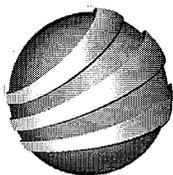


In the Matter Of:

ADDICKS AND BARKER DAM SAFETY OVERVIEW

PUBLIC MEETING

October 29, 2014



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1 COLONEL PANNELL: All right. Good evening,

2 everybody.

3 My name is Colonel Richard Pannell. I'm the

4 Commander of the U.S. Army Corps of Engineers, Galveston

5 District, and just wanted to welcome you all to this

6 update on the Addicks and Barker Dam safety project.

7 And first, I wanted to make a few

8 introductions and recognize some of the folks that we

9 have with us today. And you'll have to excuse me, I'm

10 sure I've forgotten folks. Particularly if you didn't

11 sign in and somehow you escaped through the system, then

12 I may be omitting you, but for those I know, I'd like to

13 go ahead and recognize.

14 We've got Ms. Amy Peck, she is from

15 Councilwoman Stardig's office from the City of Houston.

16 So, thank you. All right. Great. Amy, good to have

17 you here.

18 And then Ms. Elizabeth Stinsman from

19 Commissioner Cagle's office from Harris County Precinct

20 4. Okay. Very good. Great. Thank you all for coming

21 to this event.

22 And I also have Mr. Mike Talbott from the

23 Harris County Flood Control District here, one of our

24 key partners.

25 And then we've got a panel that we'll bring

Page 3

1 up here as well. I guess they're kind of blocking the

2 view, so, you know, we won't have them come up until the

3 end of the presentation portion but we'll go ahead and

4 recognize them. I think I can get them all here.

5 We've got my Chief of Engineering and

6 Construction, Mr. Terry Bautista. He'll be on the

7 panel.

8 We've also got Mr. Steve Fitzgerald from the

9 Harris County Flood Control District will be on the

10 panel.

11 We've got Ricky Villagomez, my Project

12 Manager. He'll be on the panel.

13 We've got Mr. Richard Long, the -- our

14 project field office out here at Addicks and Barker Dam.

15 A lot of you all know him.

16 And then we've got some -- who else is on

17 our panel? Oh, yeah, Bobby Van Cleave from our Tulsa

18 District, part of our dam safety center. This is a

19 collaborative project, so, it's not just the Galveston

20 District but we get support from several of the other

21 districts as well.

22 Did I miss anyone else on the panel?

23 In addition to those members on the panel,

24 we've got some of our key folks from the district here

25 as well.

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1 We've got our Chief of Construction, Mr. Don

2 Carelock, who is sitting here.

3 And our Area Engineer is also here,

4 Mr. Ralph Steiner.

5 Then, of course, our Public Affair Officers

6 are here, Sandra Arnold and Isidro Reyna, who you met on

7 the way in.

8 All right. Who else from the district is

9 here that I forgot?

10 Dr. Gary Chow is here, one of our smartest

11 engineers that we have in the district. So, it's always

12 good to have a doctor with us in the house.

13 And we also have my Chief of Emergency

14 Management, Mr. Mike DeMasi is in the back as well.

15 All right. So, we brought the A team

16 tonight. So, they are the ones that are going to field

17 all the tough questions, and I know that there's some

18 tough questions out there but we'll bring up folks up on

19 the panel in kind of the second part.

20 And then the third part, which may be

21 interesting to some of you all as well, is we're going

22 to have an opportunity to just kind of gather around

23 some of the screens and the boards that you have here

24 and be able to talk one on one with some of the members

25 from the Galveston District.

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1 So, that's kind of the format that we're
2 going to do tonight. And there will be an opportunity
3 after this presentation for you all to provide comments
4 or ask questions with the panel here.
5 Okay. We'll go ahead and get started, if
6 you can pull up the slides. All right. Everybody can
7 see that all right? Great.
8 You know, our purpose tonight is to inform
9 you all, to inform the public on the Addicks and Barker
10 Dam safety program and provide you an update on kind of
11 where we are.
12 Who was here -- I don't know -- it was, I
13 guess, 2009 for the meeting that occurred with my
14 predecessor, Colonel Weston?
15 So, some of you are in the audience here.
16 That's great.
17 Well, this is -- you know, back then it was,
18 you know, we've got this issue, this problem that we
19 want to make sure everybody is aware of and talk about
20 how we're going to fix it.
21 And today is really to provide you an
22 update, to describe some of the fixes that we've made
23 and some of the work that we still have to do.
24 I'm going to start with a little discussion
25 of the historical background and then get into some of

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1 the issues discovered with the structures. And some of
2 that may be review for those that were here back then
3 but we've learned a lot about dam safety in the year
4 since then, and really what we're doing to continue to
5 minimize the risks with respect to flooding in the area.
6 Up front, though, I just want to make sure
7 everybody understands kind of our role as the Corps of
8 Engineers and what our responsibilities are.
9 If you can, hit the next slide.
10 You know, it's -- the Corps of Engineers is
11 a national organization. It's really a worldwide
12 organization but our vision for the Corps and our
13 mission is to solve these very difficult national level
14 engineering problems for the country.
15 And we do that in several areas and,
16 clearly, with respect to flood risk management, that's
17 an important one because that directly impacts the
18 safety of life and the safety of -- you know, protection
19 of property and infrastructure, and so, that's really
20 what we're talking about today.
21 You know, in the case of Addicks and Barker
22 Dam, in terms of being a challenge and kind of a
23 national issue, it's not just necessarily about the
24 flood risk management. It's also about addressing this
25 issue that we have across the country with our aging

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1 infrastructure.
2 Flooding in the U.S. got a lot of attention
3 back in the '20s and '30s, whether it was on the
4 Mississippi or here in Houston. And so, the country
5 spent a lot of resources to try to protect communities,
6 to protect infrastructure from flooding.
7 But the life of those structures is not
8 forever, and so, what we've seen within the last 15, 20
9 years is many of those structures have been reaching
10 their design life.
11 And so, it's a matter of trying to figure
12 out, well, what structures do we need to be fixing,
13 which ones are the most important.
14 And so, all this work we've been doing with
15 dam safety is focusing on those high priority projects,
16 such as the one we're talking about today, and making
17 sure that we're delivering a solution to this challenge,
18 not just with respect to flood management and flood risk
19 management but with respect to how do we solve this
20 aging infrastructure that we have across the country.
21 And so, I'm very happy to report that we're
22 getting authorization and money to solve the problem
23 here. And so, that's a huge win for the Houston area.
24 I want to talk a little bit about the
25 history of the project.

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1 So, go ahead and hit the next slide.
2 We've got this timeline, and what's
3 interesting on this timeline is a couple of things.
4 First, the genesis of this project of Addicks and Barker
5 really, you know, began back in the '30s, 1929 and 1935
6 with these two major floods that occurred, and many of
7 you all probably understand the impact of those floods
8 much better than I do.
9 But, you know, the Corps of Engineers
10 responded to that. We built these structures here. We
11 built these reservoirs with these outlet structures.
12 And then you see on that timeline, there's
13 kind of this gap in time. You know, everything is kind
14 of fine. And part of the story tonight is to talk about
15 that gap in time.
16 So, you see 1948, we finish the second dam
17 and reservoir, and then I've got all this stuff starting
18 in '92 when we had this new set of flooding, and then
19 we've got all these activities that we've done to
20 evaluate the system here and put all these interim risk
21 reduction measures in place.
22 But what you need to understand, there's a
23 lot going on between '48 and '92, and a lot of that is
24 the story not just about this system here but about the
25 entire bayou system in Houston.

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1 And, of course, we've got the Harris County
2 Flood Control District here because they are responsible
3 for that in many respects.
4 But it's also a story about the growth of
5 this city because the growth of the city has had a
6 profound impact on this project, and we're going to talk
7 a little bit about that.
8 You know, these floods that occurred in the
9 early stages there '29, '35, these were a catalyst for
10 action. And shortly afterwards, the community presented
11 the state legislature with the Wild River Petition.
12 Many of you are probably familiar with that document.
13 That was back in '37.
14 And from that, we had things like the Harris
15 County Flood Control District but something else that's
16 also happening -- that was kind of at the state level.
17 At the national level, in 1938 Congress
18 authorized Addicks and Barker Dam. And when Congress
19 authorizes that, that means we can bring a federal
20 project down here to the community.
21 So, that was a key piece as well, and then,
22 of course, you know, ten years later, we have both of
23 these structures have been completed.
24 And I talked about that gap, you know. So,
25 it's a brand new structure. There's not a lot of

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1 worries about it. Everybody is safe and feeling happy
2 and the structure is working and it's protecting the
3 city.
4 What I want to show is a few pictures of
5 that, and then we'll get into some of the things that
6 are happening between kind of that construction phase --
7 we'll show some slides of the construction but then, you
8 know, what's going on in Houston after that.
9 Go ahead to the next slide.
10 So, here's some pictures from the Wild River
11 Petition. Some of you are familiar with these pictures.
12 It just really gives you an idea how damaging the floods
13 were.
14 Seven members of the community drown in the
15 '35 flood, and the direct damages were about \$9 million,
16 and that's in, you know, 1935 or 1937 dollars. So,
17 that's a lot of money back then.
18 And then another probably estimated \$20
19 million in indirect damages, and even probably more
20 interesting is the fact that there was about a hundred
21 million dollars worth of infrastructure and property
22 that was threatened during that.
23 And so, I think the community became acutely
24 aware of what the potential destruction and devastation
25 that could occur in the Houston area was.

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1 So, you know, while the community is working
2 to leverage the state resources and working with the
3 Harris County Flood Control District, the Corps of
4 Engineers is working to develop a plan based on this new
5 authorization that we received.
6 Hit the next slide.
7 So, some of you may have seen this. This is
8 the Corps of Engineers plan for Addicks and Barker, and
9 really it was more than just Addicks and Barker. It was
10 a plan to protect the City of Houston and the
11 surrounding areas.
12 And if you look at that, you see a couple of
13 interesting things on there. You see a few other
14 components of the plan that were never constructed, and
15 the reason why is they never were authorized for
16 construction.
17 So, the only elements on there that were
18 authorized for construction were Addicks and Barker
19 reservoirs.
20 So, you've got these two kind of grand
21 canals, one in the north and one in the south. You've
22 got this Cypress Creek levy to the northwest. You've
23 got a potential third reservoir with White Oak, but none
24 of those things were constructed as envisioned on this
25 original 1940 plan, but the two reservoirs were

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1 authorized and constructed, as you all know.
2 Now, I've got these stoplights on here, and
3 the reason I've got these stoplights on here is to help
4 the discussion with how we talk about this risk because
5 it's a very difficult topic to kind of discuss. And so,
6 it's a little simple. So, you'll have to excuse me. I
7 want to try to communicate it in kind of a basic term.
8 It's not about numbers. It's just about kind of a
9 relative risk.
10 And so, when the Corps of Engineers looks at
11 risk, we look at it with respect to the likelihood of
12 something happening and then the consequence if
13 something happens.
14 And so, that's what those two stoplights
15 represent. So, the one on the left is this idea of
16 likelihood. Well, with the floods that just happened in
17 '29 and '35, we know that the likelihood is probably
18 relatively high. And so, we know that we need to do
19 something.
20 At the same time, you know, we've got a
21 major city here, and so, there are significant
22 consequences involved, particularly if you have no
23 structure.
24 And so, I think those early floods really
25 helped us identify, hey, we've got a significant risk

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1 that we've got to address.
2 And so, as we look at some of the -- as we
3 go through the presentation, I'll go back to these
4 stoplights to kind of give you have a gauge of where we
5 are throughout that history of Addicks and Barker.
6 So, we start building the structures here.
7 So, let's look at a couple of the slides that show that
8 construction effort. The dams were originally designed
9 and constructed as storm water detention basins,
10 basically a large version of those detention basins you
11 see behind some of the, you know, shopping centers in
12 the area, so, really to detain the water, not
13 necessarily to regulate the flow of it.
14 And originally, there was only one gate at
15 the outlet conduits, and there was no intention to hold
16 a pool. So, it was just really temporary detention.
17 The original cost was just over \$10 million
18 but, you know, that's -- it sounds like a lot but in
19 comparison to the savings, it was considerable.
20 Go to the next slide.
21 During the construction phase, Addicks was
22 modified to control flows, and overall, it was modified
23 so that you could control up to 15,000 cubic feet per
24 second, and they had two -- two of the conduits were
25 gated to help control that.

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1 So, we see as we're moving through this, we
2 have this realization that we're going to have to do
3 more than just detain water. There's going to have to
4 be some aspect of being able to regulate the flow of it.
5 So, since 1948 when the dams were
6 constructed -- and I said it cost 10 million -- we
7 estimate there's been about \$6 billion in benefits with
8 respect to protecting the community from flood damages.
9 Now, these are just estimates. It's
10 probably a low estimate. So, it's probably a lot more
11 than that, but probably more important than the dollar
12 amount is the lives that were saved because, you know,
13 you really can't put a pricetag on that. So, it's
14 important to recognize this as significantly protected
15 life safety.
16 The next slide.
17 So, here we are in the early '50s. We've
18 got our new dams in place. What's very interesting here
19 is the outline of the City of Houston. So, right here,
20 you know, and here's the reservoirs, well positioned to
21 protect what is the city at this time.
22 And so, we've got a brand new structure.
23 The likelihood of flood risk from flows from that system
24 has been reduced now, and the consequences have been
25 reduced because it's positioned so that it protects the

Page 15

1 city.
2 But as many of you all know -- and many of
3 you probably grew up during this timeframe -- is, you
4 know, after World War II, there was a pretty significant
5 boom happening here in this region, as well as the rest
6 of the country, but I think Houston was booming just as
7 fast, if not faster, than most areas of the country, and
8 that's something that's going to start affecting our
9 little stoplights here as we go through.
10 So, hit the next slide.
11 So, in the period of just a decade, between
12 1940 and 1950, the population of Houston has doubled.
13 The number of factories has doubled. Houston has become
14 a major economic powerhouse.
15 And in addition to the population growth,
16 the population is also migrating. So, it's a little bit
17 hard to see on this slide but, you know, this is
18 Houston. The area that's white in the center, that's
19 actually population decline. So, people are leaving the
20 center of the city. It's probably becoming a little
21 more industrialized, factories, that sort of thing, and
22 they are moving out to the suburbs. So, where it's
23 black here, that's where the population has more than
24 doubled. It's increased by a hundred percent or more.
25 And, you know, to this day, you've seen that

Page 1

1 rapid growth. So, this is just to 1950. And over time,
2 you know, you see how the city has expanded.
3 Well, you know, meanwhile, we're also
4 looking at our operations at the reservoir. And so,
5 operations at the reservoir are also changing, too,
6 because we're trying to make sure we're balancing how
7 we're operating the reservoir in this kind of growing
8 population.
9 So, hit the next slide.
10 So, over a series of years there, we've
11 added some improvements. We've added more control
12 features to the system so that we can, you know, put
13 gates in the conduits so we can control that flow a
14 little bit. We've raised some of the embankments but,
15 essentially, you know, we're trying to reinforce that
16 structure. We're trying to add control measures and,
17 you know, the dams are no longer operated the original
18 way they were intended.
19 For example, back in the '70s, we ended up
20 kind of reducing the amount of flows that we would let
21 out. And so, that's when we started getting into
22 regulating how many cubic feet per second we were going
23 to send out of the system. And so, eventually, that
24 gets to about 2,000 cubic feet per second as measured at
25 the Piney Point station downstream from both of the

Page 17

1 reservoirs.
2 So, what happens? Well, this results in
3 water standing against the embankments. It results in
4 that pool height increasing. It results in, you know,
5 longer periods of time where that water is pooled.
6 And so, while the likelihood of the flood
7 risk of the reservoir is still low, you know, the change
8 in demographics and geography of the city is starting to
9 affect how we do the operations on the dam, and it's
10 also affecting the consequences because the city is kind
11 of growing beyond what the dams are designed to protect.
12 And so, now let's go up to the next slide
13 and look at 1992.
14 Well, our dam is still working okay. At
15 least we think it is. There's probably stuff going on
16 we just don't know about yet but the consequences now
17 are starting to elevate because, you know, here are my
18 reservoirs and now look how big the City of Houston is
19 starting to get.
20 And so, no matter what you do at these
21 reservoirs, you're not going to be able to necessarily
22 protect or prevent consequences happening downstream.
23 And to this day, I don't think you ever get to the point
24 where you can prevent all the consequences, as big as
25 this city is, as big as it grows every day.

Page 18

1 So, in the early '90s, we started having a
2 couple of systems -- weather systems that created some
3 significantly large pools in our reservoirs.
4 Go to the next slide.
5 And so, you've got these major rain events,
6 storm events, and so, we start getting these record
7 pools.
8 And so, we start getting a little concerned
9 about what happens when we have these record pools?
10 What does that do to our reservoirs? How does that
11 impact the integrity of our levies, the integrity of our
12 outlet structures?
13 And so, while they're still, you know,
14 operating for their intended purpose, we're starting to
15 become concerned because they are reaching their --
16 towards the end of their design life, and we're putting
17 these additional pressures on it that we originally
18 didn't intend to.
19 And at the same time, the city continues to
20 grow. This thing is not stopping all the flooding. So,
21 I may pool all this water here and get it up to just
22 about its max height but there's still flooding
23 occurring down range -- or downstream, if you will.
24 Excuse me. So, just because you've got this system
25 here, it's not going to protect everyone all the time.

Page 19

1 Well, you know, these sorts of things are
2 happening all over the country because all this
3 infrastructure is reaching its designed life. So, the
4 Corps started to spend a little bit more time looking at
5 our dam safety program, and we start doing more
6 assessments. And so, you see some of the -- an idea of
7 all the dams and projects that we're focusing on.
8 So, this nationwide program to evaluate and
9 analyze potential risks, you know, began in the 1990s.
10 Addicks and Barker reservoirs already reached their
11 design life by this time.
12 So, eventually, it gets in the cue as a
13 priority, and so, we go through that process and get an
14 assessment or a report out by 2009, and we identify some
15 pretty significant issues, and that's what you all were
16 briefed on by Colonel Westin several years ago.
17 And in particular, we found that that
18 practice of holding the pools longer and higher was
19 resulting in the development of void space and seepage
20 in the outlet structures, and so, we did some analysis
21 on that.
22 So, this may be a little hard to see. Go to
23 the next slide. Yeah, it's a little hard to see.
24 But anyway, this is an example of some of
25 the output we did. We used ground penetrating radar to

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1 identify potential areas where voids exist. Once we had
2 that information, we said, okay, we've got to find out
3 for sure. So, we drilled borings and discovered, yes,
4 indeed, there are voids under here, and there may be
5 some piping connecting those voids together so that
6 further erosion under the ground can occur, and so, we
7 were starting to get a little bit concerned about that.
8 The other thing you see in this picture --
9 go back.
10 This picture, you see -- it's a little bit
11 hard to see because of the light here but you see some
12 of that seepage occurring on the seams in the conduits.
13 So, at this point, it's clear that this
14 is -- first of all, this is an important structure
15 because it's upstream from Houston. It's reaching its
16 design life and, hey, we've got to do something because
17 this is not satisfactory.
18 So, hit the next slide.
19 We get back to our stoplights here. We're
20 thinking, okay, the likelihood of this thing causing us
21 flooding problems has increased, and so, we've got
22 concerns.
23 The City of Houston has -- the consequences
24 are enormous, not just the city but some of these areas
25 that the metropolitan area has expanded to. And so, we

Page 21

1 recognize that it's very significant.
2 And so, the Corps knew we had to take some
3 fast action, and we started implementing a strategy that
4 included both kind of these short-term fixes -- and
5 we'll look at some of the work we've done -- as well as
6 the long-term fix.
7 The first set of these fixes is what we call
8 our interim risk reduction measures, and I want to show
9 you some of those things that we've done.
10 Very good.
11 So, to address the voids, you know, one of
12 the things we want to do is fill the voids in, grout
13 areas around the conduits. And that -- you know, we did
14 that work back in 2009, 2010.
15 Next slide.
16 To remove -- to reduce the movement of the
17 granule particles within -- you know, around the
18 structure, we installed some granular filters. That
19 keeps the material in there. It keeps it from moving
20 away. We accomplished that in 2010 and 2011.
21 Next slide.
22 We also replaced the gate at Barker. We had
23 problems there. And we did that in 2010 and '12.
24 And then along with that -- the next
25 slide -- we improved the gate operating systems, as well

Page 22

1 as added emergency power so that if we lose power, we
2 still have generators there so we can operate these
3 gates. And so, these are all part of the risk reduction
4 measures that we did.
5 And then the last one -- I think there's one
6 more here -- we found that the parabolic spillways where
7 the water is going out during these high flows can
8 actually float up because of the hydraulic jump that's
9 created there.
10 And so, what we determined is we needed more
11 weight to keep them in place. And so, we actually put
12 steel on top of them and mounted that steel on there,
13 and that's all been completed as well.
14 So, we've done all these interim risk
15 reduction measures, and at the same time, probably the
16 most important thing we did was an overall safety
17 assessment, and that's our dam safety modification
18 study.
19 And, you know, why this is important is
20 because this really allow us to get to this long-term
21 fix, and it allows us to get funding for it. And so,
22 we're able to justify these problems. We're able to lay
23 out exactly a plan to fix them.
24 And the study was completed in the summer of
25 2013, and the recommendation is to replace the outlet

Page 23

1 structures, essentially build new outlet structures
2 adjacent to the old ones. So, the old ones continue to
3 operate right now with these interim risk reduction
4 measures, and then that allows us to construct these new
5 structures right next to them, and then eventually, the
6 new structures will be the structure that's used, and
7 the old structure will no longer be required.
8 So, the construction phase is going to kick
9 off in 2015, this spring, hopefully, if everything goes
10 according to plan right now, and then we expect to have
11 it completed around 2018.
12 And here's kind of the schedule of what it's
13 going to look like. So, on the right here, you've got
14 the existing outlet structure. You know, it comes in
15 from the interior of the reservoir, goes through the
16 structure, and then it's got this channel.
17 So, what we'll do is we'll be building a
18 coffer dam up here to protect the construction site, and
19 then we'll just construct our new outlet structure.
20 We've got the engineers here. If you want
21 to ask questions about that, they can answer some of the
22 specifics with respect to that.
23 And then that outlet will tie back into the
24 old channel system on the other side of the levy.
25 So, with that in place, our goal is to get

Page 24

1 to the next slide, which is back to our spotlight. You
2 know, we're back to having a safe system that we're
3 confident in.
4 We're not going to be able to reduce all the
5 consequences because the city is now around and
6 swallowed up our two reservoirs, essentially, but the
7 overall risk has been reduced for the community.
8 And what we'll continue to do is work with
9 our partners to find solutions for some of the other
10 issues that come up. So, it's very important that we
11 work hand in hand with the Harris County Flood Control
12 District and some of our other stakeholders as well to
13 manage those risks to the best of our ability.
14 And what I think you'll see with Addicks and
15 Barker Dam, I mean, this thing is a jewel in the middle
16 of Houston. When I first came here -- I'm not from
17 Texas. I'm from Georgia. Sorry about that but I am a
18 Texan now. I'm going to be voting next week and
19 everything. I'm a resident. I may not be a citizen but
20 I'm a resident.
21 But, you know, when I first saw this thing,
22 I thought what a jewel in the middle of the city. And I
23 think there's some significant benefits, and I hope you
24 all recognize those.
25 And if you'd hit the next slide.

Page 25

1 You know, these reservoirs have really done
2 a fantastic job of protecting the fourth largest, soon
3 to be perhaps the third largest city in the country.
4 It's enabled the city to grow. So, you
5 know, that's good in a lot of respects. Yeah, from my
6 foxhole, maybe it's a little bad because it puts our
7 reservoirs in kind of a danger but I think, in general,
8 most people would say that this has been an enormous
9 benefit to the city.
10 It protects about \$60 billion worth of
11 infrastructure and, of course, most importantly is the
12 lives that it protects and reduces that risk to people
13 and to their property.
14 And then, of course, what a lot of people
15 recognize Addicks and Barker for is the recreational
16 benefit. In fact, some people don't realize that
17 there's any other purpose out here except for recreation
18 but, you know, that's an important benefit as well for
19 the community.
20 So, I want to end with a few points, and
21 then we'll bring up the panel.
22 Houston is not in imminent danger of this
23 system failing. First of all, it's dry. If there was a
24 problem, we would be underwater right now but it's
25 typically dry. There's only a few times that this thing

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1 pools up.
2 We monitor it. We send out teams. Some of
3 the people in this room right now, they walk the levies
4 for miles and get blisters on their feet looking for
5 weaknesses in the levy system.
6 We've undertaken all those improvements, all
7 those interim risk reduction measures. We've focused
8 on -- life safety is our number one priority.
9 And, you know, it's important to work with
10 you all because this is your community. And so, we want
11 to make sure that we take opportunities to inform you of
12 the efforts that we're making, and really tonight is an
13 example of us kind of listening to some of your
14 concerns, and we look forward to that.
15 And then as we get moving into the
16 construction phase, you'll be able to kind of track the
17 progress on our website as well.
18 So, in my mind, this is really exciting
19 times for the area because it allows us to solve these
20 very difficult and tough challenges that we have in the
21 Corps of Engineers, protecting growing urban areas from
22 flood risk, while at the same time addressing our aging
23 infrastructure across the country.
24 So, at this time, we'll go ahead and bring
25 the panel forward, and we'll start taking questions,

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1 comments.
2 Sandy, do you have any instructions on how
3 you want to do that?
4 MS. ARNOLD: If you have a question for any
5 panel member, I ask that you state your name for the
6 record, and just raise your hand and I'll come with the
7 microphone.
8 Would you please state your name.
9 MR. NICHOLS: Bruce Nichols. I live in
10 Frostwood, which is downstream, near Memorial and
11 Gessner.
12 Our neighborhood has been concerned because
13 it's a place that shouldn't flood and does, and that's
14 partly because of the construction that's gone on in the
15 commercial areas along I-10.
16 And we have heard some things that
17 apparently are not true, and I would like to hear you
18 all say they are not true.
19 One is that the elevation -- the maximum
20 elevation of the flood pool that can be temporarily
21 stored behind the dams has been lowered, which reduces
22 storage, increases runoff down the bayou toward us.
23 That also prevents drainage into the bayou from our
24 area.
25 The commercial areas are doing a great job

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1 of getting the water off of their property and putting
2 it in the neighborhoods but the neighborhoods are not
3 getting any help in terms of putting into the bayou and
4 getting it out of the area.
5 So, the question is is there a limit on the
6 flood pool? Are there any restrictions on Harris County
7 Flood Control District in terms of what they can accept
8 because you all will be putting more water in there to
9 keep the flood pool under control? And, finally, is
10 there any limit on the city in terms of putting
11 additional drainage into the bayou storm water pipes?
12 Thanks.
13 MR. LONG: How are you all this evening?
14 I'm Richard Long. I'm the Natural Resource Manager for
15 Addicks and Barker.
16 The questions that were just asked were
17 twofold in a way. First off, as a result of our
18 planning for construction, have we reduced our maximum
19 possible pool at the reservoirs? We have not.
20 Have we -- second part, have we increased
21 the potential for additional releases in order to
22 protect the dams? Yes, we have.
23 As an interim risk reduction measure, we are
24 authorized to go up to 4,000 cubic feet per second in
25 the bayou. That's an elevation that we determined was

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1 acceptable to the downstream development.
2 Now, that doesn't mean that there won't be
3 some flooding of back yards and flowerbeds and tennis
4 courts and things like that but it's a safe elevation.
5 We will not deviate, however, from our
6 existing 2,000 cubic feet per second release unless it
7 appears that we're going to exceed the pool of record to
8 date, and then we'll only go up to 4,000.
9 Can we exceed that pool of record to date?
10 Yes, we can but the reservoir has its full potential, as
11 it did before we even discovered these issues.
12 MR. BERTAGNE: Could you please give a few
13 specifics in terms of technical facts? So, when you
14 say --
15 MS. ARNOLD: State your name, please.
16 MR. BERTAGNE: Yeah, my name is Allen
17 Bertagne. I'm a geologist, by the way, geophysicist.
18 So, could you give -- or some of the other
19 engineers give some specifics? So, first of all, when
20 you say elevation, what is that relative to? What's
21 zero elevation?
22 MR. LONG: Okay. Zero elevation for the
23 reservoirs is the stream bottom. Okay? Because the
24 reservoirs are normally dry.
25 MR. BERTAGNE: And the stream bottom

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1 elevation is how many feet above sea level?
2 MR. LONG: You're going to make me look at
3 my notes, right?
4 MR. BERTAGNE: Well, you've got other people
5 around you.
6 MR. LONG: Right. It's just a lot of
7 numbers that I -- my head is full of them. In the range
8 of 70 feet. 70 to 75 feet is the stream bed elevation.
9 When we go to max pool, it's where we look at the
10 reservoir cannot hold any more water and we start
11 spilling it uncontrolled around the ends of the dam,
12 that would be the maximum pool. That's about -- that's
13 over 200,000 acre feet.
14 We still have that capability today but we
15 don't want to do that. We never want to do that, in
16 fact, just because we don't want to test the dams if we
17 don't have to but right now especially, we don't want to
18 do that.
19 So, as an interim reduction measure, we have
20 permission to stage up to 4,000 in order to slow that
21 rise down, hopefully not exceed that pool of record
22 because we haven't seen what would happen yet.
23 MR. BERTAGNE: So, the 200,000 acre feet,
24 so, how many feet would the water level be above the 70
25 feet of the stream bed?

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1 MR. LONG: In the range of 35 feet.
2 MR. BERTAGNE: Okay. Thank you. Thank you
3 very much.
4 MR. MARTINSON: Yes, my name is Clark
5 Martinson. I'm the general manager of the Energy
6 Corridor District, and mine is not about the flooding
7 aspect but it's about the recreational potential not
8 only where the improvements are being made but also
9 within the reservoirs themselves. We'd like to do low
10 impact improvements or see Cullen Park or other -- the
11 county parks continue to do their sort of low impact
12 development but as the outfall, especially for Addicks
13 Dam, is there a possibility that the Energy Corridor
14 District, who I work for and represent, that we could
15 work with the Corps so that when you finish your
16 improvement, we can have a public access or park to that
17 area downstream from the dam?
18 MR. LONG: That's a definite possibility.
19 In fact, we've talked to some of the Energy Corridor
20 District people already, discussed it a little bit. We
21 know it's out there on the table. We're waiting to see
22 what our contractor needs, what everything looks like,
23 and then we can discuss a partnership either through a
24 real estate agreement or some other type action because
25 we would encourage recreation out there also as long as

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1 it's sound, environmentally kind, and we know that the
2 community needs it.
3 MS. CALDWELL: My name is Marge Caldwell.
4 I'm a long-term -- long-time resident of the Eldridge
5 Memorial area.
6 My question is inasmuch as the Panama Canal
7 is being widened and, I assume, deepened and, I assume,
8 the changes being made to the ship channel to
9 accommodate that enlargement, is that going to affect
10 all of the drainage of Buffalo Bayou into that area?
11 COLONEL PANNELL: Yeah, that's a great
12 question. And navigation is my other important mission
13 that I do, and so, I can talk to that.
14 You know, one thing that's happening right
15 now at Bayport and Barber's Terminal and the Port of
16 Houston Authority is deepening those container
17 terminals. And, of course, that wouldn't necessarily
18 have an impact on what you're talking about.
19 The other thing that's going on is we have a
20 new start study this year for the Houston/Galveston ship
21 channel complex, and so, that will affect the entire
22 ship channel from the Gulf of Mexico all the way up to
23 the upper turning basin potentially.
24 So, what we would do is as we go through
25 that study process, one of the key things that we'll be

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1 looking at is are there any impacts, and if there are
2 impacts, then that would be factored into the study to
3 determine whether or not those impacts are significant
4 or if they are significant, how significant and how they
5 can be mitigated.
6 So, we will be looking at that as a
7 potential concern. My guess is, you know, having not
8 looked at it, you know, it's quite a ways away from here
9 but it's something to consider.
10 In fact, one of the original purposes of
11 Addicks and Barker Dam was to reduce the amount of
12 sedimentation that was taking place, you know, the
13 sediment that was coming out of the bayou system and
14 dropping into the ship channel because I've got to dig
15 that out on the other end. So, you know, having a
16 system up here that retains some of that was one of the
17 original purposes of Addicks and Barker.
18 MR. RITCHIE: Good evening. My name is
19 Norman Ritchie. My house backs up onto Addicks Dam.
20 So, I'm fairly interested in all of this but, Colonel, I
21 came from further away than you.
22 COLONEL PANNELL: I can tell by the accent.
23 MR. RITCHIE: Yeah. Residual risk post
24 remediation but you've already told us that this risk is
25 dynamic in the sense that since the dam was constructed,

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1 it's changed continuously. How do you anticipate the
2 risk changing going forward post remediation,
3 particularly in view of the arguable climate change
4 that's out here?
5 MR. VAN CLEAVE: Yes, my name is Bobby Van
6 Cleave. I'm the lead engineer for the dam safety and
7 modification project.
8 And we spent quite a bit of time evaluating
9 all the issues related to Addicks and Barker Dam and
10 what were the root causes of the voids that Colonel
11 discussed and how to mitigate those, you know, in an
12 efficient manner.
13 And we developed a numerous amount of
14 alternatives to address each one of those issues,
15 specifically related to the foundation materials,
16 foundation soils below the conduits.
17 And so, what our team has done is come up
18 with an alternative that employs both a cut-off wall
19 that penetrates through that sand zone that we're
20 concerned about that may transport materials from
21 upstream to downstream, and then we've designed a new
22 outlet structure that has all the -- is designed in a
23 way that meets, you know, current standards relating to
24 an actual dam structure that regulates outflows,
25 whereas, the original structure did not do that.

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1 And so, it's a lot more robust type system
2 that we're installing. We're also including filters
3 downstream, whereas, a short-term fix, we addressed some
4 of the issues with a short-term filter around the
5 conduit, and this will include an internal filter, as
6 well as extending that filter to the downstream end.
7 And so, the team feels like -- and after we
8 went through the risk evaluation of that alternative,
9 the team feels like that that fully addresses any
10 concern related to the causal problems for the
11 foundation.
12 And so, as far as residual risk, we think
13 that is lowered to a significant amount that for the
14 foreseeable future is -- there will not be any attempt
15 to address those at all.
16 We will, obviously, be maintaining -- you
17 know, operating and maintaining the structure and
18 evaluating it constantly, looking and, you know,
19 assessing how the structure performs but we feel like
20 that that risk has been reduced and that we can continue
21 to hold pools, which the dam was not meant to do that in
22 the beginning. So, we feel like we can do that in a
23 very controlled fashion and keep that risk down.
24 MS. KAHLER: Excuse me. Sir, my name is Jan
25 Kahler. Good evening.

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1 I was just curious about the effect of the
2 speed of the water when it's released from the dam as it
3 goes downstream because it's a huge amount of water and
4 as it affects Buffalo Bayou and, you know, the banks and
5 all that sort of thing, are you planning any kind of
6 mitigation that will slow it down when you have to --
7 and how often do you have to release water from the dam
8 anyway, to protect it?
9 MR. LONG: Okay. First off, let's talk
10 about the last portion of your question, and then I'm
11 going to hand it off to Harris County.
12 The speed of the water going downstream is
13 the result of a couple of factors; the curvature of the
14 stream, the grade of the stream and other factors like
15 that, as well as the volume of water.
16 So, our release is at 2,000 cubic feet per
17 second. That's from the Piney Point gauge. That's
18 what's in there. It definitely has some speed to it and
19 velocity to it but we try to manage it in such a way as
20 we open the gates and let the water out, as well as
21 close the gates back down before we have another rain
22 event possibly. We slowly gauge up, we slowly gauge
23 down in order to keep a surge of water from coming
24 downstream, which could cause erosion and damage or
25 heavy water loads in the banks that would cause

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1 sloughing. So, we make attempts to do that.
2 Now, the management of the stream banks
3 downstream is the responsibility of Harris County, so --
4 MR. FITZGERALD: Thanks, Richard. We've
5 been working together for over 20 -- 25 years, so, I can
6 tease him.
7 I'm Steve Fitzgerald with Harris County
8 Flood Control District.
9 And that's a good question concerning about
10 the speed and what the water flowing downstream does to
11 the channel, and we've looked at it for quite a long
12 time.
13 And 2,000 is a big number. 4,000 is a big
14 number. We've observed it all the different ranges.
15 And once the water comes out of the reservoirs and makes
16 it into Buffalo Bayou, the slope of the bayou and the
17 shape of it affects the speed of it.
18 And because these releases have been going
19 on since the gates were put in in 1972 -- is that right?
20 Or -- we went down to 2,000 CSF in the '70s. This
21 channel has adjusted to that because it gets these
22 flows, and like Richard said, they vary -- when they
23 open and close the gates, they vary the speed or they
24 gradually open it and gradually close them over time.
25 So, the channel has really adjusted to that.

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1 MS. KAHLER: By the channel, you mean the
2 bayou?
3 MR. FITZGERALD: The bayou, yes, yes,
4 Buffalo Bayou, the bayou itself.
5 And so -- and like downtown, 2,000 CSF is
6 about 2 feet higher than it is in normal time. And up
7 at West Belt, it's about, I believe, 6 or 7 feet higher
8 than normal, but it's kind of created its own channel to
9 that amount.
10 So, it's fairly stable in most times, but
11 like any channel in Harris County where there's a lot of
12 urbanization, in the watershed, they are all stressed.
13 So, there is stress on all of our channels that are
14 semi-natural or natural, like Buffalo Bayou, just
15 because of the urbanization.
16 MS. KAHLER: Thank you.
17 MS. FOSTER: Hi. My name is Robin Foster.
18 I'm a reporter for the CHRONICLE's neighborhood section.
19 Related to that question, is the increasing
20 urbanization west of the dams going to contribute to the
21 amount of the level of the pool behind the dams and the
22 structures being able to hold that for longer periods?
23 MR. LONG: Okay. The increased urbanization
24 upstream creates more hard surface but we've also added
25 detention upstream as a requirement from Harris County

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1 Flood Control.
2 We do see more frequent pools just because
3 there's more runoff. We do see longer pools and we see
4 longer lasting pools due to the fact that we do not
5 release as much as we used to.
6 So, there's lots of variables that have
7 changed the operation of these reservoirs and what we
8 see. Will the reservoirs be able to continue to serve
9 as they have in the past? Definitely. No problem
10 there, but it has applied additional pressure to the
11 reservoirs. That's why we have going on right now this
12 dam safety modification study and the improvements.
13 MR. OXLEY: Yes, my name is Keith Oxley, and
14 I want to follow up the previous two questions.
15 Is there a dynamic model that's available
16 that you guys use to do stress tests on the overall
17 network? As was mentioned, we've had a tremendous
18 amount of urbanization occur upstream of the dam. If
19 you look at the rate of growth of Houston over the last
20 ten years, it's probably exceeding or doubling what had
21 been occurring the previous ten years.
22 And so, I'm just wondering -- I live
23 upstream of the dam, thankfully. I came from New
24 Orleans where I had five and a half feet of water in my
25 house. I don't want to have to go through an event like

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1 that.
2 So, I'm just wondering have you done stress
3 tests, just like the banks are required to do, and are
4 we doing all we need to do to prepare ourselves for
5 what's going to happen in the next 5 years and then also
6 for what may happen in the next 15 years, given our
7 apparently consistent high growth rates of the overall
8 city and the overall suburban area?
9 MR. FITZGERALD: Great question. There's
10 been different studies over the last 30 years or so to
11 address what you're talking about because we at Harris
12 County Flood Control, we look at it on a watershed
13 basis, and then we boil it down to individual bayous and
14 channels and see what stress or additional flows will go
15 into those areas.
16 And it's something we need to keep
17 monitoring as well and keeping an eye on. We are
18 concerned about it because the reservoirs do have a set
19 volume but the volume that's available in those
20 reservoirs, you know, is probably -- it's on the order
21 of about two, two and a half to three times the amount
22 of rainfall that we use for our 1 percent or 100-year
23 frequency storm. So, it could hold like up to three
24 100-year storms in there as far as volume is concerned
25 So, most of you all know if you live along

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1 the channel and you buy flood insurance, hopefully,
2 that's based on the 100-year storm. That's our baseline
3 in Harris County, and that's part of the National Flood
4 Insurance Program. So, these reservoirs have a lot more
5 volume than that to hold.
6 But one of the things that we want to do,
7 we've been talking with the Corps about, with Colonel
8 Sallese and Colonel Westin and Colonel Pannell is they
9 wanted to get through -- this is the most important
10 thing, is to get these outlets replaced. That is the
11 most important thing on their to-do list are these
12 reservoirs, but the next thing we want to do is to do a
13 joint analysis or evaluation of the watersheds with the
14 reservoirs together because some of our information is
15 getting a little bit aged right now, and we want to do
16 that together.
17 So, that's our next thing on our to-do list
18 after they get this launched is to do that because we
19 want to look at it in more of a system basis.
20 And like Richard said, the spillway on the
21 reservoirs are at the end of the dams, and we want to be
22 able to track if they got that high, where would the
23 water go. You know, right now we have like a 1980s kind
24 of version of that but the computer technology is a lot
25 better now. Topographic information is more detailed

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1 with lidar. So, we want to make sure we know where is
2 that water going to go if it gets to that level. So, we
3 have some things we want to do together, and that's what
4 we want to do next.
5 MR. OXLEY: Do you have funding for that?
6 MR. LLOYD: My name is Jim Lloyd, and I'm a
7 retired engineer.
8 And the question I have is we've put a lot
9 of retention ponds along Buffalo Bayou, which have
10 worked very effectively in mitigating local flooding
11 next to the bayou, and what I want to know is is it
12 possible -- the dam -- the dam slopes from west to east.
13 You could increase the capacity of the dam without
14 changing the pool elevation if you could excavate the
15 west end of the dam and effectively make a retention
16 pond capacity. Instead of having to worry about it
17 downstream, you can do it in the dam itself.
18 MR. LONG: Okay. We have looked at
19 excavation of the reservoir in the past. At the time we
20 looked at it, it was not feasible to do it. There's
21 numerous concerns involved with that.
22 First off, how much capacity would you gain
23 out of it because the reservoirs are so flat?
24 Second, we have environmental issues and
25 recreation issues out there.

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1 So, all those have to be addressed. When we
2 addressed it in years past, it was not practical at the
3 time. That does not mean it won't be practical in the
4 future. And with what Steve was talking about, it will
5 probably be addressed at that time again as part of that
6 study to see if that would be feasible to do.
7 MR. LLOYD: Could I just respond just a
8 minute? I would think that you would want to put
9 flooding priority above recreational issues. So, my
10 thinking is that that's not a good reason.
11 I also believe that the environmental issue
12 is a chronic problem that this country faces that is
13 regretfully making things less safe.
14 MR. LONG: Point taken.
15 MR. TANNICH: Yeah, my name is David
16 Tannich. I live in Briargrove Park, two blocks from the
17 West Belt gauging station.
18 And Jim Lloyd is a former colleague of mine,
19 and he asked one of the questions I was going to ask
20 about the possibility of deepening the area behind the
21 pool.
22 But beyond that, the increasing
23 urbanization, everybody has mentioned that very
24 recently, I mean, it is reducing the permeable area.
25 There's a lot more fast water in the bayou. My home has

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1 flooded twice, neither time from the bayou itself. It
2 got that close, but from inadequate city storm sewer
3 infrastructure.
4 What I'm wondering now is whether the -- I
5 saw the Colonel had the good words about cooperating
6 with other political bodies, and I know Flood Control
7 District is one of them, but one of the other things
8 that had been discussed by people like Jim, myself and
9 others is doing something with Fort Bend County and the
10 Clodine Ditch to keep the water from running around the
11 dam and never being caught behind the dam.
12 Is there any genuine hope of cooperation in
13 that area that will solve a problem? The April, 2009
14 flood, per the gauging station at West Belt, was a
15 100-year storm. It was really scary at my house, and
16 eye witnesses have told me that even though the flood
17 gates were closed, water was just gushing around through
18 the Clodine Ditch. And that would deem like that ought
19 to be dammed up somehow. Would somebody please comment?
20 Thank you.
21 MR. LONG: Okay. Clodine Ditch, let's talk
22 about Clodine Ditch for a minute. It was constructed to
23 intercept flows that would have originally gone to
24 Buffalo Bayou had the dam not been there.
25 So, above 293, Clodine Ditch is called Long

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1 Point Slough. There's two Long Point Sloughs; one on
2 the outside of the dam, one on the inside of the dam.
3 The dam cut it. So, we rerouted Long Point Slough.
4 Right now there's no way for the Clodine
5 Ditch water, Long Point Slough water to get inside the
6 reservoirs. It would be a modification to the
7 additional -- to the existing operating procedure. So,
8 it would require an authorized study to be done to see
9 if that's practical to be done.
10 So, what I'm telling you basically is
11 Congress is going to have to get involved. They are
12 going to have to tell us to study Clodine Ditch and see
13 if it's practical to put the water from Clodine Ditch
14 somehow in the reservoir. To date, that hasn't
15 happened. So, we cannot just go out and change the
16 operational aspects of the reservoir without
17 authorization to do that.
18 MR. KORNUA: Hi. My name is Nick Kornuta.
19 I live in Terraces on Memorial. My house is probably 4
20 or 500 yards downstream of the Barker current outflow
21 structure.
22 What's the decommissioning process? What
23 happens to the old one when you're done? How is it
24 buttoned back up and keeping me safe down there?
25 MR. VAN CLEAVE: Very good question. Yeah,

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1 that's something we spent quite a bit of time on trying
2 to evaluate how best -- and, again, we went through
3 several alternatives. One was to completely remove the
4 structure and then replace the embankment where that old
5 structure was. That turned out to be more costly and
6 did not save us any -- or didn't gain us any reduction
7 in risk, or much.
8 So, we felt like we could decommission the
9 structure in place by -- we're actually going to take
10 out a couple of the segments of the conduit, along with
11 all the downstream and upstream portions of the current
12 structure, the intake structure and the outlet
13 structure, the spillway. We're taking all that out.
14 We're going to be grouting the conduits full
15 with a cellular grout mixture, and then we're going to
16 be placing a cutoff wall upstream of that structure in
17 order to mitigate any issues related to the foundation
18 soils.
19 And so, after all that is completed, we're
20 going to place a berm upstream and downstream over top
21 of that area, and so, the embankment will be a little
22 wider in that section where the old conduit was located.
23 And so, that, along with the filter, again,
24 downstream of all that, will limit any potential
25 material loss within the foundation soils.

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1 So, we feel confident -- when I say "we," I
2 want to clarify -- and I didn't mention it earlier --
3 this is a collaborative effort. We're not working
4 within a vacuum in the Galveston District. We've got
5 quite a bit of, you know, experts and professionals that
6 are working throughout the country actually.
7 I'm actually located in the Little Rock
8 District Corps of Engineers. Adam Smith, he's in Tulsa
9 District. And then we've worked with people from Denver
10 in our Risk Management Center, quite a bit of the people
11 that work with us constantly, and along with some other
12 outside consultants that were hired to evaluate certain
13 problems specifically related to, you know,
14 decommissioning the structure and other structural
15 elements.
16 So, we feel like we've, you know, joined a
17 bunch of great engineers' combined efforts in order to
18 mitigate these risks, and that's who we use to evaluate,
19 you know, what's going to be there when we leave it,
20 make sure it's in much better shape than when we
21 started.
22 BETTY: Hi. My name is Betty. I live in a
23 home that backs up to the Addicks Dam.
24 I have two things totally unrelated.
25 The first is to register a public complaint

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1 against a nut case who lives in my neighborhood who says
2 he has a permit from the Corps of Engineers to pick up
3 trash. And 365 days a year, he rides his 4-wheeler over
4 the dam into the nature preserve and back again. I've
5 never seen him pick up a single piece of trash.
6 He now has three to four buddies who ride
7 with him on a regular basis, and he's beginning to
8 recruit other people to ride with him. And I'm
9 beginning to see other people from other neighborhoods
10 also riding 4-wheelers in the nature preserve.
11 I would like whoever it is who gave him the
12 permit to take it away.
13 MR. LONG: Let's talk afterwards. I'll get
14 more information from you. Okay?
15 BETTY: Okay. The second issue is -- and I
16 don't see this on the maps but the drainage ditch that
17 is on the south side of Addicks Dam at the base of the
18 dam, I would like someone to address how that all ties
19 into flood control because I note that there are some
20 very large exits of water. During light rain, there's
21 water flowing into the creek from south of the dam, and
22 during very heavy rains, we run out there in our rain
23 jackets, and we see that creek get very, very high, and
24 we fear that it will come over the edge into our
25 neighborhood.



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1 And in that case, all of those very large --
2 I mean, there are probably two-foot diameter pipes, the
3 water -- they're underwater then. So, aren't they
4 flowing south of the drainage and actually causing
5 flooding downstream? If someone can address how that
6 all ties in with the dam and flood control.
7 MR. LONG: Okay. Let me make sure I know
8 where you're talking about. You're talking about --
9 BETTY: Westwick subdivision.
10 MR. LONG: Westwick subdivision. Okay.
11 Upstream of Shell and Conoco?
12 BETTY: Yes.
13 MR. LONG: Okay. That ditch is called
14 Turkey Creek. I don't have the number off the top of my
15 head but it's called Turkey Creek. Just like Clodine --
16 just like Long Point Slough, there are two Turkey
17 Creeks; one inside the reservoir, one outside the
18 reservoir.
19 That ditch is a Harris County Flood Control
20 ditch that parallels our property line. And so, Harris
21 County is responsible for the management of that ditch
22 but we carry on discussions with them because of the
23 impact it does have on the tow of the dam.
24 So, just recently, Steve and I were
25 discussing Turkey Creek, and we agreed just, what, two

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1 weeks ago to get together and further discuss the Turkey
2 Creek issues. Okay?
3 BETTY: Thank you.
4 MS. BRYANT: Hi there. My name is Donna
5 Bryant, and I live north of the dam, Addicks Dam
6 actually.
7 And 15 years ago when I moved in there, I
8 patted myself on the back and said, "Aren't I smart, I
9 live north of the flooding area or anything that would
10 flood."
11 But now with all the development north and
12 west of us, the bayous are being overstressed, and
13 during some rain events -- and Horsepen Bayou, for
14 instance, specifically, water is forcing itself out of
15 the bayou and into our subdivision. We've had flooding
16 in our subdivision over the last five years that we
17 never had previously.
18 And so, I think this is probably a Harris
19 County question. Is there any plans to extend or widen
20 those bayous and, coincidentally, how will that impact
21 the pool in the dams itself?
22 MR. FITZGERALD: Horsepen Bayou, I know
23 we've done some work in there desilting, probably last
24 year, I think it was. No?
25 MS. BRYANT: About four years ago.

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1 MR. FITZGERALD: Four years ago? Okay.
2 Time flies. And I believe that the channel is in
3 probably about as good a shape as we can get it in. And
4 if we need to talk some more about more recent flooding
5 or flood levels, we can get with you and learn more
6 about that and see if there's anything else that
7 might -- we might be able to address but right now
8 there's no plans to widen or deepen Horsepen Bayou.
9 And so, it -- you know, since the
10 development has come around the upstream side of the
11 reservoirs, around the edge that Colonel showed the
12 pictures, it has been a challenge trying to get the
13 water into the reservoirs but we've worked with the
14 Corps over the years in getting easements and working
15 out engineering plans to do improvements in the
16 reservoirs on the bayous, like Langham -- or the creeks,
17 Langham Creek, Horsepen, Bear Creek, Mason Creek.
18 So, we've done work inside the reservoirs to
19 get depth and capacity to minimize the flood levels from
20 the more local rains around the edges but it still is a
21 challenge because of that but we've worked well together
22 and have done the best we can.
23 MR. ROBERTSON: My name is Jim Robertson.
24 As a result of the dam safety program doing
25 the outlet replacement, are there any other issues or

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1 deficiencies that were identified as a result of that
2 study that need to be addressed near term or potentially
3 longer term?
4 Thank you.
5 MR. VILLAGOMEZ: My name is Rick Villagomez.
6 I'm the Project Manager for the Addicks and Barker Dams
7 project.
8 On the slides, when we saw the results of
9 the assessment that was done in 2009, there were
10 concerns identified with the ends of the dam, the
11 spillways.
12 Based on the investigations and analysis
13 that were conducted, it was determined that the
14 protection that's there now -- we call it compacted
15 concrete -- was adequate in the event that we had pools
16 that would flow over the spillways.
17 What was not addressed in this study was the
18 flows around the ends of the dams. Folks who live in
19 the area and frequent it for recreation understand that
20 the dams tie into what we refer to as the natural
21 ground.
22 Well, the natural ground is lower than the
23 elevation -- the top elevation of the spillways, and
24 that means if the water is flowing over the spillway,
25 it's also going to go around it.

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1 And so, when we began our phase one study,
2 which you saw was completed in the summer of 2013, we,
3 at that time, deferred what we were referring to as a
4 phase two study that would assess the flows around the
5 ends of the dam.
6 So, we are currently awaiting congressional
7 funding to pursue a study that would look at flows
8 around the ends of the dam.
9 And upon receipt of funding, the Corps will
10 resume what we refer to as a phase two study. And
11 that's what remains for us to do.
12 It has no effect per se on the integrity of
13 the dam itself but it is associated with pools that
14 could be held in the dam.
15 MS. ARNOLD: Ladies and gentlemen, we have
16 approximately five more minutes for questions. Then
17 we're going to break away, and you can ask your
18 questions individually to the subject matter experts.
19 So, we'll take approximately three more questions, and
20 then we'll break off.
21 UNIDENTIFIED SPEAKER: I have one more
22 follow-up question on the Clodine Ditch question, and
23 that is, why is it the responsibility of Congress to
24 tell you what to do when it's your job to -- as the
25 Corps of Engineers to provide us the safety? Why don't

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1 you place requests from the government to get funding to
2 do something like sequestering the Clodine Ditch?
3 COLONEL PANNELL: That's a great point. We
4 do do requests, and the requests typically come from the
5 communities, and typically, we require some type of
6 sponsorship for those studies.
7 However, to get a study started, it
8 requires, by law, congressional authorization for a new
9 start study. So, if it's something brand new, by law,
10 it requires that.
11 Now, we have a whole stack of ideas that we
12 send up there but Congress only has so much money, and
13 so, they have to look at, well, what new starts are
14 going to be most important for the nation. And so, they
15 start prioritizing what those new starts are going to
16 be, and they say, "Okay. We're going to do these."
17 So, for example, we just had the Water
18 Resources Reform and Development Act come out in May,
19 June, 2014, that was the first time since 2007 Congress
20 authorized any of these new start studies. So -- and in
21 that, there were only nine. Fortunately, two of them
22 were here in Texas. Two of them are here in the
23 Galveston District.
24 So, it does take some time. So, you have to
25 work with your community, with your state, with your

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1 congressional folks. And so, getting the word out is
2 key.
3 At the same time, we're pushing that stuff
4 up from our level as well. And so, you know, we take
5 that input. That's one of the reasons why we're here is
6 so we can get those ideas, and if they make sense to us,
7 then we'll continue to push those forward.
8 UNIDENTIFIED SPEAKER: I encourage you to
9 put Clodine Ditch on your list.
10 COLONEL PANNELL: It's a big country out
11 there, sir. So, I think there's a lot of folks that
12 have their own Clodine Ditch challenges across the
13 country, and so, that's where we get down to
14 prioritization.
15 MR. DICKSON: Hi. My name is Eric Dickson.
16 You guys have talked to my question to some
17 degree but we know that there's extra water coming
18 around from the Clodine Ditch side and from the Turkey
19 Creek side but they're not -- and maybe I don't
20 understand -- they're not necessarily in the Corps' area
21 at this point. So, you say that we -- you have to go to
22 Congress to get authorization but does it really fall
23 under the Corps' side or the Flood Control District's
24 side as far as those two areas?
25 And what I'm thinking about more is the big

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1 concern downstream is surge capacity. If we have a big
2 surge from those two items, even though the dams are
3 collecting that water, you know, we're not controlling
4 those two flows, and if we can control those, it would
5 seem like it solve a lot of these other flood problems.
6 MR. LONG: Okay. Your question is answered
7 with the word property line. Clodine Ditch and Barker
8 Ditch -- Clodine Ditch south of Barker reservoir, Barker
9 Ditch north of Barker reservoir are within our property
10 line. We constructed and we maintain those ditches.
11 Turkey Creek over at Addicks is outside our
12 property line and is operated and maintained by Harris
13 County Flood Control District.
14 Basically, the dividing line is that getting
15 water to the reservoir is the responsibility of Harris
16 County Flood Control. Managing the water in the
17 reservoir is our responsibility. Managing the water
18 downstream of the reservoirs is Harris County's
19 responsibility again, with a cooperative effort between
20 us and them in determining how much water the bayou can
21 handle.
22 Does that make sense?
23 MR. BACHMAN: My name is Jim Bachman. I
24 live in Mayde Creek subdivision.
25 I talked to you on the phone about six weeks

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1 ago, I guess, and I was -- my concern is water going
2 from Mayde Creek into the reservoir.
3 In 2009, during the flood, we -- our
4 community flooded for like the first time since I had
5 lived there. And you had told me that that's Harris
6 County Flood Control District's responsibility of
7 getting the water into the reservoir and that you were
8 looking -- that you two were -- two groups were
9 collaborating on possibly, you know, increasing the size
10 of Mayde Creek. I just wanted to know if there's any
11 progress on that or anything like --
12 MR. FITZGERALD: Good question. We're not
13 looking at increasing the size necessarily. When we do
14 this overall comprehensive analysis together, we'll
15 probably look at it then but for now, what we're trying
16 to do is work with the Corps on getting into the --
17 South Mayde Creek within the reservoir and try to reduce
18 some desnagging and clearing some blockages out that are
19 downstream. It won't solve the problem but at least --
20 you know, every few inches in Harris County makes a
21 difference. If we can do something that can lower water
22 level 6 inches, that's a good thing, maybe not for
23 everyone but it's good for a lot of people.
24 So, we'll continue to look at that because
25 we know that that is an issue, trying to get the water

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1 in the reservoir for South Mayde Creek.
2 MS. ARNOLD: Okay. Thank you.
3 At this time, what we'd like to do --
4 MR. FITZGERALD: Can I say one more thing?
5 MS. ARNOLD: Sure.
6 MR. FITZGERALD: It's not a question but I
7 want to thank the Corps, of course, for making this
8 presentation tonight.
9 But also something else we're working
10 together with the Corps on and have done for quite some
11 time in some other agencies is there's always a storm or
12 event that can exceed the capacity of whatever we build.
13 We think we can outbuild mother nature but we really
14 can't.
15 We do the best we can, make good decisions,
16 keep everything maintained. Maintenance is a very
17 important part, but we always have to be ready for the
18 big one or something that would cause excessive
19 flooding.
20 And so, we put together, many years ago, the
21 Addicks Barker Emergency Coordination Team. It's the
22 Corps of Engineers, Harris County Flood Control
23 District, Harris County Office of Emergency Management,
24 Fort Bend County Office of Emergency Management, the
25 City of Houston, Precincts 3 and 4. So, we have a

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1 group -- oh, and the National Weather Service and the
2 United States Geological Survey. We're all working
3 together, and we have a group that -- we monitor what's
4 going on. We do drills. We do all kind of things so we
5 can keep you informed through the media and the elected
6 officials in case something happens or you need to know
7 something.
8 So, we always have that in our hip pocket,
9 and I just wanted to let you know we have that as an
10 active group that meets regularly to make sure we're up
11 to date on everything and knows what's going on so that
12 you will know if there's an issue that's possible that
13 could happen either upstream in the reservoirs or
14 downstream, that we're keeping an eye on it, and we'll
15 get the word out.
16 MS. ARNOLD: Okay. I just wanted to briefly
17 say we have approximately another half an hour left. At
18 this time, we're going to break away so you can ask any
19 of our panel members one-on-one questions.
20 Additionally, we have a 3D model in the back
21 that will be available for your viewing that just shut
22 off.
23 We will also have a recreational display
24 here to indicate where construction will be taking place
25 in the area.

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1 And then, lastly, we did pass out a
2 perception survey. We're very -- we would like your
3 feedback. It's very important to us. So, if you have
4 any feedback, you can fill it out and then just place it
5 on the front table before you leave. That way it gives
6 us an opportunity to provide you with information if you
7 would like.
8 And then also, if you didn't have a chance
9 to speak but would like to present your comment to the
10 Colonel or any of the panel members, we can do that as
11 well and then get back with you.
12 So, at this time, thank you again for
13 joining us, and we have another half an hour so you can
14 ask your questions of any of the panel members.
15 (Off the record at 7:55 p.m.)
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25

1 STATE OF TEXAS *
2 COUNTY OF HARRIS *
3

4 I, the undersigned certified shorthand reporter
5 and notary public in and for the State of Texas, certify
6 that the facts stated in the foregoing pages are true
7 and correct.

8
9 I further certify that I am not related to or
10 employed by any of the parties to the action in which
11 this public meeting is taken and, further, that I am not
12 a relative or employee of any counsel employed by the
13 parties hereto, or financially interested in the action.

14
15 SUBSCRIBED AND SWORN TO under my hand and seal of
16 office on this the 6th day of November, 2014.

17 *Edith A. Boggs*

18
19 EDITH A. BOGGS, CSR
20 Certified Shorthand Reporter and
21 Notary Public in and for
the State of Texas

22 Notary Expires: 5-10-2016
23 Certificate No. 3022
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