

**CITY COUNCIL WORKSHOP
U.S. ARMY CORPS OF ENGINEERS'
COASTAL FLOOD RISK MANAGEMENT STUDY
COUNCIL CHAMBER**

February 15, 2022

A City of Charleston City Council Workshop regarding the Coastal Flood Risk Management Study was held this date convening at 3:00 p.m. at City Hall and over video conference call (Zoom).

A notice of this meeting and an agenda were mailed to the news media February 11, 2022 and appeared in The Post and Courier February 14, 2022 and are made available on the City's website.

PRESENT (13)

The Honorable John J. Tecklenburg, Mayor

Councilmember Gregg	District 1	Councilmember Waring	District 7
Councilmember Shealy	District 2	Councilmember Seekings	District 8
Councilmember Sakran	District 3	Councilmember Shahid	District 9
Councilmember Mitchell	District 4	Councilmember Bowden	District 10
Councilmember Brady	District 5	Councilmember Appel	District 11
Councilmember Gregorie	District 6	Councilmember Parker	District 12

Mayor Tecklenburg called the meeting to order at 3:00 p.m.

Mayor Tecklenburg said, "I want to thank our partners, the Corps of Engineers, Wes and Nancy, and I'm afraid I don't know your name, young lady. They're with us here today in case we need to refer to them, or ask any questions as the presentation goes forward, although it's mostly a presentation from Dale and the City. I would say this, we are poised to complete the study that we started almost four years ago. It was originally intended to be a 3x3, which means 3 years, \$3 million. It morphed a little bit into close to a 4x4. I think it turned out \$3.7 million in almost 4 years, which was really at our request, since we had the addition of a full environmental impact study along the way that added a little more time but answered a number of questions that we wanted to answer. So, when we last had a report, the Council, a few months ago, time flies, so maybe it was 4 or 5 months ago now, there was one big issue that was kind of outstanding, which was the alignment over on the Cooper River side. So, what I shared with Council at that time was we would wait until the Corps reviewed that with the Port Authority and made some other adjustments and, as I think you've seen in an email you got the week before last or so, they had a four or five page memo of the things that they've changed in the preliminary study report and also had a new map with the new alignment.

In the meantime, we have a few new City Councilmembers who haven't been around for the last four years to kind of absorb all of this, and it's a big initiative and a big project, so it takes a little digestion. So, I think it was appropriate for us to come back here today in a workshop form so we can really have a little time for Dale and the Corps, if need be, to explain the updates, where we are, what we're poised to do next. So, without further ado, if I could call on Dale Morris

to come forward and kind of lead us in this presentation and discussion. A couple of points along the way I may jump back in, but, Dale, you're up."

Mr. Morris said, "Great. Thank you. Could I ask IT to put my presentation on the screen? While they're doing that, thank you, Mayor, for that introduction and welcome, members of Council, to this Coastal Storm Risk Management Project Workshop. I just want to say, this is really cool for me to be in this room, first time presenting to Council in this historic chamber. I wondered if I would get a chance to do this, and here I am. Thank you. It's an honor for me to be here, and I just want to bring us a few steps forward from when we had the last workshop in October.

We'll talk today about the feasibility schedule, where we are, and what happens next. We'll talk about the feasibility plan, and what that is, and what it is not, and how that might change going forward. We'll talk about some of the technical parts of the design agreement negotiation, which would get us into PED, if we go that far, and opportunities within PED, and challenges within PED. Again, this is a longer process, and we have to be prepared to negotiate well through this. Then I want to broaden it out at the end to talk about other flood risk mitigation needs and demands upon the City as we go forward, and how these things should line up.

So, I want to start with this slide here. Most members of Council have seen this slide. For the new members of Council, if you haven't, here it is. This is a very simple graphic of the Army Corps of Engineers' Coastal Storm Risk Management process: study phase, design phase, building or construction phase, operation and maintenance phase. As you may or may not know, we are in the study phase, towards the end of it, trying to wrap up the feasibility phase. Let's be clear about what feasibility is. Feasibility is a Federal process that the Army Corps goes through with the non-Federal sponsor. Is there a hazard? What is the hazard? Is the hazard manageable? Can we solve it, and is there a Federal interest in doing so? Those are the things that the feasibility study is trying to tease out. Nothing has yet been designed, so let's keep that in mind that this is just feasibility to establish the Federal interest.

The Federal interest is often summarized in the context of the BCR, the benefit-cost ratio, which follows a very strict and rigid benefit-cost analysis process that the Army Corps uses to determine the benefit-cost ratio. You will hear it, you may have heard it already, you'll hear it again. The benefit-cost ratio of the Charleston Peninsula Project is the highest of its kind in the nation. It is 11.3. Our friends in Norfolk are doing a CSRMP project on PED, and it is a 3.3 BCR. Miami is fussing around with their CSRMP project; their cost-benefit ratio is right around 8. So, Charleston, it's a proxy for the amount of value that's here on the Peninsula, the risk that's here, and in the Army Corps' mind, the simple way to manage this risk. So, that's where we are, and it's important to understand that, again, we're just towards the end of the study phase.

So, past milestones. Just briefly for the new members of Council, we kicked this off in 2018. There was a tentatively selected plan released by the Corps in April of 2020. Public comments on that, one of those comments from the City, as well as the public, was please do an EIS, an Environmental Impact Study, and not rely solely on an environmental assessment. An EIS has much more detail associated with it. It requires some extra time and some extra money, and that was the extension that the Corps requested and the funding that they gave to this project to do the EIS. That EIS was done really in the beginning and middle of 2021. Again, City Council had some workshops, and City Council and other partners hired the discovery team to do a separate analysis of the Corps of Engineers' project. Waggoner & Ball and the Water Institute led that. As you know, before I came here, that's where I was, so I worked on that discovery analysis.

The 3x3 Advisory Committee, empowered by and paneled by the City Council in February of 2021, started meeting every other week beginning in April 2021. They met consistently until the middle of December, and they have a suggestion for how they can continue to operate going forward, if we decide to move forward with that project.

September of last year, the Army Corps released its optimized tentatively selected plan and draft environmental impact statements. Comments on that, it was very clear that the South Carolina Port Authority was unhappy with the line that was released at that point. They communicated that very clearly. Do I see Jordi over there? She shot the proverbial thing across the bow, so anyway, it worked. The Army Corps realized that they did need to change this. I think that they had wanted to start with a line on the Port, but didn't get that far in the original TSP, but they changed the alignment, and I'll show a map there, and this is a tremendous benefit for both the Port properties and, we think, for the City.

The Advisory Committee, Susan Lyons, one of the advisory members, is here, also from Groundswell. They made their recommendations in November of 2021. I'll talk briefly about those. Preview of the recommended plan, most members of Council, I think all of you should have received that preview about three weeks ago in an email from me on a Sunday night explaining what's going on here. Here we are at this workshop today, moving forward, and then there is a deadline for us to submit, the City to submit, a non-binding letter of support and a non-binding financial self-certification to the Army Corps so that they can put the package together and send it up the chain of command for review. So, that's where we've been and where we are today.

What could happen in the future? If the Army Corps gets our letter of support, they will package this up and send it up to division and headquarter for review. Division headquarters will review in March and April. There are changes that headquarters and division could make to the plan. It's important to know that this is the district plan, and it will be reviewed by important people up the chain of command, so changes could be made and be finally presented to the Chief of Engineers. The target date for that is mid-May. The reason mid-May is because there is a Water Resources Development Act. That is the bill that the U.S. Congress uses to fund and authorize projects like this to move forward. That is up for discussion this year in Congress. They often do it every two years, and this is the year. So, the Army Corps wants to get the Chief's report finished so that they can submit it to the White House and to Congress for consideration for authorization. That would also eventually require an appropriation, so they authorize the project, and they need to spend the money on the project, two separate steps on Capitol Hill.

If all that is successful and the Army Corps of Engineers gets its money by the end of the year or the beginning of next year, they will come to the City and ask to negotiate a design agreement with the City. That design agreement has to be finalized before PED can start. City Council and other people would be consulted on that when we get to that phase of negotiating the design agreement, so that's an important milestone. If all of that goes successful, and these are all estimated, again, Congress may not take up a WRDA bill this year. That could happen. If it doesn't, we would have to wait until they do, so the Army Corps would get its money to do its share of PED. If they do get their money, we would negotiate the design agreement probably about a year from now. PED would start maybe a year from next month. One of the things we want to report today, the Mayor and I and others have been stressing very clearly to Colonel Johannes here at the district, to General Kelly at the division, and to others in the project delivery team that we want more natural and nature-based features added to this project, if possible. The U.S. Army Corps of Engineers maintains something called the Engineering with Nature Program. It is their version of natural, nature-based features and trying to add them to projects. The lead of

that is someone I know, someone a lot of us may know. They have agreed, and Wes, and Nancy, and Colonel Johannes have agreed, to get them here to start PED with a workshop on natural and nature-based features and how they could be included into the future design.

Here's the alignment. The image on the left is quite simple. The yellow line is the old alignment, the September 2021 tentatively selected plan alignment. You can see it moves along Washington Street then skirts over into Gadsdenboro on Concord Street, then loops back to East Bay Street and then Morrison. This is the alignment that the Corps of Engineers was happy, they basically said, Jordi, if I can paraphrase, 'look, if you're going to build this thing, we're going to not have an opinion about whether you should, but if you're going to do it, please protect our facilities, both Union Pier Terminal and Columbus Terminal.' The Corps of Engineers heard that. The green dotted line is what was said this is what we should do. The right image is the new recommended plan alignment, and you can see the Port properties are now protected within that, and this drove the BCR up from 10.2 to 11.3, likely because it's going to be less costly to construct on the Peninsula than on Washington and East Bay Streets because of the complex utilities there, and also because you're protecting more property. So, this is a substantial improvement, and we thank the Corps for doing that. It does show some flexibility going forward.

So, the support to finish the CSRSM study is there. I'll remind you that the 3x3 Advisory Committee made a recommendation in November 2021. Again, they said very clearly, perimeter protection is likely needed, make sure it's integrated, and then, very specifically, we recommend the City of Charleston move cautiously, and I underlined that, into the PED phase. Cautiously because we have to be careful with what we're doing here. This is an important City with important architecture, important services, so let's not take a gray wall. Let's try to get the best we can from the Army Corps project. So, move cautiously, openly, transparently, but be careful with what you're doing, so that's important. It's also important to note that it wasn't only the 3x3 Advisory Committee that recommended this. The Charleston Area Metro Chamber of Commerce recommended this. Bailey is here, and she can talk to that if you have questions about that. The Charleston Trident Association of Realtors, the medical district, the Medical University of South Carolina, the Charleston Resilience Network, Historic Charleston Foundation, Groundswell, Charlestowne Neighborhood Association, WestEdge. So, a fairly wide array of key stakeholders on the Peninsula and in the region, and they all also cautiously recommended moving into PED. Openly, transparently, but wide-eyed with what we're doing.

What are the steps to finishing the feasibility study to let the Army Corps run this up the chain of command for policy and technical review? A non-binding letter of support from the Mayor. A non-binding self-certification from the CFO that, if the City moves into PED, it can and will pay its share of those costs. The Mayor's signature on two documents, which only become active if PED starts, that's the Memorandum of Understanding on visual impact assessment and the Programmatic Agreement on national and historic features for those procedures in PED. The first two are non-binding. These are required to be given to the Corps in the next week or so.

What would happen then, if we moved on this process? We'd get this policy in technical review, the Chief of Engineers will sign the report if he's happy with it, authorization and appropriation from Congress. I'll remind you that is required before the Army Corps can do anything to start PED. Then, after they have their money, they will ask us to negotiate a design agreement. All of these documents here I sent you examples of that, or the Clerk sent you examples of those documents in the packet last week. The design agreement we sent you, the Mayor sent a letter last week to the Army Corps of Engineers explaining to the Colonel the items that we are going to anchor in the design agreement, and if we can't anchor them, we will think

hard about moving into the PED phase. We have some very clear ideas about what needs to happen in PED. These are respectful of all the things we've heard going forward, and we've communicated this in an open, transparent way to Wes, and Colonel Johannes, and Nancy, and the team like, 'we have some ideas here.' Yes, sir?"

Councilmember Shahid said, "So just to be sure, the Mayor does not need City Council's approval or review of those documents going forward, correct?"

Mr. Morris said, "I'm sorry, I didn't hear you. I'm sorry."

Councilmember Shahid said, "The Mayor does not need approval or authorization to execute those documents that you just mentioned?"

Mr. Morris said, "As I understand it, Councilman, the governance in the City of Charleston is that of a strong mayor. He does not need City Council's support to do so. What I understand is the Mayor wanted to use this briefing to explain to you where we are and see if you all had any objections to him sending these letters, which these letters are non-binding."

Councilmember Shahid said, "I just want everybody to be clear that he's got the authority to do that outside of our review."

Mr. Morris said, "Yes, sir."

Councilmember Gregorie said, "Can somebody check, because I thought we voted on that, giving the Mayor the authorization, although he may not need it. I thought, at some point, that came before Council. Okay, maybe it was just discussion."

Mayor Tecklenburg said, "I think it was just discussion that we had."

Mr. Morris said, "This issue, these signatures, are related to an issue I'm going to address in a few minutes, so let me move through that, and that may clarify some things. So, one of the things that's important to state is, without these non-binding letters and signatures from the Mayor, the Army Corps of Engineers is likely to pause the study because there's no signal from the non-Federal sponsor that it is willing to move forward, and the Chief of Engineers is not going to send a Chief's Report to the White House and Congress for authorization and appropriation if there is not a willing local sponsor, a non-Federal sponsor. So, it's an important moment. We have to decide, should we finish the study? We can remain agnostic on PED. We do that in the design agreement, and we'll see how we do that, but this is just to give the Army Corps the authority to finish the study, to indicate that there is a willing non-Federal sponsor.

Here's this image. I want to talk a little bit about a misunderstanding that's out there. This image is a more complex version, the stepwise version, of the Army Corps' Coastal Storm Risk Management process. It's what we were in. It's 17 steps. All of these steps have a lot of processes within them. Orange are things that other people were doing, green is feasibility, blue is PED, and gray is construction. I annotated this with the dark numbers, the dark dates on the bottom left of each slide. It shows you when these occurred in the Charleston process. We are, in fact, right now at the bottom of the first column on the left, which is step 5. The Army Corps of Engineers is finalizing its report to send up the chain of command and said 'we need those letters.' They need the letters from the City to move that forward. Once that occurs, again, then steps 6, 7, and 8 we

discussed those, that's the Corps reviewing things up the chain of command, authorization, and appropriation.

You get to step 11, the Corps has the money, they come back to us and say let's negotiate a design agreement. You will see there is a fair amount of time in between step 5 and step 11. It has been suggested that the Army Corps of Engineers has paused the study, or they've given an extension to the study, they've given City Council reprieve on a decision. That is not the case, as one of these reviews up the chain of command and work by Congress takes time. Because the Army Corps of Engineers, the division, and the headquarters, they can make changes to the plan, we deem it most appropriate that when we would ask City Council to consider moving into PED to have the final report, not the district's report, but the final Chief of Engineers' report, and that it sees what we're doing in the design agreement negotiations with the Army Corps of Engineers to make sure this works for everyone on Council. So, there isn't a pause. There isn't an extension. This is just the time it takes, and there is a suggestion by Councilman Seekings, and you've heard others, to let's perhaps use this time to do some more research. We should consider that. This is not my decision, it is your decision, but that is possible with this time.

Let me move forward here. Moving more broadly, there are a lot of concerns expressed about the TSP. A lot of those concerns are serious and legitimate, and we need to take them seriously, and we do. Concerns from citizens, concerns expressed by Council, concerns expressed by stakeholders, people in this room. We've expressed these all along to our engineers, so these are not surprises to them. I fuss at them regularly, and Mark Wilbert did, too. So, it's good. It's an open, transparent relationship, but we want more natural, nature-based features. Sorry, that's the Army Corps acronym, NNBFs. We want more of those, citizens want more of those.

We want changes to the alignment. Let me assure you, there is not an inch of space between Councilman Seeking's view, and the Mayor's view, and my view on the Lockwood alignment. These gates cannot cross Lockwood, we need to fix it, there is a way to fix it, we think, in PED. We're going to make sure we anchor that. There are other alignment changes needed on Johnson Street. The port realignment was wonderful, but it creates a challenge for Morrison Yard on Johnson Street. I have walked that area twice. I know we can fix this in PED. We've discussed this with Wes and Nancy. We have to get into PED to do it, but I think we can fix this. Again, Concord Street, a very complex area both in Gadsdenboro and the French Quarter. We need to respond and understand the sensitivities of that zone and potential gates there, and exactly where we place the structure, and exactly what that structure functions like to protect that area. So, these are sensitive design things. We're going to do these things. Again, we have concerns about the non-structural approaches for Rosemont and Bridgeview townhomes or apartments, aesthetics, viewsheds, serious concerns, and achieving multiple benefits. And for any of you that want to ask me in the Q&A, I have some ideas to show how we can get multiple benefits from this project. We can talk about that. You know, I have a wide network of folks around the U.S, really smart people, much smarter than I am, engineers, who think about these things.

There's concern about the analysis done by the Army Corps for wave overtopping and stormwater impoundment. Not that their analysis is wrong, but perhaps that we need more study on. This is exactly what we do in PED. To make sure those numbers are right, and I have an engineer sitting next to me, and if I heard him express the same thing, we have to make sure that wave overtopping and stormwater impoundment analysis is right so the pumps are the right size that the Army Corps is going to build us, something we very clearly need to do in PED, and we just haven't done enough of it yet, because of the limitations of the feasibility study.

Groundwater management. I've expressed this over and over, I know Councilman Gregorie and others, Councilman Seekings, the Mayor, we share our concerns here. We need to know more about the groundwater situation under the Peninsula because, as the seas rise, the shallow aquifers likely start to pop up in soccer fields, and in people's backyards, and perhaps onto our streets. We need to understand that. The PED process will help us there.

Again, mitigations, features, and betterments, what is that? A mitigation is a project addition that the federal government pays for. A project feature is something that is within the project, and it's a cost-shared, 65% Federal, 35% local. A betterment is something that we want to do, but the Army Corps doesn't have the authority to do, but we can do it if we pay for the marginal cost increase of that ourselves. So, we want to explore more things like this in PED, to get some betterments, to get some features that improve the structure for us, but we can only do that in PED. You all have an example, this is just a front page here on the right, of the letter that the Mayor sent to the Corps on this design agreement, what we're trying to anchor in it. That was one of the exhibits you all received last week. We have some very serious thoughts here. I hope you all have read that and understand what we're talking about."

Mayor Tecklenburg said, "So, Dale, if I may just interject here for just a moment. Of course, these items, you all, really apply to when we get to the stage where we would be negotiating that design agreement with the Corps for PED, which would be late this year or early next year, about a year from now. We've had so many conversations about these concerns that the City has in moving forward. I guess this, in a way, defines that word cautiously, about moving forward cautiously, that we are taking all of these things. And this isn't an exclusive list. It's not to say we can't think of something else to put on the table before we get to the design agreement, and very similar to many of the items that Councilmember Seekings pointed out in his article the other day, so I won't go back over them all, but I just felt that in addition to the excellent verbal communication that we've had with the Corps over this, we're their partner, they need to know where we stand on cautiously moving forward. So, I wanted to put this in writing for them to be fully aware of as they finish their process for completing the study. Thanks."

Mr. Morris said, "Right. So none of these issues that are anchored in this letter, again, it is non-exhaustive. We may find more things to anchor in the design agreement over the next year. We will do so, if necessary. None of these were a surprise. We have talked repeatedly with the project delivery team about these, so, again, it's an important and transparent relationship to make sure we're trying to accomplish the same goals. Yes, sir."

Mayor Tecklenburg said, "Use the microphone please, closely."

Councilmember Gregorie said, "Since we do have this added time, and we've already appropriated monies for the water plan, will we have that water plan completed so that when we do make a decision, with respect to PED or anything else, we're looking at the total, the whole, in terms of not just the wall, and I hate to call it the wall, not just the wall, but some of the things like the groundwater, etc., will we be able to have all that completed by then, in terms of the water plan?"

Mr. Morris said, "There's a saying, great minds or lazy minds think alike. I have a slide on that, so you can determine what that is, but I do want to address that because it's an important question, if you'll indulge me for a few more minutes."

Councilmember Gregorie said, "Sure."

Mr. Morris said, "Great. So, again, we have communicated to the Corps of Engineers things we want to design. I want to remind the members of Council from last year and the new members of Council that the City Design Division, which is part of the Planning and Sustainability Department of the City, they worked hand-in-hand with the Corps of Engineers over the last three years. How could we design this better for the City? This document is online. It was released last October. It's 300+ pages. It's got a lot of images in it. It shows you that Alan Davis and the Planning Department have not been sitting still. We have a vision and an idea for how we can move forward.

Now, let me be clear, not everything in this study was vetted or engineered. These recommendations, these are ideas that the Design Division came up with by themselves and by things they borrowed from others, from the Waggoner & Ball team, from the team that did the Imagine the Wall Report, from others who have said 'let's think more broadly about this.' So, this is a compendium. It is now in print, I'm told, as of yesterday or the day before, but this is online, and I encourage you all to look at this. The Army Corps of Engineers has said this is a wonderful starting point for PED. Let me also be clear, there is no way there is enough money in the City budget to do all of these things. This is just an idea so we could work through this and prioritize those things. This is an expensive list of wonderful design ideas, but we could surely do some of them, and we could work with everyone to achieve that in the design phase.

Back to this slide because I'm going to broaden it up here. So, the recommended plan is a feasibility plan to achieve those Federal goals – is this feasible, and is there a Federal interest? Nothing has been designed, and it disturbs me when I see images of gray walls all around the Peninsula because, in fact, a gray wall in an area could be a possible feature in an area like Columbus Terminal because that won't disturb the port operations. It's the simplest kind of structure there is, but a gray wall is not what we need in the middle of the French Quarter, or in other parts of the Peninsula. We have to design this, yet, and we need to get to the design phase to do this. I have verified, I have contacts around the U.S., that alignment modifications and improvements to the TSP can and do occur in PED. Right now, Norfolk, Virginia, Jamaica Bay, which is right next to JFK airport in New York, so it's a Hurricane Sandy project, Galveston, which is still dealing with the impacts of Hurricane Ike 13 years ago, Beaumont/Port Arthur, this is funding that was given to Texas for the Texas Coastal Study and amplified by Hurricane Harvey and the impacts there, and in Naples, Florida, Collier County, they're also in the middle of their processes. We are in touch with them. The Army Corps and the local partners are making changes to the TSP. The line is moving, betterments are occurring, project features are being added to it. We don't know what that will be for Charleston, but if we get into PED, we could try to do this, so I just want to be clear that we can, nothing yet has been designed.

Let's talk about what do you do in PED and the importance of this. There are a lot of very important surface, subsurface, and other studies in PED that need to be done so the engineering can be appropriate to the hazard so that we can design a structure. It's very important to do these extra studies, these deeper studies. These are very important things, topographic, geospatial, and bathymetric surveys, subsurface exploration, stratigraphy, wetland delineation, I can go down this list. You can have this presentation. There are a lot of really important studies here. Because the City will be paying 1/3 of the cost of these studies, that information that comes from those studies are ours to use forever in the future, even if we don't go to the construction phase. So, this information, \$0.35 on the dollar is a good value because we are still going to have to do things

on the Peninsula, no matter what. It's important to understand that these are very important things, and this is part of the PED process.

I'm going to broaden it out here. We all agree this is primarily a surge risk effort. It's what the Federal government is empowered to do. There is a push to give them more authority to do tidal and stormwater work. Bills were introduced just last week on this in Congress. There's a push. We're hopeful that this push will occur and it will happen. I happen to know some of the sponsors of that bill. We're hopeful. It's not there, yet. Surge is just one of our threats. We have every water threat there is here in Charleston. We have surge, tidal, riverine, stormwater, groundwater, compound, and sea-level rise, which makes all of those things more difficult. So, we have to do more, and we will. This sentence in quotes up above, that's one of my favorite sayings from the Dutch Water Boards, the people who do this in the Netherlands. It's a translation from Dutch, 'it is not either-or, but and this and that.' We have to do it all, and we're going to try to do it all. This image here from the medical district from Hurricane Dorian in September of 2019 expresses very clearly that it isn't just surge that we have to deal with. I know a lot of you are concerned about flooding the rest of the Peninsula or the rest of the City. That is absolutely correct. We have to do it all, and it's not going to be cheap, but we have to do it all.

I'm wrapping up here. I'll remind you all, from the City's own vulnerability analysis done a few years ago, not the Army Corps, but the City did this themselves, commissioned it, water is our biggest risk. Floodplain inundation, so stormwater and tidal, is very high, but surge risk is higher because of the impacts it brings. It may only occur once every 20 or 30 years, but when it happens, it is devastating, as you all know, and it takes a lot to recover from. So, again, it's not 'either-or,' it's both, it's 'and.' Here's the most recent tidal flooding graphs from NOAA. This is from December of 2021 or January of 2022. There's minor tidal flooding, so 7ft. Meanwhile, the water, there's moderate tidal flooding, here is major tidal flooding, it's the same trend, and in the last decade we have seen a lot of tidal flooding, so we have to address this. This trend, no one thinks it's going to stop. There is a newer report out by us from a set of Federal agencies saying, 'look, this is going to get worse.' It's not a surprise. Any of us in the water realm have seen this coming for a couple of decades. It's not a surprise, but here's evidence it's happening in Charleston. Again, it's not 'either-or.'

Maybe some of you know, these are three images to capture an important expression. The City is involved with the national Federal Department of Homeland Security on a pilot project with Deltares to create a tool for communities to use around the U.S. that would capture future hazards and their impacts and then what measures might help you manage those impacts. It's a planning tool. The model inside of it is an impact model, and it's a damage model. A damage model, impact model, and a water surface elevation model. These are validated. They're not sort of new and modern and not validated. These are modern, validated models.

The left image here shows 2.5 ft. of sea-level rise, which is the City's own sea-level rise strategy recommendation – plan for 2.5 ft. over the next 50 years, or by 2070. So, 2.5 ft. with no adaptation, so doing nothing. You can see what the Peninsula looks like. We know where it floods now. It's probably going to get worse. You can see what it looks like if we only do pumps, the middle slide. Let's add some pumps in. If we only do pumps, we're still going to have a similar amount of flooding because the tide and potentially the surge is getting in. The rivers are in the City. We know this, but I want to remind you, what this tool shows here is if you put a hard edge on the Peninsula, it doesn't have to be the surge wall, but we have to raise the edge of the Peninsula so that the tides don't come in all the time. You can see the benefit of doing so. So, again, this is just a pilot, but it captures visually what we're trying to say about raising the hard

edge so we stop the tide from getting into the Peninsula. If we do so, that will lessen the demands on the drainage systems, so we get a multiple benefit there.

Councilman Gregorie, here you go. You indulged me. Yes, the water plan. City Council, last year, approved funding for a water plan. A comprehensive and integrated water plan came out of the Dutch Dialogues. It's been done in New Orleans. It's all risks, all hazards across the City, and options, again, per basin. The City has a number of basins, and we would try to tease out, per basin, what is the best approach to the particular flooding or types of flooding in that basin. So, looking forward, I don't know when this work will be finished because I'm writing the scope of work now, and it requires some very careful adjustment, but I hope to have it finished by the end of the month. Then, we've talked with the Procurement folks and how to get that out on the street. This may take some time, so the Advisory Committee, and the Mayor, and others, and I think Council, has recommended: make sure we use this water plan to inform what we may do in PED. That is our goal, but we have to see how quickly the information comes back from the team that we hire to do that work. I guarantee you I will push them to give us some results before, let's say, December of 2022 so we can have this information. One of the things I'm pondering and I've discussed with the Mayor, and with Matt Fountain, is to putting some language in this scope of work that would give the City the option to have the consultant become an owner's agent so that if City Council said 'you know what, in May or June of this year, go study this so we can understand how it's going to impact PED or what it's going to impact with this wall,' the City Council would fund that, and we could task this directly to that consultant team or consultant, so that we wouldn't have to procure that separately and wait longer. I would like to put that language in there. I'm going to put it in there until someone tells me to take it out, because it will create some flexibility for us to go forward.

I do believe the water plan is underfunded. I don't know that we can do a full water plan for the full City in 9 months for \$500,000. I just want to say that. I think we need to, the Mayor and I or others many come back --- Yes, sir?"

Councilmember Seekings said, "We can't."

Mr. Morris said, "Okay."

Councilmember Seekings said, "That's just a fact. We're going to have to live with that around this table and think seriously about it. We can debate on what the next year looks like, but one of the things it's got to look like, it's going to look like us putting resources into it."

Mr. Morris said, "Right."

Councilmember Seeking said, "I would implore everyone sitting around this table to think long and hard about how we fund what we do before we sit down and talk about getting into the design agreement."

Mr. Morris said, "Thank you, Councilman. I agree 100%. Where you make your investment is a reflection of your priorities, right? Again, I think we have to consider maybe a phase 2, or a second-year funding for the water plan, and let's figure out how to phase that, but I agree, and I hope we can count on your support for that. I'll leave it at that. I'm not a lobbyist."

We also have to do the Rosemont Resilience Plan. It's something that the Advisory Committee recommended, very important to Councilman Mitchell, to those non-structural areas,

we're in touch with them. Be aware that City Council did not provide separate line item funding for the Rosemont Resilience Plan. The idea was well, we'll just fund it out of the water plan. Well, I just explained to you that the water plan is slightly under-resourced, so let's talk about that. Be aware that I am already trying to put my hands in people's pockets to get money to help them support this. There's a possible grant funding opportunity, a big one, and one of our local stakeholders has pointed this out to me, that we may be able to get money from them. I think we can, but we have to do this, too. Again, it's not an 'either-or' situation, it's all.

I want to end sort of where we started all those years ago, or where I started with the City of Charleston all those years ago with the Dutch Dialogues Report. We had a team of Dutch, and Americans, and locals here, experts, planners, designers, engineers, hydrologists, groundwater folks, all those folks here. This report, as you may know, was the compendium of a lot of great ideas, but I wrote most of the report. I took a lot of ideas. These words are mine, so I know what they mean. So if you have questions about the Dutch Dialogues Report, please ask. But here 'the importance of perimeter protection cannot be overstated, and any perimeter protection must be logical, practical, and forward-looking.' Some of those alignments, they're in the TSP, they're not that, but PED can help us get there. So let's do this, but also we should try to get multiple benefits from this. There's a misunderstanding, I think, floating around about what multiple benefits could be from this project or how the Dutch look at multiple benefits. I have a slide after this. I can talk about multiple benefits day and night, if you want to do that, happy to do that, but just want to say, here we are. We can get some multiple benefits from this project. It isn't just surge. We may have to pay a little bit more to get those benefits, but it's something we should at least explore and not stop right now. Thank you."

Councilmember Gregorie said, "[Inaudible.]"

Mr. Morris said, "Yes, you have toured some of these places when you went to the Netherlands, sir."

There was laughter.

Mr. Morris said, "I have oodles of slides here. Briefly, let me take this opportunity, so yeah, this is infrastructure, right? The top left, that's a 16 ft., it's a 5 meter high sea wall on the coast of the Netherlands protecting Scheveningen. That's a funny Dutch town, but The Hague, the seat of government, is right behind that. This was a boulevard, pretty ugly parking lots on it, beachfront, it was nasty. They brought in a good designer to make sure the surge wall reflects some important values. So, now they have a surge wall that is a walkway. This thing has restaurants on it, it's really cool. They break them up when a storm is coming, they put them up behind the wall, and they're safe. That's a multiple benefit thing. It is a surge wall and amenity.

The top right, we were here, this project is now completed. It's one of the Room for the River projects. So, the river that you see meandering on the left, that's the Waal River. It's an important discharge channel or navigation channel from Germany up through the Netherlands. This area of the Netherlands had a lot of river floods in the last decade because of quick snowmelt, more rainfall in Germany, coming down this river flooding them. You will see, the pointer is not working, but that's their big river levy. This thing is high. It's probably 22, 24, or 25 feet high. They set this back from the river edge, and you can see the old river edge, they set that levy back and they created this diversion area, so when the river is high, that water is going to flow through that channel that's been created, you see it under construction on the right. That will lower the water level downstream where the people were getting flooded from things here. What they're doing

here, what was surprising to the folks from Charleston over there, they put an amphitheater in there so people can go use it, there's a bike park over there. They're actually planning to sell some property there so people can live above the river level, but on that area, and they're right next to the water. That's multiple benefit design.

The bottom right, that's a school that had flooding, ponding, in its playground. They needed a playground, but they also had ponding, so they created these sort of stormwater features in there that, they're dry most of the time, but when it's wet, they fill up with water, so now you have a multiple benefit of it. You have a playground and water management.

The one in the middle, that's a parking garage. That's an entrance to a parking garage that is under a beach that had a big sea dike put in front of it. The City said 'hey,' well, let me back up here. On these projects, the national government pays for the flood risk mitigation, and the locals pay for the betterments, or the bells and whistles. This town, Katwijk, is a Dutch beach town. German tourists are there all the time. The Dutch hate the German tourists because they leave their garbage and park on the street, and all that. They leave their garbage on the street and anything else. They said 'wait a minute, you want to put sand up on our beach? You're going to kill our views. Let's not do that. What are our options?' They worked with the design team, the design team said 'let's put a revetment in the dune,' so they lifted the dune up, they put concrete steel there to make that sea wall, they covered it with sand, and behind the revetment, the sea wall, they put a parking garage. 660 spaces, bonded, the German tourists are paying the parking fees, and the Dutch have built this wonderful structure. Pretty smart guys, right? That's how you do this. You get creative with 'how can we combine multiple benefits?'

The last one, this is an area of Rotterdam, a redevelopment area. It's a museum district. There are a bunch of museums nearby. They decided to consolidate this. There was an old, ugly surface parking garage here where you see that sort of colorful thing in the middle. The museum said, 'hey, we need more parking.' The City said, 'fine, you guys pay for the parking garage, build it underground, and store the stormwater from this whole area in that facility when you hit a certain level.' So they did this. There is a storage chamber that when it's the first, I think, two centimeters of rain that falls in this region, it goes, when the drainage system is at capacity, so it would flood otherwise, the water gets diverted into the storage chamber, and when the tide goes out on the river, because the river is pretty close by, it drains out into the river. This is multi-benefit infrastructure, and the museum district and the visitors are paying for it. So, pretty cool. We have some things here we can do in Charleston with this project, too, and if you want to talk about those, I will. I can see you're all --- I've talked too much."

Councilmember Mitchell said, "Did you also look at the Bridgeview area?"

Mr. Morris said, "We have looked at the Bridgeview area. Kaylan and I have, we have spoken to the new owner of the apartments up there. They are monitoring this study. They said, once we move into the PED phase, they want to talk to us about the floodproofing mechanisms that would go up in those facilities. So, yes, we have. The Bridgeview Apartment owner has said let's wait until the appropriate moment to talk about what we do up here."

Councilmember Mitchell said, "Even when it's raining, you know, it's flooding, you can't get in and out. The safety mechanism because, even the safety, firemen, and nobody can get in there."

Mr. Morris said, "Right."

Councilmember Mitchell said, "Not just when we have a storm coming, I mean, it's an ocean. You can't get in and out. Even the residents can't get in or out."

Mr. Morris said, "Yes."

Councilmember Mitchell said, "We have to look at that very, very, very seriously. That's why I was talking about the Bridgeview area and the Rosemont area."

Mr. Morris said, "Yes, sir."

Councilmember Mitchell said, "I know the new owner there now, and they're renovating all those apartments there, and they have already started. It's going to be completely renovated, so we are going to need to have some solution for that area, too."

Mr. Morris said, "Well, how I would respond is, if you're willing to make the introductions with the community, I am more than happy to go up there and work with the Corps of Engineers, either over the next year, or if and when we would start PED, to work with them to see how we can provide them with other benefits. I drive across the Ravenel Bridge every day, and I can see where that area is, and I worry about, I do worry about a surge event. If you see there's a lot of construction going on over there. I'm sure the hydrology, the surface stormwater drainage, has been changed up there because of all this development, so working with them through the water plan also, but with them individually, what would they want us to do there in addition to the floodproofing, the non-structural, from the Corps? I would love to explore that with them. It's not just me, it's other folks in the City from Planning and elsewhere. I'm more than game for this."

Mayor Tecklenburg recognized Councilmember Sakran.

Councilmember Sakran said, "Thank you, Mayor. Thanks, Dale, for this. You and I have met."

Mr. Morris said, "Yes, sir."

Councilmember Sakran said, "Thanks for the opportunity to meet with you, and thanks for today. Two questions, I've got a bunch of questions, but the two main ones that I do have, the first one would be, and maybe Councilmember Seekings articulated this in his piece, it seems to me that we have a year, right, until potentially PED gets finalized?"

Mr. Morris said, "Gets started."

Councilmember Sakran said, "Gets started. I guess my question would be, when is Council supposed to make that decision? Whatever today's date is and when Council has to make that decision, can we do some work on design? Just at least engaging the community on what they think it is. To your point earlier, I talked to a lot of constituents, and they say 'it's the big concrete wall.' Of course, you know, that's the perception that, I think, a lot of folks have. I think it would be advantageous for us to engage, prior to PED, at least with some design ideas so the community is on board with some conceptual ideas, number one. Number two, if we do approve PED, what's the financial outlay for the City. What are we responsible for?"

Mr. Morris said, "Okay, let me take the latter, the last question first. The estimate from the Army Corps of Engineers for PED is a total cost, over three years is the estimate of how long PED would take, it could take longer, a year longer, who knows, we just have to see what kind of troubles we run into in PED. We could find some geotechnical challenges in the engineering studies. Again, three to four years, the total cost is \$51 million. The City's share of that is 35%, so about \$17 million over that three or four year period.

Your question about doing some work on design between now and then. So, I think that is a wonderful idea. I think City Design Division is more than happy to work on this, and I am, too, I am. I'm not a designer, and I'm not an engineer, but I know some good people who are, so what is the question? Should we ponder with the community what they want to do, or do you want to bring in an outside consultant and design team, which, sorry, if I were king, that would be my preference because they're really creative folks. Bringing them in to help to engage with the community and the City to see what's possible and let the Army Corps of Engineers be part of that process so they know what's coming, I think that would be ideal. It would cost some money. I think we just have to understand that up front, but that would be good. Let me say this, as an alternative, most of the things that we would do in that sort of pre-design phase that I just mentioned, we can also do in PED. So, keep that in mind that that's possible. If we do it before PED, it is unlikely that we would get credit for those costs in the PED phase, so we would pay for it in advance, and then we would have to do it again in PED. We would have something to build upon. Would we be paying double? No. Would we be paying 150%? Maybe because we have to see that. There is a mechanism, and Wes, they have shared this with us, that we could work with the Corps under an MOU, a separate MOU, to try to get some of these costs credited in PED, but they would then have to meet certain performance criteria that the Corps could, in essence, analyze, that would become part of the start of PED. So there's a consideration. That is why I would like that scope of work, the scope of work for the water plan, to have that owner's agent component to it, so that if you all decided we want to do this and here's some money for it, we could just contract it, give a task order, and not have to procure it, so we don't have to wait 4-5 months to start it. Is that fair?"

Councilmember Sakran said, "Yes."

Mr. Morris said, "Okay, thank you."

Mayor Tecklenburg recognized Councilmember Gregorie, followed by Councilmember Shahid.

Councilmember Gregorie said, "Dale, I mean, to try to respond to Councilmember Sakran, if we go to the civil design book, it gives you a sense, I mean, it's just renderings, but it sort of gives you a sense and direction of how the designs may go, if you just want to get a sense of how it's going to be softened in certain areas and all that kind of stuff. The civic design centerpiece sort of, it's ---"

Mr. Morris said, "Well, there are ideas in there. None of them have been engineered, so I think what we do with that, with an external consultant or with the Corps and an external designer in PED, because the Mayor's letter indicates this, we would like external design advice in PED because, as smart as the City is and the Army Corps of Engineers is, we may not be the most creative. Let's understand our strengths and weaknesses. External design folks, they've worked in this realm, and they try to blend design and this amenity that you see in these projects, and they try to blend the engineering and the design so you get something creative. So, I mean, I think

that's a great idea to go down that road, but, again, I'm not a designer. I have a lot of really smart designer friends and people that can help us, but I think we need to just understand the difference between the two.

Now, let me talk. So you've teed up something that's come up. I mentioned Norfolk. Norfolk is two years ahead of us in their PED phase. They have a waterfront park, their version of Waterfront Park, their version of Riley Waterfront Park. It happens to have a battleship in it, like they have over in Mt. Pleasant, so it's well programmed, it's downtown, it's protecting a lot of facilitates. They have four separate structures in four separate neighborhoods. That's what they're being protective against, but this downtown one looks a lot like part of our downtown. The TSP, the recommended plan, had a gray wall. My friends up there, because I know those folks pretty well, were like, yeah, we don't want a gray wall, but we'll take care of it in PED. So, I know for a fact that what the Army Corps of Engineers has said, yeah, we understand this is a park, you don't want a gray wall, let's suggest using a bin wall.

Who knows what a bin wall is? My friend here might know what a bin wall is. A bin wall is a modern version of the high battery. It is a structure, to me, it's a long flower box, but big, made of concrete or steel. You put it someplace, you put some dirt in it, sand, or whatever, and it then has weight, it can deal with the storm surge, and it has width on top, 10-12 ft. of width. Oh, what is that? That's the low battery, it's the high battery. They're using a bin wall in Norfolk as a project feature, so that means it's part of project cost, shared 65/35, to deal with that part of the park. Well, hold on a second. We would all love, it's an idea that Mayor Riley has had, I've seen pictures of this, I know the Planning Division talks about this. We could take the low battery condition, the revised low battery condition, go up the west side of the Ashley River, and create the river walk idea. Sorry for my Corps of Engineers friends, but have the Feds pay for 2/3rds of that. Well, wouldn't that be awesome? Again, there's going to be challenges there because we have to make sure that subsurface would support that, but that's what we do in PED. There's a multiple benefit there that we can do. How far up do we go? To the medical district for sure. Do we go up to Brittlebank Park? I don't know. If we get over to the east side, can we pull that up? We have to watch the yacht club and their needs, but can we pull it up there and get into the Union Pier terminal and get that sort of river walk? I don't know. It's something that the bin wall enables, and it's possible within as a project feature in Norfolk. So, it's encouraging that there's a possible improvement here that helps us achieve what my Dutch friends have done in the Netherlands."

Mayor Tecklenburg recognized Councilmember Shahid.

Councilmember Shahid said, "Thank you, Mr. Mayor. Dale, would you mind going back a couple of slides? The slide that you had that had the other issues that we are confronting besides storm surge."

Mr. Morris said, "Yes, sir. Let me just get those--- it's late afternoon and the clicker isn't working well either, hold on. I think it's this one. This one?"

Councilmember Shahid said, "Yes. So, what is the probability of the Corps adopting all those issues into this Memorandum of Understanding?"

Mr. Morris said, "All of those issues as primary features?"

Councilmember Shahid said, "As primary. I mean, I think this is sort of the disconnect a lot of us are having. Right now, on these issues of stormwater, tidal, sea level rise, we're facing

those issues on a regular basis, and we've discussed this. Growing up in Charleston, those things happened once every 10 months, and now it's almost every other day it seems like."

Mr. Morris said, "Yes, sir."

Councilmember Shahid said, "This is the immediate threat that we are dealing with on a regular basis. We know storm surge is going to come at some point. We know we can't predict that, but we know we're living with these issues. How can we get the Corps to adopt these issues? Not just the storm surges, but these issues as a primary focus of what we're trying to accomplish? I understand the benefit. The benefit is we build something that will benefit and maybe address some of these concerns, but shouldn't the focus be that we're going to address the immediate needs and the storm surge? I mean sort of like we can walk and chew gum at the same time. Why can't we do that?"

Mr. Morris said, "Yes sir --"

Mayor Tecklenburg said, "If I may interject Dale, and that's exactly what I've communicated to the Colonel in the letter, and I've, verbally, had meetings with, not just the Colonel, but with General Green about this need for them to be flexible with us. We mentioned all these other storm risks, flooding risks here, but if I may interject another little tidbit that just came to my attention this morning, and sometimes, like the Dutch, you're smart but then sometimes like us, we're just lucky. I got this news, a little flash from DC this morning, the lawmakers in both chambers and from both parties are preparing to unveil sweeping legislation today that would leverage and boost the Army Corps of Engineers' authority to protect the nation's coast and almost half of the nation's populations from rising seas, flooding, extreme storms, various risks in it, you know, not just surge. Senator Tom Carper, he's a Democrat from Delaware, Chair of the Environment and Public Works Committee is poised to join Republican Senator Bill Cassidy of Louisiana introducing a bill that's called SHORRE: Shoreline Health Oversight Restoration Resilience & Enhancement. The House members are lining up from both Delaware and Louisiana. We're going to be talking to our delegation about joining the co-sponsors of this bill, because the language is likely to be incorporated in a sprawling infrastructure bill that goes to the water and but it really addresses, Councilmember Appel brought this up to Dale and I last week, and we weren't very optimistic about it, and here it is. It's happening that the Congress is looking to give the 'Corps more authority to study, design, and build nature-based projects that boost coastal resilience such as restoring wetlands, re-nourishing beaches, and also lower the amount of local participants would have to pay for nature-based projects. The bill would create new flexibility and authorities to help the Corps protect fragile infrastructure and support vulnerable coastal economies.' So, all of these things would apply to us and, I'll read one more sentence of it if you don't mind, the bill for example would 'change the way the Corps develops projects by allowing state localities and other non-federal sponsors like us to pitch projects that directly address the threat of climate change including sunny day tides, extreme rainfall, ever-increasing sea-level rise and back bay flooding.' So, fortunately our timing may just align with a new congressional authority to the Corps to be able to be a little more open-minded about the different flood risks as you mentioned. But I'll be honest with you, we've been very open about communicating this need to the local office and on up the chain of command, and that's one of the main points of this communication to them is to make sure that we are flexible and we're taking into account groundwater. I mean that's of the study things we're going to do during the PED phase and when we strive to have the most complete water plan you've ever had in America. If the PED phase is going to pay for the study for the ground water, let's let them do that. So once again, not to be

offensive to our partners that they can pay 65% of that study and we only pay 35%, rather than us running off and rushing and getting it done, you know, in the meantime so does that-?"

Councilmember Shahid, "Let me tell you my thought, Mayor, thank you. I did read your letter of February 7th, and I thought you'd pointed out some very excellent points and concerns that you know I've talked about, as well, for some of these repairs on Concord St. and Jackson St. and Lockwood Blvd. and those things. The Mayor just read to us, Dale, will the Corps, based upon what the Mayor just gave us, that new hot off the press information are we going to be able to include those issues into this Memorandum of Understanding?"

Mr. Morris said, "So, I think it's going to be, I'm gonna give you a pessimist and an optimist answer here, and you can weigh what you like. The Corps of Engineers has authority interpreted beginning in 1956 saying 'you deal with storm surge, everyone else, the states and locals, deal with riverine, tidal, stormwater, groundwater.' That's the interpretation of Federal policy that governs the Corps of Engineers today, so that is why this CSRM for the peninsula is surge primary. Keep that in mind. That is the current interpretation of Federal law. Can we tweak? Given that as a boundary condition, can we improve this project? Yes. I just described how we can get amenity up the east, up the west side with a bin wall so that's good. So, that will help with surge and tidal because if that thing is built on land, right at the land/water edge, it's going to stop the tides from coming in. So, those king tides that flood Harleston Village and that whole area in the medical district, we will now have a wall there that those tides are not coming in. So yes, it is dealing with tidal because we're not in a tidal creek, so that's one.

The Army Corps of Engineers is going because there is at some point that wall height will be insufficient. You'll anticipate a 12-foot surge, and you get a 13-foot surge, right? Irma was 9.9 feet. Hugo was 10 feet. So this wall, this structure would protect against that. Wonderful. What happens if you get a 14-foot surge? Well, two foot coming over the top or one foot coming over the top of the wall, that's something. Then, if you normally have gravity over, overland drainage for gravity, that wall has now created a bathtub so you're impounding water. The Army Corps of Engineers has to put pumps in there to mitigate those things to mitigate that extra flooding. So, those pumps now become an important resilience feature for us that if we can leak that into the current drainage system, then we have additional resiliency.

So, in the Army Corps version of the world this is dealing with surge, but if we can create those connections, and this is something that Matt and I and others have talked about and some other good engineers, if we can do that, then we are going to manage or create some resiliency for our system. By stopping the tidal water from coming in the Cooper-Jackson Basin on Morrison or here in Harleston Village on the southwestern part of the peninsula, that means those systems, the Calhoun West, you know, if and when it gets built or the Medical District Facility, those systems will not be pumping tidal water because it is blocked off. It would just be pumping stormwater and the volumes of stormwater are less than the volumes of tidal water, so you do get these ancillary benefits, and we've communicated in that letter to the Army Corps of Engineers.

Let's look at the sizing of these pumps that they're going to build, if we have the right size pipes nearby, because the pipe and the pump have to match up, right? If the pump's big, and the pipe's small, it doesn't matter how big the pump is so same thing. If we can get those things to align, and we can upsize the pumps as a betterment, we should do so. That's going to increase the efficiency of the drainage system. So, there are some possibilities to deal with this, but it isn't an explicit goal with the Army Corps of Engineers. We're trying to think as creatively as possible within that pessimistic view of the world. Let me become the optimist. This legislation that the

Mayor introduced, it's something that a lot of people have been fussing about for a long time, and I've been one of the million that have been fussing about this. The Army Corps of Engineers is as bound in by the Federal policy, and they follow the letter of the law, for better or for worse that's what they do, and thank goodness that when the war time comes, they build barracks and bridges and do all these wonderful things. They follow the law, and they implement. Are they creative designers for urban areas? No, they're not, and they'll acknowledge this. So, this legislation to deal with stormwater and nuisance flooding and sunny day flooding, this is important.

The Environmental Defense Fund, so Susan is over there, the other advisory crewmembers, I sent them a letter, and Councilman Seekings and Councilman Waring got this. We sent them a letter from EDF that was out for circulation in the fall, October, telling the Army Corps that you have authority to broaden your mandate. This legislation reflects that. Is it in the policy right now? No. Word is up in 2022, could it be included? Yes. Do I think there's a chance of it being included? I do. Let me just say this, my good friend, former Senator Mary Landrieu and I have worked with Senator Carper on a regular basis. We know he's serious. He's Chairman of the committee that deals with WRDA, so he'll put it in until he has to take it out. Garret Graves, he's the Congressman from Louisiana who's sponsoring this in the House. I have known Garret for 15 years. I have worked closely with him in Louisiana. As you may know, I come from the Water Institute. He was the person that created the state funding to help create the Water Institute. I've known Garret for a long time. We joke that he is a thorn in the side of the Corps of Engineers, but he is well-meaning, has also seen these strictures on the Corps of Engineers, these boundaries, and then we know in these modern times with these compound flood events and increasing water from all sources we need to do more. So I'm hopeful, but even in the pessimistic view of the world, we can do some things to help address this. Sorry, my passion comes out there, I'm sorry."

Councilmember Gregg said, "Thank you for all the work."

Mr. Morris said, "Thank you, sir."

Councilmember Gregg said, "Thank you. Thank you all. As a new Councilmember, it's a lot to digest, but a couple of quick questions. So, given where we are now, when do you think the earliest time frame would be for us to start construction? So, if everything went smoothly, and it never does in the Federal government, when are we talking? I've seen different estimates. So, what's your best estimate?"

Mr. Morris said, "So, I mean, you know, with all due respect I should ask you. You're the engineer. But, let me say this, I think the schedule suggests three to four years for PED. So, let's say we start PED in 2023, get through PED, start construction by 2027. That is likely the earliest. Does that help?"

Councilmember Gregg said, "Well, so I've seen different estimates from 2027 to 2032. So my follow-up question is how are we accounting for construction cost inflation because right now, we're saying \$1.1 billion, right. Construction cost inflation is enormous right now --"

Mr. Morris said, "Yes, it is."

Councilmember Gregg said, "So how are we accounting for that in the budget?"

Mr. Morris said, "So we are not yet. Last year, the Advisory Committee asked the City to come up with a financial plan to pay for PED, and we have that, and if you don't have it, I'm happy to share that with you, and a financial strategy to deal with construction, if we would get that far, because that's further out. The financial strategy for construction is going to require support from County and state folks, and we know there's a bunch of Federal money out there that's going to be spent over the next 10 years. You know that the Federal government's pushing out some money for infrastructure, and it won't be absorbed very quickly. So can we get some of that for the construction phase? Yes, I think so. We're thinking in those terms we, in all honesty, we're looking to finish the study to negotiate a design agreement, so we're happy with those boundary conditions for the design agreement and PED, do PED, and see how far we get. I've said very clearly phase one of PED is going to show us the flexibility that the Corps of Engineers can provide to us because we will go from Joe Riley stadium, the bottom of the Citadel, across Joe Riley down to the Coast Guard station. There we have that creek in front of Joe Riley Stadium, we have Brittlebank Park, which is soft. Some nature-based features, a softer type of surge structure there. Come under the complex Medical District, which needs the highest level of protection, the strongest level known, you know, all redundancy possible there because we need to protect that coming down the Lockwood corridor to help Harleston Village and South of Broad communities. So, we're going to see there in that process how creative we can be and how flexible the Corps of Engineers is going to be. Can we get some mitigations, can we get some project features and get some betterments? That's what we do in the design phase. In fact, we may get into phase one and determine okay is really tricky, let's reconsider what we're doing. We may get into phase one and say, wow, because of this legislation or because of the wonders of the district here they're pushing hard that we're being successful in PED to make this thing work in the ways we need to. I think phase one is really going to be a telling point for PED to see if we're ever going to get to construction. I guess that's how I would point it, say it."

Councilmember Gregg said, "So just a follow-up question then, so what are the off-ramps then that you view in PED? So if we start PED you know \$51 million, \$17 million in City sharing, \$60 million per year roughly, so where do we have an off-ramp? Do we spend \$2 million and then have an off-ramp to reevaluate?"

Mr. Morris said, "Yes. Yes, sir. So when PED starts we will get a general budget scope and schedule. We will fund this, the Army Corps, will ask us to say 'hey, we're going to do x, y, and z next year. Here's the schedule. Here's the cost. Here's your call. Here's the total cost.' City Council will be given that, and City Council will consider it at the end of that year. Army Corps will come back and say this is how far we've gotten. They'll report to the Council, to the City, this is how we've gotten, this is what we want to do next year. If the City, you all, determine that you don't want to spend the money because you're unhappy with the results, you just don't provide your funding for that next year, and the Army Corps of Engineers has to stop the study because they need the local money to get to the 100% that they need to do those phases for the next year, so there's an off-ramp every year."

Councilmember Gregg said, "It's a budgetary statute? Can I keep going?"

Mayor Tecklenburg said, "Yeah, sure."

Councilmember Gregg said, "The NAVD, the 12 foot height, so was it a --"

Mayor Tecklenburg said, "Can you speak a little closer to the microphone."

Councilmember Gregg, "Is there any sensitivity analysis done on the height? I mean how did we determine 12 feet? Did we look at VCRs at 10 feet, at 11 feet, at 12 feet?"

Mr. Morris said, "Yeah so, as I understand that, and Wes can correct me or add to this, I think the Army Corps of Engineers looked at a 9 foot wall, a 12 foot wall, and a 14 foot wall?"

Mr. Wilson said, "So we looked at a 7 foot wall, a 9 foot wall, and a 12 foot wall, and anything above a 12 we realized we had to make some modifications. The bridges, I-26 and at that point we kind of just qualitatively ruled it out. So we did a quantitative assessment on the 7, 9, and 12 and to maximize our net benefits, which is our national economic and development plan, we selected the 12 foot wall. The incremental benefits go up drastically, the higher wall you go and the elevation, and the costs are just a small fraction of that because a lot of the cost has to do with the mobilization in the contractor on site, and then the piles in the ground."

Councilmember Gregg said, "Makes sense, thank you."

Mr. Morris said, "So let me just add this, a lot of my smart engineering friends, they have wondered if 12 feet was high enough. I imagine that was part of your motivation for the question, is 12 feet high enough. Again, I think this is part of the next phase of PED. In the phase we would do some studies. Is 12 feet appropriate? Keep in mind that if the water comes over 12 feet, that's just to design exceedance, and you have to have that pumping there to do that. But, if we put some nature-based features, some more living shorelines outside of the wall, and those living shorelines then grow because you have to put them there, and then nourish them so they get robust, if a surge would come in and hit that wall without anything in front of it, you know, there's no friction, no wave reduction it's going over. If you put friction outside of the wall, that's going to lower the wave height a bit. The more space you have, the more friction, the lower the wave height, so the less water getting over top, and it will also reduce the wave energy so you have those benefits from nature-based features. It's in the letter that we sent to the Corps like these things need to be explored very carefully. That said, let's be realistic. There are places that stakeholders on the peninsula may not want a nature-based feature, like the Marina. They may not want salt marsh near their boats, we get that. So we're going to have to tailor this but, again, this idea of adding more friction through nature-based features is a smart response, and it does enable us to respond to is 12 foot high enough. Again, that 12-foot is probably okay in year 1 to 10 of the structure's surge life, but because we don't know how quickly sea levels are rising, it's just a guess right now. We're probably going to need that extra resiliency for more friction in the out years, in year 40, so in 2070 or 2080."

Mayor Tecklenburg said, "Any more? Councilmember Appel."

Councilmember Appel said, "Thank y'all and, Dale, fantastic presentation as always. I feel like I learn a lot every time I hear you speak about these subjects. You've clearly done your homework, and I'm really happy to hear from the Mayor that there's this major legislative push in DC. I made a couple calls last month, I didn't think anything would come of it, but apparently, I mean apparently-"

There was laughter in the Chamber.

Councilmember Appel said, "Thank you. I'm delivering here but, that's great because I think what Councilman Shahid was alluding to was a concern that I've had really since day one, which is that this is a really wonderful answer to the wrong question. Namely, you know what's

the biggest threat facing the peninsula? I don't think most people would say storm surge is the number one issue, certainly not something we face and experience every day. But the message that I've been receiving ever since asking that first question is that, we're the Army Corps of Engineers. You know, not only are we the military and a bunch of engineers, we follow orders, and Congress has ordered us to only look at storm surge. Well, I looked at that report, the most recent report I think from last fall, maybe November or so, the 300 pager, and there's a section where it sort of goes through the legislative authority that corresponds to this limitation and actually did some additional research on it, and I didn't see the phrase storm surge anywhere.

Now, you can tie this legislation back to, you know, the World War II era. There's 2018 funding authority that allowed the 3x3 study to move forward. I've always been convinced that there's enough gray in this very general statutory language that you could come to a result that is not so narrowly fixated on storm surge, but be that as it may, it's always great to have Federal legislation to come in and clean that up and clarify those issues. My question is this. Let's just say, you know the Republicans and the Democrats in DC get together. Everybody's singing Kumbaya, and they pass this wonderful piece of legislation. Let's say it happens later this year, let's say it happens next year. Will we have already been too far down the road with this walled first concept through the feasibility phase to sort of incorporate that new approach that's been hopefully made into Federal law by then at that point? Or would it make more sense to basically start the process over, where you're not so fixated so much on storm surge from the get-go and then have to kind of engineer everything around that. I don't know if that's coming off as clear or not, I'm just trying to understand the timing and the relationship between these Federal changes in the law that hopefully are happening and where we are because we're sort of in a position where we'll be mid-stream somewhere, if and when these new rules come into effect, and I just am concerned that, let's just say this wonderful clarification in the law happens, will we already be so wall forward that it's impossible to kind of re-engineer putting that toothpaste back in the tube."

Mr. Morris said, "So Councilman, that's a great question. My experience, and again it's personal experience, I have to read the legislation. I got notice of it last night. Let me look at it. I'm sure it's long and lengthy. I need to digest it. My belief is, unless there's a clause that says all completed feasibility studies do not get the benefit of this wonderful improvement. If it says that, we would have to be careful, we'd have to look at the language. It doesn't say that according to the schedule that's there now. We'll get a Chief's report if we're successful. We'll get an authorization appropriation towards the end of this year-it's an election year, who knows what Congress is going to do? Who knows what mischief could happen up there? But WRDA bills, you know, everyone gets a bit of a piece of the pie there. So those things, like a transportation bill, all those things, they grow, and there's a lot of support for them, so that's a WRDA bill. If this is added into the WRDA bill, there's no doubt that the administration is going to support this. If there's a push from the White House and those folks, if this happens, we won't start PED until after this law takes effect. It will go into effect probably upon signature because it's going to give the Corps of Engineers authority to start thinking in this way. The challenge I think is going to be, in the design phase, and the PED phase for the Army Corps of Engineers to again, there they have very strict procedures with how they look at flood risk, and they're going to have to adapt to this new authority. Wes and I, we've had a text about this this morning. It's like, boy, you've got a bunch of work coming at you if this law passes. I mean it's fun. We're dead serious, and I think that's why we're going to need an external designer to help us take advantage of the flexibility of that law with the Army Corps and with the City. Again, I don't see us being bound by it. I'm not so worried about it now, but I have not yet read those legislations, so I want to see if there's any sort of language in there that scares me about that."

Councilmember Appel said, "Yeah, that all makes sense, and I think this is certainly something worth following closely, but if I'm hearing what you're saying correctly, and again, a lot depends on the details, and this may not even happen, so let's not be counting our eggs before they're hatched, but we could imagine a world in which PED, let's say this legislation does come forward in some form or fashion that, if that happens before PED really gets off the ground we could be talking about a much more open-ended, much more creative, much more dynamic PED process than on option A, where none of this legislation happens and we're just sort of proceeding under the ordinary course. I think that if it's that open, there's potential for it to be much more broad. I'm thinking let's let the Army Corps loose, like let's start looking at all these issues as Councilman Shahid talked about, things of that nature, so it's something really worth following closely, so thank you for that."

Mayor Tecklenburg said, "Dale, if I may interject a couple of things. One is, don't get me wrong, I'm not for slowing anything down. It's taken us long enough to get to where we are, but we're in charge of the schedule to a great extent because if we don't approve the budget for the next year it will be deferred for a year. So, if some circumstance were to occur with this legislation, and it would make sense to wait a year, we can do that, it's up to us, right?"

Mr. Morris said, "Yes, sir."

Mayor Tecklenburg said, "That's what I've been told all along. Corps' back there nodding their head. But I understand completing the question. I appreciate, it but I've got to repeat again that their willingness to be flexible with us has been clearly communicated, and it's been expressed to them, as well, the need for the flexibility. Even if this legislation doesn't occur, and we go through a year of PED like Dale says, and we don't see that flexibility happening, we're in charge, we can turn off the switch. I think we are certainly partners, but we both have a chance at the ignition switch here to cut things on and off. In the meantime, I did want to just share that we've been talking about this one major initiative here, the perimeter of protection and the thought that time moves on, and we've got to wait for this process and that. I just want to remind everybody that in the meantime, Matt Fountain over there is doing about \$100 million worth of projects this year that all tie into our City's efforts that we did update our Comprehensive Plan. We will be moving forward on the land use recommendations of the Comprehensive Plan, over the next, and that will be a two-year thing too, but to rezone properties that are low-lying and at risk. We've made the major changes to our stormwater requirements, but we are continuing to review those. I think we still have some fill requirements that we're looking to tinker with this year, and we continue with our resiliency efforts through Katie McCain and those efforts talking about rain gardens and adopting a drain. So I just want to put it out there, remind everybody that while we've spent a lot of time on this going back to our original sea level and flooding strategies of resources, infrastructure, governance, land use, and resiliency, we can walk and chew gum at the same time, and we're doing those things, as well. Just a reminder. Any other questions, comments?"

Mayor Tecklenburg recognized Councilmember Seekings.

Councilmember Seekings said, "Thank you, Mr. Mayor. Dale, thank you as always. I appreciate it. A couple of things, one, I was just sharing with the Mayor and Councilmember Shahid, I haven't looked to see the projections yet. I'm sure that Wes and his team know about this too, but NOAA has released its 2022 sea level rise technical report, which has updated projections for all U.S. coastal waters through 2150. So I'd predict, without having read it, but you may have already looked that those numbers have gone up, not down."

Mr. Morris said, "You're right."

Councilmember Seekings said, "So, our sea-level rise strategy that we published in 2015 from the City, and we worked hard on it, is going to have to be amended, right? We're going to have to think about that. If these projections go up, we projected out 50 years, and I don't know, we'll have to just look. So I'd just like to get back to a procedural question that has sort of been in my mind. Obviously, you saw what I wrote, but I just want to make sure I have this chronology right because we've asked citizens to sit on a committee, and I see one of them here and Councilmembers, too. We've been operating off of a certain timeline, and there was a good bit of urgency placed on this whole notion of setting us up at this Council to be ready to vote whether or not to go forward into PED. We had a City Council Workshop, Dale, I think it was right after you started working here, and Wes you were there, and we were told that the vote on the PED was going to go forward in December or January. From that point forward then, this would go up the chain and ultimately seek funding because you would have and you used the term, I believe, willing non-Federal sponsor, right, and the indication of our willingness was not a signature from the Mayor saying complete a report. It was, we're willing to fund 35% of PED. Am I right about this? I think I'm right about this, and we actually issued a report and a letter that, I think, Susan you actually authored that sent out a timeline that included all, and it wasn't until very recently that it got flipped. I'm not going to ask you to go back to your slide, but it got flipped. Now, apparently we're going to ask the Mayor to sign a letter, they're going to take that letter as an indication of us as the non-Federal sponsor being supportive of not going forward to the next phase, but completing the feasibilities, am I right about that?"

Mr. Morris said, "So what happened --."

Councilmember Seekings said, "As you saw in my piece, I mean, I turned that into an opportunity for us because we as a Council were being set up to go and vote on this thing in December or January. There were groups who asked to vote up or down, whether they endorsed it in the Chamber of Commerce, my community association, all those things were like, we think you know there were lots of adjectives used, but there were some positives and negatives of cautiously, with qualifications, but all that, that was a setup for us to vote this thing forward. So then, the Army Corps could take it up the chain of command with a willing local non-Federal sponsor saying 'yes if you go and get this, and you put it in WRDA, and it gets appropriated then, boom, we're ready to go, you can get right into PED.' That changed somehow. I just want to know what changed because it's reversed of what we were told, and for us at the local level when we tell our neighbors, our friends, and our constituents that something's about to come down the pipe and get ready for it and we get the good, the bad, and the ugly, now it's a deep breath, and I certainly think that the Mayor absolutely should sign that letter because that's why it was written. Let's get this study finished. I'm a little curious, really. What happened?"

Mr. Morris said, "That's a great question."

Councilmember Seekings said, "I could have, but I just wanted to give it some context at the local level because, in the end, the authorization to go forward is not just Congress, it's us, these 12 people and the Mayor, around this table saying we're in for 35% for PED, with the off-ramps that all have been talked about, but it is an endorsement. It is committing monies, and we were all being set up to go back to our constituency, think through this, have a committee, send out reports, send out timelines, all that stuff. So, I don't know what you call the next year. I call it a huge opportunity for us to have a conversation with the Army Corps of Engineers, and the

easiest target is Lockwood, right? I mean, that's the easiest target. We're never going to build a wall that crisscrosses Lockwood four times and has four gates you have to go through. So anyway, we don't have to answer this. I do want to know what happened, but I don't see why we can't use this year, because it looks like we're going to have it or maybe more, to make some adjustments, and when this thing comes back to us before you go into PED or not, adjustments have been made so it is a better vote."

Mr. Morris said, "Right, so let me respond briefly to the concern about the pause or when you move into PED. There was a misunderstanding by certain words that we kept seeing. So, the Corps of Engineers, as we started this process, they give us a TSP and then an optimized TSP a couple months later, after the EIS last September. There was a communication that the City would receive a recommended plan that would be used to run up the chain of command and move into PED. Upon further investigation and, again, this is something that I learned and my predecessor learned, we had sort of interesting discussions with the Army Corps, you know, what is a recommended plan? Well, a recommended plan is a decision internal to the Army Corps of Engineers when they take the draft ideas, and there is a fairly serious set of meetings in review within the Army Corps saying, 'are we comfortable that this becomes the foundation of our final report?' It's an internal thing, but it is called a recommended plan. We were under the assumption that we were going to be given a recommend plan sometime in the fall. We had to delay it because of Jordi's shot across the bow, but that's wonderful. This is an improvement. It's wonderful. We were expecting a recommended plan anywhere from November to December, and then the idea was you're going to see it, and that was going to be it.

What we found out was, in fact, as this thing, as the district finalizes this and sends it up the chain of command, the division and headquarters can change it. So, that's a bit scary to ask you guys. We thought, hold on, are we going to ask you guys to support something that may not be finalized? So, we have the option now to come back to you after they do their work and after they get their appropriation to see the final report and the design agreement, because that is what sets up PED. So, there was a misunderstanding, and I'll be honest, it surprised me, and it surprised a lot of folks who were involved with this. Again, we know better now. It does create this opportunity that you mentioned, that we can do things in between, but again, it is not my responsibility to suggest how to spend City resources. Things we can do, as Councilman Sakran said and Councilman Gregorie said, between now and then, a design agreement, if we want to do that, we should. You'll recall, scarce resources. We could also do these things in PED. So, again, the accounting, what I'm saying is, I would not want to spend money twice on the same thing. That's all I'm saying."

Councilmember Seekings said, "Can I follow up? I agree with you. I mean, we have scarce resources, and we shouldn't be spending monies that aren't well appointed, aren't going to be for the public benefit, aren't going to do all the things we want them to do, and clearly water management is one of them."

Mr. Morris said, "Yes, sir."

Councilmember Seekings said, "But once we get into PED, it's 65/35, right? I think everyone around this table agrees there are certain things in this preliminary recommended plan that we're never going to agree to. But it can get fixed in PED? We have to go pay 35% to fix something that we know needs to be fixed, in advance, right now? Why doesn't it get fixed before it comes back to us? Because if it comes back to us in that configuration, trying to sell, and going forward, and fixing this, and that, the other thing, it's going to be a hard sell. It's just going to be a

hard sell. So, I mean, if we know there are certain things out there, I would implore this Council to go back and look at our budgets. Let's get some resources towards doing a comprehensive water plan that now knows that, essentially, the recommend plan is in our hands. There may be some changes, but it's not going to be major changes, right? Can we agree on that?"

Mr. Morris said, "Nothing has been designed, and again, the alignment on Lockwood will change. We've communicated clearly. So these are things that we do in PED, and we have the flexibility to do so."

Councilmember Seekings said, "I get that. It will change, we think, comma, we think. What we've got in front of us now is what we've got in front of us. How it changes, I mean, it likely will, but we don't know for sure. That's what we've got. It's what we're operating with, right? And if what I'm hearing today is correct, it's going to be what we're operating off of, with maybe some minor changes, going into PED. There are other things, not just Lockwood, that need adjustment. Why wouldn't we take that opportunity now, along with the Army Corps, to make those adjustments? Why wouldn't we?"

Mr. Morris, "So, again, ----"

Mayor Tecklenburg said, "If I may interject, I think there's real engineering time and cost to decide, to make some of those decisions. Just to use the Lockwood example, I mean, it's clear we put them on notice. We all agree that what's in the current recommended plan, we're not quite at that point yet, isn't going to be suitable to us. We could go and design something on our own, I guess, and we'd still have to vet it through the Corps during PED. We put them on notice, using this example, that that's got to change. If it doesn't, we've got the off-ramp every year to say 'see you later.' So, I mean, I hear you. I think there's plenty of work to be done with the water plan this year to fulfill our knowledge and plans, not just on the Peninsula, but in other parts of the City, including Johns Island, James Island, West Ashley. You know the water plan is intended to be a City-wide thing. I hear you, Mike, but I really think, from a practical point of view, to really get down to the nitty gritty and design that gate change, or whatever we propose, it takes some science, it takes some money, and we'd be better off doing that together than we would be going out like the lone ranger."

Mr. Morris said, "Let me just clarify something ---"

Councilmember Seekings said, "Just one final point on that, and then I'll be quiet. I get all of that, and I hear it, but to go back to the example that's been used in this room, the shot heard 'round the Peninsula, the shot heard 'round Charleston, the shot heard through this report, was the Yarborough shot, right?"

There was laughter.

Councilmember Seekings said, "There she is. Sorry. This is going nowhere unless the alignment moves to the Port's satisfaction. That was what happened. We are sitting here right now saying 'this is going nowhere, among other things, unless Lockwood gets realigned.' I'm not sure I completely understand the difference. I'll just leave it at that. I mean, I think the message has been delivered, and we'll see how it's received."

Mr. Morris said, "Let me say this, there is a difference between Jordi's shot across the bow, sorry, the Port's communication that the September TSP, optimized TSP alignment, was

insufficient for their purposes. That was an important signal. So, that's a big piece of property because you have a potential redevelopment of one part of that. It's going to provide, if developed appropriately, and as we imagine now, a tremendous amount of economic value, and housing, and other things for the City. So, why wouldn't you protect that? Jordi's boss is fond of saying 'who knows what the future of transportation looks like in 25 years.' Will we be re-exporting BMWs and Volvos from that facility? No one knows. The future uses of Columbus Terminal may also change over the lifespan, so let's make sure we get that protected. That's massive, and it was important that we get it done. Lockwood is really making sure that we can put something on the western side of Lockwood under the James Island Connector that would be, again, sufficient to mitigate surge to the 12 design level and would stay there and not sink. You have to make sure that the subsurface is right. That requires a fairly high level of technical analysis. I think the Corps of Engineers, again, if I recall, they said 'we understand, right now, that the Lockwood alignment is a challenge, but we don't have the money to study what else could be done, so we're just putting this here.' So, the scale of those two things are different, and I think we need to just acknowledge that.

Do I think we need to spend the money now? Let's say you all approve, here's a million dollars for a design engineer, an architect, and some hydrologists to go and study the Lockwood quarter from the Coast Guard Station up to Brittlebank. Here's a million bucks, come back to us in 7 months with a plan. Big work. Okay, it could be done. You all have to understand, sorry to be disrespectful, I'm not trying to be, the Army Corps of Engineers, already, they have run an analysis against their feasibility plan. The level of service that their plan provides, technical term, needs to be met by whatever we would design, so we're going to have to work with them in this process to make sure we provide the same level of service, the same relative cost, the same relative benefit because if we design something, 'oh, you know what?', let's make it 8ft.,' because we can't get it under the bridges, that won't pass the project snuff. That won't pass the project when you get to review because you have to have the same height all around. So let's understand that there's, in my opinion, sir, there's a difference between the East Side and the Lockwood corridor.

I just want to say this to Councilman Appel, your enthusiasm, can we pry this thing open with the Corps policy? It's why I came here. It's why I came here. It's one of the reasons why I came here. I know this force is out there to pry open, whatever the appropriate analogy is, to pry open the Corps process. It is so needed. We have this opportunity, Charleston is this iconic place, we have this BCR, we have everything on our side to get there. Are we there yet? Nope. We can try, so I just want to say that's my enthusiasm. That's my passion for this, and it gets the best of me sometimes, and I apologize to all of you for that."

Mayor Tecklenburg said, "Yes, sir."

Mayor Tecklenburg recognized Councilmember Bowden.

Councilmember Bowden said, "Thank you, Mr. Mayor. Just so I'm clear, because I'm not a numbers guy so I can get sort of lost in all this talk, if we decide to go into PED, and then we take that first off ramp the following year and say 'we're out,' for whatever reason, what have we just paid for a year? What do we have as an asset moving forward? Do we have some of these studies you talked about, and how much money have we just spent?"

Mr. Morris said, "So the scope and schedule, the setting up of those studies, what's done in year one. Some of those studies can be done in 3 months, some of them may take 18 months. It just depends on what you're looking at. So whatever is completed in that first year, and the

Army Corps will give us updates of where they are, what the consultants are providing at that point, we will have that. So, we will have that, again, and we can use that in perpetuity. When it's developed, it's ours. Again, I don't want to say that every study can be done within a 12-month timeframe because some can and some cannot. So, it's possible that we could be asked to spend \$4.5-5 million in year one, and it's funding 10 different studies and reports or analyses, and we get 8 of them back completed, but 2 of them may not be. So, we'll have the status of that report at that moment when we decide to terminate the study, again, or not move forward in the next year. I don't want to scare my friends over there because they're listening, and they're going to report up the chain of command, that is not our goal. Our goal is to succeed, but let's be realistic, we may not. So we have to have that in the back of our minds as what's our alternative? What do we do at that point? I think that's a fair question, sir."

Councilmember Bowden said, "And then, just as a follow-up, if we do have these, you know, some of these studies in our back pocket, does what we're studying on the Peninsula tell us anything about West Ashley?"

Mr. Morris said, "Likely not, because of the hydrology and hydraulic conditions, the physical occupation, the infrastructure on the Peninsula is different from that in West Ashley, or Daniel Island, or James Island, or Johns Island. So, likely not."

Mayor Tecklenburg said, "But the water plan that we're doing addresses the whole City."

Mayor Tecklenburg recognized Councilmember Gregorie.

Councilmember Gregorie said, "You mentioned that, eventually, it will go up the chain and, sometimes when it goes up the chain, it may come back with changes from the Chief. Do we have any idea, typically, the extent of those changes? If legislation goes through while the Chief has it, is there a possibility that the Chief may say we need to incorporate in this submittal some of the new provisions of the new legislation?"

Mr. Morris said, "On that point, I would certainly hope so."

Councilmember Gregorie said, "Okay."

Mr. Morris said, "I can guarantee you that I will be calling Wes about this addition, and the Mayor will be talking to the Colonel and to the General in Atlanta. So, the first part of your question, I regret to say I don't know the extent of modifications that the Chief or headquarters has made when it's run up the chain of command. I don't know if Wes ---"

Wes Wilson said, "Can I?"

Mr. Morris said, "Yes, sir."

Mr. Wilson said, "Thanks, Dale. If there are significant changes or major changes, we will come back to Council and present those to you. We, Nancy's had a lot of experience on these projects in Texas and other areas of the country, and there are very minor, little changes, it's usually wordsmithing, small words, and that's it. There's no technical changes or anything along those lines."

Councilmember Gregorie said, "Okay."

Nancy Parrish said, "When we send that up through our chain of command, I mean, they are looking at policy things and that sort of thing. They are not looking at alignments and designs. They don't look at it and think 'oh, this would be better if it had an angle like this.' There is no engineering. They're not out there re-engineering it, right? They're not doing that kind of thing. I have never seen anything more than wordsmithing before it comes back and ready for the Chief to sign."

Councilmember Gregorie said, "My final question has to do with regionalization of the effort, COG involvement, to what extent have we done that? If we haven't, I'm sure we're planning to do it. Because I really think that if we don't, it's going to be a political nightmare, especially with other low-lying cities within our region. So, are we dealing with the regionalization of, not the wall necessarily because I think if we do a water plan, that water plan would have to go beyond the City limits, and just as a water plan would do that, my question is shouldn't this effort also do that?"

Mr. Morris said, "Let me address that in a couple of ways. One is, the authority for this study has a physical boundary around it. You can look at the original map. It's the Peninsula and the associated waters. That is defined under the authorization, so we have to stay within that boundary. It doesn't mean that there's not surge risk in Councilwoman Parker's district or anyone else's district, there is. It's just that this is here, that boundary condition is there. At a staff level, I have spoken with folks at the County, and I have spoken with folks in the State, and I have spoken with folks, as you may know, there is the State Resilience Office, and they're doing a resilience plan, which is really a statewide flood plan right now. I'm serving on one of those subcommittees just to make sure Charleston is heard on that. So, we're doing this. We don't have an ask for them, yet, because we've designed nothing. We'll go there. The Mayor, you can talk about the conversations you've had with your colleagues around the neighborhood."

Mayor Tecklenburg said, "We recently had called a meeting of regional mayors to give them a briefing. We've done so with County emergency personnel, not the elected officials. We've done so with the State Emergency Management Division. I believe we're making a good faith effort to keep our regional partners up to date. You know, a few years ago we started a regional gathering on the COG level amongst all the water and stormwater managers, and those sessions continue on. We should give that group, Matt Fountain, an update the next time they get together. In addition to the mayors, I had a number of Councilmembers attend from the other cities, as well. Mayor Haynie was there, Ron Brinson was there, North Charleston, Mayor of Seabrook, Kiawah, Sullivan's Island. So, we are making those efforts. Yes, sir."

Councilmember Gregorie said, "We'll be protecting a lot of state facilities."

Mr. Morris said, "Yes, sir."

Councilmember Gregorie said, "We really would be. How would the State, when they do contribute, will that affect our 35%?"

Mr. Morris said, "Yes."

Councilmember Gregorie said, "Okay. To me, that should be an easy sell, given what we're protecting."

Mr. Morris said, "I agree wholeheartedly. I think everyone agrees wholeheartedly. I'm not particularly brilliant on this. We need to do this, right? I have had discussions with the State Resilience Office, who helps to direct the Federal CDBG monies that come to the State, but the State distributes locally, and there is unclaimed money in 2024 and 2025, and I have said 'oh, we can use some of this for PED, can't we?' So once we get an indication, we're going to go down there. We're going to make that application. CDBG-DR and CDBG-MIT money is the one, maybe not the only, but the one spot where Federal money can be sent to the locals, and the locals can use it to pay for a cost share of a Federal project. Most of the other times it's no double dipping. CDBG-DR is one of those places where that can be. We've talked about this. Again, I'm reluctant to say we're going to put this application out there without confidence that we're happy with the plan. Again, up until 3 weeks ago, we did not see Jordi's realignment, sorry, Jordi, we did not see that realignment. So, we have to be careful when we ask for money. We have to go with a serious request. If we complete the study, and we see this other work going on, we'll talk with them. And, again, we have time because these grant cycles are not even open, yet."

I forgot to answer one of your previous questions. The water plan, the goal is to have it tease out, per hydrological basin, what risks are there, what opportunities are there to mitigate that risk, not just with pumps or concrete or land use policy, but land cover policy and all those other things. We'll look at it per basin, and as you all know, and Councilwoman Parker knows this intuitively, these basins cross many, many different political jurisdictions. So, we will have to look at those things and work with other folks, and we may have to go to Charleston County or Berkeley County and say 'here's this basin. We're downstream, you're upstream, you guys have to help us with this.' It's a negotiation. We have to tease it out first and then see how far we can get."

Mayor Tecklenburg said, "Any other questions?"

Mayor Tecklenburg recognized Councilmember Gregg.

Councilmember Gregg said, "Sorry, back to the cost. In the \$1.1 billion and then also in the \$51 million, how much contingency is in that?"

Mr. Morris said, "Go, Wes."

Mr. Wilson said, "So, the current contingency number is 36% we have built in to all the costs."

Councilmember Gregg said, "So that's in the \$1.1 billion, but also in the \$51 million for design?"

Mr. Wilson said, "Yes, sir."

Councilmember Gregg said, "Okay, great. Thank you. Then, I guess this is a question for you, with regards to the work product in PED, you were talking about the hydrologic survey. How much of that do you think would be applicable to Calhoun West? We talked about that. And then, if we spent the money now on that, does that count as our cost share of the PED, as well, if we were to move forward with any of that?"

Mr. Morris said, "If we would spend money on a separate Calhoun West study, on interior hydrology, you mean?"

Councilmember Gregg said, "Yeah, I mean, does that knock off any of our costs on this? Is that too complicated?"

Mr. Morris said, "Well, it is and it isn't. Let me give you the shorthand."

Councilmember Gregg said, "Okay."

Mr. Morris said, "Work that we do in advance of PED that can inform our requirements under PED for the cost share, we either have to create a very clear MOU and make sure it's good, that we can get credit for that in PED. Because if we don't, we won't, so we have to see what's possible. I don't know the boundary conditions of the negotiation. We should explore that. The second question in response to you, what was the other part of your question? I'm sorry."

Councilmember Gregg said, "When do we think the work products would be available that could potentially, I mean, the other way, if we proceed with PED, when do we think the work products are going to be available that could potentially inform us or help reduce the cost of the design on the Calhoun West project?"

Mr. Morris said, "I think that's going to depend on each particular study, and we'll see how long it takes to do that. There is a, so again, that's what I tried to explain to Councilman Bowden is, you know, we'll tee up, they will tee up studies with us in PED. Some of those could be completed in a relatively short period and others in a longer period. We'll have to see what those are, but whenever they're ready, they should be able to inform other H&H challenges on the Peninsula. Sorry, hydraulic and hydrology challenges on the Peninsula. I still feel I'm missing one of your questions."

Councilmember Gregg said, "No, I think you answered it."

Mr. Morris said, "Okay. I'm sorry."

Councilmember Gregg said, "Thank you."

Mayor Tecklenburg said, "Alright. Anybody else?"

Mayor Tecklenburg recognized Councilmember Appel.

Councilmember Appel said, "I have a real quick thing, and it's more of a statement/request than a question. You know, the Mayor, you put together a wonderful letter February 7, 2022. I like the language around anchoring. Could we expect a response to this letter from the Army Corps as a sort of trust building exercise here to sort of address maybe some of Councilmember Seekings' points? In other words, we've got these good verbal communications, we're working together, we're vibing off each other, the Mayor sent this wonderful letter. It would be nice to perhaps receive a response. I mean, I'm not asking for a response from anybody on the fly now. I'll just state that, for the record, I just think that as we continue to proceed, knowing that we're on the same ground and having that in writing could be, I think, something that's advantageous as we continue to move forward."

Mayor Tecklenburg said, "Well, I wasn't expecting one, but I see Wes jumping up."

Mr. Wilson said, "Maybe this will be helpful for you to understand. We're going to take it one step further. We're going to take that letter, and we're going to put it into our final report, so it's an appendix of our report so folks can have that for the future. That will be somewhat part of our response. A lot of that letter is going to be taken into account in the negotiations and the design agreement, so that will be part of our response going forward, as well, as what that final design agreement will look like."

Mayor Tecklenburg said, "And then, just very briefly, I wanted to address the matter that Councilmember Seekings brought up about the misunderstanding about coming together today and needing or not to like take a vote. We've been on this path, on this journey, now almost 4 years, and I must admit, maybe it was a misunderstanding on my part and Mark's, but I thought that when we got to this point, when we got to this letter of support, that it would be a commitment to PED and a commitment to funding. It is not. That became crystal clear to us with a communication from the Corps late last year and after Jordi fired her famous shot. At that point, I had advised Council that we would get back together when we saw the new map, and I, yeah, could have signed the letter already, and I'm prepared to now, but I felt it was incumbent on me and us to fully inform you all of everything we know as of right now, even after all of this last couple of hours. If you all jumped up and said 'Mayor, we're making a huge mistake, and here's why' to just finish the study, you know, I want to hear that from you. I don't think we are, to finish the study, so I intend to sign the letter tomorrow morning, unless I hear some general consensus to the contrary. Alright. Any closing remarks from anyone?"

No one asked to speak.

Having no further business, the meeting adjourned at 5:06 p.m.

Jennifer B. Cook
Clerk of Council