

MassDOT Cape Cod Canal Area Transportation Study

Cape Cod Canal Area Transportation Study

RE: Fourth Working Group Meeting

Date and Time: March 10, 2016, 4pm-6pm

Location: Bourne Community Building, Buzzards Bay

Attendees: [Sign in names attached]

Meeting Notes:

Stantec Project Manager Edward Hollingshead welcomed Working Group members and thanked them for attending the meeting.

Mr. Hollingshead revisited key points from the September 2015 Working Group meeting where presentations focused on the regional travel demand model and its calibration to existing counted traffic volumes. One portion of that presentation focused on how much of total existing traffic volumes were comprised of visitor traffic as opposed to non-visitor traffic. As discussed at that meeting, while a range of socio-economic data can be utilized to identify the non-visitor portions of total traffic volumes, defining the portion of total traffic represented by visitors is less defined. Because the projection of future year traffic volumes and their assignment to the study's roadway network is dependent upon the regional travel demand model, MassDOT had taken an additional step to try to refine the understanding of how much of total traffic is comprised of visitor's traffic.

To discuss the regional travel demand model and this attempt to refine the understanding of visitor and non-visitor traffic Mr. Hollingshead introduced Mr. Sudhir Murthy of TrafInfo to discuss these issues.

Mr. Murthy explained the computer-based travel demand model for the study reflected the roadway network and socio-economic data for the entire Cape Cod (Barnstable County) and part of Plymouth County. The model is used to forecast traffic for 2035 under the No Build scenario, and ultimately the build alternatives. He explained how the network functioned and what TAZs (Transportation Analysis Zones) were. TAZs are geographic areas used for trip generation and trip distribution.

Mr. Murthy explained that there are four seasons represented by the model: Fall weekday and weekend and Summer weekday and weekend. Four time periods (6am-9am, 9am – 3pm, 3pm – 6pm, and 6pm – 6am) were modeled for each season. Counted Average Daily Traffic (ADT) came very close to model ADT. He explained that peak Summer Saturday travel time is 11am-12pm. The data was divided between commute trips vs non-commute or visitor trips. Non-commute trips include visitors.

Mr. Murthy then explained the total bridge traffic volume and how this was calculated. To calculate non-commute trips he takes the counted traffic volume on the bridge, estimates the number of commute trips from the Massachusetts Travel Survey, and then subtracts that number from the total volume to get the non-commute trips. He furthered detailed that using this methodology, the portion of total vehicle trips which represent non-commute or visitor trips were found to be: Fall weekday 12.2%, Summer weekday 37.7%, Fall weekend 44.0%, and Summer weekend 58.6%. It was these assumed percentages that were presented at the September 2015 Working Group meeting and that the Group questioned if a more detailed data source were available to confirm these assumed percentages.

MassDOT Cape Cod Canal Area Transportation Study

To attempt to refine the understanding of the percent of traffic volumes represented by visitors Mr. Murthy introduced data that MassDOT had obtained from a firm called AirSage. AirSage utilizes data collected from cell phone service providers as various devices (cell phones, laptops, tablets) connect from one cell tower to the next. In essence, as the signal from various devices like cell phones in vehicles is picked up by cell towers the program keeps track of where the signal came from and went to. Based on the geography of where signals originate and the length of time the signal is continuously at a given area trip types are assigned to the trip. The trip types are divided into four primary trip types: 1. People who live/work on the Cape Cod; 2. People who live on the Cape Cod but work in outside of Cape Cod, and vice-versa; 3. Short term visitors; and 4. Long term visitors. For example, a trip that originated on Cape Cod on a weekday morning and travelled to Boston for eight hours prior to returning to its Cape Cod point of origin for the evening over the course of a month was categorized as a work trip from the Cape Cod to Boston.

Some members of the Working Group expressed concerns about privacy of their cell data. Mr. Murthy explained that no personal data could be derived from the AirSage data.

Mr. Murthy continued explaining that the total number of devices crossing the Sagamore and Bourne Bridges were compared to the counted ADT volumes on the bridges for the same time periods. ADT represents the actual number of counted vehicles passing a location over a 24 hour period.

The goal was that if a relationship could be found between trip types (based on AirSage data) and vehicles on the road a more exact percentage of visitor and non-visitor trips could be identified.

The study has numerous ADT count locations across the study area. Mr. Murthy found that on a typical Fall weekday there were 186,000 cell devices crossing the Sagamore Bridge compared to a counted 95,000 ADT. On a summer weekday, this increased to 279,000 cell devices vs. a counted 132,000 ADT. On a Fall weekend this increased slightly to 284,000 cell devices with a counted ADT of 104,000. The largest number of vehicles and devices occurred during the Summer weekend day, with 454,000 devices while the ADT was only 154,000. Mr. Murthy stated that there is a stark disconnect between the number of vehicles crossing the bridges and the number of devices crossing the bridges.

Unfortunately, the disconnect between number of devices recorded by AirSage and number of vehicles counted on area roadways eliminated the ability to use the AirSage data to refine the percentage of total traffic that could be identified as visitor and non-visitor trips. For this reason, it was stated that the study will continue to use the percentages for visitor and non-visitor trips that were presented at the September 2015 Working Group meeting.

Mr. Murthy concluded his presentation and introduced Frank Mahady of FXM Associates to present on economic trends and data.

Mr. Mahady noted his experience in the region and presented data on the Focus Area, the Study Area, and Barnstable and Plymouth counties. This included existing demographics, population, households, and employment distribution. Projections of growth for office, industrial, flex, and retail space to 2020 were also presented. The conclusions were that the long-term historic pattern of population growth and jobs is not sustainable; some industries have shown growth and some additional development is

MassDOT Cape Cod Canal Area Transportation Study

possible, but the market is intensely competitive between regions, and overall growth of Massachusetts as a whole is only projected to be 0.26% per year through 2040.

Mr. Mahady explained that trends in employment in accommodations and food are a good proxy to understand the number of visitors to Cape Cod. Mr. Mahady stated that FXM compared trends in this sector with other sectors. Using these data, he created a series of regression models of the hotel and food sectors. He found that between 2001 and 2013 there was an average 0.12% annual visitor growth. This increased to 0.26% in 2006 to 2013 then to the most recent recent peak average of 0.69%.

Mr. Mahady noted that understanding the capacity of the bridges to handle the expected demand of all motorists on the bridges was a complicated process. He noted that options included building a third bridge and increasing or rebuilding capacity on the existing two bridges.

The mention of building a third bridge brought some concern from some members of the Working Group. Mr. Mahady clarified his statement and explained that this study was not to determine the feasibility of building a third bridge exclusively but to discuss a diverse range of possibilities, one possibility is the potential for building a third bridge.

MassDOT Project Manager Ethan Britland returned to the front of the room to discuss the options available between no build or build scenarios.

Mike Walsh of the Army Corps of the Engineers explained that their standards state that the number of vehicles and weight loads need to be limited while major work is done on the bridges. He explained that the repairs necessary on the Bourne and Sagamore Bridges would require the bridges' capacities to be limited during maintenance periods. Mr. Walsh advised that extensive lane closures could be inevitable, even in the summer, if nothing is done. Mr. Walsh stated that sometimes fixing the bridge is not as feasible as simply building new.

Wendy Northcross of the Cape Cod Chamber of Commerce asked if building a rail bridge instead of a vehicular bridge had been considered. Mr. Britland responded that we have ridership for the Cape Flyer, and will be identifying possible passenger rail crossing alternatives.

A member of the Working Group asked the team what the bridges' peak capacity was. Heather Ostertog of Stantec explained that peak hourly capacity for a travel lane is typically between 1,900 and 2,100 vehicles per lane per hour and 1,500 during peak times due to off-ramp frictions. However, that is not the case for these bridges because the stated capacities are for bridges due to narrow lane widths and closely spaced on- and off-ramps. Current actual capacity on the Sagamore and Bourne Bridges is approximately 1,400 to 1,500 vehicles per lane due to existing lane widths.

Ms. Ostertog stated that the highest recorded number of vehicles crossing the Sagamore Bridge on a single day was 94,000 vehicles on Saturday, July 4, 2012.

Ms. Northcross stated that there is concern from employers that workers are increasingly living in Plymouth since it is more affordable. She stated that some workers are opting out of working on the Cape to avoid bridge traffic. She asked if data showing this trend was available and asked if and how this would be included into the traffic analysis of the bridge. Mr. Britland stated that it was an interesting observation that they would consider and look into.

MassDOT Cape Cod Canal Area Transportation Study

Mr. Britland then asked if anyone else had additional questions or concerns. There were no additional questions or concerns and he concluded the session. He explained that the presentation would be available on the website.

Meeting notes compiled by Kevin Gurley and Alison LeFlore; March 20, 2016

MassDOT Cape Cod Canal Area Transportation Study

Attendees:

Name	Affiliation
Thomas Baron	Citizen
Margie Redmond	Homeowner
Glenn Cannon	Cape Cod Commission
Mike Walsh	Army Corps of Engineers
Steve Mellin	6 th Spec Warning Sq
Ellen Spear	Heritage Museums / Gardens
Jacqueline Schmidt	SRPEDD
Denise Kammerer-Cody	USACE
Tom Guerino	Town of Bourne
Ed DeWitt	APCC
Randy Hunt	State Rep
Mahesh Ramachandran	Cape Cod Commission
Leah Sirmin	FHWA
Cathy Lynds	CCRTA
Dave Viera	House of Representatives
Chris Anzudri	P & B Bus
Wendy Northcross	Cape Cod Chamber of Commerce
Stephen Mealy	Bourne BOS
Pamela Haznar	MassDOT D5
Charles Kilmer	OCPC
Donald Ellis	Bourne BOS
James Jodice	MassDOT
Wayne Lamson	Steamship Authority

Also in attendance were the following team members:

- Ethan Britland, MassDOT
- Ed Hollingshead, Stantec
- Bill Reed, Stantec
- Heather Ostertog, Stantec
- Steve Cecil, The Cecil Group
- Kevin Gurley, The Cecil Group
- Frank Mahady, FXM Associates
- Sudhir Murthy, Trafino