

Cape Cod Canal Transportation Study

RE: Ninth Working Group Meeting

Date and Time: December 14, 2017, 3:30 PM -5:30 PM

Location: Sandwich Town Hall Auditorium, 145 Main Street, Sandwich, Massachusetts

Attendees: See end of document

Meeting Notes:

Introduction:

Ethan Britland, MassDOT Project Manager, began the presentation by welcoming everyone and thanking them for attending the 9th Working Group meeting of the Cape Cod Canal Transportation Study. He introduced Craig Martin from U.S. Army Corp of Engineers (USACE) and said Mr. Martin would start the meeting with a short presentation.

USACE Presentaion:

Mr. Martin presented information on the USACE's Major Rehabilitation Evaluation Study for the Cape Cod Canal highway bridges. Mr. Martin explained that the USACE is authorized to study the two highway bridges over the Canal that connect Buzzards Bay to Massachusetts Bay; the Bourne and Sagamore Bridges. The USACE is required to maintain these bridges having four lanes, two lanes each way, with no tolls. The federal government owns from bridge abutment to bridge abutment and the rest of the roadway system is under the jurisdiction of MassDOT. This is why we are working so closely with MassDOT.

Mr. Martin continued stating that the USACE study is evaluating alternatives for either the rehabilitation or replacement of the Canal bridges. The study includes an evaluation of structural and cost engineering, economic justifications, and environmental analysis. So far, the structural engineering has been completed which evaluated the risk and reliability of various bridge systems and components. The cost engineering, which has also been completed, calculated construction costs for both bridge rehabilitation and replacement. The USACE awarded a contract to TrafInfo to complete traffic modeling. The traffic modeling is scheduled to be completed this month (December 2017). Economic justifications for the various alternatives will be evaluated to determine differences between the rehabilitation or replacement of bridges. This work is scheduled to be finished in the summer of 2018. The full draft Major Rehabilitation Evaluation report is scheduled to be completed in late summer 2018, and the final report will be released for public review in December 2018.

The USACE will continue regular maintenance and inspection of the bridges as the study is being conducted. The USACE will arrange for additional public and stakeholder outreach and will be piggybacking on the public engagement process that MassDOT has been doing for this study. There will be stakeholder listening sessions starting in early March and then public meetings. These meetings will be held as close as possible to the impacted communities. We will inform members of the Working Group about upcoming meetings regarding the Major Rehabilitation Evaluation Report.

Mr. Martin asked if anyone had any questions and there were none, and he handed the presentation back to Mr. Britland.

Results of Travel Demand Modeling Analysis:

Mr. Britland stated that the presentation would review the analysis of the original four cases and three new ones that have been developed by the team. The agenda of today's meeting will include background on the travel demand model, analysis results for the original and new cases, a summary of origin-destination study and travel time analysis, and the study schedule and next steps. Mr. Britland handed the presentation over to Mr. Paiewonsky from Stantec.

Mr. Paiewonsky presented the results of the alternatives development, analysis, and regional traffic modeling. He explained that a logical groupings of transportation improvements (known as cases) was modeled to determine future traffic operations and identify changes in traffic patterns. The emphasis remains improvements to the non-summer PM weekday period. In response to the comments from the Working Group, three new cases were developed. Mr. Paiewonsky presented the seven cases in a table showing which transportation improvements were included in the various cases. He reminded the audience to refer to the handouts provided for information on the cases.

Mr. Paiewonsky showed a map of the overall future (2040) no-build traffic analysis. The map presented queues on approaches at Belmont Circle and Bourne Rotary if no substantial transportation improvements were completed over the next 20 plus years.

Case 1:

Mr. Paiewonsky proceeded to present the analysis results for Case 1 which includes two mid-term transportation improvements; a new entrance ramp from Scenic Highway to Route 25 westbound and the relocation of Exit 1C on Route 6. He presented a map of queue lengths for Case 1 improvements. For Case 1, Belmont Circle had fewer delays in summer and non-summer versus the no-build scenario but Bourne Rotary delays were not improved in either summer or non-summer.

Tom Guerino, the Bourne Town Administrator, asked if the queues are for inside the circle or rotary or are they queues to go into them. Mr. Guerino also asked if a ½-minute difference is really significant and the maximum queue at Scenic Highway seem a lot longer than 2 minutes. Mr. Paiewonsky answered that the queues presented represent the maximum extent of the queues and the delay times represent an average.

Mr. Paiewonsky then presented a map of the overall summary of findings for the Sagamore Bridge approaches under Case 1 and a diagram showing the existing and revised travel times for residents of a local neighborhood because of the relocation of Exit 1C. The relocation of Exit 1C would add a maximum of 4 minutes of travel time to reach the existing Exit 1C entrance ramp on Route 6.

Fred Moseley from Stantec provided a summary of the findings for Case 1. In Belmont Circle, there would be a modest reduction in delay in the summer (especially on the Route 25 Exit 3 & Head of the Bay Road approaches) and there was a more substantial reduction in delay in the non-summer period, especially at the Head of the Bay Road approach. Under Case 1 during the non-summer, the new Route 25 ramp results in fewer vehicles entering Belmont Circle reducing the conflicts within the Circle. At Bourne Rotary, there would be no significant change in delay times because the Rotary roadway

design is not changed. Under Case 1, the approaches to the Sagamore Bridge on Route 6 would see a more substantial reduction in delay during both summer and non-summer periods on Route 6 westbound partially due to longer acceleration/deceleration lanes at Exit 1C. On Route 3 southbound, there is only a modest reduction in delay during non-summer and no reduction in the summer.

Mr. Guerino asked about time savings, and why we can't put a deceleration lane at Exit 1. Mr. Moseley stated that while it may be possible to construct a deceleration lane on the approach to Exit 1C (although there are numerous residences adjacent to Route 6 in that area), it would not be possible to construct a needed acceleration lane because Exit 1C is too close to the Sagamore Bridge. Congestion problems in that area are mainly related to people entering the highway from Exit 1C.

State Representative Randy Hunt (5th Barnstable District) asked to go back to Nightingale Pond and view the traffic counts. He asked if there are 2,000 cars per hour traveling from Scenic Highway to Belmont Circle leaving Belmont Circle? Are the same number of cars going up Route 25? It seems like the model is flawed. Mr. Moseley responded that the number of vehicles using the new ramp is projected to be 1,300 to 1,500 per hour. He handed the presentation back to Mr. Paiewonsky.

Case 1A:

Mr. Paiewonsky presented the new Case 1A, which also consists of mid-term transportation improvements. This case includes the Scenic Highway westbound to Route 25 westbound on-ramp (similar to Case 1) and a Route 28 northbound ramp to Sandwich Road at Bourne Rotary. Case 1A does not include the relocation of Exit 1C. Case 1A includes a pair of improvements that could be implemented without a major environmental study.

Mr. Moseley presented a summary of the Case 1A findings. In Belmont Circle, there would be a moderate reduction in delay during the summer. During the non-summer periods there would be a more substantial reduction in delay. There would still be delays during the summer on Main Street. Representative Hunt asked if this case included moving the entrance to the vocational technical high school. Mr. Paiewonsky said not in this case, but in other cases it does.

Mr. Moseley stated that under Case 1A at Bourne Rotary there would be an overall modest reduction in delay. Delays on the Route 28 approach to the Rotary would be substantially reduced. However, delays would persist on the Route 28 southbound, Trowbridge Road, and Sandwich Road approaches. The proposed ramp effectively reduces queues on Route 28 northbound. Sandwich Road degrades due to increased traffic entering the Sandwich and Old Sandwich Road intersection.

Mr. Guerino asked if the entrance to the technical school could be relocated farther down (east) Sandwich Road. Mr. Paiewonsky responded that yes, we were proposing relocating this driveway about 300 feet to the west.

Wendy Northcross (Chief Executive of the Cape Cod Chamber of Commerce) asked how many students go to the technical school. Mr. Guerino estimated that the number of students was between 500 to 700 students, and could be more; it is growing all the time.

Glenn Cannon from the Cape Cod Commission asked why don't we study individual parts of cases. Mr. Moseley said that the study team initially evaluated the suggested improvements individually and are now looking at combinations of these individual improvements to gauge their effectiveness in conjunction with one another.

Sandra Goldstein from the Bourne Planning Board asked if we were factoring in the future developments of parcels east of the Rotary? Mr. Moseley said there would be more refinements to designs in the future to accommodate any future development.

Case 1B:

Mr. Paiewonsky then presented Case 1B which is a new Case and builds on Case 1A as it includes the westbound on-ramp from Scenic Highway to Route 25 and the northbound ramp from Route 28 to Sandwich Road at Bourne Rotary. Case 1B also includes three new signalized intersections immediately adjacent to the Bourne Rotary. It does not include the relocation of Exit 1C. Overall, Case 1B would result in notable improvements at both the Bourne Rotary and Belmont Circle regarding delays and queue lengths.

Mr. Mosley stated that at Belmont Circle there would be a moderate reduction in delays (better results than Case 1A especially on Main Street and Scenic Highway in the summer). During the non-summer there would be more substantial reduction delays (similar to Case 1A). There would still be some delay at the Head of the Bay Road and Main Street approaches during the summer.

Mr. Mosley stated that the results for Case 1B at Bourne Rotary included an overall modest delay reduction, more substantial in the non-summer than the during the summer. There would still be some delay during the summer at Route 28 northbound and Trowbridge Road approaches.

Tom Baron asked why don't we direct all traffic coming south from the Sagamore Bridge directly to Route 28, with no curve in the rotary. Mr. Mosley said that would result in safety issues related to having two 50-mph roads meeting a 25-mph road.

Case 2:

Mr. Paiewonsky went on to present Case 2 which includes the same improvements as Case 1B with the addition of the reconstruction of Belmont Circle. Case 2 also includes the relocation of Route 6 Exit 1C.

Mr. Mosley summarized the findings of the travel demand model analysis for Case 2. During the summer at Belmont Circle there would be a moderate reduction in delay with a more substantial delay reduction during the non-summer period. More substantial delay would continue during the summer on the Main Street and Scenic Highway approaches. Delays would persist in Belmont Circle for several reasons including that the reduced delay on Route 25 southbound heading into Bourne Rotary would attract more people to use Belmont Circle. Regarding Bourne Rotary, Case 2 would result in substantial delay reduction in the summer and non-summer periods, especially on Route 25 southbound and on Sandwich Road. Delays would persist on Route 28 northbound. Mr. Paiewonsky added that people will be attracted to using Belmont Circle, specifically when examining the no-build scenario which reveals 1,200 vehicles on Main Street during the peak period compared to 1,500 vehicles under Case 2.

Origin-Destination Study:

Mr. Mosley presented origin-destination study and travel time analysis. He explained that there were 360 different traffic zones on Cape Cod and southern Plymouth County that we grouped into 8 zones. Zones 6, 7, and 8 (adjacent to the north side of the Canal) are considered local traffic. A travel time analysis was conducted at various locations to see where people are going and coming from within the Focus Area. To complete this analysis, seven travel locations were established: Buzzards Bay Rotary, the

Bourne Bridge, Scenic Highway, Sandwich Road, Bournedale Road, the Sagamore Bridge, and the intersection of Route 6A and Route 130.

Mr. Mosley presented a map that portrayed the travel patterns for trips to Cape Cod during the summer period from Zones 3 and 4 (southern Plymouth County), and Zone 6 to Zone 1 (which represents most of Cape Cod except the western Bourne and the Falmouth area). The analysis revealed that during the summer as one transitions from Case 2 to Case 3 there would be a marked increase in vehicle traffic on the Sagamore Bridge and Sandwich Road. Conversely, there would be a reduction in vehicle traffic on the Sagamore Bridge and Scenic Highway from Case 2 to Case 3. The non-summer period showed a similar, but less pronounced, trend.

The overall findings show that current poor operations at Belmont Circle and Bourne Rotary discourage use of the Bourne Bridge. As operations improve at Belmont Circle and Bourne Rotary, more travelers would shift to the more direct use of the Bourne Bridge. The increase of traffic on the approaches to Belmont Circle under Case 3 is a direct result of this change in travel patterns.

Mr. Baron stated that there are no connections from Zone 8 to 1 and that a third bridge would be beneficial. We should get real numbers from Zone 8 to zone 1. Mr. Mosley answered that we previously discussed why a third bridge would not work; this alternative would result in very substantial environmental impacts in the Canal Area.

Case 2B:

Mr. Paiewonsky presented Case 2B which is a new mid-term alternative improvement. Case 2B is similar to Case 2 but in addition to the 3-leg roundabout with signalized intersections at Belmont Circle, Case 2B would also include a fly-over bridge directly from the Route 25 Exit 3 ramps to Scenic Highway eastbound.

Mr. Mosley presented the Case 2B summary findings. In the summer in Belmont Circle there were no delay reductions. This case was not as effective as Case 1B or Case 2. In particular, there were increased delays at the Head of the Bay Road and Buzzards Bay Bypass approaches to Belmont Circle. This increase is caused by better traffic flow in roundabouts resulting in greater difficulty for vehicles attempting to enter from these approaches. However, during the non-summer period there was a more substantial reduction in delay. At Bourne Rotary there would be substantial reductions in delays during both summer and non-summer periods.

Ms. Northcross asked if it would be so bad to have additional traffic on Main Street. This is usually what businesses desire. Melissa Ferretti from the Herring Pond Wampanoag Tribe said more traffic on Main Street will not help local residents. Mr. Mosley responded that this was likely through traffic and not helping local businesses. Mr. Cannon said this issue needs to be discussed in more detail. The Town of Bourne is looking for more vehicle traffic on Main Street.

Case 3:

Mr. Paiewonsky presented Case 3. Case 3 is a long-term alternative that has all the same improvements as found in Case 2 with the addition of new Bourne and Sagamore Bridges and a Route 6 eastbound travel lane from Exit 1A to Exit 2.

Mr. Baron said there would be better flow with a third bridge. Mr. Britland told him that he has been heard and the assumption is that the two bridges (Bourne and Sagamore) will be replaced.

Mr. Mosley presented the Case 3 summary of findings. In the summer, Belmont Circle would experience no reduction in delay but there would be a substantial delay reduction in the non-summer period. The areas of delay during the summer include the Head of Bay Road, Buzzards Bay Bypass, and Main Street approaches. In regard to the Bourne Rotary in the summer, there would be minor delays at Route 28 South and Sandwich Road and longer delays at Route 28 North and Trowbridge Road. During the non-summer period, there would be substantial delay reductions at the Bourne Rotary. Some of the delays during the summer are in the area of the new signalized intersections. The new Bourne Bridge would experience an additional 750 vehicles at peak hour in the summer compared to the future no-build scenario.

Representative Hunt said we should see traffic numbers for different configurations of the bridges to see how the design can be the most optimal. It is worth finding out these numbers since many of the models came out with surprising results. Mr. Britland stated that is why we are going over these various cases.

Ms. Northcross noted that one case is not better than the other. Mr. Britland said we have provided a lot of information and it will take a while to digest all this information.

Case 3A:

Mr. Paiewonsky proceeded to present Case 3A. The difference from Case 3 to Case 3A is that under Case 3A the Bourne Rotary would be reconstructed as a highway interchange. As in Case 3, it would also include the new Canal bridges, a Route 6 eastbound travel lane, the 3-legged roundabout in Belmont Circle and Route 6 Exit 1C relocations and an on-ramp from Scenic Highway to Route 25 westbound. Mr. Paiewonsky showed a map of the reconstructed Bourne Rotary as a highway interchange.

Mr. Mosley presented the Case 3A summary of findings. In Belmont Circle, during the summer, there would be a minor reduction in delay times especially on Main Street. In the non-summer period, there was a more substantial delay reduction. However, there would be approaches that still experience some delay in the summer including Head of Bay Road, Scenic Highway, and Main Street. The Bourne Rotary area would experience substantial reduction in delays. There were minor delays at intersections in the summer and a few in the non-summer season. Overall, the highway interchange would make a great improvement.

Future traffic operations were also analyzed under the Case 3A improvements for the approaches to the Sagamore Bridge. This analysis revealed few remaining delays both in the summer and non-summer periods on Route 6. With the changes in travel patterns the Sagamore Bridge is not expected to experience an increase in traffic volumes with a new bridge in the same way as the new Bourne Bridge would.

Overall Case Analysis Findings:

Mr. Paiewonsky presented a bar chart of the overall findings of the no-build scenario and all seven cases for both Belmont Circle and Bourne Rotary. The chart presented average delay times during both summer and non-summer periods.

Ms. Northcross asked how long are the summer months. Are the Memorial Day to Columbus Day? Mr. Mosley said three months. Mr. Mosley continued presenting the overall findings for Sagamore Bridge. Under Case 1 there was only minor improvement on the Route 3 southbound approach but a more notable reduction in delay times for travelers on the Route 6 westbound approach to the Sagamore Bridge.

The overall findings of the case analysis showed that notable reductions in delay during the non-summer period can be achieved with mid-term improvements at Belmont Circle and Bourne Rotary. These improvements will be tempered however because, as conditions improve, traffic patterns will shift to more use of the Bourne Bridge rather than the Sagamore Bridge. As a result, long-term improvements to traffic operations at Belmont Circle remain a challenge during the summer period under the cases evaluated. Mr. Mosley stated that construction of the highway interchange at Bourne Rotary will be necessary to reduce delay.

Mr. Britland closed out the presentation and said we will come back in January and review the costs and economic impact of these transportation improvements. He thanked everyone for attending.

Attendees

Attendees are listed by name followed by their affiliation.

- Tom Baron, Cape Cod Citizen
- James Jodice, MassDOT
- Charles Kilmer, Old Colony Planning Council
- George Slade, Bourne Selectman
- Paul Tilton, Sandwich DPW
- Wendy Northcross, Cape Cod Chamber of Commerce
- Melissa Ferretti, Herring Pond Wampanoag Tribe
- Susan Moran, Falmouth Selectmen
- Craig Martin, USACE
- Glenn Cannon, Cape Cod Commission
- Michael Paiewonsky, Stantec
- Bill Reed, Stantec
- Fred Moseley, Stantec
- Jennifer Siciliano, Harriman
- Bill Travers, MassDOT
- Frank Mahady, FXM Associates
- Tom Guerino, Bourne Town Administrator
- Randy Hart, Vanasse Hangen Brustlin (VHB)
- Sandra Goldstein, Town of Bourne Planning Board
- Stephen Mellin, Cape Cod AFS
- John Hession, BSC Group
- Bill Hallstein, SMART Citizens Task Force
- Paul Rendon, Joint Base Cape Cod (JBCC)
- Lee Rowley, Cape Cod Citizen
- Randy Hunt, State Representative