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B o s t o n , M a s s a c h u s e t t s 0 2 2 1 0
(617)482-7298 fax:(617)482-1837

Meeting Date: July 23, 2009

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: Quincy Point Congregational Church, 1000 Southern Artery, Quincy,
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 for the members of the Quincy 2000
business development group. Invitations to the meeting were coordinated
through the Quincy 2000 business development group's executive staff and
reached businesses in Quincy, Weymouth and Braintree. Representatives of
the United States Coast Guard were also present at this meeting.

Items Discussed:

Dean Rizzo welcomed the attendees and introduced himself as the Executive Director of Quincy 2000, a public-private partnership promoting Quincy-based businesses. He explained that an invitation to the briefing had been extended to businesses in Quincy, Weymouth, and Braintree. Dean then thanked the design team for providing the briefing and the Quincy Point Congregational Church for hosting the event. Before turning the meeting over to Mike O'Dowd (MassHighway), he requested that Quincy Ward 2 City Councilor Dan Raymondi make a brief statement. Councilor Raymondi expressed his thanks to MassHighway and requested that the design team schedule a similar briefing for residents of Ward 2.¹

Dean then introduced Mike O'Dowd, who thanked the representatives of the United States Coast Guard (USCG) for their presence at the meeting. He explained that the

¹ This briefing is tentatively scheduled for mid-September.



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briefing represented one element of the larger public process for replacement of the Fore River Bridge. Replacement of this span is one of the central projects of the Accelerated Bridge Program.² Several years ago, a study was conducted that analyzed the feasibility of replacing the Fore River Bridge with a new movable span, a fixed span, or a tunnel. Due to the takings of private property that would have been required for the last two options, a new movable span had proven to be the only feasible option. The results of this study formed the basis for the design/build project. Mike underscored MassHighway's commitment to starting construction on the new bridge as soon as possible, based on both the difficulty of maintaining the temporary bridge and community dislike for it. He also noted the design team understands that the new bridge must serve not only commuters but also mariners.

Highlights of the Presentation³

Mike then introduced Mark Ennis (STV), who briefed the group on the current phase of the project. Highlights included the following:

- 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.
- Highlights of the Accelerated Bridge Program include:
 - Faster construction techniques;
 - Advanced project scheduling and estimating;
 - Streamlining of the environmental process; and
 - Innovative delivery mechanisms such as design/build and single-phase construction.
- Members of the Fore River Bridge Replacement Design Team include:
 - **STV:** project management, structural engineering, electrical and mechanical, and civil/drainage;
 - **AECOM:** environmental and structural;
 - **TRC:** environmental;
 - **Howard/Stein-Hudson:** public involvement and traffic management;
 - **Rosales + Partners:** bridge aesthetics and architecture;
 - **ASEC:** survey;
 - **Domingo-Gonzalez Associates:** bridge lighting; and

² This program commits \$3B over the next 8 years to reduce the number of structurally deficient bridges in the Commonwealth and ensure that additional bridges are not added to the list.

³ This presentation can be viewed at <http://www.mhd.state.ma.us/ProjectInfo/>. Search either Quincy or Weymouth for project number 604382.



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- **Pressley Associates:** landscape architecture.
- The scope of work includes:
 - Coordination with stakeholders and agencies;⁴
 - Evaluation of the movable span and approach structure types;
 - Selection of a preferred alternative;
 - Preparation of the National Environmental Policy Act (NEPA) filing;
 - Establishment of permitting requirements;
 - Advance design, construction staging, and traffic management plans to the 25% level; and
 - Preparation of the design/build procurement package.
- Key issues to be addressed by the design team include:
 - Community and environmental concerns;⁵
 - Designing a new movable bridge that:
 - Serves vehicular,⁶ bicycle, pedestrian, and marine traffic equally well;
 - Cycles in 12–15 minutes;⁷
 - Maximizes horizontal and vertical clearance in the navigation channel to minimize bridge openings;
 - Is aesthetically pleasing to the surrounding community; and
 - Is as inexpensive to build and maintain as possible while still maintaining sound structural quality.
 - Staging and traffic management during construction.
- Conducting the bridge type study is a major component of the design team's work. The team is studying the two types of span deemed most appropriate for the site: a bascule bridge⁸ and a vertical lift bridge.⁹

⁴ The lead federal agency on this project is the Federal Highway Administration. The Coast Guard also plays a lead permitting role and will ultimately dictate the required width of the shipping channel. The selected width will influence the type of bridge chosen.

⁵ Environmental issues on-site include a herring run, winter flounder spawning areas, hazardous materials in the river sediment, and view-shed for a number of neighborhoods.

⁶ The Fore River Bridge carries roughly 30,000 vehicles on an average week day.

⁷ The cycle of a movable bridge is the time from traffic stopping to traffic starting again. The time in between includes the raising and lowering of safety gates, raising the movable span, the transit of the ship, and closing the movable span. The ship transit time is a significant portion of the cycle, and could result in longer overall cycle times.

⁸ This design is similar to the original 1936 bridge and is more commonly used for short distances. This type of bridge provides unlimited vertical clearance in the open position.

⁹ In this design, the road deck lifts vertically between two towers at either end of the bridge. This type of bridge has a limit to its open position vertical clearance, but through appropriate sizing based on a study of ships using the Fore River, a “right-sized” vertical lift bridge could be built for the site. The road deck of a



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- USCG will be responsible for approving a navigation channel width proposed by MassHighway.
- The channel width selected will influence the type of bridge chosen.
- The 1936 span had a channel width of 175 feet and a closed position vertical clearance of 33 feet at the fender line.
- The 1936 horizontal and vertical clearances are no longer considered adequate. As a result, the design team is basing its current work on a baseline channel width of 225 feet with a closed position vertical clearance of approximately 50 feet for a bascule bridge and 60 feet for a vertical lift span.
- Even with these greater closed position vertical clearances, the new Fore River Bridge will be a footprint span that will not require additional land takings or change current roadway geometry.
- The 225-foot horizontal clearance will easily accommodate the Panamax¹⁰ oil tankers that serve the Citgo Terminal to the south of the Fore River Bridge. In the closed position, the improved vertical clearance will accommodate the bulk of recreational sailboats. This will reduce bridge openings during the summer months, as compared to the 1936 bridge.
- Regardless of which bridge type is chosen, the design team's bridge architect Rosales + Partners can provide the new span with either a historic or modern appearance that will harmonize with its surroundings and the community's wishes.¹¹
- The design team will also study and select a preferred alternative for the new bridge's approaches, which will carry traffic between the roadway and the movable span. The two types being studied for the approach are both highly conventional and inexpensive to build:
 - Plate girder, in which the road deck is carried by steel support members.
 - Pre-cast concrete, in which the road deck is carried by concrete support members.
- At present, the design team is considering a roadway profile that will provide:
 - Four 12-foot-wide travel lanes;
 - A 6.5-foot-wide sidewalk on either side of the bridge; and
 - A 5-foot bicycle lane on either side of the bridge.

vertical lift bridge is carried by a through truss that tends to have a slimmer appearance as compared to the road deck of a bascule bridge, resulting in a higher vertical clearance and therefore fewer openings.

¹⁰ A Panamax vessel is the largest size ship that can transit the current Panama Canal.

¹¹ The area around the Fore River Bridge is both industrial and residential. The *USS Salem* is also docked to the immediate south of the bridge. Public amenities on the Weymouth side of the river will be restored in the final phase of construction.



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- The design team is cognizant that traffic will be an issue during bridge construction. A traffic management plan will be developed based on a study of current traffic patterns. Members of the public are invited to submit their thoughts on what worked well or was a challenge during the building of the temporary bridge.
- To minimize impacts on commuters, the new movable span will be built next to the temporary bridge. The approach ramps will then be shifted to connect to the new bridge and the temporary span demolished.
 - The design team is studying 5 alternatives to shift the approach spans from the temporary bridge to the new structure to determine which one will least inconvenience commuters.
- Major milestones in the replacement of the bridge will include the following:
 - Basic design: 2008–2010;
 - Creation of the 25% design: January–August 2010;
 - Creation of the design/build package: September 2010–April 2011; and
 - Completion of construction of the new bridge and demolition of the temporary span: 2015.

Question and Answer Session¹²

Q = Question

A = Answer

C = Comment

-
- Q. You spoke about the Panamax vessels. I understand that there is a plan underway to expand the Panama Canal. Does creating a new bridge that accommodates only current Panamax ships place a burden on our economic future?
- A. Historically, the Panamax ship is the largest vessel that has used the Fore River channel. Please bear in mind that we are looking at a baseline channel width of 225 feet. The Panamax has a beam of roughly 106 feet; the next step up from that is a tanker with a beam of 136 feet; so a channel width of 225 feet would not impede the passage of future, larger ships.
- C. Post-Panamax vessels are currently thought of as being able to traverse the Chelsea Creek. As a harbor pilot, I would say that a 225-foot channel width would be more than adequate at Fore River.

¹² Because attendees did not universally introduce themselves before giving their comments, commentary is given anonymously throughout.



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Q. What about the possibility of people trying to jump off the bridge? We do get people trying to jump from the current span.

A. We can extend the railing on the sidewalk with protective screens that will create an overall railing height of 6'8".

C. There's more to this than just a bridge. A big part of what kind of ship you can move through the area is the river, which is winding and shallow. For 20 years, I've watched them bring Panamax ships into the Fore River, and I don't think anything bigger is a good idea. Until the Army Corps of Engineers decides it needs to change the path of the river, I think providing clearance for a Panamax ship is enough.

A. The Army Corps of Engineers just finished a dredging of the Fore River in 2006/2007. That operation brought the depth of the river to 35 feet, which is just deep enough for a Panamax ship. At the moment, that is the only dredging MassHighway anticipates. In designing this bridge, we want to provide for larger maritime traffic without impacting the current roadway geometry. We can do that with a structure that represents a compromise between marine and vehicle traffic. STV will give you a structure that is safe for the road and water users.

Q. I'd like to respond to what I just heard. It's my understanding that all of the studies thus far have talked about a channel width of 300 feet. Why are we suddenly at 225 feet? I'm not saying I have an issue with it, but I am a little surprised.

A. I don't want anyone getting the impression that 225 feet is a solid decision. We understand that there is an interest in something wider. That being said, at 300 feet obstacles on the roadway side could mean land takings, which we are anxious to avoid. In addition, the touchdown points for the bridge would definitely change; there would be a greater vertical curvature to the bridge, resulting in shortened sight distances and lower design speeds. At 300 feet, a utility tunnel would need to be relocated, which would certainly lengthen the project timeline and raise its costs. The 225 feet is a baseline width. We want this project to be quick, safe, and cost-effective. We can go wider, but 300 feet would certainly cause significant problems.

C. We hope this bridge will be here for a hundred years. Certainly the tankers operating now won't be operating then; however, if the channel width is 225 feet from fender to fender, that would probably be acceptable.

A. We are definitely trying for a taller span that will let through recreational traffic and decrease the number of openings.



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C. I commend the design team and MassHighway on all the thought they have put into this, but I want you to consider greater depth at this site. A lot of ports are being dredged to accommodate deeper draft ships; if they can receive those larger vessels, there will be expectation that we can too. Citgo is a multi-supplier in this area. One thing we can do is to make some unloads at other sites before arriving at Fore River—which would allow the larger ship to float a bit higher in the water.

Q. You mentioned earlier that the bridge would cycle in 12 to 15 minutes. Is that regardless of bridge type and quality?

A. Right now, the temporary bridge cycles in about 20 minutes. The range of 12–15 minutes applies to both types of permanent structures. The bascule bridge cycles a little more quickly than a vertical lift, which is why the range is 12–15 minutes. The structure and its motors will of course be first-rate. The time to open and close the bridge is based on the time needed to stop traffic, lower the safety gates, raise the movable span, transit the ship, lower the movable span, raise the safety gates, and start traffic again. Given that the raising and lowering part is really a matter of physics, 12–15 minutes is a reasonable time frame. Another issue is that ships are not always perfectly lined up and waiting when they request the bridge to be raised. This adds time to the cycle. Could the Pilots' Association weigh in?

A. We have to call in for bridge openings earlier at this location because the bend in the river requires us to “go deep into the turn” to align perfectly for the existing tight fender system. This maneuver does not allow us to stop quickly if the bridge doesn't open for some reason. The unreliability of the temporary bridge makes it that much worse, so we call for openings even earlier. A wider channel and a more reliable structure would definitely allow us to be closer to the bridge when we call for openings, reducing the overall cycle time.

Q. Have you done any survey of what percentage fewer openings the greater height of the vertical lift bridge would provide?

A. We are trying to maintain a closed position vertical clearance of between 53 and 60 feet. This will allow us to accommodate most recreational boats without an opening.

A. Roughly speaking, every additional 5 feet of height in the closed position yields a 25% reduction in the number of openings. A vertical lift bridge with its closed vertical clearance of 60 feet would give fewer openings during the summer months.

Q. Will the new bridge impact the rotary?



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A. The bridge as we are designing it will not change the rotary; the 1936 bridge's touch-down points will be maintained. We do not propose to turn the rotary into a round-about or to alter any existing traffic movements.

Q. I own a business near the bridge that has been there since the Dukakis administration. My concern is not MassHighway, but the Legislature. What happens if we get new legislators or a new governor and we have to go all the way back to the beginning on this because they don't like the program or have other financial priorities?

A. I can't comment on future elections, but I can tell you that the department has the money right now for this project and that as I stand before you today I am committed to building this bridge in the timeframe we have given you today.

Q. Is there a difference in wind-loading between the two bridge types?

A. A bascule bridge would have a greater wind-load; but whatever bridge we build, it will be designed for full wind loads. Any bridge would be consistent with the AASHTO guidelines for a bridge of its size, shape, and type.

Q. Looking at the drawings you have shown here today, it seems that the new bridge might be wider than the old one. Is that right?

A. The cross section we propose is roughly what was there before. It is ever so slightly wider, but it still falls within the MassHighway ownership lines. For those with businesses to access around the Quincy approach to the bridge, the frontage road should not be impacted.

Q. Can you comment on any impacts there may be on the MBTA ferry boats that use the Fore River shipyard as a terminal?

A. During the construction of the temporary bridge, the contractor had to provide an alternate docking structure. I understand that the MBTA now owns that structure and—while we have not yet defined the staging and logistics yet—it is likely that at some point during construction the MBTA might need to use that structure to board passengers from an alternate location, possibly near the Twin Rivers Technologies plant. We will try to use new bridge construction techniques to make this project go faster, but some impacts will need to be addressed.



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Q. Will the Coast Guard's decision regarding the channel width impact the type of bridge chosen?

A. There is an upside limit to the length of a bascule bridge. Beyond a 230-foot channel width, the stress on the deck and the lifting machinery drives some very substantial maintenance costs. If the channel width goes beyond 230 feet, we are looking at a vertical lift bridge.

Q. Right now we are in August of 2009 and the Coast Guard has yet to make a determination on the channel width. You want to go out to bid in winter of 2010. How can you go out to the community and engage them about what type of bridge they want, when the Coast Guard might take one bridge type off the table?

A. That is one of the reasons we invited the Coast Guard here today. Would any of the Coast Guard members in the room like to speak to that?

A. We have not made a formal decision about the channel width yet. At first blush, 225 feet seems acceptable to us unless the marine community tells us otherwise. The breakpoint is 230 feet, at which we would need a vertical lift bridge. Even if there is a vertical lift bridge, there won't be impacts on either side of the waterway or takings. We are close, we can't make that decision right now, but sitting here today, both types are possibilities.

Q. So when is the application from MassHighway going to the Coast Guard, and when will the Coast Guard make its decision?

A. It's likely to be another few months before that happens, but we are in an ongoing conversation with the Coast Guard.

Q. How long would it be before the Coast Guard could turn around the application?

A. Between 9 and 12 months.

A. In terms of timing, this permit is not going to impede the design process. Where you would see an impact is in determining when we are able to go out to bid. That's why it's incumbent on all the agencies to work together now and make sure this happens. I would say the Coast Guard is getting a good idea right now on what the public wants.

Q. Between the two designs, is there much difference in how much the footing for the bridge will go into the navigation channel?



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A. Any footing obstruction would be well out of the navigation channel. The abutment structures of the original bridge have now been removed in their entirety. At 225 feet from fender to fender, you would have plenty of room.

Q. There seem to be some abutments already poured and in the water today. What are those for?

A. That is the dolphin fender system that protects the temporary bridge. When the permanent span is built, those will be removed.

Note:

As the meeting was adjourning, City of Quincy Director of Economic Development Nick Verenis reiterated comments he had made in a prepared statement at the June 23, 2009, public information meeting, as follows:

The City of Quincy considers the replacement of the bridge at Fore River critical to the economic development not only of the immediate business and residential community, but of Quincy and the South Shore as well. The current temporary bridge is not only an eyesore; it does not adequately meet the needs of businesses and residents in a safe and efficient manner. The successful completion of this project is hugely important to our business community—and the stability of the residential community as well. This will serve as a critical link to the South Shore. The City of Quincy greatly appreciates the efforts of the Massachusetts Highway Department in completing this project. We in Quincy are aware of the challenges involved and support the efforts of our legislative delegation, Representatives Ronald Mariano, Bruce Ayers, Stephen Tobin, Senator Michael Morrissey, and—locally—Ward 2 City Councilor Daniel Raymondi.

Next Steps

The next public involvement milestone will be a meeting in mid-September to brief the residents of Quincy Ward 2 on the project. Joe Pavao noted that the design team would be willing to conduct additional briefings.



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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.
