

Community Meeting, March 12, 2019

Community Meeting March 12, 2019

B.J. Jones: Thank you for coming to our second Community Meeting regarding the South Battery Park City Resiliency Project. I'm B.J. Jones, President and CEO of the Battery Park City Authority. And we have a lot of information that we want to share with you tonight. But before we get into that I'm delighted to introduce Battery Park City Authority's Chairman, George Tsunis to say a few words to open the meeting up.

George Tsunis: I really appreciate the opportunity to be amongst you. This is incredibly important work. The Authority thinks that it's the single most important thing we will be doing over the next couple of years and we want to do it right. We want to make sure that the resiliency work that we do is lasting. I think the most important component is a lot of input from the community in which we serve. I think sometimes a lot of boards like ours forget that and I'm grateful to have Board members who never let us forget it that it is about a community input and cooperation and reaching out and just having respect for everyone's opinion. So I promise you we will always be available, we will be open to dialogue, our doors are always open. Please just come and see us if you have any issue, whether it be resiliency or anything else. There is an open door policy and we're here to help.

I want to acknowledge a couple of the other Board members who also happen to be the working group for our resiliency project. Tony Kendall who is also a Battery Park City resident. Catherine McVay Hughes, [indiscernible] she's also on the working group. And the Vice Chairman of the Board, Martha Galo, who's also on the profit resiliency work group. Thank you for letting me come and visit with you. I'm going to hand this back to B.J., but I really appreciate it.

B.J. Jones: Thank you, Mr. Chairman. So community input is required for all of our resiliency projects and we will be having additional meetings forthcoming for our Ball Fields resiliency efforts, which is underway and our North Battery Park City resiliency project, which is soon to start. There are a lot of stakeholders that are important to this project's success. You see a lot of them up here, not only my colleagues with the Battery Park City Authority but Community Board One. So we'll have you guys introduce yourselves in a moment, but very glad to be working with the Community Board on this. I also need to mention the wide range of city and state agencies that are involved in this project too. It's truly a collaborative effort to get this done. As you see, we cross into a lot of different territory here on this project and we've had everyone at the table and particularly appreciative of our partner at City Parks and DOT, the Mayor's office [indiscernible] and resiliency and many others.

So tonight you're going to see a lot of information from the analysis that our team has been doing regarding coastal flooding, subsurface assessments. I've been learning a lot along the way. You'll also be hearing a lot about what we are calling alignment which is really the location of the protective measures that we want to put in place. But what you won't be seeing in this presentation are any splashy renderings or designs because we're not there yet in this project. And as some of you who have been part of this process before and at these meetings before know that we're including community input sessions throughout the course of this endeavor to keep

Community Meeting, March 12, 2019

you apprised of where we are and so where we are right now is at the analysis phase and the alignment phase and that's what you're going to hear about tonight, it will certainly inform design and we're looking forward to getting your input on that as we move forward too. But speaking of moving, we can't act quickly enough and you'll see in a little bit why. Hurricane season is coming which makes me more mindful of it as ever and so we need to act with urgency, we need to make this happen, and so to keep things moving how about we keep this meeting moving. And so with that, I'm going to turn the mic over to Nora who's going to help facilitate this discussion. So Nora, if you're ready. Okay. Thank you.

Nora: Thank you, and good evening. If anybody needs a seat and wants to be closer in there's plenty of seats left. I'm Nora Madonick and I'm going to be helping out tonight and we're going to be doing a couple of things. Our agenda is really very simple. It's in two parts. We'll have a presentation and then we'll have a Q&A. The presentation is going to be a little less than an hour. The Q&A is scheduled to be the second hour but we're going to stay to answer your questions really as long as it takes. The way we're going to work the Q&A, I know you'll have questions coming up and bubbling up as the presentation is going through. My associate, Karina is going to pass out some cards and pens, and we'd appreciate it if you would write your questions down. We'll collect them toward the end and then I will read out the questions to make sure everybody in the back hears them and we get everything answered. And then when we get very close to the end we're going to pass something out and ask you to rate some things, some values, some considerations for the project. We'd like to be able to take that away and put together some information so when we come back the next time we can share out what we've agreed on and what people think and then take things forward. So without further ado, we'll pass it onto Heather Morgan, Aecom, the Authority and we'll [indiscernible].

Heather Morgan: Thank you, Nora, very much. All right. Can everybody hear me okay? I'm pretty loud without this, so hopefully we'll do fine. One, thank you for coming tonight. We're really excited to be here. Some familiar faces, not only from the first meeting but as well as the community engagement process over the last several months. Before I get started too I definitely want, there are many team members as part of this process that are sitting up here, some are back in, there's Annette back there, that have been a really important part of this project process so far. Jaime, how are you? Thanks for coming. So in this slide deck that you're about to see this has been many months of collaboration amongst our teammates back and forth, the Resiliency subcommittee, we met with CB1 leaders on Thursday. And so I just want to make sure that the content that's in here is certainly not just from me and it's been a large extensive effort. And then the more content we get with all the input from all of you that will be continued through the process and then at the next public meeting as well.

So just to give you an update on the project, for those of you that are just coming in or are familiar with this, if it's repetitive I apologize but we want to get everyone on the same page.

B.J. Jones: Would you do me a favor? Explain to everybody not only your name but what your role is in the project.

Heather Morgan: I'm Heather Morgan. I'm the project manager from the Aecom team. I'm a landscape architect. I have a background of not only landscape architecture but as well as flood

Community Meeting, March 12, 2019

risk management I worked for the US Army Corp of Engineers for seven years, so I walked kind of a hybrid in the discipline. As far as everybody, do you want me to go through the Board or allow you guys to introduce themselves? Go ahead, Brian.

Brian Silvey from Aecom Ports and Marine Group.

Gwen Dawson, I'm the Vice President of Real Property for the Authority.

I'm Tammy Meltzer, Chair of the Battery Park City Committee for CB1.

Justine Cuccia, Co-Chair of the Battery Park City Committee for CB1.

Alice Blank, Chair of the Environmental Protection Committee for CB1.

Nick Sbordone, Communications and Public Affairs for the Battery Park City Authority.

Heather Morgan: Thank you. So for all of you, the project that we're working on is the South Battery Park Resiliency Project which you can see on the southern portion of Battery Park City. This project has a direct relationship with three other projects as well as comprehensively with a lot of other resiliency projects going on within Lower Manhattan and other parts of the city. The Ball Fields is currently underway. I know Debbie Addison is PM'ing that from the Authority as well. And STB is the consultant on that. The RFP was released for the North Battery Park Resiliency Project recently and there's been open competition for that. And then the Western Battery Park City Resiliency Project. That [indiscernible] has not been sent out but that is for the western alignment along the 92 acres. What's really important though on this slide besides being situationally aware of the projects that are out there that all of you are going to be seeing is the interdependencies of the relationships between these projects. As we move through this presentation we're going to talk about what this project is being designed for as far as the year 2050 and the 100-year even and that direct relationship with these other resiliency projects. As you can see, they're drawn in lines on this plan. And so what we really want to encourage here is that when all four of these projects are constructed that is when Battery Park City and the adjacent parts of Lower Manhattan will have a connected combined comprehensive response for a 2050 100-year event. Okay. So we're just focused on South Battery Park City Resiliency which is the one in the lower part which is the light blue line. Okay.

Next slide. So to zoom you into the specifics of the project area, this is kind of a delineated boundary for what is mostly contains our project area. Keep in mind storm water moves, this is not, we are looking way past this boundary, but as far as where the physical designs of the comprehensive project will land. It's going to be within this range. Okay. So we just want to make sure you guys have an understanding of where you are in space and in context of the things that are adjacent to the project area. So you know this is South Cove. These things that are grey scaled along the perimeters, these just give you context, Castle Clinton, obviously the Battery. So with our project area it starts far here on the east side almost to State Street. The end of the project will be determined through engineering analysis and feasibility so that's why it's a dashed line.

Community Meeting, March 12, 2019

As we move west through the project area on the north side of the Battery we go across some subsurface conditions which I'll explain in a little bit in further detail. New York City Parks has the bike greenway there. They're a project partner especially for design collaboration for this whole process.

As you move down through Pier A Plaza, that's another segment of the project area. And then as we shift into the Wagner Park area as well. And then continuing west towards the Museum of Jewish Heritage in the first place. The high points for this project, as in high points of existing topography I'm going to show a little bit in a second, but understand for this project what it's first goal is to tie into high points that are over here and high points over here and to create a coastal barrier, right, to give us risk reduction in the future, so that means not being exposed to a certain level of coastal surge in the future. Again, the year is 2050, a 100-year event. I'll explain that a little bit further as we go.

Okay. So project schedule. We have a very detailed Microsoft project schedule that I don't think any of you want to see. We've tried our best to take what we think is the most pertinent information and what was good for this forum and this group. If you guys have more specific questions about the schedule we can answer that in Q&A, but what we really wanted to do here was capture where we're at in the project, and I think for this forum, really give you guys an opportunity so you can see when we're going to be meeting at the same slides so you can actually know when these meetings are coming and attend them. So cradle to cradle I'd like to say, project September 2018 we signed contract and initiated work. It's a three-year project. In order to get through design we're looking to get to a hundred percent design by December of 2019. This red line is marking where we're at right now, March 2019, and the process that we're at as you can see we're anchored in here with Public Meeting #2. All right. Just to orient you guys on this slide.

As you can see, there's a lot of parallel activities going in tandem, so we again Community Engagement process has been started. We started Inventory and Analysis for Design and Engineering. Feasibility of what we can actually physically build within the project area. Not just what we would like to build all of us collectively, but what can we physically build and you'll see that in slides to come. After this we will move into the Design Development and we'll work through that. We like to use increments of level of detail for 30 percent, 60 and 100 percent design. So the next time you'll see us will be at this 30 percent design threshold where we will have listened to you guys, gone through this process, start to develop concepts. So earlier tonight when B.J. mentioned that you're not going to see designs, the reason why is because we need to get your input and you need to see what was feasible as far as a flood alignment for the project area and then the thing is if anything with landscape architecture, anything with architecture, anything with storm water, anything with civil engineering, it's all attached to the location of that coastal barrier line. So you'll see that in the slides to come. So that's the other reason why it's going in a sequence.

One thing I want to mention is in between these public meetings we have meetings with project partners, agency meetings, some of you in the room have been a part of those, the Resiliency Subcommittee, those will always be interim cycles in between the four overall Public Meetings.

Community Meeting, March 12, 2019

So in the past with doing these projects whether for federal service, private sector, any of the projects that I think many of you have ever been involved in, even at your own home, right, there's a lot of different disciplines involved sometimes, there's a lot of different aspects that you're trying to consume and so in this forum, in this larger forum where a lot of us have to share information, right, we're going to fire hose you with all this information, you've got to absorb it, you're going to come back and have questions for us. It's really good to kind of set some boundaries as far as what are we trying to accomplish, right. If we set the boundaries, not necessarily in your opinions or anything like that, but in what we're creating together as a larger team on what is our balance of decisions. So the list on the far right, these are just some of the things that this project is considering. Again, there's many more to add on to this, but this is to give you an idea of the range of what we're dealing with. So look at this list, aesthetics, costs, the design foot elevations, the foot alignment has to meet, I'm going to explain that in a few slides and you'll get a better grasp on that. The design legacy and excellence of the designers that actually created many aspects of the City, within Battery Park City, and even specifically to the Wagner Park project.

I also want you to think about what is it, the design legacy what does it mean to you, not necessarily who designed it, but what it is about that place. The places that you have when you walk through Battery Park City Authority, you walk on the north side of the Battery, you ride your bike along that greenway, what does that design legacy mean to you? What risk measures? You're going to see a ray of options, and once you start to see what we can physically build out there what do those features start to really look like? Lawn space, tiered space, within the Park space, those type of things that are out there that you want to keep as a community and possible expand on.

So as you look at this, we basically have to take all these things into consideration and at the end of the day we have to have a comprehensive resiliency output.

So if any, as we're going through this, any opinions are welcome. Any ideas are certainly welcome. But everyone really has to understand that if we go and we put too much pressure on one thing it isolates the other attributes of the project. If we focus just on cost and somehow that flood alignment comes out where it's just a single flood wall placed out in the landscape, I don't think that's what anyone else wants to see out here, right. So in order to reach integration we have to integrate our opinions with each other and share and be flexible and compromise. Okay. So I know it's a very literal straightforward thing like, "Heather, I already know that," but when you're on the receiving end of all of this and all that the Authority has to take into consideration, as well as what you guys, everyone wants to see collectively we just ask you that you kind of keep this along [indiscernible] shoulders when you're commenting in the meeting or you're asking questions. Okay.

So this is where we get into what we've been doing the last few months. As far as basis of analysis we're here in this Community Engagement Meeting, we've done and we've looked at the previous community engagement efforts that were done and the previous phase of design and work. Existing drawings, we have to collect, we have to know what's below the ground, above the ground, and everything else. We're trying to capture all of that so we can move quicker through the design process.

Community Meeting, March 12, 2019

Subsurface conditions, you're going to see a slide up here that's really showing you how this project has to integrate into a bunch of different really tough things to consider from a subsurface condition. So let's just think about that. Subway tunnels, underpasses, right, combined sewer overflow systems, relieving platforms, the list is going to go on. Our project partner and agency coordination and then as I mentioned before the work that was done on the previous phase.

So this is something, and you guys might have more questions on this in Q&A, so this project has to be FEMA certified and accredited. So that means that FEMA as an agency will certify it and eventually accredit it, but what that means as far as a design is that FEMA's standards right now they're asking for a design to meet a 100-year event in current conditions. So 2019 conditions. Okay. So when we look at this plan that's up here, right, this is basically the flood plain and the flood inundation areas of where the water would go in a 100-year event in current conditions. This is our minimum standard for flood design in this project.

So when we move a little bit more forward, as I mentioned before, this project is designing for a 100-year event in 2050. So when you start to look at this flood plain for where the water is going to go projected at that type of event in the future and not a very far away future, the inundation patterns increase to this. So this project, as well as many of the other projects in Lower Manhattan as well as the New York City Panel on Climate Change have comprehensively agreed that meeting these higher design standards pun intended in some places, that this is what we're trying to achieve because by the time we construct these projects and they get in the ground if we went with a 100-year event today how many of you are kind of tired of hearing about a 100 event today and then watching it on the news getting inundated or water carrying over. So this also goes back to fiduciary trust and responsibility.

So precedent storms, many of you were dealing with Hurricane Sandy, Hurricane Irene, Hurricane Lee, I did emergency operations when I was at the US Army Corp of Engineers in the New York District for all three of those storms. Many of you were impacted by these storms or had friends or family. Many of you looked out your windows and saw certain conditions, saw where the water went, didn't know if it was rain water, didn't know if it was surge, didn't know if it was ground water. Well, the good thing is we have tools to actually determine what was where and when. We also have great tools to determine what's going to come in the future so we can all make a really good informed decision about what's best to go out there and what you want out there as well for the level of risk reduction that we'd like to capture for the design. So these are just some images from those storms.

One thing I want everyone to really, all of our team wants everyone to really kind of keep, again, on the edges of your shoulders when we're involved in this project is that Sandy is one storm. We are not designing this project for Hurricane Sandy. We are designing this project for a 100-year event, I know you're going to get really tired of me because you're going to have to put up with me for three years, 100-year event in the year 2050. Sandy did not meet those thresholds. It was actually a lot smaller than that in the essence of coastal surge specifically, and rainfall. Irene, a lot of rain not a lot of surge. Lee a lot of rain, went up into the northeast, hit a lot of the ravine systems, had massive inundation.

Community Meeting, March 12, 2019

So moving into this. These are some of the images that you might remember from Hurricane Sandy. US Army Corp of Engineers had to dewater the Battery Tunnel. I'm sure many of you saw that firsthand and saw what an extensive situation it was. But this is where it gets a little more interesting.

Frequencies of storm, right. So from the National Weather Service from 2010 to 2017 there has been 26 500-year events. We're still trying to collect the most recent data on how many 100-year events there have been. Hurricane Harvey, right, Texas, right, on the USGS rain gages for basically the gages that are in streams in the tributaries for the river ravine systems in there in the Houston region, FEMA and USGS measured that it was a 1500-year precipitated storm event for over 43+ hours. Again, FEMA standards, hopefully they won't be mad at me for this down there, right. What we want to collectively empower ourselves with in the future is a level of risk reduction that we think is responsible for our future, our immediate investments and our future generations.

So this is existing topography. This is the contours that are out there right now. This is LIDAR data. This is not exact. We are working hard to get our surveyors out into the field so that we can get a level of precision that we are comfortable as designers and engineers to stand up in front of you and say, "Okay, around this area, we think this is going to, actually the water is going to move more closely in idea and detail where it's going to go, what we're going to need." I think the high points for this is that your low point is Pier A Plaza. Roughly, approximately you're dealing with about a four-foot contour there, a little bit lower, a little bit higher in certain areas. That's why there is a greyed in of color. Again, this is approximate. Please don't go out there and start measuring because just wait for our survey, how's that sound? Okay.

Going over here to the east, we start moving more to like a 14-foot contour. As I mentioned earlier, high point to high point. As you can see Battery Place kind of comes in through the back, the road is crowned, the 9-foot contours are the range in there. This side of Wagner Park even though the Ornamental Gardens is flat this part gets pretty steep. So then over in here this is Wagner Park. You've got an elevation down here of 7 feet on the esplanade. And then as you transition up into Wagner Park the lawn space it's a range, it's somewhere between 11 feet, goes into 12 and then as you go through the pavilion it starts to descend, in between the two pavilion structures, it starts to descend back down to the street.

So as part of our analysis I really enjoy our Coastal Modeling Team because what we get to do is they get to basically create digital terrain, they look at stormwater that's going to come in, coastal surge is going to be coming from the estuary, they get to combine that and then animate it for all of us to see in an animation way through the existing site's condition. So I'm going to give you a couple of things up front that you need to use as a lens when you're actually watching this animation. The first thing again, 2050 100-year event, so in this video if absolutely nothing was built at all, and it's the year 2050 and a 100-year event comes through the project here that's what this is modeling. There is 30 inches of sea level rise included in this model animation. So again, the second point is the first thing I said, sorry. It's as if nothing was built and water was to move through.

Community Meeting, March 12, 2019

Also in the animation, you're going to see there's going to be curves up at the top. It's going to go through one full tidal cycle and then as it starts to go into the second tidal cycle that's when the surge event hits. So one tidal cycle you'll see it because I'm not going to talk while we play this video we want you to watch it. Okay. And so precipitation is not included in this. That's coming at a later stage when we can work with DP more closely on knowing what their stormwater infrastructure is existing and we can model it. And then please when you're watching this, I know it's from an aerial perspective, we can play it a couple of times if you want, it's a minute and like 13 seconds long. When you see rooftops and water going around them the rooftop is there, that is not saying that that terrain or the contours around there are not going to get wet, that's meaning that the water didn't go over the top of the Museum of Jewish Heritage or whatever building footprints you're going to see out there. So I just want to keep you guys oriented to the animation. [Video playing]. I am going to say one thing. Notice that Pier A Plaza is wet on a 12-hour tidal cycle now. Again, year 2050.

Female: Heather, could you explain what it is? It's the depth of the water, right?

Heather Morgan: Yeah. The graph, if you'll hit play again Nick, or just move it right before the surge if that's easy. So the colors, thank you for asking that, I should have said that. So this gradient when you're down in this color threshold it's more shallow as far as the amount and height of the water coming in. As you move through this color sequencing and go closer to red you're getting in higher elevations for surge. One of the things that's really important on this, and this is probably what's familiar to you from Hurricane Sandy as well, is once the surge comes through this low point the residual flooding stays. So a lot of the pooling and the water, so surge is not just about it coming in with a lot of energy and what it does then, but once it arrives into the urban terrain where does it go? And in this scenario it's staying. So think about again a larger event with rain you're going to see more inundation.

All right. So engineering and feasibility. So here we are, this is subsurface conditions. Again, this is drawn in a more simple way because if you tried to see everything that was there it would probably make you dizzy. Just main features. The relieving platform over here in Wagner Park. I'm going to explain a little bit more what that is. We've got combined sewer overflow it comes through Pier A Plaza. We've got the Battery Park underpass. Again, another storm water and sewer system here. We've got the Brooklyn Battery Tunnel. We've also got the MTA Tunnel, so we're talking about the 1 Train, the 4 and 5 Station and those features as well. All of these combined are what we're going to have to work through when replacing any part of the design, but in specifics the flood alignment because in places it's going to have to get piled down or stretched across some of these subsurface conditions and we'll have to get kind of innovative on how we're going to stance them.

All right. So relieving platform. What does that mean? That is that structure that I was showing there before that comes through here, and this is a section of it, so this is the relieving platform right here. Here's your water's edge. That's the edge of your esplanade. This is your landscape, the Esplanade Terracing Backup towards here. So this section is this section right through here. So what we've learned about this weaving platform is because it cantilevers out and has these piles only so much weight can come down onto that. You can't pile through it. We are to leave that alone because that is actually anchoring that edge, as far as flood alignment leave it alone.

Community Meeting, March 12, 2019

So what we have to do then is that because of the relationship of the relieving platform with the rest of the site we have to also keep a load restriction zone off the back of the relieving platform. So the edge of the relieving platform has a bulkhead here, it's a timber bulkhead, and so the load restriction zone is not just over this but it also extends back through here. So the red hatch area that you're going to see through this is not only the relieving platform but it's inclusive of that 20 foot setback. So what that means is we cannot put pilings or any form of alignment anywhere closer to the water unless we went all the way to the water's edge which you'll see in a minute as an alternative to potentially consider, but the alignment would come through this area that we couldn't put it into the relieving platform so it's a constructability issue.

Female: [Indiscernible] questions at the end, but is there a purpose for this relieving platform [indiscernible] or it's just to make the esplanade?

Heather Morgan: So I wasn't here when the design done.

Martha Galo: Yeah. That relieving platform forms the esplanade. The water comes underneath, there's pilings underneath, water flows underneath and the esplanade is at the top of that platform.

Heather Morgan: The bulkhead itself that runs through here on the edge, it's intent on that is to retain all the fill that was utilized from the excavation of the World Trade Center to build out Battery Park City too.

So design foot elevation. This is a term that right now a lot of people are adding to their language, right, dealing with climate change. What we want to do on this slide is show you what makes up how you arrive to your design foot elevation. So NAVD 88 is an industry standard for a vertical data line for North America that everyone kind of uses as your baseline condition when you're determining what your design foot elevation would be in any of your flood designs. Then you place your design storm on it. What's our design storm? 100-year event in 2050, right. Then you add sea level rise on top. A surge comes with wave action and wave energy. Then you also have freeboard which is a variability on wave action and wave energy and how it's going to perform when it hits certain surfaces. And all of that basically gets you to your design foot elevation. So there are a lot of factors that go into this as well as when water is moving across different surfaces. So to compare some of these kind of what we were talking about with this precedent storms, Hurricane Sandy, this is just an estimate of the water coastal surge for that event. So that's not a design elevation shown right here but that's just an approximate of what we think that surge event might have been for what already happened.

This is your FEMA standard as I mentioned before, 100-year event, FEMA, no sea level rise is considered in that. This is what your threshold then is or your design foot elevation as for 2050 100-year event.

So when we stretch this across the contours of what's existing out there right now, remember that topographic map that I showed earlier, your high points, low points, and things like that? So when we stretch that across here this is our approximate estimation of what the design foot elevations might be for the project area. We won't be able to confirm these with true accuracy

Community Meeting, March 12, 2019

until we actually have our survey. Keep in mind that the survey is going to do topographic and bathymetric which is water borne contours. So once we know more with these ranges, might get zoomed in a little better, be a little bit more close in accuracy. Again, this all is modeling and this is all about future scenario storm events.

I think at points you can just see obviously where the contours are in the Wagner Park Section and then over to here the design foot elevations are getting into 14 and 15 over here, and then through this corridor what you have in the Wagner Park and then as it expands over to the Museum of Jewish Heritage.

Next slide, please. So this is your existing topography. This is just really in here when we get to Q&A if you guys have more questions about the design foot elevation or what we call the DFE, and if we have to reference it, but as you can see those design foot elevations correspond with the existing topography but there are other factors besides the topography that go into the design foot elevation.

Height of Intervention. So what does height of intervention mean? So you have your existing topography, what we just showed, right, and then you have your design foot elevation which was the slide before that, the height of intervention is the distance in between. So if you were to actually put a berm out there or a flood wall what makes up that part of that flood alignment to give you the risk reduction for the storm event. So you can see the grade again. We're showing this as gradient because we do not have close proximity on some of these yet but we wanted to give you an idea of what it's starting to look like.

Next slide. All right. Alignment locations. Again, this is the overall project area just to keep everybody oriented.

Next slide. I'm going to start on the east. So starting on the east, this is the north of the Battery. The alignment we're thinking it's going to start around here. Again, the exact points to be determined.

Female: [Indiscernible]. That rectangle is [indiscernible]?

Heather Morgan: Yes.

Female: We know that, but just so everybody else knows that.

Heather Morgan: Yeah. Thank you. Pier A.

Female: Pier A. So that's from Pier A East.

Heather Morgan: Yeah. Thank you. So moving west, right, this is where the bike greenway is, this is Battery Place. All right. So as we move across through this part of the project area we start looking at all those subsurface conditions. Remember, as I mentioned, Battery Park Tunnel, FDR Underpass, right. So that's all that information starts to shape what kind of alignment we would have to have here. When we start moving through here too we have to consider well

Community Meeting, March 12, 2019

what's it not only look like below ground but what do we want it to look like above ground? So these are just call outs and options about what we could potentially put out there. So this is an example of a deployable that's known as a flip gate so it lays down in the ground, when the storm event comes it will actually pop up. It can be propped up in many different ways. This one up here is a flood wall buried within a berm. So the floodwall is kind of underneath buried or concealed whatever your preference is. And then this might be something you might see as a more traditional flood measure which is an actual floodwall where it's standing up out of the landscape on either side, there's not bermed earth but that's just another application.

Female: [Indiscernible].

Heather Morgan: Which one?

Female: The middle one. The berm with the concealed floodwall. Does that pop up at all or [indiscernible] just built as it is?

Heather Morgan: Yeah. And that's a great question. In the floor risk measures our group is kind of breaking it down to two categories; static or deployable. Static meaning it stays in place and stays as is no matter if there is a storm or it's just sunny and 65 outside. On this, the deployable is one that actually moves or shifts or gets deployed, or gets kicked into gear when an event is happening. So static versus deployable, there's a lot of different types of deployables but that's kind of what we've broken in that category. Thanks for asking that.

So as we move west this is Pier A Plaza. Remember in existing topography this was one of our low points you saw in the coastal animation, you saw it on a 12-hour tidal cycle that Pier A Plaza will have wet feet. All right. So knowing that this is our low point and knowing how Pier A Plaza is currently utilized within the project area in Lower Manhattan we're probably going to have to lean towards doing deployables here. All right.

We're going to jump all the way to the Museum of Jewish Heritage.

Female: You might talk about the two types, the other type other than deployable, deployable and the raised [indiscernible].

Heather Morgan: Oh thank you. Thank you. So again, these call outs and these, so because this is a low point, right, deployables there's trade-offs with any form of floor risk measures, but with deployables in a lot of situations you can only use them to go so high because they're freestanding. Once they're propped they're kind of a single thing out in the landscape and if they're freestanding you really only want to use them to a certain height of intervention like we were talking about earlier. So in a scenario like this say that we start going further into our analysis and the deployable height here would have to be into a range that is engineering of record Aecom's not comfortable with that. There might be an addition of having the berm up the grade here and then place the deployable on top. So thank you, Gwen for having recalled that.

Community Meeting, March 12, 2019

Next slide. So we're jumping over to the Museum of Jewish Heritage. Michael Stratford's over here as well. We met with him last week. Thanks again for your time with that. We greatly appreciate it.

So if you guys remember, that relieving platform's here, right, and then the 20 feet behind the relieving platform. So if the scenario hit is on this edge of Battery Park City is at this corner of the building actually encroaches that load restriction zone. So what that means for our team is that in the current conditions our alignment here can't go out into this relieving platform, right, because as we said earlier we can't put that weight on it, we can't have pilings going down in. So what we're looking at right now is proposing that the Museum of Jewish Heritage becomes part of the flood alignment. So what that means is we would reinforce the building, it would be dry proofed so that when coastal surge or storm events come onto Battery Park City that that building actually serves as part of the flood alignment.

Female: And that's a deployable at the top end crossing what is first, correct? Pointing towards 50 Battery.

Heather Morgan: Yeah. Thanks for adding that in [indiscernible]. So the project in order to hit full high ground it needs to come to meet these contours over here on the north side of First Place, so the alignment would then leave the building, cut across First Place, and we have to determine where it would tie in up here. We're not at a spot yet to say that's the end point of the alignment.

Female: So [indiscernible] the building is actually your floodwall and the Park is going to get flooded.

Heather Morgan: You got it. Yep. Spot on. Thank you. Okay. So we're going to jump back down to Wagner Park because we know this is an area too that one we have more space so we're able to look at different options, two we don't have as many subsurface conditions, knock on wood, right now that we don't know about. Okay. So when we start to look at this part of the project area we really start to say, "All right. Well, let's consider everything that we can." So one of the alternatives is to actually carry the flood alignment out to the furthest edge on the waterfront. So all the way out to that edge of the esplanade. That would mean if anything was to go in that direction and have that out there that would mean that the relieving platform gets transformed, maybe it even gets demolished and something else is reconstructed. That would also mean that you would have to put in a bulkhead and backfill this area and there would have to be piled down down to bedrock. That's an extensive construction project as well as a design project. And the cost associated with that as much as that's a really great option for maximizing the amount of protected area based on the relieving platform and the other aspects of the site and maybe what we want out here within a logical timeframe permitting a loan, we have our environmental group here as well to comment on that, basically that comes with that alternative. Okay.

So next slide, please. So we're just going to keep moving back more inland into the project area. So if you remember the relieving platform, you remember the 20 foot restricted boundary, this would be placing the alignment as close as we can to that relieving platform. The drivers on an

Community Meeting, March 12, 2019

alignment like this is it's in a safe place, it's in a doable place. It's not going to be easy, right. We're still going to have to deal with a lot of things like what's the current condition of the relieving platforms if it's on the wet side of the wall. But what we do get out of this is look at the amount of protected area that get elevated up out of the flood plain. Do you remember the 2050 map? The 100-year? Do you remember how much water there was there? So what this is pushing for is though we may not have the luxury to go all the way to the waterfront edge, we're able to take as much of the project area and elevate it up out of the project, or out of the floodplain. That includes any time there's a storm of lesser event than a 100-year 2050 event. Okay. So you saw the 12-hour tidal cycle in the coastal animation in Pier A, as you move forward toward 2050, 30 inches of sea level rise, and as you move towards 2100 your sea level rise in a 12-hour cycle is going to be covering the esplanade. So this is looking a little bit more forward to give more risk reduction in the future and maximizing the amount of public space you have out there.

Next slide. This is moving completely further more inland. So this is if the alignment was going to carry through closer towards Battery Place. This is a similar location to what you saw in the earlier phase of work, right, when we were looking at well if this is placed here we might not have to modify as much as the current project area but you clearly don't get as much maximized protected space for future use. So those are the three alternatives right now in a very simple form because we had a lot to cover today and I'm talking a lot and I want some other people to talk like you, and the other people on the team and people up here.

Female: What's not represented that I don't think people understand from these three slides. The first one is very clear because you're out of the water's edge. The second one's very clear because you're at the end of the relieving platform. Where does that line go through in terms of what the entire park is? Where is that in the park? Because that's not clear. You've got all the other architectural aspects on the thing but not here in Wagner.

Heather Morgan: Do you want me to answer that or do you want to answer?

Gwen Dawson: We had asked Aecom to focus on alignment and then to layer on what the implications would be to what's there now but we wanted to focus on the alignment options first and then layer in how that impacts and what the interaction is with the existing [indiscernible].

Female: So there'll be another three slides that show the existing infrastructure?

Gwen Dawson: I don't, but I know there are three, well [indiscernible].

Heather Morgan: Can I add on to that too, Gwen? So by us not showing everything that's out there in the park we're not trying to in any way say that we don't acknowledge what's out there. The focus of these slides is for you guys to really understand. If you want certain amount of space out there in the future that is a main factor in contributing of where that alignment location goes. There are a lot of good reasons why where those -- we understand that wherever that alignment goes it's not designed in isolation and lost in space. We completely understand the ripple effect into all the other aspects of what's out there, right, for your part in other aspects of the park. But for this slide and for this part of the presentation we wanted to teach you about the

Community Meeting, March 12, 2019

flood alignment and the resiliency components of the project because sometimes that information gets cluttered with everything else.

Female: Heather, you may have an answer on the next slide, but each one of those lines what is that? Is that a wall? Is it a deployable? Or is it we don't know yet. Or is it raising the land?

Heather Morgan: We carried it a little bit further based on our meeting with you guys. So we don't know yet exactly what that is because you guys are a part of that process. What we can guide you in is we can say as engineers what's feasible out there, what's safe to put out there, and then based on not only what's safe and structurally sound what's the best form of measure so that we can make sure that it's integrated, integrated into the landscape architecture, integrated into any form of architecture, integrated into how you use the park. Right. We do not want a flood alignment basically dropped into the middle of the park, right, that hasn't actually been incorporated into the landscape. So we're going to show what it could be and we're also going to show what we think is best for in this park, for in this part of Wagner Park based on how you guys use it right now. Basically what would be the most least invasive flood measure for how the park is used today, and reasons why you enjoy it and cherish it.

Female: Heather, those flood barriers though it would be helpful I think to mention to people how high they need to be in order to address, within the range, the low point to the high point.

Heather Morgan: Yeah. Okay. So that we can go back to our Q&A, that high-

Female: You'd want a barrier at the water's edge you could get one but at the point it'd be high and you won't see anything.

Heather Morgan: So will you do me a favor? Will you must write that down on the card with Nora so we make sure we answer fully because I think other people are going, I'm sure your questions are around that too. I see can see you nodding. Okay. So we're going to get to that. Well, it's in that.

Implications of project area. So here you go, right. Next slide, please, Nick. Thank you, sir.

B.J. Jones: Thank you, Heather. I just wanted to jump in here because I think this section is really important as you can imagine, which is why we need to get to it. But I just wanted to echo what I said at the outset of this engagement several months ago is that make no mistake, this is resiliency project. This is driven by resiliency decisions and now by what the data is showing us, what the coastal modeling is showing us and also understanding that balancing act that Heather talked about earlier today. So now what we're going to get into is where we feel that alignment should be both in terms of protecting ourselves against the storms that are to come and are happening already now elsewhere but also in maximizing the areas that are protected in terms of our public spaces and so we're mindful of the implications that that might have particularly with Wagner and the Pavilion and so we take very seriously these alignments that you see here given that. But this really all informs what we think is the right way to go based on what we've seen and the data shown here today.

Community Meeting, March 12, 2019

Heather Morgan: All right. So Tammy had mentioned earlier, you know, when we put any form of alignment or any form on your design anywhere there's an implication to what's existing and then what's out there. So the previous phase of work, had done assessments, and had looked at this, right. And so when we were brought on board the Authority asked us to kind of pull all that together and look at it again and then summarize it in a more simple way so you guys can understand what decisions are being made about certain aspects that are out there like the current pavilion on site. Okay.

So this was a way for us to kind of break down, and many of you may have more detailed questions again on this one if it's a sensitive topic to you like Nick said, please write it down. But I want to get through this slide and then also get to what was asked about what would make up the flood alignment. Okay. So on the far left you have a list of considerations of how you could handle the existing pavilion that's on site. And then along the top you have considerations, weights basically what does that mean, if we do this what does that mean, how much does it cost, what's its implications to the resiliency part of the projects? I want to echo what B.J. mentioned. This is a resiliency project so the thresholds and comparisons up here are about that relationship. Please look at this image. If this is making you dizzy over here, I'm more of a person that would like to stay over here in the visual, in the pictures, but please look at the existing pavilion. And once your design flood elevation, whatever is designed. Okay. That's a relationship of the height of any form of flood design that would need to be out there for that pavilion and that view shed corridor. Okay.

This is a plan view down here just showing the relationship of the existing pavilion that's out there in the park and its relationship to some other aspects of the site like the Allee and Battery Place. All right. So in these considerations you can look at repair. What if the existing pavilion was to be repaired? Well we start to look at and compare it across what we have listed across the top. Initially you have higher costs. It may not be as much cost as fully remediating the structure but your long-term operation and maintenance because you're kind of just doing some band aid fixing is going to increase over time. This image captures that if you keep the existing building and the existing location, again, that's option 1, that finished floor elevation and the view sheds and everything that you have here when we pop up that elevated moving of most of the project area up out of the flood plain for a 100-year 2050 event it will be below that DFE, right, design foot elevation. And as you guys can see no matter what you have to hit that design foot elevation so your view in relationship to the rest of the site will be altered and changed or blocked.

The consideration 2 is to remediate the existing building on site in the existing location. Remediate is very different than repair. Repair is to fix, look at different features and kind of do your best to keep the building going. I am not an architect so those that are here to answer more detailed questions on the differences between those types of things. But remediate is more of a wholesale exchange or change in the building to basically look at that building and make it more efficient. So right now for remediation, remediation is a lot more changes. It's looking comprehensively at the veneer that's on the building, looking at the mortar, looking at the way it's constructed, why is it failing, what's its conditions right now, what's going on, we have some more detailed information about that in Q&A if it's needed. So remediating is a lot more of a lift upfront. Remediating costs more upfront but the benefit that you get is that your reduction in

Community Meeting, March 12, 2019

O&M because you've made the building comprehensively more efficient over time for now at least until more crystal search comes. Again, below the DFE and blocked by the flood alignment. Any of these options down here are to build a new building. The options there, the considerations there, well what if we just replicated the same design at a higher elevation. You start looking at initial costs that are really intense because you have to elevate the structure, the structure already right now is not in good health as far as staying for a very long time. It has issues right now. And then you start to look at the fact that you wouldn't actually maximize your protected lawn area. Your relationship to the stairs once you elevate the building we all know the stairs that are on the street side, once you elevate that up four or five, maybe six feet depending on how the DFEs go -- yeah.

Female: Can you clarify that you're not talking about elevating the building. You're talking about replicating the building?

Heather Morgan: Yes. Okay. So does everyone, that's a clear line that means replicating the building means that right now you cannot take that current pavilion as it is and pop it up. It's not feasible due to the structural condition of it now. So what this would mean is you recreate a very similar design as to what's out there but place it at a higher elevation. So it's a replication. You're replicating the structure. Okay.

All right. So option here, 3B, is to replicate existing design closer to street. So in this plan you can see this is where the existing pavilion is. What this is looking at is okay, well what if we pushed it back more towards the street? Well, if your flood alignment comes through here now you'll actually gain this space here of additional protected lawn, green space, whatever it is that eventually in the future you see fit to be in your public space.

Female: Heather, the flow line would be where?

Heather Morgan: Well, again, the flood alignment would run like through a potential flood alignment. I don't want anyone to think these are all decided. So the flood alignment would run through here along that edge of that relieving platform and through there. So in this consideration what I would like you guys to see is even though we can't elevate this front part of the park that's on that esplanade and that relieving platform, by placing the flood alignment here and if we do do a new building and if we move it back here towards Battery Place, you gain all this additional space for what you know as Wagner Park. Not only do you gain additional space, right, but it's additional space that can handle a certain level of storm in a pretty close future condition. Remember what I mentioned about precedent storms. Remember what I mentioned about Harvey. Remember what I mentioned about since 2010 to 2017 26 500-year events have occurred.

So then C is to actually build -- well I already just went through that one I'm sorry.

So then 4 is this option of like what if there is no building? Just think about it for a minute, right. Like if we were to maximize the green space, the lawn space, and things that are there and we were to elevate as much out of that space. If we can't come to consensus on what to do with any of these existing structures out there maybe just elevating out of the flood plain and not getting

Community Meeting, March 12, 2019

the opportunity to design a new building maybe that's what happens. I don't know but that's why we're doing this process and that's why we'd like to be able to move forward with that weighted decision that we were talking about earlier.

All right. Again, so this is getting to your question. So once we take all that information, everything you put up with listening to me explain, which I'm sure, B.J. likes to tease me about using three syllable words too much, so alignment, what could it potentially look like. Based on what we know right now, what do we feel comfortably as a team saying? This might be a way to go, one of the ways to go. So again, I'm going to start over here on the east, not to confuse you, as Tammy mentioned this is Pier A and Pier A Plaza, this is Battery Place. So over here on the far east side or far right side of the slide we have the 1 Train coming through there, the 4 and the 5 Station. Again, all of the subsurface conditions. So one of the reasons why this is hatched red is to be determined on what's going to be best there once we know. Right now we don't know how deep the Brooklyn Battery Tunnel is from the top of the grade on the New York City Parks bike path. Okay. So once we know that, we can start to show you something that's actually more as options but for right now we didn't want to show you something that we can't build. We don't want to promise something that we can't actually deliver on.

So in this section, there would be some form of a flood measure, as you guys saw, you'll see another slide with a bunch of range of flood measures on it as well. As we move west through the north part of the Battery we don't have subsurface conditions there such as the tunnel. So we're going to be able to pile down. So one of the things as we start looking at this is we can do a floodwall that's buried underneath a berm. One of the things we can also do is in this spot if we can build a little bit more of a traditional flood measure as a freestanding wall we'll be able to land create on both sides from a landscape architecture standpoint and working with [indiscernible] because the purpose and use there is a bike greenway, but we'll actually be able to potentially save money in places where we know we're going to have a lot more of a higher structure to do the risk reduction that's seen.

So moving in a little bit further west as you go through the Battery underpass, right there we need to know how close to all those tunnels we can get to. If we anchor down on both sides of the tunnel but we can't pile through the tunnel we need to know how far we can span across that tunnel. If we span across it we also then have to understand well how high can that flood measure be, that height of intervention, whatever it's going to be, how high can it safely be if we can't anchor or pile down through the underpass. So that's why those are hatched red. We're trying to unpack it and as we know more information we can bring you some more design solutions as B.J. mentioned but not in this meeting.

As we move through Pier A Plaza, we've got this is that low point. Again, deployables, the next slide you're going to see a ray of deployables and static flood risk measures. As we transition through into Wagner Park because of the way it is now, because of the aesthetics, because how you guys use it, because how we all love that space right now what we're leaning towards as a team is a buried floodwall. So a buried floodwall that means you're not going to see those flood risk measures above the grade. It's going to look like a park. Now you guys all get to decide what that park looks like but underneath that park is this spot that's a spine of a flood alignment, okay, that anchors down and elevates that entire project area out of the flood plain. So that's

Community Meeting, March 12, 2019

what we're leaning towards in that area. Again, we're here to talk about it, we're here to move it forward and to get your input as well.

So then as we move through over here to the Museum of Jewish Heritage we talked about that. That's going to be a combination of dry proofing, what they call dry proofing from a structural engineering standpoint, the Museum of Jewish Heritage, you nailed it. The building becomes part of the alignment. And then carrying over across First Place there'll be a deployable there. That's just TBD because we're trying to determine the relationship on how the Museum's going to be designed as well.

Next slide. So this is all these different array of flood risk measures that you guys were asking me. What is a deployable look like? So notice on the bottom these are deployables and what I mentioned earlier these are static types of flood risk measures. So these are ones again that stay the way they are no matter if an event's coming or not. These down here, this row is a collection of ones that actually deploy or kick into operation when an event happens. This is a swing gate. Think of like a door. It's open. When an event comes it gets closed and locked. It has pilings or columns on both sides to anchor it down. This is a roller gate or a slide gate. It's sometimes varied or nestled into something that's adjacent and when an event comes it gets rolled out and locked into the other side. This is a flip up gate. Flip up gates can get triggered in a bunch of different ways as far as what deploys them. All the technology and deployables has come a long way in the last 5-10 years. A lot of these flip up gates now have three different modes in which trigger them to pop up. Some of them actually through the weight of the water when it comes it will pop up on its own. Some have hydraulics in them that you can actually do it through a system and it actually elevates itself and props itself up on its own. In others, you can come and down manually. Some are set up to do all three in case any of the three fail when an event's coming. Stop logs, that's a little bit more of a traditional and more cost effective but it's labor intensive where you put out columns and you actually stack the logs up. Again, someone's going to have to go out, install the [indiscernible] or the columns, stack up the logs as they go to a certain design foot elevation. And then the vertical sliding gate is what you saw in the previous phase for design where the actual gate itself is stored in a subterranean condition. And when an event happens it actually gets pulled up out of the ground and into its place and then it's part of the alignment.

Female: How high currently can the flip up gates go approximately? Is it like 6 feet, 7 feet?

Heather Morgan: That's a tough question. There you go, let's let the engineer answer. Right. All right. So this is just again contextually if you take that alignment, you saw what you saw and you actually stretch it over this project area plan that you saw earlier in the presentation. This is where this would all land in its relationship to the rest of the other parts of the project.

Female: So my question is with that in front of Wagner Park and going throughout all the park area, okay. That would probably, in my mind what I see happening is a flip gate. Why do you have to do anything else besides put the flip gate in? The 12-foot.

Male: It's an arranged 12'6" off an existing elevation that you have as 9 in there that puts you at [indiscernible].

Community Meeting, March 12, 2019

Female: And yes, you're going to have to do some construction of the grassy area. I mean it's right through part of the ornamental garden, it's going right through the tiered part of it. I get that there'll be something done there.

Female: Again, it's what the Community Board has as a resolution.

Female: I mean if it's feasible [indiscernible].

Female: Okay. So you'll have to get to all the questions, but I just wanted to put it out there that these discussions have been had by many different aspects of people and we all want resiliency. It's really important to protect Lower Manhattan. There's no doubt that is the primary focus, but the question of tearing apart everything to get there is another conversation. And what aspects of resiliency planning and design knowing that you can get up to 12'6" can be included in this kind of a conversation. And then we want to hear what everybody else in the room has to say so that we can take more notes. But I just wanted to put that out there for what the baseline, for what the Community Board passed as a full resolution.

Heather Morgan: Okay. So can I respond to you guys? Okay. All right. First off, great questions. We passed this around our team until I don't know I think Gabe's tired of hearing me talk about it actually. So here we are. We all understand that Pier A is a low point. We can't change that right now. It is what it is. It's a low point for Lower Manhattan on the western side. Everyone agree on that? Thank you. All right. So as we move through this corridor we also said that Pier A is going to have to be some form of deployable. If you continue deployables contiguously from there through here that means that 50% maybe higher percentage of your alignment is deployable. Okay. That's not including these little spots over here or any of these spots over there. A rule of thumb with risk management, looking at flood risk management projects across the country, what happens when you have a single levy along a big river and that single levy berm fails? So an underlying thing that comes with risk-informed decision-making, dealing with comprehensive flood risk across the country, a rule of thumb is we use deployables only where you have to and you anchor the deployables on other ends with other forms of flood measures that are structured and static so they can share the responsibility and dissipate the amount of energy from a storm event.

So one thing just to kind of inform you guys on before everyone starts actually asking these really detailed questions about this. So let's say in Wagner Park this is a flip-up gate, let's just say that, and the whole way through Wagner Park and Pier A Plaza, when this is flipped up it looks a lot like this. Right guys? A flood wall standing by itself with nothing on the front side of it or the back side of it. Rule of thumb, like risk management, risk-informed decision-making, do your best to not put single measures on systemic problems. You hear in climate change, multi-layered response, multi-tiered, multiple lines of defense. Why? Because if one aspect of it fails it's set up because you're not relying on one single type of deployable or one single wall for a majority of your alignment.

Other things to consider with deployables. All right, guys. Deployables are very costly. They're basically a large mechanism that has a lot of materiality to it and it's designed with very big

Community Meeting, March 12, 2019

precision. It has to have the same size foundation as a flood wall. And it has to pile just as far deep down into the ground. So one thing about deployables is sometimes people think that you can place a deployable within a project area and it's all good. No, the construction footprint on the deployable, the ones that were proposed in the earlier phase of design at an early stage we looked at how far you would have to excavate to put in a section of it and you're talking just excavating to build it would be 25-feet wide, 26-feet deep, and the length goes on. So this concept that we could take a deployable and just insert it nicely into the landscape and everything stays the same your construction footprint unfortunately is still going to completely, I hate to see this, rip up Wagner Park. I'm just being honest with you.

Female: So what's their idea then? I mean if you don't want to put a deployable there what would you put?

Heather Morgan: Our preliminary suggestion so that you guys can have as close to what you have out there now but it not be wet all the time or get ripped up in the future so your grandkids can play on it, or maybe my grandkids can play on it, I don't even know at this point, would be something like this. The concealed floodwall. You guys like the terraces that are out there, right? You like the open lawn, right? We can tuck those floodwalls underneath the grade, bring the grade up, make it grass, terrace it so it transitions back down the esplanade or back out to Battery Place. You see? So that flood measure is totally hidden but the landscape architecture around it you don't even recognize it. The landscape architecture becomes a design excellence that you love and you deserve and you have out there and you will have out there for future generations. By the way, the concealed floodwall with the berm, that really gives us a lot of room to really listen of what you spatially want out there. And what aspects about the current design you spatially would like to retain.

Female: Just a comment about the [indiscernible] what scares me about that is if because sea level rise that's [indiscernible] or what have you, is it possible that that gate is only [indiscernible].

Gwen Dawson: No, I actually was going to make that point. All of these points are valid points and they're valid observations. They're all very nuance and they all have many layers to them. And certainly I understand the logic of saying, okay, if we could have a deployable that is not there all the time then you can keep the park as it is maybe, or closer to as it is. But what happens with sea level rise, and one of the things that's really kind of come more into focus during this part of our process is that that park, parts of that park and the esplanade are going to see water a lot. It's not going to be just the once every 5 or 6 year kind of storm or something that's very infrequent. There are going to be more frequent storms. And then at some point just with the natural tidal cycle you're going to have situations where you're going to have wet areas in the park, on the edge of the park and the esplanade.

Heather Morgan: Yeah. Just to add onto that. Think about when I did emergency operations for Sandy in East Rockaway. Right. We mentioned this at the CBI Leaders. How many of you remember that it was actually the coastal search coming, hitting the Boardwalk, parks, I mean when I worked for the Corp we used to work with you guys on the Boardwalk renovation moving along and trying to tie it into the dune previous to the event. And the Boardwalk ripped

Community Meeting, March 12, 2019

up and the Boardwalk moving through the terrain also did a lot of damage. With what Gwen's saying, and our engineers are looking at, that relieving platform has gotten the wear and tear since 1996, since it was constructed. Okay. It's gotten Sandy, nor'easters, lots of other things. Everything that we're showing you about storms to come means it's going to continue to keep getting hit more wear and tear. That relieving platform is on the wet side as far as the ocean side of that alignment. We will do all the calculations, we will look at making sure if anything ever rams against anything or anything like that. But I will tell you from seeing a lot of flood projects throughout the country after working at the headquarters of the US Corp of Engineers, you want something like this when something comes that shares and dissipates that event across the landscape in a single measure here for something to arrive at no matter what the degree is.

Female: It wasn't saying a single measure through the entire park, but my thought was for the open areas and for the design that we have that what considerations were given with the raised platform we already have that's there because it is a terraced park, what considerations were given working within the existing design of the park to make it resilient. There are ways in the ornamental gardens to add walls, there are a few [indiscernible] in the Museum of Jewish Heritage as a giant floodwall in itself. So what other measures are being considered versus knock it all down or do nothing. Like where in the middle is there some ground? That's what I meant. Not gee, let's just pop up gates all through the entire park because that I understood was not reasonable from the failure point because of where we are with Pier A. So just understand that I'm not like all gates or nothing.

Heather Morgan: Okay. That's fair. Go ahead, Gwen.

Gwen Dawson: I want to make sure, do we have questions that we need to answer.

Heather Morgan: Yeah. The next step slide, so we can just do that so everyone knows and then we can Q&A. I just want you guys to know that this is for the project. You're going to see surveyors out in the field. This is your neighborhood so I just want you to know everything that's going on here. We're going to have surveyors out in the field like I said they're going to be doing the dry contours, the terrestrial terrain stuff in your streets, around the park and the project area. They're also going to be getting into the water and doing that and doing the bathymetric survey.

Geotechnical borings. They're going to be out there, they're going to be drilling into the ground. They're going to be going down to a pretty far depth, 50, 60, 70 feet. The reason for that it's going to pull those samples up. We need to know not only what's going on from the subsurface condition but what is going on in that soil strata. How are things built up because we're the engineer of record, so whatever we pile into the ground we have to have an idea of how far the pilings have to go, how thick they need to be, how the spacing in between them. It's all engineering stuff but that's why that's getting done.

Environmental assessment. We're going to be looking at our impact to anything, natural, cultural resources, the social effects, air quality, all that's going to be considered in the environmental assessment. Moving forward we're going to have some different meetings for design feedback. We'll talk about that later. And then please just know that we'll be having another meeting at this

Community Meeting, March 12, 2019

size and scale for us to present to you, New York Summary as a collective large team. And the next public meeting would be somewhere between May and middle of June.

Nick Sbordone: Just very briefly, I'm sorry, Heather, just very quickly, I want to thank in advance, [indiscernible] Community Board we have the leaders of both Battery Park City Committee and the Environmental Protection Committee. In addition to the steps here, and if we can get the date set next couple of days we're pushing [indiscernible] we will, come April, which is only a few weeks away now jointly with both the Battery Park City Committee and the Environmental Protection Committee we're going to be doing a joint meeting on South Battery Park City, but specifically with some concerns about Wagner Park and that's kind of the next touchpoint for the public to come in and actually start giving some feedback about what aspects of the park they would like to see, what are some of the design elements. Some of the questions that we're not discussing tonight because we're focused primarily on the alignment. There's going to be additional opportunities through and with the Community Board to advance that conversation together. So to the extent that I can get that date soon I will add it, if not, this presentation will be up on our website nonetheless in the next day or so, and then we will be marketing out that next meeting date in early April very widely and broadly. So with that, thank you, Heather.

Nora: So Karina's going to pick up your cards. We want to make sure we get through all of the questions if possible. But we'll get started. We're doing it this way so that everybody can hear what the questions are and we'll move through as many as we can. So let's start.

Question: Has Aecom spoken with Hudson Yards?

Female: Are you talking about [indiscernible] or are we talking Hudson Yards the development that's on the west side?

Male: Like Hudson Yards [indiscernible]. Are we taking any queues from what they did [indiscernible]?

Female: Gotcha.

Gwen Dawson: We have not specifically talked to Hudson Yards. Although we have talked to Jav Center, and the Jav Center took us on a tour, showed us some of the things that they had implemented as far as flood protection measures and they were continuing that discussion. But it's a good thought that we might want to actually find out what, if anything, we might be able --

Male: [Indiscernible].

Gwen Dawson: Sure. Well, Brian's got [indiscernible].

Brian: So actually Aecom [indiscernible] has actually constructed some of those buildings so that's a great opportunity that we could reach across to them [indiscernible].

Community Meeting, March 12, 2019

Nora: I have lived here for 20 years. AS the river is rising what makes you think a 100-year storm is sufficient?

Heather Morgan: I would say that when you start looking at how do you get enough done and change is hard. But you have to find this good balance between how far have you designed for a certain scenario in the future, okay, but what if that future kind of shifts or turns? What if sea level rise goes a lot faster than we thought? You want to be able to actually adapt your structure or your alignment or your project. So right now a 100-year event in 2050 is what we consider to be a measurable understandable projection of what might happen. I know Gonzalo's been working on answering these types of questions for LMCR. Do you want to add in on this? You sure? Okay. All right. So 100-year event again, I don't even know if they're going to call it a 100-year event by 2050, but what we're going to be looking at is where the water goes and the elevations that are there. And if we decide to lean forward further and design to a larger event that would be something that would be transparently discussed.

Gwen Dawson: We've discussed this actually, whether the 2050 100-year event is actually aggressive enough given the frequency that things change and the projections change. We are matching our design flood elevations and our standards to those that the city has implemented in their east side coastal resiliency and the Lower Manhattan Coastal Resiliency Program because we want them all to be compatible with each other. However, one of the things that we are going to be mindful of as we continue the design is are there things that we can take into account? Can we perhaps create a foundation that might be strong enough to support a little bit higher measure in the future if we decide that we need to add something more in the future. So we want to make whatever we do adaptable so that if things change more rapidly than we're anticipating we have a plan. There's a plan that we can then add onto or modify in some way to accommodate that.

Nora: Heather, this probably builds off of one of the earlier questions. What coordination is under way with adjacent projects to make sure that the efforts that we do here are not voided out by flood waters just flowing in from nearby points and other neighborhoods?

Heather Morgan: Can you rephrase that just one more time?

Nora: Sure.

Heather Morgan: I want to make sure I got it all.

Nora: What coordination is underway with adjacent projects to make sure that efforts here are not voided out by flood waters just flowing in from nearby points?

Gwen Dawson: I can start it and you can follow up. From the very outset we have, our efforts have been in [indiscernible] with the City's project. As a matter of fact, what we are doing here with the south, the west, and the north projects is actually forming a part of what was originally conceived as a big U by the City. So we know that it has to be coordinated. And even though there's currently not a plan for what happens north of Battery Park City we want to make sure that our north project has the ability to match up or marry with some future project that would take the project even further north from there. We have regular dialogue, meetings with the

Community Meeting, March 12, 2019

consultants, with the agency, representatives that are working on those projects. We are talking about working jointly on a storm drainage analysis so that we can share information so that we have a better plan collectively for how to deal with what we were talking about earlier, that Heather was talking about earlier, the rain events and the storm drainage issues that go along with this type of resiliency project. So we are constantly mindful of making sure that we are coordinated with the adjacent projects. If you have anything more to add.

Heather Morgan: Yeah. Just if you can rewind back to where you saw the water pool during the coastal storm animation how it pulled up and where it went, so you're not only like Gwen's mentioning, we're not only dealing with the surge but we're dealing with the rainfall. But we're also dealing with where the water rests and lies after a surge. And then any rain that would continue on top of that. So what's interesting about water that maybe makes the job really difficult but interesting at the same time is water forces alignment literally. It's a system. So we, at the CB1 leader meeting, Tammy brought up the new tunnel closures for the Battery underpass and all of that, what DOT's doing, what type of resiliency measures they're doing, how is everyone starting to respond when an event happens. If everyone at one time during an event is setting up all their resiliency measures, okay, and we still have pooling and stormwater conditions that's something that not just the Authority or even some of our obvious adjacent partners, but very much of the larger Lower Manhattan system all the way over to East River and what gets sent over to New Town Creek in a sewer system format. So we are comprehensively looking at all of that and we're trying to gather as much information so we can come forward and explain that to you. It's complex. It's just going to take us a while to kind of bring it all together in a format that's I think good for this audience.

Female: I have a follow up on that too. So are you, as we all know, I mean, shortly the City will release their plans for the East side of Manhattan and so I wanted to know specifically is the Battery, and often New York would and we'd know that, or we've heard rumor that there might be some sort of infill project and that Battery Park City was of course using a paradigm in 2014 when the resiliency plans for the eastern seaport city were considered. Are you specifically working with ORR on those plans and how these two [indiscernible] privy to and work with them on the way we are making the big U [indiscernible]?

Heather Morgan: Yeah. I'm going to let Gwen answer that.

Gwen Dawson: We have awareness of the fact that they are working on these projects. We don't share drawings or data with them on a daily basis. I would like for us to do that more.

Female: Is there a master plan, Gwen? I was just wondering if maybe Lower Manhattan does not have a master plan, that there is no resiliency master plan, that there is no City master plan. That aside, it seems like some things that agencies should be working together because I can't imagine how, what's going to be planned for the Battery, which we're soon to learn about, and [indiscernible] and side street, and wall, you know, how this all becomes one and with the kind of money and time that is going into it it just seems like what agency is going to give immunity to the public all over the City a master plan that identifies this big U and at that, you know, reincarnated or temporary notion today. Will we be able to see that, would you be able to work with agencies providing that?

Community Meeting, March 12, 2019

Gwen Dawson: I believe that is consistent with what the City would like to achieve, and certainly we are very eager to be involved in that and to help in any way we can and to play whatever significant role we can in putting an overall [indiscernible].

Heather Morgan: Gonzalo, would you like to speak a little bit? Not to toot our horn or anything.

Gonzalo: Specifically to answer your question we are aware of how we are putting together all the pieces. As previously mentioned, everything was borne out of the Big U competition and that was kind of broken into many different sections. We're actually working on the second southern section which is the area of two bridges between Montgomery Street and [indiscernible]. A lot of that flood protection is actually happening underneath the FDR for each of the surface conditions. We have worked with the City with the Economic Development Corporation at the Mayor's office for resiliency in helping them justify the pros and cons behind going out more or staying within the line between FIDI and also seaport areas. We're actually, I mean we're in constant communication with them about what to do next. They're actually debating internally about how to actually move the project forward. What we've come up, and you know, like these were chats that we were having of little like 7 to 8 months ago, this is where we left the project until we went back and actually analyzed a little bit more of the data, there's no feasible solution for FIDI and seaport that they can afford that actually is going to withhold the year storms that Heather has been talking about. So that's why they're thinking about going out boarding that section. All of these components are like almost independent utilities, right. They all connect to one another, like that is being treated as an independent piece, two bridges is being treated as an independent piece and the joints are basically where we meet. And all of these, what they have in common is the 20-foot phase, 100-year flood.

Gwen Dawson: Let's follow up on that concept of independent utilities. When the question was asked how do we make sure that we're not building something that just gets surrounded by water from adjacencies. We're designing our project to avoid that and that's why when Heather was doing her presentation earlier she emphasized high point to high point, so that regardless of what happens on either side we've got a level of, the level of whatever those points are, we have protection, a risk reduction in between those points regardless of what's happening on either side so that the water's just not going to go around and come in the back door essentially. So we are certainly looking at that as the way that we're approaching our projects but I get the point of wanting to not just have a series of connecting projects that there's value in having an overall plan. And I believe that there's a desire to get there and certainly we are desirous of [indiscernible].

Heather Morgan: I'm going to add on to that.

Tammy: I want to tag to that because my greatest concern when we talk about this, everybody's focused on flood surge. I'm really, really concerned that the water being managed coming from the sewer system and under because that is part of what happened and flooded Battery Park City. So my concern when we're taking a look at this, no matter what plans we put in place, there's the potential that we don't end up trapped in a pool because of the sewer system. And I already see where the pinch point will be, it will flood back out around Pier A because that's the low point.

Community Meeting, March 12, 2019

But the amount of damage that it will do to the buildings in Battery Park City before it can finally leave from Pier A is really disturbing to me. So you're only talking about the edges. I understand we're going to go to the North and the Ball Fields and the West, but there is, and you can't, it's not a perfect system anywhere but I do think that that is such an integral part to the conversation here to even make sure that there are places for it to flood out of as much as we're worried about water coming in I want to make sure the water gets out.

Gwen Dawson: Just to make sure that I emphasize. We're not just looking at the edges. As part of each of these projects, we are looking at that system and at the sewer and storm drainage that certainly is an extremely important part of this and we are probably lagging a little bit behind in terms of the analysis of that but it's coming. So we're working on that.

Heather Morgan: Yeah. So Nick, if you could go to the slide that shows the four resiliency projects that'd be really helpful. So I just really want to take the opportunity to share information with you guys so you can learn, so you can marinate on this. So what Tammy is saying is spot on, and the only reason we don't have that information in this presentation is we know we can only show so much before you guys are like, okay that's way too much information. Secondly, we got a real consensus on can everyone agree on the best alignment location. So that is why this presentation is aimed at that. Right. We are comprehensively looking at the system that's why Matt Jones here is from MKA, our civil lead for the project, Hilda on our team is also our storm water engineer. What Tammy is saying and Gwen is saying is spot on. Understand there's a slight ridge here topographically through Manhattan, so any surge that comes through there is a relationship there if an event comes at a large enough scale that it will come through a surface flow there. But there's also a relationship here from a stormwater infrastructure and sewer infrastructure relationship. Okay. As I mentioned currently right now, a lot of the storm water is captured through here, it's carried through a system that travels through Lower Manhattan, goes up the East River, and then transitions across East River and over to New Town Creek for treatment. So what Tammy and Gwen and everyone's talking about is when all this rainwater as well as surge are all collecting in these corridors can the current existing system handle that. Yes. We're looking at that. Are we working with the Mayor's office [indiscernible]. Yes. Yes. Exactly. We are working, there was work that was previously done as Gonzalo mentioned, our engineering and landscape architecture team when we looked at the comprehensive master planning for Lower Manhattan we started to look at that stuff at a system scale. Remember before I said no single measures on systemic problems. Rain and storm and sewer is a big part of that system. We just weren't showing it today. When we have more information and can talk about it in a clear concise way we will absolutely bring it to the table. So thanks Tammy for bringing that up.

Nora: So how do you know that the basic underpinnings for Battery Park City are still strong enough to withstand a major storm?

Male: The relieving platform?

Heather Morgan: The Battery Park City. Do you want to?

Community Meeting, March 12, 2019

Female: I think they're talking pilings. Whoever asked that question are you talking pilings or relieving platform? Or a structural [indiscernible].

Female: It was my question, Tammy. The thing is this place was built a long time ago, many decades ago. I believe there are big [indiscernible] I imagined it a big [indiscernible] under this place, with concrete in them or something like that. Whatever is holding us up.

Gwen Dawson: The sheet pilings I think is what you're talking about that form part of the edge that holds back the fill. And to that point, there are caissons and sheet piles along the north side marina and that area of the esplanade. We perform regular maintenance on those. And you'll note that if you follow our Board Minutes, which I know you do, that we have almost annually, if not one if not more, projects that we do to remediate the piles, to jack up the piles, to make sure that all the concrete pilings are solid and maintain their integrity. We've done the same with the sheet piles as well because those are kind of intermittently mixed in with the concrete pilings. We inspect the seawall, we inspect all of those structural elements of the esplanade on a regular basis and we do frequent, make regular maintenance to make sure that there aren't any problems with the integrity or the structural soundness of the esplanade or the relieving platform. We are going to in connection with each of our resiliency projects do a new structural assessment of those elements, of those areas of the esplanade as well so that we have even greater assurance that there's not a problem there.

Female: That was really what I was thinking about that they may be fine for right now but I guess the magnitude of the kinds of storms you're discussing. And also the battering, the battering, the battering, would they still be fine or would they require some major change or reinforcement to make sure this place doesn't go that way.

Nora: Did everybody hear that question?

Heather Morgan: So remember how I described a little bit in the next steps how we're going to have geotechnical teams going out and doing drilling and sampling? So besides what we know, we have as existing drawings, and what we think is out there we're going to be surveying it all like I mentioned before to verify it, to verify physically what's out there. We're going to be doing the geotechnical sampling to make sure that what's out there is what was built versus what was in the original design drawings. So that's one aspect where we reinforce it. We're also going to be doing what we call potholing or test pits where in certain specific areas we're going to dig a little bit into the ground to get eyes on it, right, because you can only see so much at the top and if you only drill down in certain isolated holes you might miss something. We're not going to be doing test pits all over the place, so please don't think that. And then in addition to that, we're looking at the esplanade and the relieving platform. And right now we're looking at potential to do a structural assessment of the one, the portion that's within the project area, because exactly what you said we need to know how beat up is it. Maybe it's holding ground great. Maybe it's in great shape, but we need to know that. And if we determine that it needs improvement or needs reinforcing that will be then added into the scope because there's no sense in us building a flood alignment going through all this, right, just to have something in the front undermine that flood alignment system.

Community Meeting, March 12, 2019

Nora: So if the flip gate deployable has a 25-foot footprint, what is the concealed greatest wall berm footprint?

Heather Morgan: Okay. So real quick. The 25 thing is not to be held to every single deployable. He was looking at the ones that were in the original phase of design. So please when I'm talking numbers I'm just trying to give you an idea of scale of disturbance. Right now where our team is at I can't tell you how high everything's going to be exactly, and I can't tell you how much we're going to have to excavate until we carry the design of that alignment further. So kind of what Tammy was hinting at. Well, if you go in, and you looked can you put a deployable here versus a berm wall in Wagner Park so we don't have to change it all so much. We have to agree on the location of the alignment. Then we can start to tell you what the alignment could look like and what would be around it and anywhere adjacent to it and how high everything would be. So does that make sense?

Female: That was my question. And it was based on just trying to get a sense of how much disruption and how much -- I know [indiscernible] you said it was going to have to be excavation sideways, you know, so along the line of it you'd be 25 feet.

Heather Morgan: Can we move to the project area map real quick, Nick because this is real important.

Female: And the berm things it's weighted it so in my understanding of it that would block the view card or some [indiscernible] on how I'd have to raise it, correct?

Heather Morgan: From Pier A Plaza or anywhere?

Female: No, I'm looking at Wagner Park. I'm good with everything but Wagner Park.

Heather Morgan: Okay. So if you have an alignment come through and it's deployables here, no matter what we put there, you guys, we just explained that there's a relieving platform here, right. So think about that. We can't put really big heavy equipment on there to crane things in. What about in any way when we start to dig into here, the excavation and fill that gets taken up, the construction footprint.

Female: The other option. You basically give a grain of wisdom why the flip up gate makes no sense to be that long distance. I get that. Now I'm asking what are the other options there and the other ones seem to be you said and maybe I've got the wrong name for it, but it was some sort of a berm with what you called the concealed wall thing.

Heather Morgan: Yep.

Female: How high does that have to go?

Heather Morgan: Okay. So let's just talk about what we know so far. These are approximate numbers you guys, these might change. Okay. So you guys are talking about this zone in here.

Community Meeting, March 12, 2019

So when you start to look at height of intervention, there's a lot of things that go into consideration, the decision foot elevation is one aspect of it.

Female: Yeah, so if you're coming in here, [indiscernible] but you have to get behind the levy [indiscernible].

Heather Morgan: Right. So what we're saying here is what actually works out really nicely, you guys have the existing terraces and such so as we start to build up to meet this height of interventions we can actually very much try to keep the same type of maxing and terracing that's there. But if this is elevated or increased by 9 feet what we were proposing there is that concealed floodwall where the grade comes up. Now, Nick, do you mind going to one of those slides that shows the concealed, the last flood risk measure one which is -- yeah, perfect. So in this scenario, here is the floodwall underneath here. How the grade comes up to it you guys get to decide does it slope up to it, are we going to go out further and then terrace down. Like all of that is yet to be determined so how I can answer your question is on that one edge in Wagner Park roughly the grade's going to have to come up about 9 feet. Okay. So if it comes up and there's a varied floodwall under there then collectively we all get to decide from a design standpoint what you would like to see out there.

Female: The protection has to be raised 9 feet is the question?

Heather Morgan: Yes.

Female: Not the base level to put protection on, correct?

Heather Morgan: Say that again, I just want to make sure I understand what you're saying.

Female: You're talking the protection level has to be at 9 feet in those slides.

Heather Morgan: Yes.

Female: That doesn't mean you have to raise the ground 9 feet consistently across. It means that's where your flood level protection needs to be at.

Heather Morgan: Well, that goes back --

Female: This whole resiliency plan is 16.5 feet.

Female: Right. But when she gave us the elevations the additional elevation that's what we're talking about. But it has to be up at 9 feet at that point, but that's not where you would start to build from. You need to be at 9 feet at that point however you get there, when you build up 2 feet and have something that stands like high as the terrace that's not, the goal is 9 there but I need people to really understand we're not talking about building a 9 foot raise of an entire park at that point. I mean it's a big thing to understand.

Community Meeting, March 12, 2019

Female: Yeah. Right. Because if you move it back you don't need 9 feet. You've got that concealed floodwall thing. It's 9 feet at the edge of the berm, but if you go back I think go back to the terrace wall thing you're talking about it goes back to 4 feet, 5 or 4 feet, again, give or take, it could be 6, it could be 2 whatever.

Heather Morgan: Yeah.

Female: The picture [indiscernible].

Female: Height of intervention.

Female: So I mean it's clearly the esplanade wall by the water it's going to be under water. Now if you go back, you can start terracing it if you want to which as it exists now at 7-9 feet but then you go up to almost to the building and you're only having it looks 4-6 feet. So at that point that's your height and we've got to be figuring are we going to be build a wall there or you're going to be at that ground and you're going to have to lift to get up to that level or higher because the person who asks is that enough, do they need to make this all and add 10 feet to each level and then it'll be safer.

Heather Morgan: If you put anything here at 4-5 feet and don't adjust anything here that's all sacrificial. But if you terrace --

Female: Or it's designed to flood and then recede, which is the way the park was designed currently. You don't want to lose the whole thing obviously when sea water rises, but there is an aspect to say that we want to be in touch with the water, so we don't want to be so far above the water.

Heather Morgan: The level on this, if the alignment is pushed out towards the relieving platform there's no changes to the esplanade as far as its elevation. And we're also looking at descending down through here so you have more of a right peering edge there than an hardened edge.

Female: In a few years you're going to have to raise the esplanade anyway.

Female: But I don't want to interrupt other people's questions I just wanted to get an idea of what you're talking about and that you still need something that's 4-6 feet beside the building. Otherwise, you got a problem.

Heather Morgan: I think designing to be animated that can be a loosely turnaround term too because who's going to be footing the bill or who's going to be dealing with the residual [indiscernible].

Nora: So are the barriers reused after a storm or do they then have to be repaired or replaced?

Male: The deployable?

Nora: Yeah. Well, barriers.

Community Meeting, March 12, 2019

Female: The options. It's not a one and done is the question.

Heather Morgan: If you guys are worried about how the deployables will perform over time. Whose question is that? Okay. So all the deployables, any section of it there's an operation and maintenance plan that's written that talks about how you would test those deployables, how many times a year, there's inspections that go all along the flood alignment that will be inspecting the quality, making sure there's no damages. If anyone tries to build anything next to the alignment there's going to be a protocol in that O&M manual that what is supposed to follow. Again, any modifications to the alignment you would have to get again FEMA recertified and reaccredited. All of the deployables depending on what they are they'll all have their own protocol as to what the operation and maintenance is to make sure that that deployable fits the life of the structure that it's intended. Any time an inspection of a deployable or any part of the deployables or the alignment is triggered as faulty that will be identified and then there will be protocol, [indiscernible] or whatever condition or resolves can there be to strengthen it. So there's an operation and maintenance plan for constantly looking at that. Yes, some deployables are reused if they perform and are able and found to be in good fit to be used again for the next event.

Gwen Dawson: Just to build on that, we were talking about the deployables earlier and Heather was just mentioning the operating and maintenance plan. If you can imagine that beyond this project we were talking about the other Battery Park City projects, within the other City projects, and you've got miles of flood barrier system. And each of them has deployables. You have to have a massive kind of effort to go out and have a plan to have the manpower, people power to go out and make sure that all of those deployables get deployed before a storm event, which is another reason why the objective is to keep [indiscernible] and deployables to a minimum if at all possible so that you don't have to have that kind of effort, and you don't run the risk that one section's not deployed because that person didn't show up that day.

Heather Morgan: Because you couldn't get a crane out there or something like that.

Male: I want to say this also about deployables. There's also would you pull the deployables on October 12th. Believe it or not, sometimes weather forecasters they're not always correct, right? So exactly how many false alarms are you going to go through and you're going to be like, oh my God, and that's with these deployables, right? I'm sick of this because we haven't had this storm that they said we were going to have. And then you're probably going to get the storm when the guy is going to be lifting a deployable somewhere else. I just wanted to say that because passive you don't have to worry about that, right, it's there and you know where we talk about a very large storm but there are storms that are less impactful that are going to impact your site and do you want to be lifting these deployables all the time? You know, so just take that into account.

Heather Morgan: Yeah. And think about if a state of emergency is declared at a 72-hour window, everyone's going to be trying to put out the deployables so if Gwen and Brian understands everyone will be doing it at the same time. I know on the Hudson River project there's potentially 24 of them [indiscernible] across the river in New Jersey in Hoboken and Weehawken and Jersey City, but just to give you an idea of the scale.

Community Meeting, March 12, 2019

Nora: So with option 4, which was no building at all, what is the resiliency barrier plan that the Authority prefers? Is it still the concealed wall berm option?

Gwen Dawson: Right now we're talking about alignment and the Authority prefers the alignment that is at the edge of the relieving platform that protects as much as possible. Without the major drastic change that would be required to actually take it out to the [indiscernible] water's edge. So what happens with that alignment, how it's designed, what it looks like, is I think the part that we're going into the next phase of the project. We certainly think that the buried floodwall has a lot of merit in terms of its level of protection, keeping the options open to create an environment that is in many ways very similar to what we have now or could be or could build on that in a lot of different ways to address a lot of the aesthetic desires that the community may have. And whether or not there is a building there I think doesn't necessarily change that. I think the alternatives to the buried floodwall would be to have deployables there or to have a permanent wall there above grade. And certainly it seems at this point that those two options are less desirable and less effective.

Nora: The deployables that you are thinking about been tested under a variety of severe conditions?

Heather Morgan: Yeah. So when we get further into the design and we're looking at a range of deployables to fit the conditions on a specific part of the project. There is a whole host in the industry of standards and testing and everything else and all of that actually is taking into consideration on another layer as to is that deployable best for that location. So all of that is taken into consideration, our engineers will look at it. Do you have anything to add to that? Yeah. They're very much so tested.

Nora: And I hope I get this one right. The old building is kept, how will the Authority deal with the need for more space for Battery Park City Maintenance Department, and what other things would be planned for space in a new building?

Female: That was my question. [Indiscernible] in consideration to building and cost. [Indiscernible] the new building wasn't just structure as a barrier. But we're also going to have to do other things and so [indiscernible] what would still have to happen no matter what the choice is?

Gwen Dawson: Certainly we looked, when we were looking before at the prospect of if we needed to replace the building what kind of other opportunities or other flexibility that might create for us. The Authority we had mentioned over the years we have a lot of parks operations, a lot of equipment, a lot of materials, a lot of things that need to be stored, and over the years we usually have had little pockets where there wasn't any development or there hadn't been a building built or whatever so we could set up a little yard or a temporary spot. Of course, we don't have that anymore. And you know having an additional opportunity at Wagner Park at that end of Battery Park City would be a positive. It's not something that is driving this. We don't have to have it in that we don't have to have it and that's not a basis for making the decision. We just are looking at opportunities for flexibility, which is the same way that we looked at the

Community Meeting, March 12, 2019

opportunity of perhaps creating a security outpost, a small office where security personnel could be in the area, or a community room. Those were all just things that were opportunities, but certainly none of those is absolutely essential. If we need to create a little yard someplace if the decision is that people would rather not have a building at all we could create a little yard or something similar to what we already have there out at the corner. And then look for space elsewhere. But those were the thoughts.

Female: Are there any other plans to have to buildout any more [indiscernible] or grade plans ever at, and building onto the existing [indiscernible].

Heather Morgan: You want to answer that, B.J.? No, I'm not aware of it.

B.J. Jones: The Battery Park City is basically built out. We're not looking to change what's existing beyond what's contemplated in the master plan, so to the extent there's any opportunities remaining there may be after [indiscernible]. But currently [indiscernible].

Nora: So this is a remarkably expensive planning and community input process. The City process will not match this. How will critical planning differences be accommodated?

Gwen Dawson: When you say planning differences, I'm not quite sure are you talking results, are you talking about design differences?

Nora: The gentleman who asked the question has left.

Gwen Dawson: Okay. Well, I'll try to see if I can psycho what he meant. Certainly each project will have its own planning process that will differ in some ways and in minor ways or major ways. It's a matter of whether we all start out with the same objective and we get to an end product that allows us to all achieve that same objective, and in a way that is not going to harm or be a detriment to another project that's along the ultimate larger alignment. So if there are those differences in results or designs, then of course we would need to try to reconcile those between the Authority and the City or the agencies that would be involved in making those decisions. I certainly feel that we have a very good collaborative relationship already established, so I don't see any impediments at the moment in achieving that kind of reconciliation. So I'm optimistic about that.

Nora: If you go with the concealed wall berm option in the Wagner Park area, why would that have to include either taking down or redesigning or rebuilding the current pavilion building structure?

Gwen Dawson: The concealed floodwall would result in a raised elevation of the park and that raised elevation of the park would then create a difference in the relationship with the pavilion as Heather pointed out in the presentation. The question then becomes is what is most important at that point saving that building or creating a relationship between a pavilion or no pavilion that somehow is more integrated together because as we saw with the design flood elevation being where it is it creates a very different relationship with that building than currently exists, or what existed when it was designed. Certainly that framed view was a very important element of that

Community Meeting, March 12, 2019

pavilion when it was designed. And there would be an impediment or an interference with that. So that is something that we feel is a pretty compelling set of considerations.

Heather Morgan: Just real quick on that too, it's a little tricky but if you did the concealed floodwall and berm like let's just say through here and this was to stay here at this elevation this alignment as we've just been discussing would have to hit that design foot elevation out here, right, which was elevating it out 7-9 feet whatever it's going to be. So you would have to terrace to get up to that elevation somehow creatively we'd have to terrace up from the esplanade and then somehow terrace and work your way back down to the existing pavilion. So basically right through the middle of your park if you didn't elevate this whole area you basically would have a large terraced levy out there. The only thing is it wouldn't be a levy as per dimension of the U.S. Army Corp of Engineers. I would refer to it as a levy just because it's bermed earth maybe terraced on both sides, but underneath the spine of it would be a floodwall. So your large expansive lawn, big lawn, like flat usable spaces no longer spatially can fit in there because you have to drop an elevation back down to what's here. So again, unfortunately spatially it gets really difficult to try to fit all these things in there and get your risk reduction.

Nora: So the last question of the night, and maybe even closing comments you want to make --

Female: Betty had a question though about what you just said.

Betty: Oh maybe just continued on from that. I was looking at it and the level of the building didn't change. What would the view look like? How much, how high would the berm be blocking what Statue of Liberty?

Heather Morgan: It's tough to show how high it would be because we have to come to an agreement on the alignment. Once we know where everyone is comfortable with the alignment then we can tell you, we can give you lots of different options on what it would look like.

Betty: Well, let's say you didn't move the building. You kept that building in that location. Now you've got a restriction there.

Heather Morgan: Yep.

Betty: How high would the berm be and what [indiscernible]?

Heather Morgan: Okay. So right now, right in front of the building what we have for approximate is a minimum, like if you, right across the front of the building on the estuary side of it, minimum of 4-1/2 foot increase in elevation. As you go out into the project area further it continues to go up. See what I'm saying? So whatever you have right in front of you at a minimum is going to be 4-1/2 feet and then as you go out towards the water it's going to continue to ramp up.

Betty: Okay. So I would certainly have no view of [indiscernible]. And even [indiscernible] would have a pretty much blocked view.

Community Meeting, March 12, 2019

Heather Morgan: Yeah. Unless you were 6 feet, but again at the beginning of the pavilion, like right here you might be around 4-1/2 feet, but when you move out to here you're increasing up to 7 and then as you go out to here up to 9. So I guess what I'm saying is --

Female: Would it be fair to say that whatever, however tall you were or exactly where within that opening you're standing, your view of the water and the harbor is going to be substantially obstructed.

Heather Morgan: Yeah, that does.

Betty: Can you answer the question?

Heather Morgan: Yeah, absolutely. And that relationship is so nice right now it would be really nice to keep that kind of balance and water rise out there. Okay.

Male: Hi, my name is Jeremiah [indiscernible]. I'm on the Community Board 1 [indiscernible] here. But I missed some of the earlier parts, [indiscernible]. And I appreciate your time and thoughtfulness as in [indiscernible]. I think some of the community is resisting to losing the building, [indiscernible] simply [indiscernible] the fact that there's not a lot of history in our community in terms of historical buildings [indiscernible] lived here and that's one of the few buildings that has that kind of feel of history to it. It's 20 plus some odd years old and it's positioned in a really geographically interesting space, also right at the tip and across from the square at Pier A. So I think that's why you're encountering resistance to if you remove that building. I recognize the resiliency needs but I just wanted to say on the record that I think that is part why you're encountering the community's strong sentiment because there aren't a lot of that kind of older buildings in our community and we don't want to lose the ones that we have.

Female: Architecturally wanted ones.

Male: [Indiscernible] old that's not to me doesn't have the same kind of feel to make it a part of it. I recognize from what you're saying for us a very common thing we're probably going to lose that [indiscernible] come along Battery Place because it just feels the need. I think losing the view plus the building is what I think is what [indiscernible] some of us. [Indiscernible] which has been made I just want to say I think that might be why there's a strong sentiment about that building.

Heather Morgan: Yeah.

Gwen Dawson: I think that is a very, very well said point and I appreciate your making it. I appreciate that sentiment. And I just want to also let you know that we have been in contact with Dalton Shadow, the original architect and Laurie Ellen, the landscape architect because we don't want to lose the legacy that is there of that park and the building. And certainly we would be looking at every possible way to honor that and make sure that whatever our approach is ultimately would take that into account and we'd be extremely sensitive to that. But I very much appreciate what you just said.

Community Meeting, March 12, 2019

Nora: I think that's a good closing spot.

Female: Do you have more questions in your hand?

Nora: No, I have, it's a side bar.

Nick Sbordone: So in the interest of our time, I know that we were supposed to move at 8:00. We had that. I want to make sure that we got [indiscernible]. Again, this is [indiscernible] conversation. We're going to take the process on the first [indiscernible] and then we'll be moving on the side [indiscernible], and for additional questions by all means email me, sign up exactly [indiscernible] posted on our web page. And you can send in those questions we'll get to them at the next community board meeting and [indiscernible] and the Environment Protection Committee and then further on our next touchpoint we will [indiscernible] as Helen at her next Board meeting [indiscernible] process.

Tammy: Again, we want to thank you guys for [indiscernible] so open to the community. This has been a precedent setting experience for Community Board 1 and BBKA's relationship, and we would only hope that the rest of the City takes notice of how well this group despite lots of conversation, lots of input. So a big huge thank you and we appreciate the input, the opportunities and look forward to future dialogue.