MEMORANDUM

To:	Mike O'Dowd MassDOT Project Manager	Date:	October 9, 2019
From:	Taylor Miller Howard Stein Hudson	HSH Project No.:	2013061.14
Subject:	Massachusetts Department of Transportation Allston Multimodal Project Charles River Users Meeting Meeting Notes of September 18, 2019		

Overview

On September 18th, the MassDOT team for the Allston I-90 Interchange Improvement Project held a targeted meeting for users of the Charles River. The meeting followed a similar meeting from July 18th which had addressed a smaller group of river users. The purpose of the meeting was to brief boaters of all types about potential impacts to the Charles River associated with construction of the I-90 Allston project, particularly in the section of the job opposite the existing I-90 Allston Viaduct known colloquially as "the throat." The meeting was attended by representatives of Community Rowing, the Watertown Yacht Club, Cambridge Boat Club, Union Boat Club, Riverside Boat Club, Buckingham Browne & Nichols Crew Team, Intercollegiate Rowing Association, Charles River Watershed Association, and the Charles River Alliance of Boaters (CRAB). Members of the project team present represented MassDOT, Tetra Tech, and Howard Stein Hudson.

The main purpose of the meeting was to obtain input from river users on MassDOT's current proposal to place a temporary trestle in the Charles River to carry Soldiers' Field Road during construction through the section of the project known as "the throat" which runs along the existing I-90 Allston Viaduct. Placing the parkway on a temporary structure in the river allows construction in the throat to move ahead with safer work zones and fewer disruptions to the Worcester Mainline commuter rail. The structure would be approximately 50 feet off the riverbank and roughly 80 feet wide leaving 350 feet of water for boaters at the narrowest point. Meeting attendees asked why the structure had not been conceptualized to be placed closer to the shore. It was explained that its position on the water sheet represents a compromise between constructability and impacts to the riverbank. Other elements of discussion included the possibility of installing a temporary buoy line

to help boaters get used to the trestle's position, how the trestle and any attendant work barges would be lit and their positioning developed in coordination with and monitored by the United States Coast Guard, and the idea of getting members of the project team out on a crew coach's launch to experience rowing traffic on the river.[1]

Agenda

Detailed Meeting Minutes[2]

Welcome & Opening Remarks

C: Mike O'Dowd: I appreciate you all coming out this evening. You may or may not have seen previous presentations by MassDOT and our team on the I-90 Interchange Replacement Project and the various other configurations around Allston, Beacon Park Yards, the "throat" section of the Charles River, Boston University. This has been a significant undertaking for the past five years that has gone through many changes, refinements, and improvements. A Draft Environmental Impact Report (DEIR) was filed in 2017 led to new developments in the alternative designs. In January of this year, our transportation secretary identified a preferred alternative concept which will solve a number of problems such as safety and structural issues and maintaining multi-modes of transportation. With the proposal of the new alternative, we have begun looking at ways to advance the design through state and federal environmental permitting. Up until January of this year, we had no expectations that there would be any impacts on the Charles River. We brought you all here tonight because you are all users of the river and we want to hear your feedback. The river will likely be temporarily impacted by a trestle, or a temporary bridge, that will be used to reconstruct Soldiers Field Road (SFR) while giving us room to rebuild I-90, the MBTA Commuter Rail, and a number of other facilities adjacent to that project.

[1] This ultimately took place on October 8, 2019. Attending were Mike O'Dowd, MassDOT PM, Jim Keller, and Mark Fobert, both of Tetra Tech.

[2] Herein "C" stands for comment, "Q" for question and "A" for answer. For a list of attendees, please see Appendix 1. For copies of meeting flipcharts, please see Appendix 2.

It's extremely difficult for us to construct our project in the throat and maintain all the user groups going through it at the same time. We're trying to minimize any disruption to recreational groups, drivers on I-90 and SFR, and riders on the Commuter Rail. It's our intent to maintain those operations throughout all construction phases while, at the same time, completely reconstructing I-90, the Commuter Rail, and SFR.

What we're proposing here tonight is the construction of a temporary bridge to alleviate the pressures of relocating SFR and I-90, as well as the existing utilities. It will greatly assist us in moving all modes of traffic and reconstructing all new facilities. This temporary structure will be 80 feet wide and will be built approximately 50 feet off the banks of the Charles River, adjacent to the Paul Dudley White (PDW) Path. It will accommodate the four lanes of SFR and the cyclists and pedestrians who use the PDW Path. We want to know how we can advance this project without inconveniencing the river users. If you have any questions, please share them with us after this presentation. We are here to listen to you. If I can't answer your question here tonight, please leave your name and contact information with Nathaniel Curtis and someone from the project team will get back to you.

C: Jim Keller: Good evening everyone. My name is Jim Keller, and I work with Tetra Tech, a design-consultant team working for MassDOT. I personally work on the highway design side. Mark Fobert works with environmental permitting. When we get into the environmental impacts of the temporary trestle, Mark will answer any of those questions.

Tonight, we want to bring you up to speed on the current concept we're looking at which we'll be referring to as concept 3L. If you have a question at any point, feel free to raise your hand. We brought six presentation boards tonight. They are the same six that we've been bringing to meetings since January when Secretary Pollack decided on a preferred alternative. We've been studying and refining the preferred alternative, looking at staging and constructability. Throughout that process, we've come up with these different stages of development, and we'd like to present those to the public. It's a pretty dramatic change since concept 3K in the Draft Environmental Impact Report. Coming up with the best alternative concept for all modes of transportation has been a challenge from an engineering perspective.

C: No Name Given: If I may speak for the group, the end stage that you're showing looks really great, but there are two issues regarding the river that we need to talk about. Most of us agree that having something stick out into the river 130 feet for 10 years won't work. If the structure could hug the shore, not be 50 feet away from it, it might be feasible. The structure will also come very close to a one thousand-meter racecourse that's used by the high school kids.

A: Mike O'Dowd: We're here to focus the conversation of the project wherever you'd like it to go.

C: No Name Given: I'm not an engineer, but I wonder if it's feasible to curve the structure.

C: Jim Keller: I want to share some background on this process. Back in January was when the decision was made to move forward on this concept. We settled on placing SFR over I-90 eastbound because of what it allows for with future pedestrian connections. The independent review team put out an alternative concept that provided wider open space and a separated PDW Path. They didn't go very deeply into the staging and building process. This project is going to be very complex. The constructability report suggested shutting down the PDW Path for the duration of construction, which would be around ten years. These schematics show that there is a lot of work that needs to be done and there is very little area available for a work zone. On top of that, there are major utility relocations involved. To maintain gravity flow, the only place to relocate the sewer to is under the future PDW Path. There's also a water main and drain line and they all run through here. We ran out of room. We can't go further south, so we ended up getting pushed towards the river. We never wanted to go into the river, but we had to realistically explore how to build this. To procure a design-builder, we had to put out a project that could be constructed.

When we made the decision to start going north and into the water, we looked into how close we could go to the bank, how much room we could create for a work zone, and how we could maintain I-90 and rail operations.

When we started looking at alignments, we have to keep SFR and all the utilities live. The temporary bridge is called an Acrow bridge. It's easy to have manufactured. When you try to fit it into the curves of the riverbank, it becomes a custom build and would require some fill. To build this transition and maintain traffic operations, the structure should be as for from the existing road as possible. That's why the structure comes out 50 feet, and with less curves there will be less impacts along the bank.

C: No Name Given: You hit the main point very quickly. This is about navigating the grades from existing SFR to a trestle. But you didn't say why this trestle can't be further south.

A: Mark Fobert: One reason the trestle can't be further south is because of how it will impact the riverbank.

C: Jim Keller: I can show you our temporary SFR layout. We have to change the grade, and to do that we have to take SFR and put it somewhere else. Traffic needs to be diverted away from the site.

C: No Name Given: What I'm hearing is that you need to leave room to make the eventual connection.

C: Jim Keller: That's a very good point, but we're not even talking about that yet. This is all at the beginning.

Q: No Name Given: What is the total measured width of the river at that point?

A: Jim Keller: The structure will be 50 feet from the bank and be 80 feet wide including four lanes of traffic and a temporary PDW. There will be 370 feet left over at the narrowest point. That's before barges.

Q: No Name Given: Did you say that it was impossible to move the green part down and use part of that 50 feet of water? Once you put in another 50 feet of barges, that's taking up a lot of space.

A: Jim Keller: I understand. I'm just explaining why we are where we currently are. I didn't say that it can't go further south. But if it did, there would be more impacts to the bank, and it would be more difficult to build the approaches. We're really concerned about the construction of the approaches and taking SFR out of service.

Q: No Name Given: Can I take a second and explain why there's anxiety in the room over this? First, let me say thank you for coming out and talking with the boating community, which is a little bit unprecedented. We really appreciate it.

We have paddleboards and gondolas on the river that kind of operate like pedestrians in your world of traffic management. We have canoes and kayakers who are kind of like the runners. We have rowers that are like cyclists. Sailboats are like roller-bladers. Powerboats are like cars, and tour boats are like busses. We manage all of this without pavement markings or traffic lights or stop signs. And keep in mind that almost half of us are facing backwards! So, there's a good reason why we have some heavy anxiety about this. There's a spectrum of use intensity all going on at the same time. We have a lot of recreational users who may use the river once and then never come back, and we have gold-medalists who use the river to train every single day. In a lot of ways, it's a traffic nightmare, and we manage it with a gentleman's handshake that says we will agree to be here if you agree to be there.

C: Mike O'Dowd: Courtesy still counts on the waterway.

C: No Name Given: It works most of the time. We've had a fatality on the river. A sculler was impaled a few years ago and is happily still alive.

Q: Nathaniel Cabral-Curtis: It's important for us to know exactly what kind of boats are in this zone. Are there sailboats this far west?

A: No Name Given: No, there are no sailboats in this area, only on rare occasion.

So, you can image how taking away 130 feet of river would squeeze us all together. That worries us because some of the slower users need a place to go to get out of the way when faster boats race by. I'd love to see that bridge closer to the riverbank. I'd like to see an overhead shot of that section from the Powerhouse to River Street because I can't really tell how wide that is without seeing the rest of the river.

Q: Nathaniel Cabral-Curtis: I'll come up and measure it. Bank to bank up in the Powerhouse section is 350 feet. Mike, do you want to talk a bit about the Coast Guard plan?

A: Mike O'Dowd: I spent a good part of the last ten years on Longfellow Bridge, so I know a bit about how it was designed, permitted, and constructed. The Coast Guard maintains jurisdiction over this. They said that if we're going to advance this further, we need to consult with them to determine whether something like this is even feasible and how it would impact mariners. That's the reason we're here tonight, to consult with the users of the river.

If we do go forward with something like this, construction will be monitored by the Coast Guard. They will permit the location of the structure, how it will be constructed, and where construction staging will happen. There may be obstacles presented to the mariners and the users, so we have to provide necessary advanced alerts and warnings in the event that there is an obstruction ahead. It's not our intent to keep barges out there on a regular basis. Once the temporary trestle is constructed, and we're anticipating 18 months to construct it, there is no need for a contracting firm to have any barges north of that trestle. At that point, it will be an open waterway. We told the Coast Guard that we will establish navigational markers, lights, whatever is needed to ensure advanced notification for users at night.

Q: No Name Given: Will you tell me how you're going to address the 400,000 people who come to the Head of the Charles for the Regatta event?

A: Mike O'Dowd: That's a good question. One reason we're here today is because on July 18th, we had asked members of Community Rowing (CRI) to meet with us and discuss who the user groups are, who is most likely to be impacted by the proposal being shown to you, and whether there is an opportunity to convene all the user groups in one location. When we met with members of the Regatta group, they told us that they would be inconvenienced but not to the point where relocation or rescheduling was necessary. It causes an inconvenience because it's a turning area and a layover area. So, we anticipate that the Regatta event will happen as usual. DCR will be managing traffic on Storrow Drive and SFR, and we're not sure whether traffic will continue to operate through that area during events on the waterway. We do know that the temporary bridge will not cause events on the waterway to be the suspended. So, the 400,000 people who attend the event will continue to attend the event.

C: Nathaniel Cabral-Curtis: I see that a lot of folks have questions. I'm going to start moving the microphone through the crowd. It seems folks want to go straight to questions and use the materials behind us to illustrate them.

Discussion

C: No Name Given: If you can zoom out on the map around the project area, I'll show you the traffic pattern that emerges. Your temporary bridge is in a major transition point where crews tend to use this straight stretch for racing. There are other crews who use the area to turn around and get out of the way of the racers. Since crews normally use this area to get out of the way or turn around, it might be helpful for you to install a temporary buoy line exactly where your bridge is going to go in order to study how it will affect this particular traffic.

C: Mike O'Dowd: That's a great point. We brought that up to members at CRI in July to determine whether it was plausible. If that's something that the user groups support, then we'll try it. The preference that was shared by CRI members was to have soft markers and soft delineation points because, as was pointed out earlier, courtesy still does go a long way to various users at various speeds. If there is consensus among the user groups, we will try it. We are just apprehensive because it's contrary to what has been conducted on the waterway for years previously.

C: No Name Given: If you want to get this group comfortable with it, they should experience it and tell you whether it could or couldn't work for them.

C: No Name Given: I think you're confused about what a buoy line is. A buoy line can be soft. There's a buoy line at the turn right now. It's one buoy every five yards so you can weave between them if need be.

C: Mike O'Dowd: Many people look at that soft buoy line as an obstacle, and it all depends on how you're using the waterway. As we said, we're open to doing that. We've done it before on other waterways. It's just a matter of whether or not the users are comfortable with it.

C: No Name Given: Someone from the Yacht Club should weigh in on this. They have to follow a channel, so it's a different issue for them than it is for the rowers, and I think it's important to see both sides.

C: No Name Given: It's also season specific. Different seasons see different traffic in different frequencies. Spring would make or break high school races.

C: No Name Given: There's so much concern surrounding this issue because we want you to know how much use there is and how much the use is increasing, especially among new, young rowers and their coaches who need to be educated. We want to make sure that you guys get out there at six in the morning and see that its mayhem, and we really need places to pull over and be safe. We just want you to be aware that it's growing, and rowers need the space to stay safe.

Q: No Name Given: About 20 years ago I was involved with the building of the Boston University boat house. It was a miniscule project compared to what's being proposed here. My question is, how do you propose to provide materials for the construction? When they built the Boston University boat house there was no place to deliver materials on land. Materials had to be delivered by water. Will that be the same procedure here, a constant parade of material-laden boats up and down the river?

A: Mike O'Dowd: You bring up a great point. This is one of the challenges we face when we're coming up with how to construct this. The mariners in the room would obviously like to see us push the temporary structure as close to the riverbank as possible. However, what that does is it limits the contractor's ability to bring in materials and construction equipment via the roadway because we have to provide all lanes of traffic to the users of the roadway. That means that we'll have more traffic and more barges on the waterway as a result of there being no other way to bring material in and haul material away because all the roadways will be occupied by all the travel lanes. What we're trying to do now is find that balance. One of the limiting issues is the locks on the canals. We're limited by the size of the equipment and the size of the barges that you can bring between the harbor and the river. Once we construct that temporary structure, there is

no need for a contractor to have any navigational use of that waterway because they're essentially locked out from that real construction zone, or everything south of there. But what we've done is provide access for the contractor to be able to come in and out of where SFR is right now. The contractor will still have the ability to move their equipment and materials in and out over the roadway. It's easier for a contractor to move equipment and personnel over the roadway than over the waterway.

C: Jim Keller: This temporary structure gets built essentially very early. What we've been thinking for getting materials in is obviously setting up some cranes for the approach work, but also utilizing what's still live and existing during the construction of the approach. Until that's constructed, no work is going to take place near the existing portion of the throat. The Yard area will potentially be used for lay-down. We can potentially bring materials in by rail. Once the approach is constructed, we can build the trestle by launching from the approaches rather than do everything from the water side. There are advantages to certain ways of building the approach. How the approach is built hasn't been determined yet because they're custom built. We have been looking into how to impact the river the least amount.

Q: No Name Given: Is there anyone here from the Charles River Tourist Boat Company?

A: Nathaniel Cabral-Curtis: We've been working with Community Rowing as they are the ones who first approached us asking us to convene this meeting. As their contacts are better than ours, we asked them to invite that group. I don't want to throw Kane under the bus. This project team will find a way to contact those folks.[3]

C: No Name Given: They are one of the most dangerous boats because they are so wide. They're probably 30 feet wide. Because they're so deep, they have to take the wrong arch under the Boston University Bridge. Most small boats are traveling downstream on the Boston shore while the Charles River Tour Boats travel upstream, so there's no room to pull over. They're going the wrong way against what is now a narrower lane of traffic. They often travel at unsafe speeds over the speed limit and without regard for whoever is around, so I think that the Charles River Tour Boats will be a major safety player in this whole thing.

C: Nathaniel Cabral-Curtis: Maybe having increased involvement and visibility of United State Coast Guard (USCG) would be good for them.

[3] A meeting with this group was secured and conducted on September 27th, 2019.

Q: No Name Given: Would you ensure that the rowers are involved in the design of the lights on the trestle? Because we're so low, lights that could be useful for higher-up boats will just blind us.

A: Mike O'Dowd: That's a good point and something that the Coast Guard has already brought to our attention. We're still a couple of years out from being able to do that, but we're certainly aware of the issue of identifying where those markers will be relative to the existing structure and their usability among the various users. The USCG and the State Police have a pretty good understanding of what happens on that waterway.

C: No Name Given: They really don't.

C: Mike O'Dowd: Thank you for bringing that to my attention.

Q: Nathaniel Cabral-Curtis: Do you want to talk about your experience with the Burns Bridge and how you've been down this road before?

A: Mike O'Dowd: Many of you are familiar with Lake Quinsigamond in Worcester. It's another very popular area for regatta, and a number of colleges and high schools train out there. Nate and I were both involved in the reconstruction of the Ken Burns Bridge which spans over Lake Quinsigamond on Route 9. It's very similar to how we anticipative constructing this. On that project we established lane markings. It worked well because there's not as many motorized users on Lake Quinsigamond as there is non-motorized users. Lane markers were established because they had become accustomed to that over time. When we initiated the project and started moving it forward by talking with users, they asked us to make sure that the markers would still be in place and moved accordingly as the project is constructed. There were more impacts on the waterway there than we're proposing here. We moved forward by having a full understanding of how the various mariners use the waterway and how they want our work to be done, and we then disclosed that with the contractors. Notification was posted whenever there was a change to the navigational opening. We didn't have any interruptions, and contractors got along with all the user groups on the waterway. If that's what it takes here, that's what we're prepared to do. It's just a little bit different because that's not how you currently operate on that waterway. I've been on the Charles River many times. And it's a matter of how people become accustomed to it versus how we may be introducing something different.

C: No Name Given: I used to live on Lake Quinsigamond and I will tell you that the essential difference is the direction of traffic relative to the interruption of flow. On Lake Quinsigamond, the boat traffic goes perpendicular to the structure. In this project, traffic goes parallel. That's a

completely different kettle of fish. The depth of the water is completely different, and the level of traffic is multitudes higher here. I appreciate that you have some experience with a project like this, but I don't think that it applies here.

C: Mike O'Dowd: When we were doing Longfellow Bridge, we had a thousand feet to contend with. We had seven spans within the waterway. I can move traffic back and forth for a contractor and still maintain all the navigational uses of that waterway. I recognize that it's a little bit different up here.

C: No Name Given: Forget that last mile down and back. Just turn before you get to it. This is literally the half-way mark of this river.

C: No Name Given: You spoke briefly about the different options you were looking at to construct the temporary lanes. I wanted to ask if you could go into that a little bit more because that's going to be a really important part. If it's all along the side and you're building all three at once, the barges will be working its way down constantly for 18 months and we lose 50 feet. If you're working on the ends, that opens up a lot more.

A: Mike O'Dowd: There is a temporary structure going up near the North Washington Street Bridge. If you have problems with that as well, throw them at me because I'm also the Project Manager on that! Nate is also engaged there as well.

We're showing what we're showing on the approaches because to get the longest tangent run that you possible can. When a contractor wants to construct a temporary Acrow Bridge, they want to launch each of these 100-foot sections not necessarily from the waterway itself, but from where they're progressing forward, either from the west or from the east. Each back span provides the stabilization that they need to be able to launch the next section. You want to be able to keep moving forward in 100-foot increments across the waterway placing each section down. You don't want to be doing it from the waterway. It becomes more difficult for a contractor to stage it that way than launching each successive section as you progress west to east or east to west.

Q: No Name Given: As that's happening, are the barges sitting in the waterway?

A: Mike O'Dowd: You may not need barges. The whole point is to minimize working in the water. Most contractors want to stay away from the waterway as much as possible and rely on something that they know is stable: Mother Earth.

Q: No Name Given: From the power boater's perspective, what is the impact going to be on the Boston-side arches on the Boston University Bridge and the approach? Someone said earlier that the Charles River Tour boats go the "wrong way." The reason that most power boaters go both directions under the Boston-side arch is because of its clearance and because that's the one that we have to use.

A: Mike O'Dowd: If you look at what we've done since we started this year, we went out and did a bathymetric sounding which was essential. We had to find out what the depth of the mud floor was at each given location across this waterway. From my experience, most of the power boats are going through the middle of the channel until they get to the bridge. We don't anticipate any impacts or a span at Boston University. All of the encroachments into the waterway occur well before the Boston University Pavilion, where the rowing club is now. There will be no impacts to any of the arches along Boston University.

C: No Name Given: But the impact is the 370-foot approach going down the river, where the barges are sticking out.

C: Mike O'Dowd: There are very few motorboats over at this side. If you're within 100 feet of the edge and you're on a motorboat, you're probably running some risks.

C: No Name Given: You're 50 feet out and there's a barge there.

C: Mike O'Dowd: Yes, but that's all the more reason why we need to establish navigational markers. That's the whole point of establishing where those markers are going to be and minimizing the amount of impacts within the waterway during construction.

C: No Name Given: I think that it's a valid point that's being raised. We don't want to approach the bridge and then make a sharp turn. We need at least a few boat-lengths out to help us get in the pattern.

Q: Mike O'Dowd: Of course. But most of you would not be operating within 100 feet of the riverbank, correct?

A: No Name Given: Correct. We never go there. Not until we're near the arch.

C: Mike O'Dowd: At that point, you're well outside of the area of impact.

Q: No Name Given: Will the pedestrian and bicycle path be closed temporarily at some point or will it stay open the entire time?

A: Mike O'Dowd: That's one of the blessings associated with the temporary bridge that we're proposing. We will actually be doubling the size of the bicycle path even in the temporary condition. So, the path won't be closed. There is an eight-foot path along the narrowest section now, and what we're proposing on the temporary structure is 16 feet.

Q: No Name Given: Why?

A: Jim Keller: Because you're out on the temporary structure, not the land. You're out there with four lanes adjacent to you, so there will be some off sets from the barrier.

C: Mike O'Dowd: It's also convenient relative to the span widths and the lengths of these Acrow panels. Each panel is a standardized width and that gives us the flexibility to allow upwards of 16 feet.

C: Nathaniel Cabral-Curtis: Having sat through all these meetings, one thing that I would add is that, like you said about the river, the cyclists and pedestrians agree that the path is getting busier every day.

C: No Name Given: I have great respect for the Coast Guard and the State Police, but they do not know how this river operates on a day-to-day basis. They don't spend enough time there.

Q: Mike O'Dowd: Who, in your opinion, is the best resource of information?

A: No Name Given: There's an organization called Charles River Alliance of Boaters (CRAB), and I would say that they are who you want to go through.

One other thing about barges: we've worked with DOT before and largely had a very good experience with them. I have to tell you that with every single project, we are promised that barges will be lit, but many boaters can tell you that they've hit unlit barges in the dark. We'd like you to be acutely aware that there's always a learning curve with the contractors and that they never really believe that we'll be out here at 4:30 – 5 in the morning. We are very serious about the lights.

The last thing is that I learned something earlier from Jim about that bicycle path that you probably want to tell the power boaters. You should talk about the cantilever bridge beneath the Boston University Bridge.

C: Jim Keller: The Grand Junction Rail currently goes underneath the highway viaduct and it will go over I-90 in the proposed design. As a result, we need to replace Grand Junction Bridge

completely. Because of the constraints, SFR had to be rounded out and come back by the Boston University Pavilion. As a result of replacing the bridge, the abutments can be widened, not into the river, but to allow for the PDW Path to be realigned. These paths will be separated into a bicycle path and a pedestrian path, and they will be re-routed underneath the Boston University Bridge.

C: Mike O'Dowd: We can't commit to removing the boardwalk because we need DCR approval, but we will definitely be having the discussion with them.

C: Jim Keller: Correct, that is not a decision that has been made at this point.

Q: No Name Given: As a rower that has been on the river for 40 years, I can attest that it has become a kind of superhighway. Not all the rowers are seasoned rowers and they don't know how to row in the river. Also, the last time I checked about two years ago, the Charles had 9,000 rowers competing from all over the world and they did not all know the Charles River.

I have also seen the Charles River become much cleaner and much more beautiful thanks to the efforts of many people. I was wondering whether there was an environmental impact look at this project.

A: Mike O'Dowd: That's a great question. I will refer it to Mark, our environmental specialist.

A: Mark Fobert: We are coordinating with the Department of Environmental Protection, the Army Corps of Engineers, the Environmental Protection Agency, and the United States Coat Guard. They'll be involved the whole way because this is a full bridge permit, so we need more than just approvals. They'll be monitoring the barge, the traffic, and all that. I know that they don't know the Charles River as well as other people, but they do know how to build a bridge and move barges around. When moving a structure into a river you need to secure a lot of environmental permits.

C: Mike O'Dowd: We need to establish what the conditions are before construction. We also have to go back and do a post-survey to ensure that the condition that we left the floor in is better or equivalent to the condition when we got there. That's something that's established in all of the environmental permits and it's something that DOT forces upon the contractor.

C: Nathaniel Cabral-Curtis: The only thing I would add to that is that SFR currently directly discharges stormwater into the river. The new viaduct that's being built will capture that stormwater and route it to treatment prior to being discharged. That's the final condition. That's

something that's not possible today but will be possible in the future. I think that we can find a way to effectively communicate with the Head of the Charles and figure out what languages are needed and utilize UMass' translation services. If we need 50 different languages, we'll get 50 different languages if it will help rowers from different places understand what's going on.

C: Mark Fobert: It's part of the Coast Guard process. We have to prepare a Navigation Impact Report in which we try to capture the experiences of the users. There are a lot more users here tonight than what is captured in that report. I want to welcome anything that anybody can give me about how the river is used so we can memorialize that in the report that we're preparing.

C: No Name Given: If it's only an 18-month window to put up the trestle at both ends, the time of that window could drastically affect the impact on the waterway traffic. For instance, if it ran November to April, it would only affect one Head of the Charles and it would span over two winters, when the river sees less traffic which could mean better safety. I'm a member of the Coast Guard Auxiliary and we don't regularly patrol the river at all. This would require coordination for more patrolling and more safety boats on the water in this section.

C: Mike O'Dowd: You bring up a great point about when we initiate construction.

C: No Name Given: A point about the Head of the Charles: There's training that goes on in the river a month before of people who don't know the river. It's wild.

C: No Name Given: I hope that you've gotten the impression that moving that street section 20-30 feet closer to the shore has a big impact for us. I realize that you could do that by extending the curb section just a little bit and giving us a little more room out there. The other thing that you might not be aware of is that we've measured the depth of the river and we know the history about how the depth has been changing over the last 100 years now. We know that this section in particular has lost 4 to 6 feet of water depth since 1920.

Q: Mark Fobert: Do you have any more data? We've used the CRAB data from the MIT project and that's what we've overlaid on our map.

A: No Name Given: I was the project coordinator for the MIT project.

C: Mark Fobert: We welcome any other data that you have.

C: No Name Given: I've spent a lot of time in the library and a lot of time at archives around the state looking at how the river has been changing over the last 100 years, including looking at engineering projects that were done in the early part of the century.

C: Mark Fobert: Another great resource is the Chapter 91 Waterways Program.

C: No Name Given: The DCR archives and the state archives out at UMass Boston are probably some of the best sources.

Q: Aleks Zosuls: Thank you everyone for coming out tonight and holding this meeting. My name is Alex Zosuls from CRAB. I will graciously accept the challenge of answering questions and clarifying things related to the river. My question is where is the Acrow bridge section going to start on the temporary trestle?

A: Jim Keller: That section will start roughly where the curved approach ends, and the straight portion begins. Currently we don't have a set option for the approach construction. We're still looking at potential ways to do that.

Q: Aleks Zosuls: That's going to have to switch grades and everything, right?

A: Jim Keller: That's the hardest part. In this section, we have to raise the profile of the parkway and because of that, the existing SFR will be impacted. Traffic will be a challenge while we build the temporary road while maintaining the existing one.

Q: Aleks Zosuls: What is the deck surface going to be on the Acrow bridge?

A: Mark Fobert: It will be paved. It won't be open grate.

C: Jim Keller: It's a prefabricated panel surface that will have a layer of pavement on it.

C: Aleks Zosuls: I take it that's better for noise.

C: Jim Keller: Yes, substantially.

C: Nathaniel Cabral-Curtis: Alex, if you have a set of good, general principals about what the boaters like and don't like, I think that would be a great thing to start with.

C: Aleks Zosuls: Yes, we have things that we've used while cooperating with other projects.

Q: No Name Given: Thank you for explaining a bit about how the bridge is to be constructed. Looking at the diagram, I would assume that there are piles that need to be driven? Does that happen at the very beginning of the project? How long will that occur for and does that need to happen while the water is liquid, meaning during the rowing season? Also, as a bicyclist, what

you just said about the bicycle path sounds fantastic. The current boardwalk is treacherous because it's a bottle neck and it's very slippery. Thank you, and the final path will be even better.

A: Jim Keller: Depending on which approach structure gets chosen, there's going to be a certain amount of piling associated. For the Acrow, there will be a 20-inch steel pile at each pier. We'd obviously like to get them in during the time of year when the river is being used the least amount.

C: Mark Fobert: I'm not sure if Marine Fisheries would impose restrictions, but those are mostly in the summer.

C: Nathaniel Cabral-Curtis: The pile driver will go through pretty much any ice that you'd encounter on the Charles River.

C: Jim Keller: We're looking to do the concept with the least amount of piles.

Q: No Name Given: You also show the temporary steel sheeting, will that be in the river?

A: Jim Keller: Yes.

C: No Name Given: That is going to change how the river flows and how the wake is handled along the shore.

Q: Nathaniel Cabral-Curtis: Can you say where the steel sheeting will go?

A: Mark Fobert: Just at the curved parts of the river. It won't be along the whole length. The bridge structure will be a few feet above the waterline.

Q: No Name Given: We've heard some guestimates about the size of the barges. Can you tell us the actual sizes?

A: Mike O'Dowd: It would be consistent with what you saw with the Longfellow structure. Some of those larger units were on the range of about 25 feet to 50 feet in length with 20-foot beams.

Q: No Name Given: Do you know how much of the river will be kept open at all times? Like with a margin of safety during construction, what's left?

A: Mike O'Dowd: I can't speak to this exactly right now, but we don't see it being less than 320 feet during the time frame where we're actually driving the piles and installing the structure. After that, it will be back to 370 feet.

Q: Richard Garver: Could we encourage you to set up an actual meeting between CRAB and the Coast Guard? They're drafting their report now. Sitting down with Alex and his people will only strengthen what they're doing.

A: Mike O'Dowd: We invited the Coast Guard to attend tonight, but they were not able to make it. We can set up a meeting and have it here or at the Coast Guard's office.

Q: No Name Given: I'm not giving up on expanding that 370 feet there. I love the idea of extending the approach a little further in order to bring the straight sections closer in. I think you may have explained why that would be harder to do on the east end, but is it possible to do it on the west end? That's the constriction point that everyone's been talking about for turning during races. Lastly, are there such things as curved sections that you can launch?

A: Mike O'Dowd: Unfortunately, there isn't because that's where it all becomes stick-built as opposed to prefabricated. But you do bring up a good point about the west side. It may be easier for us to transition on the west side than on the east side.

C: Jim Keller: It's just carrying the straight section with it. What you do with the west will affect the east. It depends on whether or not you can introduce a reverse curve.

C: No Name Given: 10 or 20 feet can make a big difference.

C: Jim Keller: Good to know.

Q: No Name Given: It's not quite clear to me why there's 50 feet between the blue line and the pink line on the map.

A: Mike O'Dowd: Because of regulatory reasons, we're trying to minimize impacts to the riverbank as much as we're trying to minimize impacts to the river sheet itself. The closer we bring it south, the more impact we're going to have on the bank. And when we go too far to the north, we're impacting the river users. We're trying to find a balance where we can permit it while not disrupting the various recreational activities.

C: No Name Given: It's a completely man-made bank.

C: Mike O'Dowd: We know.

C: No Name Given: And it's not even that old!

Q: No Name Given: And you can take the pilings out at the end?

A: Mike O'Dowd: Yes, they will be taken out. Everything comes out.

C: Lisa Kumpf: I know we're here today to talk about the river users. I know at one point there was a lot of discussion around the construction of this and how that's going to happen. I wanted to say a couple things regarding environmental impacts and how those may impact river users over the eight to ten years that the structure will be in the Charles River. Invasive species such as milfoil weed are already crowding the riverbank and causing a loss of depth for the users, and that is something that will probably get worse as they grow around these pilings. As Carl mentioned, the river will see an increase in sedimentation from this project. It's important to think about the management of those things over the next eight to ten years if it hasn't already been explored yet.

C: Mark Fobert: That has been explored in the final condition, but not in the temporary one.

Q: Lisa Kumpf: I know you explained how these alternatives were all decided. It seems to me like DOT jumped right to this temporary structure in the river. I understand the reasons you explained, such as getting the grade up, but was there an extensive alternative process for the transition period?

A: Jim Keller: At the beginning of this meeting, I referred to our first presentation on construction staging from back in April. That presentation did not propose a trestle out in the river. That presentation is on the MassDOT website and it's very detailed for a very early stage of design-development. The purpose of that was to show that a lot of thought has been put into this preferred alternative following the decision made by Secretary Pollack. It's such a dramatic change to the infrastructure that's out there today, so we wanted to feel some level of comfort that it's constructible. In April, we wanted to look at what makes sense, what's easiest to construct, what are the advantages and disadvantages of the alternatives.

C: Nathaniel Cabral-Curtis: There's been alternatives looked at for both the permanent and the temporary structures.

C: Lisa Kumpf: That's what I'm asking.

C: Jim Keller: I understand. What I'm saying is that lead us to wanting to put SFR out a little bit into the river, say 12 to 15 feet. We presented that concept in April. In transition to the final viaduct, we looked into maintaining all the traffic while getting all the piers and the columns in.

In the end, considering work zones and carrying all modes of travel, there was no level of comfort that it was constructible. We decided that we needed a work zone. We couldn't go into Boston University, so we determined that we needed to go a little bit further out into the river. We started looking at our options for maintaining SFR traffic during construction of the temporary structure. We did not have a level of comfort for maintaining that traffic, so we realized that we may have to shut down SFR for a period of time to change that profile. But shutting down SFR wasn't an option. We started tweaking the concept to include demolition on little Grand Junction Bridge, do some realignment of SFR to build approaches, and that took us to where we are today.

The decision to go into the Charles River was carefully thought out. We held Task Force meetings in February and March, and then in April construction staging was discussed. At the Task Force meeting in May, we first explained our reasoning for going into the river at a very schematic level. Every one of these presentations are available on the project website. Also, in May, we started discussing this with various agencies. June, July, and August went by and we had public meetings in Framingham and Worcester.

C: Mark Fobert: I'll add from a permitting standpoint: we're at the beginning. We'll have a notice of project change with Massachusetts Environmental Policy Act Office (MEPA), we'll have a draft environmental impact statement (DEIS), and waterways and wetlands permits. All of those will have public hearings. We have a long way to go and a lot of meetings and discussions about this.

Q: Lisa Kumpf: Do you bring that up to say that there's typically change during that permitting process?

A: Mark Fobert: It's possible, but we think we're at a good place now. As always, there are discussions during the permitting process.

C: Mike O'Dowd: There's typically more changes if we don't permit the correct thing now. Those changes would then have to be made by the contracting team because, as Jim had alluded to early on, this is a design-build project. With design-build projects, we're not taking the entire project to a full stage of construction-design. We bring it as far as preliminary design and then provide a base-technical concept. We then give the project to a design-build entity. There will be competition among contracting teams and their designers to take it from the preliminary level of design, at 25% design, and work within the permits that we've obtained and take it to final design and construction.

We see changes coming from the contracting team complaining to MassDOT that we haven't permitted a sufficient window of impact for them to construct this. That will require

amendments to the permits, and that takes time and risk for contracting teams to do that. We've learned from past projects to permit what we feel is a comfortable opportunity for any contracting team to come in and construct this using conventional or innovative methods with the permits that we have obtained for them. That is why we're establishing what we feel is a very comfortable window, all the while understanding that it does pose a hardship for the boaters.

C: Nathaniel Cabral-Curtis: We're going to move the microphone through the crowd to those who haven't had the chance to share questions or comments.

C: Mike Miller: I want to assure the group here that we are well aware of the impact of invasive species, particularly in this section of the Charles River which used to be nine feet deep and is now a foot and a half to two feet deep, interfering with all kinds of boats and rowers. It's easy to imagine when you put up the trestle that it's going to slow the current in that area and there may be more deposition sediment. It would be very nice if we could monitor the depth in that area during the project. It would also be really nice if you could dredge that section of the river while you have all of the heavy equipment in the area. The area particularly around the big bend is very shallow and used to be much deeper.

I know we talked about the trestle a lot, but I had the pleasure of attending this presentation in Framingham which went on for four hours. I ask particularly about the red section on the graphic that indicated construction on the Grand Junction Bridge. I asked if there would be any impact on the waterway there when they build that section of bridge. Someone told me that it may interfere with the traffic on Boston University side of the waterway. I asked for how long it would interfere, and someone answered that inference would last one season. I made my point at that time that that would not be acceptable. If someone can assure us that water traffic will be maintained under the Boston University section of the bridge during this entire project, not just the trestle project, that would be very reassuring.

C: Jim Keller: The existing abutment will come back.

C: Mike O'Dowd: But it should be constructed from the land side.

C: Jim Keller: Yes. The little existing bridge comes out early on during construction of the trestle. With that said, it's anticipated that the abutment can be constructed during that process. There could be a lot of work getting done from the landside. There very well might be some work getting done from the river side. But work involving the Grand Junction Bridge will happen very

early. We don't have duration staging plans at this time. The concern you voiced was heard and it's recorded on the record. We plan to approach it accordingly.

C: Mike Miller: That passage is essential.

C: Jim Keller: Yes, we understand that. We've learned a lot here tonight regarding how you navigate this area. From a staging perspective, that information is very important.

C: No Name Given: From a Head of the Charles side of things, if that rig were here now under perfect conditions and perfect weather, we could probably manage race weekend, we would probably just have to go single file through the travel lane. For race weekend, we use the basin between Boston University and Longfellow, mostly on the downstream side of things, for warm-up patterns. We've got a couple hundred boats in there at any given time. Right now, we've been doing a deep dive on our short course procedure. This procedure requires us moving the start line from Boston University to Riverside. The area that's affected is our queuing zone for pointing all the boats around. We don't have all the space that we have in the basin. As we back up through the powerhouse section, there's not a lot of space in those travel lanes to lineup boats. It doesn't seem like a lot of space here for regular race weekends, but if we were doing a short course I don't know if we would be able to run races safely or be able to turn boats around because we would also have to move all of our river operations and control folks to that area. If this project does take ten years, there would need to be some serious considerations in terms of the short course and the safety of our rowers.

C: Mike O'Dowd: We would obviously want to work with you on that because we don't want to disrupt those typical competitions.

C: No Name Given: We have our safety procedures, too.

Q: Nathaniel Cabral-Curtis: Is it possible for you to share those with us? Are there things written down, are there diagrams? If I give you a business card tonight, could you start funneling that stuff to us?

C: Ralph Levy: I know when they did the Big Dig, there was a lot of *quid pro quo* with things happening in neighborhoods such as mediation. Since interfering with the normal operation of the river is the *quid*, is there any possibility of dredging as the *quo*? This is the time when you guys have access to money to spend along the river to start thinking about the possibility that only kayaks are going to have enough depth through the years to navigate most of this river. There might be some possibility to put mediation money aside. As far as the Grand Junction

Bridge goes, the walkway under the bridge was built with none of the permitting that would be needed today. That took away three inches of navigable height under that bridge. It went from 13'9" to 13'6". It would be nice to get that back. It should be communicated to DCR that some of our taller boats would appreciate it. Anything that interferes with that Boston Side arch would keep a great number of the boats that you see out there from going down the river. If any work has to be done in the river, all of our boats have to be out of the water by November 1st. That date in Newton is pretty much the same. Please plan any work in the river between mid-November and April/ March.

Q: No Name Given: Just to clarify, the section of Grand Junction Bridge that will be worked on is just that red piece? Or will work be done on those spans that you just showed us?

A: Jim Keller: On the spans, no work is proposed over the water. It's all happening landside.

Q: No Name Given: Doesn't the MBTA also have plans to rehab that bridge?

A: Mike O'Dowd: MBTA has suggested it, but they have no plans or funding for it right now. We have regular discussions with them, but nothing is programmed in their capital plan right now. Our work limits would be from the landside, replacing the abutments so we can reopen the Dudley White path to run uniformly throughout and avoid that boardwalk.

C: No Name Given: Just a quick observation, you've got information on traffic flow on all these roads. It doesn't seem to be that you really know what the flow is on the river, or where it goes. It seems to be a really good idea to get out there between March and the end of the Head of the Charles to know where the boats are, when they're there, and where they have to be. Rowing a shell isn't like anything else that happens on the water. If you're going to do a really good engineering job, you'll want to know what's there and when.

C: No Name Given: These next five weeks are the time to get out there.

Q: Nathaniel Cabral-Curtis: Mike, do you think that PDI or Accurate Counts does something similar for boats?

A: Mike O'Dowd: You're right, we haven't done that, and I think that it's a great opportunity for us to do so.

C: Mark Fobert: The Navigation Impact Report for the Coast Guard should include that.

C: No Name Given: I bet you could get boaters to count for you. The river sees about 1000 rowers a day.

C: No Name Given: That's a really old number. That number has gone up. That's from ten years ago.

C: No Name Given: CRAB will be able to help you by reaching out to the river users.

Q: No Name Given: Do you anticipate any land-based staging areas up and down the Charles?

A: Nathaniel Cabral-Curtis: We see Beacon Park Yard, which is now vacant, as a heavy lay-down area.

A: Mike O'Dowd: Considering the area impact that we're showing right now, I would see staging all the way from Boston University/ Commonwealth Avenue all the way up to Cambridge Street, because that's the entire area that we're talking about right now. There's going to be an area of construction disruption, so to avoid disrupting normal traffic patterns we're trying to construct as much of it offline as we can. But you will see a lot of construction activity over that timeframe.

Q: No Name Given: Including barges from that very narrow area all the way down?

A: Jim Keller: No, only for the trestle. Land staging, not water staging.

C: No Name Given: No one ever turns in that straight stretch that measures 350 feet across. Reducing a turn area by 50 feet or more won't leave very much turning radius for boats that are 60 feet long.

C: Mike O'Dowd: We talked about that today, internally. I wasn't sure whether they used the lower basin, east of Boston University, for turning.

C: No Name Given: It depends on the wind direction. Wind from the east creates rollers that can make turning around very dangerous.

C: No Name Given: It also depends on how many sailboats are out.

C: No Name Given: You're extending the western curve so that the whole thing is closer to the shore.

C: Nathaniel Cabral-Curtis: You all have been a wonderful audience. This is not the last time that we'll be here to see you. The I-90 Allston email website has an email address on it. If you

send an email, it will come to me and Mike. If anyone wants my business card, you can send an email directly to me any time after this meeting. Please be in touch with us, and we will be in touch with you. Thank you and have a nice night.

Next Steps

MassDOT and its project team will continue to engage with the boating community throughout the federal and state environmental permitting process. The project team will also obtain counts of boaters using the river during the fall of 2019.

Appendix 1: Meeting Attendees

First Name	Last Name	Affiliation
Sam	Ames	Community Rowing, Riverside Boat Club
Sarah	Baker	Harvard University
Ed	Ballo	Riverside Boat Club
Joe	Ballow	Watertown Yacht Club
Chloe	Bancel	Buckingham Browne & Nichols Crew Team
William	Becklean	Cambridge Boat Club
John	Born	Cambridge Boat Club
Nathaniel	Cabral-Curtis	Howard Stein Hudson
Jose	Carasquillo	Watertown Yacht Club
Buzz	Congram	Intercollegiate Rowing Association
Jeff	Dietrich	Howard Stein Hudson
Mark	Fobert	Tetra Tech
Richard	Garret	Riverside Boat Club
Peter	Graham	Watertown Yacht Club
Andy	Haack	
Lou	Harwood	Cambridge Boat Club
Howie	Hecht	Watertown Yacht Club
Denis	Holler	Community Rowing
Jim	Keller	Tetra Tech
Thomas	Kohler	Cambridge Boat Club
Lisa	Kumpf	Charles River Watershed Assoc
Maria	Lane	Riverside Boat Club
John	Langorwann	Riverside Boat Club
Kane	Larin	Community Rowing
Ralph	Levy	Watertown Yacht Club
Joann	Lindenmayer	Wellness Warriors, Dragon Boat Team
Priscilla	Livingston	Head of the Charles River
Michael	Miller	Newton Yacht Club

First Name	Last Name	Affiliation
Eddy	Mog	Community Rowing
Jane	Morse	Cambridge Boat Club
Joan	Nash	Community Rowing
Tracey	Neret	Cambridge Boat Club
Giulia	Norton	Cambridge Boat Club
Barbara	Olfman	Cambridge Boat Club, Community Rowing
Lynn	Osburn	Riverside Boat Club
Cassie	Ostrander	Federal Highway Administration
Jennifer	Piezak	Community Rowing
Dave	Ringham	Union Boat Club
Lucy	Salwen	Charles River Conservancy
Alison	Sanders-Fleming	Cambridge Boat Club
Howie	Schmuck	Cambridge Boat Club
Hugh	Scott	Community Rowing
Rosemary	Sheelian	
Janet	Solomon	Cambridge Boat Club
Lauiev	Srugthe	Cambridge Boat Club
Genovra	Stone	Cambridge Boat Club
Kate	Sullivan	Riverside Boat Club
Timothy	Timmermann	Environmental Protection Agency
Catherine	Truman	Cambridge Boat Club
Robert	Turrivise	Cambridge Boat Club
Tom	Vasquez	Watertown Yacht Club
Lee	Warren	Community Rowing
Constance	West	Watertown Yacht Club
Brian	Wettach	Union Boat Club
Conray	Wharff	Watertown Yacht Club
Aleks	Zosuls	Charles River Alliance of Boaters