



## Minutes

### Joint Meeting Cape Cod Commission and Metropolitan Planning Organization Harborview Conference Room • 3195 Main Street, Barnstable, MA 02630

February 21, 2019

The meeting was convened at 3:00 p.m., and the Roll Call was recorded as follows:

Town	Member	Present
<b>Cape Cod Commission</b>		
Barnstable	Fred Chirigotis	Present
Bourne	Richard Conron	Present
Brewster	Elizabeth Taylor	Present
Chatham	Vacant	Vacant
Dennis	Richard Roy	Absent
Eastham	Joy Brookshire	Present
Falmouth	Charles McCaffrey	Absent
Harwich	Jacqueline Etsten	Present
Mashpee	Ernest Virgilio	Absent
Orleans	Len Short	Absent
Provincetown	Cheryl Andrews	Absent
Sandwich	Harold Mitchell	Present
Truro	Kevin Grunwald	Absent
Wellfleet	Roger Putnam	Present
Yarmouth	John McCormack, Jr.	Present
County Commissioner	Ronald Bergstrom	Present
Minority Representative	John Harris	Present
Native American Rep.	David Weeden	Absent
Governor's Appointee	Michael Maxim	Present
<b>Metropolitan Planning Organization Representing</b>		
MassDOT Planning	Steve Woelfel	Present
MassDOT Highway Division District 5	Pam Haznar	Present
Barnstable County Commissioner	Ronald Bergstrom	Present
Cape Cod Commission	Harold Mitchell	Present
Cape Cod Regional Transit Authority	Tom Guerino	Present
Mashpee Wampanoag Tribe	Jason Steidling	Present
Town of Barnstable	Dan Santos	Absent
Sub Region A	Judith Froman	Present
Sub Region B	Paul McCormack	Present
Sub Region C	Alan McClennen	Present
Sub Region D	Bob Weinstein	Present
Federal Highway Administration	Jeff McEwen	Present

The Joint Meeting of the Cape Cod Commission and Metropolitan Planning Organization (MPO) was called to order on Thursday, February 21, 2019 at 3:00 p.m. in the Harborview Conference Room, Barnstable County Complex, 3195 Main Street, Barnstable, MA. Roll was called, and a quorum was established for the Cape Cod Commission and the MPO.

Steve Buckley of OpenChatham.com announced that he would be recording the meeting.

## ■ MINUTES

The Cape Cod Commission reviewed the minutes of their January 10, 2019 meeting. Roger Putnam moved to approve the minutes, Elizabeth Taylor seconded the motion and a vote called on the motion passed with 9 votes in favor and two abstentions (John Harris and Jack McCormack).

The Cape Cod Commission reviewed the minutes of their January 24, 2019 meeting. Roger Putnam moved to approve the minutes, Elizabeth Taylor seconded the motion and a vote called on the motion passed with 9 votes in favor and two abstentions (John Harris and Jack McCormack).

## ■ EXECUTIVE DIRECTOR'S REPORT

Executive Director Kristy Senatori provided the following report:

- Ms. Senatori reminded Cape Cod Commission members that the State Ethics Conflict of Interest Training Certificates are due by March 22<sup>nd</sup>. She said the link to the online training and assessment is in the email sent to Commission members and asked that they contact Jessica Wielgus, Commission Counsel, for assistance and to answer any questions they may have.
- The East Wing Conference Room will be wrapping up in the next few weeks and will be available for use once the work has been completed.
- The Regional Policy Plan is currently at the printers and once received copies will be distributed to all 15 towns.
- Letters were sent to Cape Cod towns requesting they appoint someone to sit on the Cape Cod and Islands Water Protection Fund Management Board. Nantucket and the seven Martha's Vineyard towns are currently not members of the Fund but have been invited to attend all Fund meetings. The letter sent to towns will be forwarded to Commission members.
- The Barnstable County Economic Development Council and the Cape Cod Commission hosted a Comprehensive Economic Development Strategy (CEDS) Update Kick-off meeting as the first step in updating the CEDS on January 31, 2019. The next phase of the update is a series of working group meetings scheduled for next week and the second week of March. Group members will identify projects or initiatives that operationalize the set of regional priorities identified at the Kick-off meeting on January 31.

## ■ 2020 CAPE COD REGIONAL TRANSPORTATION PLAN DEVELOPMENT

Steven Tupper, Cape Cod Commission Transportation Program Manager, with the use of PowerPoint slides provided an overview of the Cape Cod Regional Transportation Plan (RTP) and said it's a 20- to 25-year long range plan, it addresses all modes of transportation, it establishes the regional vision, and was developed and endorsed by the Cape Cod Metropolitan Planning Organization (MPO). He gave an update on the 2020 RTP development schedule and said preliminary RTP development began in the summer of 2018 through January 2019; listening sessions were held in February and a survey was launched at that time; RTP discussions began in February and will continue in March and April; and going forward a Draft RTP is anticipated for release in May. He said the RTP views Cape Cod as a transportation network, the approximate funding allocation is over \$1.1 billion dollars and the major projects outlined in the RTP were included in the 2016 RTP. Mr. Tupper said the RTP is based on performance-based planning and programming and includes a vision statement, goals, objectives, performance targets, and policies and strategies. He said the Draft 2020 RTP goals include safety, environmental and economic vitality, livability and sustainability, multimodal options/healthy transportation, congestion reduction, system preservation and freight mobility. He said changing population, demographics and land use; effects of climate change; technology shifts and funding challenges will change our transportation future. He said we can shape our transportation future by defining our regional vision, understanding our region and its people, building on our strengths, understanding our changing world and taking a comprehensive approach. Mr. Tupper said the online survey is open through March 6, 2019, project information and participation in the online survey is available at [www.capecodcommission.org/rtp](http://www.capecodcommission.org/rtp). Mr. Tupper's PowerPoint presentation is attached hereto.

## ■ U.S. ARMY CORPS OF ENGINEERS CAPE COD CANAL BRIDGES MAJOR REHABILITATION EVALUATION STUDY

Craig Martin, Project Manager Army Corps of Engineers (ACOE), with the use of PowerPoint slides said the topics for discussion today are based on what they heard from the public during their informational sessions. He said the Major Rehabilitation Evaluation Study is authorized in the Water Resource Development Act (WRDA) of 1992 for all civil works, the required study covers a 50-year lifecycle, it compares baseline "without project" condition to identified alternatives, and

results in a Major Rehabilitation Evaluation Report (MRER) decision document recommending a long-term plan for both bridges with a cost of \$20 million or more and two years of construction. He said the MRER is a recommended plan for standard operations and maintenance for a major rehabilitation and/or replacement project that includes a risk and reliability analysis, defines problems/opportunities, the probability of unsatisfactory performance, provides alternatives to correct problems, provides cost and economic benefit of alternatives and environmental compliance. He said the MRER will not result in a final bridge design, initiate construction and guarantee funding and said that will come after with design. He discussed initial MRER alternatives without project (baseline), major rehabilitation, replacement with current authorization and replacement including auxiliary lanes. He said other alternatives will be considered as they are identified through public involvement and National Environmental Policy Act (NEPA) process. Mr. Martin said they had five meetings, 273 individual meeting attendees, 51 oral comments were received during the meetings and 40 additional comments were provided via letters, cards and the project website. He said the results from the public involvement meetings during December 4-12, 2018 showed that most people favor replacement of the bridges over rehabilitation of current structures, support the alternative including auxiliary lanes to improve local travel access; requested an evaluation of alternatives not initially included in the MRER; emphasis on replacement bridges supporting multimodal connections with appropriate bike lane widths and pedestrian access; travel safety improvements of current structures such as a center barrier, rumble strips, and truck speed limitations; and integration of state and federal studies to reduce time to come to a decision. Mr. Martin explained the NEPA process and said they will conduct a resource agency site visit and a working meeting is planned for early April. He said the results of both the site visit and working meeting will be incorporated into the document. He outlined the MRER Study and NEPA timeline and stressed that this is all about relationships and establishing relationships for gathering information. He said he invites all comments good or bad to work into the document and said he would be very interested in receiving buildout information from the Cape Cod Commission as well as information on water resource studies, affordable housing and recreational tourism studies that the Commission may have. Mr. Martin's PowerPoint presentation is attached hereto.

Tom Guerino, MPO member, asked if the aquifer in Plymouth and Wareham will be looked at as well. He said when going through the NEPA process, the process would be different for replacement versus rehabilitation and asked how that would be presented. Mr. Martin said they would be looking at the aquifer. He said they are collecting more information on replacement than rehabilitation and said they are trying to get information for both options to make the best analysis.

Ronald Bergstrom asked if there was a way to quantify bad experiences people may have who don't want to deal with bridges. Mr. Martin said there are economic ties to traffic relationships for both rehabilitation or replacement. Mr. Bergstrom said people may feel that there is an ongoing impact and they may want more lanes so more people can come to the Cape. Mr. Martin said he cannot answer that at this point and said they could look at that.

Joy Brookshire asked if there would be two lanes one in each direction. Mr. Martin said there would be four lanes two lanes in each direction same as existing. Ms. Brookshire asked if the old bridges would come down. Mr. Martin said the old bridges would come down with new bridges. Ms. Brookshire asked if they have considered boat traffic in the canal and if construction would impact boats going through the canal. Mr. Martin said they are evaluating the traffic in the canal for the height of the bridge and said they do not see any impacts.

Tom Guerino said when putting together the working group they need to consider the more rehabilitation you have ongoing the more impacts there are to Emergency Management Systems, school buses, police and other scheduling entities and how going over the bridge will impact these services. He said he hopes someone can address that and he would ask that they include the local entities. Mr. Martin said they have "other direct impacts" that they will be looking at and said they would like to get more information on that.

Judith Froman, MPO member, inquired about auxiliary lanes and questioned whether they are required to do pedestrian sidewalks. Mr. Martin said there would be a pedestrian sidewalk in each direction and said the Army Corps of Engineers (ACOE) maintains what was built. He said he not sure what will be authorized but replacement will be in-kind.

Jack McCormack asked how long rehabilitation will extend the life of the bridge. Mr. Martin said at least until 2060-2070 and they may need to do more rehab. Mr. McCormack asked if the bridge could support a second deck. Mr. Martin said he does not believe that is a capability.

#### ■ MASSACHUSETTS DEPARTMENT OF TRANSPORTATION CANAL AREA TRANSPORTATION STUDY

Ethan Britland, Project Manager Cape Cod Canal Area Transportation Study Massachusetts Department of Transportation (MassDOT), said they held a public meeting last week and provided background information on the study. He referred to PowerPoint slides and said the purpose of MassDOT's conceptual planning study is to evaluate existing and future transportation safety and congestion deficiencies in the Cape Cod Canal study area; the study process has involved

coordination with the ACOE on its study of the Bourne and Sagamore bridges; it includes the development and analysis of multimodal transportation alternatives for roadways, transit and bicycle and pedestrian facilities in order to address identified deficiencies; and a final report will include the study's analytical findings, a recommended plan of transportation improvements, and preliminary cost estimates for these improvements. He said it would not include design or funding the same as the ACOE. He said the study goal is to improve transportation mobility and accessibility in the Cape Cod Canal Area and to provide reliable year-round connectivity over the canal and between the Sagamore and Bourne Bridges. He said the study objectives are to improve multimodal connectivity and mobility levels across the Canal to avoid degrading quality of life on the Cape; to ensure that cross-canal connectivity does not become a barrier to reliable intra-community travel within Bourne and Sandwich; and to create a reliable multimodal connection across the Canal to assure public safety in the event of an emergency evacuation of portions of the Cape and to accommodate first responders trying to reach the Cape. He showed slides of the study area and explained access on and off Cape Cod; he said the transportation system has two parts: Part 1: Bridges spanning Cape Cod Canal linking to a Network (the responsibility of the ACOE) and Part 2: "Gateway" roads and intersections linking to bridges (the responsibility of MassDOT). Mr. Britland said design assumptions focus on year-round safety and mobility problem locations; design for future (2040) fall weekday p.m. peak period; seek further improvements for summer Saturday peak as feasible; and replacement bridges to be built adjacent to existing bridges. He discussed the evaluation of alternatives and said a total of seven cases were evaluated as travel demand model case improvements and discussed elements of cases analyzed. He discussed traffic analysis findings for the Bourne and Sagamore Bridges for non-summer weekday afternoon hours and summer Saturday morning hours. Mr. Britland said the Draft Study Recommendations are multimodal for bicycle/pedestrian improvements, improvements to local intersections and "Gateway" locations. He discussed conceptual cost estimates for Case 3A elements for 2030 and 2040. He said the year 2040 represents the out year for their analysis and the analysis and conceptual cost estimates are based on that. He said they also developed an interim year of 2030. He said if you total the costs roughly it would be along the lines of \$270 million for the 2030 cost and \$540 million for the 2040 cost which is primarily for inflation. Mr. Britland said the next steps going forward are to produce a Draft Report which is in production now; they will have a 30-day public comment period on the Draft Study Report; they will continue to coordinate with the ACOE on their study of the Bourne and Sagamore Bridges and once the ACOE has decided on its long-term plan for the bridges, after their public comment period and after they have finalized their recommendations, MassDOT will initiate and prioritize the project development process for capital projects recommended in Case 3A or ultimately what is in the final Cape Cod Canal Transportation Study. Mr. Britland's PowerPoint presentation is attached hereto.

Judith Froman inquired about "Complete Streets" on Adams Street in Sagamore and asked if in order to participate in Complete Streets does the whole town have to participate; she asked if Complete Streets is a study that starts with the entire town of Bourne. Mr. Britland said Complete Streets is a MassDOT program and there is a participation aspect to it, but Complete Streets is also just a design term as well; it's a program and a way to design a road. He said this was just meant for designing in the context of all modes. He said whether it be a wider shoulder or a natural side path for bikes is to be determined.

Jackie Etsten asked how practical it would be to add lanes for emergency evacuation. She said the volume of traffic that would leave the Cape would be huge and result in traffic backing up on roads and the cost of doing this is huge. She said cities affected by hurricanes along the gulf coast have made it clear that people should shelter in place because it's a lot less dangerous than getting caught on the highway from traffic backing up. She said she hopes that this issue is looked at carefully when approving extra capacity. Mr. Britland said it would not be providing extra capacity for evacuation. He said the idea being if they provide lanes that are up to standards as well as full shoulders it allows more mobility but also in the event of an emergency when getting over the bridge vehicles could use the shoulders to move over for emergency vehicles to get through. He said it's meant to provide the proper capacity up to standards. He said it would not be a specific lane for emergency access.

Jeff McEwen, Federal Highway Administration, said they would look at resiliency, they would look at the possibility of contraflow over the bridges and what would have to be done in advance on the bridges to allow that to happen for emergency services to utilize that. He said typically a median crossover would be blocked off; he said those are the types of things they would look at.

Joy Brookshire referred to the number of lanes in each direction and said under Case 3 and 3A it still mentions two travel lanes one in each direction and questioned whether it should be two travel lanes in each direction. Mr. Britland said if that is not clear they will provide clarity on that.

Rob Wilson asked when does MassDOT estimate when they need to start doing this. Mr. Britland said to be determined. He said the ACOE needs to finish their study and once they do MassDOT can figure out project timelines. He said right now they are still collaborating on their studies and they also need to initiate conversations about environmental permitting and

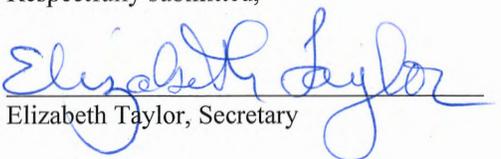
project development, but they haven't set a date for anything like that. He said they are committed to prioritizing the project well before any projects.

Steve Buckley, OpenChatham, asked at what point whether it's MassDOT or the ACOE is somebody going to estimate what the increase in traffic would be with the idea being that if the number of lanes are increased by 50 percent that somebody should be estimating what that would be and whether other agencies can weigh in on whether that is accurate and desirable. Mr. Britland said the final report will have that information projected out for future conditions, as well as a year-round projections and visitation projections and said they worked with the Cape Cod Commission on that. He said that information will all be in the report and the report will be out for public comment for everyone to have the opportunity to sound off on those projections.

■ **NEW BUSINESS:** *Topics not reasonably anticipated by the Chair more than 48 hours before the meeting.*  
No new business was taken up.

A motion was made to adjourn at 4:20 p.m. The motion was seconded and voted unanimously.

Respectfully submitted,



Elizabeth Taylor, Secretary

**List of Documents Used/Presented at the February 21, 2019 Joint Meeting**

- February 21, 2019 Agenda for the Joint Meeting of the Cape Cod Commission and Metropolitan Planning Organization.
- Draft Cape Cod Commission meeting minutes of the January 10, 2019 and January 24, 2019.
- PowerPoint slide presentation on the 2020 Cape Cod Regional Transportation Plan by Steven Tupper, Commission staff.
- PowerPoint slide presentation on the Major Rehabilitation Evaluation Study/Cape Cod Canal Bridges by Craig Martin, Project Manager, Army Corps of Engineers.
- PowerPoint slide presentation on the Cape Cod Canal Transportation Study by Ethan Britland, Project Manager, Cape Cod Canal Area Transportation Study, Massachusetts Department of Transportation.



# 2020 Cape Cod Regional Transportation Plan

Joint Meeting of the Cape Cod Commission and  
the Cape Cod Metropolitan Planning Organization  
February 21, 2019

## CAPE COD REGIONAL TRANSPORTATION PLAN

- + Long-range plan (20~25 years)
- + Includes all modes
- + Establishes the regional vision
- + Programs infrastructure projects within available funding
- + Developed and endorsed by the Cape Cod Metropolitan Planning Organization

### TRANSPORTATION INFRASTRUCTURE FOR CAPE COD

# 2020 RTP DEVELOPMENT SCHEDULE

Preliminary RTP Development  
Summer 2018 – January 2019



Listening Sessions and Survey  
February



RTP Development Discussions  
February/March/April

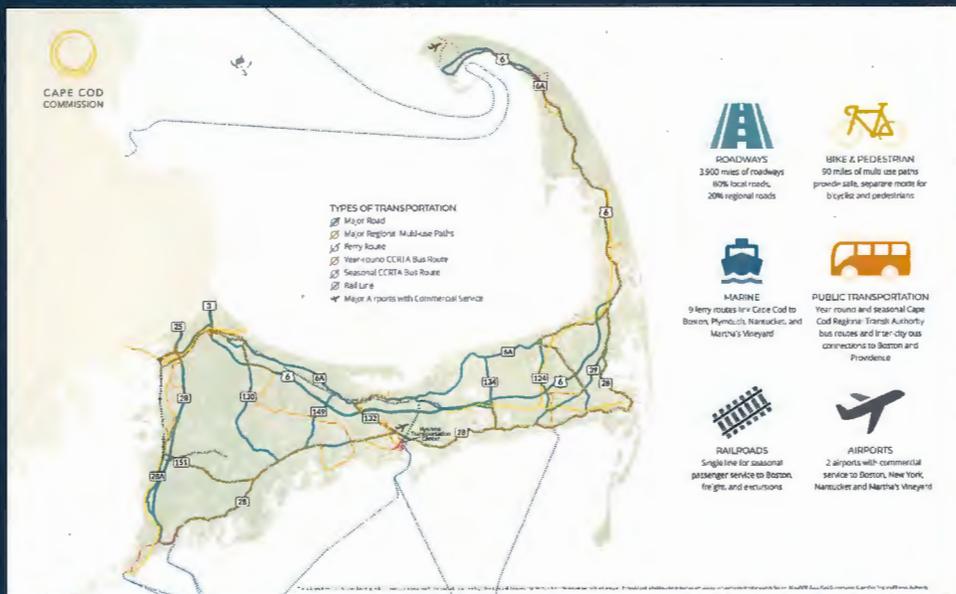
Draft Document Released  
May



21-Day Public Comment Period  
with Outreach Events  
May/June

Potential Approval  
June/July

# THE CAPE COD TRANSPORTATION NETWORK



## APPROXIMATE FUNDING ALLOCATION



## MAJOR PROJECTS INCLUDED IN THE 2016 RTP



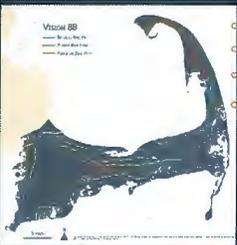
+ Hyannis Access Improvements (phased)

+ Canal Area Improvements

- Belmont Circle/Route 25 Ramp
- Route 6 Exit 1C Reconfiguration

+ Multimodal Improvements

- Cape Cod Rail Trail Extension: S. Wellfleet to Provincetown
- Cape Cod Rail Trail Extension: Barnstable to Cape Cod Canal
- Shinning Sea Bikepath Extension to Cape Cod Canal Path
- Route 28 Multimodal Improvements (various segments)



+ Route 6 Outer Cape Safety Improvements

+ Buzzards Bay Commuter Rail Infrastructure

+ State-prioritized roads and bridges

+ Regional Transit Service

+ Various "small" TIP projects



## PERFORMANCE-BASED PLANNING AND PROGRAMMING



### Vision Statement

⚙️ Goals

🎯 Objectives

📊 Performance Targets

📋 Policies and Strategies

## DRAFT 2020 RTP VISION STATEMENT



The Cape Cod Metropolitan Planning Organization, informed by public input, envisions a transportation system that supports the environmental and economic vitality of the region through infrastructure investment that focuses on livability, sustainability, equity, and preservation of the character that makes our special place special.

## DRAFT 2020 RTP GOALS



- ⚙ Safety
- ⚙ Environmental and Economic Vitality
- ⚙ Livability and Sustainability
- ⚙ Multimodal Options/Healthy Transportation
- ⚙ Congestion Reduction
- ⚙ System Preservation
- ⚙ Freight Mobility

## WHAT IS OUR TRANSPORTATION FUTURE?

- + Changing population, demographics, and land use
- + Effects of climate change
- + Technology shifts:
  - + Electric vehicles
  - + Ride sharing
  - + Autonomous vehicles
  - + Dockless bikes and scooters
- + Funding challenges
- + ...and the unknown...



## HOW DO WE SHAPE OUR TRANSPORTATION FUTURE?

- + Define our regional vision
- + Understand our region and its people
- + Build on our strengths
- + Understand our changing world
  - + Climate Change Research
  - + Massachusetts Commission on the Future of Transportation Report
- + Take a comprehensive approach
  - + Cape Cod Regional Policy Plan
  - + Cape Cod Comprehensive Economic Development Strategy



## THANK YOU



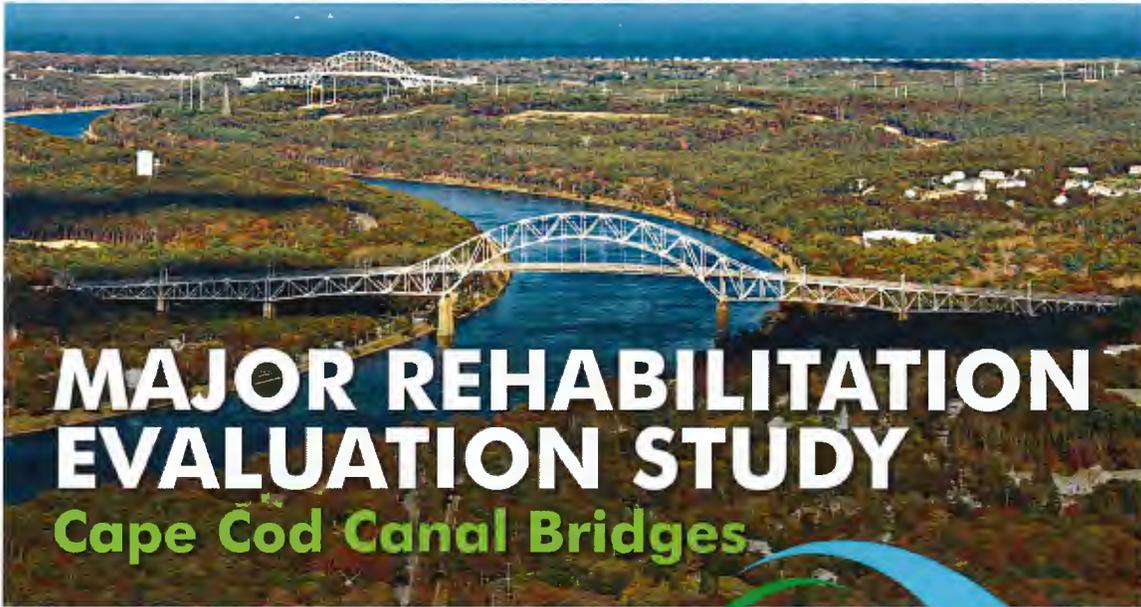
View project information and  
participate in the online survey at:

[www.capecodcommission.org/rtp](http://www.capecodcommission.org/rtp)

Survey open through March 6, 2019

Steven Tupper  
508-362-3828

[stupper@capecodcommission.org](mailto:stupper@capecodcommission.org)



February 21, 2019



## Topics

**Major Rehabilitation Evaluation Study and Alternatives**

**Results from Public Involvement Meetings (Dec 2018)**

**NEPA Process / Timeline**

**Partnerships**

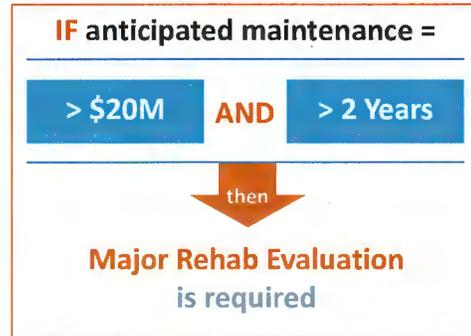
**Request of information to inform MRER**





## What is the Major Rehabilitation Evaluation Study?

- Authorized in Water Resource Development Act (WRDA) of 1992, Sec 205 (modified by WRDA 14) for all Civil Works
- Required study covers 50-year lifecycle
- Compares baseline “without project” condition to identified alternatives
- Results in Major Rehabilitation Evaluation Report decision document recommending long term **PLAN** for both bridges.



MAJOR REHABILITATION EVALUATION STUDY Cape Cod Canal Bridges



## The Major Rehabilitation Evaluation Report



- Risk & Reliability Analysis
- Define Problem / Opportunities
- Probability of Unsatisfactory Performance
- Alternatives to correct problem
- Cost and Economic Benefit of Alternatives
- Environmental Compliance



MAJOR REHABILITATION EVALUATION STUDY Cape Cod Canal Bridges





# The MRER will NOT . . .



## Result in final bridge design

- Additional public input incorporated during design phase, after completion of the MRER.

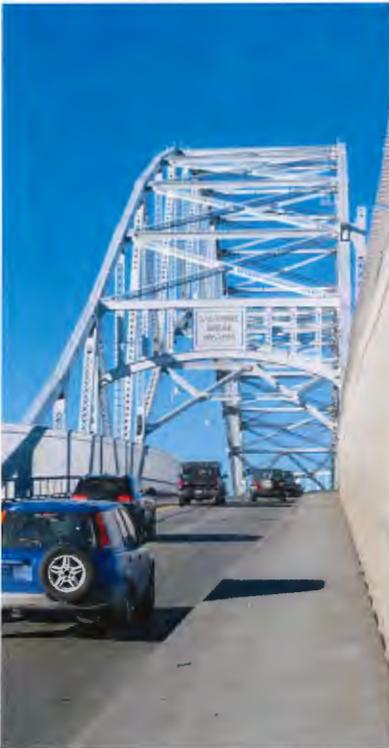


## Initiate construction



## Guarantee funding

- Selected alternative will require appropriations and may require Congressional authorization



## Initial MRER Alternatives

- Without project (baseline)
- Major rehabilitation
- Replacement with current authorization
- Replacement including auxiliary lanes

Other alternatives will be considered as they are identified through the public involvement and National Environmental Policy Act (NEPA) process.







# Environmental Assessment through National Environmental Policy Act (NEPA)



Wetlands



Water Quality



Wildlife/Fisheries

NEPA related analyses will be undertaken



Cultural/Historic Resources



Air/Noise



Land Use/Recreation



MAJOR REHABILITATION EVALUATION STUDY Cape Cod Canal Bridges



## Map of Existing Bridges and Initial Survey Areas

**BOURNE BRIDGE**



**SAGAMORE BRIDGE**

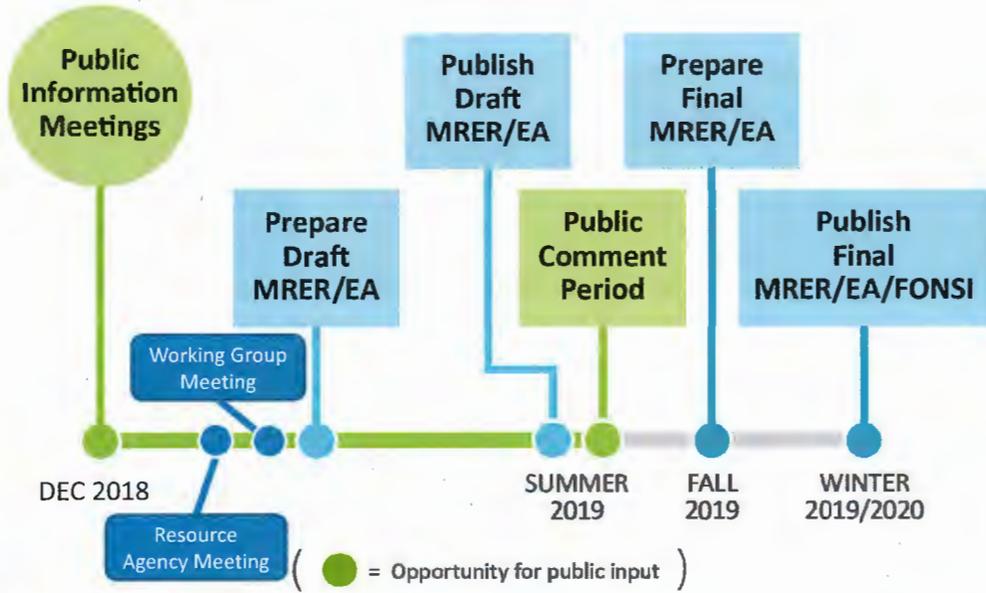


MAJOR REHABILITATION EVALUATION STUDY Cape Cod Canal Bridges





# MRER Study & NEPA Timeline



MAJOR REHABILITATION EVALUATION STUDY Cape Cod Canal Bridges



# Partnerships for a Successful Outcome



US Army Corps of Engineers

**massDOT**  
Massachusetts Department of Transportation



U.S. Department of Transportation  
Federal Highway Administration



- Joint Base Cape Cod
- Cape Cod Commission
- Town Governments
- Chambers of Commerce
- Community Organizations
- Non-Governmental Organizations
- Public

## MRER



- Senators and Representatives
- Federally Recognized Tribes
- U.S. Coast Guard
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- NOAA
- MA Government Agencies



MAJOR REHABILITATION EVALUATION STUDY Cape Cod Canal Bridges





## Cape Cod Commission / MPO Request for information & data

- Cape Cod Commission Regulations or by-laws that control build out / development on the Cape.
- Water quality / Water Supply studies related to the Cape and the single source aquifer.
- Affordable housing availability / social vulnerability inventory for the project area.
- Recreational use / Tourism studies.



MAJOR REHABILITATION EVALUATION STUDY Cape Cod Canal Bridges



# Cape Cod Canal Transportation Study

Bourne, Plymouth, Sandwich, Wareham  
Cape Cod Commission/Metropolitan Planning Organization Meeting,  
Barnstable  
February 21<sup>st</sup>, 2019 – 3:00PM



## Study Purpose

- The purpose of MassDOT's conceptual planning study is to evaluate existing and future transportation safety and congestion deficiencies in the Cape Cod Canal study area.
- The MassDOT study process has involved significant coordination with the US Army Corps of Engineers on its study of the Bourne and Sagamore bridges.
- This includes the development and analysis of multimodal transportation alternatives for roadways, transit, and bicycle and pedestrian facilities in order to address identified deficiencies.
- A final report will include the study's analytical findings, a recommended plan of transportation improvements, and preliminary cost estimates for these improvements.

# Study Goal

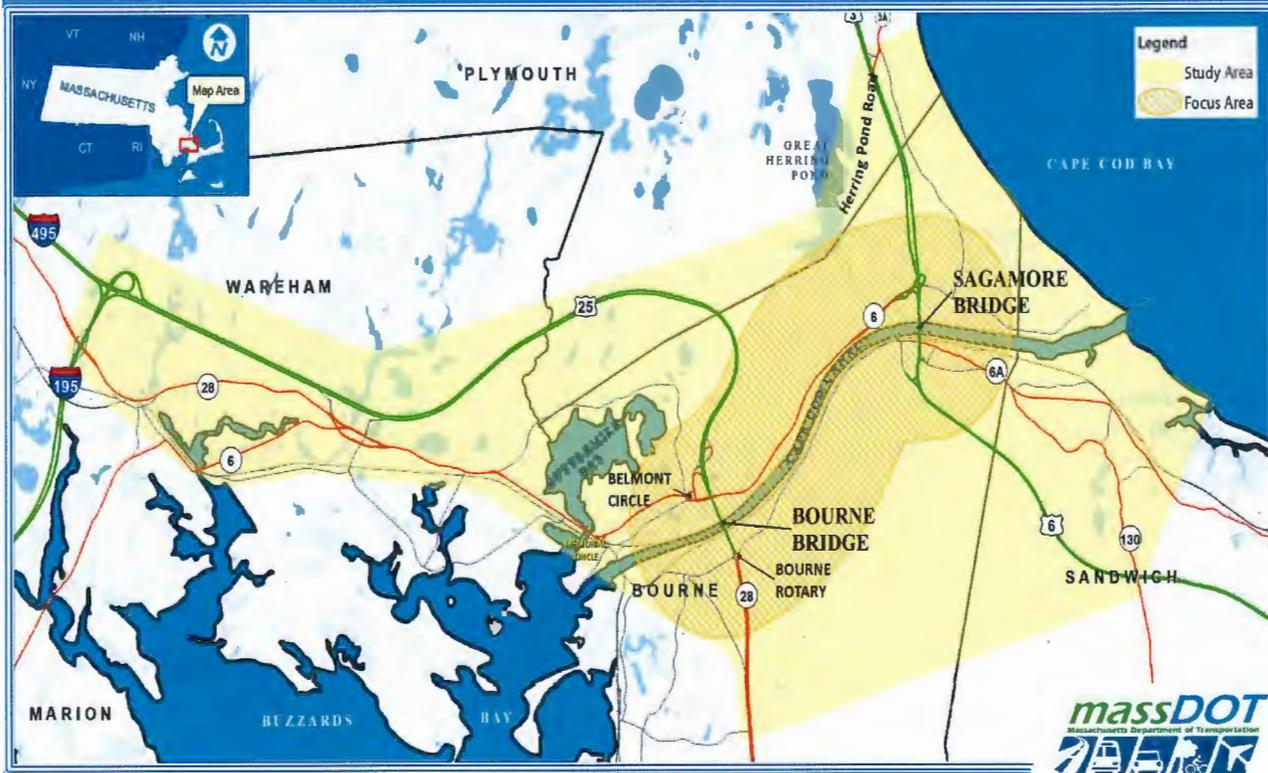
- Improve transportation mobility and accessibility in the Cape Cod Canal Area, and to provide reliable year-round connectivity over the canal and between the Sagamore and Bourne Bridges.

# Study Objectives

- Improve multimodal connectivity and mobility levels across the Canal to avoid degrading quality of life on the Cape.
- Ensure that cross-canal connectivity does not become a barrier to reliable intra-community travel within Bourne and Sandwich.
- Create a reliable multimodal connection across the Canal to assure public safety in the event of an emergency evacuation of portions of the Cape and to accommodate first responders trying to reach the Cape.



# Study Area



# Access On & Off Cape Cod is a System



## Transportation System - Two Parts

**Part 1: Bridges spanning Cape Cod Canal linking to Network (Responsibility of the U.S. Army Corps of Engineers).**

- Sagamore Bridge
- Bourne Bridge

**Part 2: "Gateway" roads and intersections linking to bridges (Responsibility of MassDOT).**

- Sagamore Interchange (Reconstructed in 2006)
- Route 6 at Exit 1C
- Belmont Circle
- Bourne Rotary

## Design Assumptions

- Focus on year-round safety and mobility problem locations
- Design for future (2040) fall weekday PM peak period
- Seek further improvements for summer Saturday peak, as feasible
- Replacement bridges to be built adjacent to existing bridges



## Evaluation of Alternatives - Travel Demand Model

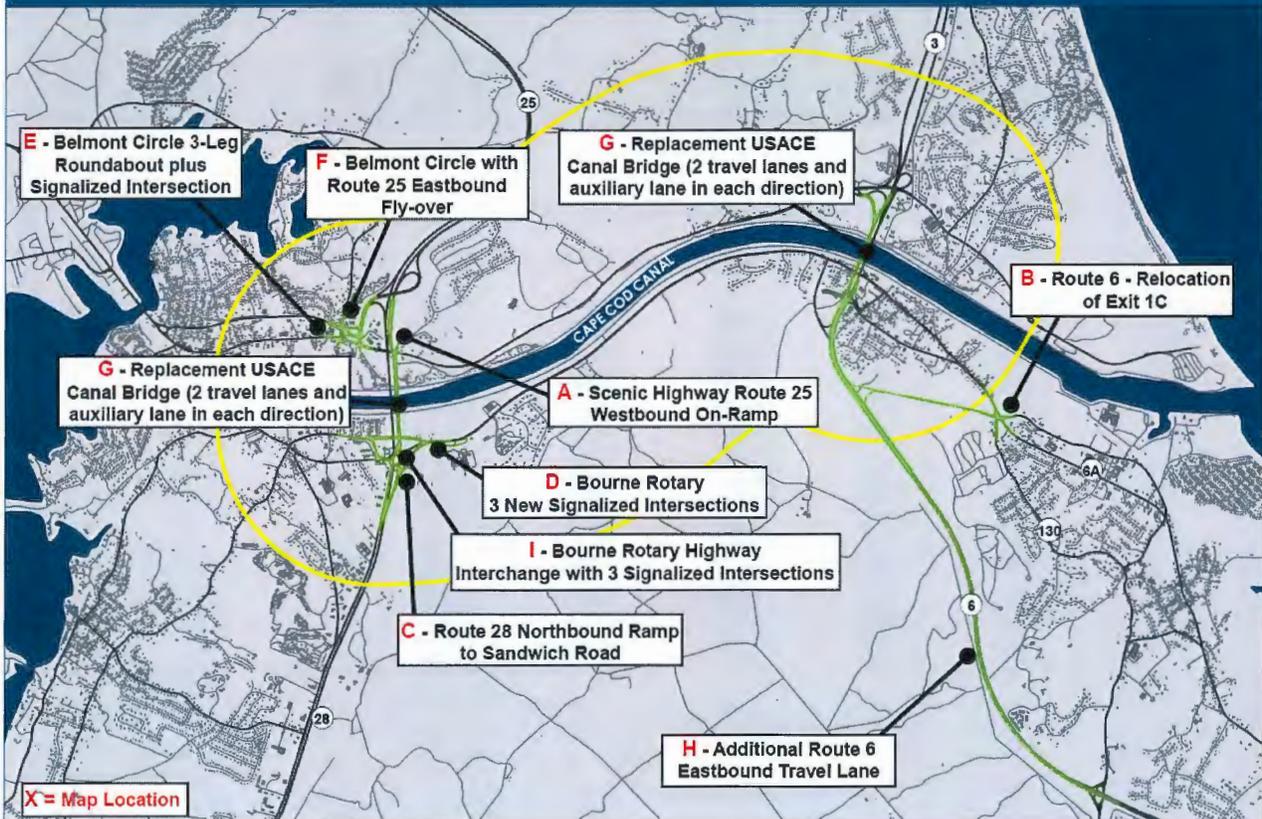
- Improvements at key locations initially evaluated separately/stand-alone.
- Next, seven combinations of improvements (known as 'cases') at key locations evaluated.
- Travel analysis model identified modified travel patterns given the 'transportation system' alternatives.



# Total of 7 Cases Evaluated

TRAVEL DEMAND MODEL CASE IMPROVEMENTS								
Map Location	Improvements	Case 1	Case 1A	Case 1B	Case 2	Case 2B	Case 3	Case 3A
A	Scenic Highway to Rte 25 Westbound On-Ramp	●	●	●	●	●	●	●
B	Rte 6 Exit 1C Relocation	●			●	●	●	●
C	Rte 28 Northbound Ramp to Sandwich Road		●	●	●	●	●	
D	Bourne Rotary (Three New Signalized Intersections)			●	●	●	●	
E	Belmont Circle (3 Leg Roundabout plus Signalized Intersection)				●		●	●
F	Belmont Circle with Rte 25 Eastbound Fly-over					●		
G	Replacement Bridges (Bourne and Sagamore) - 2 travel lanes with auxiliary lane in each direction						●	●
H	Additional Rte 6 Eastbound Travel Lane from Exit 1A to Exit 2 (3 total lanes)						●	●
I	Bourne Rotary with Highway Interchange							●

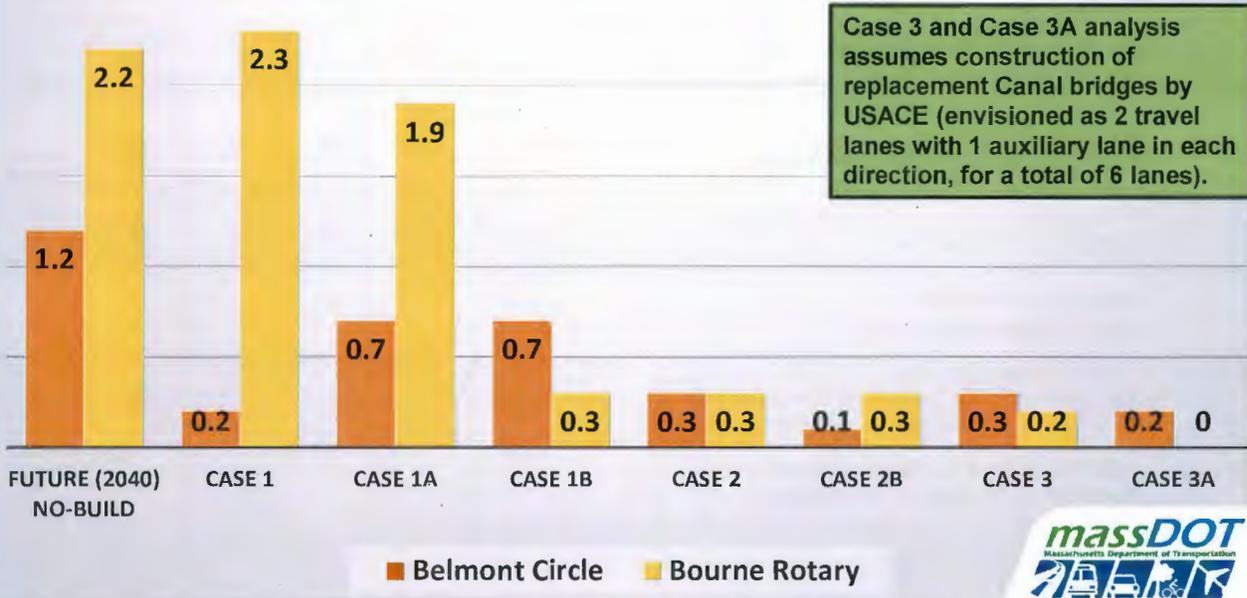
# Elements of Cases Analyzed



# Traffic Analysis Findings Bourne Bridge Area, Non-Summer

(Weekday PM: 4:00PM – 6:00PM)

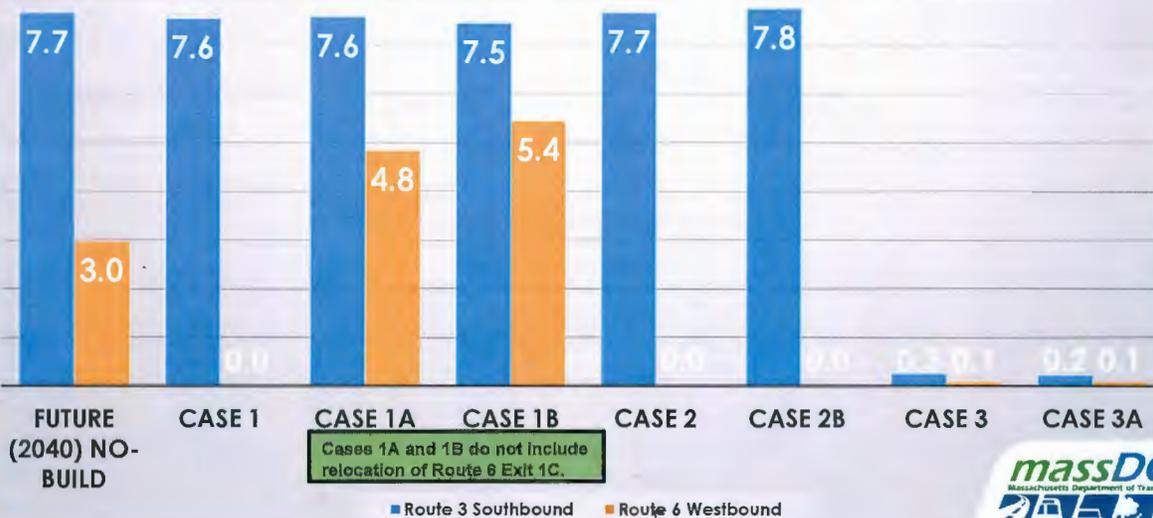
### Belmont Circle and Bourne Rotary Overall Average Delays (minutes).



# Traffic Analysis Findings Sagamore Bridge Non-Summer

(Weekday PM: 4:00PM – 6:00PM)

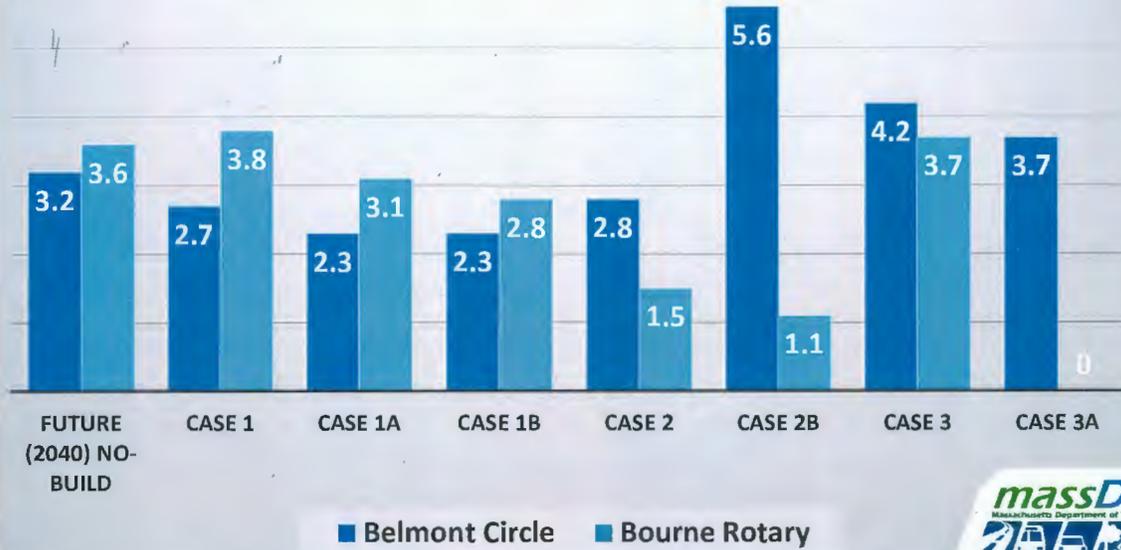
### Non-Summer PM Operations for Sagamore Bridge - Average Delay (mins).



# Traffic Analysis Findings Bourne Bridge Area – Summer

(Saturday: 10:00AM-12:00PM)

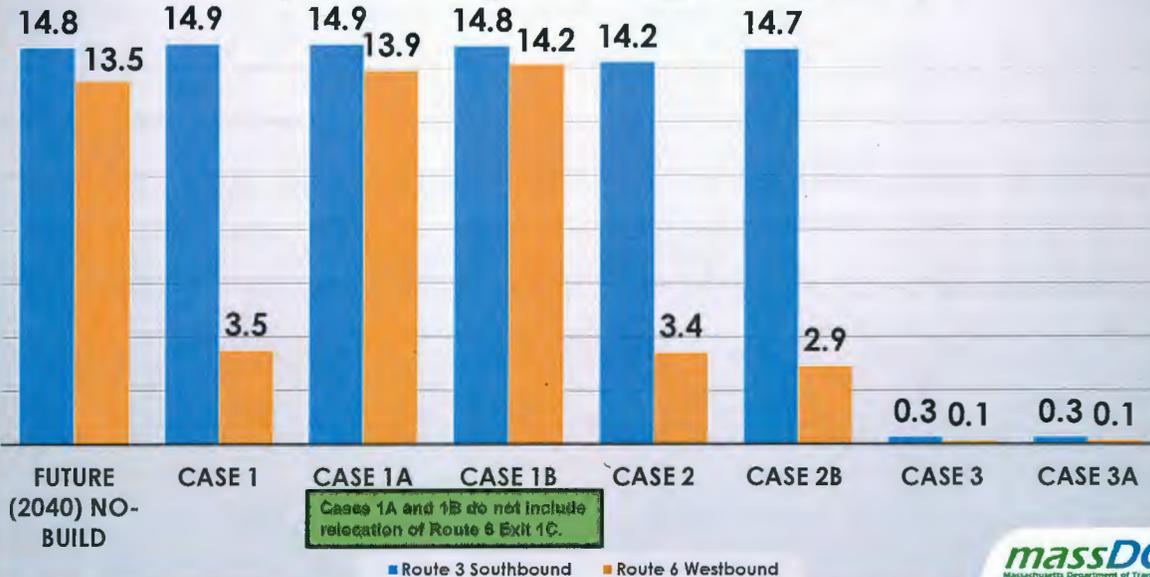
Belmont Circle and Bourne Rotary Overall  
Average Delays (mins).



# Traffic Analysis Findings Sagamore Bridge - Summer

(Saturday: 10:00AM-12:00PM)

Summer Saturday Operations for  
Sagamore Bridge - Average Delay (mins)



# Draft Study Recommendations – Multimodal

## Bicycle/Pedestrian Improvements –

- Provide three new additional accessible connections to Cape Cod Canal Bikeway.
- Improve bicycle/pedestrian facilities along Cape Cod Regional Transit Authority (CCRTA) bus routes.
- Provide accessible connections along roadway approaches to Sagamore and Bourne Bridges (including 'Complete Street' design of Adams Street)

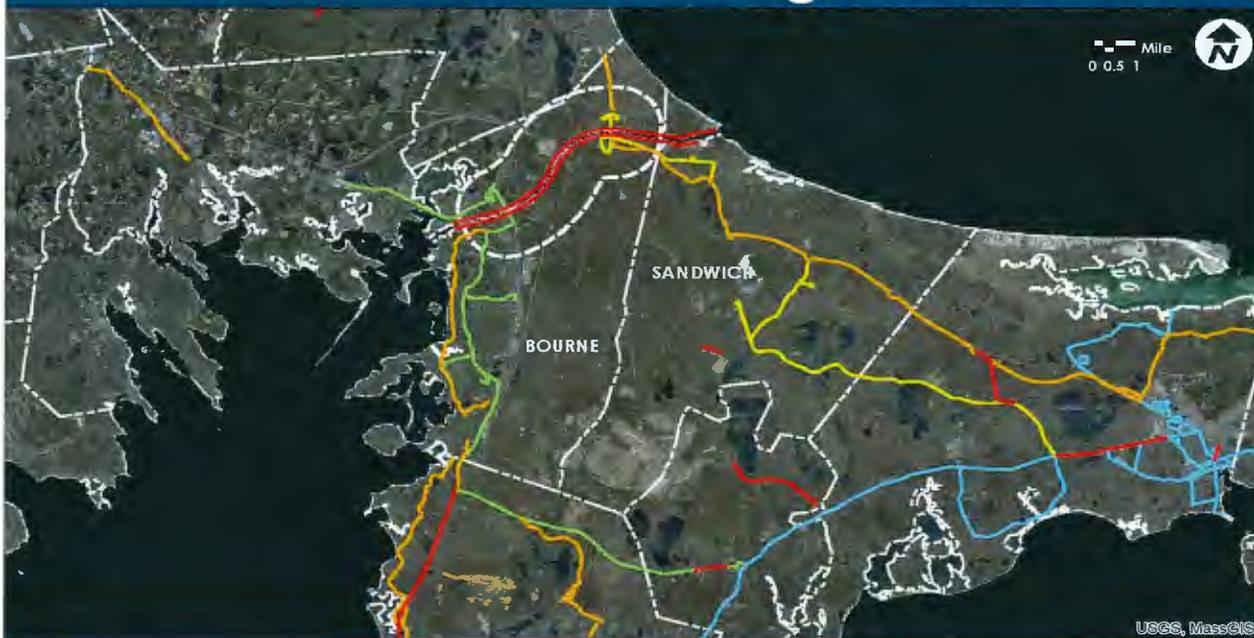
**WHY? – More accessible connections provide more multimodal options for residents and visitors.**



# Draft Study Recommendations – Canal Trail Connections



# Draft Study Recommendations – Bike-Ped Facilities along Bus Routes



**Legend**

- Focus Area
- Existing On-Road Bicycle Facilities
- Existing Off-Road Bicycle Facilities
- Bus Route - CCRTA Bourne Route
- Bus Route - CCRTA Sandwich Line
- Bus Route - CCRTA Seaside Route

USGS, MassGIS



## Bicycle/Pedestrian Access: Sagamore Bridge Approaches & Adams Street Complete Street Improvements



**PROPOSED CONNECTION TO CANAL PATH AT BOURNE BALL FIELD.**

**MULTI-USE PATH ALONG CRANBERRY HIGHWAY AND ADAMS STREET WOULD PROVIDE CONNECTION FROM SAGAMORE BRIDGE TO LOCAL STREETS AND CANAL PATH.**



# Bicycle/Pedestrian Access: Bourne Bridge (North of Canal)



# Park & Ride Facility/Lot Route 6 at Route 130



# Draft Study Recommendations – Local Intersections

## Intersection/Signal Improvements –

- Signal Timing / Adaptive Signal Improvements:
  - Scenic Highway at Meetinghouse Road
  - Scenic Highway at Nightingale Road
- Route 6A at Cranberry Highway/Sandwich Road:
  - Construct new turn lane
- Route 130 at Cotuit Road:
  - Install traffic signal
- Sandwich Road at Bourne Rotary Connector:
  - Install new traffic signal and through lane



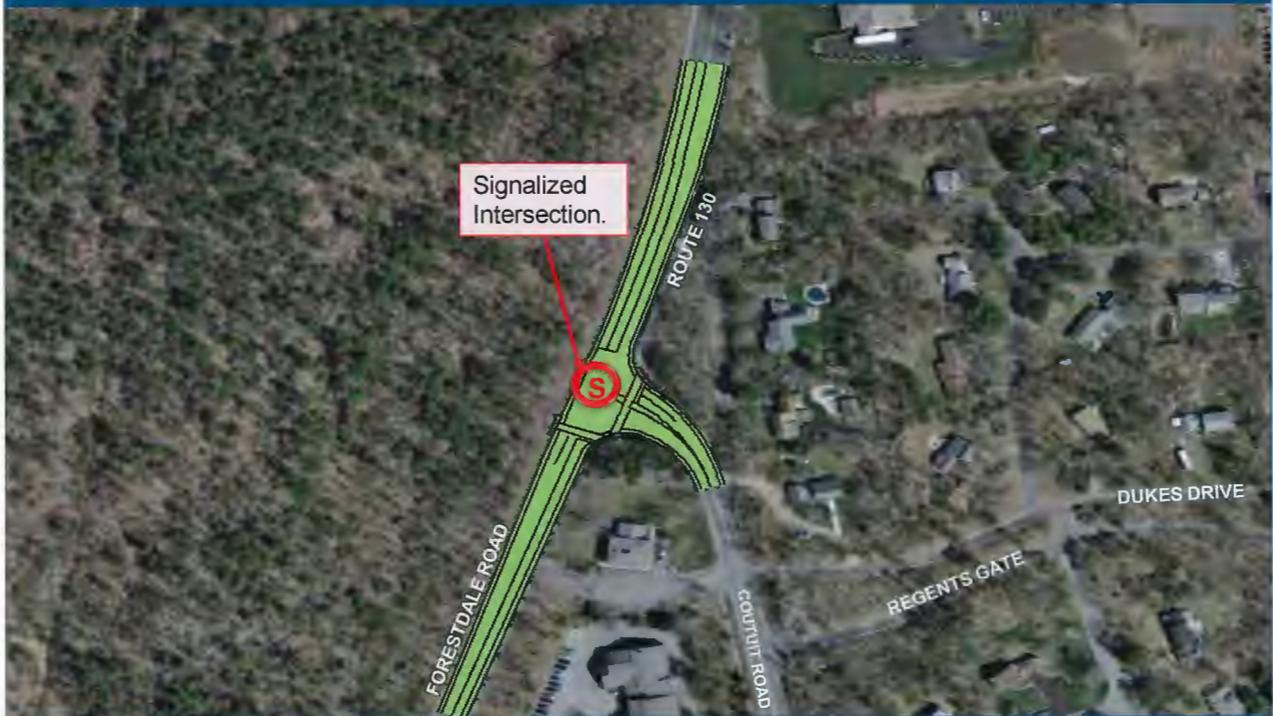
## Route 6A at Cranberry Highway/ Sandwich Road, Bourne



Proposed: Add exclusive left-turn lanes on westbound approach.  
ADA-compliant sidewalks and crosswalk on all approaches.



# Route 130 at Cotuit Road, Sandwich



Proposed: Signalized Intersection.  
ADA-compliant sidewalks and crosswalk on all approaches.



# Sandwich Rd/Bourne Rotary Connector, Bourne 'Florida T' Intersection



Proposed: Signalized Intersection. Includes through-lane from Bourne Rotary Connector to Sandwich Road and ADA-compliant sidewalks and crosswalks.



# Draft Study Recommendations – “Gateway” Locations

## Case 3A Elements/Improvements Satisfy the Study Goals and Objectives:

- Improvements analyzed under Case 3A would provide the greatest long-term benefits to accessibility and mobility for Cape Cod residents, employers, and visitors.
- Case 3A would provide a reliable multimodal transportation system in the event of an emergency evacuation of Cape Cod.
- Case 3A improvements focused on improving existing infrastructure, thereby minimizing anticipated impacts.



# Draft Study Recommendations – MassDOT “Gateway” Locations.

## **Elements/Map Locations of Case 3A Include:**

- A. New Scenic Highway to Route 25 westbound on-ramp.
- B. Relocation of Exit 1C on Route 6 westbound
- E. Belmont Circle reconstruction as a 3-leg roundabout with signalized intersection.
- H. Construct Route 6 eastbound travel lane to Exit 2.
- I. Reconstruct Bourne Rotary as an interchange.

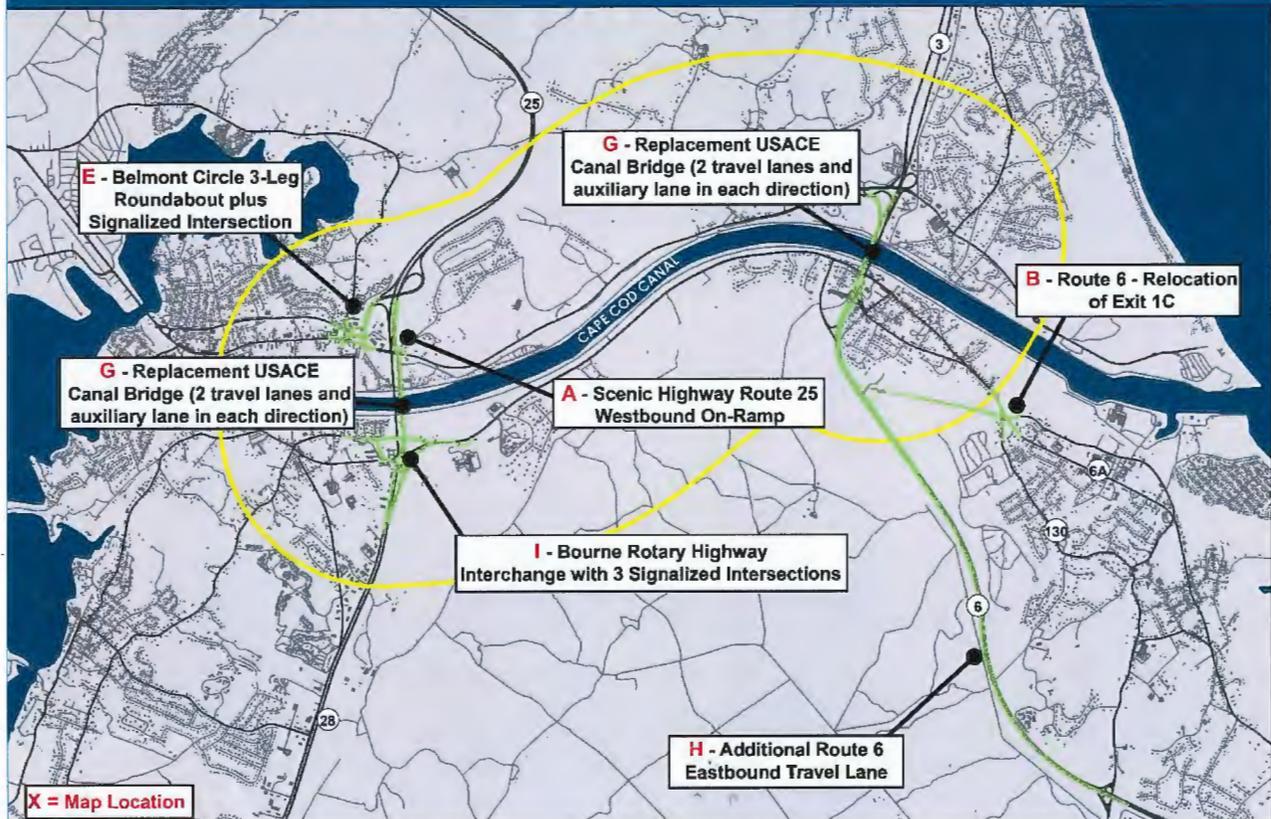


# Draft Study Recommendations – “Gateway” Locations

- The US Army Corps of Engineers (USACE) is currently conducting a study to determine the long-term disposition (Major Rehabilitation or Replacement) of the Bourne and Sagamore Bridges.
- MassDOT’s Draft Study Recommendations of improvements included in Case 3A assumes that USACE will be recommending replacement of both the Bourne and Sagamore Bridges (with 2 travel lanes and 1 auxiliary lane in each direction – total of 6 lanes).



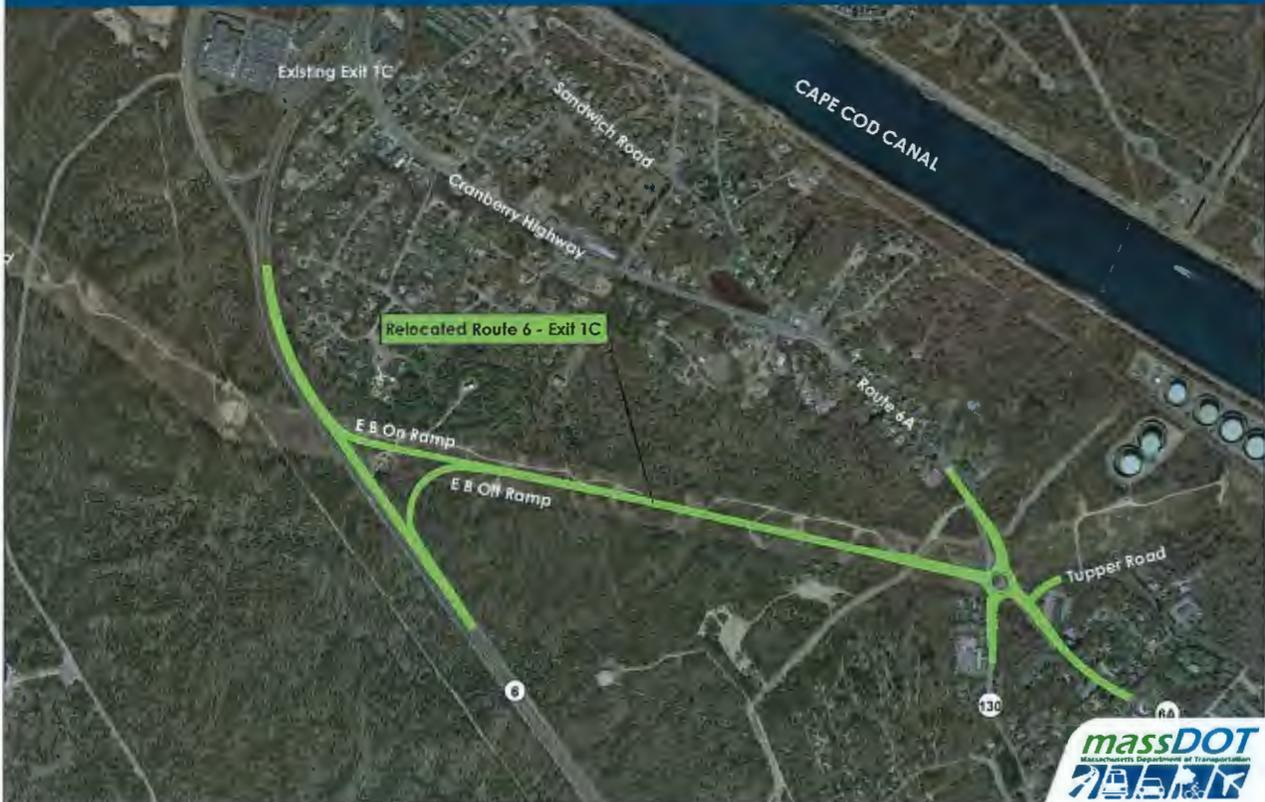
## Travel Model Case 3A.



## Map Locations A and E: Scenic Highway to Route 25 Westbound On-Ramp, and Belmont Circle Reconstruction (3-Leg Roundabout with Signalized Intersection)



## Map Location B: Route 6 Exit 1C Relocation



# Map Location H: Route 6 – Additional Eastbound Lane to Exit 2.



# Map Location I: Bourne Rotary Highway Interchange



## Conceptual Cost Estimates for Case 3A Elements (\$ in millions)

Location	2030	2040
Scenic Highway to Route 25 WB Ramp	<b>\$11</b>	<b>\$16</b>
Route 6 Exit 1C Relocation	<b>\$51</b>	<b>\$75</b>
Belmont Circle Reconstruction	<b>\$23</b>	<b>\$33</b>
Route 6 Eastbound Travel Lane	<b>\$48</b>	<b>\$71</b>
Bourne Rotary Interchange (including 3 signalized intersections at Bourne Rotary)	<b>\$87</b>	<b>\$127</b>
Sagamore Bridge Approach	<b>\$64</b>	<b>\$95</b>
Bourne Bridge Approach	<b>\$84</b>	<b>\$125</b>

## Next Steps.

- Draft Study Report – 30-day public comment period  
<https://www.mass.gov/cape-cod-canal-transportation-study>
- MassDOT will continue to coordinate with the USACE on its study of the Bourne and Sagamore Bridges.
- Once the USACE has decided its long-term plan for the bridges, MassDOT will initiate and prioritize the project development process for the capital projects recommended in the Cape Cod Canal Transportation Study's Final Report.