STV Incorporated
321 Summer Street
Boston, Massachusetts 02210
(617)482-7298 fax:(617)482-1837

Meeting Date: March 26, 2010

MassHighway Project Name: Fore River Bridge Replacement, Quincy-Weymouth
Bridge No. Q-01-001= W-32-001

MassHighway Contract No.: 50281

MassHighway District: 6

Designer: STV Incorporated

Minutes Prepared By: Nathaniel Cabral-Curtis, Howard/Stein-Hudson

Meeting Place: United States Coast Guard Sector Boston Command Center
427 Commercial Street, Boston, MA.

Persons in attendance: Meeting attendance lists have been removed to protect the privacy of audience members.

Purpose: The design team held a targeted briefing session for maritime stakeholders as defined by the United States Coast Guard. Representatives of CITGO, various Boston Harbor Pilot associations and the harbor masters for Quincy and Weymouth also attended this meeting.

Items Discussed:

Mike O'Dowd (MassDOT) opened the meeting by welcoming the group and thanking them for their attendance. Mike explained that the meeting had been called at the request of Lieutenant Commander Pamela Garcia (USCG), Ed O'Donnell (ACOE) and Duban Montoya (Army Corps of Engineers). He remarked that members of the Fore River Bridge Replacement Project team had last met with the maritime stakeholders' group in August of 2009 by way of introducing this important group to the work and that since then, the project had made significant progress. Elements of this progress include an increased general understanding that the ACROW span bridge must be removed as soon as possible: that the new crossing of the Fore River will be a movable span, as opposed to a tunnel or fixed span, as it represents the most equitable approach for abutters, bridge users and marine users; and the continuation of a public outreach process including a

STV Incorporated
321 Summer Street
Boston, Massachusetts 02210
(617)482-7298 fax:(617)482-1837

project website and eight meetings including one for area commuters held in Hingham on February 24, 2010.[1]

Mike then explained that the presentation for the meeting would closely mirror the presentation given at the community meeting on February 24. At this meeting, the project team communicated to the public that STV had submitted its preliminary type study to MassDOT recommending that of the two bridges considered by the type study--bascule and vertical lift--MassDOT advance the vertical lift bridge for construction. While MassDOT is still analyzing the type study submitted by STV, the agency expects to announce their decision publicly at the next public information meeting to be held at 6:30 p.m. on April 12, 2010 at the Fore River Club House in Quincy. MassDOT encourages maritime stakeholders to attend this meeting.

The new Fore River Bridge will be delivered using design/build methods. STV will advance the design to the 25% level and create a design/build package for which design/build entities consisting of a contractor and a designer will bid. It is anticipated that the design/build package come out in spring of 2011.

Highlights of the Presentation[2]

Following his opening remarks, Mike O'Dowd introduced Mark Pelletier of STV. Mark Pelletier, Nikole Bulger and Mark Ennis (STV) briefed the group on the current phase of the project, as follows:

- The Fore River Bridge carries Route 3A and connects Quincy in the west to Weymouth in the east. The approximate limits of the project are the rotary on the Quincy side and the intersection of Bridge Street and Monatiquot Street on the Weymouth side. The goal of the Fore River Bridge replacement project is to replace the current temporary bridge with a permanent movable span.

- The Fore River Bridge is being replaced under the Accelerated Bridge Program (ABP), the goal of which is to reduce the number of structurally deficient bridges in the Commonwealth. The ABP commits a total of $3 billion to be spent on bridge construction by 2016 when funding runs out. Techniques associated with the ABP include:
  - Faster construction techniques, including design/build;
  - Advanced project scheduling and estimating;
  - Streamlining of the environmental process; and

[1] This meeting was held at the behest of state Senator Hedlund who wanted to ensure that commuters from towns south of the project area were adequately informed with regard to the work.

[2] This presentation can be viewed at www.mass.gov/massdot/foreriverbridge/documents.html

STV Incorporated
321 Summer Street
Boston, Massachusetts 02210
(617)482-7298 fax:(617)482-1837

  - Innovative delivery mechanisms such as design/build and single-phase construction. The innovative technique most closely associated with the Fore River Bridge project is design/build.

- The scope of work for the project team includes:
  - Coordination with stakeholders and agencies.
  - Evaluation of structure options for both the movable and approach spans of the new Fore River Bridge.
  - Selecting a preferred alternative.
  - Preparing the National Environmental Policy (NEPA) filings for the project.
  - Establishing permitting constraints.
  - Advancing the design to the 25% level including traffic management and construction staging.

- Key milestones in the Fore River Bridge Replacement Project include:
  - Notice to proceed – October, 2008.
  - Basic design – Fall 2008 to Winter 2009/2010 including:
    - Project development and environmental assessment.
    - Basic highway design.
    - Functional design reports.
    - Bridge type study reports.
    - MassDOT Highway Division Review
  - 25% Design – Spring 2010 to Spring 2011 including:
    - Federal and state permit filings.
    - Highway plans.
    - Bridge sketch plans.
    - MassDOT Highway Division Review.
  - Design/build procurement package – Fall 2010 to Spring 2011 including:
    - Bridge and highway plans, specifications and final estimate.

- Key issues with regard to the project include:
  - Community input.
  - Environmental concerns.
  - Channel clearances as mandated by appropriate state and federal agencies.
  - Span type selection.
  - Ensuring equitable vehicular, bicycle, pedestrian and marine access.
  - Construction staging.
  - Aesthetics
  - Capital and lifecycle costs.

- With regard to environmental permitting, the Fore River Bridge Replacement Project is going through the NEPA process. Within this process, FHWA is the lead federal agency and the USCG is a significant coordinating agency.

STV Incorporated
321 Summer Street
Boston, Massachusetts 02210
(617)482-7298 fax:(617)482-1837

- As part of the NEPA process, the project team will prepare an Environmental Assessment or EA. The EA:
  - Analyzes project alternatives.
  - Assesses existing conditions.
  - Identifies potential impacts and proposes mitigations if appropriate.
  - Documents public outreach.

- Part of the environmental process is conducting a scour analysis. The scour analysis models what impact the new bridge will have on the bed of the Fore River. Current modeling suggests that while neither type of bridge presents insurmountable scour, the bascule bridge would cause greater scour than the vertical lift.

- Once the EA is filed, there will be an additional public comment period and FHWA will issue a determination.

- As the Fore River Bridge replacement is a "footprint bridge replacement" (that is, it replaces an existing structure with a bridge of the same vehicular capacity along a similar alignment) under the most recent Massachusetts Transportation Bond Bill, , the project is exempt from MEPA, Chapter 91 licensing, and the Massachusetts Wetlands Protection Act. Even with these exemptions, the Fore River Bridge Replacement project must still obtain the following permits:
  - USCG Bridge permit – this is the next document to be prepared.
  - MassDEP Section 401 Water Quality Certificate.
  - Army Corps of Engineers Section 404 Permit.
  - Massachusetts Coastal Zone Management Consistency Determination.
  - EPA NPDES permit for construction related storm water discharge.
  - Compliance with the National Historic Preservation Act. A Memorandum of Agreement was negotiated and signed prior to the demolition of the 1936 bridge.

- The area immediately surrounding the Fore River Bridge is a diverse mix of residential neighborhoods such as Quincy Point, North Weymouth and Germantown that have the bridge in their "view-shed" and industrial uses such as Twin Rivers Technology, MWRA and the Fore River Station power plant. Also present immediately at the bridge are the museum ship *USS Salem* and a waterside public amenity on the Weymouth side of the bridge. MassDOT has already signed a restoration obligation for this amenity following construction.

- Minimizing impacts to the communities and uses surrounding the bridge has been a top-of-mind goal for the project team. To this end, STV has chosen a bridge profile which:

  - Provides an ADA-compliant grade of 5% and a design speed of 40 miles per hour.
  - Avoids permanent impacts to the homes in Weymouth or the rotary in Quincy.

- The chosen profile will include two vehicular travel lanes and sidewalks in each direction as the 1936 bridge did, but will also offer bicycle lanes in each direction.

- The project team understands that traffic management during construction is a significant concern to residents in the communities surrounding the bridge. Construction criteria and methods will be established with an eye towards reducing the duration and intensity of construction traffic impacts.
  - The project team is currently analyzing how best to use intelligent transportation systems to address traffic both during and after construction.
  - The project team is also in the process of reaching out to the maritime community in an effort to reduce the duration of bridge openings.

- Construction of the new Fore River Bridge will be achieved in three broad phases including:
  - Construction of the new movable span on the 1936 alignment. This will be done off-line and will not impact traffic.
  - Connection of the approach ramps to the new bridge. This will be the most complex phase of work and will have some impact on traffic. The project team is currently analyzing how best to accomplish this element of the work.
  - Removal of the temporary bridge.

- The project team is currently coming to the end of the type study phase of the bridge replacement process. The goal of the type study is to identify the most appropriate type of bridge to cross the Fore River. The type study has analyzed two types: bascule and vertical lift. Criteria on which the two bridges have been weighed include:
  - Agency acceptance of channel width.
  - Acceptance of vertical channel clearance and the ability of the chosen vertical clearance to minimize the required number of openings.
  - Site conditions and impacts.
  - Engineering parameters.
  - Permitting agency constraints.
  - Bridge aesthetics.
  - Capital, lifecycle and maintenance costs.

  The project team is also analyzing the most appropriate approach structures to take traffic between the shore and the movable span. The project team is currently considering two fairly conventional steel and concrete types of approach structure. It is expected that there will be three spans of approach structure on either side of the movable section.

STV Incorporated
321 Summer Street
Boston, Massachusetts 02210
(617)482-7298 fax:(617)482-1837

- A bascule bridge consists of movable segments, known as leaves, which rotate about an axis, known as a trunnion. The bascule bridge is generally used for shorter spans, 225 feet or less.

- A vertical lift bridge consists of a movable deck or truss positioned between two towers. The truss is able to move between the towers like an elevator in a shaft. Vertical lift bridges are, as an inherent aspect of their design, more stable and suited to longer crossings of 225 feet and greater.

- The project team is aware that openings cause a significant impact on traffic. This impact is especially pronounced given the position of Route 3A in the local transportation network. The Fore River Bridge carries roughly 32,000 vehicles each day.
  - In light of this, reducing the number and duration of bridge openings is a goal of the project team.

- The project team is also aware that the Fore River Bridge is a busy shipping channel. The largest ship currently transiting the Fore River is the Panamax class oil tankers used by Citgo. The current horizontal clearance offered by the temporary bridge, 175 feet, is inadequate to meet the needs of current and future shipping. The depth of the channel, 35 feet below mean lower low water, does place some upward limitation on the size vessel that can transit the Fore River.
  - In light of this, improving access for shipping is a goal of the project team. To this end, the team is considering a bascule bridge with a 225-foot horizontal clearance at the fender line and a vertical lift bridge with a 250-horizontal clearance at the fender line.

- With a horizontal clearance of 225 feet at the fender line, a bascule bridge over the Fore River would be the largest and heaviest in the United States. As they become longer, bascule bridges require larger, heavier leaves. This places additional strains on the lifting gear, trunnions and motors, particularly when opening the bridge in high winds as the leaves act as a sail. A horizontal clearance of 225 feet represents the outer engineering extreme of what can be achieved with the bascule type.

- A new bascule bridge over the Fore River would also be unable to completely replicate the look of the 1936 bridge.
  - The deck structure would need to be deeper, given the longer leaves, and present a heavier visual presence.
  - The piers would need to be wider to accommodate the counterweights needed for the bridge. At 225 feet of horizontal clearance, the counterweights would be so large as to drop below the water when the bridge was opened. To avoid

the corrosive effects of salt water on the counterweights, each pier would need a chamber into which the counterweight would drop the bridge opened, forcing each pier to be 100 feet wide.

- A vertical lift bridge uses towers to support the lifting span at both ends. This makes the vertical lift bridge inherently more stable and less susceptible to high winds. If a new vertical lift bridge were used to cross the Fore River, it would provide 175 feet of vertical clearance above mean high water in the open position.
  - The vertical lift bridge's truss has most of its supporting structure above the road deck. This provides increased vertical clearance in the closed position and reduces the number of bridge openings.

- An advantage of the vertical lift design is that it can provide a wider fender-to-fender horizontal clearance, in this case, 250 feet. A new, permanent vertical lift structure would open and close much faster than the current, temporary span. It is hoped that mariners would gain confidence in the robust construction of the new bridge as well as the greater channel clearance and be willing to transit the Fore River Bridge at higher speeds leading to a decreased duration for bridge openings.

- The current temporary bridge is a vertical lift structure however a permanent vertical lift bridge would be much more robust than the present bridge. The project team has developed the following table to help community members understand the differences between the two:

Criteria	Temporary Structure	Permanent Vertical Lift Bridge
Design life	15 years	75 years
Basis for mechanical design	Crane construction	AASHTO specifications
Operation in high winds	No	Yes
Wire rope lubrication	Constant maintenance requiring daily off-peak closures	Normal maintenance, 50 year life.
Navigation channel width	175 feet	250 feet
Ease of ship transit through the bridge	Difficult	Easier
Deck system	Steel (loud)	Concrete (quiet)
Average opening time	21 minutes	13 minutes (est.)

- A new vertical lift bridge could be built of either steel or concrete. The towers of this bridge would be taller than those of the current, temporary bridge.

STV Incorporated
321 Summer Street
Boston, Massachusetts 02210
(617)482-7298 fax:(617)482-1837

- STV believes at this time that the towers could be lowered by approximately 20 feet from the renderings shown at the February 24, 2010 public meeting.

- From the standpoint of reducing openings, the vertical lift bridge presents an advantage over the bascule bridge as is shown by this table:

Bridge	Vertical Clearance above MHW at Fenderline	Navigation Channel Width	Number of Annual Openings	Approx. change in # of openings/year	Approximate average weekly change in summertime openings
1936 Bridge	33 feet	175 feet	646 (2002)	-	-
Temporary Bridge	55 feet	175 feet	587 (2007)	-	-
Proposed Bascule Bridge	43 feet	225 feet	612 (interpolated)	+25 as compared to temporary bridge	+1.6 as compared to temporary bridge
Proposed Vertical Lift Bridge	58.5 feet	250 feet	560 (2007)	-27 as compared to temporary bridge	-1.7 as compared to temporary bridge

- On the basis of this information, STV is recommending that MassDOT proceed with design and construction of a vertical lift structure. As compared to each other:
  - The cost to build each bridge is roughly the same - $255 million. The bascule bridge is more challenging to construct, but the vertical lift bridge is a larger structure overall.
  - The construction schedule is the same.
  - The vertical lift bridge has fewer construction impacts on the channel as it can be constructed in the open position.
  - The vertical lift bridge represents an easier construction since it can make better use of the channel to deliver materials, equipment and possibly even the lift span of the bridge which could be built off-site and barged into place. The machinery and lifting gear associated with the vertical lift bridge would be smaller and easier to obtain and install.
  - Lifecycle costs are roughly equivalent.
  - The number of bridge openings would be reduced from the current temporary structure by the vertical lift, but the bascule bridge would require more openings as compared to current conditions.[3]
  - The vertical lift may have a slightly shorter opening cycle time due to the improved navigation that is expected to reduce the time required for vessel passage.

[3] Ken Coehlo of FHWA suggested that how these numbers were arrived at be discussed at the next public meeting on April 12, 2010 and in the EA document that the project team will submit.

- Ease of navigation would be improved by the vertical lift bridge.
- Permitting through federal agencies would be smoother with the vertical lift bridge.

Question and Answer Session

Q = Question **A = Answer** **C = Comment**

C. Gregg Farmer (GF): Looking at the vertical lift bridge, it does look like it would be easier to get through the bridge, but I don't know how much it will change the cycle time. Given the way the river bends we can't just say "full ahead, we're going to Citgo."

A. Mark Ennis (ME): Thank you, that's a good thing for us to know as we move forward.

Q. Michael Duarte (MD): Who is requiring the 250 foot horizontal clearance?[4]

A. Mike O'Dowd (MOD): In our previous with maritime stakeholders, relative to the usage of the Fore River channel, it's been assumed that 250 feet of horizontal clearance would be adequate to meet future shipping requirements given the limits imposed by the depth of the channel. 250 feet does represent a bit of a compromise down from the 300 foot shipping channel mentioned in some documentation regarding the river, but it's substantially more than the 175 feet you have now.

A. Gary Kassof (GK): We have been working with MassDOT since this project began to maximize the channel opening. When we at the Coast Guard were presented with a possible horizontal clearance of 225 feet or 250 feet we pushed for 250. There will certainly be larger vessels in the future. We think 250 feet is a good number, but we are listening to you.

C. Bob Bell (BB): I think we discussed this at the meeting in Hingham. People don't want that ugly-looking steel lattice structure for a bridge. I am concerned about the impact of openings on road traffic. When you calculate the impact of sailboats on

[4] Herein, the term "horizontal clearance" should be taken to mean width of the channel through the replacement Fore River Bridge at the fender line. The fender system protects the bridge's piers from collisions with ships. Due to their size, the leaves of the proposed bascule bridge, could not be brought to the full vertical position though they would be quite close. As such, a new bascule bridge crossing of the Fore River would provide 225 feet of horizontal clearance at the fender line and at 175 feet above MHW, but slightly less near the tips of leaves.

how many openings you'll have, I think sailboats influence the bridge for more like five or six months each year, not just three or four.

A. Mark Ennis (ME): It's our belief and expectation that a wider horizontal clearance through the bridge will give mariners greater confidence in transiting it. A new, permanent vertical lift bridge will operate more quickly and more reliably than the current structure, which will also increase mariners' confidence. We think that this, combined with faster operation of the bridge, will decrease the duration of bridge openings and their impact on roadway users.

C. Allen Morris (AM): When we met in August 2009, I think we all established some limitations. There's a utility tunnel in the river bed and building a bridge with a 300 foot horizontal clearance greatly expands the time and money needed to build the new bridge because its supports would impact that tunnel. Back in 2009, we settled on 250 feet of horizontal clearance as being reasonable based on our projections and rough cost and time estimates. Right now the navigation channel is way too tight. There's no cap on the size of future vessels, but we are comfortable with a channel of between 225 and 250 feet.

C. Carol Voigt (CV): There were two studies done several years ago that recommended a bridge with a horizontal clearance of 300 or even 350 feet. When we came down to 250 feet it was in recognition of the huge cost in time and money of moving the utility corridor and taking houses. I'd like to ask the pilots in the room, what's the beam of a post-Panamax ship? Is it between 145 and 160 feet?

A. MOD: That's right, there were those studies done that suggested the navigation channel be 300 feet in width. As we understand it, the post-Panamax isn't a defined class of ship yet, but rather a range of sizes.

Q. CV: So, at 250 feet of horizontal clearance, would a post-Panamax ship be able to come in?

A. GK: The channel is authorized at 35 feet of depth. So unless Congress studies the channel and demands the channel be deepened, we can't go past the current depth. That probably wouldn't happen unless there were a huge increase in traffic and that increase in traffic were driven by more than just a single user.

C. CV: So with a post-Panamax ship we could short the cargo, lightering a part of it in New York--we do that all the time--or we could bring the ship in at high tide.

C. GF: I think we're forgetting the history of the shipyard. They built LNG tankers there with 138 foot beams and they used to squeeze in and out rubbing the fender

system. The big problem was bumping the bottom on the way through. With the current channel, I can't see moving bigger ships with 130-140 beams through it unless the Army Corps does a whole lot of work on this river.

A. CV: The point is that there are constraints and variances. My point is that a replacement bridge with a 250 foot horizontal clearance does not constrain the economic viability of the port. I compliment you on going with the vertical lift bridge and giving us the extra 25 feet. That is huge for us. Again, if the beam works, but there's a problem with the depth, you can use your knowledge of the bottom, the winds and tide to navigate a bigger vessel through there.

C. MOD: When we talk about the channel width, one thing MassDOT is faced with on a regular basis is the public perspective that we are making the bridge wider to accommodate Citgo. If there is some doubt about whether you will actually bring these larger vessels into the Fore River then it could place us in a difficult position. Does a higher channel width make the area more economically viable? Does Citgo own its own facility? You're not planning to move in 10-15 years are you?

A. AM: Citgo accounts for perhaps only a third of current bridge openings.

A. AM: Citgo does own its own facility.

A. GF: We can't forget the Fore River Shipyard which is part of the designated port area. Think of Quirk who owns that area. If he decides he wants to bring car carriers into that area, he will need all the width he can get, even fairly high up. Having the width of the opening taper as you go up from the water line is fine with an oil tanker that has a narrow superstructure, but a car carrier is wide all the way to the top. You don't want to limit the area's future economic development.

Q. GK: When USCG considers an application, we look at historical, current and predicted future needs. That's why we demanded that everything associated with the old bridge come out of the riverbed and why we are pushing for the biggest possible horizontal clearance. This project is now moving along at a good clip. How do we segue the dredging so that we have a nice, feathered transition from the 300 foot channel to the neck-down underneath the bridge?

A. Ed O'Donnell (EOD): We are currently in the planning stages and trying to get an idea of what alignments would work out best for those entering the channel. We need to determine where it might be useful to widen the bends and do sampling and testing of the bottom. It can take a while to get these sorts of permits. I forget the exact timing we had discussed. I think MassDOT was thinking that dredging after the new construction would be better. How long is this going to take?

A. MOD: We think building the bridge is going to cost $240 million. That's being paid for through the Accelerated Bridge Program which means we need to done by 2016. I don't know when we'll be seeing that kind of money again. That means there's four years for us to build the new movable span, the approaches and demolish the existing ACROW. That's not a lot of time for what we need to do. We're trying to make the right decision for the general public and mariners' now and for the next 75 years which is why we are seeking so much public input and consensus.

Q. CV: What's the advantage to dredging the channel after bridge construction is complete?

A. MOD: When we started, Ed wasn't completely sure as to when he could get out there to start construction. We need to file our Environmental Assessment and our permit application with USCG. I don't think that Ed can be in and out of the channel between now and late 2011 or early 2012, and having two operations out there at once does present a problem.

A. EOD: [Agreed].

Q. CV: So there's no benefit to dredging before the bridge construction?

A. MOD: No benefit, but definite downsides. The area we'd expect to have to excavate to bring the channel through the bridge to 250 feet in width has actually already been done a good bit because of the removal of the 1936 bridge's foundations. We will of course design the new bridge for dredged conditions.

C. AM: I want to go back to something you said earlier. As far as Citgo building a facility to accommodate bigger ships, why would we do that if we can't even fit them through the bridge. Once you give us the biggest bridge you can, then we have the opportunity to modify our facility to fit bigger vessels. Don't use where we are today as a constraint on what our future operations might look like; take that out of your calculations.

A. GF: I think we do need to be realistic about the restrictions on the river. We're daylight restricted down there. For the foreseeable future, unless the channel is changed significantly, its going to stay daylight restricted with 36 feet of depth in the channel. We're already under those restrictions, plus a size restriction for the temporary bridge. The biggest ship we can bring in right now is 600 feet of length by 106 feet in the beam.

Q. MOD: Why the daylight restriction?

A. GF: It's because of the depth and turns of the river.

C. AM: It seems to me that a post-Panamax ship coming in here would require significant changes by the Army Corps. Clearly, the 175 foot horizontal clearance we have now is not adequate. Everything we've seen said it could go as high as 350 feet. We compromised and I thought we had some concurrence at 225-250 feet.

A. MOD: You are right. There is documentation that suggests a 300-foot channel and there has been a consensus because you backed off 300 feet. 225-250 feet of horizontal clearance at the fender line is our operating range and you'll know exactly what we are proposing when we submit out permit. The recommendation coming from STV is that we build a new vertical lift bridge with a horizontal clearance of 250 feet. We just need to make sure that our decision to go for a vertical lift bridge is defensible.

Q. MD: So is future use of the shipyard driving the need for a 175 foot vertical clearance?

A. ME: There are a lot of potential vessels that could come through here. Our design vessel is a Panamax ship. The fender system, the clearances, all of those will be for the Panamax class of vessel. We are aware that larger vessels could use the bridge, but post-Panamax isn't a well defined class right now and based on what you're telling us, they would have to be lightered elsewhere in order to meet the draft restriction. We believe that a vertical lift bridge with a 250 foot horizontal clearance and a 175 foot vertical clearance will accommodate most Panamax and post-Panamax ships. It's consistent with the new vertical lift bridge going in at Chelsea Street between Boston and Chelsea.

Q. MOD: I've got some questions of my own for the mariners here today. The first one of those is whether anyone has ever considered an off-shore unloading facility for Citgo?

A. GF: There's nowhere to do anything like that safely in the area. None of the agencies that would be involved would ever grant a permit for it.

Q. MOD: With regard to pilots taking ships in and out of there, how much can you reduce the time between calling the tender house and going through the open bridge?

A. GF: The issue for us is confidence in the opening. We've had issues with the temporary bridge. The thing gets stuck and the tender needs to get an electrician to reset the circuit breaker and we understand that if something like that happens during rush hour it causes havoc. We need the right tide conditions so if the bridge doesn't open and we have to wait around while those conditions are slipping away that's frustrating and even dangerous. In a worst case scenario, we don't get through the bridge and have to wait a day or two while the tide gets to be right again. In the meantime, Citgo's running dry and people's homes are getting cold.

Q. MOD: Well, how much of a window do you generally have?

A. GF: That varies a lot depending on the tide, run-off and wind conditions. The big thing for us is confidence. As mariners come to understand that the bridge is more robust and they can rely on it, you will see shorter openings. It won't be because we'll go through the bridge faster--we're going through at between 2 and 2.5 knots--but the set-up time is going to shrink noticeably.

C. DM: We know that when you're watching this from a stopped car it looks like watching paint dry, but from the deck of the ship it can be nerve-wracking. We just need to be a little more confident in the new bridge.

C. GK: I've got a suggestion: install an air-gap sensor on the bridge. That will tell everyone exactly how much space they have under the bridge. We have one on the Bayonne Bridge in New York and it broadcasts real-time clearance data every six minutes. The pilots have to play the tidal game with the Bayonne Bridge too, but since we installed the air-gap sensor it's made for many fewer complaints.

Q. MOD: Since the new dolphin system went in, do you still require a two tugboat escort?

A. GF: Yes, it's usually two or three tugboats for the escort. It has to do with the difficulty of lining up to go through the bridge, but when we actually transit the bridge the ship is going through under its own power.

C. MD: But, if the opening under the bridge was wider, we might be able to use tugs to bring the ship through. You might approach the transit entirely differently.

C. GF: I think this conversation brings us to the question of cycle time. The cycle really ought to be viewed from the motorists' point-of-view. That means from the moment the gates come down.

STV Incorporated
321 Summer Street
Boston, Massachusetts 02210
(617)482-7298 fax:(617)482-1837

A. ME: The time we're showing here is the average time of gate closing to gate opening. The 21 minutes for the temporary bridge is based on the bridge tender's logs although we know it can be much longer. Currently, the temporary bridge requires six minutes to go up and seven and a half minutes to come down. The numbers we're showing here today are based on the reduction in time to move the bridge.

C. GF: Then I think it's fair. I think with a better bridge with a more robust mechanism, we would feel comfortable making the call to open the bridge a little later.

Q. MOD: Are there scheduled deliveries?

A. GF: With larger ships we don't schedule it, we have to deliver when it's needed. Otherwise we might lose a week or a day and people's houses get cold.

Q. MOD: Regardless of whether we wind up with a vertical lift or a bascule structure, we want to use heavy lift techniques as much as we can. What restrictions would you like to see imposed on a contractor? Do you know of open areas that would lend themselves well for preassembling or precasting?

A. RB: On the Weymouth side, there's a section where most of the pilings have been removed near the power-plant so you might be able to use that area. You will need someone to direct traffic in the water. When the temporary bridge was installed, there was a USCG vessel on hand to direct traffic and that worked well. Outside the bridge you would have to use the Weymouth side. Inside the bridge you might be able to stage some barges at the shipyard provided you got permission from Cashman. Also, the barges can't stick out into the federal channel. On occasion, there are barges at Proctor and Gamble that project into the federal channel and it does create a problem.

Q. MOD: Who would regulate directing traffic in the channel?

A. Lieutenant Commander Pamela Garcia (PG): It's a combination of Quincy and Weymouth and us. It worked out well last time.

Q. MOD: What type of coordination would be required to bring in a heavy element such as the truss of the vertical lift bridge? A move like that could take a few days. What impact does that have on you?

A. AM: As long as you give us plenty of advanced notice, and limit the closures to say 72 hours, it's no problem for us. We can make sure to get out of your way and clear the channel. Just give us enough time to plan ahead.

A. AM: On the Chelsea Street Bridge, we have an expected 72 hour closure and we're programming it in advance. Just give us time to plan ahead.

Q. GK: What kind of heavy lift are you considering?

A. MOD: The firms I've spoken with have the opportunity to bring in the truss in the full vertical position so it doesn't impact the channel much. With the bascule we have to build it in the closed position which does have a significant impact on the channel. We can't stipulate that the design/build contractor use that approach, but we can stipulate no more than a three day closure of the channel.

C. GK: A few things to keep in mind: to the extent that you can discuss this in your EA document, that would be good. Once that occurs, our office will review your construction plan. Any closures of the bridge or channel need to be cleared through us and the Captain of the Port. The first inkling you have about a closure, please tell us then.

A. MOD: It's a concern for us because this is the first time MassDOT has done a design/build movable bridge. We have to give the contractor the ability to be flexible. We have to give them wiggle room in design and construction, but at the same time make sure it goes right.

C. GK: In that case, I might suggest you speak with Maine DOT. They did a very similar and very successful project on the Carlton Bridge over the Kennebec River in Bath, Maine. They were very good about providing us documents in advance.

C. PG: Speaking on behalf of the Captain of the Port, we'd request between 90 and 120 days before instituting a closure. That's our normal rule making timeline. Anything shorter than that would have to go through as an emergency.

A. MOD: All right, we will keep that in mind. Can you restrict the navigable opening? For example, could you say restrict the channel down to 100 feet of width and keep the pleasure craft moving through?

A. PG: If you change the use of the channel in any way from what the public is used to, we have a variety of notifications and tools we can use to reach out to them. The point of the safety zone is to keep the public, mariners and the contractor safe. It can

be hard to connect with the general public so our inclination would be towards a full closure.

C. GF: There are ferries in and out from under the Fore River Bridge on a daily basis. There'll definitely be issues if they can't access their dock next to the *USS Salem* for three days.

A. MOD: During the construction of the temporary bridge, there was a relocation of the ferry dock to be north of the bridge on the Twin Rivers Property.

A. Nikole Bulger (NB): That became difficult very quickly because the access road was a single vehicle in width. Buses were forced to back out and occasionally coming into conflict with Twin Rivers trucks. Instead they used an off-set channel under the Quincy approach span of the temporary bridge so that the ferries could use their normal berth.

A. MOD: Right, which is why I asked the question about whether the entire channel needs to be closed or whether some segment could remain open. We would need some kind of alternate arrangement for the ferry boats.

C. AM: Maybe you could shuttle passengers by bus to another facility. Let the passengers use the Fore River ticketing and parking, but have them get on the boat elsewhere.

A. NB: To what was said earlier, we would look to create a channel under the approach again to allow the ferries to use their usual berth.

C. Kenneth Coehlo (KC): We would ask that you reach out to the MBTA and tell us whatever agreement you ultimately reach with them.

C. GK: There's a whole range of options available between a full closure and some kind of method where you can sneak ferries out through a work-around solution. Once you have your contractor onboard you can come back to us and we'll work through it together.

C. KC: When you issue the RFP, it will be important for you to work in the elements that Lieutenant Commander Garcia mentioned so we don't get into claims and other unpleasant surprises. Don't make any promises, but just make sure you've laid down the ground rules.

Q. MOD: There will be an interim between when we build the new bridge and when the Army Corps is able to get in and dredge. In that interim, the current fender system

would still be in place. What do we do to make that period go as smoothly as possible?

A. GK: I think the Chelsea Street Bridge represents a good learning experience on just this issue. We can look at that together and come up with something; it's not an insurmountable challenge.

Q. AM: So, by 2016 the new bridge is in and old one is out?

A. MOD: Yes, by 2016 everything has to be done or we would liquidate damages against the contractor.

Q. AM: So how long a demolition period would it be?

A. MOD: I don't have the exact figure, but it would be less than six months. There would be some channel restrictions during the removal of the temporary structure.

Q. EOD: Will the new bridge be on the old alignment?

A. MOD: Yes.

C. EOD: So we'll require you to do soundings, but you'll mostly have the depth throughout the 250 foot opening.

A. ME: We've done some survey and while there will be some additional dredging it will be minor because so much of the old pier system has been removed already.

C. EOD: In that case most of the depth will be there. The Corps of Engineers won't need to do too much. We'll have some buoys to make sure nobody runs aground, but the safety will pretty much be there.

C. EOD: I did want to take the last few minutes and talk about the alignment. We have the authority right now to make some changes to the bends and increase the width out to 300 feet. What we would do is deepen the channel to match the new fender system and up towards the Town River if you think it would make sense. I think we also need to talk to P&G because they are mooring things in the federal channel and they really should not be doing that. None of the things I'm laying out here require study or a sponsor. We can do all of them as soon as the bridge is complete. If you want more than this, it will require a public sponsor, a study, and Congressional approval. That would be pretty hard if only one user, Citgo, is pushing for it; identifying some other potential users, as we did today, such as Quirk who wants to bring cars in at that

location would be helpful in making this an easier process. I think that having the bridge complete in 2016 gives us a good head start.

Next Steps

The next public involvement milestone will be a public information meeting similar to the one on February 24, but held for the residents of Representative Mariano's district. This meeting is scheduled for April 12th, 2010 at the Fore River Club House.

STV Incorporated
321 Summer Street
Boston, Massachusetts 02210
(617)482-7298 fax:(617)482-1837

File STV No. 20

End of Meeting

Note to the Reader: the materials made available through this section of the website have been developed by the project team to support the public involvement process. As the materials cover roughly a year's worth of meetings, the reader should assume that all materials reflect the project team's best understanding of the project at the time prepared. Later materials offer the reader a deeper and clearer look at the project and should be assumed to supersede earlier materials.

These minutes are a close representation of what transpired at the meeting summarized herein, but should not be considered a verbatim transcript. Contact information provided by meeting attendees has been removed to protect their privacy.