

MassDOT Cape Cod Canal Area Transportation Study

Cape Cod Canal Area Transportation Study

RE: Second Working Group Meeting

Date and Time: April 2, 2015, 4pm-6pm

Location: The Beachmoor at the Massachusetts Maritime Academy, Buzzards Bay

Attendees: [Sign in names attached]

Meeting Notes:

Introduction:

MassDOT Project Manager, Ethan Britland, welcomed Working Group members and thanked them for attending the meeting. He asked the attendees to introduce themselves. Michael Paiewonsky, Heather Ostertog, and Ed Hollingshead of Fay, Spofford & Thorndike introduced themselves.

The attendees then introduced themselves.

Mr. Britland reviewed the day's agenda and the study process and framework. The project is in the Step 2: Existing Conditions stage. This step is very important as it provides the foundation for the rest of the study. Mr. Britland also briefly discussed the study's goals and objectives, which were covered in more detail at the Working Group's first meeting.

Existing Conditions

Mr. Britland turned the meeting over to Mr. Paiewonsky to review the Existing Conditions. Mr. Paiewonsky covered Natural and Cultural Resources, Protected Environmental Areas, Infrastructure, and Demographic Information before his colleague, Ms. Ostertog, presented the section on Transportation, which includes data related to traffic, transit, bikes, and pedestrians.

Based on feedback from the last Working Group meeting, the Study Area was extended to the eastern coast at Cape Cod Bay and to the west along Route 25 past Glen Charlie Road in Wareham.

Mr. Paiewonsky reiterated how important the existing conditions portion of the study is. There are two main reasons 1) it informs the rest of the study, especially the alternatives development and alternatives analysis and 2) it provides the information necessary to ensure limited impact to environmental and other resources in accordance with federal, state, and local regulations.

Natural and Cultural Resources

Mr. Paiewonsky then discussed the area's Natural and Cultural Resources. The environmental resources include waterways, wetlands, FEMA Flood Hazard Areas, Impaired Waters, fisheries, and areas with identified rare and endangered species. Cape Cod has a wealth of environmental resources including excellent fishery resources and a wide variety of rare and endangered species (including a variety of

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turtle, reptile, bird, butterfly and moth species, and other endangered plants and wildlife). These environmental resources can limit the use of certain areas.

In addition to excellent environmental resources, the area boasts a number of historic and cultural resources. These include areas on the National Register of Historic Places, Regional Historic Districts, Local Historic Areas, Local Historic Districts, and Massachusetts Historical Commission Inventory Areas. These resources can limit uses and/or create additional permitting requirements. As with environmental resources, projects in these areas must be able to show that they will not adversely impact historic resources. The cultural resources include bicycle facilities (both on and off road).

There are portions of the Study Area that are protected environmental areas. These include the property owned and managed by the Army Corps of Engineers. In addition to owning and operating the Canal and three bridges, the Army Corps has 1,000 acres of recreation land adjacent to the Canal. This property includes seven miles of bike paths on each side of the Canal as well as fishing, hiking, and camping facilities and a Visitors Center/Museum. The Army Corps reports approximately four million visitors per year.

There are also properties that are legally protected as open space. These properties are owned by local, state, federal, private, and nonprofit entities. Work on any of these parcels requires review and the limiting of impacts to these areas.

The project area has two Areas of Critical Environmental Concern (ACEC). These are the Herring River Watershed and the Bourne Back River. There are also a number of wellhead protection areas; projects in wellhead protection areas need to ensure that the quality of the drinking water will not be degraded. There are several listed hazardous material sites and in various stages of remediation.

While there are no Environmental Justice Populations (as designated by the federal government) within the Study Area, there are Environmental Justice Populations nearby.

Mr. Paiewonsky opened the floor for questions.

Questions Regarding Natural and Cultural Resources

Have all of these areas been mapped on a single map?

Mr. Paiewonsky responded that it was tried, but made the maps unreadable.

Will these maps be made available for us to review and provide comment?

Mr. Britland apologized for not mentioning the website sooner, but yes; all of the information presented at the meeting will be available on the project's website: [Cape Cod Canal Study Website](#).

Mr. Paiewonsky noted that much of the information he presented was MassGIS data.

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Have the specific laws and regulations that govern the Canal been reviewed as part of the legal and regulatory review? Including documents written to build the Canal and then the additional regulations and statutes that were associated with the transfer to the Army Corps of Engineers?

Mr. Britland explained that MassDOT and the Army Corps are digging into the legislation. There is still work to do and he stated that this is the environmental and transportation portion of the research. This work will identify the issues, constraints, and opportunities associated with the resources.

Infrastructure and Demographics

Mr. Paiewonsky resumed the presentation with a discussion of the area's infrastructure. It is important to identify the locations of major municipal facilities (including police and fire stations, town halls, libraries, schools, etc.). These locations inform the traffic study. There are also railroad lines and utility corridors that run through the area.

Mr. Paiewonsky then moved into a discussion of Barnstable County's demographic characteristics and trends. Understanding these characteristics and trends helps to inform future needs. The source for this demographic information is the 2010 US Census and 2010 – 2013 American Community Survey. Plymouth County has about twice as many residents (approximately 531,000) as Barnstable County (approximately 250,000). The overall trend in Massachusetts is steady population growth. Plymouth County shows the same trend, but Barnstable County had a 5.4% decrease in population between 2005 and 2013. During the same time period, Plymouth County's population and the state's population both increased by approximately 4.4%.

Population trends in the individual communities were briefly discussed and seem to follow a geographic trend. Many areas to the east of Yarmouth have had double-digit percent decreases in population. Bourne is the only Cape Cod community that has seen population growth, though this growth (1.9%) is less than Massachusetts' overall growth. The populations in Plymouth and Wareham have increased more than the state as a whole.

Barnstable County has a higher percentage of residents aged 65+ than the statewide population and a lower percentage of school-aged children than the state as a whole. Between 2005 and 2013, the number of residents aged 55+ in Barnstable County increased while the number of residents under 55 decreased.

Barnstable County has a slightly higher unemployment rate than the rest of the state (Barnstable County 5.8%; Massachusetts 5.1%). The unemployment rate in communities closer to the mainland is significantly lower than that of communities further from the mainland. The ability to access employment opportunities off-Cape may influence the unemployment rates.

The amount of travel between counties for work was also analyzed. A much larger percentage (up to 18.6% in Sandwich) of workers travel from Cape Cod to the mainland for work. There are more than 21,000 people travelling on and off Cape Cod for work each day (12,800 travelling from Cape Cod and 8,600 travelling to Cape Cod). For the entire population of workers on Cape Cod, 88% are using a vehicle

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to commute; the rest use a different mode of transportation (public transit, walk, bike, work at home, other).

Mr. Paiewonsky opened the floor for questions.

Questions Regarding Infrastructure and Demographics

Can the Public Facilities map be updated to include Visitors Centers?

Mr. Paiewonsky responded that they can absolutely be added.

Can you go back to the slide showing travel to other counties? There are a number of things that need to be looked at, such as housing prices and the regulatory environment to create jobs in this area, to understand what kinds of policies could be created to address some of these trends.

Mr. Paiewonsky agreed that there are many factors that influence demographics and the trends shown in the data, but it is impossible to show all the data and factors. Many of the factors are outside the scope of this project.

Mr. Britland remarked that these are great comments and that there is still research to do. He also reminded the group that this meeting is at the intermediate point of the team's research and commented that the project team has discussed meeting with individual towns. Mr. Britland explained that it is very important to understand this information because everything is interrelated and the demographics will influence transportation needs. The next Working Group meeting will focus on economic data.

If we are a Working Group, I would like the opportunity to do some work instead of just having information reported to us.

Mr. Britland explained that while during these first few meetings we will be speaking to the group, in the future the process will be much more interactive.

Can we, especially as Chambers of Commerce, help to communicate information about design plans and options, etc. back to the people we're talking to and help disseminate information?

Mr. Britland commented that that is a great use of this group.

In regard to the trends, it is important to note how challenging it is to get people out of their cars. However, 1.3 million people used public transit last year. It may look like a small share of the total transportation, but there has been a dramatic increase in transit ridership over the past several years.

Mr. Britland praised the increased transit ridership numbers.

We have found that population numbers are not always a good measure to use in planning, especially when planning for infrastructure. Also, the populations on Martha's Vineyard and Nantucket need to be considered in the transportation study because they are reliant on the bridges.

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Mr. Britland explained that the island populations are going to be included. Mr. Paiewonsky stated that Ms. Ostertog would be covering the bridge traffic volumes later in the presentation.

Were year-round populations used in the demographics section?

Mr. Paiewonsky confirmed that year-round populations had been reported.

I know it is hard to get an exact seasonal population, but it is important to estimate the increased seasonal population.

Mr. Britland confirmed that it is challenging to identify the seasonal populations, but indicate that is a good point and will be included moving forward. Mr. Paiewonsky indicated that it is something that can be looked into to get a best estimate on summer populations. The study team has used Census data to look at the year round population.

Each of the towns can provide estimates of their summer population and it would be helpful to compare that with the year round populations. The Cape Cod Commission has some good data and can help with that.

Mr. Britland and Mr. Paiewonsky confirmed that it would be helpful and that they would work to incorporate that information into the study.

Have you not been working with the Cape Cod Commission to date?

Mr. Britland replied that the study group has been working with the Cape Cod Commission to this point, but that the information being asked about is higher-level than what has been undertaken to date. This study is still a work in progress and not all of the research has been completed. The study group wanted to present the work completed to date to the Working Group to get many of these comments and questions so the information can be incorporated into the study.

Mr. Paiewonsky turned the meeting over to Ms. Ostertog to review the transportation study. The three basic topics to be covered are traffic operations, crashes, and multi-modal transportation.

Transportation Study

Traffic Operations

To conduct traffic analysis, the locations first need to be identified and then traffic volume data must be collected. There are two main north-south corridors (Route 3/Route 6 to the Sagamore Bridge and Route 25/Route 28 to the Bourne Bridge) and two main east-west corridors (Scenic Highway on the mainland and Sandwich Road on Cape Cod) in the study area. People are able to use the east-west corridors to travel between the north-south corridors.

The study team reviewed existing traffic data and worked with MassDOT and the Cape Cod Commission to determine the best locations to collect new traffic data. Automatic Turning Recorder (ATR) counts were collected at 57 locations over a complete seven day period (for 24 hours each day) once over the

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summer and once in the fall. Turning movement counts were also collected at 37 locations for three peak periods: AM Peak Period (7-9am), PM Peak Period (4-6pm), and Saturday Peak Period (10am-12pm). This data was also collected during the summer and fall.

Data was collected in August and then again in October to account for Cape Cod's summer and non-summer traffic seasons. The specific times for data collection were determined using existing information on bridge crossings, which showed that July and August have the highest volume and that October is the median month.

Traffic volume is 26% to 63% higher during summer months.

The study team also collected origin-destination data using BlueTOAD software that is able to utilize Bluetooth information from cars as they pass the apparatus. Origin-destination data was collected for the same seven day collection periods. The vast majority of Cape-bound drivers on both Route 3 and Route 25 on a summer Saturday went to Route 6. Approximately half of drivers driving west-bound on Route 6 on a summer Sunday go to Route 3 and half of drivers go to Route 25. However, the vast majority of drivers heading north on Route 28 on a summer Sunday go to Route 25.

Using the traffic data collected, the study team was able to calculate the level of service (LOS) for 37 intersections. Level of service is always based on peak hour traffic volumes and are reported as LOS A (best) to LOS F (failing). This is a way to rank how well an intersection is performing. Ms. Ostertog summarized the number of locations receiving a LOS E or LOS F rating: 10 of 37 were LOS E or F during the summer morning peak; 11 of 37 were LOS E or F during the fall morning peak; 15 of 37 were LOS E or F during the summer evening peak; 13 of 37 were LOS E or F during the fall evening peak; 16 of 37 were LOS E or F during the summer weekend peak; and 12 of 37 were LOS E or F during the fall weekend peak. A total of 18 intersections (three signalized and 15 unsignalized) were LOS E or F during at least two of the six peak periods. More than half (11 of 18) of the intersections were LOS E or F during a majority of the peak periods. Some of the intersections appear to have seasonal problems, but many are failing during both the summer and non-summer months. All of this information will be available on the website for people who are interested in specific locations.

Ms. Ostertog showed VISSIM simulations for two rotaries, the Bourne Rotary and Belmont Circle. VISSIM is multimodal traffic simulation software that allows the interactions of each entity (car, train, person) to be individually simulated. These simulations were for a summer weekend (worst-case scenario).

Ms. Ostertog then opened the floor for questions.

Questions Regarding Traffic Operations

Have the other rotaries been simulated?

Ms. Ostertog responded that those simulations have not been completed at this point but are expected to be complete for the public meeting on April 16th.

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Mr. Britland explained that there are a number of options available for simulating and visualizing traffic data. Each program has strengths and weaknesses and are used for different types of analyses.

What are the criteria for failure?

Ms. Ostertog explained that it is based on an overall delay of an intersection.

Have any consideration been given to shifting the evening peak hours to be later?

Ms. Ostertog responded that some traffic studies use extended peak times. The current methodology has taken a conservative approach. The study team can speak with the client and consider extending the evening peak. The study team will look at the continuous count stations on the bridges to identify the peak bridge traffic.

For design purposes, what capacity do you build for?

Ms. Ostertog explained that industry standard is to design for the 30th highest hour of the year so that there is enough roadway capacity for the median- to higher-traffic volume use. Nothing has been ruled out or decided for this project. Mr. Britland explained that this is something the project has not explored yet, but it is something that the study group and MassDOT will need to work on.

Is there travel time data from the BlueTOAD analysis?

Ms. Ostertog responded that yes, BlueTOAD collects travel time data in addition to the origin-destination data. Mr. Britland explained that the ATR data is simply a count but the BlueTOAD is an excellent resource because it provides a lot of data.

Ms. Ostertog clarified that heavy vehicles, pedestrians, bicyclists, and motorcycle counts were also collected at the 37 intersections and noted that travel patterns look different on different days and at different times.

Is queueing captured in the data?

Ms. Ostertog explained that the queueing over the bridges will be shown at the next meeting on April 16th.

Mr. Britland mentioned that the simulation software captures queueing and backups. The study team will not simply end the research at the study area boundaries but will look as far out from the area as necessary. Mr. Britland explained that the data presented was not meant to be presented as new information; it was presented to capture the existing conditions and ensure that the data was capturing what the working group members experience. Ms. Ostertog elaborated that the study team needs input from the working group members and that the data needs to capture the existing conditions to determine what is necessary.

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Could the peak hour be after the queueing clears?

Ms. Ostertog explained that yes, that can be the case but that is captured by the count data. Mr. Britland elaborated that this is the reason for something called calibration that allows traffic engineers to calibrate the volume based on different scenarios. Additionally, a failing intersection is often not getting the number of cars through that motorists demand, so some cars change routes. The data needs to be able to capture the cars that do not get through since that is also demand on the intersection. Mr. Britland explained that the study group is looking for feedback and questions from the Working Group.

There is a problem with the high tourist traffic, but we need to remember that these problems occur year round and that there are people who are using these roadways for school, work, doctor's appointments, etc. Thank you to the study team for recognizing that and shifting towards regular traffic patterns as opposed to only looking at tourist and seasonal traffic.

Crash Analysis

Ms. Ostertog moved into a discussion of the crash analysis. There were 81 crash locations between 2010 and 2012. The Highway Safety Improvement Program (HSIP) provides a weighted rank for the severity of crashes (based on property damage only). The crash data for 12 HSIP areas was provided; in 11 cases, the proportion of crashes occurring off-season was significantly higher than the percent of crashes occurring during the summer. Of the 15 intersections with LOS E or LOS F ratings, nine of them were also HSIP intersections. As with the LOS ratings, the data indicates that some of these problems are seasonal, but there are also many year-round problems.

What about accidents that are not reported? Many times, people do not report crashes so the number can be skewed.

Mr. Britland agreed that it is important to note that the data is only as good as what is reported. Ms. Ostertog explained that in addition to receiving a report, MassDOT needs to be able to locate the crash. MassDOT has a very high location rate. They are able to locate between 90 and 95% of crash reports they receive.

Adams Street in Sandwich is a very dangerous intersection that we've asked to be made into a one-way, I think that would make it much safer. Nightingale is another problem as people travel at high speeds on Scenic Highway and do not expect people to be turning. Do higher volumes mean more crashes?

Ms. Ostertog agreed that this is a very good point. Mr. Britland explained that crash data is normalized to account for this.

Multi-modal Transportation

Ms. Ostertog then moved into the transit portion of the presentation. CCRTA ridership is significantly higher than it used to be, especially during the last several years. The Bourne and Sandwich services

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were introduced in 2012 and have seen incredible growth; the Sandwich Line had more than 20,000 riders in 2014.

The Cape Cod Flyer (operated by the MBTA) began in 2013, the Plymouth-Brockton Bus Line, and Peter Pan also provide service in the area. The Cape Flyer had 15,000 riders its first year and more than 12,600 riders in 2014. The Plymouth-Brockton Bus Line averages more than 1,300 riders per weekday during the summer and almost 1,000 riders per weekend day in July. There are three Park and Ride lots in the study area. The lot at the Sagamore Bridge is especially well used and is often 90% full.

Ms. Ostertog explained that there are a number of bicycle and pedestrian facilities in the area. However, while both the Sagamore Bridge and the Bourne Bridge have sidewalks, neither have adequate bicycle facilities. Bicycle and pedestrian data was collected at all 37 intersections. Bike and pedestrian traffic peak in the summer evening.

Project Schedule and Next Steps

Ms. Ostertog turned the presentation over to Mr. Britland to discuss the project schedule and next steps. Mr. Britland reminded the attendees that the project is in Task 2 and there will be more data collection and analysis for the public meeting and then after to dig deeper and answer the questions asked today. The project will then move into Alternatives Development, Alternatives Analysis, and Recommendations. The next Public Informational Meeting will be April 16th from 7-9pm at the Admiral's Hall at Mass Maritime Academy. This meeting will include a lot of the information presented today, but in a more condensed version. There will be an additional Working Group meeting scheduled after the public meeting. The study team will also begin to develop the projections and analyze the 2035 No-Build Traffic Volumes.

Mr. Britland thanked Mass Maritime for their hospitality, but the study team would like to spread these meetings around so Working Group members should let him know if they are aware of good locations for meetings like this. The location has to be accessible and have a good layout for the meeting.

Mr. Britland thanked everyone for their attendance and feedback and opened the floor for any additional questions.

Can you tell us where the public-private partnership process is?

Mr. Britland responded that he could speak to it briefly. Is the question more about how it is being coordinated or where P3 is in their process?

Primarily the latter, but the former is also interesting.

Mr. Britland explained that the P3 Commission had a meeting earlier this week. MassDOT staff informed the Commission on the status of projects they are looking at as potential P3. Where they stand in terms of process, the next step of the P3 process is a Request for Information of any Concessionaires to find out what Concessionaires would want to see from a public-private partnership. The focus of today's meeting was the study. The study will inform the P3 process.

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Last time you indicated that the P3 process had gotten ahead of this project - is this project catching up?

Mr. Britland explained that this project has done a lot of work in the last several months and is catching up to the P3 process.

With no additional questions and the meeting time elapsed, Mr. Britland closed the meeting.

Meeting notes compiled by Alison LeFlore; April 6, 2015

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Attendees:

Name	Affiliation
Kerry Morris	MassDOT
Michael Clark	MassDOT
David Paulson	Mass Wildlife – NHESP
John MacPherson	Corps of Engineers
Ed DeWitt	Assoc to Preserve Cape Cod
Mark Begley	EMC
Marie Oliva	CCRC
Sallie Riggs	Bourne Transp. Advisory Cmte
Tom Cahir	CCRTA
Cathy Lynds	CCRTA
Jacqueline Schmidt	SRPEDD
Lance Lambros	Sen. Murray's Office
Stephen Mellin	Cape Cod AFS
Steven Tupper	Cape Cod Commission
George Sala	Town of Bourne
Paul Rendon	JBCC
Glenn Cannon	Cape Cod Commission
Charles Kilmer	OCPC
Diane Madden	MassDOT Environmental
Linda Zuern	Bourne Board of Selectmen
Mike Sharff	Peter Pan Bus Lines
Pat Ciaramella	OCPC
Susann Koelsch	Legislative Aide to State Rep. Randy Hunt
Pamela Haznar	Mass DOT
Wendy Northcross	CC Chamber
Steve McKenna	CZM
Leah Sirmin	FHWA
Paul Tilton	Town of Sandwich
Tom Guerino	Town of Bourne
Kevin McCune	Eversource Energy
Dave Vieira	MA House of Representatives
Sue Rohebach	Legislative Aide to Sen. Wolf

Also in attendance:

Ethan Britland, Mass DOT
Ed Hollingshead, FST
Michael Paiewonsky, FST
Heather Ostertog, FST

Ken Buckland, The Cecil Group
Emily Innes, The Cecil Group
Alison LeFlore, The Cecil Group