study area there is a good deal in the surrounding area as shown in Figure 8.



FIGURE 8. WETLANDS AND OPEN SPACE

- OPEN SPACE
 - PROTECTED IN PERPETUITY
 - UNPROTECTED
 - LIMITED PROTECTION
- WETLAND TYPE
 - BOG
 - DEEP MARSH
 - ROCKY INTERTIDAL SHORE
 - SALT MARSH
 - SHALLOW MARSH MEADOW OR FEN
 - SHRUB SWAMP
 - TIDAL FLAT
 - WOODED SWAMP CONIFEROUS
 - WOODED SWAMP DECIDUOUS
 - WOODED SWAMP MIXED TREES
 - 100 FT WETLAND BUFFER
- STUDY AREA
- RIVERS
- PONDS
- ACTIVE CRANBERRY BOGS

Map Data: MassDEP and MassGIS

BICYCLE AND PEDESTRIAN ACCOMMODATIONS

Figure 9 shows existing bicycle and pedestrian accommodations within and in the vicinity of the study area. A multi-use path approaches the study area on the west side of Route 130, but ends about a quarter-mile north of Route 28. Sidewalks exist on the south side of Route 28 from Main Street to Sandalwood Drive. Sidewalks also extend from Route 28 south down Main Street and north up Santuit-Newtown Roads. Within the study area, marked crosswalks are located across Main Street at the intersection with Route 28 and across Route 28 just west of Sandalwood Drive. Aside from the multi-use

path on Route 130, there are no dedicated bicycle accommodations in the vicinity of the project site. Furthermore, the shoulders on Route 28 are very narrow and not well-suited for bicycle use.

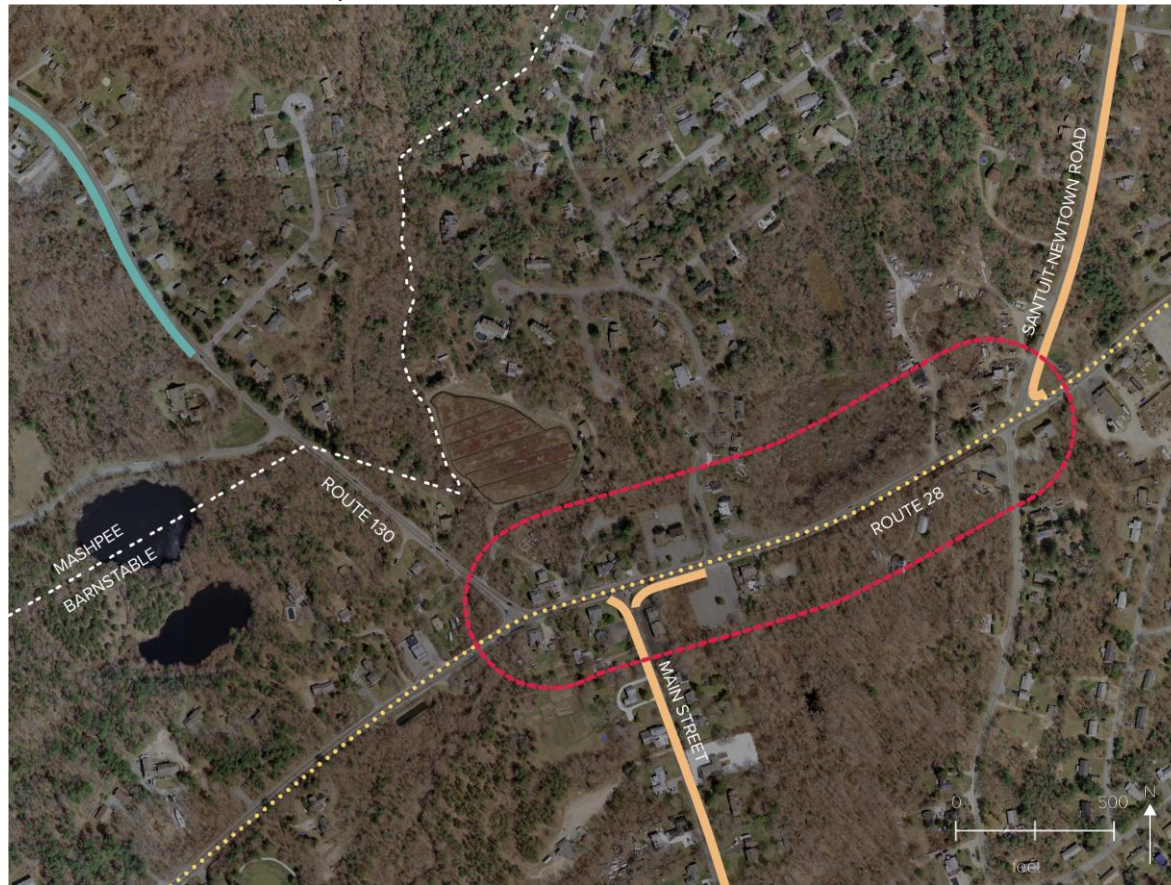


FIGURE 9. PEDESTRIAN, BIKE, AND TRANSIT ACCOMMODATIONS

- SIDEWALK
- MULTI-USE PATH
- BUS ROUTE
- STUDY AREA

SPEED LIMITS AND CRASH HISTORY

Traveling east to west along Route 28, the speed limit ~~drops~~ increases from ~~50~~ 35 miles per hour (mph) ~~down~~ up to ~~45~~ 45 mph just ~~east of~~ east of into the study area ~~west of~~ west of ~~Anchor Lane~~ Anchor Lane ~~Route 130~~.

The speed limit ~~drops~~ further down to 35 mph at Sandalwood Drive before increasing up to 50 mph 600 feet west of the Route 130, as can be seen in ~~Figure 10~~. ~~Remains at 50 mph throughout the study area, as can be seen in Figure 10.~~

Crashes reported within the last three years and speed limits are shown in Figure 11. Crash history points to the Route 28 intersections with Route 130 and with Santuit-Newtown Road as being the most dangerous within the study area. Less pronounced safety issues appear to exist at the Route 28 intersections with Main Street and with Sandalwood Drive.

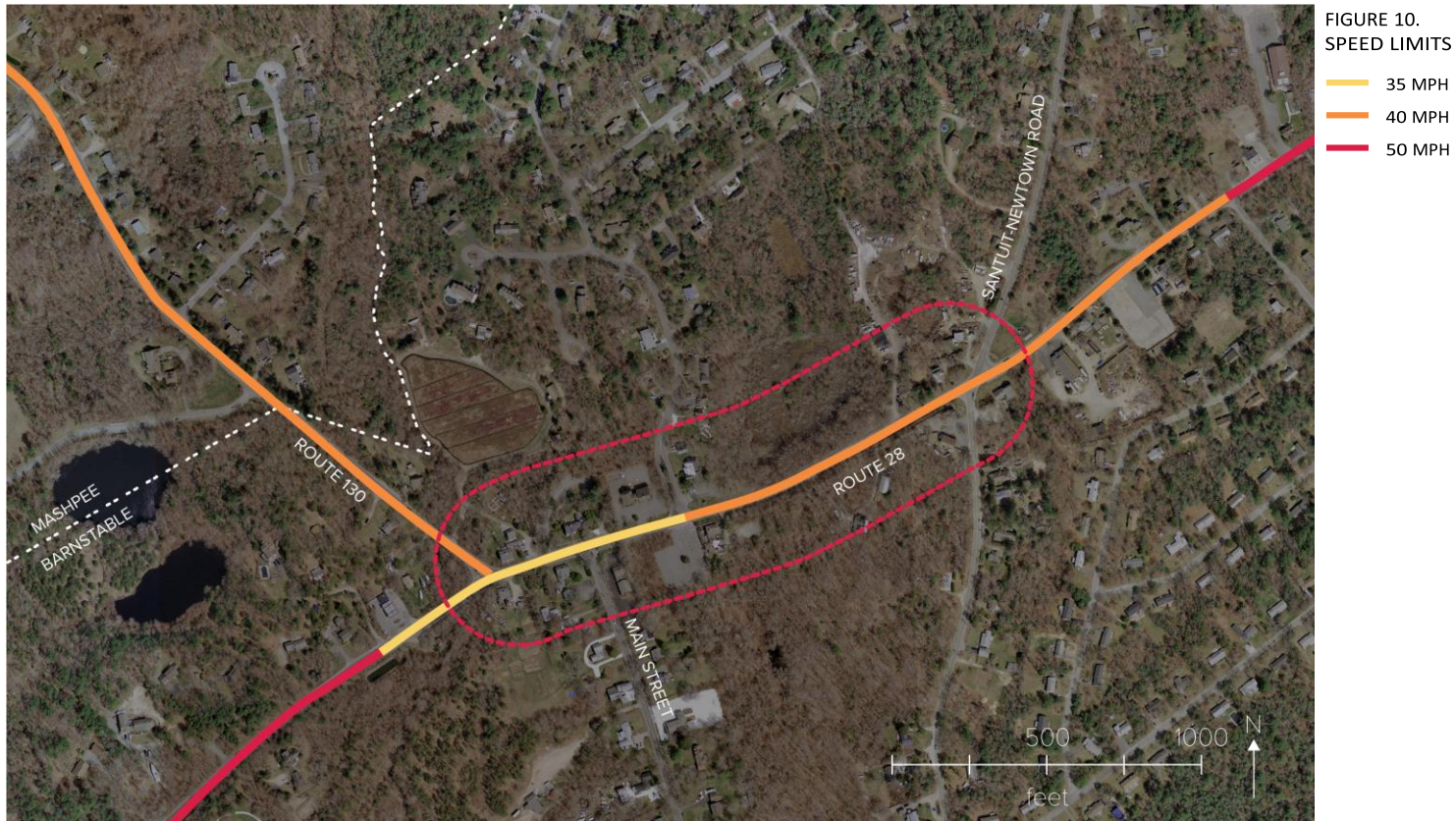




FIGURE 11. CRASH HISTORY (MAY 2013-APRIL 2016)

■ PROPERTY DAMAGE ONLY
■ INJURY
■ FATALITY

5 CRASHES	22 CRASHES	13 CRASHES	7 CRASHES	1 CRASH	18 CRASHES
PROPERTY DAMAGE ONLY: 5	PROPERTY DAMAGE ONLY: 18	PROPERTY DAMAGE ONLY: 12	PROPERTY DAMAGE ONLY: 5	PROPERTY DAMAGE ONLY: 1	PROPERTY DAMAGE ONLY: 11
INJURY: 0	INJURY: 4	INJURY: 1	INJURY: 2	INJURY: 0	INJURY: 6
FATALITY: 0	FATALITY: 0	FATALITY: 0	FATALITY: 0	FATALITY: 0	FATALITY: 1

SUNOCO/4741 FALMOUTH ROAD

ROUTE 130 INTERSECTION

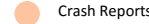
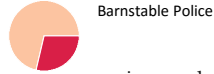
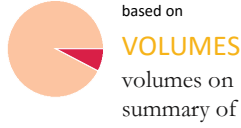
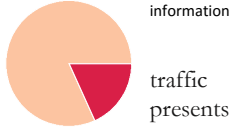
MAIN STREET INTERSECTION

SANDALWOOD DR

4588 FALMOUTH ROAD

SANTUIT-NEWTOWN ROAD INTERSECTION

Map



Commission staff measured within the study area. Table 1 within the study area. Annual

Average Daily Traffic is the average number of vehicle trips per day on the roadway over the course of a full calendar year. Summer Average Daily Traffic represents the average number of vehicle trips per day on the roadway over the months of July and August. Traffic patterns vary day-to-day due to events, weather, and a host of other facts so the actual traffic on any given day can vary substantially. Detailed traffic volume data is included in Appendix A.

TABLE 1. TRAFFIC VOLUMES

ROAD	ANNUAL AVERAGE DAILY TRAFFIC	SUMMER AVERAGE DAILY TRAFFIC
ROUTE 28	20,000 – 21,000	26,000 – 28,000
ROUTE 130	6,000 – 7,000	8,000 – 10,000
MAIN STREET	~1,700	~2,300
SANTUIT-NEWTOWN ROAD (NORTH OF ROUTE 28)	~2,100	~2,700
SANTUIT-NEWTOWN ROAD (SOUTH OF ROUTE 28)	~1,100	~1,500

SITE VISITS

During the course of the study, Commission staff conducted several site visits to the study area. These site visits helped Commission staff better understand the area, how the traffic functions, and the area's character, opportunities, and constraints. During these site visits, staff noted congestion and confusion at several intersections in the corridor, missing links in sidewalks, and poor bike accommodations. However, there were many positive aspects to the area, including its historic character and the Santuit River.







ALTERNATIVE DEVELOPMENT

All of the work in analyzing existing conditions was used to support a community-driven alternative development process that began with a listening session. A full set of meeting notes, including a copy of the presentation, are included as Appendix B.

LISTENING SESSION

The listening session, the first public meeting for this project, was held at the ~~Cotuit Freedom Hall~~ Mashpee Public Library on ~~June 22, 2016~~ July 22, 2017. Following a presentation to the audience about the study area, goals, and existing conditions, attendees participated in a visioning exercise for the

STRENGTHS

- The Village of Santuit is a tight knit community
- Small town feeling
- Historic feeling and historic buildings
- Cahoon Museum of American Art
- This section of Route 28 feels different than the rest; is a nice break
- There are things to do within walking distance, although not very safe to walk
- Sidewalks and crosswalks are nice where they exist
- Unique local shops
- Nearby recreational opportunities such as Lovell's Pond
- This portion retains some tree canopy



corridor. The visioning exercise began with a brief group brainstorm of what stakeholders liked about the area. Attendees then split into groups to record on maps the strengths of the corridor, the issues they saw with the area, any suggestions for the corridor, and any other comments they had.

ISSUES

- Heavy traffic
- Cars speed along the corridor
- Blind curves and corner
- Cars run red lights
- Light timing is poor
- Traffic backs up to the east from the light at Route 130
- It is difficult to make a left turn out of Main Street or onto Main Street from Route 28
- Difficult to turn left out of Sandalwood Drive
- Left turns off of Santuit-Newtown Road are difficult in both directions
- People pass cars on the right
- Difficult to walk around the area; sidewalks don't connect
- There is only one crosswalk
- Residents are afraid to use the crosswalk
- Guardrail is close to the road
- Vegetation creates poor visibility and infringes on areas for pedestrians

The issues identified at the listening session are mapped in Figure 12.

SUGGESTIONS

- Synchronize or better time the lights
- Have a camera that records people who run the red lights
- Prohibit left turns onto and out of Main Street
- Create a left turn lane on Route 28
- Have a police officer at the Main Street and Route 28 intersection after baseball games
- Shift the intersection of Route 130 and Route 28 to the west
- Cut back vegetation to provide space for pedestrians and increase visibility
- Put bikes and pedestrians behind the guardrail
- Add a traffic circle at Route 130 and/or at Santuit-Newtown Road
- Add a light at Santuit-Newtown Road
- Lower the speed limit through the corridor
- Create a historic district with signage
- Connect the cul de sac of Sandalwood Drive with Route 130
- Add a grass median on Route 28
- Add flashing arrows and speed signs along Santuit-Newtown Road
- Remove distracting signs at Santuit-Newtown Road
- Add sidewalk on either side of Route 130
- Add bike path on west side of Route 130 and along Route 28
- Add sidewalk along Route 28
- Add a crosswalk across Route 28 at Main Street
- Repaint the existing crosswalk to brighten it up
- Add blinking lights for the crosswalk
- Open up Old Post Road from Wakeby Road to Route 28 Industry Road
- Create a one way loop down Santuit-Newtown Road and up Main Street
- Make Banfield Drive one way
- Have “Cross the white line, pay the fine” signs along the corridor
- “Don’t block the box” signs and markings
- Increase driver awareness of bikers and pedestrians
- Improve driver education
- Put a traffic light at Main Street
- Build another road
- Expand public transit with bus stops along the corridor at the Regatta or just east of Santuit-Newtown Road

- Make trucks use a different route

FIGURE 12. ISSUES IDENTIFIED AT LISTENING SESSION

Figure 13 shows suggestions from the listening session.

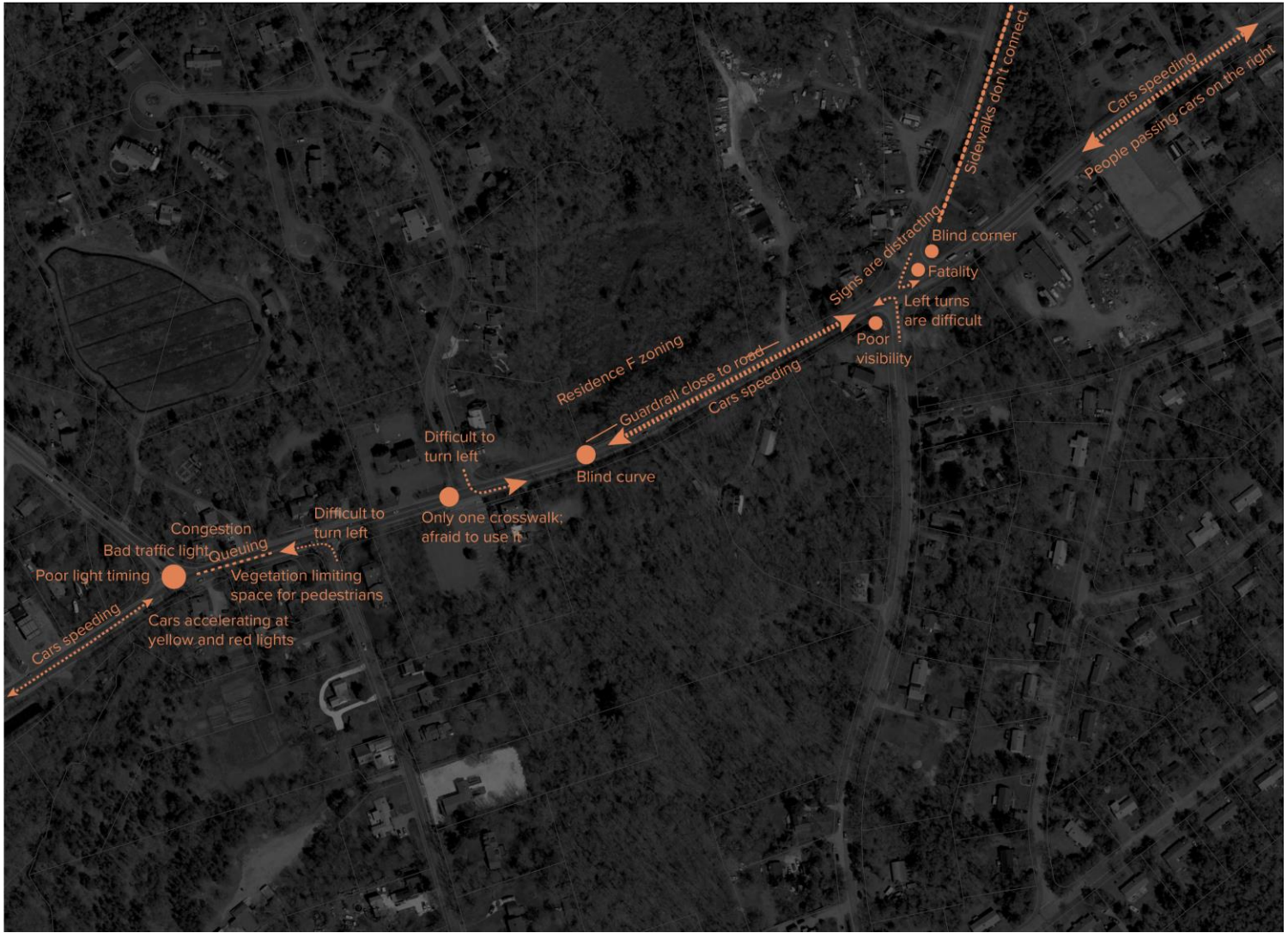
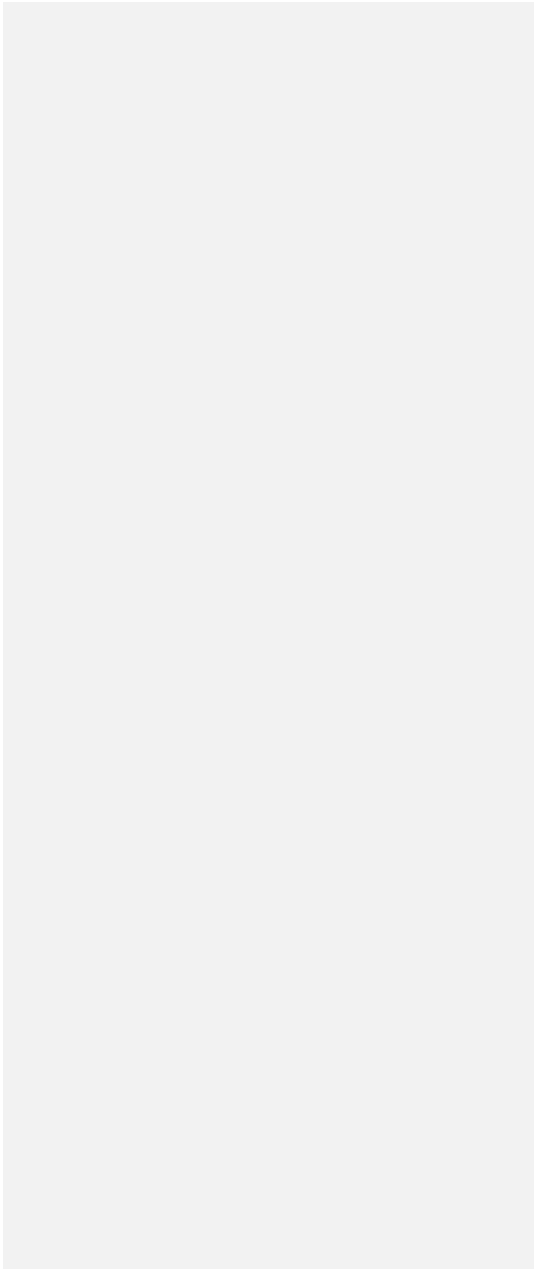
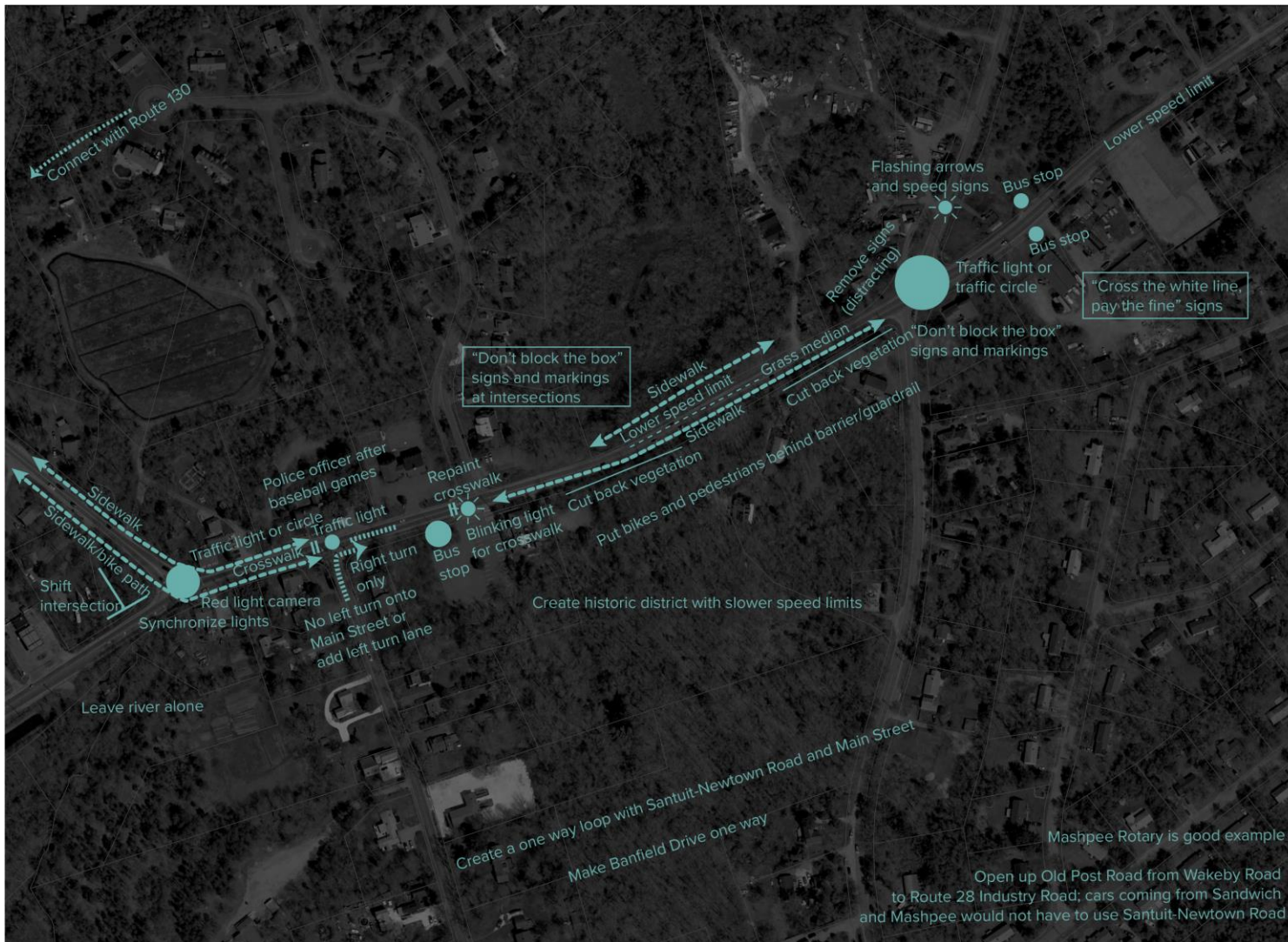


Figure 13. SUGGESTIONS IDENTIFIED AT LISTENING SESSION





ALTERNATIVE IDENTIFICATION

ROUTE 28 AT ROUTE 130

- Replacement of the signal with a roundabout
- Moving Main Street to align with Route 130

ROUTE 28 AT MAIN STREET

- Left turn restrictions

ROUTE 28 AT SANDALWOOD DRIVE

- Back access to Route 130 or Santuit-Newtown Road
- Installation of a traffic signal or roundabout

ROUTE 28 AT SANTUIT-NEWTOWN ROAD

- Modifying intersection geometry

PEDESTRIAN ACCOMMODATIONS

- Bumpouts **OTHER**
- Installation of a portable traffic signal west of Sandalwood Drive
- Widening Route 28 to four lanes
- Zoning changes

- Route 28 westbound left turn lane
- Installation of a traffic signal or roundabout
- Connector road

Potential improvements were identified from suggestions from the listening sessions and a technical review of the issues present at each location. Commission staff, in consultation with Town staff, reviewed these possible improvements and developed a set of potential improvements for further investigation:

ROUTE 28 AT ROUTE 130 Cape Drive

- Retiming the traffic signal Install a traffic signal
- Changes to the lane configuration Install left turn pockets on Route 28
- Replacement of the signal with a roundabout
- Bicycle/pedestrian accommodation upgrades

ROUTE 28 AT MAIN STREET Bowdoin Road

- “Don’t Block the Box” pavement markings Install left turn pockets on Route 28
- Left turn restrictions Install a traffic signal
- Route 28 westbound left turn lane Install a roundabout
- Installation a traffic signal or roundabout
- Bicycle/pedestrian accommodation upgrades

ROUTE 28 AT Noisy Hole Road SANDALWOOD DRIVE

- “Don’t Block the Box” pavement markings Install a traffic signal
- Back access to Route 130 or Santuit Newtown Road Install a roundabout
- Installation of a traffic signal or roundabout Install left turn pockets on Route 28
- Bicycle/pedestrian accommodation upgrades Consider connection to Route 130 using existing town layout

ROUTE 28 AT Sampsons Mill Road SANTUIT-NEWTOWN ROAD

- Modifying intersection geometry Left turn restriction
- Installation of a traffic signal or roundabout Consider connection to Trinity Place
- Bicycle/pedestrian accommodation upgrades Signage and guardrail upgrades
- Realignment and regrading

Route 28 at Orchard Road

- Request review of signal timing
- Pedestrian/bicyclist upgrades

PEDESTRIAN ACCOMMODATIONS

- Closing sidewalk gaps
- Installation of sidewalks on both sides of Route 28 for entire corridor
- Bumpouts

BICYCLE ACCOMMODATIONS

- Route 28 cross-section options Add multi-use path
- Regional routing options Add signage for alternative routes
- Bicycle accommodating shoulders

TRANSIT ACCOMMODATIONS

- Bus stop Review bus stop location

OTHER (Corridor wide)

- Signage Install two-way left turn lanes
- Stormwater management Widen to a four-lane cross section
- Vegetation management Request follow-up speed study
- River preservation Install turn pockets
- River visitation options Add interconnects between parcels when/where feasible
- Review of passing zones Reduce the size and number of curb cuts when/where feasible
- Review of speed limits
- Speed management on Route 28
- Gateway treatments

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- ~~Bus shelter~~ Improve bus stops (e.g., benches, shelters)
- ~~Add bus~~ pull-out

Additional alternatives that were submitted by the public for consideration included moving Main Street to line up with Route 130 and installing a portable traffic signal west of Sandalwood Drive (see Appendix C for more details). Commission and Town staff examined the feasibility of each of these potential improvements through an alternative screening process. Possible improvements identified as potentially feasible were refined and presented at a second public meeting to allow for public review.

ALTERNATIVE SCREENING

While all alternatives identified through the above described process appeared to provide some benefit a number were eliminated from consideration based on the feasibility analysis. More detail on alternatives that were not further developed can be found in Appendix C. At all locations, there were no opportunities for bicycle or pedestrian accommodation upgrades without major intersection reconstruction. Eliminated alternatives included the following:

PUBLIC REVIEW OF ALTERNATIVES

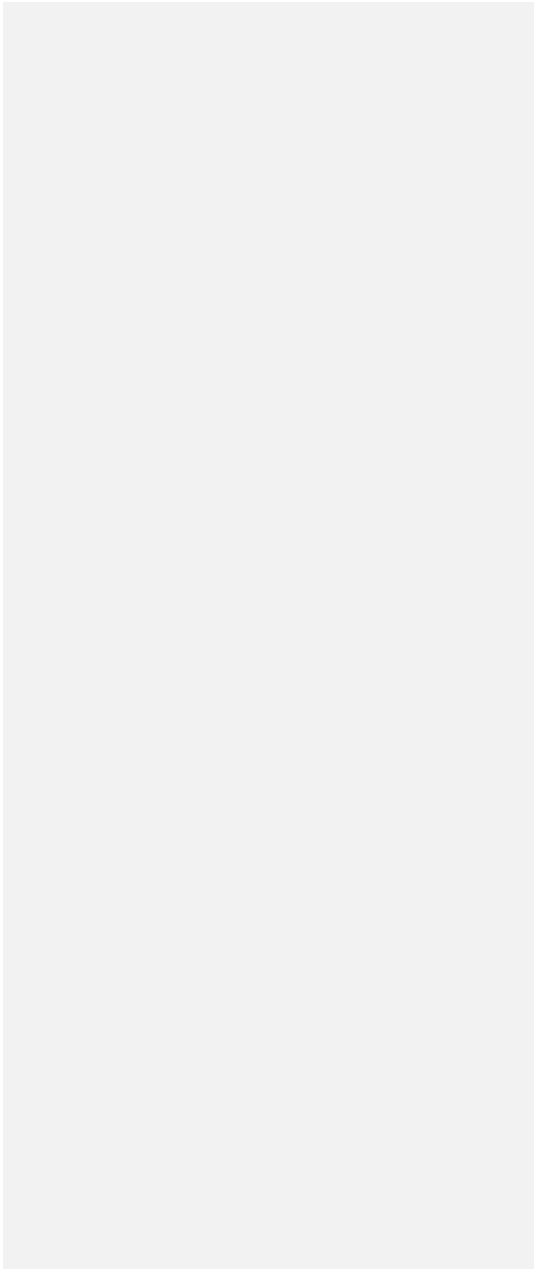
The public review of alternatives took place at the second public meeting for this project, held at the Cotuit Freedom Hall on November 2, 2016. The presentation provided a brief overview of the project, a summary of the issues and suggestions provided at the June public meeting, and then walked through the potential alternatives for each intersection as well as some corridor-wide improvement alternatives.

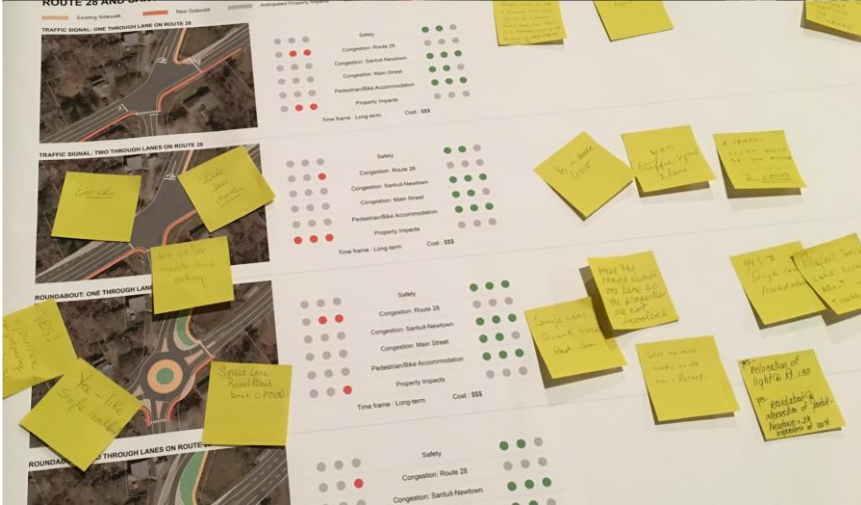
Following the overview of the alternatives, attendees provided comments and feedback on each alternative by visiting five tables throughout the room. Each table had a different intersection or issue area for the corridor broken out as follows: Route 130 at Route 28, Santuit-Newtown at Route 28, Main Street and Sandalwood Drive at Route 28, Pedestrian and Bike Accommodations, and Transit Accommodations. At each table, attendees wrote down feedback and comments for each alternative and put their feedback in a + or - column to show whether they generally supported the idea or not. Attendees circulated to each table they were interested in. A full set of meeting notes, including a copy of the presentation, are included in Appendix D.

PHOTOS FROM PUBLIC REVIEW OF ALTERNATIVES MEETING, NOVEMBER 2, 2016



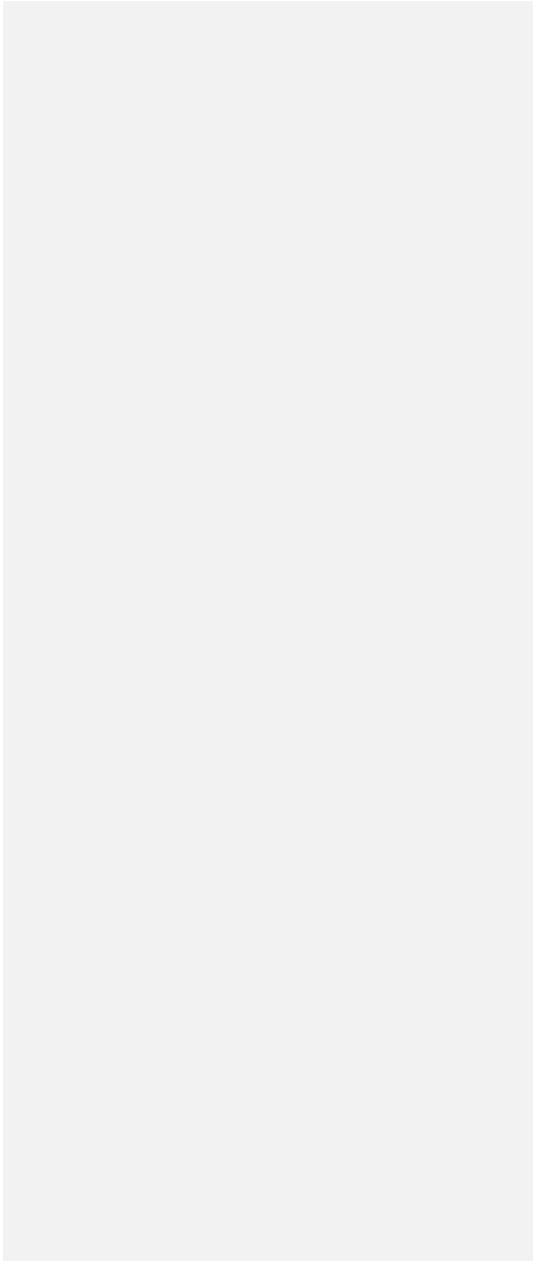
PHOTOS FROM PUBLIC REVIEW OF ALTERNATIVES MEETING, NOVEMBER 2, 2016







SUMMARY OF ALTERNATIVES



ALTERNATIVE REFINEMENT

The opinions expressed and comments made on the alternatives presented at the ~~November~~ September public meeting were used to refine the alternatives. The following section presents the alternatives developed as part of this study along with a discussion of relative time frame and cost, and expected impacts in terms of safety, congestion, bicycle and pedestrian accommodation, and property of each alternative. Table 2 summarizes the alternatives.

Table 2. SUMMARY OF ALTERNATIVES

INTERSECTION ALTERNATIVES	TIME FRAME	COST	ANTICIPATED IMPACT				
			SAFETY	CONGESTION		BICYCLE/PEDESTRIAN	PRIVATE PROPERTY
				ROUTE 28	CROSS STREET		
ROUTE 28 AT ROUTE 130							
Retime traffic signal	Short	\$		●●●● ●●●●	●●●● ●●●●		
Widen Route 130 approach	Long	\$\$		●●●● ●●●●	●●●● ●●●●		
Relocate/realign intersection to the west	Long	\$\$\$	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●
ROUTE 28 AT MAIN STREET AND ROUTE 28 AT SANDALWOOD DRIVE							
"Don't Block the Box" markings	Short	\$			●●●● ●●●●		
Improvements to Route 130 intersection	Short-Long	\$-\$\$\$			●●●● ●●●●		
Improvements to Santuit-Newtown Road intersection	Long	\$\$\$			●●●● ●●●●		
ROUTE 28 AT SANTUIT-NEWTOWN ROAD							
Traffic signal: One Route 28 through lane	Long	\$\$\$	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●
Traffic signal: Two Route 28 through lanes	Long	\$\$\$	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●
Roundabout: One Route 28 through lane	Long	\$\$\$	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●
Roundabout: Two Route 28 through lanes	Long	\$\$\$	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●	●●●● ●●●●
CORRIDOR CONCEPTS							
PEDESTRIAN CONCEPTS	BICYCLE CONCEPTS	TRANSIT CONCEPTS	OTHER CONCEPTS				

- Close sidewalk gaps
- Sidewalks on both sides of Route 28 for entire corridor
- Expanded shoulders where possible for bicycle accommodation
- Alternate bike routes
- Bus stop with signage
- Bus bench/shelter
- Bus pull-outs
- Follow-up safety analyses
- Improved stormwater management and treatment
- Improved vegetation management
- Speed management on Route 28: visual narrowing and gateway treatments

ROUTE 28 AT ROUTE 130

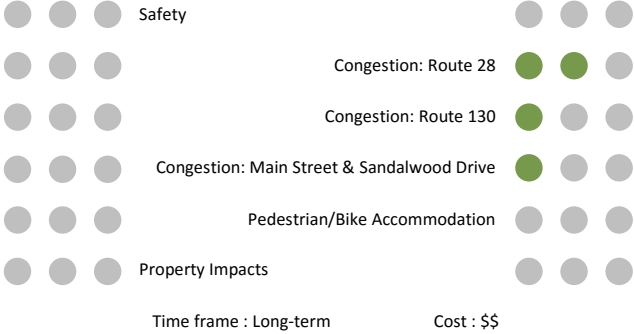
The intersection of Route 28 at Route 130 is a signalized T-intersection. The eastbound Route 28 approach consists of an exclusive left-turn only lane and a through lane. The westbound Route 28 approach consists of a single shared through and right-turn lane. The Route 130 approach consists of a single shared left-turn and right-turn lane. The Route 130 approach is wide enough to function as two lanes for approximately two car lengths. The signal operates as a three-phase actuated uncoordinated signal including a lead phase for the eastbound Route 6 through traffic and protected left turns, a phase for eastbound and westbound through traffic on Route 28, and a phase for Route 130 traffic. There is no dedicated pedestrian accommodation at the intersection.

Key issues at this location include congestion (particularly queuing on the westbound approach), a significant crash history (potentially related to vehicle speeds and red light running), and lack of pedestrian accommodations. Given the safety issues at this intersection, a Road Safety Audit (RSA) is recommended as detailed on page 41. After this analysis is complete, consideration should be given to the potential improvement alternatives detailed on the following pages.





ANTICIPATED IMPACTS



RECONFIGURING THE INTERSECTION

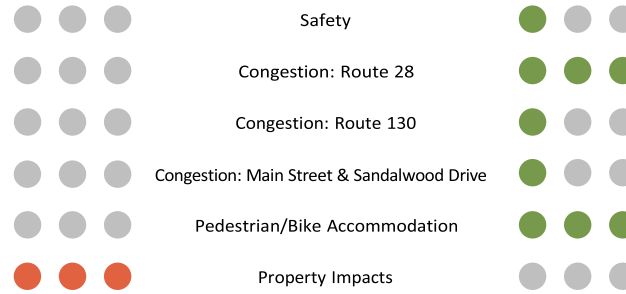
Significant improvements to the operation or pedestrian accommodations are infeasible with the current location of the intersection given the environmental and historic resources so close to the signal. This alternative, illustrated in Figure 16, relocates the intersection to the west allowing for significant improvements to be made. The primary operational benefit comes from removing the Route 28 westbound right-turning vehicles from the operation of the signal with a bypass lane prior to the signal. The relocated signal also allows for safe pedestrian accommodation at the intersection and along the corridor.



FIGURE 16. REALIGN INTERSECTION TO THE WEST

- EXISTING SIDEWALK
- NEW SIDEWALK
- ANTICIPATED PROPERTY IMPACTS

ANTICIPATED IMPACTS



Time frame : Long-term Cost : \$\$\$

ROUTE 28 AT MAIN STREET

Main Street intersects Route 28 from the south to form an unsignalized T-intersection. The eastbound Route 28 approach consists of a single lane for through traffic and right-turning vehicles. The westbound Route 28 approach consists of a single lane for through traffic and left-turning vehicles. The Main Street approach consists of a single lane for left-turning and right-turning vehicles and is under STOP-sign control. Sidewalks exist on the west side of Main Street and the south side of Route 28 east of the intersection. A crosswalk provides a pedestrian connection across Main Street.

Key issues at this location include difficulty in making left turns out of Main Street onto Route 28. Given the safety concerns related to this maneuver, a follow-up engineering safety review would be appropriate. This review would assess and make recommendations on the current pavement markings, signage, and any sight distance obstructions in the vicinity of intersections. Additionally, consideration should be given to “Don’t Block the Box” markings and signage as discussed below.



"DON'T BLOCK THE BOX" MARKINGS

Through pavement markings and signage, this alternative seeks to alert westbound Route 28 motorists not to block the intersection with Main Street. The signs and markings, enforceable with a fine, will help alleviate the gridlock that often exists when the signal with Route 130 is red for westbound Route 28 traffic.

FIGURE 17. "DON'T BLOCK THE BOX" MARKINGS AT MAIN STREET



ROUTE 28 AT SANDALWOOD DRIVE

Main Street intersects Route 28 from the north to form an unsignalized T-intersection. The eastbound Route 28 approach consists of a single lane for through traffic and left-turning vehicles. The westbound Route 28 approach consists of a single lane for through traffic and right-turning vehicles. The Sandalwood Drive approach consists of a single lane for left-turning and right-turning vehicles and is under STOP-sign control. Sidewalks exist on the south side of Route 28 west of the intersection. A crosswalk provides a pedestrian connection across Route 28 just to the west of the intersection.

Key issues at this location include difficulty in making left turns out of Sandalwood Drive onto Route 28. Given the safety concerns related to this maneuver, a follow-up engineering safety review would be appropriate. This review would assess and make recommendations on the current pavement markings, signage, and any sight distance obstructions in the vicinity of intersections. Additionally, consideration should be given to “Don’t Block the Box” markings and signage as discussed below.



"DON'T BLOCK THE BOX" MARKINGS

Through pavement markings and signage, this alternative seeks to alert westbound Route 28 motorists not to block the intersection with Sandalwood Drive. The signs and markings, enforceable with a fine, will help alleviate the gridlock that often exists when the signal with Route 130 is red for westbound Route 28 traffic.

FIGURE 18. "DON'T BLOCK THE BOX" MARKINGS AT SANDALWOOD DRIVE



ROUTE 28 AT SANTUIT-NEWTOWN ROAD

Santuit-Newtown Road intersects Route 28 to form a four-way unsignalized intersection. Each of the four approaches to the intersection consist of a single lane shared to all movements. Given the width of the approaches, vehicles often go around left-turning vehicles creating de facto left-turn lanes in an unorganized and often dangerous manner. Sidewalks exist on the west side of Santuit-Newtown Road north of the intersection. Vehicle speeds on Route 28 and limited sight distance present hazards to vehicles approaching the intersection from Santuit-Newtown Road. Furthermore, the intersection lacks safe pedestrian accommodations. Given the safety issues at this intersection, a Road Safety Audit (RSA) is recommended as detailed on page 41. After this analysis is complete, consideration should be given to the following potential improvement alternatives.

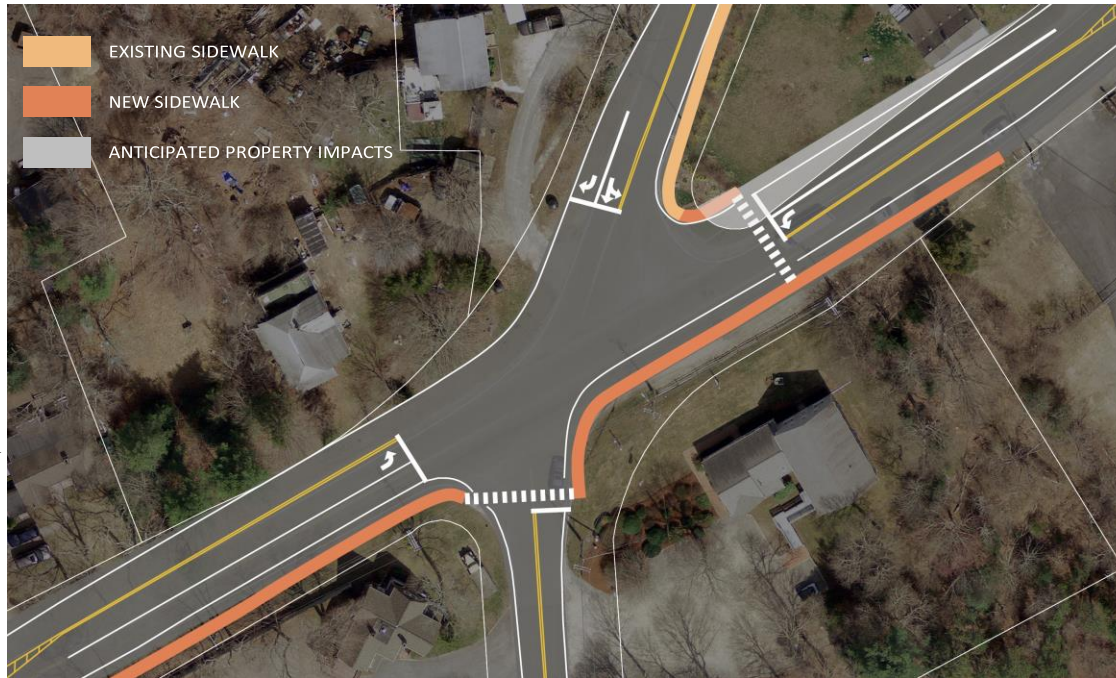
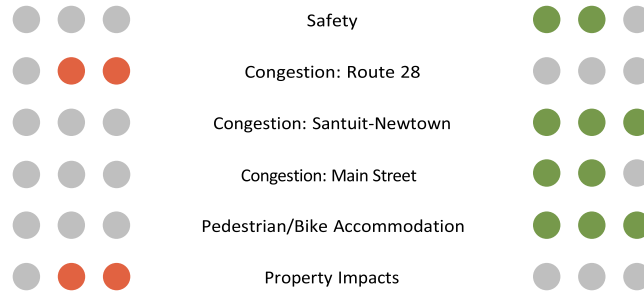


FIGURE 19. TRAFFIC SIGNAL: ONE ROUTE 28 THROUGH LANE

TRAFFIC SIGNAL WITH ONE THROUGH LANE ON ROUTE 28

This alternative involves the construction of a traffic signal at the intersection. The Route 28 approaches would consist of a left-turn lane and a shared through/right-turn lane. The Santuit-Newtown Road southbound approach would consist of a right-turn lane and a shared left-turn/through lane. The Santuit-Newtown Road northbound approach would consist of a single lane shared for all movements. Pedestrians would be able to safely navigate the intersection with a push-button activated exclusive pedestrian phase, crosswalks on two approaches, and new

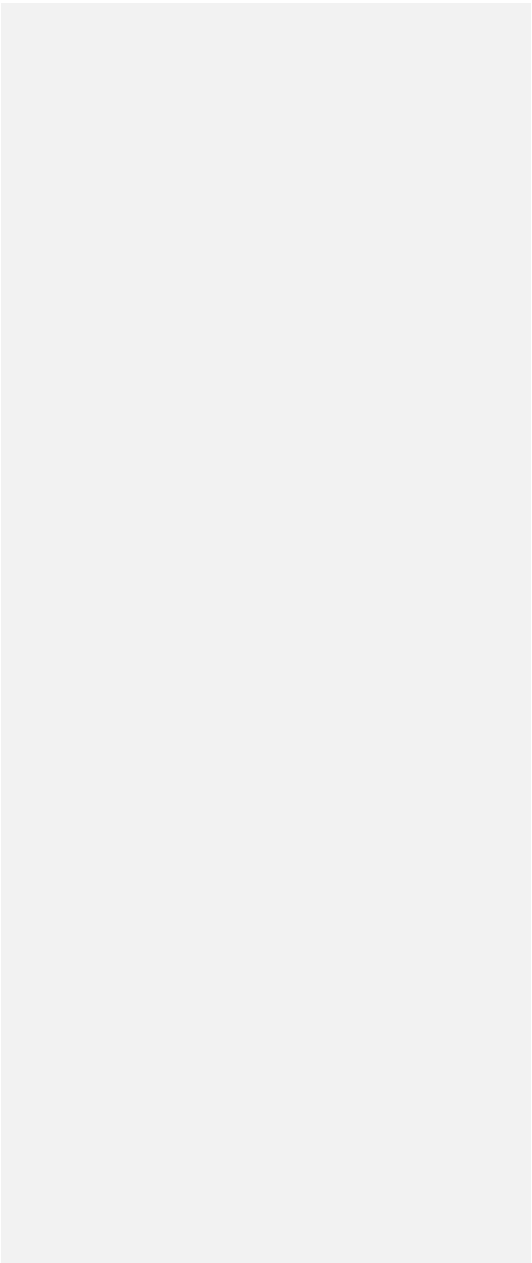
ANTICIPATED IMPACTS



sidewalk connections to existing and future sidewalks in the area.

Time frame : Long-term

Cost : \$\$\$



TRAFFIC SIGNAL WITH

TWO THROUGH LANES ON ROUTE 28

This alternative involves the construction of a traffic signal at the intersection with two through lanes on Route 28 and improved pedestrian accommodations. The Route 28 approaches would consist of a left-turn lane, a through lane, and a shared through/right-turn lane. The Santuit-Newtown Road southbound approach would consist of a right-turn lane and a shared left-turn/through lane. The Santuit-Newtown Road northbound approach would consist of a single lane shared for all movements. Pedestrians would be able to safely navigate the intersection with a push-button activated exclusive pedestrian phase, crosswalks on two approaches, and new sidewalk connections to existing and future sidewalks in the area.

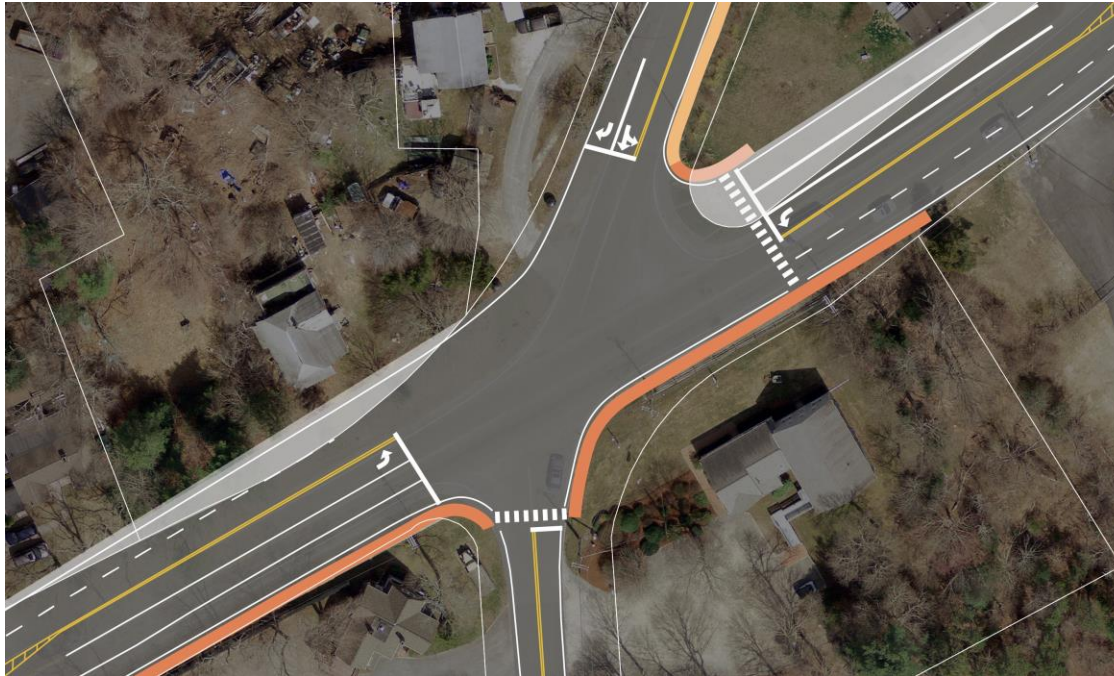
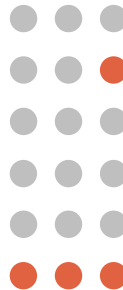
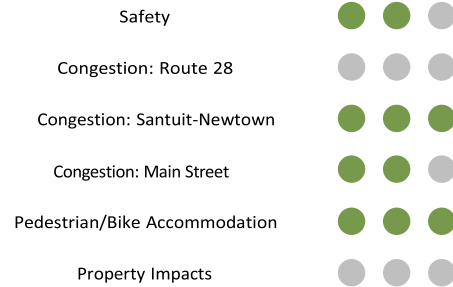


FIGURE 20. TRAFFIC SIGNAL: TWO ROUTE 28 THROUGH LANES

- EXISTING SIDEWALK
- NEW SIDEWALK
- ANTICIPATED PROPERTY IMPACTS



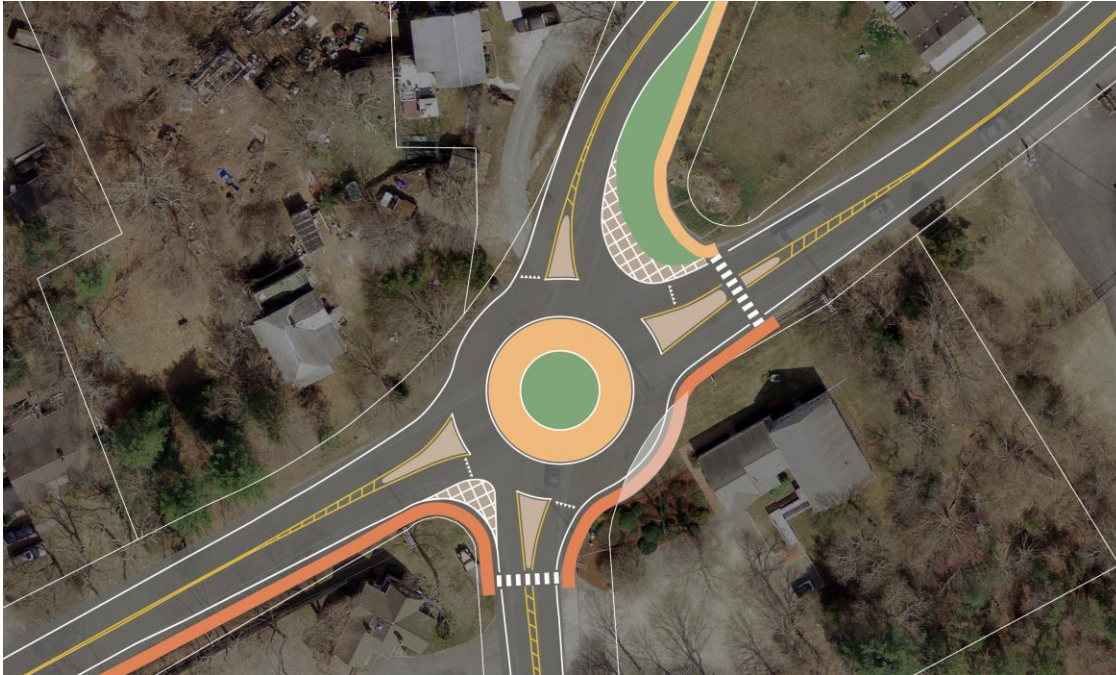
ANTICIPATED IMPACTS



Time frame : Long-term

Cost : \$\$\$

ROUNDBABOUT WITH ONE THROUGH LANE ON ROUTE 28



This alternative involves the construction of a roundabout at the intersection with a single through lane on Route 28 and improved pedestrian accommodations. The roundabout would consist of a single lane from each approach and a signal circulating lane. Pedestrians would be able to safely navigate the intersection with crosswalks on two approaches and new sidewalk connections to existing and future sidewalks in the area.

FIGURE 21. ROUNDBABOUT: ONE ROUTE 28 THROUGH LANE

- EXISTING SIDEWALK
- NEW SIDEWALK
- ANTICIPATED PROPERTY IMPACTS
- TRUCK APRON

ANTICIPATED IMPACTS

● ● ●	Safety	● ● ●
● ● ●	Congestion: Route 28	● ● ●
● ● ●	Congestion: Santuit-Newtown	● ● ●
● ● ●	Congestion: Main Street	● ● ●
● ● ●	Pedestrian/Bike Accommodation	● ● ●
● ● ●	Property Impacts	● ● ●

Time frame : Long-term

Cost : \$\$\$

ROUNDBABOUT WITH TWO THROUGH LANES ON ROUTE 28

This alternative involves the construction of a roundabout at the intersection with two through lanes on Route 28 and improved pedestrian accommodations. The roundabout would consist of two approach lanes from the Route 28 approaches and a single lane from the Santuit-Newtown Road approaches. Pedestrians would be able to safely navigate the intersection with crosswalks on two approaches and new sidewalk connections to existing and future sidewalks in the area.

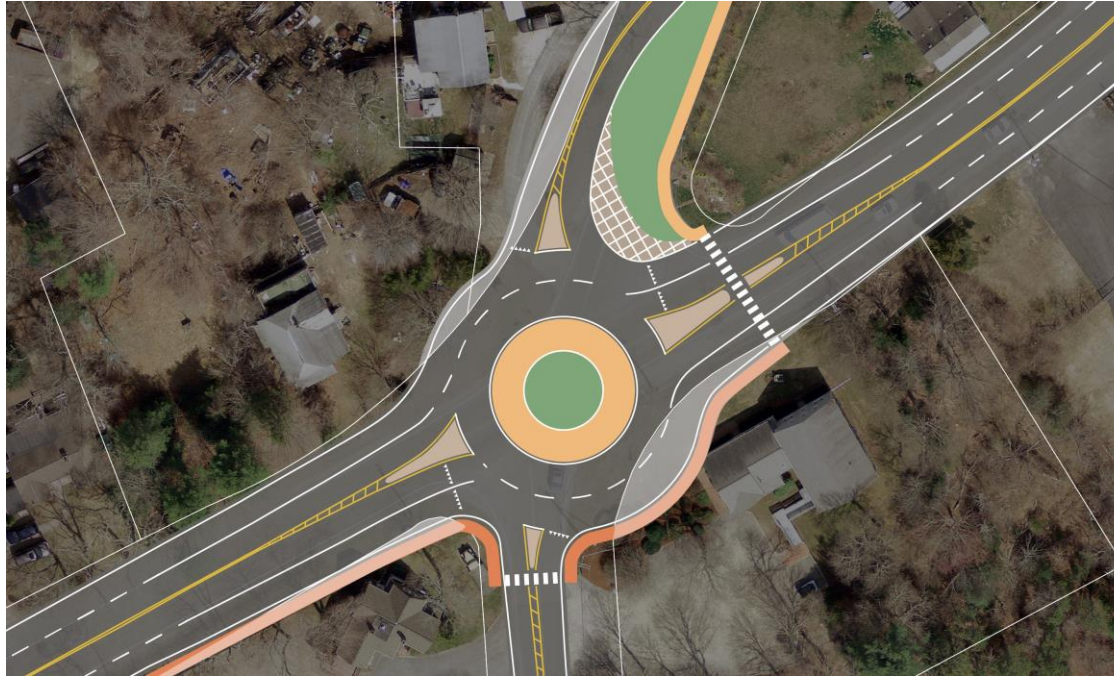




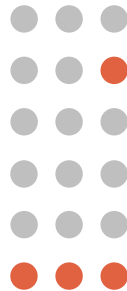
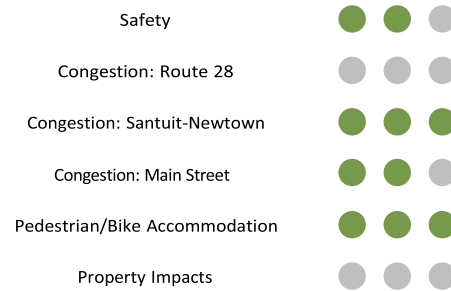


FIGURE 22. ROUNDBABOUT: TWO ROUTE 28 THROUGH LANES

-  EXISTING SIDEWALK
-  NEW SIDEWALK
-  ANTICIPATED PROPERTY IMPACTS
-  TRUCK APRON



ANTICIPATED IMPACTS



Time frame : Long-term

Cost : \$\$\$

PEDESTRIAN AND BICYCLE ACCOMMODATION ALTERNATIVES



Route 130. There is generally space

FIGURE 23. CLOSING SIDEWALK GAPS

FIGURE 24. SIDEWALKS ON BOTH SIDES OF ROUTE 28

CLOSING SIDEWALK GAPS

As described in the Existing Conditions section, the existing multiuse path on Route 130 and sidewalks on Main Street, Santuit-Newtown Road, and a portion of Route 28 are important resources for pedestrians, but they lack connectivity within the study area.

One alternative, as shown in Figure 23, would be to provide connections with the existing pedestrian accommodations in the area. This would include a sidewalk on the south side of Route 28 and a sidewalk or multi-use path along the west side of

within the public right of way for this pedestrian improvement; however, the



intersection of Route 28 and Route 130 would have to be investigated further given the constraints at this location.

SIDEWALK ON BOTH SIDES OF ROUTE 28

A second alternative, as shown in Figure 24, would include an additional sidewalk on the north side of Route 28 between Route 130 and Santuit-Newtown Road. This would further improve pedestrian accommodations, but would come with significant additional costs and property impacts.

BICYCLE ALTERNATIVES

The existing shoulder on Route 28 is narrow and ill-suited for most bicyclists. While protected bicycle lanes or a multi-use path along Route 28 would provide much improved accommodations for bicyclists, there are numerous challenges in implementing such improvements. Given these challenges, including significant property takings,

such an improvement were proposed for a greater length along Route 28, the improvement in regional connectivity may justify costs of the project.

Until such a regional solution is developed, this study recommends directing most bicyclists along an alternate route as shown in Figure 26, and, where possible, widening shoulders on Route 28.

FIGURE 25. EXPAND SHOULDERS WHERE POSSIBLE



such improvements are not recommended for this relatively short portion of Route 28 at this time. If

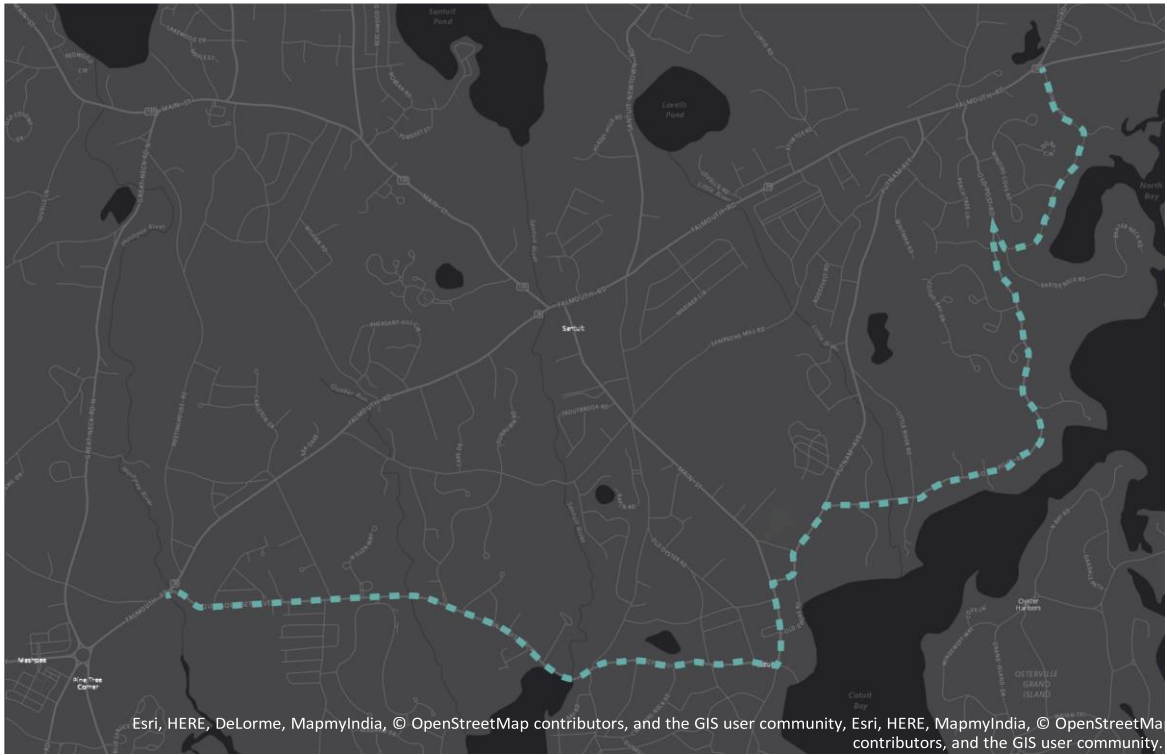


FIGURE 26. ALTERNATE BIKE ROUTE FOR REGIONAL TRIPS

TRANSIT ALTERNATIVES



The Cape Cod Regional Transit Authority H2O (Hyannis-to-Orleans) line runs along Route 28 through the study area. While the bus will stop within the study area if it is flagged down, a signed bus stop would add to the visibility of the service. Furthermore, a properly sited stop will ensure the transit user waits in a safe location that is easily visible to the bus driver. If ridership warrants, a bench may be a desirable amenity.

OTHER ALTERNATIVES

FOLLOW-UP SAFETY ANALYSES

A Road Safety Audit (RSA) is a formal safety examination of a roadway location by an independent, multidisciplinary team. The purpose of an RSA is to identify potential safety issues and possible opportunities for safety improvements. The RSA provides a list of low-cost, short-term safety improvements and qualifies the location for funding of higher-cost, long-term improvements.

Based on crash history, both the intersections of Route 28 at Route 130 and Route 28 at Santuit-Newtown Road are good candidates for a RSA. Unlike this planning-level corridor study, the RSAs would provide an engineering-level set of recommendations with specific recommendations on details such as signage, pavement markings, and traffic signal operation. This would be an important next step in addressing the safety issues at these locations.

Additionally, while crash history does not point to the need for a full RSA at the intersections of Route 28 at Main Street and Route 28 at Sandalwood Drive, an informal engineering safety review would be appropriate. This review would assess and make recommendations on the current pavement markings, signage, and any sight distance obstructions in the vicinity of the intersections.

IMPROVED STORMWATER MANAGEMENT AND TREATMENT

Effective stormwater management has both road safety and environmental benefits. Removing water from the roadway surface is critical in reducing hazards such as hydroplaning, while the elimination of untreated stormwater discharge into groundwater and surface water sources is critical to the health of the area's natural environment. As part of this study, contaminants of concern and a set of Best Management Practices (BMP) well-suited to capture and treat these contaminants were identified. The contaminants of concern identified include nitrogen, phosphorus, and pathogens. Nitrogen is of particular concern for this section of roadway as it is located within the nitrogen-overloaded Popponeset Bay Watershed. See Appendix E for details on this watershed.

Stormwater BMPs, as detailed in Appendix E, should be implemented as standalone projects or whenever major upgrades to the roadway are planned. Given the location within a nitrogensensitive watershed, stormwater improvements should utilize BMPs with the ability to remove nitrogen.

IMPROVED VEGETATION MANAGEMENT

While only relatively minor issues were noted in the field, it is important that vegetation near the roadway continue to be well maintained to avoid obstructing the sightlines of motorists. Tree limbs that extend towards the roadways, and hedges and shrubs near intersections, need to be periodically trimmed. This is particularly important in locations where obstructions may compromise drivers' ability to see pedestrians and bicyclists.

SPEED MANAGEMENT ON ROUTE 28

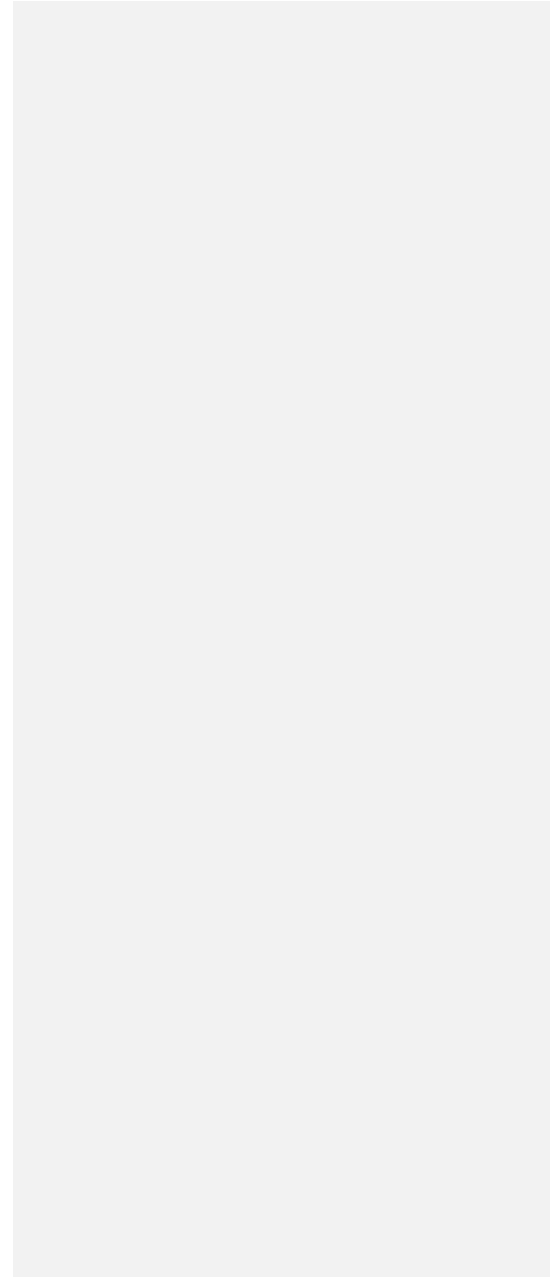
Vehicle speeds on Route 28 were consistently noted as an issue by members of the public. It has been consistently show that simply changing the speed limit on a roadway does little to change vehicle speeds. The best way to reduce vehicle speeds is to change the character of the roadway. Features such as sidewalks and streets trees that visually narrow the roadways encourage lower speeds. Within the study area, it needs to be apparent to drivers they are entering a stretch of Route 28 distinctly different than the relatively high-speed sections to the east and the west. A major improvement to the intersection of Route 28 at SantuitNewtown Road would help to further define this area.





RECOMMENDATIONS AND NEXT STEPS

With the benefit of active participation by members of the community, a host of potential improvement options were developed for the corridor. Based on technical review and feedback from a public review of the alternatives, these improvement options were refined and organized into the following sets of key short- and long-term recommendations.



SHORT-TERM RECOMMENDATIONS

- Adjust signal timing at the Route 28 at Route 130 traffic signal
- Install “Don’t Block the Box” pavement markings and signs at the intersections of Route 28 at Main Street and Route 28 at Sandalwood Drive
- Work with the Cape Cod Regional Transit Authority to establish a bus stop on Route 28 near the existing crosswalk east of Main Street
- Conduct a Road Safety Audit for the intersections of Route 28 at Route 130 and Route 28 at Santuit-Newtown Road

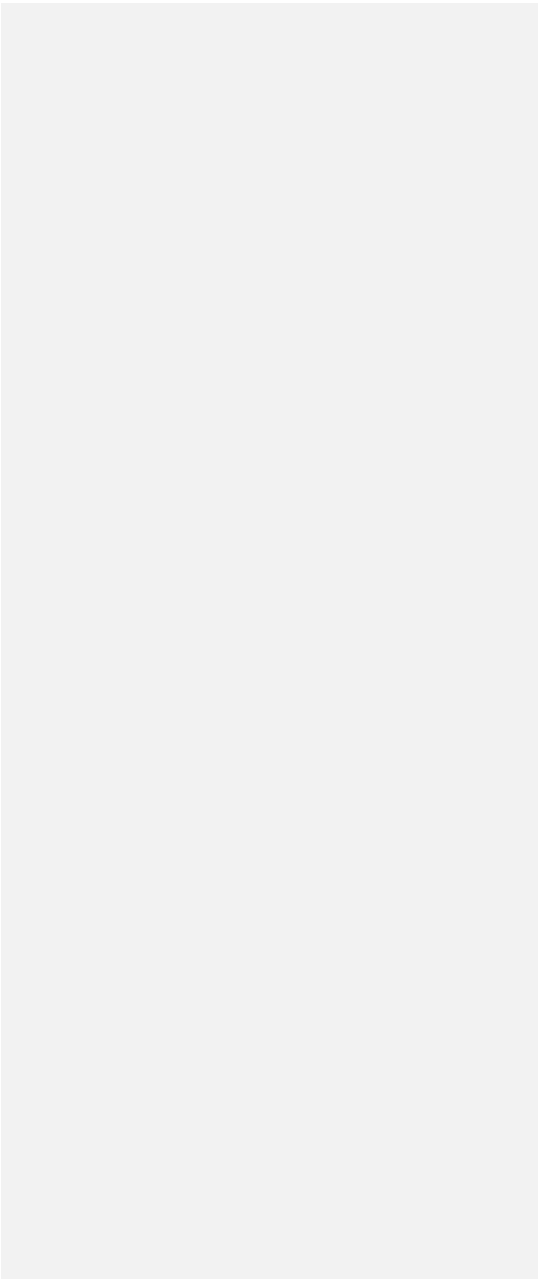
LONG-TERM RECOMMENDATIONS

- Install a signal or roundabout at the intersection of Route 28 at Santuit-Newtown Road
- Install sidewalks to close the gaps in the existing pedestrian network within the study area
- Relocate and improve the intersection of Route 28 at Route 130 to the west
- Consider changes to Route 28 to reduce vehicle speeds and improve the accommodation of pedestrians and bicyclists

NEXT STEPS

Given that Route 28 is owned and maintained by MassDOT, the Town of Barnstable will have to work with MassDOT to bring any of the improvements detailed in this report to fruition. Staff of the Cape Cod Commission are available to assist the Town in this effort. It is recommended that a meeting between MassDOT, Town of Barnstable, and Commission staff be set up to discuss the implementation of the short-term recommendations and potential funding options for the long-term recommendations.





APPENDIX A: TRAFFIC DATA

Cape Cod Commission

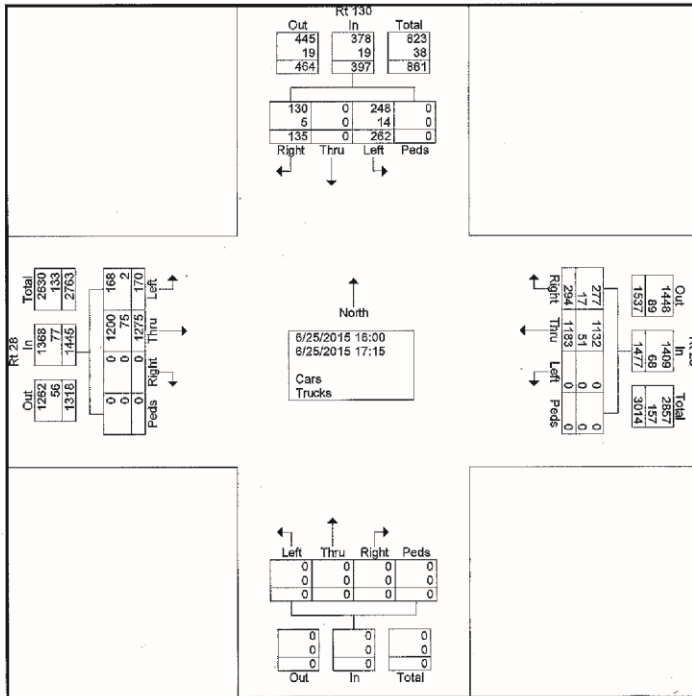
3225 Main Street
Barnstable, MA, 02630
www.capecodcommission.org

Location: Rt 28 & Rt 130
Town: Barnstable
Counted by: AR
Counters: 4

File Name : 2963_06252015
Site Code : 2963
Start Date : 6/25/2015
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Rt 130 From North					Rt 28 From East					From South					Rt 28 From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
16:00	46	0	26	0	72	0	184	41	0	225	0	0	0	0	0	26	187	0	0	213	510
16:15	39	0	24	0	63	0	204	39	0	243	0	0	0	0	0	27	207	0	0	234	540
16:30	46	0	17	0	63	0	204	50	0	254	0	0	0	0	0	24	210	0	0	234	551
16:45	38	0	22	0	60	0	187	59	0	246	0	0	0	0	0	36	225	0	0	261	567
Total	169	0	89	0	258	0	779	189	0	968	0	0	0	0	0	113	829	0	0	942	(2168)
17:00	47	0	19	0	66	0	196	51	0	247	0	0	0	0	0	40	219	0	0	259	572
17:15	46	0	27	0	73	0	208	54	0	262	0	0	0	0	0	17	227	0	0	244	579
Grand Total	262	0	135	0	397	0	1183	294	0	1477	0	0	0	0	0	170	1275	0	0	1445	3319
Approch %	66	0	34	0	0	80.1	19.9	0	0	0	0	0	0	0	0	11.8	88.2	0	0	0	0
Total %	7.9	0	4.1	0	12	0	35.6	8.9	0	44.5	0	0	0	0	0	5.1	38.4	0	0	43.5	0
Cars	248	0	130	0	378	0	1132	277	0	1409	0	0	0	0	0	168	1200	0	0	1368	3155
% Cars	94.7	0	96.3	0	95.2	0	95.7	94.2	0	95.4	0	0	0	0	0	98.8	94.1	0	0	94.7	95.1
Trucks	14	0	5	0	19	0	51	17	0	68	0	0	0	0	0	2	75	0	0	77	164
% Trucks	5.3	0	3.7	0	4.8	0	4.3	5.8	0	4.6	0	0	0	0	0	1.2	5.9	0	0	5.3	4.9



Cape Cod Commission

3225 Main Street
Barnstable, MA, 02630
www.capecodcommission.org

Location: Rt 28 & Rt 130
Town: Barnstable
Counted by: AR
Counters: 4

File Name : 2963_06252015
Site Code : 2963
Start Date : 6/25/2015
Page No : 1

Groups Printed- Bikes

Start Time	Rt 130 From North					Rt 28 From East					Rt 28 From South					Rt 28 From West					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
16:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																						
16:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
17:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1
17:15	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	2	0	0	0	2	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	4
Approch %	100	0	0	0		0	50	50	0		0	0	0	0		0	0	0	0	0	0	
Total %	50	0	0	0	50	0	25	25	0	50	0	0	0	0	0	0	0	0	0	0	0	

Cape Cod Commission

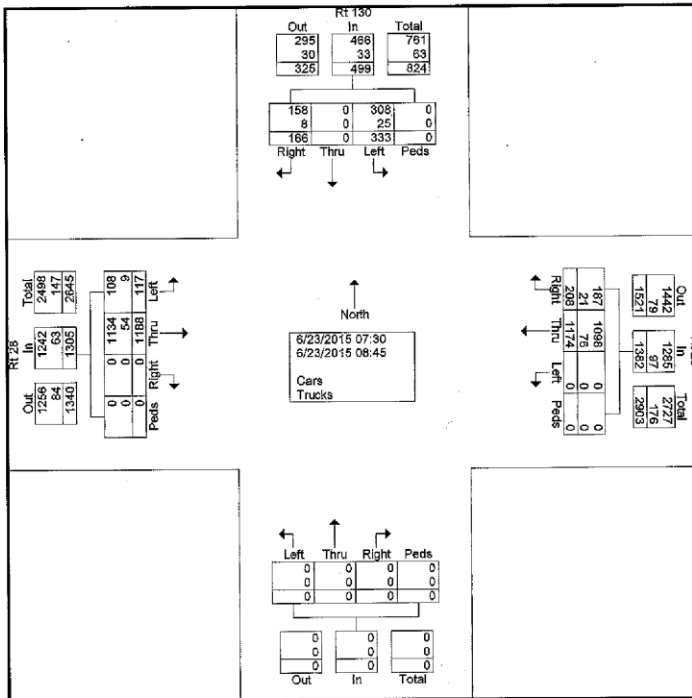
3225 Main Street
Barnstable, MA, 02630
www.capecodcommission.org

Location: Rt 28 & Rt 130
Town: Barnstable
Counted by: AR
Counters: 4

File Name : 2963_06232015
Site Code : 00002963
Start Date : 6/23/2015
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Rt 130 From North					Rt 28 From East					Rt 28 From South					Rt 28 From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:30	57	0	23	0	80	0	209	27	0	236	0	0	0	0	0	24	216	0	0	240	556
07:45	56	0	31	0	87	0	203	36	0	239	0	0	0	0	0	16	178	0	0	194	520
Total	113	0	54	0	167	0	412	63	0	475	0	0	0	0	0	40	394	0	0	434	1076
08:00	52	0	18	0	70	0	194	35	0	229	0	0	0	0	0	20	199	0	0	219	518
08:15	48	0	37	0	85	0	215	36	0	251	0	0	0	0	0	12	213	0	0	225	561
08:30	58	0	32	0	90	0	156	39	0	195	0	0	0	0	0	21	191	0	0	212	497
08:45	62	0	25	0	87	0	197	35	0	232	0	0	0	0	0	24	191	0	0	215	534
Total	220	0	112	0	332	0	762	145	0	907	0	0	0	0	0	77	794	0	0	871	(2110)
Grand Total	333	0	166	0	499	0	1174	208	0	1382	0	0	0	0	0	117	1188	0	0	1305	3186
Approch %	66.7	0	33.3	0		0	84.9	15.1	0		0	0	0	0	0	9	91	0	0		
Total %	10.5	0	5.2	0	15.7	0	36.8	6.5	0	43.4	0	0	0	0	0	3.7	37.3	0	0	41	
Cars	308	0	158	0	466	0	1098	187	0	1285	0	0	0	0	0	108	1134	0	0	1242	2963
% Cars	92.5	0	95.2	0	93.4	0	93.5	89.9	0	93	0	0	0	0	0	92.3	95.5	0	0	95.2	93.9
Trucks	25	0	8	0	33	0	76	21	0	97	0	0	0	0	0	9	54	0	0	63	193
% Trucks	7.5	0	4.8	0	6.6	0	6.5	10.1	0	7	0	0	0	0	0	7.7	4.5	0	0	4.8	6.1



Cape Cod Commission

3225 Main Street
Barnstable, MA, 02630
www.capecodcommission.org

Location: Rt 28 & Rt 130
Town: Barnstable
Counted by: AR
Counters: 4

File Name : 2963_06232015
Site Code : 00002963
Start Date : 6/23/2015
Page No : 1

Groups Printed- Bikes

Start Time	Rt 130 From North					Rt 28 From East					From South					Rt 28 From West					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
07:30	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																						
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Approch %	100	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	
Total %	100	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Cape Cod Commission

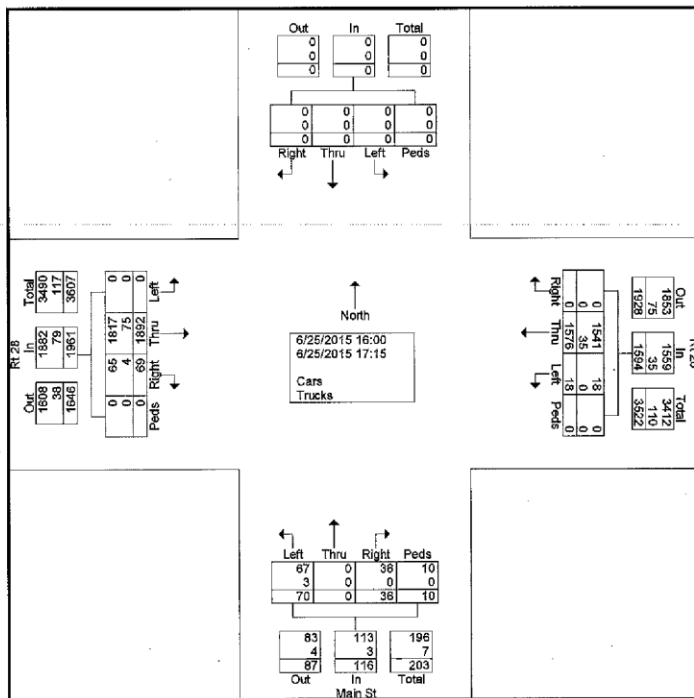
3225 Main Street
Barnstable, MA, 02630
www.capecodcommission.org

Location: Rt 28 & Main St (Cotuit)
Town: Barnstable
Counted by: JW
Counters: 3

File Name : 2962_06252015
Site Code : 2962
Start Date : 6/25/2015
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Rt 28 From North					Rt 28 From East					Main St From South					Rt 28 From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
16:00	0	0	0	0	0	4	259	0	0	263	7	0	3	10	20	0	280	16	0	296	579
16:15	0	0	0	0	0	1	251	0	0	252	17	0	8	0	25	0	294	8	0	302	579
16:30	0	0	0	0	0	0	316	0	0	316	11	0	4	0	15	0	375	12	0	387	718
16:45	0	0	0	0	0	4	286	0	0	290	13	0	7	0	20	0	306	12	0	318	628
Total	0	0	0	0	0	9	1112	0	0	1121	48	0	22	10	80	0	1255	48	0	1303	2504
17:00	0	0	0	0	0	5	214	0	0	219	6	0	10	0	16	0	326	7	0	333	588
17:15	0	0	0	0	0	4	250	0	0	254	16	0	4	0	20	0	311	14	0	325	599
Grand Total	0	0	0	0	0	18	1676	0	0	1594	70	0	36	10	116	0	1892	69	0	1961	3671
Approch %	0	0	0	0	0	1.1	98.9	0	0	0	60.3	0	31	8.6	0	96.5	3.5	0	0	0	0
Total %	0	0	0	0	0	0.5	42.9	0	0	43.4	1.9	0	1	0.3	3.2	0	51.5	1.9	0	53.4	0
Cars	0	0	0	0	0	18	1541	0	0	1559	67	0	36	10	113	0	1817	65	0	1882	3554
% Cars	0	0	0	0	0	100	97.8	0	0	97.8	95.7	0	100	100	97.4	0	96	94.2	0	98	96.8
Trucks	0	0	0	0	0	0	35	0	0	35	3	0	0	0	3	0	75	4	0	79	117
% Trucks	0	0	0	0	0	0	2.2	0	0	2.2	4.3	0	0	0	2.6	0	4	5.8	0	4	3.2



Cape Cod Commission

3225 Main Street
Barnstable, MA, 02630
www.capecodcommission.org

Location: Rt 28 & Main St (Cotuit)
Town: Barnstable
Counted by: JW
Counters: 3

File Name : 2962_06252015
Site Code : 2962
Start Date : 6/25/2015
Page No : 1

Groups Printed- Bikes

Start Time	From North					Rt 28 From East					Main St From South					Rt 28 From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
*** BREAK ***																					
16:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
Grand Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Approch %	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0
Total %	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0

Cape Cod Commission

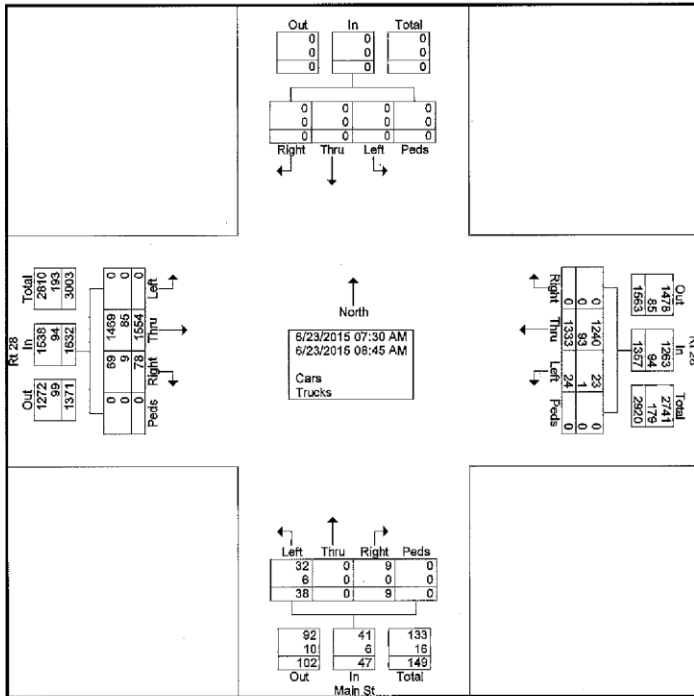
3225 Main Street, Barnstable, MA, 02630
www.capecodcommission.org

Location: Rt 28 & Main St (Cotuit)
Town: Barnstable
Counted by: JW
Counters: 3

File Name : 2962_06232015
Site Code : 00001111
Start Date : 6/23/2015
Page No : 1

Groups Printed- Cars - Trucks

Start Time	From North					Rt 28 From East					Main St From South					Rt 28 From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:30 AM	0	0	0	0	0	2	264	0	0	266	9	0	3	0	12	0	302	10	0	312	590
07:45 AM	0	0	0	0	0	4	233	0	0	237	7	0	2	0	9	0	234	16	0	250	496
Total	0	0	0	0	0	6	497	0	0	503	16	0	5	0	21	0	536	26	0	562	1086
08:00 AM	0	0	0	0	0	3	220	0	0	223	6	0	1	0	7	0	247	13	0	260	490
08:15 AM	0	0	0	0	0	3	247	0	0	250	5	0	2	0	7	0	294	12	0	306	563
08:30 AM	0	0	0	0	0	7	172	0	0	179	6	0	1	0	7	0	251	9	0	260	448
08:45 AM	0	0	0	0	0	5	197	0	0	202	5	0	0	0	5	0	226	18	0	244	451
Total	0	0	0	0	0	18	836	0	0	854	22	0	4	0	26	0	1018	52	0	1070	1950
Grand Total	0	0	0	0	0	24	1333	0	0	1357	38	0	9	0	47	0	1654	78	0	1632	3036
Approch %	0	0	0	0	0	1.8	98.2	0	0	0	80.9	0	19.1	0	0	0	95.2	4.8	0	0	0
Total %	0	0	0	0	0	0.8	43.9	0	0	44.7	1.3	0	0.3	0	1.5	0	51.2	2.6	0	53.8	0
Cars	0	0	0	0	0	23	1240	0	0	1263	32	0	9	0	41	0	1489	69	0	1538	2842
% Cars	0	0	0	0	0	95.8	93	0	0	93.1	84.2	0	100	0	87.2	0	94.5	88.5	0	94.2	93.6
Trucks	0	0	0	0	0	1	93	0	0	94	6	0	0	0	6	0	85	9	0	94	194
% Trucks	0	0	0	0	0	4.2	7	0	0	6.9	15.8	0	0	0	12.8	0	5.5	11.5	0	5.8	6.4



Cape Cod Commission

3225 Main Street, Barnstable, MA, 02630
www.capecodcommission.org

Location: Rt 28 & Main St (Cotuit)
Town: Barnstable
Counted by: JW
Counters: 3

File Name : 2962_06232015
Site Code : 00001111
Start Date : 6/23/2015
Page No : 1

Groups Printed- Bikes

Start Time	From North					Rt 28 From East					Main St From South					Rt 28 From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
*** BREAK ***																					
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

Cape Cod Commission

3225 Main Street, Barnstable, MA, 02630

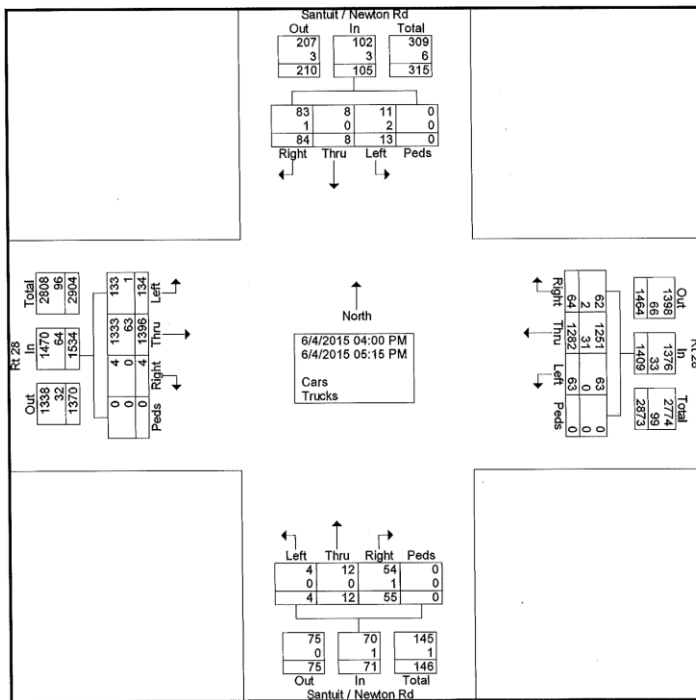
www.capecodcommission.org

Location: RT 28 @ Newton Rd
 Town: Barnstable
 Counted by: AR & JW
 Counters: 5 & 6

File Name : 2960_06042015
 Site Code : 2960
 Start Date : 6/4/2015
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Santuit / Newton Rd From North					Rt 28 From East					Santuit / Newton Rd From South					Rt 28 From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	2	1	18	0	21	9	210	8	0	227	2	2	7	0	11	20	250	2	0	272	531
04:15 PM	1	1	11	0	13	9	201	12	0	222	1	2	8	0	11	15	239	1	0	255	501
04:30 PM	2	1	15	0	18	14	213	15	0	242	0	0	6	0	6	30	225	0	0	255	521
04:45 PM	4	3	22	0	29	9	219	5	0	233	0	0	14	0	14	24	245	0	0	269	545
Total	9	6	66	0	81	41	843	40	0	924	3	4	35	0	42	89	959	3	0	1051	(2098)
05:00 PM	3	0	8	0	11	10	230	10	0	250	0	6	12	0	18	23	250	0	0	273	552
05:15 PM	1	2	10	0	13	12	209	14	0	235	1	2	8	0	11	22	187	1	0	210	469
Grand Total	13	8	84	0	105	63	1282	64	0	1409	4	12	55	0	71	134	1396	4	0	1534	3119
Apprch %	12.4	7.6	80	0		4.5	91	4.5	0		5.6	16.9	77.5	0		8.7	91	0.3	0		
Total %	0.4	0.3	2.7	0	3.4	2	41.1	2.1	0	45.2	0.1	0.4	1.8	0	2.3	4.3	44.8	0.1	0	49.2	
Cars	11	8	83	0	102	63	1251	62	0	1376	4	12	54	0	70	133	1333	4	0	1470	3018
% Cars	84.6	100	98.8	0	97.1	100	97.6	96.9	0	97.7	100	100	98.2	0	98.6	99.3	95.5	100	0	95.8	96.8
Trucks	2	0	1	0	3	0	31	2	0	33	0	0	1	0	1	1	63	0	0	64	101
% Trucks	15.4	0	1.2	0	2.9	0	2.4	3.1	0	2.3	0	0	1.8	0	1.4	0.7	4.5	0	0	4.2	3.2



Cape Cod Commission

3225 Main Street, Barnstable, MA, 02630
www.capecodcommission.org

Location: RT 28 @ Newton Rd
Town: Barnstable
Counted by: AR & JW
Counters: 5 & 6

File Name : 2960_06042015
Site Code : 2960
Start Date : 6/4/2015
Page No : 1

Groups Printed- Bikes

Start Time	Santuit / Newton Rd From North					Rt 28 From East					Santuit / Newton Rd From South					Rt 28 From West					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
*** BREAK ***																						
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
Apprch %	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	100
Total %	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	100

Cape Cod Commission

3225 Main Street
Barnstable, MA, 02630
www.capecodcommission.org

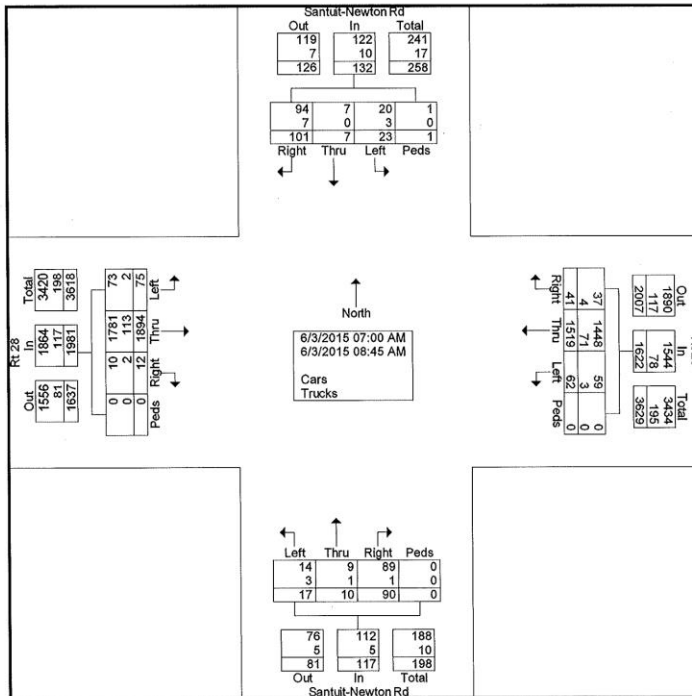
Location: Rt 28 and Newton Rd
Town: Barnstable
Counted by: AR & JW
Counters: 3 & 6

File Name : 2960_06032015
Site Code : 00002960
Start Date : 6/3/2015
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Santuit-Newton Rd From North					Rt 28 From East					Santuit-Newton Rd From South					Rt 28 From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	3	1	16	0	20	2	148	3	0	153	0	1	12	0	13	3	197	1	0	201	387
07:15 AM	3	1	12	0	16	7	186	3	0	196	0	3	6	0	9	12	242	2	0	256	477
07:30 AM	4	0	11	0	15	7	185	6	0	198	4	1	7	0	12	5	271	1	0	277	502
07:45 AM	3	2	21	0	26	6	216	4	0	226	2	0	15	0	17	14	257	5	0	276	545
Total	13	4	60	0	77	22	735	16	0	773	6	5	40	0	51	34	967	9	0	1010	1911
08:00 AM	1	0	11	0	12	9	201	4	0	214	2	1	10	0	13	14	272	2	0	288	527
08:15 AM	5	0	6	0	11	8	223	4	0	235	4	2	10	0	16	12	245	1	0	258	520
08:30 AM	1	1	14	0	16	7	163	6	0	176	2	0	13	0	15	4	212	0	0	216	423
08:45 AM	3	2	10	1	16	16	197	11	0	224	3	2	17	0	22	11	198	0	0	209	471
Total	10	3	41	1	55	40	784	25	0	849	11	5	50	0	66	41	927	3	0	971	1941
Grand Total	23	7	101	1	132	62	1519	41	0	1622	17	10	90	0	117	75	1894	12	0	1981	3852
Approch %	17.4	5.3	76.5	0.8		3.8	93.6	2.5	0		14.5	8.5	76.9	0		3.8	95.6	0.6	0		
Total %	0.6	0.2	2.6	0	3.4	1.6	39.4	1.1	0	42.1	0.4	0.3	2.3	0	3	1.9	49.2	0.3	0	51.4	
Cars	20	7	94	1	122	59	1448	37	0	1544	14	9	89	0	112	73	1781	10	0	1864	3642
% Cars	87	100	93.1	100	92.4	95.2	95.3	90.2	0	95.2	82.4	90	98.9	0	95.7	97.3	94	83.3	0	94.1	94.5
Trucks	3	0	7	0	10	3	71	4	0	78	3	1	1	0	5	2	113	2	0	117	210
% Trucks	13	0	6.9	0	7.6	4.8	4.7	9.8	0	4.8	17.6	10	1.1	0	4.3	2.7	6	16.7	0	5.9	5.5

1941



Cape Cod Commission

3225 Main Street
Barnstable, MA, 02630
www.capecodcommission.org

Location: Rt 28 and Newton Rd
Town: Barnstable
Counted by: AR & JW
Counters: 3 & 6

File Name : 2960_06032015
Site Code : 00002960
Start Date : 6/3/2015
Page No : 1

Groups Printed- Bikes

Start Time	Santuit-Newton Rd From North					Rt 28 From East					Santuit-Newton Rd From South					Rt 28 From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
*** BREAK ***																					
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

Cape Cod Commission

Site: 21220
 Location: Rt 28 W of Santuit-Newton Rd
 Town: Barnstable
 Counters: AP-6

3225 Main Street
 Barnstable, Massachusetts
 www.capecodcommission.org

Site Code: 21220
 Station ID:

Latitude: 0' 0.0000 Undefined

Start Time	15-Jun-15 Mon	16-Jun-15 Tue	17-Jun-15 Wed	18-Jun-15 Thu	19-Jun-15 Fri	20-Jun-15 Sat	21-Jun-15 Sun	Week Average	Weekday Average
12:00 AM	*	*	*	95	116	*	*	106	106
01:00	*	*	*	49	76	*	*	62	62
02:00	*	*	*	29	45	*	*	37	37
03:00	*	*	*	40	53	*	*	46	46
04:00	*	*	*	100	90	*	*	95	95
05:00	*	*	*	347	353	*	*	350	350
06:00	*	*	*	1135	1046	*	*	1090	1090
07:00	*	*	1532	1411	1530	*	*	1491	1491
08:00	*	*	1242	1480	1347	*	*	1356	1356
09:00	*	*	1551	1508	1480	*	*	1513	1513
10:00	*	*	1513	1422	*	*	*	1468	1468
11:00	*	*	1557	1509	*	*	*	1533	1533
12:00 PM	*	*	1446	1426	*	*	*	1436	1436
01:00	*	*	1531	1533	*	*	*	1532	1532
02:00	*	*	1387	1393	*	*	*	1390	1390
03:00	*	*	1249	1270	*	*	*	1260	1260
04:00	*	*	1291	1369	*	*	*	1330	1330
05:00	*	*	1287	1312	*	*	*	1300	1300
06:00	*	*	1435	1504	*	*	*	1470	1470
07:00	*	*	1073	1101	*	*	*	1087	1087
08:00	*	*	935	893	*	*	*	914	914
09:00	*	*	675	761	*	*	*	718	718
10:00	*	*	391	510	*	*	*	450	450
11:00	*	*	221	251	*	*	*	236	236
Total	0	0	20316	22448	6136	0	0		
Percentage	0.0%	0.0%	91.2%	100.8%	27.6%	0.0%	0.0%		
AM Peak	-	-	11:00	11:00	07:00	-	-	-	-
Vol.	-	-	1557	1509	1530	-	-	-	-
PM Peak	-	-	13:00	13:00	-	-	-	-	-
Vol.	-	-	1531	1533	-	-	-	-	-
Total								22270	22270

Cape Cod Commission

Site: 21220
 Location: Rt 28 W of Santuit-Newton Rd
 Town: Barnstable
 Counters: AP-6

3225 Main Street
 Barnstable, Massachusetts
 www.capecodcommission.org

Site Code: 21220
 Station ID:

Latitude: 0' 0.0000 Undefined

Start Time	15-Jun-15		Tue		Wed		Thu		Fri		Sat		Sun		Weekday Ave	
	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
12:00 AM	*	*	*	*	*	*	56	39	76	40	*	*	*	*	66	40
01:00	*	*	*	*	*	*	28	21	40	36	*	*	*	*	34	28
02:00	*	*	*	*	*	*	11	18	23	22	*	*	*	*	17	20
03:00	*	*	*	*	*	*	12	28	15	38	*	*	*	*	14	33
04:00	*	*	*	*	*	*	44	56	30	60	*	*	*	*	37	58
05:00	*	*	*	*	*	*	166	181	164	189	*	*	*	*	165	185
06:00	*	*	*	*	*	*	555	580	495	551	*	*	*	*	525	566
07:00	*	*	*	*	714	818	674	737	703	827	*	*	*	*	697	794
08:00	*	*	*	*	636	606	698	782	659	688	*	*	*	*	664	692
09:00	*	*	*	*	759	792	720	788	747	733	*	*	*	*	742	771
10:00	*	*	*	*	705	808	656	766	*	*	*	*	*	*	680	787
11:00	*	*	*	*	731	826	732	777	*	*	*	*	*	*	732	802
12:00 PM	*	*	*	*	731	715	720	706	*	*	*	*	*	*	726	710
01:00	*	*	*	*	785	746	794	739	*	*	*	*	*	*	790	742
02:00	*	*	*	*	737	650	732	661	*	*	*	*	*	*	734	656
03:00	*	*	*	*	654	595	677	593	*	*	*	*	*	*	666	594
04:00	*	*	*	*	661	630	703	666	*	*	*	*	*	*	682	648
05:00	*	*	*	*	749	538	726	586	*	*	*	*	*	*	738	562
06:00	*	*	*	*	717	718	767	737	*	*	*	*	*	*	742	728
07:00	*	*	*	*	529	544	543	558	*	*	*	*	*	*	536	551
08:00	*	*	*	*	485	450	458	435	*	*	*	*	*	*	472	442
09:00	*	*	*	*	396	279	430	331	*	*	*	*	*	*	413	305
10:00	*	*	*	*	221	170	281	229	*	*	*	*	*	*	251	200
11:00	*	*	*	*	118	103	133	118	*	*	*	*	*	*	126	110
Total	0	0	0	0	10328	9988	11316	11132	2952	3184	0	0	0	0	11249	11024
Day	0	0	0	0	20316	20316	22448	22448	6136	6136	0	0	0	0	22273	22273
AM Peak	-	-	-	-	09:00	11:00	11:00	09:00	09:00	07:00	-	-	-	-	09:00	11:00
Vol.	-	-	-	-	759	826	732	788	747	827	-	-	-	-	742	802
PM Peak	-	-	-	-	13:00	13:00	13:00	13:00	-	-	-	-	-	-	13:00	13:00
Vol.	-	-	-	-	785	746	794	739	-	-	-	-	-	-	790	742

Comb. Total 0 0 20316 22448 6136 0 0 22273

ADT ADT 22,270 AADT 22,270

Cape Cod Commission

3225 Main Street
Barnstable, Massachusetts
www.capecodcommission.org

Page 1

Site: 21375
Location: Rt 28 W of Anchor Ln
Town: Barnstable
Counters: AP-11

Site Code: 21375
Station ID:

Latitude: 0' 0.0000 Undefined

Start Time	15-Jun-15 Mon	16-Jun-15 Tue	17-Jun-15 Wed	18-Jun-15 Thu	19-Jun-15 Fri	20-Jun-15 Sat	21-Jun-15 Sun	Week Average	Weekday Average
12:00 AM	*	*	*	91	116	*	*	104	104
01:00	*	*	*	50	76	*	*	63	63
02:00	*	*	*	26	43	*	*	34	34
03:00	*	*	*	36	50	*	*	43	43
04:00	*	*	*	97	96	*	*	96	96
05:00	*	*	*	342	345	*	*	344	344
06:00	*	*	*	1114	1029	*	*	1072	1072
07:00	*	*	1588	1662	1612	*	*	1621	1621
08:00	*	*	1592	1634	1559	*	*	1595	1595
09:00	*	*	1611	1599	1563	*	*	1591	1591
10:00	*	*	1543	1498	*	*	*	1520	1520
11:00	*	*	1569	1588	*	*	*	1578	1578
12:00 PM	*	*	1587	1525	*	*	*	1556	1556
01:00	*	*	1597	1588	*	*	*	1592	1592
02:00	*	*	1632	1563	*	*	*	1598	1598
03:00	*	*	1548	1198	*	*	*	1373	1373
04:00	*	*	1228	(1728)	*	*	*	1478	(1478)
05:00	*	*	1409	1596	*	*	*	1502	1502
06:00	*	*	1423	1445	*	*	*	1434	1434
07:00	*	*	1083	1073	*	*	*	1078	1078
08:00	*	*	902	888	*	*	*	895	895
09:00	*	*	682	756	*	*	*	719	719
10:00	*	*	389	499	*	*	*	444	444
11:00	*	*	218	245	*	*	*	232	232
Total	0	0	21601	(23841)	6489	0	0		
Percentage	0.0%	0.0%	91.7%	101.2%	27.5%	0.0%	0.0%		
AM Peak	-	-	09:00	07:00	07:00	-	-	-	-
Vol.	-	-	1611	1662	1612	-	-	-	-
PM Peak	-	-	14:00	16:00	-	-	-	-	-
Vol.	-	-	1632	1728	-	-	-	-	(23562)
Total								23562	(23562)

Cape Cod Commission

3225 Main Street
Barnstable, Massachusetts
www.capecodcommission.org

Site: 21375
Location: Rt 28 W of Anchor Ln
Town: Barnstable
Counters: AP-11

Site Code: 21375
Station ID:

Latitude: 0' 0.0000 Undefined

Start Time	15-Jun-15		Tue		Wed		Thu		Fri		Sat		Sun		Weekday Ave	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	*	*	*	*	*	*	30	61	34	82	*	*	*	*	32	72
01:00	*	*	*	*	*	*	19	31	33	43	*	*	*	*	26	37
02:00	*	*	*	*	*	*	16	10	22	21	*	*	*	*	19	16
03:00	*	*	*	*	*	*	27	9	37	13	*	*	*	*	32	11
04:00	*	*	*	*	*	*	57	40	63	33	*	*	*	*	60	36
05:00	*	*	*	*	*	*	184	158	193	152	*	*	*	*	188	155
06:00	*	*	*	*	*	*	594	520	553	476	*	*	*	*	574	498
07:00	*	*	*	*	911	677	916	746	902	710	*	*	*	*	910	711
08:00	*	*	*	*	825	767	901	733	821	738	*	*	*	*	849	746
09:00	*	*	*	*	824	787	858	741	793	770	*	*	*	*	825	766
10:00	*	*	*	*	810	733	804	694	*	*	*	*	*	*	807	714
11:00	*	*	*	*	829	740	821	767	*	*	*	*	*	*	825	754
12:00 PM	*	*	*	*	785	802	755	770	*	*	*	*	*	*	770	786
01:00	*	*	*	*	781	816	764	824	*	*	*	*	*	*	772	820
02:00	*	*	*	*	780	852	745	818	*	*	*	*	*	*	762	835
03:00	*	*	*	*	762	786	514	684	*	*	*	*	*	*	638	735
04:00	*	*	*	*	549	679	(862)	(866)	*	*	*	*	*	*	(706)	(772)
05:00	*	*	*	*	633	776	743	853	*	*	*	*	*	*	688	814
06:00	*	*	*	*	692	731	689	756	*	*	*	*	*	*	690	744
07:00	*	*	*	*	530	553	523	550	*	*	*	*	*	*	526	552
08:00	*	*	*	*	391	511	410	478	*	*	*	*	*	*	400	494
09:00	*	*	*	*	268	414	291	465	*	*	*	*	*	*	280	440
10:00	*	*	*	*	160	229	206	293	*	*	*	*	*	*	183	261
11:00	*	*	*	*	97	121	114	131	*	*	*	*	*	*	106	126
Total	0	0	0	0	10627	10974	11843	11998	3451	3038	0	0	0	0	(11668)	(11895)
Day	0	0	0	0	21601	21601	23841	23841	6489	6489	0	0	0	0	23563	23563
AM Peak	-	-	-	-	07:00	09:00	07:00	11:00	07:00	09:00	-	-	-	-	07:00	09:00
Vol.	-	-	-	-	911	787	916	767	902	770	-	-	-	-	910	766
PM Peak	-	-	-	-	12:00	14:00	16:00	16:00	-	-	-	-	-	-	13:00	14:00
Vol.	-	-	-	-	785	852	862	866	-	-	-	-	-	-	772	835

Comb. Total 0 0 21601 23841 6489 0 0 23563

ADT ADT 23,562 AADT 23,562

Cape Cod Commission
 3225 Main Street
 Barnstable, Massachusetts
 www.capecodcommission.org

Site: 20294
 Location: Main St S of Rt 28
 Town: Barnstable
 Counters: AP-9

Site Code: 20294
 Station ID:

Latitude: 0' 0.0000 Undefined

Start Time	13-Jul-15 Mon	14-Jul-15 Tue	15-Jul-15 Wed	16-Jul-15 Thu	17-Jul-15 Fri	18-Jul-15 Sat	19-Jul-15 Sun	Week Average	Weekday Average
12:00 AM	*	5	13	*	*	*	*	9	9
01:00	*	11	4	*	*	*	*	8	8
02:00	*	0	2	*	*	*	*	1	1
03:00	*	5	7	*	*	*	*	6	6
04:00	*	6	7	*	*	*	*	6	6
05:00	*	26	28	*	*	*	*	27	27
06:00	*	66	64	*	*	*	*	65	65
07:00	*	83	100	*	*	*	*	92	92
08:00	*	189	171	*	*	*	*	180	180
09:00	*	162	159	*	*	*	*	160	160
10:00	*	172	148	*	*	*	*	160	160
11:00	178	164	181	*	*	*	*	174	174
12:00 PM	178	168	*	*	*	*	*	173	173
01:00	160	136	*	*	*	*	*	148	148
02:00	154	151	*	*	*	*	*	152	152
03:00	146	189	*	*	*	*	*	168	168
04:00	155	(225)	*	*	*	*	*	190	(190)
05:00	133	180	*	*	*	*	*	156	156
06:00	99	158	*	*	*	*	*	128	128
07:00	105	179	*	*	*	*	*	142	142
08:00	80	111	*	*	*	*	*	96	96
09:00	46	42	*	*	*	*	*	44	44
10:00	30	29	*	*	*	*	*	30	30
11:00	6	15	*	*	*	*	*	10	10
Total	1470	(2472)	884	0	0	0	0		
Percentage	63.2%	106.3%	38.0%	0.0%	0.0%	0.0%	0.0%		
AM Peak	11:00	08:00	11:00	-	-	-	-	-	-
Vol.	178	189	181	-	-	-	-	-	-
PM Peak	12:00	16:00	-	-	-	-	-	-	-
Vol.	178	225	-	-	-	-	-	2325	(2325)
Total									

Site: 20294
 Location: Main St S of Rt 28
 Town: Barnstable
 Counters: AP-9

Cape Cod Commission
 3225 Main Street
 Barnstable, Massachusetts
 www.capecodcommission.org

Site Code: 20294
 Station ID:

Latitude: 0' 0.0000 Undefined

Start Time	13-Jul-15		Tue		Wed		Thu		Fri		Sat		Sun		Weekday Ave	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	3	2	6	7	*	*	*	*	*	*	*	*	4	4
01:00	*	*	7	4	1	3	*	*	*	*	*	*	*	*	4	4
02:00	*	*	0	0	1	1	*	*	*	*	*	*	*	*	0	0
03:00	*	*	2	3	4	3	*	*	*	*	*	*	*	*	3	3
04:00	*	*	4	2	5	2	*	*	*	*	*	*	*	*	4	2
05:00	*	*	18	8	16	12	*	*	*	*	*	*	*	*	17	10
06:00	*	*	35	31	34	30	*	*	*	*	*	*	*	*	34	30
07:00	*	*	35	48	47	53	*	*	*	*	*	*	*	*	41	50
08:00	*	*	94	95	84	87	*	*	*	*	*	*	*	*	89	91
09:00	*	*	93	69	93	66	*	*	*	*	*	*	*	*	93	68
10:00	*	*	89	83	76	72	*	*	*	*	*	*	*	*	82	78
11:00	93	85	86	78	98	83	*	*	*	*	*	*	*	*	92	82
12:00 PM	88	90	88	80	*	*	*	*	*	*	*	*	*	*	88	85
01:00	68	92	74	62	*	*	*	*	*	*	*	*	*	*	71	77
02:00	74	80	68	83	*	*	*	*	*	*	*	*	*	*	71	82
03:00	80	66	107	82	*	*	*	*	*	*	*	*	*	*	94	74
04:00	73	82	(93)	(132)	*	*	*	*	*	*	*	*	*	*	(83)	(107)
05:00	60	73	97	83	*	*	*	*	*	*	*	*	*	*	78	78
06:00	47	52	81	77	*	*	*	*	*	*	*	*	*	*	64	64
07:00	51	54	121	58	*	*	*	*	*	*	*	*	*	*	86	56
08:00	38	42	73	38	*	*	*	*	*	*	*	*	*	*	56	40
09:00	25	21	15	27	*	*	*	*	*	*	*	*	*	*	20	24
10:00	15	15	14	15	*	*	*	*	*	*	*	*	*	*	14	15
11:00	3	3	8	7	*	*	*	*	*	*	*	*	*	*	6	5
Total	715	765	1305	1167	465	419	0	0	0	0	0	0	0	0	(1194)	(1129)
Day	1470		2472		884		0	0	0	0	0	0	0		2323	
AM Peak	11:00	11:00	08:00	08:00	11:00	08:00	-	-	-	-	-	-	-	-	09:00	08:00
Vol.	93	85	94	95	98	87	-	-	-	-	-	-	-	-	93	91
PM Peak	12:00	13:00	19:00	16:00	-	-	-	-	-	-	-	-	-	-	15:00	16:00
Vol.	88	92	121	132	-	-	-	-	-	-	-	-	-	-	94	107

Comb. Total 1470 2472 884 0 0 0 0 2323

ADT ADT 2,326 AADT 2,326

Cape Cod Commission

Site: 20300
 Location: Santuit Newton Rd N of Rt 28
 Town: Barnstable
 Counters: AP-5

3225 Main Street
 Barnstable, Massachusetts
 www.capecodcommission.org

Site Code: 20300
 Station ID:

Latitude: 0' 0.0000 Undefined

Start Time	13-Jul-15 Mon	14-Jul-15 Tue	15-Jul-15 Wed	16-Jul-15 Thu	17-Jul-15 Fri	18-Jul-15 Sat	19-Jul-15 Sun	Week Average	Weekday Average
12:00 AM	*	19	10	*	*	*	*	14	14
01:00	*	7	15	*	*	*	*	11	11
02:00	*	4	3	*	*	*	*	4	4
03:00	*	4	5	*	*	*	*	4	4
04:00	*	7	5	*	*	*	*	6	6
05:00	*	32	37	*	*	*	*	34	34
06:00	*	104	106	*	*	*	*	105	105
07:00	*	160	155	*	*	*	*	158	158
08:00	*	163	205	*	*	*	*	184	184
09:00	*	153	152	*	*	*	*	152	152
10:00	*	156	174	*	*	*	*	165	165
11:00	149	168	*	*	*	*	*	158	158
12:00 PM	172	172	*	*	*	*	*	172	172
01:00	155	149	*	*	*	*	*	152	152
02:00	176	156	*	*	*	*	*	166	166
03:00	192	206	*	*	*	*	*	199	199
04:00	222	233	*	*	*	*	*	228	(228)
05:00	237	223	*	*	*	*	*	230	230
06:00	188	208	*	*	*	*	*	198	198
07:00	124	144	*	*	*	*	*	134	134
08:00	104	113	*	*	*	*	*	108	108
09:00	73	96	*	*	*	*	*	84	84
10:00	44	54	*	*	*	*	*	49	49
11:00	35	26	*	*	*	*	*	30	30
Total	1871	(2757)	867	0	0	0	0		
Percentage	68.2%	100.4%	31.6%	0.0%	0.0%	0.0%	0.0%		
AM Peak	11:00	11:00	08:00	-	-	-	-	-	-
Vol.	149	168	205	-	-	-	-	-	-
PM Peak	17:00	16:00	-	-	-	-	-	-	-
Vol.	237	233	-	-	-	-	-	-	-
Total								2745	(2745)

Cape Cod Commission

Site: 20300
 Location: Santuit Newton Rd N of Rt 28
 Town: Barnstable
 Counters: AP-5

3225 Main Street
 Barnstable, Massachusetts
 www.capecodcommission.org

Site Code: 20300
 Station ID:

Latitude: 0' 0.0000 Undefined

Start Time	13-Jul-16		Tue		Wed		Thu		Fri		Sat		Sun		Weekday Ave	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	4	15	1	9	*	*	*	*	*	*	*	*	2	12
01:00	*	*	2	5	5	10	*	*	*	*	*	*	*	*	4	8
02:00	*	*	2	2	2	1	*	*	*	*	*	*	*	*	2	2
03:00	*	*	2	2	3	2	*	*	*	*	*	*	*	*	2	2
04:00	*	*	5	2	4	1	*	*	*	*	*	*	*	*	4	2
05:00	*	*	21	11	26	11	*	*	*	*	*	*	*	*	24	11
06:00	*	*	79	25	79	27	*	*	*	*	*	*	*	*	79	26
07:00	*	*	108	52	111	44	*	*	*	*	*	*	*	*	110	48
08:00	*	*	105	57	134	71	*	*	*	*	*	*	*	*	120	64
09:00	*	*	85	68	81	71	*	*	*	*	*	*	*	*	83	70
10:00	*	*	69	87	86	88	*	*	*	*	*	*	*	*	78	88
11:00	75	74	75	93	*	*	*	*	*	*	*	*	*	*	75	84
12:00 PM	75	97	77	95	*	*	*	*	*	*	*	*	*	*	76	96
01:00	85	70	63	86	*	*	*	*	*	*	*	*	*	*	74	78
02:00	78	98	66	90	*	*	*	*	*	*	*	*	*	*	72	94
03:00	82	110	101	105	*	*	*	*	*	*	*	*	*	*	92	108
04:00	101	121	(101)	(132)	*	*	*	*	*	*	*	*	*	*	(101)	(126)
05:00	91	146	114	109	*	*	*	*	*	*	*	*	*	*	102	128
06:00	89	99	82	126	*	*	*	*	*	*	*	*	*	*	86	112
07:00	41	83	53	91	*	*	*	*	*	*	*	*	*	*	47	87
08:00	39	65	24	89	*	*	*	*	*	*	*	*	*	*	32	77
09:00	26	47	34	62	*	*	*	*	*	*	*	*	*	*	30	54
10:00	17	27	18	36	*	*	*	*	*	*	*	*	*	*	18	32
11:00	14	21	9	17	*	*	*	*	*	*	*	*	*	*	12	19
Total	813	1058	1300	1457	532	335	0	0	0	0	0	0	0	0	(1325)	(1428)
Day	1871		2757		867		0	0	0	0	0	0	0	0	2753	
AM Peak	11:00	11:00	07:00	11:00	08:00	10:00	-	-	-	-	-	-	-	-	08:00	10:00
Vol.	75	74	108	93	134	88	-	-	-	-	-	-	-	-	120	88
PM Peak	16:00	17:00	17:00	16:00	-	-	-	-	-	-	-	-	-	-	17:00	17:00
Vol.	101	146	114	132	-	-	-	-	-	-	-	-	-	-	102	128

Comb. Total 1871 2757 867 0 0 0 0 2753

ADT ADT 2,747 AADT 2,747

Cape Cod Commission
 3225 Main Street
 Barnstable, Massachusetts
 www.capecodcommission.org

Site: 21377
 Location: Santuit-Newton Rd S of Rt 28
 Town: Barnstable
 Counters: AP-9

ge 1
 21377 OK
 Site Code: 21377
 Station ID:

Latitude: 0' 0.0000 Undefined

Start Time	13-Jul-15 Mon	14-Jul-15 Tue	15-Jul-15 Wed	16-Jul-15 Thu	17-Jul-15 Fri	18-Jul-15 Sat	19-Jul-15 Sun	Week Average	Weekday Average
12:00 AM	*	6	9	*	*	*	*	8	8
01:00	*	7	5	*	*	*	*	6	6
02:00	*	0	1	*	*	*	*	0	0
03:00	*	2	3	*	*	*	*	2	2
04:00	*	1	2	*	*	*	*	2	2
05:00	*	14	12	*	*	*	*	13	13
06:00	*	30	29	*	*	*	*	30	30
07:00	*	69	63	*	*	*	*	66	66
08:00	*	114	111	*	*	*	*	112	112
09:00	*	117	109	*	*	*	*	113	113
10:00	*	101	103	*	*	*	*	102	102
11:00	109	116	129	*	*	*	*	118	118
12:00 PM	127	141	*	*	*	*	*	134	134
01:00	115	103	*	*	*	*	*	109	109
02:00	102	108	*	*	*	*	*	105	105
03:00	99	69	*	*	*	*	*	84	84
04:00	99	105	*	*	*	*	*	102	102
05:00	96	95	*	*	*	*	*	96	96
06:00	81	95	*	*	*	*	*	88	88
07:00	54	84	*	*	*	*	*	69	69
08:00	58	55	*	*	*	*	*	56	56
09:00	36	33	*	*	*	*	*	34	34
10:00	25	30	*	*	*	*	*	28	28
11:00	10	10	*	*	*	*	*	10	10
Total	1011	1505	576	0	0	0	0		
Percentage	68.0%	101.2%	38.7%	0.0%	0.0%	0.0%	0.0%		
AM Peak	11:00	09:00	11:00	-	-	-	-	-	-
Vol.	109	117	129	-	-	-	-	-	-
PM Peak	12:00	12:00	-	-	-	-	-	-	-
Vol.	127	141	-	-	-	-	-	-	-
Total								1487	1487

Cape Cod Commission

3225 Main Street
Barnstable, Massachusetts
www.capecodcommission.org

Site: 21377
Location: Santuit-Newton Rd S of Rt 28
Town: Barnstable
Counters: AP-9

Site Code: 21377
Station ID:

Latitude: 0' 0.0000 Undefined

Start Time	13-Jul-15		Tue		Wed		Thu		Fri		Sat		Sun		Weekday Ave	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	2	4	2	7	*	*	*	*	*	*	*	*	2	6
01:00	*	*	1	6	2	3	*	*	*	*	*	*	*	*	2	4
02:00	*	*	0	0	0	1	*	*	*	*	*	*	*	*	0	0
03:00	*	*	1	1	2	1	*	*	*	*	*	*	*	*	2	1
04:00	*	*	0	1	0	2	*	*	*	*	*	*	*	*	0	2
05:00	*	*	7	7	6	6	*	*	*	*	*	*	*	*	6	6
06:00	*	*	20	10	18	11	*	*	*	*	*	*	*	*	19	10
07:00	*	*	41	28	29	34	*	*	*	*	*	*	*	*	35	31
08:00	*	*	68	48	62	49	*	*	*	*	*	*	*	*	65	48
09:00	*	*	56	61	63	46	*	*	*	*	*	*	*	*	60	54
10:00	*	*	62	39	53	50	*	*	*	*	*	*	*	*	58	44
11:00	56	53	61	55	59	70	*	*	*	*	*	*	*	*	59	59
12:00 PM	65	62	(62)	(79)	*	*	*	*	*	*	*	*	*	*	64	70
01:00	58	57	53	50	*	*	*	*	*	*	*	*	*	*	56	54
02:00	50	52	62	56	*	*	*	*	*	*	*	*	*	*	51	54
03:00	52	47	40	29	*	*	*	*	*	*	*	*	*	*	46	38
04:00	49	50	54	51	*	*	*	*	*	*	*	*	*	*	(52)	(50)
05:00	43	53	45	50	*	*	*	*	*	*	*	*	*	*	44	52
06:00	36	46	38	57	*	*	*	*	*	*	*	*	*	*	37	51
07:00	35	19	65	29	*	*	*	*	*	*	*	*	*	*	45	24
08:00	23	35	30	25	*	*	*	*	*	*	*	*	*	*	26	30
09:00	15	21	13	20	*	*	*	*	*	*	*	*	*	*	14	20
10:00	12	13	11	19	*	*	*	*	*	*	*	*	*	*	12	16
11:00	4	6	3	7	*	*	*	*	*	*	*	*	*	*	4	6
Total	496	513	775	730	296	280	0	0	0	0	0	0	0	0	(759)	(730)
Day	1011		1505		576		0	0	0	0	0	0	0		1489	
AM Peak	11:00	11:00	08:00	09:00	09:00	11:00	-	-	-	-	-	-	-	-	08:00	11:00
Vol.	56	53	68	61	63	70	-	-	-	-	-	-	-	-	65	59
PM Peak	12:00	12:00	12:00	12:00	-	-	-	-	-	-	-	-	-	-	12:00	12:00
Vol.	65	62	62	79	-	-	-	-	-	-	-	-	-	-	64	70

Comb. Total 1011 1505 576 0 0 0 0 (1489)

ADT ADT 1,487 AADT 1,487



Accident Status Report

From: 05/01/2013 Thru: 05/01/2016

05/16/2016

Location: (ALL)
Street(s): COT > FALMOUTH RD RTE 28
COT > RTE 130
Zones: (ALL)
Weekday(s): (ALL)

13-378-AC

Officer [redacted]
State Rpt/Acc. Date & Time
No 05/14/2013 1150
Vehicle Owner> [redacted]
Operator> [redacted]

Location / Street Names
FALMOUTH RD RTE 28 @ SANDALWOOD DR
Veh# 1
Veh# 1

13-431-AU

Officer [redacted]
State Rpt/Acc. Date & Time
No 06/01/2013 1405
Operator> [redacted]
Vehicle Owner> [redacted]
Vehicle Owner> [redacted]
Operator> [redacted]

Location / Street Names
FALMOUTH RD RTE 28 @ RTE 130
Veh# 1
Veh# 1
Veh# 2
Veh# 2

13-474-AC

Officer [redacted]
State Rpt/Acc. Date & Time
No 06/11/2013 1923
Operator> [redacted]
Vehicle Owner> [redacted]
Passenger> [redacted]
Vehicle Owner> [redacted]
Operator> [redacted]
Passenger> [redacted]

Location / Street Names
FALMOUTH RD RTE 28 @ SANTUIT-NEWTOWN RD
Veh# 1 Injured
Veh# 1
Veh# 1
Veh# 2 Injured
Veh# 2 Injured
Veh# 2

Accident Status Report

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From: 05/01/2013 Thru: 05/01/2016

05/16/2016

13-654-AC

Officer
[REDACTED]
State Rpt/Acc. Date & Time
No 07/24/2013 0945
Vehicle Owner>
Operator> [REDACTED]
Vehicle Owner>
Operator> [REDACTED]

Location / Street Names
FALMOUTH RD RTE 28 @ RTE 130
Veh# 2
Veh# 2
Veh# 1
Veh# 1

13-713-AC

Officer
[REDACTED]
State Rpt/Acc. Date & Time
No 08/05/2013 1202
Operator>
Vehicle Owner> [REDACTED]
Operator>
Vehicle Owner>
Vehicle Owner>
Operator> [REDACTED]

Location / Street Names
FALMOUTH RD RTE 28 @ RTE 130
Veh# 1
Veh# 1
Veh# 2
Veh# 2
Veh# 3
Veh# 3

13-723-AC

Officer
[REDACTED]
State Rpt/Acc. Date & Time
No 08/06/2013 1045

Location / Street Names
FALMOUTH RD RTE 28 @ RTE 130

Accident Status Report

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From: 05/01/2013 Thru: 05/01/2016

05/16/2016

Vehicle Owner>		Veh# 1
Operator>		Veh# 1
Operator>		Veh# 2
Vehicle Owner>		Veh# 2
Passenger>		Veh# 2
Witness>		

13-836-AC

<u>Officer</u>	<u>State Rpt/Acc. Date & Time</u>
	No 09/03/2013 1901
Vehicle Owner>	
Operator>	
Operator>	
Vehicle Owner>	

<u>Location / Street Names</u>
RTE 130 @ FALMOUTH RD RTE 28
Veh# 1
Veh# 1
Veh# 2
Veh# 2

13-968-AC

<u>Officer</u>	<u>State Rpt/Acc. Date & Time</u>
	No 10/07/2013 0200
Operator>	
Vehicle Owner>	

<u>Location / Street Names</u>
FALMOUTH RD RTE 28 @ RTE 130
Veh# 1
Veh# 1

Accident Status Report

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From: 05/01/2013 Thru: 05/01/2016

05/16/2016

13-1077-AC

<u>Officer</u>	<u>State Rpt/Acc. Date & Time</u>
██████████	No 11/23/2013 1443
Vehicle Owner>	██████████
Operator>	██████████
Vehicle Owner>	██████████
Operator>	██████████
Passenger>	██████████

<u>Location / Street Names</u>
FALMOUTH RD RTE 28 @ SANFUIT-NEWTOWN RD
Veh# 1
Veh# 1
Veh# 2
Veh# 2
Veh# 2

13-1126-AC

<u>Officer</u>	<u>State Rpt/Acc. Date & Time</u>
██████████	No 12/09/2013 1628
Operator>	██████████
Vehicle Owner>	██████████
Operator>	██████████
Vehicle Owner>	██████████
Passenger>	██████████

<u>Location / Street Names</u>
FALMOUTH RD RTE 28
Veh# 1
Veh# 1
Veh# 2
Veh# 2
Veh# 2

*w/ 28 Sandblow
Pr.
(Operator
Signature)*

Accident Status Report

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From: 05/01/2013 Thru: 05/01/2016

05/16/2016

14-63-AC

<u>Officer</u>	<u>State Rpt/Acc. Date & Time</u>
██████████	No 01/18/2014 2025
Operator>	██████████
Vehicle Owner>	██████████
Vehicle Owner>	██████████
Operator>	██████████
Witness>	██████████

<u>Location / Street Names</u>
FALMOUTH RD RTE 28
Veh# 1
Veh# 1
Veh# 2
Veh# 2

4741 Falmouth Rd.

Accident Status Report

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From: 05/01/2013 Thru: 05/01/2016

05/16/2016

Accident Status Report

Page: 7

From: 05/01/2013 Thru: 05/01/2016

05/16/2016

14-678-AC

Officer	State Rpt/Acc. Date & Time
[REDACTED]	No 07/25/2014 1755
Vehicle Owner>	
Operator>	[REDACTED]
Vehicle Owner>	
Operator>	[REDACTED]

Location / Street Names
THOMAS, PAUL / PALMOUTH RD RTE 28
Veh# 1
Veh# 1
Veh# 2
Veh# 2

4468 Falmouth Rd.

Accident Status Report

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From: 05/01/2013 Thru: 05/01/2016

05/16/2016

14-768-AC

Officer [REDACTED]
State Rpt/Acc. Date & Time
No 08/17/2014 1607
Operator>
Vehicle Owner>
Operator>
Vehicle Owner>
Passenger>
Vehicle Owner>
Operator>

Location / Street Names
FALMOUTH RD RTE 28
Veh# 1
Veh# 1
Veh# 2 #4681
Veh# 2 Falmouth Ped.
Veh# 2
Veh# 3
Veh# 3

14-815-AC

Officer [REDACTED]
State Rpt/Acc. Date & Time
No 08/27/2014 1820
Operator>
Vehicle Owner>
Vehicle Owner>
Operator>

Location / Street Names
CAHOON MUSEUM OF AMERICAN ART / FALMOUTH RD
Veh# 1
Veh# 1
Veh# 2
Veh# 2

14-896-AC

Officer [REDACTED]
State Rpt/Acc. Date & Time
No 09/18/2014 0926
Vehicle Owner>
Operator>
Vehicle Owner>
Operator>

Location / Street Names
CAHOON MUSEUM OF AMERICAN ART / FALMOUTH RD
Veh# 1
Veh# 1
Veh# 2
Veh# 2

Accident Status Report

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From: 05/01/2013 Thru: 05/01/2016

05/16/2016

Accident Status Report

Page: 10

From: 05/01/2013 Thru: 05/01/2016

05/16/2016

15-32-AC

Officer [REDACTED]
State Rpt/Acc. Date & Time
No 01/11/2015 1135
Vehicle Owner> [REDACTED]
Operator> [REDACTED]

Location / Street Names
FALMOUTH RD RTE 28 @ RTE 130
Veh# 1
Veh# 1

15-104-AC

Officer [REDACTED]
State Rpt/Acc. Date & Time
No 02/05/2015 2003
Operator> [REDACTED]
Vehicle Owner> [REDACTED]
Vehicle Owner> [REDACTED]
Operator> [REDACTED]
Passenger> [REDACTED]
Passenger> [REDACTED]

Location / Street Names
FALMOUTH RD RTE 28 @ SANTUIT-NEWTOWN RD
Veh# 1
Veh# 1
Veh# 2
Veh# 2
Veh# 2
Veh# 2

Accident Status Report

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From: 05/01/2013 Thru: 05/01/2016

05/16/2016

15-256-AC

Officer [Redacted]
 State Rpt/Acc. Date & Time
 No 03/16/2015 0713
 Vehicle Owner> [Redacted]
 Operator> [Redacted]
 Vehicle Owner> [Redacted]
 Operator> [Redacted]

Location / Street Names
 FALMOUTH RD RTE 28
 Veh# 1
 Veh# 1 #4681 Falmouth Pa.
 Veh# 2
 Veh# 2

15-260-AC

Officer [Redacted]
 State Rpt/Acc. Date & Time
 No 03/16/2015 1840
 Vehicle Owner> [Redacted]
 Operator> [Redacted]
 Operator> [Redacted]
 Vehicle Owner> [Redacted]
 Passenger> [Redacted]

Location / Street Names
 FALMOUTH RD RTE 28
 Veh# 1
 Veh# 1 Rte and 130
 Veh# 2
 Veh# 2
 Veh# 2

15-273-AC

Officer [Redacted]
 State Rpt/Acc. Date & Time
 No 03/20/2015 1826
 Operator> [Redacted]
 Vehicle Owner> [Redacted]
 Witness> [Redacted]

Location / Street Names
 FALMOUTH RD RTE 28 @ SANFUIT-NEWTOWN RD.
 Veh# 1
 Veh# 1

15-289-AC

Officer [Redacted]
 State Rpt/Acc. Date & Time
 No 03/25/2015 2014
 Vehicle Owner> [Redacted]
 Operator> [Redacted]

Location / Street Names
 FALMOUTH RD RTE 28
 Veh# 1
 Veh# 1 Sunoco Gas

Accident Status Report

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From: 05/01/2013 Thru: 05/01/2016

05/16/2016

15-308-AC

Officer
[REDACTED]
State Rpt/Acc. Date & Time
No 04/03/2015 1745
Operator>
Vehicle Owner>
Operator>
Vehicle Owner>

Location / Street Names
SANTUIT-NEWTOWN RD @ FALMOUTH RD RTE 28
Veh# 1
Veh# 1
Veh# 2 Fatality
Veh# 2

15-361-AC

Officer
[REDACTED]
State Rpt/Acc. Date & Time
No 04/23/2015 2226
Operator>
Vehicle Owner>
Vehicle Owner>
Operator>

Location / Street Names
MAIN ST @ FALMOUTH RD RTE 28
Veh# 1
Veh# 1
Veh# 2
Veh# 2

15-376-AC

Officer
[REDACTED]
State Rpt/Acc. Date & Time
No 04/29/2015 2045
Vehicle Owner>
Operator>
Vehicle Owner>
Operator>
Witness>

Location / Street Names
FALMOUTH RD RTE 28
Veh# 1
Veh# 1
Veh# 2
Veh# 2 #4552 FALMOUTH Rd.

15-382-AC

Officer
[REDACTED]
State Rpt/Acc. Date & Time
No 05/01/2015 0739
Vehicle Owner>
Operator>
Vehicle Owner>
Operator>
Witness>

Location / Street Names
FALMOUTH RD RTE 28 @ SANTUIT-NEWTOWN RD
Veh# 1
Veh# 1
Veh# 2 Injured
Veh# 2 Injured

15-460-AC

Officer
[REDACTED]
State Rpt/Acc. Date & Time
No 05/26/2015 1547
Vehicle Owner>
Operator>
Vehicle Owner>
Operator>
Passenger>

Location / Street Names
FALMOUTH RD RTE 28 @ MAIN ST
Veh# 1
Veh# 1
Veh# 2 Injured
Veh# 2 Injured
Veh# 2

Accident Status Report

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From: 05/01/2013 Thru: 05/01/2016

05/16/2016

15-465-AC

Officer [REDACTED]
 State Rpt/Acc. Date & Time
 No 05/29/2015 1213
 Operator> [REDACTED]
 Vehicle Owner> [REDACTED]
 Operator> [REDACTED]
 Vehicle Owner> [REDACTED]

Location / Street Names
 FALMOUTH RD RTE 28 @ RTE 130
 Veh# 1
 Veh# 1
 Veh# 2
 Veh# 2

15-568-AC

Officer [REDACTED]
 State Rpt/Acc. Date & Time
 No 06/24/2015 1215
 Operator> [REDACTED]
 Vehicle Owner> [REDACTED]
 Vehicle Owner> [REDACTED]
 Operator> [REDACTED]

Location / Street Names
 FALMOUTH RD RTE 28
 Veh# 1
 Veh# 1
 Veh# 2
 Veh# 2

4424 FALMOUTH Bld.

15-568-AC

Officer [REDACTED]
 State Rpt/Acc. Date & Time
 No 06/24/2015 1715
 Vehicle Owner> [REDACTED]
 Operator> [REDACTED]
 Vehicle Owner> [REDACTED]
 Operator> [REDACTED]

Location / Street Names
 FALMOUTH RD RTE 28
 Veh# 1
 Veh# 1
 Veh# 2
 Veh# 2

4550 FALMOUTH Bld.

15-585-AC

Officer [REDACTED]
 State Rpt/Acc. Date & Time
 No 06/29/2015 1509
 Operator> [REDACTED]
 Vehicle Owner> [REDACTED]
 Vehicle Owner> [REDACTED]
 Operator> [REDACTED]
 Passenger> [REDACTED]

Location / Street Names
 FALMOUTH RD RTE 28 @ SANDALWOOD DR
 Veh# 1
 Veh# 1
 Veh# 2 Injured
 Veh# 2 Injured
 Veh# 2 Injured

15-602-AC

Officer [REDACTED]
 State Rpt/Acc. Date & Time
 No 07/02/2015 0114
 Operator> [REDACTED]
 Vehicle Owner> [REDACTED]
 Witness> [REDACTED]

Location / Street Names
 FALMOUTH RD RTE 28
 Veh# 1
 Veh# 1

Rte 130

Accident Status Report

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05/16/2016

	Passenger>	LUTCH BENJAMIN	Veh# 2
15-664-AC	Officer	State Rpt/Acc. Date & Time No 07/16/2015 1821	Location / Street Names SANTUIT #1 - CITGO / FALMOUTH RD RTE 28
	Vehicle Owner>		Veh# 1
	Operator>		Veh# 1
	Operator>		Veh# 2
			<i>4550 FALMOUTH Rd.</i>
15-681-AC	Officer	State Rpt/Acc. Date & Time No 07/20/2015 1223	Location / Street Names FALMOUTH RD RTE 28
	Vehicle Owner>		Veh# 1
	Operator>		Veh# 1
	Vehicle Owner>		Veh# 2 Injured
	Operator>		Veh# 2 Injured
			<i>4550 FALMOUTH Rd.</i>
15-684-AC	Officer	State Rpt/Acc. Date & Time No 07/20/2015 1741	Location / Street Names FALMOUTH RD RTE 28
	Vehicle Owner>		Veh# 1
	Operator>		Veh# 1
	Vehicle Owner>		Veh# 2
	Operator>		Veh# 2
	Passenger>		Veh# 2
	Witness>		Veh# 2
			<i>4632 FALMOUTH Rd.</i>
15-688-AC	Officer	State Rpt/Acc. Date & Time No 07/21/2015 0835	Location / Street Names VILLAGGIO AT THE REGATTA / FALMOUTH RD RTE
	Vehicle Owner>		Veh# 1
	Operator>		Veh# 1
	Vehicle Owner>		Veh# 2
	Operator>		Veh# 2
15-716-AC	Officer	State Rpt/Acc. Date & Time No 07/27/2015 0741	Location / Street Names FALMOUTH RD RTE 28 @ RTE 130
	Vehicle Owner>		Veh# 1
	Operator>		Veh# 1
	Vehicle Owner>		Veh# 2
	Operator>		Veh# 2

Accident Status Report

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05/16/2016

15-801-AC

Officer [REDACTED]
State Rpt/Acc. Date & Time
No 08/15/2015 0805
Vehicle Owner> [REDACTED]
Operator> [REDACTED]

Location / Street Names
FALMOUTH RD RTE 28 @ MAIN ST
Veh# 1
Veh# 1

15-957-AC

Officer [REDACTED]
State Rpt/Acc. Date & Time
No 09/30/2015 0924
Vehicle Owner> [REDACTED]
Operator> [REDACTED]
Operator> [REDACTED]
Vehicle Owner> [REDACTED]

Location / Street Names
FALMOUTH RD RTE 28
Veh# 1
Veh# 1
Veh# 2 4550 FALMOUTH
Veh# 2 Rd.

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05/16/2016

15-994-AC

<u>Officer</u>	<u>State Rpt/Acc. Date & Time</u>
[REDACTED]	No 10/12/2015 1514
Vehicle Owner>	[REDACTED]
Operator>	[REDACTED]
Vehicle Owner>	[REDACTED]
Operator>	[REDACTED]
Passenger>	[REDACTED]
Passenger>	[REDACTED]
Witness>	[REDACTED]

<u>Location / Street Names</u>
FALMOUTH RD RTE 28 @ RTE 130
Veh# 1
Veh# 1
Veh# 2 Injured
Veh# 2 Injured
Veh# 2
Veh# 2 Injured

15-1083-AC

<u>Officer</u>	<u>State Rpt/Acc. Date & Time</u>
[REDACTED]	No 11/06/2015 0902
Vehicle Owner>	[REDACTED]

<u>Location / Street Names</u>
SANTUIT SUNOCO / FALMOUTH RD RTE 28
Veh# 1

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05/16/2016

Operator> [REDACTED] Veh# 1
Operator> [REDACTED] Veh# 2
Vehicle Owner> [REDACTED] Veh# 2

15-1102-AC Officer State Rpt/Acc. Date & Time Location / Street Names
 [REDACTED] No 11/09/2015 0930 FALMOUTH RD RTE 28 @ SANTUIT-NEWTOWN RD
Operator> [REDACTED] Veh# 1
Vehicle Owner> [REDACTED] Veh# 1
Operator> [REDACTED] Veh# 2
Vehicle Owner> [REDACTED] Veh# 2

15-1101-AC Officer State Rpt/Acc. Date & Time Location / Street Names
 [REDACTED] No 11/09/2015 0739 FALMOUTH RD RTE 28
Operator> [REDACTED] Veh# 1
Vehicle Owner> [REDACTED] Veh# 1
Vehicle Owner> [REDACTED] Veh# 2 *4681 Falmouth Rd.*
Operator> [REDACTED] Veh# 2

15-1152-AC Officer State Rpt/Acc. Date & Time Location / Street Names
 [REDACTED] No 11/24/2015 0914 FALMOUTH RD RTE 28 @ RTE 130
Operator> [REDACTED] Veh# 1
Vehicle Owner> [REDACTED] Veh# 1
Operator> [REDACTED] Veh# 2
Vehicle Owner> [REDACTED] Veh# 2

15-1163-AC Officer State Rpt/Acc. Date & Time Location / Street Names
 [REDACTED] No 11/29/2015 1554 FALMOUTH RD RTE 28 @ RTE 130
Operator> [REDACTED] Veh# 1
Vehicle Owner> [REDACTED] Veh# 1
Vehicle Owner> [REDACTED] Veh# 2
Operator> [REDACTED] Veh# 2

15-1227-AC Officer State Rpt/Acc. Date & Time Location / Street Names
 [REDACTED] No 12/17/2015 0813 FALMOUTH RD RTE 28 @ RTE 130
Vehicle Owner> [REDACTED] Veh# 1
Operator> [REDACTED] Veh# 1
Vehicle Owner> [REDACTED] Veh# 2
Operator> [REDACTED] Veh# 2

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	<u>Officer</u>	<u>State Rpt/Acc. Date & Time</u>	<u>Location / Street Names</u>
16-43-AC	██████████	No 01/17/2016 1425	FALMOUTH RD RTE 28 @ RTE 130
	Vehicle Owner>	██████████	Veh# 1
	Operator>	██████████	Veh# 1
	Passenger>	██████████	Veh# 1
16-54-AC	██████████	No 01/22/2016 0759	RTE 130
	Operator>	██████████	Veh# 1
	Vehicle Owner>	██████████	Veh# 1
	Operator>	██████████	Veh# 2
	Vehicle Owner>	██████████	Veh# 2
16-55-AC	██████████	No 01/22/2016 0833	MAIN ST @ FALMOUTH RD RTE 28
	Operator>	██████████	Veh# 1
	Vehicle Owner>	██████████	Veh# 1
	Vehicle Owner>	██████████	Veh# 2
	Operator>	██████████	Veh# 2
16-56-AC	██████████	No 01/22/2016 1003	MAIN ST @ FALMOUTH RD RTE 28
	Operator>	██████████	Veh# 1
	Vehicle Owner>	██████████	Veh# 1
	Passenger>	██████████	Veh# 1
	Vehicle Owner>	██████████	Veh# 2
	Operator>	██████████	Veh# 2

Accident Status Report

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05/16/2016

16-127-AC	<u>Officer</u> [REDACTED]	<u>State Rpt/Acc. Date & Time</u> No 02/16/2016 1344	<u>Location / Street Names</u> FALMOUTH RD RTE 28 @ RTE 130
	Vehicle Owner>	[REDACTED]	Veh# 1 Injured
	Operator>	[REDACTED]	Veh# 1 Injured
	Witness>	[REDACTED]	
16-158-AC	<u>Officer</u> [REDACTED]	<u>State Rpt/Acc. Date & Time</u> No 03/02/2016 0647	<u>Location / Street Names</u> FALMOUTH RD RTE 28 @ SANDALWOOD DR
	Vehicle Owner>	[REDACTED]	Veh# 1
	Operator>	[REDACTED]	Veh# 1
	Operator>	[REDACTED]	Veh# 2
	Vehicle Owner>	[REDACTED]	Veh# 2
16-185-AC	<u>Officer</u> [REDACTED]	<u>State Rpt/Acc. Date & Time</u> No 03/15/2016 1156	<u>Location / Street Names</u> FALMOUTH RD RTE 28 @ SANTUIT-NEWTOWN RD
	Vehicle Owner>	[REDACTED]	Veh# 1
	Operator>	[REDACTED]	Veh# 1
	Operator>	[REDACTED]	Veh# 2
	Vehicle Owner>	[REDACTED]	Veh# 2
16-197-AC	<u>Officer</u> [REDACTED]	<u>State Rpt/Acc. Date & Time</u> No 03/21/2016 0550	<u>Location / Street Names</u> FALMOUTH RD RTE 28
	Vehicle Owner>	[REDACTED]	Veh# 1
	Operator>	[REDACTED]	Veh# 1 41681 FALMOUTH RD
16-258-AC	<u>Officer</u> [REDACTED]	<u>State Rpt/Acc. Date & Time</u> No 04/11/2016 1128	<u>Location / Street Names</u> FALMOUTH RD RTE 28 @ SANDALWOOD DR
	Operator>	[REDACTED]	Veh# 1 Injured
	Vehicle Owner>	[REDACTED]	Veh# 1
	Operator>	[REDACTED]	Veh# 2 Injured
	Vehicle Owner>	[REDACTED]	Veh# 2
	Operator>	[REDACTED]	Veh# 3
	Vehicle Owner>	[REDACTED]	Veh# 3

Accident Status Report

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From: 05/01/2013 Thru: 05/01/2016

05/16/2016

16-308-AC

Officer [REDACTED]
State Rpt/Acc. Date & Time
No 04/27/2016 0844
Vehicle Owner> [REDACTED]
Operator> [REDACTED]
Vehicle Owner> [REDACTED]
Operator> [REDACTED]

Location / Street Names
FALMOUTH RD RTE 28 @ MAIN ST
Veh# 1
Veh# 1
Veh# 2
Veh# 2

16-315-AC

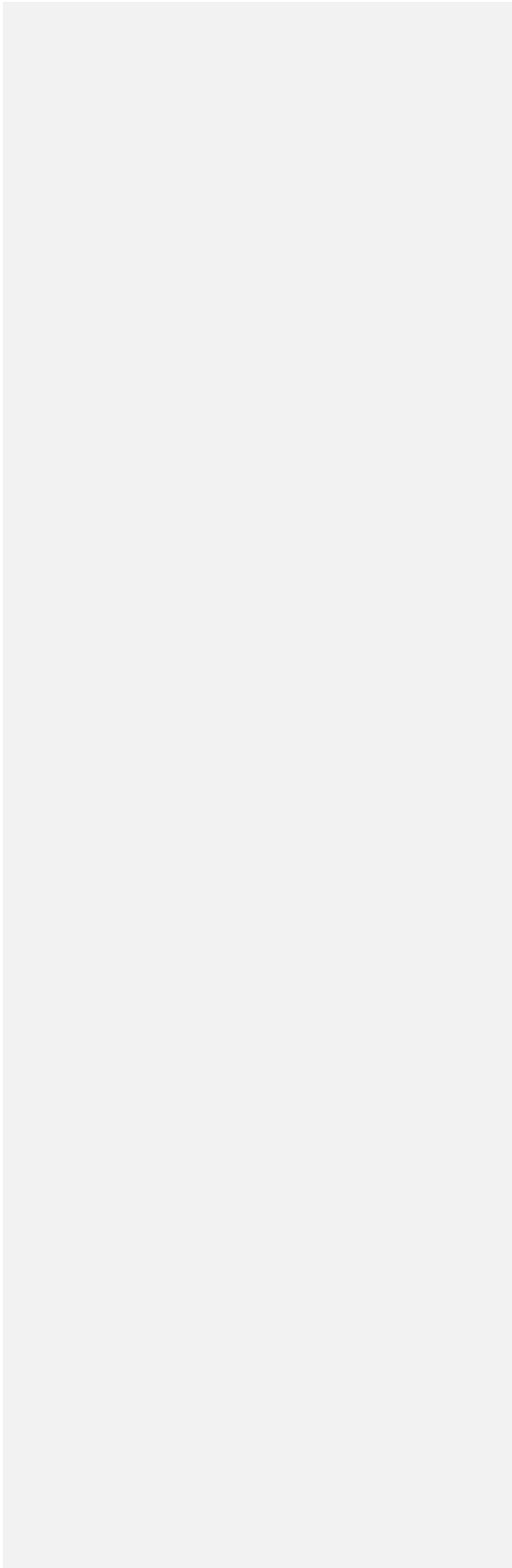
Officer [REDACTED]
State Rpt/Acc. Date & Time
No 04/30/2016 1001
Vehicle Owner> [REDACTED]
Operator> [REDACTED]
Vehicle Owner> [REDACTED]
Vehicle Owner> [REDACTED]
Operator> [REDACTED]

Location / Street Names
FALMOUTH RD RTE 28
Veh# 1
Veh# 1
Veh# 2
Veh# 2
Veh# 3
Veh# 3

4550 Falmouth Pk.

State Reports Required: 0
State Reports Not Required: 153

APPENDIX B: JUNE 22, 2016 PUBLIC MEETING NOTES AND PRESENTATION





CAPE COD
COMMISSION

MEETING SUMMARY

ROUTE 28 COTUIT CORRIDOR STUDY

COMMUNITY LISTENING SESSION

Wednesday, June 22, 2016, 6:00 pm - 8:00 pm
Cotuit Freedom Hall, 976 Main Street, Cotuit



ATTENDEES

- Steven Tupper, Cape Cod Commission
- Chloe Schaefer, Cape Cod Commission
- Glenn Cannon, Cape Cod Commission
- Lev Malakhoff, Cape Cod Commission
- Sharon Rooney, Cape Cod Commission
- Amanda Ruggiero, Town of Barnstable
- Clay Schofield, Town of Barnstable
- Clyde Takala
- Sheila Dishman
- Jim Keating
- Paula Keating
- Linda A. Butzke
- Beatrice E. White
- Elizabeth Savoia
- Laurie Hayes
- Steve Hayes
- Peter Brawl
- Teresa Carter
- John Bafaro
- Ellen Kiely
- Rick Kiely
- Jim Cahill
- Sally Cahill
- Rose Madels
- Robert Hayden
- Donna Agnew
- Randy Agnew
- Timothy Kochan
- Stephanie Tobey Roderick
- Frances S. Parks
- Penny LeVerl
- Ralph Baker
- Patricia Hall
- Patricia Guido
- Connie Brackett
- Ellen Barnaby
- Vanessa Tobey Meddes
- Pam Boden
- Jim Dannhauser
- Rob Miceli
- Rene M. Poyant
- Philip Maker
- Candace Laakso
- Greg Laakso
- Clyde Walkup, III
- Gail Alberdini
- Tina Lehare
- Rich Boden
- Anthony Moore
- Maria Sheppard
- Karen Mullaly Sweeney
- Jane Miceli
- Jackie Mastro

INTRODUCTION

Steven Tupper introduced the project team and reviewed the meeting's agenda (see page 6).

PROJECT OVERVIEW AND EXISTING CONDITIONS PRESENTATION

Steven Tupper gave a presentation on the goals of the project, as well as the existing conditions of the corridor (see pages 7-14).

MAP VISIONING EXERCISE

The visioning exercise began with a brief group brainstorm of what stakeholders liked about the area. Attendees then split into groups to record on maps the strengths of the corridor, the issues they saw with the area, any suggestions for the corridor, and any other comments they had. These comments are summarized below, as well as in the maps on pages 3 and 5.

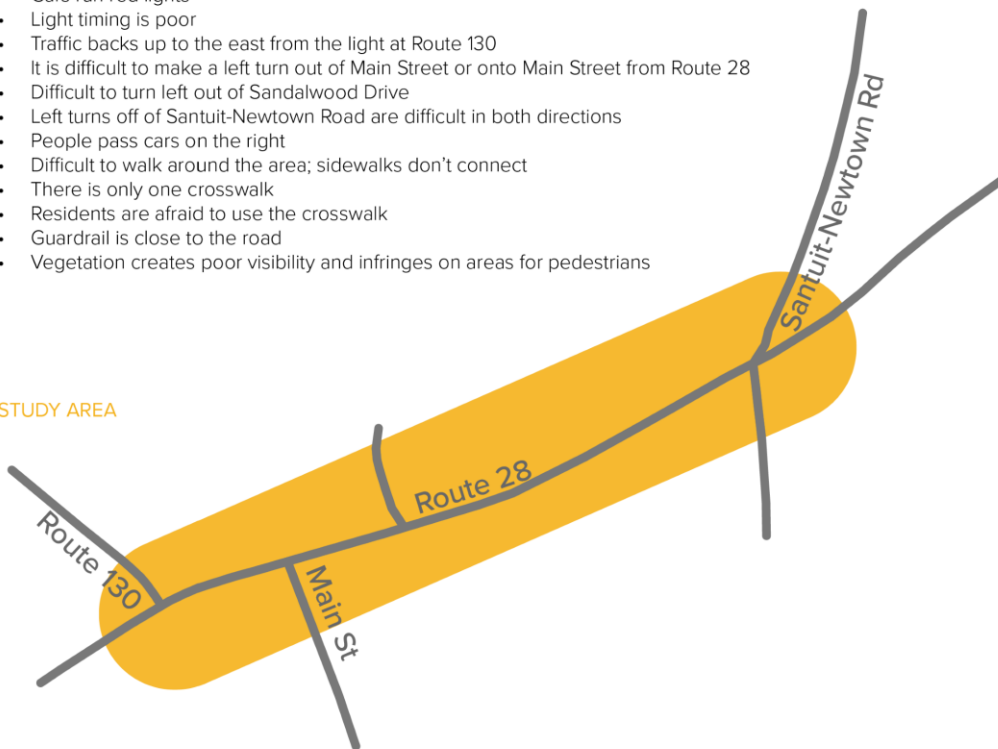
STRENGTHS

- The Village of Santuit is a tight knit community
- Small town feeling
- Historic feeling and historic buildings
- Cahoon Museum of American Art
- This section of Route 28 feels different than the rest; is a nice break
- There are things to do within walking distance, although not very safe to walk
- Sidewalks and crosswalks are nice where they exist
- Unique local shops
- Nearby recreational opportunities such as Lovells Pond
- This portion retains some tree canopy

ISSUES

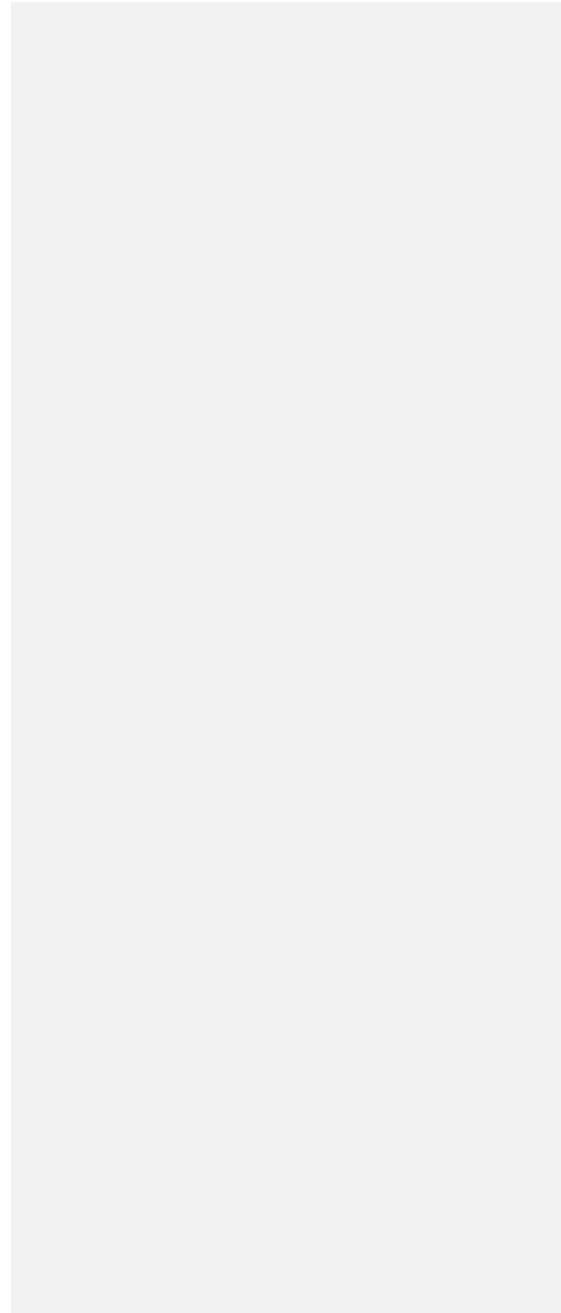
- Heavy traffic
- Cars speed along the corridor
- Blind curves and corner
- Cars run red lights
- Light timing is poor
- Traffic backs up to the east from the light at Route 130
- It is difficult to make a left turn out of Main Street or onto Main Street from Route 28
- Difficult to turn left out of Sandalwood Drive
- Left turns off of Santuit-Newtown Road are difficult in both directions
- People pass cars on the right
- Difficult to walk around the area; sidewalks don't connect
- There is only one crosswalk
- Residents are afraid to use the crosswalk
- Guardrail is close to the road
- Vegetation creates poor visibility and infringes on areas for pedestrians

STUDY AREA



ISSUES





SUGGESTIONS

- Synchronize or better time the lights
- Have a camera that records people who run the red lights
- Prohibit left turns onto and out of Main Street
- Create a left turn lane on Route 28
- Have a police officer at the Main Street and Route 28 intersection after baseball games
- Shift the intersection of Route 130 and Route 28 to the west
- Cut back vegetation to provide space for pedestrians and increase visibility
- Put bikes and pedestrians behind the guardrail
- Add a traffic circle at Route 130 and/or at Santuit-Newtown Road
- Add a light at Santuit-Newtown Road
- Lower the speed limit through the corridor
- Create a historic district with signage
- Connect the cul de sac of Sandalwood Drive with Route 130
- Add a grass median on Route 28
- Add flashing arrows and speed signs along Santuit-Newtown Road
- Remove distracting signs at Santuit-Newtown Road
- Add sidewalk on either side of Route 130
- Add bike path on west side of Route 130 and along Route 28
- Add sidewalk along Route 28
- Add a crosswalk across Route 28 at Main Street
- Repaint the existing crosswalk to brighten it up
- Add blinking lights for the crosswalk
- Open up Old Post Road from Wakeby Road to Route 28 Industry Road
- Create a one way loop down Santuit-Newtown Road and up Main Street
- Make Banfield Drive one way
- Have "Cross the white line, pay the fine" signs along the corridor
- "Don't block the box" signs and markings
- Increase driver awareness of bikers and pedestrians
- Improve driver education
- Put a traffic light at Main Street
- Build another road
- Expand public transit with bus stops along the corridor at the Regatta or just east of Santuit-Newtown Road
- Make trucks use a different route

WRAP UP

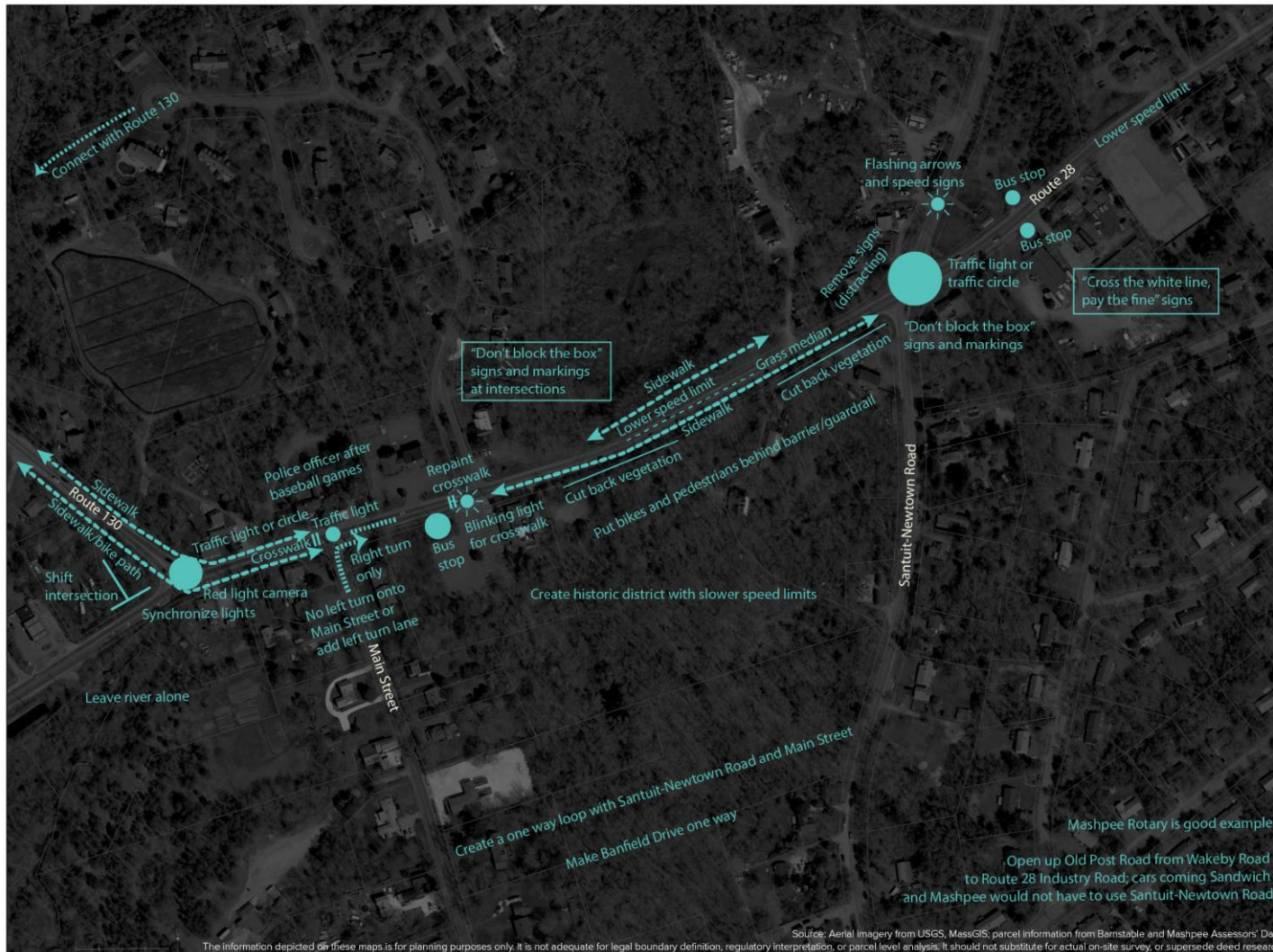
Steven Tupper informed attendees about the next steps of the project. Following the development of some alternative concepts, the next public meeting will be held in September, date and time still to be determined. Attendees who provided their email addresses on the sign in sheet will be notified of project updates via email.

FOR THOSE WHO COULD NOT ATTEND

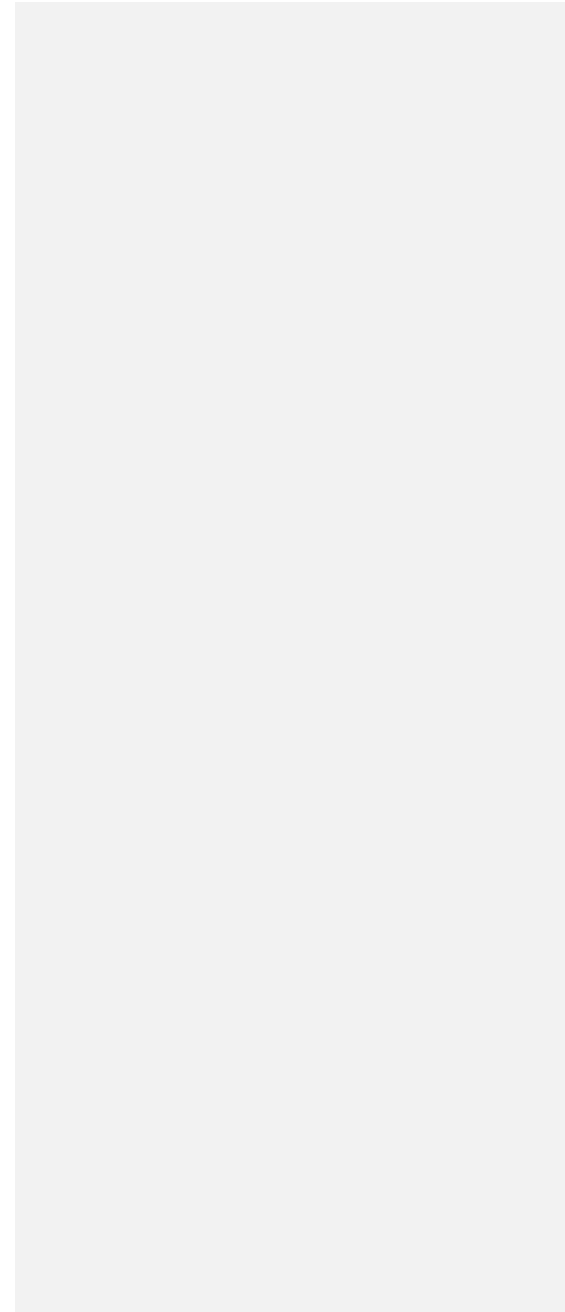
Project materials, including existing conditions maps and the project overview, are available on the Cape Cod Commission project website at: www.capecodcommission.org/route28cotuit

All of the comments heard during this meeting and received throughout the project will be taken into consideration during the concept development and concept refinement.

SUGGESTIONS



Source: Aerial imagery from USGS, MassGIS; parcel information from Barnstable and Mashpee Assessors' Data. 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.



ROUTE 28 COTUIT CORRIDOR STUDY COMMUNITY LISTENING SESSION AGENDA



CAPE COD
COMMISSION

Wednesday, June 22, 2016, 6:00 pm - 8:00 pm
Cotuit Freedom Hall, 976 Main Street, Cotuit



1. Project + existing conditions overview
2. Breakout listening session
 - Work within your group
 - Share your group's ideas with everyone
3. Wrap up and next steps

To learn more about the project visit:
www.capecodcommission.org/route28cotuit

To be added to the project
email list, email Steve Tupper at
stupper@capecodcommission.org

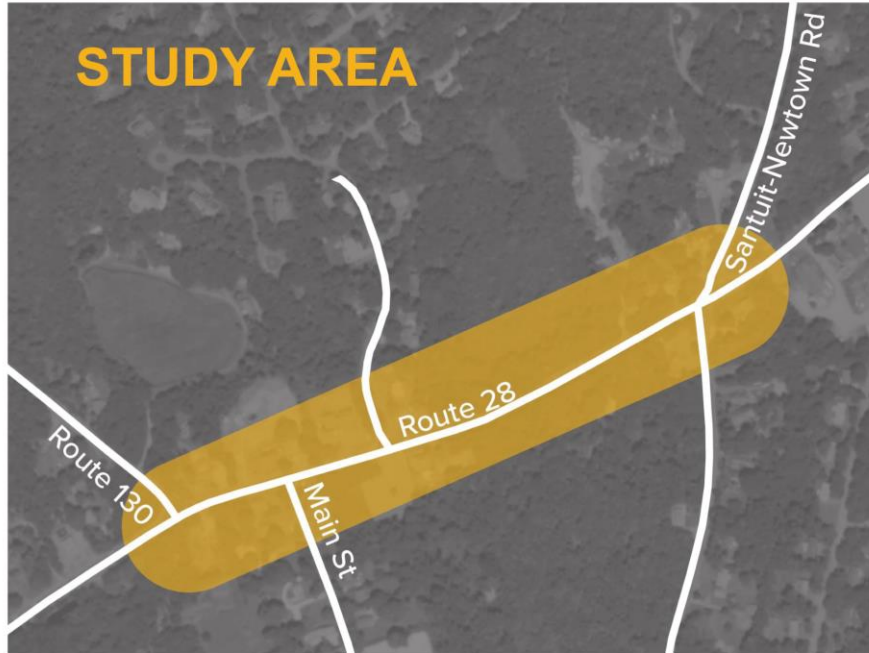


This meeting is accessible to people with disabilities. The Cape Cod Metropolitan Planning Organization (MPO) provides reasonable accommodations and/or language assistance free of charge upon request (including but not limited to interpreters in American Sign Language and languages other than English, assistive listening devices and alternate material formats, such as audio tapes, Braille and large print, as available). For accommodations or language assistance please contact the Cape Cod MPO by phone: (508) 362-3828, fax (508) 362-3136, TTY (508) 362-5585 or email frontdesk@capecodcommission.org.

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PRESENTATION





PROJECT OVERVIEW

Develop alternatives that will provide safe and convenient access within the study area for all users of the roadway system including pedestrians, bicyclists, transit users, and motorists.



PROJECT GOALS

Improve Safety



Reduce Congestion



Accommodate All Users



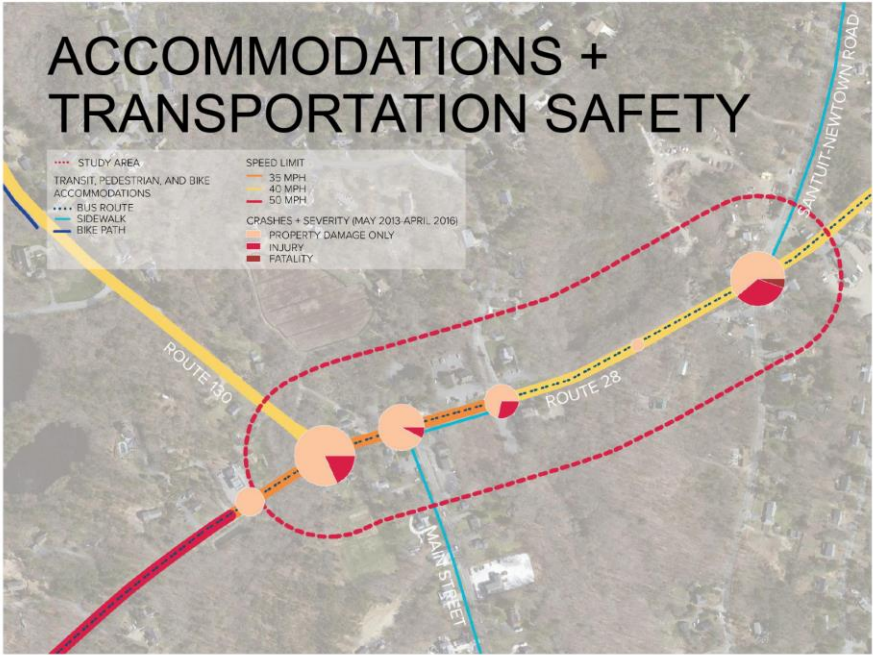
EXISTING CONDITIONS





Cotuit Route 28 Corridor Study: June 22, 2016 Public Meeting Summary





Cotuit Route 28 Corridor Study: June 22, 2016 Public Meeting Summary



VISIONING EXERCISE

- What are the things you **like** in this area?
- What are the **issues** you see?
- What would you like to see **changed**?
- Focus on the **roadway, sidewalks, and paths**
- All thoughts are welcomed

Please sign up on the sign in sheet to be involved with follow-up meetings and be included in the project email list.

www.capecodcommission.org/route28cotuit

NEXT STEPS

- Review and Summarize Input from Today's Meeting
- Concept Development and Analysis
 - July/August 2016
- Public Meeting: Review of Draft Concepts
 - September 2016
- Draft and Final Report
 - Fall 2016

THANK YOU FOR ATTENDING!

For more information:

www.capecodcommission.org/route28cotuit

Steven Tupper

Technical Services Planner

stupper@capecodcommission.org

508.362.3828



APPENDIX C: DISCUSSION OF ELIMINATED ALTERNATIVES

Route 28 at Route 130 eliminated alternatives

- Replacement of the signal with a roundabout: Eliminated due to the impact on historic properties in comparison to the anticipated benefits.
- Moving Main Street to align with Route 130: Eliminated due to the scale of property takings required and impact on historic properties in comparison to the anticipated benefits.
- Bicycle/pedestrian accommodation upgrades: Bicycle/pedestrian accommodation improvements are infeasible without a major reconstruction of the intersection. Bicycle/pedestrian accommodation improvements would be required for and major reconstruction of the intersection.

Route 28 at Main Street eliminated alternatives

- Left turn restrictions: Without a viable alternative for drivers, restrictions would provide no benefit. If a viable alternative existed (ex. signal or roundabout at Santuit-Newtown Road) such restriction could be considered.
- Route 28 westbound left turn lane: Eliminated due to the required property takings required in comparison to the anticipated benefits.
- Install a traffic signal: While the intersection meets signal warrants during the summer months, it is unwarranted during the non-summer months and therefore could not be installed.
- Install a roundabout: Eliminated due to the scale of property takings required in comparison to the anticipated benefits.
- Bicycle/pedestrian accommodation upgrades: Bicycle/pedestrian accommodation improvements are infeasible without a major reconstruction of the intersection. Bicycle/pedestrian accommodation improvements would be required for and major reconstruction of the intersection.

Route 28 at Sandalwood Drive eliminated alternatives

- Back access to Route 130 or Santuit-Newtown Road: No feasible connection could be identified and significant impacts on local roads could be experienced due to cut-through traffic.

- Install a traffic signal: While the intersection meets signal warrants during the summer months, it is unwarranted during the non-summer months and therefore could not be installed.
- Install a roundabout: Eliminated due to the scale of property takings required in comparison to the anticipated benefits.
- Bicycle/pedestrian accommodation upgrades: Bicycle/pedestrian accommodation improvements are infeasible without a major reconstruction of the intersection. Bicycle/pedestrian accommodation improvements would be required for and major reconstruction of the intersection.

Route 28 at Santuit-Newtown Road eliminated alternatives

- Modify intersection geometry: No alternative geometries could be identified that would address the core safety issues at this location.
- Connector road through the property on the northeast corner of the intersection: an additional access point along Route 28 would adversely impact safety.
- Bicycle/pedestrian accommodation upgrades: Bicycle/pedestrian accommodation improvements are infeasible without a major reconstruction of the intersection. Bicycle/pedestrian accommodation improvements would be required for and major reconstruction of the intersection.

Pedestrian accommodations eliminated alternatives •

Bumpouts: No suitable location could be identified.

Other

- Install portable traffic signal west of Sandalwood Drive (see details on the following pages): Eliminated due to the increased congestion impact on Route 28. Additionally, staff did not believe such an installation would be allowed by the Massachusetts Department of Transportation (MassDOT), the owner of this portion of Route 28. The alternative was forwarded on to MassDOT.

- Widen Route 28 to four lanes: insufficient right-of-way and would only provide substantial benefits if extended for an extended portion of Route 28.
- Zoning changes: Beyond the scope of this study.

Cotuit Route 28 from Santuit- Newtown to Route 130

The 'under- \$10,000 Solution

This quick solution is Operational in 30 days

It resolves all safety concerns in addition to resolving all congestion issues

Please Pay Attention !!

- No new traffic controls at intersections
- New materials approximately less than \$10,000
- Only a single existing light is 'cloned'
- One day installation of materials and 'adjusting existing light timing'
- Requires one '60 seconds' additional traffic delay for only east and west through travelers
- Can be operational in 30 days
- Reduces critical response times of AMT/Fire from current 'congestion' at intersections
- No new 'one-way' traffic roads established
- Resolves all 28 / Main Street safety
- Resolves all 28 / Santuit-Newtown Road safety
- No additional congestion in Summer 28 / Main Street
- Far less congestion off-season 28 / Main Street
- No additional congestion in Summer 28 / Santuit-Newtown Road
- Far less congestion off-season 28 / Santuit-Newtown Road

- Resolves all safety and access issues for 28 / Main Street existing and future retail **businesses** and **restaurants**

Less than \$10,000: *'Stress'* Reduced in 30 days - What's not to LOVE ??

How it's done –

- Rent one *portable* traffic light to be positioned west-bound as shown
- Link that 'portable' to a single East-bound light at Rt.28/130 as shown
 - Have them both signal 'RED' at the same time
 - The 'joint 'RED' stay red for a full minute – minimum
 - What has now resulted at Main Street???

All east and all west traffic prior to the RED signals *continues to flow* !!

- Traffic waiting at Main St see the last vehicle each pass: east and west
 -
 - Suddenly Rt. 28 is *'empty'* in front of Main St and its businesses.
 - All Main Street vehicles can now move on to an 'empty' Rt. 28
- They can go – *stress-free* east-west or straight across to The Cahoon as long as the two 'cloned' red signals hold all Rte. 28 east and west traffic.(one minute)

- All business and restaurant patrons between the two 'Red Clones' now can enter Rt. 28 - with *less stress*- along with the Main St vehicles.
 - Less than \$10,000: *'Stress'* Reduced in 30 days - What's not to LOVE ??

It also can resolve (no additional cost or equipment) all 28 / Santuit-Newtown Road safety and congestion issues

How ?? --

The 'slug' of largely vacant east-bound road, created for the top of Main St 'business district' - continues to move east – that 'slug' of empty Rte. 28 – arrives at and resolves most 28 / Santuit-Newtown Road safety and congestion by 'gifting' a very low, or no-traffic 'gap' east-bound.

If also 'coordinated' with the Putnam Ave/Stop&Shop light – a 'slug of very low traffic gap' west-bound could arrive at the same time - at the 28 / Santuit-Newtown Road intersection; then waiting vehicles can go – *stress-free* - east-west or straight across Rt. 28 from the 28 / Santuit-Newtown Road intersection.

- Less than \$10,000: *'Stress'* Reduced in 30 days - *What's not to LOVE ??*



The section of Route 28 from Santuit-Newton to Route 130 has been identified as a priority for investigation. This section of road is often congested, particularly in the summer months. The corridor includes three busy intersections on Route 28 including at Santuit-Newton Road, Main Street and Route 130 that are often functionally deficient. Several retail businesses and restaurants also contribute to traffic congestion. Along this corridor, congestion is an inconvenient, but understandable, slowing of inter-regional access between the towns of Falmouth and Mashpee to Barnstable, Sandwich and other towns on the eastern portions of Cape Cod. Residents and visitors traveling this

corridor may be connecting to various destinations including Hyannis, Mashpee Commons, Main Street Cotuit, or the limited access highway, Route 6.

Of key concern is accommodation for all Cotuit top of Main Street and Santuit- Newtown road users including motorists, pedestrians, area business patrons, bicyclists, and transit users. This is also a corridor for non-motorized users looking to access their jobs and retail destinations from their neighborhoods.

Despite there being significant concerns with this corridor **there has been limited study to identify solutions**. Any potential improvements along this corridor must be balanced with impacts on the environment and neighboring properties.

The Cape Cod Commission, under the 2015-2016 Unified Planning Work Program, will conduct a transportation planning study for the study area with the following study goal:

Develop alternatives submitted by area stake-holders that will provide safe and convenient access within the study area for all users of the roadway system including pedestrians, business patrons, bicyclists, and motorists. **Alternatives invited that can be easily 'tested'** along this corridor for a substantial period of time (six months) with traffic data accumulation to be reported to Area Stakeholders.

This solution was originally submitted in 2011 to the Cotuit civic association.

cotuitcivicasociation@gmail.com

Respectfully re-submitted today **October 27, 2016** by:

Michael & Gisa Belanger
P.O. Box 492
43 Poponessett Road
Cotuit, MA 02635

APPENDIX D: NOVEMBER 2, 2016 PUBLIC MEETING NOTES AND PRESENTATION

MEETING SUMMARY

ROUTE 28 COTUIT CORRIDOR STUDY

PUBLIC MEETING



CAPE COD
COMMISSION

Wednesday, November 2, 2016, 6:00 pm - 8:00 pm
Cotuit Freedom Hall, 976 Main Street, Cotuit



ATTENDEES

- Steven Tupper, Cape Cod Commission
- Glenn Cannon, Cape Cod Commission
- Lev Malakhoff, Cape Cod Commission
- Sharon Rooney, Cape Cod Commission
- Chloe Schaefer, Cape Cod Commission
- Roger Parsons, Town of Barnstable
- Clay Schofield, Town of Barnstable
- Timothy Kochan, MassDOT
- Larry Rhude
- Maria Sheppard
- Len Gersin
- Mel Gersin
- Sally Cahill
- Sheila Dishman
- Sandra Aupperlee
- Laurie Hayes
- S Hayes
- Linda A. Butzke
- Jim Dannhauser
- Stacey Schakel
- Constance Brackett
- John Silva
- Jessica Rapp Grassetti
- Rick Barry
- Fran Parks
- Dave Giguere
- Ruth Ann Kane
- Diane Rhude
- Teresa Carter
- Karen Young
- Kirk Young
- Joanna Piantes
- Claire McCann
- Rose Medeiros
- Mark Lancaster
- Ellen Barnaby
- Alyce Celona
- Jennifer Butler
- Roger Baker
- Steven Koglin



Cotuit Route 28 Corridor Study: November 2, 2016 Public Meeting Summary 1

PRESENTATION

Steven Tupper reviewed the meeting's agenda and provided a brief overview of the project. He presented a summary of the issues and suggestions provided at the June public meeting (see pages 17-18 of this summary) and then walked through the potential concepts for each intersection, as well as some corridor-wide improvement alternatives (see pages 19-36 of this summary).

Route 28 at Route 130

- Retiming the signal
- Widening the intersection
- Reconfiguring the intersection

Route 28 at Santuit-Newton Road

- Traffic signal with one through lane on Route 28
- Traffic signal with two through lanes on Route 28
- Roundabout with one through lane on Route 28
- Roundabout with two through lanes on Route 28

Route 28 at Main Street and Sandalwood Drive

- Don't block the box markings

Pedestrian and Bike Accommodation Concepts

- Closing sidewalk gaps
- Sidewalk on both sides of Route 28
- Widening shoulders for bikes
- Alternate bike route for long distance trips

Transit Concepts

- Bus stop with sign only
- Bus stop with shelter or bench
- Bus pull out

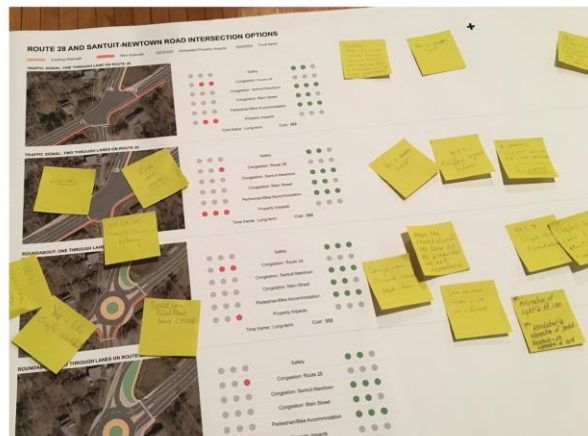
Other Concepts

- Road Safety Audit
- Improved stormwater management and treatment
- Improved vegetation management
- Speed management on Route 28



BREAKOUT GROUPS

Following the overview of the alternative concepts, attendees provided comments and feedback on each concept by visiting five tables throughout the room. Each table had a different intersection or issue area for the corridor broken out as follows: Route 130 at Route 28, Santuit-Newton at Route 28, Main Street and Sandalwood Drive at Route 28, Pedestrian and Bike Accommodations, and Transit Accommodations. At each table, attendees wrote down feedback and comments for each concept and put their feedback in a + or - column to show whether they generally supported the idea or not. Attendees circulated to each table they were interested in. Following is a summary of the comments for each concept from the tables.



ROUTE 28 AT ROUTE 130

Retiming the Traffic Signal

There was general support for this concept

- + This seems obvious
- + Do this anyways
- + Retiming!! Try it before bigger investments with don't block the box at Main Street
- + Retiming of 130 lights helps



ANTICIPATED IMPACTS



Time frame : Short-term

Cost : \$

Widen the Route 130 Approach

No comments provided



ANTICIPATED IMPACTS



Time frame : Long-term

Cost : \$\$

Relocate/realign intersection to the West

- + Sounds good
- + Yes
- + Yes to new configuration
- + I like this option
- + I like this option
- + Best option
- + Best option
- + Best option!! Love it
- + I love this option

- + Yes! Yes! With one lane roundabout
- + Yes – relocation of light @ Rt. 130
- + This is a great idea and protects all the antique houses on Rte 28-130
- + Make Santuit River a feature
- + I love Route 130 Reroute
- The river need to be protected from drainage pollutants
- How would this traffic flow?
- Concern about right of way



ANTICIPATED IMPACTS



ROUTE 28 AT MAIN STREET

"Don't Block the Box" Markings

General support for this concept

- + Need way to enforce don't block the box
- Really who's gonna stop cars from sitting in the box



ANTICIPATED IMPACTS



Other Comments

- Rethink the light at Main St. It is needed. People do not turn left because they can't.
- Light at the end of Main St – synced with 130 light

ROUTE 28 AT SANDALWOOD DRIVE

"Don't Block the Box" Markings

General support for this concept

- + I like the idea of don't block the box



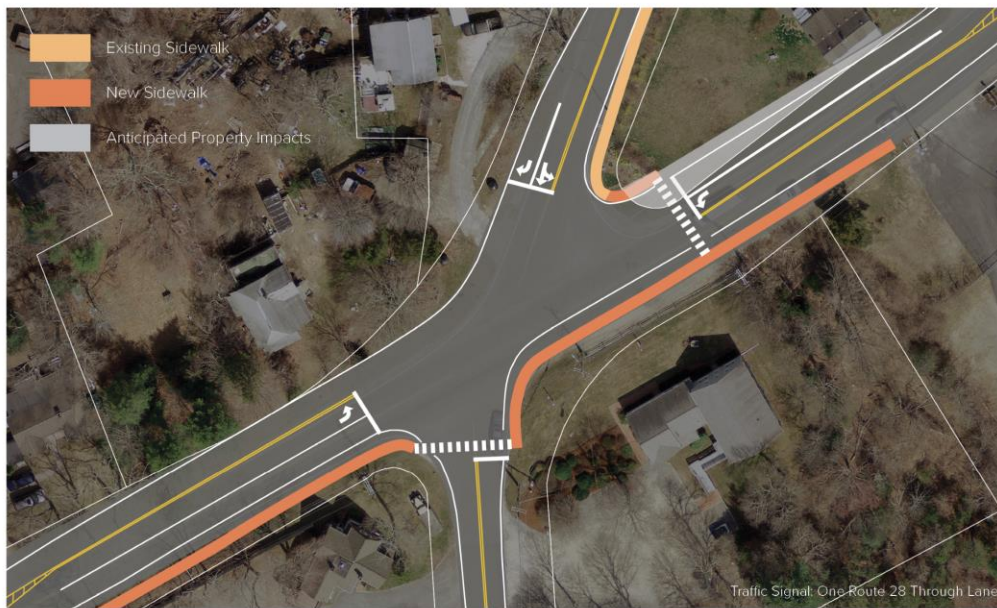
ANTICIPATED IMPACTS



ROUTE 28 AT SANTUIT-NEWTOWN ROAD

Traffic Signal: One Route 28 through lane

- + Yes to traffic light
- + Yes to traffic light 1 lane
- Need sidewalk on Santuit-Newtown up to Wakeby
- Suggestion: traffic signal at 28 & Newtown. Left turn land at all 4 streets. Reroute Main St. south of 28. No egress or right only out of Main St.



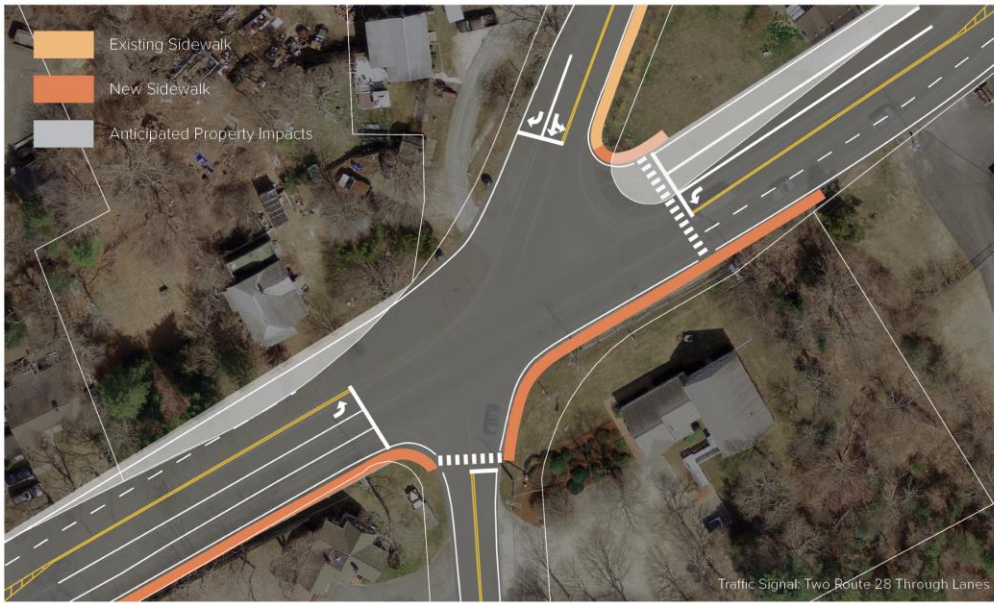
ANTICIPATED IMPACTS



Time frame : Long-term Cost : \$\$\$

Traffic Signal: Two Route 28 through lane

- + Like this
- + Like this one
- + Yes to traffic lights
- + A traffic light would be awesome – 2 lanes



ANTICIPATED IMPACTS



Time frame : Long-term Cost : \$\$\$

Roundabout: One Route 28 through lane

- + We go for single lane rotary
- + Single lane roundabout best option
- + Yes! w/ purchase of property at Rte 28/130
- + Yes – like single lane roundabout
- + Single lane roundabout best idea
- + Have the roundabout one lane so properties are not involved
- + Yes to single lane roundabout
- + Prefer single lane roundabout w/ turning lane
- + Need to slow traffic at Santuit
- + Yes - Roundabout @ intersection of Santuit-Newtown and 28 regardless of cost
 - Would slow traffic down. Increase congestion?
- No roundabout
- Roundabout causes more accidents
- Way too much traffic on Route 28 for a rotary



ANTICIPATED IMPACTS



Time frame : Long-term Cost : \$\$\$

Roundabout: Two Route 28 through lanes

No comments provided



ANTICIPATED IMPACTS



Time frame : Long-term Cost : \$\$\$

Other comments

Suggestion: traffic signal at 28 & Newtown. Left turn lane at all 4 streets. Reroute Main St. south of 28. No egress or right only out of Main St.

PEDESTRIAN CONCEPTS

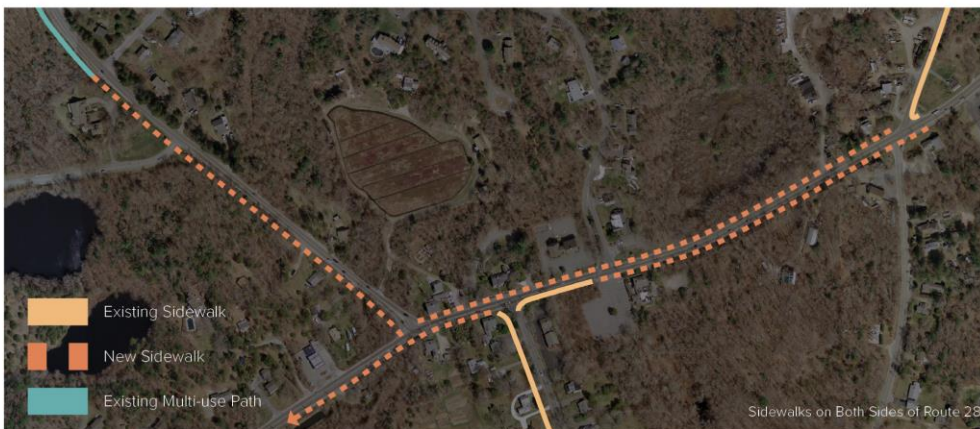
Close sidewalk gaps

- + Need sidewalk to connect bike path to Mashpee
- + Sidewalks on 1 side only
- + Connect the bike paths – continuous
- + Sidewalk would improve accessibility for pedestrians. Not sure both sides are needed.



Sidewalks on both sides of Route 28 for entire corridor

- + Good
- + Both sides
- + Add a sidewalk to both sides of Route 28 – wide sidewalk
- No to both sides
- Sidewalk would improve accessibility for pedestrians. Not sure both sides are needed.
- Concern with sidewalk on both sides with risk of pedestrians cross 28 mid-block



BICYCLIST CONCEPTS

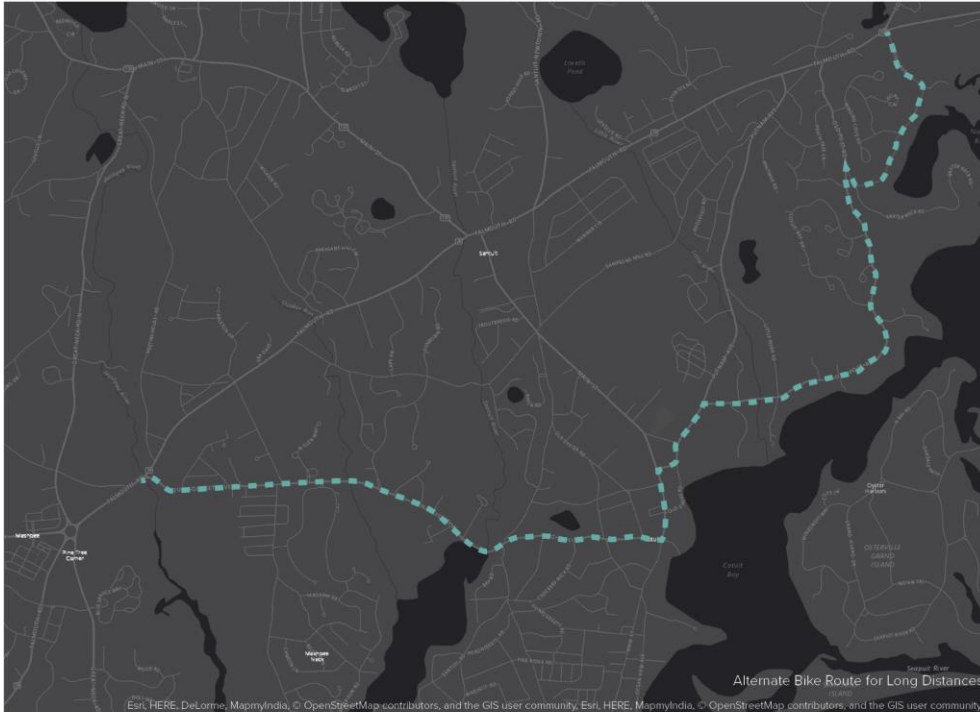
Expanded shoulders where possible for bicycle accommodation

- + Like 5' wide bike path
- + I like the wider bike path
- + Support
- Maybe
- Too dangerous at this point



Alternate bike routes

- + Nice
- + Support
- Existing South Coast Bike Route



TRANSIT CONCEPTS

Bus stop with signage

- + I like the bus stop with signage
- + Like bus stop idea at Cahoon Museum
- + Bus stop needed!

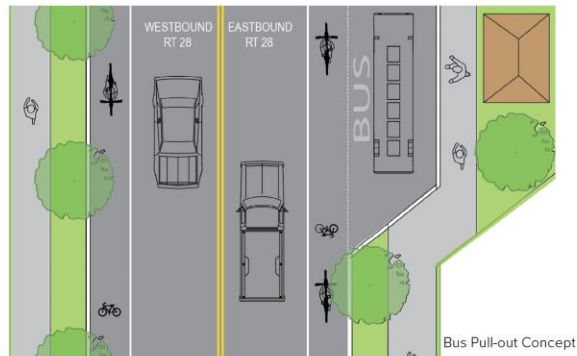


Bus bench/shelter

- + Good!
- + Good! – ditto
- + Want covered bus stop near Sandalwood

Bus pull-outs

- Better in village
- Hard to get property
- I don't like buss pull-off. Bus will have to pull back on into traffic. As it stands the bus stops for only 10-15 seconds & has no major impact on traffic flow



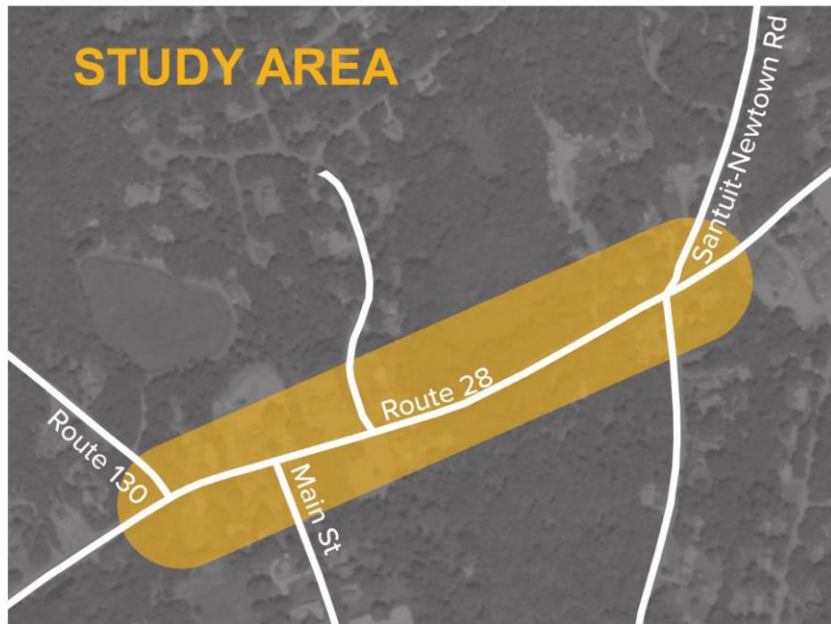
OTHER GENERAL COMMENTS

- Think about timing at Putnam Ave. signal
- Speed enforcement – highlight the speed change with more visible signs/lights on signs

MEETING WRAP UP

Following the breakout session, staff members provided the audience with a brief summary of the comments and discussion at each table. Steven Tupper summarized the next steps on the project and answered questions from the audience. He thanked the audience for their input in the process and noted that thoughts on the project can be submitted until November 18, 2016, when report preparation will begin.





PROJECT OVERVIEW

Develop alternatives that will provide safe and convenient access within the study area for all users of the roadway system including pedestrians, bicyclists, transit users, and motorists.



PROJECT GOALS

Improve Safety



Reduce Congestion



Accommodate All Users

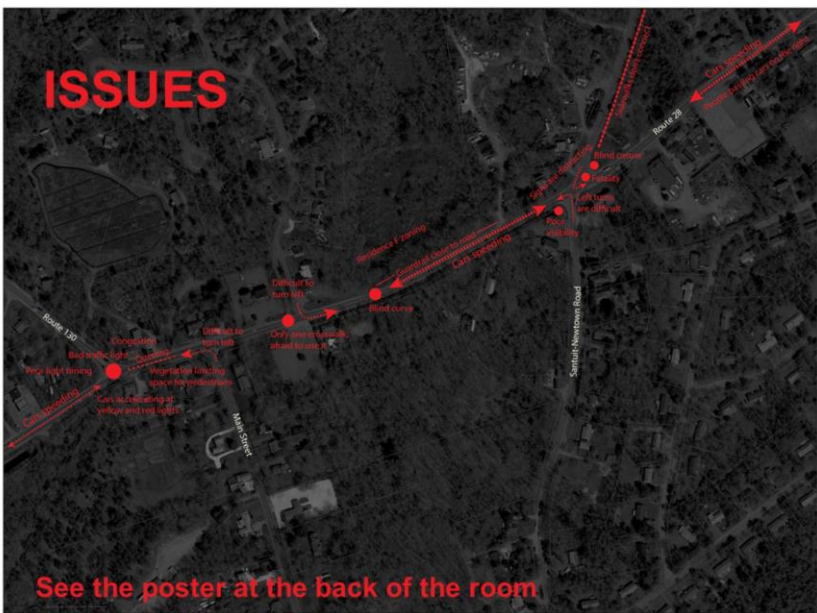
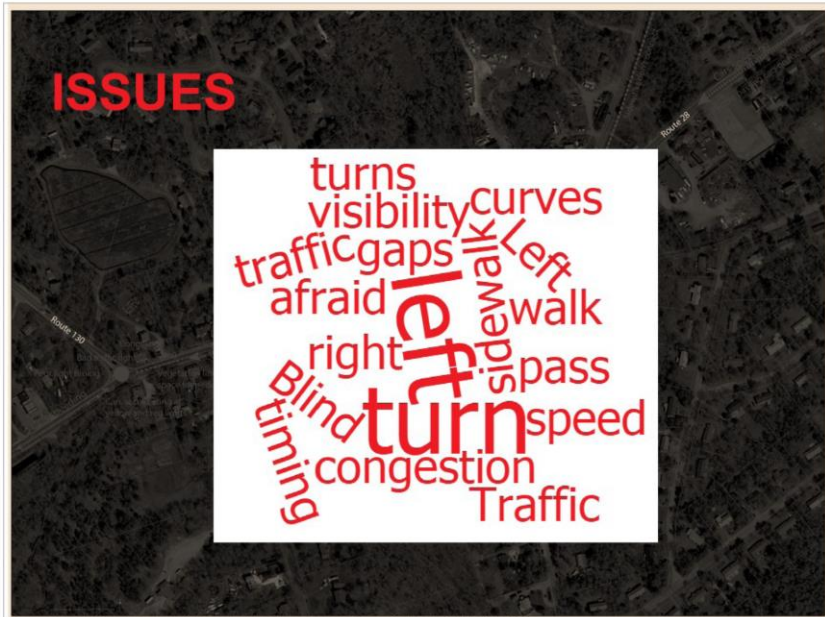


LISTENING SESSION SUMMARY



Cotuit Route 28 Corridor Study: November 2, 2016 Public Meeting Summary

15



ALTERNATIVES REVIEW

- Intersection Concepts
 - Route 130
 - Main Street
 - Sandalwood Drive
 - Santuit-Newtown Road
- Corridor Pedestrian/Bicyclist/Transit Concepts
- Other Concepts

ROUTE 130 INTERSECTION



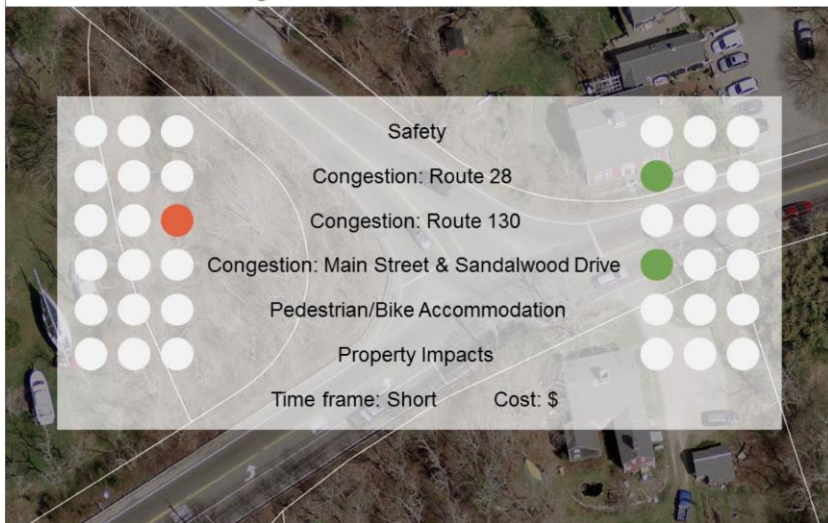
ROUTE 130 INTERSECTION

Retime Traffic Signal



ROUTE 130 INTERSECTION

Retime Traffic Signal



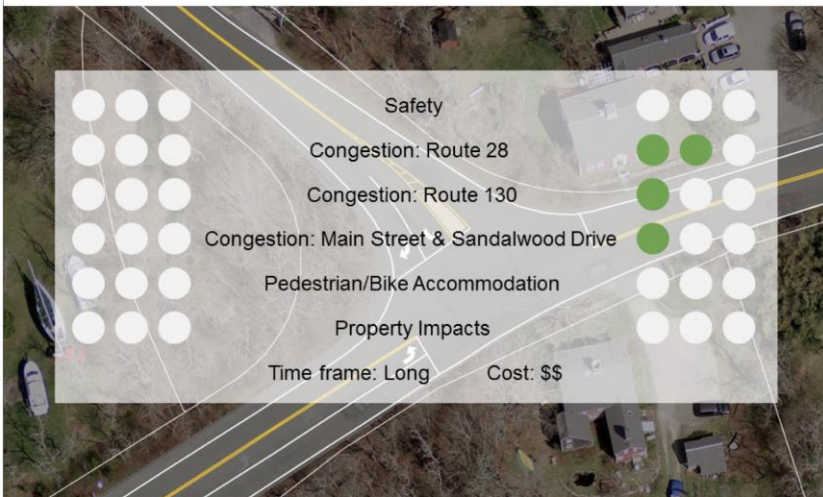
ROUTE 130 INTERSECTION

Widen Route 130 Approach



ROUTE 130 INTERSECTION

Widen Route 130 Approach



ROUTE 130 INTERSECTION

Relocate/realign intersection to the west

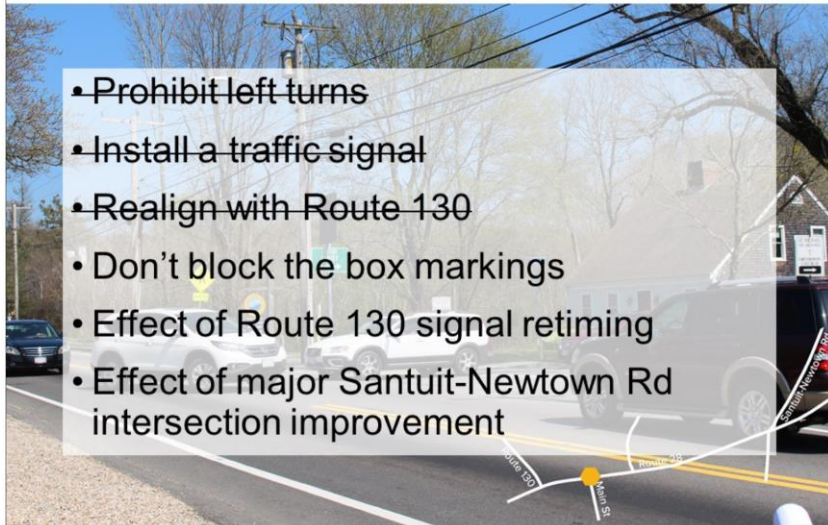


ROUTE 130 INTERSECTION

Relocate/realign intersection to the west



MAIN STREET INTERSECTION



MAIN STREET INTERSECTION

Don't block the box markings



MAIN STREET INTERSECTION

Don't block the box markings



MAIN STREET INTERSECTION

Improvements to Route 130 Intersection

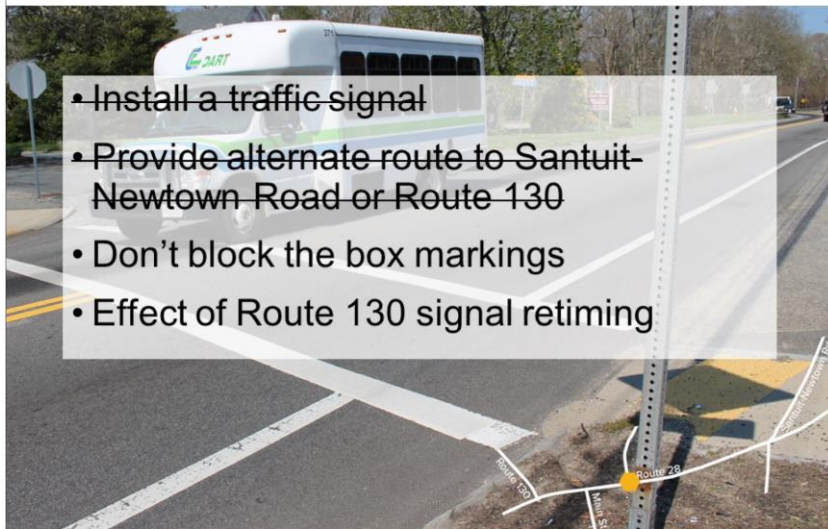


MAIN STREET INTERSECTION

Improvements to Santuit-Newton Intersection



SANDALWOOD DRIVE INTERSECTION



SANDALWOOD DRIVE INTERSECTION

Don't block the box markings



SANDALWOOD DRIVE INTERSECTION

Don't block the box markings

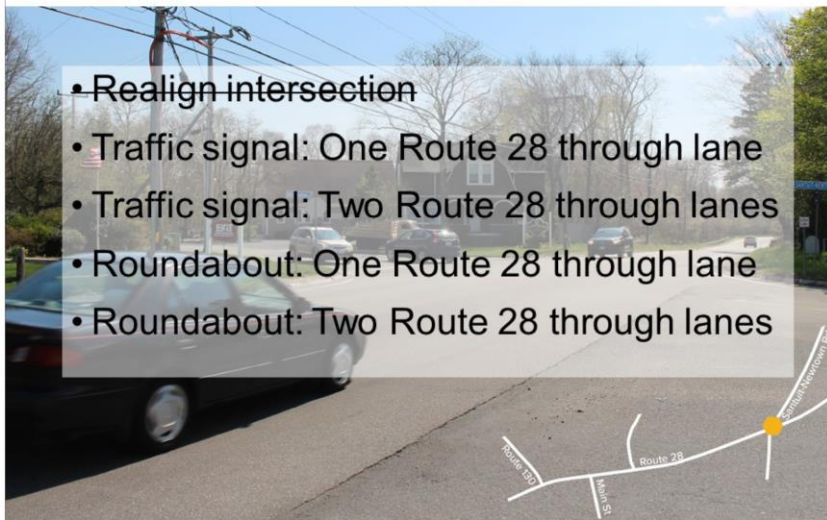


SANDALWOOD DRIVE INTERSECTION

Effect of Route 130 improvements

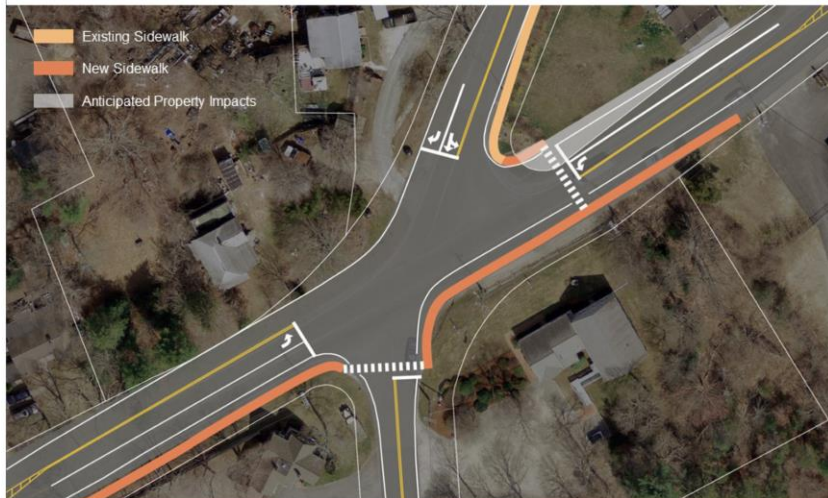


SANTUIT-NEWTOWN ROAD INTERSECTION



SANTUIT-NEWTOWN ROAD INTERSECTION

Traffic Signal: One Route 28 through lane



SANTUIT-NEWTOWN ROAD INTERSECTION

Traffic Signal: One Route 28 through lane



SANTUIT-NEWTOWN ROAD INTERSECTION

Traffic Signal: Two Route 28 through lanes



SANTUIT-NEWTOWN ROAD INTERSECTION

Traffic Signal: Two Route 28 through lanes



SANTUIT-NEWTOWN ROAD INTERSECTION

Roundabout: One Route 28 through lane



SANTUIT-NEWTOWN ROAD INTERSECTION

Roundabout: One Route 28 through lane



SANTUIT-NEWTOWN ROAD INTERSECTION

Roundabout: Two Route 28 through lanes



SANTUIT-NEWTOWN ROAD INTERSECTION

Roundabout: Two Route 28 through lanes



Pedestrian/Bicyclist/Transit Concepts

- Pedestrian Concepts
 - Closing sidewalk gaps
 - Sidewalks on both sides of Route 28 for entire corridor
- Bicycle Concepts
 - Expanded shoulders where possible for bicycle accommodation
 - Alternate bike routes
- Transit Concepts
 - Bus stop with signage
 - Bus bench/shelter
 - Bus pull-outs

PEDESTRIAN CONCEPT

Closing sidewalk gaps



PEDESTRIAN CONCEPT

Sidewalks on both sides of Route 28 for entire corridor



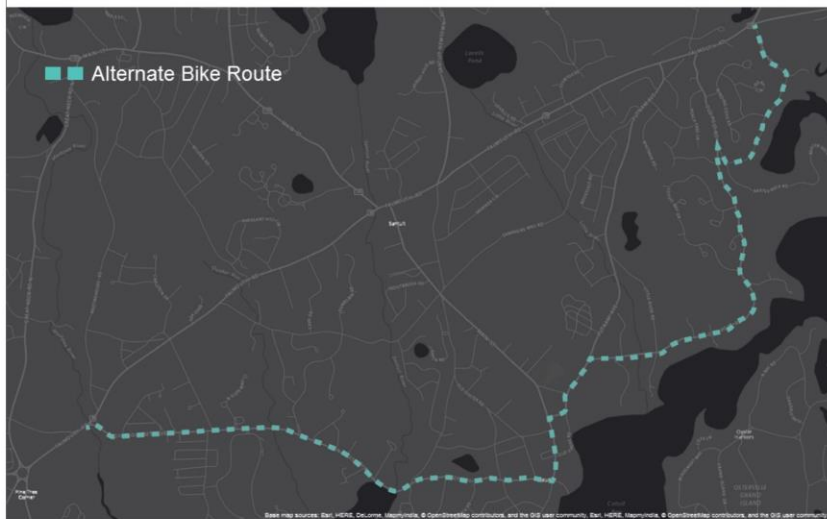
BICYCLIST CONCEPT

Expanded shoulders where possible for bicyclists



BICYCLIST CONCEPT

Alternate bike routes (for long distance trips)



TRANSIT CONCEPT

Bus stop with signage



TRANSIT CONCEPT

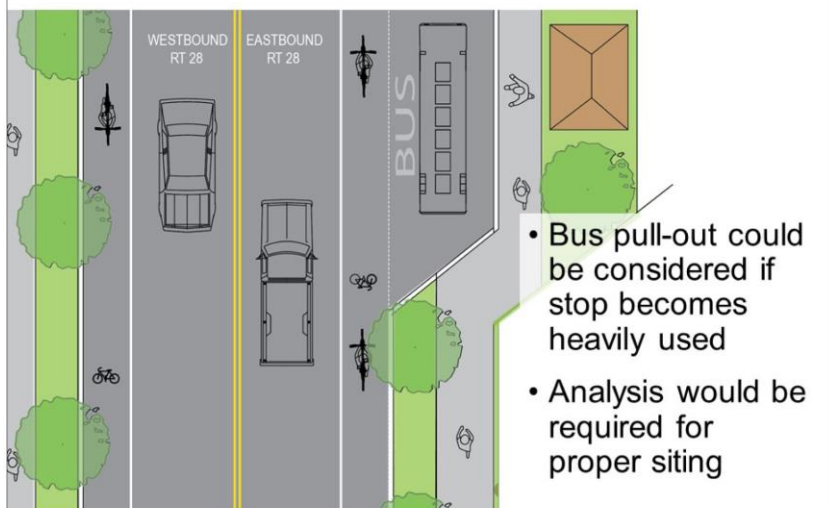
Bus bench/shelter



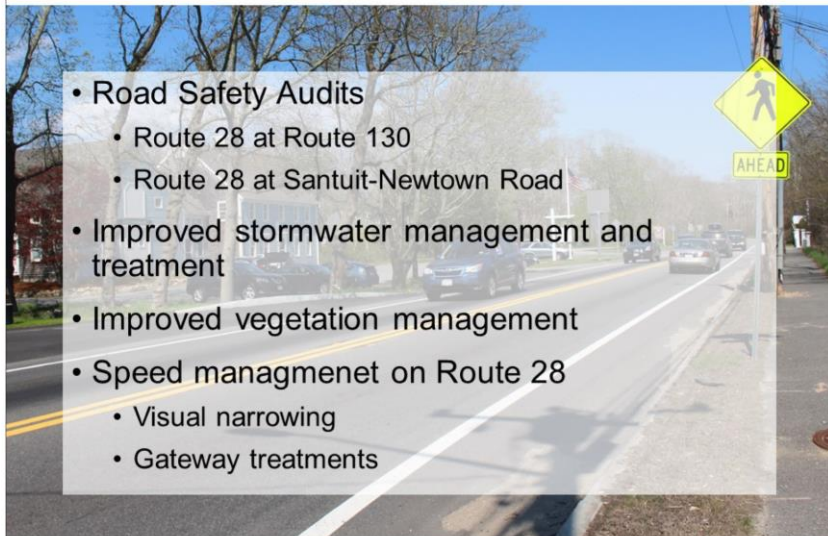
- Amenities would make the bus stop more pleasing
- Standard design could be used or enhanced design could reflect local character

TRANSIT CONCEPT

Bus pull-out



OTHER CONCEPTS



ALTERNATIVES EXERCISE

- Which concepts do you **like** and why?
- Which concepts do you **dislike** and why?
- How do feel each concept fits in the **cultural and historical context** of the area?
- Are there any concepts you like that are **not shown**?
- What is your **priority** for the area?

Write on the boards around the room or talk to a staff member.

NEXT STEPS

- Revise concepts based on input from today's meeting and comments received by November 18th
 - November 2016
- Finalize report (post online)
 - December 2016
- Work with the Town of Barnstable and Massachusetts Department of Transportation (MassDOT) to:
 - Implement short-term recommendations (1-2 years)
 - Plan for long-term changes (5+ years) – would involve additional public input

THANK YOU FOR ATTENDING!

For more information:

www.capecodcommission.org/route28cotuit

Steven Tupper
Transportation Planner

stupper@capecodcommission.org

508.362.3828

APPENDIX E: STORMWATER DOCUMENTATION

WATER THREAT LEVEL

HIGH

WATERSHEDS: UPPER
CAPE
Popponeset Bay

The Problem

The Massachusetts Estuaries Program (MEP) technical report (available at www.oceanscience.net/estuaries/) indicates the Popponeset Bay system exceeds its critical threshold for nitrogen, resulting in impaired water quality. Popponeset Bay is one of the first to have received a MEP technical report. A nutrient Total Maximum Daily Load (TMDL) has been established by MassDEP and US EPA.

MEP TECHNICAL REPORT STATUS: Final

TMDL STATUS: Final TMDL

TOTAL WASTEWATER FLOW: 456 MGY (million gal per year)

⌋ Treated WW Flow: 61 MGY

⌋ Septic Flow: 395 MGY

UNATTENUATED TOTAL NITROGEN LOAD (MEP): 41,628 kg/Y (kilograms per year)

ATTENUATED TOTAL NITROGEN LOAD (MEP): 27,611 kg/Y

SOURCES OF CONTROLLABLE NITROGEN (MEP):

⌋ 82% Septic Systems

⌋ 10% Lawn Fertilizer

⌋ 7% Stormwater From Impervious Surfaces

⌋ 1% Wastewater Treatment Facilities

CONTRIBUTING TOWNS

**MASHPEE
SANDWICH
BARNSTABLE**

DISCUSSION: A portion of the land area in Sandwich and Mashpee is not in the control of the town as it is part of Joint Base Cape Cod (JBCC), which is served by a wastewater treatment facility and discharged outside of the watershed.

THE MEP RESTORATION SCENARIO

WATERSHED TOTAL NITROGEN REDUCTION TARGET: 45%

WATERSHED SEPTIC REDUCTION TARGET: 61%
(The scenario represents the aggregated subembayment percent removal targets from the MEP technical report)

POPPONESSET BAY ESTUARY

EMBAYMENT AREA: 720 acres

EMBAYMENT VOLUME: 119 million cubic feet

2012 INTEGRATED LIST STATUS: Category 4a for estuarine bioassessments and fecal coliform

⌋ Category 4a: TMDL is complete

⌋ www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf



The Popponeset Bay estuary is located in the Towns of Mashpee and Barnstable. It is a large shallow embayment that extends from Nantucket Sound nearly three miles to its groundwater fed headwaters. The embayment includes four distinct sub-systems - Shoestring Bay, the Mashpee River, Ocway Bay and Popponeset Creek. The estuary supports a variety of recreational uses including boating, swimming, shell fishing and fin fishing.

WATERSHEDS: UPPER CAPE

POPPONESSET BAY

POPPONESSET BAY WATERSHED

ACRES: 13,082

PARCELS: 7,979

% DEVELOPED RESIDENTIAL PARCELS: 78%

PARCEL DENSITY: 1.6 acres per parcel (approx.)

Freshwater Sources

PONDS

IDENTIFIED SURFACE WATERS: 40

NUMBER OF NAMED FRESHWATER PONDS: 13

WASTEWATER TREATMENT FACILITIES: 6

☾ Stratford Ponds: 35,500 gallons per day (GPD)

☾ Willowbend: 113,000 GPD **CHARACTERIZATION: 5**

☾ Cotuit Meadows: 59,000 GPD (Listed In Appendix 4C, Ponds With Water Quality Data)

☾ Windchime: 40,000 GPD **2012 INTEGRATED LIST STATUS: 4 listed**

☾ Mashpee Commons: 180,000 GPD **DISCUSSION:** Mashpee recently conducted a pond ☾ South

Cape Village: 24,000 GPD assessment and installed Solar Bees in Santuit Pond in

efforts to restore water quality.

PONDS WITH PRELIMINARY TROPIC

LOCAL PROGRESS

BARNSTABLE

Barnstable contributes approximately 14% of the attenuated wastewater nitrogen load to Popponneset Bay. The Town of Barnstable submitted a draft Comprehensive Wastewater Management Plan (CWMP) in 2012, which characterized the wastewater needs of the Popponneset Bay watershed in terms of required nitrogen reduction, according to the Massachusetts Estuaries Project (MEP) technical report and the Total Maximum Daily Load (TMDL). The earlier 2007 CWMP and its predecessor, the 1993 Needs Assessment, identified other wastewater needs according to Title 5 conditions.

MASHPEE

The Town of Mashpee contributes approximately 77% of the attenuated wastewater nitrogen load to Popponneset Bay. The Town has been engaged in wastewater planning since 2001. The draft Needs Assessment and Technologies Screening Report, completed in 2007, address nitrogen loading to the eastern portion of Waquoit Bay and documents the significant level of effort that had gone into addressing coastal water quality over the previous six years. The Alternatives Assessment, completed in 2008, evaluates 4 options that consider an array of wastewater management scenarios that involve use of, and potential expansion of, existing wastewater treatment facilities, new sewerage and use of denitrifying on-site septic systems.

In 2013, the town filed its Final Needs Assessment, which considers 8 computer simulations run by the MEP to evaluate TMDL compliance. The final report includes adjustments to previous scenarios, incorporates decentralized wastewater treatment and non-traditional nitrogen reduction approaches, such as aquaculture and stormwater Best Management Practices (BMPs).

SANDWICH

Sandwich contributes approximately 9% of the attenuated wastewater nitrogen load to Popponneset Bay. Much of the nitrogen load from Sandwich is naturally attenuated by the intervening ponds and streams. Sandwich has completed a CWMP Needs Assessment and is presently working on public private partnerships for wastewater infrastructure in South Sandwich Village, which is partially in the Popponneset watershed.

POPPONESSET BAY

STREAMS

SIGNIFICANT FRESHWATER STREAM OUTLETS: 2

Mashpee River:

- ① Average Flow: 26,223 cubic meters per day (m3/d)

DRINKING WATER SOURCES

WATER DISTRICTS: 3

- ① Sandwich Water District
- ① Cotuit Water District
- ① Mashpee Water District

GRAVEL PACKED WELLS: 9

- ② have nitrate concentrations between 0 and 0.5 mg/L

WATERSHEDS: UPPER CAPE

Degree of Impairment and Areas of Need

For the purposes of the §208 Plan Update areas of need are primarily defined by the amount of

- Ⓒ Average Nitrate Concentrations: .318 milligrams per liter (mg/L) Santuit River:
- Ⓒ Average Flow: 13,164 m3/d
- Ⓒ Average Nitrate Concentrations: 0.702 mg/L

DISCUSSION: Characterization of fresh water streams like these is a regular part of the MEP technical reports. These concentrations are higher than areas of the aquifer with less than 0.05 mg/L background concentrations that are evident in public supply wells located in pristine areas. This provides evidence of the impact of non-point source nitrogen pollution from residential areas on the aquifer and receiving coastal waters.

- Ⓒ 1 have nitrate concentrations between 0.5 and 1 mg/L
- Ⓒ 3 have nitrate concentrations between 1 and 2.5 mg/L
- Ⓒ 1 have nitrate concentrations between 2.5 and 5 mg/L
- Ⓒ 2 have no nitrate concentration data

SMALL VOLUME WELLS: 2

DISCUSSION: The MEP includes contributing areas to the Rock Landing community water supply wells in its watershed map. These wells are located outside the Popponesset Bay watershed.

nitrogen reduction required as defined by the TMDL and/or MEP technical report. These were referred to above as a 61% reduction in septic nitrogen and a 45% reduction in total nitrogen. More specifically, the MEP provides a targeted amount of nitrogen reduction required by subwatershed, as shown in Figure 4-1 POB Subwatersheds with Total Nitrogen Removal Targets and Figure 4-2 POB Subwatersheds with Septic Nitrogen Removal Targets.

The nitrogen load from the watershed exceeds the threshold or TMDL for Popponesset Bay, resulting in impaired water quality. The ecological health of a water body is determined from water quality, extent of eelgrass, assortment of benthic fauna, and dissolved oxygen and ranges from 1-severe degradation, 2-significantly impaired, 3-moderately impaired,

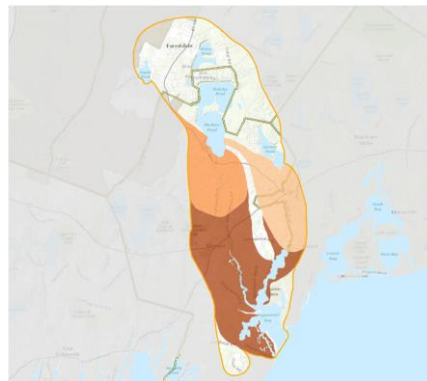
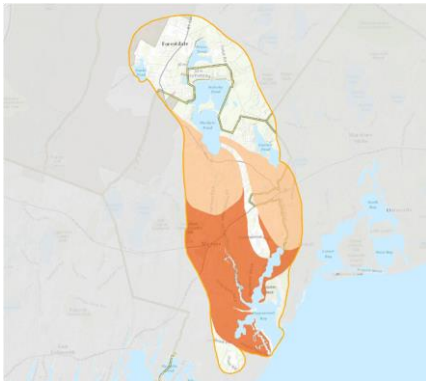
- Ⓒ 0.1% - 9%
- Ⓒ 9.1% - 38%
- Ⓒ 38.1% - 62%
- Ⓒ 62.1% - 86%
- Ⓒ 86.1% - 100%

Subwatersheds with Total Nitrogen Removal Targets

Figure 4-1 POB

Subwatersheds with Septic Nitrogen Removal Targets

Figure 4-2 POB



WATERSHEDS: UPPER CAPE

POPPONESSET BAY

4- healthy habitat conditions

MEP ECOLOGICAL CHARACTERISTICS AND WATER QUALITY

OVERALL ECOLOGIC CONDITION: Healthy to
Severely Degraded

LOWER POPPONNESSET BAY: Healthy to Moderately
Impaired

OCKWAY BAY: Significantly Impaired to Severely
Degraded

MASHPEE RIVER: significantly Impaired to Severely
Degraded

SENTINEL STATIONS:

☞ Total Nitrogen Concentration Threshold: 0.38 mg/L

☞ Total Nitrogen Concentration Existing: 0.45 mg/L (As reported at the
MEP sentinel water-quality monitoring stations)

Stormwater BMPs



SCALE: CAPE WIDE
APPROACH: REMEDIATION

SCENARIO PLANNING: SELECTED FOR USE

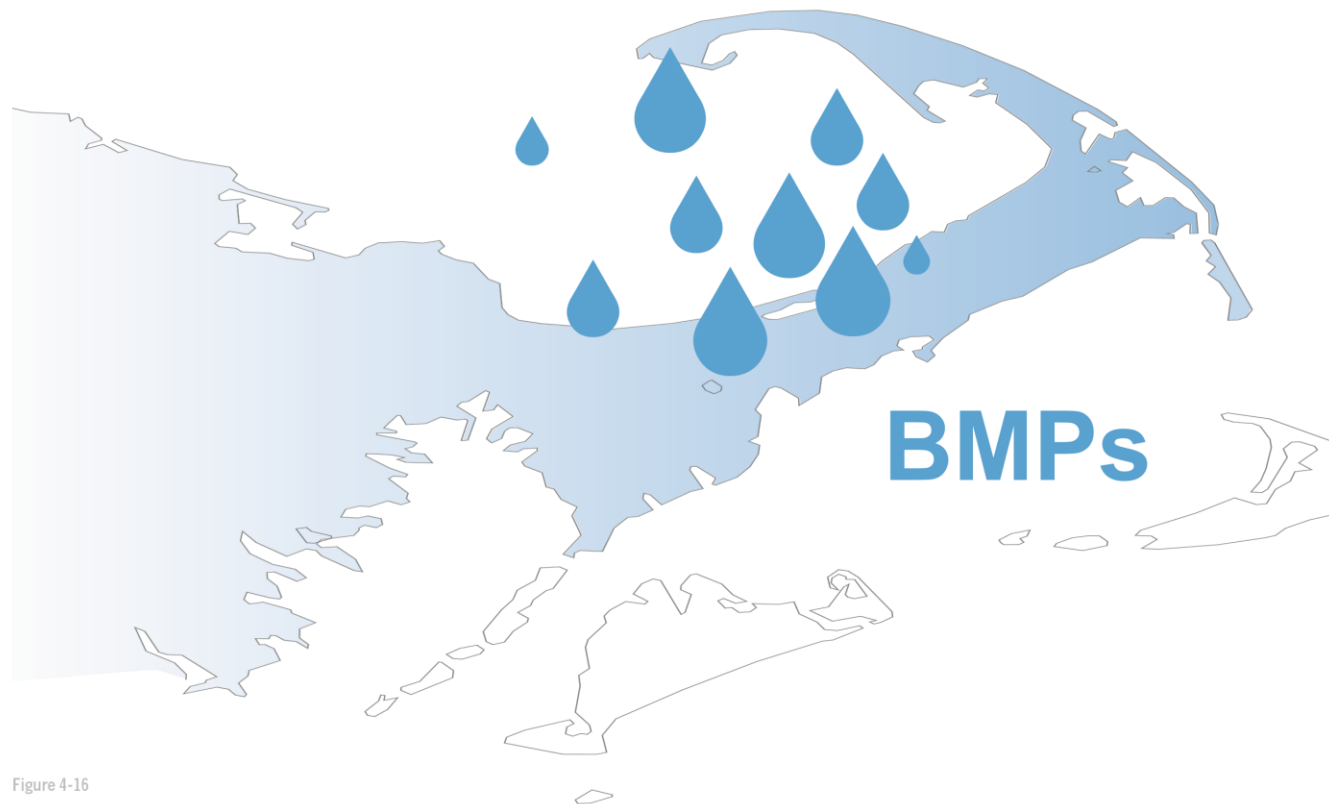


Figure 4-16



Stormwater BMPs

SCALE: CAPE WIDE
APPROACH: REMEDIATION

SCENARIO PLANNING: SELECTED FOR USE



DESCRIPTION

Non-Structural Stormwater strategies. These strategies include street sweeping, maintenance of stormwater utilities, education and public outreach programs, land use planning, and IC reduction and control.

SITING NEEDS

Varies

ECO-BENEFITS

- Enhances Habitat / Wildlife / Biodiversity
- Promotes Green Space / Conservation / Recreation
- Improves Management of Flooding / Extreme Events

PERFORMANCE CHALLENGES

Requires the creation and enforce of stormwater regulations and policies

CLIMATE RESILIENCE: RISKS

Reduced effectiveness of biological processes as a result of more frequent inundation or exposure to saline water (surface or ground water)

CLIMATE RESILIENCE: SOLUTIONS

Ensure frequent maintenance inspections to monitor condition and performance of technology (e.g. achieving nutrient removal targets, health of vegetation)
Project design and species selection to ensure adequate performance in increasingly saline environments

Permitting

POTENTIAL PERMITTING AUTHORITIES

- Municipal Conservation Commission
- Massachusetts Department of Environmental Protection

www.CapeCodCommission.org/matrix

Technology Performance



\$695	\$51,470
Removal Cost per kg N (avg life cycle)	Removal Cost per kg P (avg life cycle)

20 years	1 to 10 years
Useful Life	Time to See Results

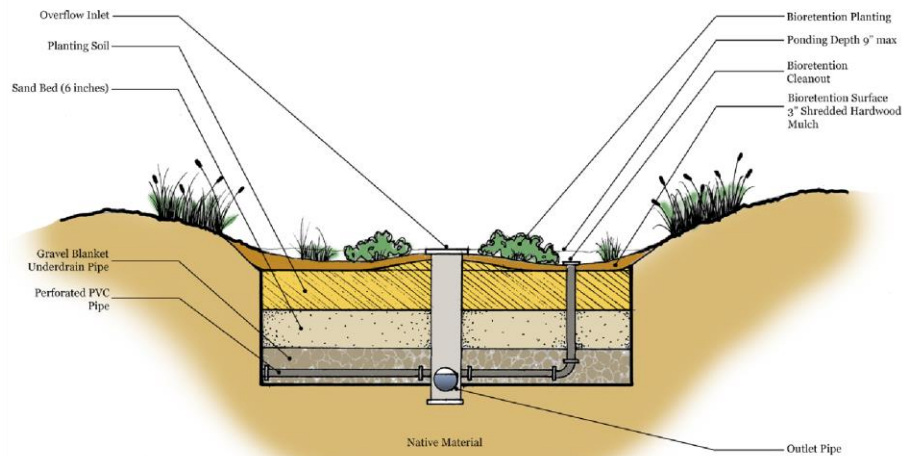


FIGURE NOT TO SCALE

Figure 4-17

Stormwater Bioretention Soil Media Filters



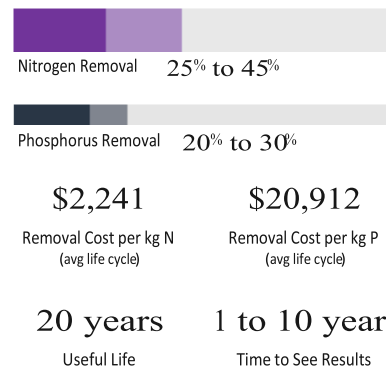
SCALE: SITE
APPROACH: REMEDIATION

SCENARIO PLANNING: NOT SELECTED FOR USE
IDENTIFIED FOR PILOTING

DESCRIPTION

Bioretention is the process in which contaminants and sedimentation are removed from stormwater runoff through physical, biological and chemical treatment processes. Stormwater is collected into the treatment area which consists of a grass buffer strip, sand bed, ponding area, organic layer or mulch layer, planting soil, and plants. Runoff passes first over or through a sand bed, which slows the runoff's velocity, distributes it evenly along the length of the ponding area, which consists of a surface organic layer and/or groundcover and the underlying planting soil. The ponding area is graded, its center depressed. Water is ponded and gradually infiltrates the bioretention area or is evapotranspired. The bioretention area is graded to divert excess runoff away from itself. Stored water in the bioretention area planting soil exfiltrates over a period of days into the underlying soils.

Technology Performance



Stormwater Bioretention Soil Media Filters

SCALE: SITE
APPROACH: REMEDIATION

SCENARIO PLANNING: NOT SELECTED FOR USE
IDENTIFIED FOR PILOTING



SITING NEEDS

- GW depth > 4 feet
- Footprint is greatly scalable

ECO-BENEFITS

- Enhances Habitat / Wildlife / Biodiversity
- Promotes Green Space / Conservation / Recreation
- Improves Management of Flooding / Extreme Events

PERFORMANCE CHALLENGES

- Open space required for construction

CLIMATE RESILIENCE: RISKS

- Reduced effectiveness of biological processes as a result of more frequent inundation or exposure to saline water (surface or ground water)

CLIMATE RESILIENCE: SOLUTIONS

- Ensure frequent maintenance inspections to monitor condition and performance of technology (i.e. achieving nutrient removal targets, health of vegetation)
- Species selection to ensure adequate performance in increasingly saline environments



Stormwater Constructed Wetlands, BMPs



SCALE: CAPE WIDE
APPROACH: REMEDIATION

SCENARIO PLANNING: SELECTED FOR USE
PHYTOBUFFERS IDENTIFIED FOR PILOTING

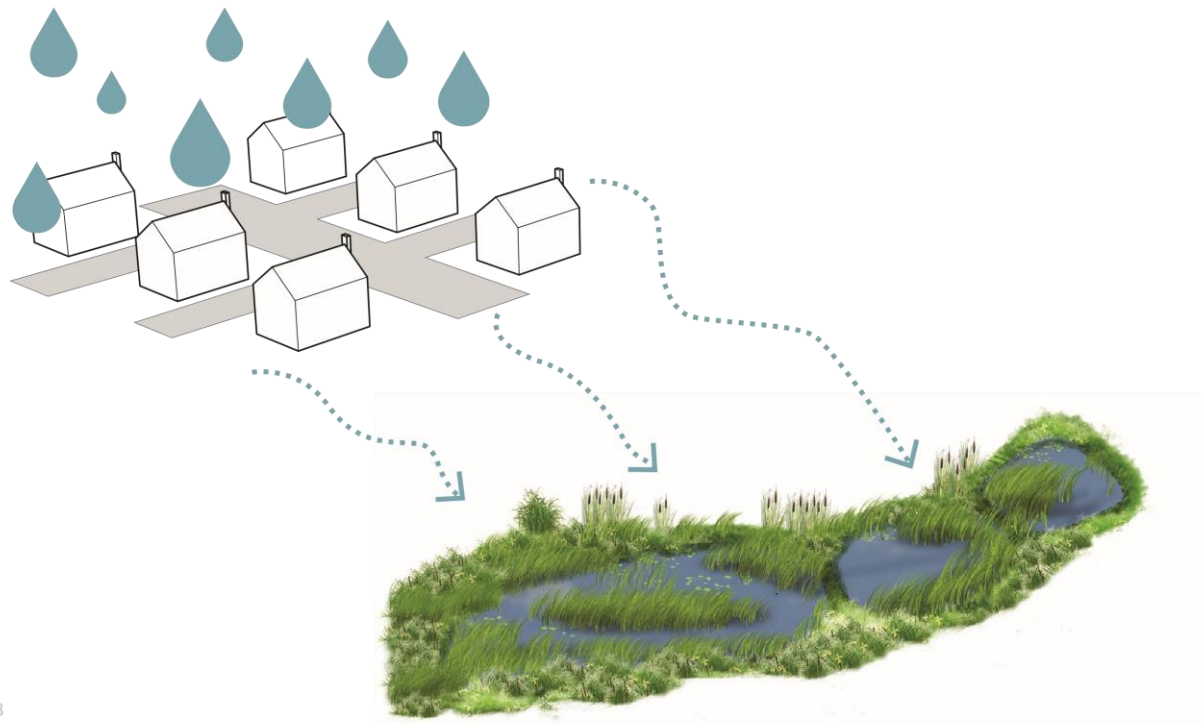


Figure 4-18

Stormwater Constructed Wetlands, BMPs

SCALE: CAPE WIDE
APPROACH: REMEDIATION

SCENARIO PLANNING: SELECTED FOR USE
PHYTOBUFFERS IDENTIFIED FOR PILOTING



DESCRIPTION

There are several types of structural stormwater BMPs, such as phytobuffers, vegetated swales, and constructed wetlands, which can contribute to nutrient removal. These approaches typically employ an excavated elongated basin engineered to accommodate the requirements of the site, together with components designed to enhance nutrient attenuation. These components may include: a swale to convey runoff; a system of chambers that allow for filtration, sediment settling, aerobic and anaerobic activity; and vegetation for nutrient uptake. Vegetated swales are typically grassed parabolic basins with relatively flat side slopes. Phytobuffers employ fast growing poplars and willow trees to remove nutrients and other contaminants. Constructed wetlands filter stormwater as it flows horizontally through a sediment forebay and a series of gravel-bottomed wetland cells, where algae and microbes grow in abundance. Constructed wetlands can be engineered to mimic natural systems, but designed to improve residence time within anaerobic chambers, allowing for year round nitrogen removal.

SITING NEEDS

Varies

ECO-BENEFITS

Enhances Habitat / Wildlife / Biodiversity
Promotes Green Space / Conservation / Recreation
Improves Management of Flooding / Extreme Events

PERFORMANCE CHALLENGES

Requires the creation and enforcement of stormwater regulations and policies

CLIMATE RESILIENCE: RISKS

Reduced effectiveness of biological processes as a result of more frequent inundation or exposure to saline water (surface or ground water)

CLIMATE RESILIENCE: SOLUTIONS

Ensure frequent maintenance inspections to monitor condition and performance of technology (e.g. achieving nutrient removal targets, health of vegetation)
Project design and species selection to ensure adequate performance in increasingly saline environments

Permitting

POTENTIAL PERMITTING AUTHORITIES

Municipal Conservation Commission
Massachusetts Department of Environmental Protection

Technology Performance



Nitrogen Removal % 25 to 90



Phosphorous Removal % 1 to 80

\$156 to
\$1,900

Removal Cost per kg N
(avg life cycle)

\$6,483 to
\$74,143

Removal Cost per kg P
(avg life cycle)

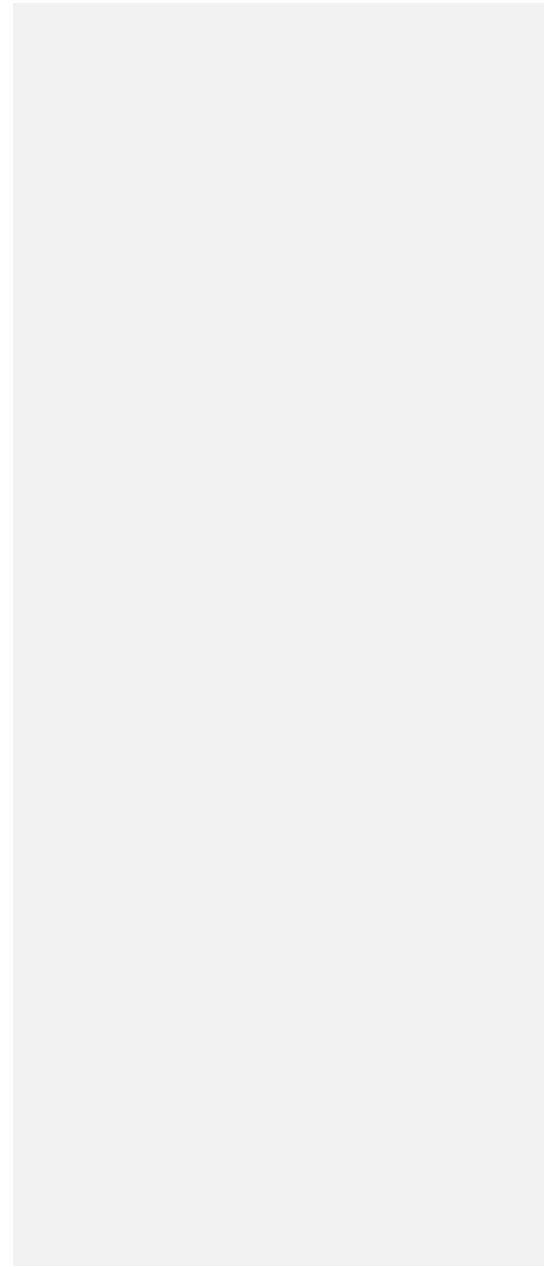
20 years

Useful Life

1 to 10 years

Time to See Results

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