

CITY OF JACKSONVILLE  
ADAPTATION ACTION AREA WORKING GROUP  
MEETING

Proceedings held on Friday, April 26, 2019,  
commencing at 9:00 a.m., at the Ed Ball Building,  
214 North Hogan Street, 8th Floor Conference Room,  
Jacksonville, Florida, before Diane M. Tropa, FPR, a  
Notary Public in and for the State of Florida at Large.

PRESENT:

EMILY PIERCE, Chairwoman.  
SHANNON BLANKINSHIP, Working Group Member.  
CHIRADIP CHATTERJEE, Working Group Member.  
MATT GALNOR, Working Group Member.  
JOSEPH LORETTA, Working Group Member.  
JEFF MARTIN, Working Group Member.  
ERIK OLSEN, Working Group Member.

ALSO PRESENT:

BILL KILLINGSWORTH, Director, Planning Dept.  
KRISTEN REED, Chief, Community Planning Div.  
SUSAN KELLY, Planning and Development Dept.  
HELENA PAROLA, Planning and Development Dept.  
CHRIS SCHOENIG, Planning and Development Dept.  
KEALEY WEST, Office of General Counsel.

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1 W/G MEMBER MARTIN: Jeff Martin,  
2 Jacksonville University.  
3 W/G MEMBER GALNOR: Matt Galnor, Jax  
4 Chamber.  
5 MS. WEST: Kealey West, City of  
6 Jacksonville, Office of General Counsel.  
7 THE CHAIRWOMAN: Bill.  
8 MR. KILLINGSWORTH: Bill Killingsworth,  
9 City of Jacksonville.  
10 THE CHAIRWOMAN: Welcome, everyone.  
11 Okay. So we just got the minutes from the  
12 April 8th meeting. So I'm going to ask that we  
13 just read those over the next two weeks and  
14 then we'll do the approvals and see if anybody  
15 has any changes. So next -- in two weeks from  
16 now we will have both the minutes from two  
17 weeks ago and the minutes from this, but I know  
18 nobody has had a chance to get through them.  
19 Okay. So we're going to start. Our topic  
20 this time is floodplain management and the  
21 Master Stormwater Management Plan, and our  
22 first presenter is Duane Kent, and he's with  
23 the City. He's with the City's engineering  
24 design section and he's the manager. He  
25 graduated from FSU in 1995 with a degree in  
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1 P R O C E E D I N G S

2 April 26, 2019 9:00 a.m.

3 THE CHAIRWOMAN: All right. Welcome,  
4 everybody. Happy Friday.

5 So we're going to go ahead and get  
6 started, and we're going to start with our  
7 introductions of everybody.

8 Let's start with Susan.

9 MS. KELLY: Susan Kelly, Planning  
10 Department.

11 MS. PAROLA: Helena Parola, Planning  
12 Department.

13 W/G MEMBER CHATTERJEE: Chiradip  
14 Chatterjee, I'm at the University of North  
15 Florida.

16 W/G MEMBER LORETTA: Joe Loretta. I'm a  
17 land planner with Genesis Halff.

18 MR. SCHOENIG: Chris Schoenig, Planning  
19 Department.

20 THE CHAIRWOMAN: Emily Pierce, Rogers  
21 Towers.

22 W/G MEMBER OLSEN: Erik Olsen, consulting  
23 engineer.

24 W/G MEMBER BLANKINSHIP: Shannon  
25 Blankinship, St. Johns Riverkeeper.

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1 civil engineering, and over the past 24 years  
2 he's worked in both the public and private  
3 sector. His experience is in general civil  
4 engineering with a focus on stormwater  
5 management. He's been with the City for the  
6 past three years and manages a staff of eight  
7 professional engineers. His section is  
8 managing the design effort for more than  
9 \$200 million of Capital Improvement Projects.  
10 So, Duane, welcome.  
11 MR. KENT: Thank you. I'll start off, as  
12 an engineer, when I very first started in  
13 school --  
14 (Discussion held off the record.)  
15 MR. KENT: I was going to say as a young  
16 engineer nobody told me that I would have to do  
17 presentations, so if you would please bear with  
18 me. I'm not the public speaker that I would  
19 like to be.  
20 But I was asked to come and talk about the  
21 City's Master Stormwater Management Plan. The  
22 Stormwater Management Plan really is part of  
23 the City's stormwater program as a total. The  
24 City's stormwater program really looks to  
25 improve public safety through floodplain  
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1 management and our CIP projects. We also look  
2 to maintain the environmental stewardship for  
3 the lower St. Johns and its tributaries. To  
4 achieve these goals we need a couple of things:  
5 Sufficient dedicated funding, which is our  
6 stormwater utility, which I'm really not going  
7 to talk about a whole lot today, or not really  
8 at all, but -- and then a moderate, accurate  
9 representation of our current systems, and that  
10 current -- that modern, accurate representation  
11 is our MSMP. The MSMP is really more than just  
12 a single model. It's a couple of different  
13 models. We look at the hydrological and the  
14 hydraulic modeling. We also look at the water  
15 quality with our watershed maintenance model,  
16 the hydraulics and hydrology. We use SWMM.  
17 The City of Jacksonville has some 400  
18 miles --  
19 THE CHAIRWOMAN: Can you hang on for just  
20 a second?  
21 MR. KENT: Yes.  
22 W/G MEMBER MARTIN: Acronym, MSMP?  
23 THE CHAIRWOMAN: Thank you.  
24 MR. KENT: Stormwater Management Model  
25 [sic].  
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1 THE CHAIRWOMAN: And SWMM?  
2 MR. KENT: Stormwater Management Model.  
3 THE CHAIRWOMAN: Stormwater management.  
4 Okay.  
5 MR. KILLINGSWORTH: MSMP is Master --  
6 MR. KENT: Master Stormwater Management  
7 Plan.  
8 MR. KILLINGSWORTH: -- Stormwater  
9 Management Plan, yes.  
10 MR. KENT: To accurately represent what  
11 we've got, we've gone out and surveyed, we've  
12 done cross-sections on more than 400 miles of  
13 our streams, our natural systems. We've  
14 also -- more than 60 sub-basins. Within each  
15 of those sub-basins, we're looking at not just  
16 the hydraulics in that area, but also the land  
17 use so we can understand the water quality.  
18 So recently we've done an update. I say  
19 "recently." Within -- over the past 10 years,  
20 working with FEMA and the Florida Department of  
21 Emergency Management. They assisted us with  
22 funding. We did new LIDAR, which is elevation  
23 mapping. Updated our Master Stormwater  
24 Management Plan, and used that information to  
25 update our new flood maps. So all of our new  
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1 flood maps that we have right now are a direct  
2 result of the MSMP.  
3 W/G MEMBER LORETTA: So I have a question.  
4 MR. KENT: Yeah. Okay. I do much better  
5 with questions and answers than trying to talk  
6 at people, so --  
7 W/G MEMBER LORETTA: When you say "flood  
8 maps," right now on the City's website, you  
9 know, you can pull up the FEMA or you can pull  
10 up the flood map kind of on the GIS page, but  
11 is there actual flood maps that the City has or  
12 is it just kind of, you know, through our GIS  
13 page?  
14 MR. KENT: The representations on the GIS  
15 page are the flood maps, the federal  
16 government's flood maps. So you can -- if you  
17 go to the -- what is it? FEMA's website, you  
18 can look at FIRMettes and actually build those  
19 maps. Those are the exact same thing you see  
20 on the City's website.  
21 W/G MEMBER LORETTA: Okay. So -- but it's  
22 my understanding that you all have a little bit  
23 more level of detail in certain areas or -- and  
24 so forth than what I've worked on in some  
25 projects. I can't think of the gentleman's  
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1 name, but I've communicated with an engineer to  
2 try and see if there's any additional level of  
3 stormwater or flood information that we need to  
4 pay attention to.  
5 MR. KENT: Yeah. The MSMP -- there's also  
6 another web page -- or GIS page that shows the  
7 MSMP connectivity, the model itself. It shows  
8 flows through the system and elevations for  
9 the, I believe, 10-, 25-, and 100-year storm  
10 events.  
11 W/G MEMBER LORETTA: So what is that page,  
12 or do you know?  
13 MR. KENT: I don't know it off the top of  
14 my head, but it's on the City's --  
15 W/G MEMBER LORETTA: So it's the same  
16 location, it's just a different link?  
17 MR. KENT: It's another map. I think it's  
18 in its own separate map. And we certainly can  
19 get that and bring it back to the group. So --  
20 With the MSMP model, we look to identify  
21 Capital Improvement Projects that we can  
22 accomplish to improve the flooding within the  
23 city. What we look at, you know, generally,  
24 our stormwater goals, desired level of service,  
25 and then do kind of a cost benefit analysis.  
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1 That level of service, quantifiable level  
2 of service, we look at -- we look at our  
3 evacuation routes. We want those routes to be  
4 open. During a 10-year storm event, no less  
5 than -- or no more than 3 inches of water on  
6 that route. The 25-year, 6 inches. The  
7 100-year, no more than 9 inches. Those are our  
8 goals. So as we look at the modeling, we  
9 identify areas where we don't meet our goals  
10 and try to come up with projects that will make  
11 improvements.

12 Other quantifiable level of service;  
13 structures, homes and buildings within -- that  
14 flood. And so again, looking at projects where  
15 we can reduce the number of structures within  
16 the floodplain.

17 Also, looking at water quality, water  
18 quality in the lower St. Johns. We're looking  
19 a lot at nitrogen removal. The City has a huge  
20 responsibility to meet, by 2023, with nitrogen  
21 removal, more than a hundred metric tons.  
22 Quite a challenge involved.

23 Another level of service that we look at  
24 to kind of judge these projects is erosion  
25 control. So looking to keep erosive velocities

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1 down to 2 to 3 feet per second.

2 So really here, we just want to -- as we  
3 look at each of those, you know, quantifiable  
4 levels of service, we rank them. Flood control  
5 at 40 percent, water quality at 40 percent, and  
6 then erosion at 20 percent.

7 Some of the projects that we've done:  
8 First, we've done over \$100 million in  
9 stormwater projects since the start of this  
10 MSMP. The Sandalwood Canal is one of the  
11 projects done several years ago, completed.  
12 You'll notice the overgrown and tree -- we  
13 had -- this area had erosive velocities, there  
14 were flooding issues, so -- come back in and  
15 rebuild the canal, get rid of that -- reduce  
16 the velocities, get rid of that erosion, the  
17 sedimentation, and then also some flood  
18 improvement.

19 Upper Deer Creek was one of our large  
20 stormwater retention facilities. This is over  
21 near the port. It provided water quality  
22 improvement and certainly some -- a good level  
23 of flood improvement for that area. We're  
24 still building on this project right now.  
25 We've got a lower east side drainage

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1 improvement project going on that is building  
2 upon the reductions and flood levels here so  
3 that we can improve the quality within that --  
4 the neighborhoods over there.

5 Another one, another project that we did,  
6 the Cedar River Outfall. This is over off  
7 Highway Avenue. Again, a water quality  
8 project. Also, looking to improve some of the  
9 flooding along Highway Avenue.

10 So with that, really, I'll take questions  
11 on -- if anybody has got anything.

12 THE CHAIRWOMAN: So how does the -- you  
13 said erosive -- you want to get erosive  
14 velocities down to 2 to 3 feet per second.  
15 What would you do to make that happen?

16 MR. KENT: Widening channels, going ahead  
17 and improving the cross-section, changing flow  
18 characteristics by -- and Sandalwood Canal is  
19 not a great example of that, but putting  
20 streams back into a more natural state. We're  
21 looking at doing that with the McCoy's Creek  
22 project.

23 Right now, we've got -- if you look at the  
24 Capital Improvement Program for the next five  
25 years, we've got about 54-, \$55 million that

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1 we're going to spend on McCoy's Creek to return  
2 it to a more natural state, improve the  
3 floodplain there, and also make some -- build  
4 some amenities around that area, so --

5 Yes, sir.

6 W/G MEMBER OLSEN: How would a group or  
7 entity make a request to the City for a  
8 specific drainage improvement, such as  
9 Riverside -- let's say at the intersection of  
10 Stockton and Riverside.

11 MR. KENT: I'm on the -- I'm really -- in  
12 engineering, we kind of deliver projects. It's  
13 what we're told to build, but certainly come to  
14 Public Works, talk to us about it, tell us what  
15 you're interested in looking at, and we'll see  
16 what we can do to change that.

17 Planning guy.

18 MR. KILLINGSWORTH: Planing guy.  
19 How often is the MSMP updated?

20 MR. KENT: It's not -- we don't have a  
21 routine time frame to update it. It's been  
22 updated twice in the past -- probably 20 years.  
23 So every 10, 15 years.

24 MR. KILLINGSWORTH: And when they do the  
25 modeling, probably not in the past -- they

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1 probably haven't, but they may have. I may be  
2 surprised. And when you're going forward  
3 looking at the next one, have they looked at  
4 projected flood hazards based on sea level rise  
5 or will they look at it in the future?

6 MR. KENT: The MSMP is more of a riverine  
7 system. We're looking at the upland systems.  
8 We have not been looking at sea level rise.  
9 Certainly we're talking about that with our  
10 next update and we'll certainly include that.

11 THE CHAIRWOMAN: Ms. Blankinship.

12 W/G MEMBER BLANKINSHIP: So the three  
13 examples you gave were all, I would say, fairly  
14 sort of, you know, structural improvements.  
15 With something like what's being done with  
16 McCoy's Creek, are there more ways that you  
17 guys can leverage those kinds of solutions on  
18 waterways or is that sort of like something --  
19 I mean, do you have more plans like that that  
20 are just sort of, we're not there yet, or are  
21 most of the solutions really structured and  
22 McCoy's Creek is kind of an outlier?

23 MR. KENT: Most of what we've looked at  
24 that -- we have a project list of about 30,  
25 they're structural components; building new

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1 stormwater ponds, improving existing systems,  
2 those that -- you know, there are systems that  
3 have been built 20, 30 years ago that really  
4 don't function as stormwater ponds. They're  
5 just -- it's just a big -- you know, big pond.  
6 There's no control structures, there's no  
7 management of the ponds themselves, and so  
8 looking at things like that. So ...

9 W/G MEMBER BLANKINSHIP: And just to  
10 follow up, so I know after Hurricane Harvey,  
11 the City of Houston really relatively quickly  
12 was able to identify significant projects  
13 within the community and within a year have a  
14 list of priority drainage projects to get done  
15 in order to make sure that at the next storm  
16 that wouldn't happen. Do you have, like, sort  
17 of a laundry list of projects you would --  
18 that, you know, would help in major disasters  
19 if you could implement them?

20 MR. KENT: The reason I'm here is because  
21 my boss is at that meeting talking about  
22 resiliency. So there is -- the administration  
23 has got a -- has set up a task force looking at  
24 resiliency, trying to identify those types of  
25 things.

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1 We are looking at -- we've got a  
2 project -- we've got an RFP out on the street.  
3 Maybe it's out on the street. If it's not, it  
4 will be within the next week or two, to look at  
5 kind of reclaiming some of the floodplain,  
6 actually taking structures -- buying back  
7 structures that are in the floodplains along  
8 the river. I see that as probably one of the  
9 ways we're going to have to go.

10 Whole neighborhoods during Irma, whole  
11 neighborhoods were inundated. You know, they  
12 were built in the floodplain. And maybe we  
13 shouldn't be building in the floodplain, so --

14 THE CHAIRWOMAN: Matt.

15 W/G MEMBER GALNOR: You had mentioned  
16 \$100 million in projects since the MSMP had  
17 been updated. How long of a time period is  
18 that? And can you give us a sense of how far  
19 that goes, how many projects you can do for  
20 \$100 million?

21 MR. KENT: Yeah. Right now -- so what I'm  
22 going to talk about is stormwater utilities.  
23 Our dedicated funding source -- and my numbers  
24 probably aren't quite right, but 25- or  
25 \$30 million a year we get from the stormwater

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1 utility. A large portion of that goes to our  
2 operations and maintenance, maintaining the  
3 systems that we have.

4 We get a million, 2 million to do drainage  
5 system rehabilitation; small drainage, flood  
6 improvements within neighborhoods. And then we  
7 look at some -- several million, 3- or  
8 4 million, 5 million a year -- I mean, recently  
9 it had been 5- -- to do larger CIP, MSMP  
10 projects. So 3- to 5 million a year maybe.

11 We get -- Water Management District  
12 partners with us on almost all of these  
13 projects. I know that Cedar River, we got  
14 money from NOAA that was -- I believe there  
15 were other grants that were -- had been  
16 involved.

17 W/G MEMBER GALNOR: Thanks.

18 THE CHAIRWOMAN: Jeff.

19 W/G MEMBER MARTIN: Just for Erik,  
20 actually. You live down by Stockton and  
21 Riverside, I believe. Are those -- is that  
22 intersection, is it an elevation function? Is  
23 it a function of elevation that it's flooding?  
24 Is it backing up the drainage system and coming  
25 out of the street drains from the St. Johns

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1 River there, which is only about a hundred  
2 yards away, I guess?  
3 W/G MEMBER OLSEN: It's probably all of  
4 those things. It's also a low point in the  
5 whole area, so there are many streets that  
6 drain into that basic intersection.  
7 W/G MEMBER MARTIN: Does it happen only  
8 during --  
9 THE CHAIRWOMAN: We can only talk one at a  
10 time.  
11 W/G MEMBER MARTIN: I'm sorry.  
12 W/G MEMBER OLSEN: And it goes under water  
13 with rainfall events. And, of course, you  
14 have -- you have St. Catherine's, you've got a  
15 hospital, you've got a lot of people that --  
16 residential areas -- residences that are  
17 subject to flooding there. So it's -- it's a  
18 logical place for a pumping station, which is  
19 the root of my question, similar to what you  
20 have in San Marco in certain areas, to resolve  
21 that type of a problem.  
22 MR. KENT: And that certainly is one  
23 solution, and it has been successful in  
24 San Marco. The Children's Way pump station,  
25 when we -- and I've been with the City for  
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1 three years. Before that I worked at  
2 England-Thims & Miller. One of the projects  
3 that we managed for the City was the  
4 Children's Way, Nira Street pump station.  
5 Nemours couldn't get people in and out of their  
6 property because of the rainfall events. It  
7 just rained hard and the tide was high. Once  
8 we put that pump station in, they haven't had  
9 that problem.  
10 Now, when a hurricane hits and it comes  
11 over the sea wall, there's not much that we can  
12 do, so --  
13 THE CHAIRWOMAN: Shannon.  
14 W/G MEMBER BLANKINSHIP: I just -- and  
15 this might be more for the Planning Department,  
16 but maybe while everyone is together -- so when  
17 it comes to having a waterway with drainage  
18 issues, with flooding, for example, Willow  
19 Branch Creek, which flows through Jacksonville  
20 parks but also has implications with private  
21 property, in thinking about some of the  
22 solutions that may not just be for drainage,  
23 but also like the McCoy's Creek project that  
24 bring in recreation and sort of amenities, who  
25 is sort of, I guess, the one in charge of  
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1 saying we need to bring, you know, Public Works  
2 in for these sort of drainage solutions, but we  
3 also need to incorporate this into long-term  
4 planning and bring in Jacksonville Parks sort  
5 of? Who is sort of the spearhead of an  
6 initiative of that kind so that it's not just  
7 the -- the one department out there, you know,  
8 building ponds and stuff.  
9 MR. KENT: I'll deflect to Bill.  
10 THE CHAIRWOMAN: Bill, can you answer  
11 that?  
12 MR. KILLINGSWORTH: I don't know that  
13 there is one person. It manifests itself  
14 depending upon how the project materializes or  
15 if it's a project that's implemented through  
16 Parks or through Planning or through Public  
17 Works. Each of those individual agencies will  
18 take it on. Quite frankly, the tenor of the  
19 project probably depends on who initiated it.  
20 W/G MEMBER BLANKINSHIP: Okay.  
21 THE CHAIRWOMAN: Joe.  
22 W/G MEMBER LORETTA: I have a few  
23 questions. Yesterday I was at a NEFBA meeting.  
24 They had concerns that St. Johns County is  
25 starting the contemplation on requiring  
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1 hundred-year storm events for all developments.  
2 Has the City of Jacksonville contemplated that  
3 at all?  
4 MR. KENT: When you say "contemplating  
5 hundred-year storm events" --  
6 W/G MEMBER LORETTA: They're contemplating  
7 requiring engineers to go to a hundred-year  
8 storm event for their retention ponds on all  
9 new development. So I'm just wondering --  
10 MR. KENT: And I'm not familiar with that.  
11 I mean, as --  
12 W/G MEMBER LORETTA: It's just like,  
13 they're initially starting the conversation.  
14 So I'm just wondering if the City has ever --  
15 you know, because we require a 25-year storm  
16 event. FDOT requires a 100-year storm event.  
17 I'm just wondering if the City has ever thought  
18 through -- thought anything --  
19 MR. KENT: And I'm not aware of that.  
20 As an engineer doing designs on  
21 subdivisions, we absolutely look at a  
22 hundred-year storm event, what does it do for  
23 your -- you know, within that subdivision. So  
24 I'm not sure -- when you say "hundred-year  
25 event," I don't know what that really means as  
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1 far as, you know, the stormwater ponds. Are  
 2 they trying to -- I don't know.  
 3 W/G MEMBER LORETTA: Okay. And then the  
 4 next question, I guess -- question to staff.  
 5 Last month I kind of asked about having  
 6 somebody who could answer some flood-related  
 7 questions or FEMA-related questions. Is this  
 8 that presentation or is that coming later?  
 9 Because -- do you understand what I'm asking?  
 10 My question really is, you know, you're  
 11 working on a project out there, there's  
 12 topography, a portion of the site is at  
 13 Elevation 6 or 5 or 4 and your FEMA flood  
 14 elevation is at 6. And so what I want you to  
 15 do is kind of walk everybody through how people  
 16 deal with that.  
 17 THE CHAIRWOMAN: We're going to have that  
 18 today as our next presentation.  
 19 W/G MEMBER LORETTA: Okay. Perfect.  
 20 That's -- I didn't know if that was coming up  
 21 or --  
 22 THE CHAIRWOMAN: That is today, with  
 23 examples and everything.  
 24 Any other questions?  
 25 W/G MEMBER MARTIN: One comment.  
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1 Earlier you had mentioned that with storm  
 2 implications you're going to have overflow of  
 3 the sea walls. Just a comment would be that  
 4 this morning, with just a southerly wind, we  
 5 have overflowing of the sea wall right now on  
 6 Memorial Park.  
 7 THE CHAIRWOMAN: Wow.  
 8 W/G MEMBER MARTIN: And that's just today.  
 9 So it's not just a flood. It's not just a big  
 10 storm. We're talking about a hundred-year  
 11 storm, you know.  
 12 W/G MEMBER OLSEN: Question.  
 13 THE CHAIRWOMAN: Yes.  
 14 W/G MEMBER OLSEN: Do you also control  
 15 vault-type retention systems, let's say located  
 16 on the St. Johns River? Does that fall under  
 17 your purview?  
 18 MR. KENT: I mean, as far as Development  
 19 Services, that would probably -- might be a  
 20 question for Mike.  
 21 W/G MEMBER OLSEN: Okay.  
 22 MR. KENT: But they certainly are used,  
 23 not that often -- or I don't see them that  
 24 often.  
 25 MR. SANDS: It's a very expensive  
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1 alternative to an open pond.  
 2 W/G MEMBER OLSEN: Well, yeah, except in  
 3 existing developed areas where --  
 4 MR. KILLINGSWORTH: The only one I'm aware  
 5 of has not been fully implemented yet.  
 6 W/G MEMBER OLSEN: Well, the reason I ask  
 7 is because there's one located at the  
 8 Villa Riva Condominiums, which is where I live.  
 9 And it's pretty clear that when it was designed  
 10 the engineers who certified it really didn't  
 11 understand tides because it doesn't function  
 12 correctly or it functions up to a point, and  
 13 beyond that point it actually backs water up  
 14 into the building because the tidal condition  
 15 which controlled the vault wasn't well  
 16 understood or someone didn't require the  
 17 engineer to understand it or just deferred to a  
 18 certification.  
 19 So I guess I have a -- I have a  
 20 fundamental interest in how the City addresses  
 21 tidal conditions, if there's anybody on staff  
 22 that is knowledgeable of that and -- and/or the  
 23 right questions are being posed to the  
 24 professional engineer who is certifying these  
 25 things.  
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1 MR. SANDS: Correct.  
 2 We have very few developments that are  
 3 tidal influenced. Most of it is already  
 4 developed. We have some redevelopment. We do  
 5 have a project on San Jose Boulevard that just  
 6 came in, and one of the first things we looked  
 7 at was the positive point of discharge above  
 8 the tidal influence.  
 9 Now, that's not saying that you're not  
 10 going to have an event. It's going to push  
 11 enough water in there to create a problem. I  
 12 mean, if you have a tidal surge above the  
 13 normal mean high water level there's not much  
 14 we can do about that, but the daily, day-to-day  
 15 function of this vault system relies on a  
 16 positive point of discharge.  
 17 W/G MEMBER OLSEN: That's the root of the  
 18 problem in a tidal condition, and that's where  
 19 they sort of missed the point --  
 20 (Simultaneous speaking.)  
 21 MR. SANDS: (Inaudible.)  
 22 W/G MEMBER OLSEN: -- (inaudible) without  
 23 having super elevations, the river is  
 24 (inaudible) --  
 25 MR. SANDS: (Inaudible.)  
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1 W/G MEMBER OLSEN: -- (inaudible) normal  
2 astronomical tides.  
3 THE CHAIRWOMAN: Okay. Any other  
4 questions for Duane?  
5 W/G MEMBERS: (No response.)  
6 THE CHAIRWOMAN: Thank you very much for  
7 your presentation.  
8 MR. KENT: Okay. Thank you.  
9 THE CHAIRWOMAN: All right. We're going  
10 to move on to Kristen Reed and Mike Sands --  
11 you know both of them -- about -- and they're  
12 going to talk to us about what floodplain  
13 management is and how the Stormwater Master  
14 Plan is used for development review, and, as  
15 Joe asked, the development review process.  
16 Take it away, guys.  
17 MS. REED: Excellent. Thank you. Good  
18 morning.  
19 Okay. So in follow-up to several of the  
20 questions today and questions at the meeting  
21 last -- our last meeting two weeks ago, two and  
22 a half weeks ago, there was an inquiry about  
23 how a property gets developed, what do we look  
24 at, how do we get from clean property to a  
25 development. So I'm going to run through a  
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1 high-level perspective of how the property goes  
2 through the development review process.  
3 And then as far as flood-prone areas,  
4 design requirements, things of that nature, I  
5 brought my cheat sheet, Mike Sands. He's the  
6 chief of Development Services and he is also  
7 the City's floodplain administrator. So he has  
8 all the technical, I have the high-level  
9 policy.  
10 So I also want to point out that in your  
11 handouts today there's some information because  
12 these questions have been posed to the City.  
13 Over the past several years we've had a lot  
14 more frequency of storms and drainage issues.  
15 So in 2017, before the LUZ Committee, we  
16 presented a workshop, an overview of drainage  
17 and flooding in a regulatory framework, so some  
18 strengths, weaknesses, and opportunities. That  
19 handout is there for you to read later.  
20 Interesting reading. That is based in large  
21 part on the City's Ordinance Code regulations  
22 and also the City's Land Development Procedures  
23 Manual, which is supposed to be your  
24 comprehensive guide book to development. It  
25 pulls Ordinance Code requirements in there as  
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1 well as additional drainage and design and site  
2 planning requirements.  
3 There is also a handout on wetlands and  
4 the policies the City has on wetlands and how  
5 we review those. Those are in your handout  
6 also. These were from a workshop back in -- I  
7 believe the date is April 2018. It's at the  
8 bottom of the handout. So questions about how  
9 the City evaluates projects in wetlands.  
10 With that, I'm going to go ahead and start  
11 the presentation about the development process,  
12 flooding and drainage. So the four components  
13 that we're going to go over today are the  
14 regulatory background, the general steps for  
15 development, the various roles and  
16 responsibilities in identifying the design  
17 regulations and the mitigation, and the Land  
18 Development Procedures Manual drainage  
19 requirements.  
20 So the regulatory background starts with  
21 the 2030 Comprehensive Plan. I know that I  
22 have given some overviews of that in the past  
23 couple of meetings. Again, it's a high-level  
24 policy document that is supposed to guide our  
25 daily activities in order to achieve long-range  
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1 goals.  
2 The Land Development Procedures Manual and  
3 the Ordinance Code are two mechanisms by which  
4 we implement the goals of the Comprehensive  
5 Plan. It includes general policy statements,  
6 things such as establishing level of service  
7 standards, standards that the City evaluates  
8 development on and ensures that there's  
9 capacity in the infrastructure, the drainage  
10 systems, the transportation systems to  
11 accommodate a proposed development, and helps  
12 lead to any mitigation to ensure that we  
13 maintain that level of service.  
14 The policies task the City with defining  
15 surface hydrology to determine the floodplain  
16 vulnerability and appropriate protection  
17 measures, which leads us to the Master  
18 Stormwater Management Plan that we just had a  
19 presentation on, and the floodplain ordinance,  
20 the regulations on development in floodplains.  
21 It also establishes general policies for  
22 protection measures to apply to identified  
23 floodplain areas. And there's an example  
24 policy at the bottom, just a general statement.  
25 It is not the detailed regulations, as you can  
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1 see. The City continues to define the surface  
 2 hydrology of the area to determine floodplain  
 3 vulnerability and sensitivity and appropriate  
 4 protection measures.

5 The Land Development Procedures Manual,  
 6 again, is a comprehensive guide to land  
 7 development. It's a one-stop shop. It  
 8 contains the detailed design standards,  
 9 methodologies and formulas for drainage and  
 10 design and site plan development. It has  
 11 development-related stormwater runoff policies  
 12 that say that any development must not harm  
 13 upstream or downstream property, so protection  
 14 of other properties surrounding the  
 15 development. And it states clearly that all  
 16 developers are under a pre- and  
 17 post-development discharge restriction. So the  
 18 water hydrology, the flows that were in place  
 19 before cannot be exceeded or place undue burden  
 20 on adjacent property owners. And then it gives  
 21 the engineering solutions for lot filling,  
 22 grading, ditches, swales, and stormwater ponds.

23 The floodplain management ordinance, which  
 24 again, is pulled up into the Land Development  
 25 Procedures Manual, is Chapter 652 of the City's

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1 Ordinance Code. It has the minimum  
 2 requirements to safeguard public health, safety  
 3 and general welfare, and to minimize public and  
 4 private loss due to flooding. The standards  
 5 are intended to manage development within the  
 6 hundred-year floodplain. It applies to all  
 7 development that is partially or wholly within  
 8 a floodplain and it's based on the established  
 9 flood insurance study maps, the current 2018  
 10 maps that were just enacted. I believe the  
 11 ordinance actually was updated in 2013, based  
 12 on the State's floodplain management ordinance  
 13 model.

14 There's also the concurrency system.  
 15 That's in Chapter 655 of the Ordinance Code,  
 16 and those level of service standards are  
 17 evaluated through the concurrency system. And  
 18 the level of service standards are set forth in  
 19 the City's Comprehensive Plan.

20 Level of service for flooding is there,  
 21 Level of Service A, B and C. And it shows you  
 22 that, say, for Level of Service B, if you're  
 23 retrofitting an existing system, that flooding  
 24 of streets in some yard areas are permitted,  
 25 but contained within the right-of-way. And

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1 Level of Service C, for an existing system,  
 2 flooding up to the finished floor elevation of  
 3 structures.

4 So the general steps for developing a  
 5 property start with the entitlement process;  
 6 again, the land use and zoning. Do you have  
 7 those tiers of the general permitted uses in  
 8 the land use and the specific uses permitted in  
 9 the district. If you don't have those  
 10 entitlements for the project that you're  
 11 proposing to do, then you need to go through  
 12 and do a land use and zoning change. Through  
 13 that process, the City evaluates the request  
 14 based on the established policies in the City's  
 15 Comprehensive Plan and the criteria established  
 16 in the Zoning Code.

17 For example, in the Comprehensive Plan,  
 18 policies encourage low-density development and  
 19 setbacks in flood-prone areas. So when we look  
 20 at a property and it has flood zone  
 21 development, if we're looking at a proposal for  
 22 a land use map change or we're looking at a  
 23 rezoning, if we have a site plan, we'll do our  
 24 best to discourage and buffer development away  
 25 and help the developer find ways to cluster

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1 their development in order to stay as much out  
 2 of those floodplains as possible.

3 So once you get through the land use and  
 4 zoning entitlement process, to go back to that,  
 5 the staff -- the Planning Department is staff  
 6 to the council. We are the technical  
 7 expertise, so we draft a staff recommendation.  
 8 The council is ultimately the one that votes to  
 9 approve or deny entitlements of land use and  
 10 rezoning changes.

11 The next step is broken down into two  
 12 separate components. So, one, there's a  
 13 preliminary site plan review. And before  
 14 anyone goes through this, they have to get a  
 15 City development number to allow the City to  
 16 track development through the process, and it  
 17 connects all of their concurrency reviews, site  
 18 plan reviews and permitting.

19 The preliminary site plan review is  
 20 established in the Zoning Code and it is only  
 21 applicable to developments that exceed  
 22 40,000 square feet either individually or  
 23 cumulatively or multifamily that has more than  
 24 one structure on a property.

25 Those developments go through a review.

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1 They're routed throughout the City to various  
2 entities. We check them for zoning, for  
3 consistency with the Comprehensive Plan, goals,  
4 objectives and policies. If there's a historic  
5 component, we review the historic nature of the  
6 property and the proposal. Public Works looks  
7 at the proposed project. The Transportation  
8 Planning Division looks at it and evaluates  
9 both vehicle transportation, but also bike and  
10 pedestrian transportation aspects, and then the  
11 landscape review.

12 Now, all of those preliminary site plan  
13 reviews then feed into the ten-set or the civil  
14 review. However, the ten-set or civil review  
15 will take other projects into consideration  
16 that don't fall within the preliminary site  
17 plan review criteria.

18 The ten-set or civil review is established  
19 in the Land Development Procedures Manual. It  
20 is applicable to all new construction,  
21 substantial improvement, road construction,  
22 driveway construction in conjunction with new  
23 building construction. It does include all  
24 projects, again, processed through the  
25 preliminary site plan review.

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1 The ten-set review -- the submittals of  
2 the ten-set review are routed to Zoning for  
3 drainage review, landscape, traffic,  
4 transportation, bike and pedestrian,  
5 addressing, and the floodplain administrator.  
6 And this preliminary review takes about 28 days  
7 and then there are subsequent review time  
8 frames. The big component of this is that the  
9 ten-set review is currently good for five years  
10 from the date of approval.

11 And then you move on to the actual  
12 building permits. All construction, other than  
13 some minor things, requires a permit. And  
14 those permits are good for 180 days from  
15 issuance. And inspections are performed on  
16 those building permits before a Certificate of  
17 Occupancy is issued.

18 Now, the various roles and  
19 responsibilities in drainage and design and  
20 permitting -- again, I have Mike Sands here if  
21 you have any technical questions. This is very  
22 high level, but he can get into the  
23 methodologies and more of the engineering  
24 components of it.

25 But for the engineering professional, they  
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1 are required to certify that all contributing  
2 areas and on-site water movement is accounted  
3 for; that the on-site collection system is  
4 designed for proper flows; the stormwater ponds  
5 are designed based on the storm event  
6 identified in the Land Development Procedures  
7 Manual; that all conveyance methods, such as  
8 pipes and ditches, elevations, calculations for  
9 flow characteristics are accounted for and  
10 documented in the plans; and they are also  
11 responsible for obtaining all their permits  
12 from the City and the Water Management  
13 District.

14 Now, on the City's side, the Development  
15 Services Division, Mike Sands' group, is  
16 responsible for verifying the analysis and  
17 engineering in the design plans. They are  
18 confirming application of acceptable  
19 methodologies. They walk the final inspection,  
20 unless a private inspector is used, and that is  
21 authorized through the Florida Statutes. They  
22 evaluate the drainage capacity per the Level of  
23 Service Standards to protect the function of  
24 existing drainage systems so as not to  
25 compromise the system. If level of service

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1 fails, then development plans are also required  
2 to address the downstream impact. Overall, the  
3 engineer professional's goal is to ensure that  
4 the engineering solutions protect adjacent land  
5 from harm.

6 So the drainage plan, based on all those  
7 criteria, are required to identify contributing  
8 areas of on-site and off-site water movement.  
9 They are supposed to ID elevations and slope of  
10 both the subject and surrounding property.  
11 They include soil investigations to determine  
12 seasonal high water lines.

13 They depict existing and proposed  
14 stormwater systems and address treatment,  
15 volumes, and compliance with the Water  
16 Management District and the Master Stormwater  
17 Management Plan.

18 They confirm the pre- and post-discharge  
19 analysis to ensure that pre- and post-discharge  
20 locations and amounts equal pre-site alteration  
21 and compliance with restricted basin  
22 requirements.

23 And they identify that all engineering  
24 solutions, such as fill, grading, ditches,  
25 stormwater connection, and ponds are sufficient  
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1 to address the needs. They also address  
2 erosional control plans to protect water  
3 quality, wetlands, and tributaries.  
4 Development of flood zones are also  
5 required to ensure that no blockage occurs in  
6 the floodplain and that fill within the flood  
7 zones must be fully compensated on a one-to-one  
8 basis or they must make downstream or upstream  
9 improvements to accommodate.

10 That is an overview of the development  
11 process, the high-level concepts and the things  
12 that have to be addressed and considered.

13 Mike Sands can walk you through a couple of  
14 examples and then, again, answer any detailed  
15 methodology or engineering solution questions  
16 you may have.

17 MR. SANDS: All right. We've got a couple  
18 of examples here showing the flood zones in  
19 this area. We've got a development going in.  
20 So let's take a look at what we did.

21 That's a different one. You see the  
22 impact. Anyway, on this particular one they  
23 actually dug a rather large pond, and we  
24 allowed -- we will allow, in certain cases,  
25 floodplain compensation in ponds, if you can

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1 demonstrate that when you have a hundred-year  
2 event the stormwater can still get back in the  
3 pond and you have capacity to handle that flow.  
4 So that's one of the things that happened on  
5 this one.

6 I think I got this right now.

7 You can see that right here. So that's an  
8 impact area. Any development in that area  
9 would require floodplain compensation. I think  
10 this kind of answers your question. If you  
11 fill in a flood zone, you've got to compensate  
12 in that same basin, adjacent to your fill,  
13 one-to-one or cup-for-cup is what we call it.  
14 It's pretty simple. It's a simple calculation.  
15 You took out so many cubic yards of dirt to  
16 compensate for the dirt that you've added. So  
17 it's pretty straightforward.

18 This particular one, this is in a  
19 restricted basin. You can see the lines, and  
20 they're on our website. This is what's called  
21 one of our challenge basins. And this happens  
22 to be at Little Pottsburg, which is limited on  
23 the amount of discharge per the site. And it's  
24 only a half a cubic foot per second discharge  
25 allowed. But what's really bad about it is

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1 we -- we won't give you any credit for any  
2 current pervious material on this site. So  
3 it's as if it's a virgin site, as if nothing  
4 has ever been done to it. So it's full  
5 discharge, what I call super-volumetric. It's  
6 really restrictive. In some cases it could  
7 even kill a project. The pond size gets way  
8 out of hand for a restricted basin.

9 And we have, I believe, 10 restricted  
10 basins identified. They were all identified  
11 using the MSMP. And the challenges that were  
12 created over the years, before we started doing  
13 this stuff, before we really started looking at  
14 drainage 25 years ago, where -- you'll see a  
15 lot of developments, say, in Arlington and the  
16 Southside. You ride by them, so where's the  
17 stormwater pond at? There is none. They  
18 weren't required to have them, permit them.  
19 They were just built. So, therefore, our  
20 challenge basins come into play.

21 And that's about it. I -- did I answer  
22 your question that you asked?

23 W/G MEMBER LORETTA: So my related  
24 question to that is, the FEMA maps are just --  
25 let's say that it's a boundary, it's a line,

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1 and it says 86, which basically means Contour  
2 Elevation 6. So really, though, it all relates  
3 to what your survey says. So it's not the  
4 boundary map on FEMA, it's actually the  
5 legitimate -- what the survey says Elevation 6  
6 is. That's what I'm trying to confirm.

7 MR. SANDS: Yes. Your survey data is more  
8 accurate than the LIDAR data that was used to  
9 formulate the map to start with. For sure,  
10 anything you do on the ground. Now, if you've  
11 got AE-6, then that means that's an established  
12 flood zone, and it was modeled -- it was  
13 surveyed, applied to the model, so those  
14 established flood zones are fairly accurate.  
15 And we proved it during the storms. I mean,  
16 they're very, very accurate.

17 Now, when you have an A or an AO zone, the  
18 lines could move. They could move quite a bit.  
19 So that's the reason, if you decided to develop  
20 in an A zone, we ask you to get your engineer  
21 to model it. They actually have to go in and  
22 do the survey, plug all that into the SWMM  
23 model. We come up with fixed base flood  
24 elevations.

25 And if you're in the -- in the MSMP Duane

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1 was talking about, looking at that, you'll see  
2 various points, those are called "nodes."  
3 They're points in time during an event that's  
4 depicted on the -- in that particular node, and  
5 it can tell you what the elevation is during  
6 each event at that point in time, that  
7 particular point.

8 And we didn't have this kind of  
9 information prior to 1992. When we actually  
10 did the technical part with FEMA, they gave us  
11 a grant to fly the LIDAR, which is a  
12 computer-enhanced topo that's done from -- I  
13 guess they shoot radar, and you have to plug  
14 all that into the computer to take out the tree  
15 canopy and the building and all that stuff.  
16 It's very, very accurate. We got it down to  
17 one foot.

18 So anytime you do a field survey, it's  
19 much more accurate. And you apply that, but  
20 you still use the same base flood elevation, so  
21 the line may move a little bit, not much.

22 THE CHAIRWOMAN: A couple of quick  
23 questions. So you talked about, the City  
24 has -- everybody has zones AE, AO, and a  
25 variety of other zones. How much of the City

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1 has been mapped? How much of it is -- do we  
2 have AE flood zone information on versus A and  
3 AO that we don't --

4 MR. SANDS: I'm kind of guessing at this.  
5 About 85 percent has been modeled. So, you  
6 know, there's still some isolated areas out  
7 there that have not been modeled.

8 MR. KILLINGSWORTH: But most of our A  
9 zones are AE now.

10 MR. SANDS: There's still a bunch of them  
11 out there that are As and AOs. AO is an  
12 isolated basin. It's just perched water. It's  
13 a cypress pond. A lot of isolated -- and  
14 there's special things that you have to do to  
15 build in an AO or an A zone. It depends on  
16 whether you're AO-2 or AO-3. That's --  
17 meaning, you have to actually build at least  
18 3 feet above the existing ground to make sure  
19 you don't have a flooding event.

20 But, once again, if you build in that  
21 flood zone, you've still got to compensate.  
22 How do you compensate in an unknown zone?  
23 There's ways to do it. I mean, you have to  
24 identify, you know, something that's at least  
25 3 feet higher than the point that you're

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1 building and scrape it down.

2 THE CHAIRWOMAN: That was my next  
3 question, was, you talked about compensation.  
4 What does that mean? How do you --

5 MR. SANDS: Well --

6 THE CHAIRWOMAN: If I'm building -- the  
7 first site that you showed on there, because  
8 I'm very familiar with it, has wetlands, has  
9 flood zone areas in it. So if somebody were to  
10 develop in the flood zone area, how do they  
11 compensate?

12 MR. SANDS: That's a slippery slope  
13 because you really have to deal with the  
14 wetlands through the Water Management District  
15 and you have to deal with us in the flood  
16 zones. So to marry those two together and make  
17 sure one thing doesn't violate another is  
18 pretty complicated.

19 THE CHAIRWOMAN: But what does the  
20 mitigation -- if I'm building a house --  
21 building a building on that site, and I'm going  
22 to encroach on property that is in the flood  
23 zone, what does mitigation mean? When you talk  
24 about mitigating one for one --

25 MR. SANDS: Cup for cup. What does that  
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1 mean? How do you determine -- the first thing  
2 you've got to determine is the seasonal high  
3 water level because you can't -- if you do a  
4 scrape-down area, you can only scrape down in  
5 that area above the seasonal high water level.  
6 It's not going to do any good to get down into  
7 the ground water because water can't go where  
8 water is. And that's basically what you're  
9 looking for.

10 THE CHAIRWOMAN: So you're just scraping  
11 down property that's at a higher elevation?

12 MR. SANDS: Above that base flood  
13 elevation, determined by a survey. But now it  
14 has to be connected to the same basin.

15 It's almost like a bowl. If you put  
16 something in it, water has to go somewhere.  
17 All you're doing is keeping it equal; filling  
18 in it and taking it away. Where that water  
19 used to go over here (indicating), now can go  
20 here. It's a trade-off.

21 THE CHAIRWOMAN: Okay.

22 W/G MEMBER MARTIN: What do you do with  
23 that soil that you're taking away?

24 MR. SANDS: Use it in your footer. You  
25 may do a scrape-down area over here for

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1 floodplain compensation. Use that fill to --  
2 for the piece you're going to fill. A lot of  
3 people do, if it's not unsuitable.  
4 THE CHAIRWOMAN: Yes.  
5 W/G MEMBER CHATTERJEE: I just have a  
6 basic question. So let's say you have this  
7 project, you build a property, and now  
8 everything that you're doing you're doing on  
9 prediction, expectation, but when you face the  
10 situation it's different than was predicted,  
11 what regulation do you have to prevent those  
12 situations?  
13 MR. SANDS: I'm not --  
14 W/G MEMBER CHATTERJEE: So let me just  
15 state, so you're doing all these inspections  
16 that you showed and -- based on that, the  
17 permit that is being given, the building is  
18 designed, and everybody comes -- starts, and  
19 now the problem started happening because  
20 everything that we have done before was  
21 prediction. No one actually experienced it.  
22 But if that is what is happening, then what's  
23 the next step? Do you let it stay like that?  
24 MR. SANDS: Say if we're moving along in a  
25 project, we've done some inspections, we find  
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1 problems. The engineer of record and the  
2 developer is responsible. We hold a bond on  
3 that development to make sure it gets completed  
4 to our satisfaction before we accept it, the  
5 maintenance and operation.  
6 So our inspectors would go out, do a final  
7 inspection, fail it, give the contractor and  
8 the developer a punch list on things they have  
9 to do to make it right. And we won't accept it  
10 until that's done.  
11 W/G MEMBER CHATTERJEE: So after you do  
12 that, after that, it starts -- like, people are  
13 occupying those places after the things are  
14 being done. If the problem starts after  
15 that --  
16 MR. SANDS: We have a warranty period.  
17 W/G MEMBER CHATTERJEE: How long?  
18 MR. SANDS: Right now it's currently a  
19 year.  
20 W/G MEMBER CHATTERJEE: A year?  
21 MR. SANDS: Uh-huh.  
22 MR. KILLINGSWORTH: Yeah. What we have is  
23 design standards for particular size events.  
24 And if you have an event that exceeds that  
25 size, then the system is not designed for it.  
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1 MR. SANDS: Yes, sir.  
2 W/G MEMBER LORETTA: So Kristen said --  
3 what is the stormwater event that we're  
4 required? I believe it's 25 years, but --  
5 MR. KILLINGSWORTH: For the ponds.  
6 MR. SANDS: For the ponds.  
7 W/G MEMBER LORETTA: Yeah. So that was  
8 the question I was asking to the other  
9 gentleman. So as a part of what we're all  
10 doing here, one of the things that I always  
11 think is a big impact to lower level areas or  
12 the development in upper level areas that meet  
13 the 25-year storm event -- and then over time  
14 more impervious occurs, and so they may be no  
15 longer meeting the 25-year storm event, but  
16 regardless, we now get the 50- or 100-year  
17 event, and so all that water is trickling down  
18 to the lower levels.  
19 So one of the things I think maybe we  
20 should think about recommending is -- if we're  
21 going to have two areas, an adaptive action  
22 area and then a nonadaptive action area, maybe  
23 we can create incentives in the nonadaptive  
24 area to -- if they were to now meet the  
25 100-year storm event versus the 25-year storm  
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1 event, they could get an additional density  
2 bonus because I think that's kind of a big  
3 aspect of why we're supposed to be here.  
4 MR. SANDS: Let me share my thought with  
5 you on that. We have a pond that's designed  
6 for a 25-year storm, and also it has one-foot  
7 freeboarding. Add that up. Then you have a  
8 collection system that's designed for a 5-year  
9 storm. All the pipes, all throughout, and all  
10 the inlets, and then you have roadway sections  
11 throughout. You get a big rain event. It's my  
12 feeling that with that freeboard and that pond  
13 and being able to store it in a collection  
14 system when it all starts coming up and  
15 actually overflowing out of the inlets,  
16 over-topping the road to the crown of the road,  
17 if you add all those numbers up, our current  
18 subdivisions are probably capable of somewhere  
19 around the 40-year event.  
20 When you see anything -- when you go home  
21 and you're going down your subdivision street  
22 and it's been designed in the last 20 years,  
23 and you've got standing water in the roadway  
24 and the inlets are full, you've got a pretty  
25 good rain event. And those roads and gutters  
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1 are designed to hold that water and maintain it  
2 without flooding your house.

3 MR. KILLINGSWORTH: But I think Joe's  
4 point -- all of those design standards are  
5 based off what a historic 25-year event is. If  
6 the curb has moved, which I think there's some  
7 evidence that the curb has moved, then the  
8 25-year event is bigger than what it used to  
9 be, or more -- I guess it's not bigger, it's  
10 more frequent and perhaps bigger.

11 THE CHAIRWOMAN: Jeff.

12 W/G MEMBER MARTIN: What about the  
13 property that is older than 20 years,  
14 Riverside, San Marco, it doesn't have the  
15 drainage capability to remove that?

16 MR. SANDS: We have to put in pumps. We  
17 have to do other special things to make that  
18 older system function. That's what happens.

19 THE CHAIRWOMAN: Shannon.

20 W/G MEMBER BLANKINSHIP: I'm curious, if a  
21 developer were to come in and want to use --  
22 maybe retain trees on site and possibly use  
23 green roofs or other ways to handle stormwater,  
24 I'm assuming he can reduce the size of his  
25 pond, but are there any other incentives

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1 through this process for him to do any of those  
2 things?

3 Could he still get through the 28-day  
4 permit process that you guys have or, you know,  
5 what kind of mechanisms would you ever have to  
6 maybe encourage him to want to utilize some of  
7 those other techniques versus just expanding  
8 pond size?

9 MR. SANDS: I think that's some of the  
10 things the resiliency group is actually talking  
11 about, how do we make things better in the  
12 future moving forward.

13 We're pretty rigid on the -- how we do the  
14 process. The Land Development Procedures  
15 Manual is very specific about all the formulas  
16 that are used, the design methodology that's  
17 used, and we stick with that. And very seldom  
18 will we vary from it.

19 If we do have to -- if we do have a  
20 situation where some engineer asks for us to  
21 vary from that book, it actually has to go back  
22 to the SSPAC for that variance. It's pretty  
23 rigid.

24 Now, with that being said, we did work on,  
25 four years ago, a process called "low-impact

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1 development," and you might want to look  
2 through that. I got the opportunity to go over  
3 to Gainesville to the University of Florida and  
4 visit their facility, demonstrating some of the  
5 unique ponds and treatments that they were  
6 doing to eliminate the issue with the river.  
7 And, you know, it was pretty cool. With the  
8 low-impact development, basically you use a lot  
9 of different materials and you don't have curb  
10 and gutters, the ponds are limited to dry ponds  
11 in most cases. So it's a -- it's pretty  
12 unique. You should get a copy of that and read  
13 it.

14 W/G MEMBER BLANKINSHIP: And this is --  
15 MR. KILLINGSWORTH: That was never  
16 incorporated into our Land Development  
17 Procedures Manual.

18 W/G MEMBER BLANKINSHIP: This is just a  
19 comment of things I've heard from -- through  
20 some of these different task forces and things  
21 that are going on, is that in the permitting  
22 process often -- maybe this isn't so much with  
23 developers, but people will buy land with some  
24 anticipated future use and never understand all  
25 of the different things that they may need to

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1 go through in order to -- if they want to  
2 develop it the way they want to develop it.

3 And so one of the suggestions that I plan  
4 to put forward is some kind of just very  
5 initial -- there's been no land clearing, you  
6 know, there's been no, maybe even purchase or  
7 sale of the land, but an understanding of some  
8 of the permits that they will need to go  
9 through, sort of a -- all of the different  
10 entities that will have to go into that  
11 permitting process, but really understanding  
12 too the insurance implications, long-term, that  
13 also came up. And then, you know, if you can't  
14 develop in wetlands or the restrictions on  
15 developing in wetlands and in floodplains  
16 before getting to the point where, you know,  
17 we're inhibiting their -- the use of their land  
18 that they purchased and bought, things like  
19 that.

20 MR. SANDS: One of the most heartbreaking  
21 things I have to deal with in my job is have  
22 someone walk in the door down there and say, "I  
23 have this piece of property that I want to bust  
24 up." What are you going to do with that? You  
25 know they don't have any knowledge of any of

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1 the permitting requirements, they don't have  
2 any knowledge about any of the engineering, you  
3 know, water, sewer, electric, all the pieces,  
4 flood zones. It's just -- you know, the only  
5 thing you can do is say, "You need to go hire a  
6 professional," or we'll try to sit down and  
7 kind of walk them through the things that  
8 you're going to need to do, but it's so time  
9 consuming. We get a lot of those. It is  
10 heartbreaking, though, to have a couple come  
11 in, they've had this property in the family for  
12 years and now all of a sudden they want to  
13 subdivide it.

14 Yes, sir.

15 THE CHAIRWOMAN: Jeff.

16 W/G MEMBER MARTIN: No, I didn't have  
17 anything. Sorry.

18 THE CHAIRWOMAN: I get calls regularly  
19 from people who have -- and they're usually  
20 individuals, not developers, who have purchased  
21 property and then do their due diligence. I  
22 got one yesterday.

23 MR. SANDS: I just recently had a call, a  
24 guy bought 14 lots, and this was  
25 predeveloped -- or not developed, unopened,  
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1 unimproved right-of-way. The road was never  
2 built. This was part of the west side -- that  
3 whole area was platted and none of the roads  
4 were built. That's the reason we require bonds  
5 today. You can't plat unless you've got a bond  
6 on file for the improvements. Anyway, he calls  
7 me up and said, "I bought these 14 lots. I'm  
8 ready for the City to come build my road."  
9 Well, that didn't work out real well. It's  
10 just -- it's sad. And folks don't know how to  
11 do the due diligence part on what you've got to  
12 do to develop the piece of property.

13 A couple of other quick items. In my  
14 division, we just recently created a Drainage  
15 Review section. And it's drainage review and  
16 inspection. I got an engineer and four  
17 inspectors that handle nothing but infill lots.  
18 An infill lot is a lot that never got built on,  
19 possibly one homeowner built his home and he  
20 bought the lot next door and he's getting ready  
21 to retire and he's decided to sell that lot.  
22 So that's an infill lot.

23 We found those particularly challenging  
24 because usually the infill lots are the last  
25 ones to be built on for a reason. They've got  
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1 an issue. You go and bring fill in there and  
2 then you've got to figure out how to get the  
3 drainage squared away. So we've actually got a  
4 section in my Development Services Division  
5 that takes care of that. We do the plan  
6 review, we do the inspection. I actually  
7 stopped by one on the way home last night to  
8 take a look at it, look at the drainage.  
9 Drainage is a big issue.

10 THE CHAIRWOMAN: One of the things that  
11 Kristen said is when a project goes through  
12 concurrency review that your office evaluates  
13 level of service for existing drainage systems.  
14 How often -- I don't think I've ever seen in a  
15 concurrency response that we've gotten back  
16 that says the drainage isn't sufficient. How  
17 often does that happen in a project, that you  
18 get a concurrency application that you kick  
19 back because there's not sufficient drainage in  
20 the area?

21 MR. SANDS: We haven't. We may note  
22 issues in the area, but that's all.

23 THE CHAIRWOMAN: Okay.  
24 Erik.

25 W/G MEMBER OLSEN: A couple of questions  
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1 for you, Mike. I'm going to drag you back to  
2 the river. How do all these standards apply,  
3 let's say to the redevelopment downtown,  
4 particularly along the riverfront?

5 MR. SANDS: Downtown is a special  
6 challenge. We have established drainage  
7 credits downtown with some of the outlying  
8 ponds that have been built and some of the  
9 improvements that have been made. Those  
10 credits have been banked. And in cooperation  
11 with the Water Management District -- the  
12 Downtown Investment Authority has control of  
13 those credits. If you want to develop  
14 downtown, you've got to go negotiate with them  
15 on how much of a credit it's going to cost you.  
16 And those monies are applied back to doing  
17 other projects in the drainage systems.  
18 McCoy's Creek is one of our big initiatives.  
19 Moving some of those restrictions of the box  
20 culvert that contains part of McCoy's Creek  
21 before they're discharged to the river and  
22 actually turning that thing back into a really  
23 beautiful waterway. So that's a good one.

24 W/G MEMBER OLSEN: I guess to be clear,  
25 when you talk about the 25-year storm, you're  
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1 talking only about the rainfall event, correct?  
2 MR. SANDS: Rainfall event and a time  
3 span.  
4 W/G MEMBER OLSEN: Okay. So if you're in  
5 a tidal condition, let's say you're  
6 redeveloping downtown, you only have to look at  
7 the rainfall, you don't have to look at the  
8 tidal level associated with another 25-year  
9 event?  
10 MR. SANDS: Right.  
11 W/G MEMBER OLSEN: Let's say your 25-year  
12 event is a tropical storm, for example.  
13 MR. SANDS: Right. Strictly rainfall.  
14 W/G MEMBER OLSEN: That seems to be a  
15 shortfall because your detention system, be it  
16 a pond or be it a vault, may not function under  
17 that 25-year scenario. It seems to be that if  
18 you're -- it would appear to be that if you're  
19 in a tidal situation, there ought to be some  
20 nexus between the two that you have to  
21 consider. You have to consider what your  
22 receiving body -- the capacity of your  
23 receiving body at that time.  
24 MR. SANDS: Right. There are so limited  
25 number of those, I guess, properties available  
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1 for us to --  
2 W/G MEMBER OLSEN: I can tell you Lot J,  
3 I'd say Healthy Town, I'd say Berkman Plaza. I  
4 mean, all of your proposed big bucks  
5 development coming up is all in that scenario.  
6 MR. SANDS: Well, those projects are a bit  
7 unique. They're going to have to work with  
8 DIA. They're in the Downtown Overlay, so they  
9 are going to have to work with DIA on those  
10 credits, each one of them.  
11 W/G MEMBER OLSEN: Well, credit is one  
12 thing, but, I mean, functionality is another.  
13 I mean, if you're --  
14 MR. SANDS: More than likely you won't see  
15 any vaulting on any of those.  
16 W/G MEMBER OLSEN: I would think you'd  
17 have to on Healthy Town. I mean, they're  
18 not -- they're going to put a pond on that?  
19 MR. SANDS: Well, you do have to do some  
20 undeveloping because there is a water quality  
21 aspect, so the District has to be satisfied on  
22 that, but it's not full attenuation like we  
23 require.  
24 W/G MEMBER OLSEN: But it's a completely  
25 impervious surface right now.  
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1 MR. SANDS: That's right.  
2 W/G MEMBER OLSEN: So you would think that  
3 the design challenge there is pretty big as far  
4 as handling the water.  
5 MR. SANDS: Right. It's going to be  
6 interesting, that whole --  
7 W/G MEMBER OLSEN: And I guess the other  
8 side of that, which I know you can't answer, is  
9 that, as I understand it, they don't understand  
10 what's going to be on that site, so it's --  
11 it's going to be phased development.  
12 MR. SANDS: Five phases.  
13 W/G MEMBER OLSEN: Yeah. I'm really  
14 curious how you would handle a phased  
15 development of that magnitude and address the  
16 water quality and the runoff criteria.  
17 MR. SANDS: I can tell you this much about  
18 the project, because it is not public knowledge  
19 yet, they've got to get a master parking lot  
20 built where they can do a land swap with the  
21 school board as part of the first phase, and  
22 then they move on into the other pieces of it.  
23 It's quite a -- I've seen the plans. It's  
24 going to be quite a unique development.  
25 W/G MEMBER OLSEN: Yeah, I would think so.  
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1 You talked about modeling. You don't  
2 model the river, do you?  
3 MR. SANDS: No.  
4 W/G MEMBER OLSEN: Okay.  
5 MR. SANDS: No. There's some tidal  
6 influence shown in it, but --  
7 W/G MEMBER OLSEN: So you're talking about  
8 the creeks and --  
9 MR. SANDS: Right.  
10 W/G MEMBER OLSEN: Okay.  
11 MR. SANDS: Modeling is done on the  
12 isolated basins and some of the creek basins.  
13 W/G MEMBER OLSEN: Okay.  
14 THE CHAIRWOMAN: Any additional questions?  
15 W/G MEMBERS: (No response.)  
16 THE CHAIRWOMAN: Thank you, Mike and  
17 Kristen. Appreciate it.  
18 MR. SANDS: Thank you.  
19 THE CHAIRWOMAN: All right. Next, we move  
20 on to staff deliverables, which I think should  
21 be in our handout.  
22 Susan.  
23 MS. KELLY: Is there anything that you  
24 guys would like -- based on the presentation  
25 you just saw, any questions you have? Is there  
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1 anything you would like staff to get back to  
 2 you on specifically for that? Obviously, we  
 3 have some of the other --  
 4 THE CHAIRWOMAN: Any information that  
 5 anybody wants at the next meeting?  
 6 Shannon.  
 7 W/G MEMBER BLANKINSHIP: I'm curious where  
 8 we are with the mapping question because I  
 9 thought that last we spoke we saw -- it was  
 10 just that downtown view. Is that coming up or  
 11 can I -- should I ask more questions about  
 12 that?  
 13 THE CHAIRWOMAN: That's in our next --  
 14 we're coming up to that right now.  
 15 W/G MEMBER BLANKINSHIP: Okay. The only  
 16 other thing -- a lot of these presentations  
 17 from the folks that have come in, there's just  
 18 so much reliance on the pond. And then we're  
 19 hearing about all the issues with -- I mean,  
 20 literally, you know, sometimes no ongoing  
 21 maintenance of ponds.  
 22 It's just -- I know it's like a much  
 23 bigger issue and sort of ongoing, but is there  
 24 any more information on sort of, you know, how  
 25 to sort of figure out what can be done with  
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1 ponds maybe 30 years from now, whether they're  
 2 still able to receive the capacity that was  
 3 modeled originally or just -- it just seems  
 4 like we're just saying everything is good  
 5 because we've got it all going in the pond and  
 6 the pond can handle it and so we're fine, but  
 7 then we also hear, "No one in our HOA is doing  
 8 anything about these ponds," or, "We fired our  
 9 pond guy," you know, or, "My pond is this giant  
 10 green goo thing." What do we do about that?  
 11 And everyone's like, "Well, that's not us,  
 12 that's not them, that's not them."  
 13 So I guess I'm just curious if there's  
 14 more information that you guys have about these  
 15 pond issues, if we're going to continue relying  
 16 100 percent on ponds to solve all the problems.  
 17 MR. KILLINGSWORTH: So the short answer is  
 18 the ponds aren't permitted through the City.  
 19 The State agencies are aware of the issue. We  
 20 had a meeting with them last week, the week  
 21 before. I was in a meeting with DEP and the  
 22 Water Management District. And it's a known  
 23 problem, but it's also a resource problem. So,  
 24 I mean, like many things, it's complaint  
 25 driven. So if somebody is complaining --  
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1 Technically, I think the ponds are  
 2 supposed to be recertified every two years  
 3 under State law and the permitting agency is  
 4 the one who is responsible for ensuring that  
 5 that happens. I think the reality is very few  
 6 ponds are recertified every two years. And the  
 7 State agencies don't have the resources to  
 8 ensure that that happens.  
 9 W/G MEMBER BLANKINSHIP: Sure.  
 10 W/G MEMBER LORETTA: That being said,  
 11 though, on a project I worked on, a post office  
 12 up in Nassau County, the redevelopment of the  
 13 parking lot, DOT was taking the land.  
 14 Basically, the 30-year pond was overgrown,  
 15 almost turned into a wetland, and so they had  
 16 to go in to redevelop the parking lot. They  
 17 were required to go in and clean out and redo  
 18 the pond. So it -- to the slightest minimum,  
 19 the Water Management District is at least  
 20 requiring people, when they do redevelopment,  
 21 to do the best that they can to bring it back  
 22 up to the original design.  
 23 THE CHAIRWOMAN: Susan.  
 24 MS. KELLY: Through the Chair, I have sort  
 25 of a gap in my notes, so I just wanted to ask  
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1 Mike, if I could. If somebody wanted to  
 2 implement into their project something from the  
 3 LID manual, would that go through a variance of  
 4 the SSPAC?  
 5 MR. SANDS: Yes.  
 6 MS. KELLY: So that's how you would do it?  
 7 MR. SANDS: (Nods head.)  
 8 MS. KELLY: Okay. I just wanted to kind  
 9 of confirm that for my notes.  
 10 MR. SANDS: Ponds, while we're here,  
 11 redevelopment -- any redevelopment we have, if  
 12 there's an existing pond master plan associated  
 13 with that development, say a shopping center  
 14 that's closed, been closed for a year or two,  
 15 now they want to redevelop, we ask for a  
 16 recertification of the pond from the engineer.  
 17 First thing we ask, you've got to recertify the  
 18 pond. That happens.  
 19 In the platting process on a brand-new  
 20 subdivision, the other thing we do is -- we  
 21 started doing this about two years ago. In the  
 22 adoption and dedication language, it  
 23 specifically says in that language, if the  
 24 homeowners association doesn't maintain the  
 25 pond, then all of the property owners within  
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1 the subdivision, Lots 1 through whatever, are  
2 responsible for the maintenance of the pond.

3 In the past, it used to only say -- when  
4 the District would go out and cite somebody for  
5 a pond, they could only cite the abutting  
6 property owners. That's why I would never buy  
7 a lot on a pond. If everybody else is not  
8 going to pay for it, then I've got to do it?

9 Well, we actually had one lady, one little  
10 lady, the whole pond for the whole  
11 subdivision -- it was a 30-lot subdivision --  
12 was on her property, in entirety. It had an  
13 easement around it. She was responsible. The  
14 rest of the property owners said, "Nope, we're  
15 not paying." And the pond failed. They had  
16 trouble with the control structure, the orifice  
17 was bad, they had all kinds of issues. She had  
18 to fix it. So we stopped that.

19 MR. KILLINGSWORTH: So it's a known  
20 problem. The earlier ponds were exfiltration  
21 ponds?

22 MR. SANDS: Yeah.

23 MR. KILLINGSWORTH: So basically, part of  
24 the volume of the pond calculates how much is  
25 designed to leak out the sides because the --

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1 like a French drain, essentially. But that  
2 material, over time, clogs up, so that volume  
3 is gone, let alone any sedimentation that may  
4 have occurred over time. It's a known problem.  
5 There's challenges. It's a resource challenge.

6 THE CHAIRWOMAN: So I suppose we, as a  
7 group, could certainly make a recommendation,  
8 something to the effect that the City continue  
9 working with State agencies on older ponds and  
10 maintenance of ponds. I don't know that we  
11 would want to -- nor would, I think, the City  
12 be willing to take on the obligation to do that  
13 because it's not within their purview and they  
14 don't have the staff and money to do it, but  
15 certainly we could make a recommendation.

16 MR. SANDS: It's a huge challenge, old  
17 ponds that aren't maintained. Just notice the  
18 next time you ride by some of them, look at  
19 them. It's pretty obvious.

20 W/G MEMBER BLANKINSHIP: And I think to  
21 that, though, a -- probably a stronger  
22 recommendation would be ways to reduce the need  
23 for the ponds. I mean, if the ponds are  
24 failing and there's no one that's going to take  
25 that on, then thinking about ways to reduce

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1 reliance on ponds in some of these new  
2 developments would be key. So retaining trees  
3 on site, requiring some of those green roofs,  
4 some of the vaulting that Erik mentioned in  
5 places that are largely impervious, and a lot  
6 of those low-impact design elements that  
7 incorporate, you know, parking design features.  
8 Impervious pavers would allow almost, you know,  
9 100 percent of, you know, a pervious site in  
10 what currently becomes what you're -- whatever  
11 you're talking about, 75, 85 percent  
12 impervious, and then the need to construct  
13 those ponds that are just sort of a ticking  
14 time bomb for either failing or needing  
15 expensive fixes that no one will fix.

16 W/G MEMBER LORETTA: But to that, every  
17 aspect of LID has opportunities of failure.  
18 So, you know, I don't see how the City would  
19 ever force people into situations that would be  
20 away from ponds because if you're putting the  
21 burden on residential houses and have, you  
22 know, green roofs, well, that -- we can't do  
23 that. I mean, ditches within parking lots that  
24 are LID ditches, they're, you know, bioswales.

25 Within five years can be silted out and no  
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1 longer function.

2 And so, you know, in the end, it's just  
3 all -- it's all maintenance and it's -- you  
4 know, it's exactly what Bill said. So we just  
5 need to make sure -- you know, hopefully the  
6 property owners and developers and -- are being  
7 good stewards of the land. But, I mean, I  
8 think we can encourage LID development, but  
9 really even half of the stuff right now the  
10 Water Management District doesn't even accept,  
11 and so it still puts you back into -- because  
12 it's much more simple to prove pre versus post  
13 in a pond than it is through 12 different ditch  
14 networks, this, that, and the other, and green  
15 roofs and all sorts of stuff.

16 THE CHAIRWOMAN: Is the City considering  
17 adopting the LID as an alternative standard so  
18 you wouldn't have to go through and get waivers  
19 to use it?

20 MR. SANDS: There was a big push on this  
21 four years ago, Bill? About four years ago.

22 MR. KILLINGSWORTH: Yeah, just as I left.

23 MR. SANDS: And it just kind of stopped.  
24 It got to a point, we were pretty well along  
25 with it. And I think to that point, you've got

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1 to have buy-in from every property owner that  
2 lives in a green neighborhood. They've got to  
3 all understand why you have a swale out in  
4 front of your house rather than -- you know,  
5 why is that there? Why do I have a pervious  
6 paver requirement? I want concrete because I  
7 like to roller skate.

8 MR. KILLINGSWORTH: And there's two  
9 aspects to the stormwater. One is controlling  
10 and holding the volume and then letting it  
11 dissipate out at a rate that's manageable. The  
12 other is treating the water.

13 So, I mean, I think to Joe's point, part  
14 of it is you've got to get the agencies that  
15 are responsible for ensuring that development  
16 meets the water quality standards accepting  
17 other practices.

18 THE CHAIRWOMAN: Erik.

19 W/G MEMBER OLSEN: On new developments,  
20 could not the City require a bond or a letter  
21 of credit that gets passed down to the HOA from  
22 the developer that addresses pond maintenance?

23 MR. KILLINGSWORTH: Kealey.

24 Because they're not our ponds.

25 MS. WEST: The question came to me -- I  
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1 W/G MEMBER OLSEN: But it is a public  
2 interest impact if it fails to function, so it  
3 seems like the City would have some entree  
4 there.

5 MR. KILLINGSWORTH: I don't know. It's  
6 something we could look at.

7 THE CHAIRWOMAN: I would think it would be  
8 more coming from the Water Management District  
9 than the City. If somebody were to require a  
10 bond, it would probably be through the Water  
11 Management District since they're really the  
12 permitting agency for those ponds. The City is  
13 reviewing them, but the permit is really coming  
14 from the Water Management District.

15 MS. WEST: In limited instances the  
16 Water Management District will require funding  
17 of financial assurance for certain systems,  
18 such as the exfiltration systems or a vault  
19 system, because of their costly maintenance and  
20 upkeep and that an HOA would not have -- by the  
21 time the initial long-term maintenance would  
22 come into play, five years down the road, they  
23 wouldn't be adequately funded by their  
24 assessments, for their yearly assessments, so  
25 there wouldn't be enough money in their coffers

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1 formerly worked at the Water Management  
2 District.

3 The way the District works is that we do  
4 not -- they do not require bonding of the  
5 ponds. It's a turnover procedure. And so once  
6 the pond is certified and it's turned over from  
7 the developer to the HOA, the HOA has an  
8 affirmative obligation within its documents to  
9 collect assessments necessary to fund the  
10 operation and maintenance of the pond.

11 W/G MEMBER OLSEN: But couldn't the City  
12 require it outside of the Water Management  
13 District?

14 MS. WEST: I don't know if there's a  
15 preemption, but I don't know that that was  
16 something -- it would be a resource thing, and  
17 I'm not sure -- those bonds are specifically  
18 for construction implementation and not for  
19 operation and maintenance, and so it would be  
20 for a different methodology.

21 MR. KILLINGSWORTH: And then it would  
22 still be -- the HOA, even if they're going to  
23 hold a bond, they're going to have to have  
24 assessments because there's going to be an  
25 annual fee to keep that bond.

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1 to do those initial maintenance activities with  
2 a vault or an exfiltration system because of  
3 their high level of maintenance and the  
4 tendency for failure. And so, therefore, they  
5 do require the developers to put a financial  
6 assurance. In that instance, that is then  
7 turned over to the HOA, once established, but  
8 those are just, again, because of those --  
9 specifics of those types of systems.

10 Usually for the ponds, the developer keeps  
11 control -- they're required to keep control for  
12 its first two years, once certified, and then  
13 it gets transferred over. So by that time  
14 there's enough money in the coffers to do the  
15 routine maintenance. Generally, with pond  
16 maintenance it's not necessarily a funding  
17 issue.

18 THE CHAIRWOMAN: Jeff.

19 W/G MEMBER MARTIN: I assume when we talk  
20 about ponding, we're talking about  
21 (inaudible) --

22 (Simultaneous speaking.)

23 THE CHAIRWOMAN: Hold on. We're going  
24 to --

25 W/G MEMBER MARTIN: We're talking about

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1 rain events -- 25- to 50-year rain events,  
 2 removed from surges from the river, which is  
 3 really what I understand to be what we're  
 4 doing. So what does this have to do with the  
 5 surge of the river? These are rain events,  
 6 correct?  
 7 MR. KILLINGSWORTH: Yes.  
 8 THE CHAIRWOMAN: All right. Let's jump to  
 9 Old Business because we're running a little bit  
 10 behind. Mapping. So Shannon had asked the  
 11 questions about mapping. Where are we on the  
 12 mapping?  
 13 MS. KELLY: Through the Chair, we have --  
 14 we can zoom in on these. These are the flood  
 15 zones -- is this 2013?  
 16 MR. SCHOENIG: This is 2013.  
 17 MS. KELLY: So this is 2013 flood zones  
 18 for the entire city. Specifically, we had  
 19 looked at the downtown area just so you guys  
 20 could see -- I believe where we left off was  
 21 looking at the 500-year floodplain and sort of  
 22 how it -- how it maps out across the city. And  
 23 it should be the pink, unless I'm -- the pink  
 24 areas on the west side there you can see.  
 25 So, again, if I remember correctly, part  
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1 of the discussion was, well, those aren't near  
 2 the river, they're certainly not near the  
 3 coast, if we're going to sort of define an AAA  
 4 boundary or look at an expansion of the  
 5 boundary based on a 500-year flood zone, how --  
 6 what do we think about those sort of isolated  
 7 zones over there. I believe that's what we're  
 8 looking at.  
 9 THE CHAIRWOMAN: I'm going to defer to  
 10 Erik.  
 11 W/G MEMBER OLSEN: Well, that's 2013  
 12 mapping. We now have 2018 mapping.  
 13 MS. KELLY: Yes. We do address that.  
 14 So we have a 2018 map, right, Chris?  
 15 MR. SCHOENIG: Yes.  
 16 MS. KELLY: So we did the 2018 map. There  
 17 have been some technical shape file issues, so  
 18 they're considering these in progress, but  
 19 they -- we do have the 2018 maps. And I think  
 20 Mike knows a lot more about this, but the -- in  
 21 this round of maps they also took into account  
 22 storm surge, so there are some differences.  
 23 And I don't know if I'm the best one to address  
 24 some of those differences, but there are some  
 25 differences.  
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1 And, Chris, can you kind of zoom into the  
 2 downtown area? I think that's what we're most  
 3 familiar with at this point. I know working on  
 4 a laptop, it's not the easiest thing to do, but  
 5 if you can kind of zoom in and we'll see --  
 6 I believe like the 500-year became the  
 7 100-year in some parts, and then also the storm  
 8 surge left -- it did some different things. So  
 9 we can take a look at how this -- zoom in one  
 10 more time. You're in the right area, just one  
 11 more time. And the legend is the same for  
 12 this, right? This pink is the 500 --  
 13 MR. SCHOENIG: Yes.  
 14 MS. KELLY: All right. So here is what  
 15 we've got for 2018 (indicating).  
 16 THE CHAIRWOMAN: Shannon.  
 17 W/G MEMBER BLANKINSHIP: So the last we  
 18 saw of this, the points of flooding for  
 19 Hurricane Irma lined up almost exactly in the  
 20 downtown area for -- with the 500-year  
 21 floodplain, so it was -- I felt like the room  
 22 was pretty clear that 500 did accurately sort  
 23 of take into account Irma impacts, but the  
 24 question was about the beaches and whether the  
 25 beaches -- and maybe not just Irma, but also,  
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1 you know, we noted Matthew was more -- had more  
 2 of an impact out at the beaches, but I thought  
 3 the question was whether the 500-year at the  
 4 beaches was accurate for us to be looking at,  
 5 or as compared to the CHHA, which we have in  
 6 our binders right now. Is that how I'm  
 7 remembering how we last left off?  
 8 W/G MEMBER LORETTA: Yeah, you're correct.  
 9 And so what Ms. Kelly started with is the  
 10 500-year doesn't really make representation on  
 11 the west side, but maybe what we end up looking  
 12 at is, you know, the 500-year within a half a  
 13 mile of any major waterway. And that sets up  
 14 our AAA boundary.  
 15 But can you zoom in to the beaches?  
 16 Because that's -- you know, like let's say  
 17 San Pablo and Beach Boulevard.  
 18 MR. KILLINGSWORTH: Just recognize that  
 19 the City doesn't have jurisdiction over the  
 20 beaches.  
 21 W/G MEMBER LORETTA: Well, you have --  
 22 over San Pablo you do.  
 23 MS. REED: The Intracoastal?  
 24 W/G MEMBER LORETTA: Yeah.  
 25 W/G MEMBER BLANKINSHIP: Yeah. And the  
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1 CHHA was really -- I thought it was really  
2 broad in the Intracoastal area, but I'm just  
3 curious if that lines up with the 500-year as  
4 well.

5 W/G MEMBER LORETTA: I think all that  
6 should definitely be within it.

7 W/G MEMBER BLANKINSHIP: Yeah, I thought  
8 it would be much worse. It doesn't look bad  
9 on -- I thought it would be, like, all red. It  
10 looks like a barrier island, so I thought it  
11 would be just completely covered. So that's  
12 still, like, small pockets.

13 THE CHAIRWOMAN: I believe that we had  
14 talked about differentiating the AAA between  
15 the 500-year floodplain -- recommending to the  
16 City that we use the 500-year floodplain within  
17 the riverine area, but then we talked about  
18 whether or not we were going to stick with the  
19 CHHA for the 500 when we were looking outside  
20 of the riverine areas; is that correct?

21 W/G MEMBER OLSEN: Sort of, yeah. I mean,  
22 that was one alternative.

23 THE CHAIRWOMAN: So that's probably  
24 something we need to add to our list for our  
25 group to talk about, is to get into the -- to

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1 have a slightly longer group discussion, maybe  
2 at our next meeting, to talk about what our  
3 recommendation is to the City as far as the  
4 boundaries of the AAA and get into work with  
5 all the experts in this group on how we want to  
6 recommend this to the City.

7 W/G MEMBER OLSEN: Point of interest here.  
8 If you look at the beaches, there's a lot of  
9 upland that is floodplain. And that may not be  
10 storm surge, it may be drainage and rainfall  
11 for the 500-year event. I don't think that's  
12 necessarily inundation from the ocean.

13 W/G MEMBER LORETTA: What part?

14 W/G MEMBER OLSEN: Well, let's say up  
15 3rd Street.

16 MR. KILLINGSWORTH: All that stuff east of  
17 9th Street there.

18 W/G MEMBER LORETTA: Yeah. I mean, it's  
19 all based on elevations is what this is all  
20 based on, so -- you know, my house is a little  
21 bit south in the pink area, on -- but  
22 the bottom line is that everything below  
23 Elevation 8 is probably identified here in pink  
24 is my guess, something of that nature. And so  
25 I think it's just everything -- it's all based

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1 on elevations.

2 So the fact is, if the surge doesn't -- if  
3 the berm at the ocean is at 12, then really  
4 that eastern edge isn't going to be that big of  
5 an issue. It's just the western edge which is  
6 going to be impacted, which is due to the  
7 Intracoastal rise.

8 W/G MEMBER OLSEN: Yeah, but that's not  
9 affected by the Intracoastal. You can see all  
10 that white between it.

11 W/G MEMBER LORETTA: No, but that's  
12 because that's Elevation 10 and 12 and 14.

13 W/G MEMBER OLSEN: Yeah, but --

14 W/G MEMBER LORETTA: So right there, if  
15 you were to -- let's say if you were to buy in  
16 Jacksonville Beach, you'd be buying on South  
17 Beach Parkway, whereas in a bunch of other  
18 areas you're at much lower elevations. That's  
19 just -- that's the high part of the beach.

20 THE CHAIRWOMAN: Kristen.

21 MS. REED: We might be productive if we  
22 could define some of these considerations you  
23 think that are important. We can work with our  
24 GIS and come up with a series of maps that show  
25 those comparisons, the elevations, the flood

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1 zones, the CHHA, the 2013 versus the 2018 flood  
2 zones so that you can have a more informed  
3 discussion about this --

4 THE CHAIRWOMAN: That would be great.

5 MS. REED: -- and more focused.

6 THE CHAIRWOMAN: If we could put that on  
7 our next -- I don't know what our agenda is for  
8 the next time, but if we could put that, you  
9 know, towards the beginning as a -- truly as a  
10 topic, to look at those.

11 W/G MEMBER LORETTA: Maybe we can get some  
12 stuff printed so everybody can write on it, or  
13 something like that, versus just seeing it on  
14 the screen.

15 W/G MEMBER MARTIN: One of the problems  
16 with the elevation maps is it does not account  
17 for other issues, such as wind, waves, and  
18 those types of things. Part of the problem  
19 with it is that the sand dunes will be blown  
20 away or will be knocked away by the wave  
21 action, which would increase the flow in, and  
22 I think that's what Erik is saying. You would  
23 think much more of this -- of the barrier  
24 island would be covered with water, and I think  
25 it most probably would if it was coming from

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1 the ocean.  
2 W/G MEMBER LORETTA: But that's only if  
3 you have a Hurricane 2 or 3 event where the  
4 storm is at Elevation 15. I mean, it all comes  
5 down to the elevation that the water is coming  
6 in at. I mean, I know the beaches pretty well.  
7 I guarantee you that pink area is Elevation 8  
8 or below and the white is above Elevation 8 or  
9 9. And so that's where -- that's where it's  
10 all relating to.  
11 W/G MEMBER MARTIN: You're going to have a  
12 higher storm surge, then, at --  
13 (Simultaneous speaking.)  
14 W/G MEMBER LORETTA: Well, that  
15 (inaudible) --  
16 W/G MEMBER MARTIN: And --  
17 W/G MEMBER LORETTA: That's only if --  
18 THE CHAIRWOMAN: We need to talk one at a  
19 time. Sorry.  
20 Joe.  
21 W/G MEMBER LORETTA: I'm just saying  
22 that's not what this is reflecting.  
23 W/G MEMBER MARTIN: That's what --  
24 W/G MEMBER LORETTA: I'm not saying you're  
25 wrong. If you look at the maps out there, if  
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1 you were to have a legitimate Hurricane 3  
2 event, the whole beaches is basically wiped  
3 away, you know, with water, basically, but I  
4 don't know a 500-year storm event includes a  
5 Hurricane 3 storm surge. It's just a 500-year  
6 rain event.  
7 W/G MEMBER MARTIN: Rain event. That's  
8 what I'm saying.  
9 W/G MEMBER LORETTA: Not including a  
10 Hurricane 3 storm surge.  
11 W/G MEMBER MARTIN: And that's what I'm  
12 saying, that these are rain events and we're  
13 not looking at necessarily a sea rise event  
14 associated with a storm surge or a storm surge  
15 associated with sea rise.  
16 And the other thing is a -- when you  
17 consider that, an 8-foot storm surge may be  
18 much greater than that when it comes to the  
19 impact of the waves and the wind knocking down  
20 the sand dunes on the beach and such and  
21 entering further in.  
22 THE CHAIRWOMAN: Okay. Let's continue  
23 this discussion at the next meeting because I  
24 think we need some more information.  
25 Shannon.  
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1 W/G MEMBER BLANKINSHIP: Well, just to  
2 clarify, though, what are we going to look at  
3 the next meeting? What maps are going to be  
4 produced?  
5 THE CHAIRWOMAN: Kristen.  
6 MS. REED: From the discussion we've had,  
7 this is what I've written down. And if you  
8 want to add or clarify -- so elevations, flood  
9 zones from the 2013 and the 2018, the Coastal  
10 High Hazard Area, storm surge maps. And maybe  
11 we can get some of the elevations from the  
12 Master Stormwater Management Plan, the base  
13 flood elevations, if that's helpful. I have to  
14 figure out how to present it, but that's what  
15 I've captured from the conversation.  
16 THE CHAIRWOMAN: Joe.  
17 W/G MEMBER LORETTA: I think that's great.  
18 And maybe what we can do is -- a way to  
19 present it is -- we've got the regional stuff,  
20 but maybe there's a way we can get the 50 or  
21 100 scale on, let's say, five areas. I mean,  
22 Erik continues to talk about his area, so let's  
23 use his area. We've got downtown, we can have  
24 Beach and San Pablo, and then we could have the  
25 beaches area, you know, and maybe one other  
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1 area, but we have five areas that we can see  
2 detailed because the volume of information  
3 you're talking about we can't see. And so we  
4 need it to be at least at 50 scale or something  
5 of that nature to be able to legitimately see  
6 and -- even if we end up getting a map that's  
7 30 by 42 and we've all got to stand up, then so  
8 be it.  
9 W/G MEMBER BLANKINSHIP: I just have a  
10 suggestion. I would like to compare the CHHA,  
11 which -- the maps we already have, with the  
12 500-year, and then also with the Category 3  
13 storm surge because that's what Hurricane Irma  
14 was. So it's my thought that the 500 and  
15 Category 3 are similar, but I only know for the  
16 downtown area and I don't know the beaches. So  
17 those would be sort of the three different  
18 comparisons. I'm just curious how different  
19 they are from each other.  
20 And Joe's point was great about maybe not  
21 the entire city but some main points so we  
22 could really zoom in and try and understand how  
23 expansive they are.  
24 THE CHAIRWOMAN: One of the things that we  
25 do need to remember, though, is that the  
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1 beaches are not part of our Comprehensive Plan.  
2 So while we can look at that information,  
3 that's really not within our purview as a work  
4 group. It's interesting, but it's not  
5 something that we can really address because  
6 they have their own Comprehensive Plan.

7 W/G MEMBER LORETTA: Yeah, I don't care.  
8 We don't need to include the beaches, but it  
9 will be intriguing 40 years from now if the  
10 City of Jacksonville has to get involved with  
11 paying out certain homes in Jacksonville Beach  
12 even though -- because there still is a local  
13 agreement and so on. So that's something that  
14 intrigues me, but I don't -- you know, we don't  
15 need to see the beaches. That's just a  
16 thought.

17 THE CHAIRWOMAN: Matt.

18 W/G MEMBER GALNOR: I do think -- you  
19 know, if there are any other areas, you know,  
20 maybe along the Trout River, anything related  
21 to Irma that we could look at, I just want to  
22 make sure that we're cognizant of the fact that  
23 we're looking at all of Jacksonville. I know  
24 we can't have maps of everything, but just to  
25 make sure that we're not only focused on

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1 downtown and Riverside and the beaches, that we  
2 take the whole city into consideration.

3 MR. KILLINGSWORTH: Well, we can have  
4 staff look at everything. And if something  
5 jumps out, then --

6 W/G MEMBER GALNOR: That would be -- yeah,  
7 that's perfect.

8 THE CHAIRWOMAN: Okay. Let's jump to the  
9 next thing real quick.

10 Susan, you were going to talk to us  
11 about -- we had asked you -- we got information  
12 from Norfolk about what they're doing with  
13 response to sea level rise. And, Susan, I  
14 believe you actually talked with them about  
15 their ordinances and regulations.

16 MS. KELLY: Yes. Thank you.

17 So I had a good conversation with a member  
18 of their planning staff. So I'm going to go  
19 over some of the high points. And then if you  
20 have questions, feel free to ask. Maybe I can  
21 answer. If not, I'm sure I can ask this  
22 gentleman.

23 So Norfolk was in the process of rewriting  
24 their entire zoning code, so they opted to  
25 include some of these resiliency components at

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1 that time, which made it even easier because  
2 they were doing the whole thing. One of the  
3 tools that they use are zoning overlays. Some  
4 of you might know, but the City of Jacksonville  
5 does have several zoning overlays, so -- but we  
6 don't have anything like this.

7 So the zoning overlays that they have --  
8 one, they have a Floodplain Overlay in general.  
9 Now, that is State-mandated in Virginia. So  
10 there's nothing especially different about  
11 that. I guess every location in Virginia that  
12 has a zoning code has to have this Floodplain  
13 Overlay.

14 They have another overlay that's new, and  
15 that's called their Coastal Resiliency Overlay,  
16 CRO. The intent of this overlay was to think  
17 more long-term and broader than their  
18 Floodplain Overlay within the geographic area  
19 that's covered. So, for example, their  
20 State-mandated Floodplain Overlay is required  
21 to take into account their current existing  
22 flood zones. The intent of this CRO District  
23 was to plan for the future; so about a 3-foot  
24 sea level rise, what the future flood zones  
25 would be.

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1 However, due to their State noticing  
2 requirements, that wasn't able to happen. They  
3 have to notify every single property owner  
4 within that area, and that becomes extremely  
5 cost prohibitive. So, instead, they -- they  
6 have that overlay and it just covers the same  
7 area as their existing flood zones. It just  
8 adds an additional layer of regulation.

9 Actually, let me back up. The zoning  
10 overlay -- for those that don't know, a zoning  
11 overlay -- you have your zoning code, your  
12 zoning map, and a zoning overlay adds a layer  
13 of regulation or design standards or what have  
14 you on top of the zoning code. Just so we're  
15 clear what an overlay is. An overlay is  
16 additional regulation or performance standards.

17 So the second one they have is this Upland  
18 Resilience Overlay, the URL. So this one has  
19 not been used yet. It is optional. It's sort  
20 of a conceptual overlay, and it allows -- I'm  
21 going to do the best I can to explain this.  
22 The concept allows for developers and builders  
23 to receive -- I should back up.

24 So they have this resilient point system  
25 that I'll talk about in a minute, and the point

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1 system is something that every -- anything that  
2 goes through site plan review has to meet  
3 certain resiliency points in order to be built.  
4 Okay. So the concept allows that  
5 developers and builders receive points off of  
6 their resiliency point system and it would  
7 count toward their development point system for  
8 each development right that is removed from  
9 that Coastal Resilience Overlay area, so for  
10 properties within their flood zones by direct  
11 purchase or easement.

12 So the idea -- again, this is big picture,  
13 it's optional, they haven't even used it yet,  
14 but, in essence, it takes developable land out  
15 of those flood zones and makes it, hopefully, a  
16 little bit more advantageous for folks to build  
17 on uplands. So it's the concept of a transfer  
18 of development rights, but it's just done a  
19 little different.

20 And he was very honest. He said, we're  
21 not entirely sure how we'll do this, but we  
22 wanted to get it in there, the tool in there so  
23 that they could at least work with it.

24 So the resiliency point system, I'll kind  
25 of touch on that. It's built into the zoning

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1 overlays. It's applicable to new development  
2 and substantial redevelopment. And what they  
3 do -- and I think the materials I provided at  
4 the last meeting had a little clip of what  
5 their chart looked like, the resiliency  
6 quotient table. And they basically ask you to  
7 do certain things and you get a certain point  
8 for it, and developments have to meet a point  
9 system to move forward.

10 I asked about the success of it because  
11 this was just adopted in January of 2018. So  
12 this is brand new. He said, with regards to  
13 its success, they'll likely keep the tool in  
14 place, but they might need to recalibrate some  
15 of the metrics that they've used. They had  
16 tried to do some benchmarking, but, you know,  
17 that can be challenging. He said it's been  
18 most impactful on single-family dwellings and  
19 that they're working towards finding better  
20 solutions for larger developments.

21 So that's, again, the high level of what  
22 they have done. I did ask him, you know, what  
23 would they do differently, what were some  
24 lessons learned, and he pointed out -- and this  
25 reminds me of our discussion of the boundary

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1 for the AAA. He said that the intent of that  
2 original CRO District, for it to apply to a  
3 larger area and to take into account that  
4 future flood zone was really very important for  
5 them because land development is a long-term  
6 prospect, and so they really would have liked  
7 to have accomplished that, but they weren't  
8 able to do so. And he felt that was a  
9 meaningful situation because they really would  
10 have liked to take into account the area that  
11 is likely to be impacted by sea level rise in  
12 the future.

13 And the other thing he talked about is  
14 that he would have -- he doesn't know if it  
15 would have changed anything, but he would have  
16 liked for them to have been able to do a little  
17 bit more research or figure out something more  
18 for multifamily developments and nonresidential  
19 uses regarding their point system and how those  
20 could be applied because, again, it's been most  
21 useful for their single-family dwellings.

22 THE CHAIRWOMAN: Thank you.

23 We may want to, as a group, ultimately do  
24 some sort of a recommendation that the City  
25 keep track of Norfolk, just continue to see how

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1 that process is operating as a possible  
2 consideration of a similar process in the  
3 future in Jacksonville because it's a similarly  
4 situated area with rivers, sea level, but it  
5 certainly sounds like their system is not --  
6 hasn't been around long enough to really see if  
7 it's resulting in anything beneficial to the  
8 city yet.

9 Okay. We're going to skip the next,  
10 Old Business, which was the City's Low Impact  
11 Development Manual, which we've already talked  
12 about a little bit, but we can bring it up next  
13 time because we have run into public comment  
14 time. So I would like to go ahead and open the  
15 floor up to public comment, if there's anybody  
16 that wants to speak. If nobody wants to speak,  
17 then we can go back to Old Business. We must  
18 have the floor open to public comment.

19 Anyone?

20 AUDIENCE MEMBERS: (No response.)

21 THE CHAIRWOMAN: All right. We're going  
22 to close the floor to public comment and go  
23 back to the City's Low Impact Development  
24 Manual.

25 Is there anything else, Susan, Kristen,

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1 Bill and Mike that you guys wanted to tell us  
2 about that?

3 MS. KELLY: We will put a link to it --  
4 there's a link on the City's website, but I'll  
5 put it specifically on your page so you guys  
6 can easily check it out.

7 THE CHAIRWOMAN: Now, my understanding is  
8 that the Water Management District -- and,  
9 luckily, we our former person here -- has  
10 adopted some low-impact stormwater approval  
11 processes as well; is this correct?

12 MS. WEST: If I recall correctly, they did  
13 during revision. They do have some LID  
14 components that they allow the developers to  
15 use.

16 THE CHAIRWOMAN: Okay. So maybe if the  
17 City doesn't ultimately adopt the Low Impact  
18 Development criteria, developers can then work  
19 through the Water Management District.

20 All right. So the last thing that we have  
21 is -- is there anything else that we would like  
22 from staff for the next meeting, besides all of  
23 the maps that we talked about and time to  
24 really get into and discuss the maps? Is there  
25 any other demographics, data, that type of

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1 information that we would like staff to bring  
2 for the next meeting?

3 W/G MEMBERS: (No response.)

4 THE CHAIRWOMAN: Nothing. Okay.

5 It's 10:48. We're going to end this  
6 meeting and -- excuse me, we're not. Erik has  
7 a comment.

8 W/G MEMBER OLSEN: I have one question.

9 The handout we have here, in the back of  
10 it there's a lot of underlined policies and  
11 objectives. Were these adopted or are these  
12 proposed?

13 THE CHAIRWOMAN: This is in the drainage  
14 and flooding handout?

15 MS. REED: Yes. Through the Chair, so  
16 this was -- the Land Use and Zoning Committee  
17 of City Council had become aware of a lot of  
18 complaints about flooding issues and had asked  
19 for an overview of our existing regulations and  
20 what some of the strengths, weakness, and  
21 opportunities were. So that's what this is.

22 At the time, we were adopting into our  
23 Comprehensive Plan the policies that are in  
24 underline and strike-through to respond to the  
25 parallel flood requirement that had to be

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1 adopted in our Comprehensive Plan, which  
2 included the development of this group, the  
3 policy that set up the framework for initiating  
4 our discussions.

5 So, yes, those are currently adopted, but  
6 at the time they were pending.

7 W/G MEMBER OLSEN: Okay. One sub-question  
8 to that is -- it does state that the maps that  
9 we are provided are the maps. How would we  
10 change that if we adopt different maps?

11 MS. REED: We would address that through  
12 an updated policy to the Comprehensive Plan.

13 THE CHAIRWOMAN: So as a group, we make  
14 the recommendation to staff. Ultimately, we  
15 are making recommendations that it be changed  
16 in the Comprehensive Plan; is that correct?

17 MR. KILLINGSWORTH: Correct.

18 THE CHAIRWOMAN: Right. Then you make the  
19 change?

20 MR. KILLINGSWORTH: Correct.

21 THE CHAIRWOMAN: Got it.

22 MS. REED: We propose.

23 MR. KILLINGSWORTH: Well, we propose the  
24 change to City Council.

25 THE CHAIRWOMAN: And City Council makes  
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1 the change. That's right.

2 Okay. Anything else?

3 W/G MEMBERS: (No response.)

4 THE CHAIRWOMAN: All right. We're going  
5 to adjourn this meeting and we will see you in  
6 two weeks.

7 Thank you.

8 (The above proceedings were adjourned at  
9 10:50 a.m.)

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7 I, Diane M. Tropa, Florida Professional  
8 Reporter, certify that I was authorized to and did  
9 stenographically report the foregoing proceedings and  
10 that the transcript is a true and complete record of my  
11 stenographic notes.

12

13

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15 DATED this 6th day of May 2019.

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Florida Professional Reporter

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