

1 AGENDA: CSO PHASE III STAKEHOLDERS MEETING

2 NARRAGANSETT BAY COMMISSION

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6 DATE: April 10, 2014

TIME: 1:00 P.M.

7 PLACE: Narragansett Bay Commission

Corporate Office Building

8 One Service Road

Providence, RI 02905

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12 PRESENTERS:

13 MIKE DOMENICA

RAY MARSHALL

14 TOM BRUECKNER

RICHARD RAICHE

15 TIMOTHY THIES

KEITH GARDNER

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17 STAKEHOLDERS PANEL:

18 GREG GERRITT

MICHAEL GAGNON

19 PHIL HOLMES

JOE HABERAK

20 AL MANCINI

CHRISTIAN CAPIZZO

21 AMES COLE

TOM BORDEN

22 DAVID TURIN

PHILIP MANCINI

23 RACHEL CALABRO

DAVID CARR

24 LANCE HILL

25 JAMES TOOMEY
HAROLD GADON

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1 BRIAN BISHOP
JAN REITSMA
2 MIKE WALKER
DORIS ASCHMAN
3 SHEILA DORMODY
STEVE COUTU

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5 OTHER ATTENDEES:

6 ERIC BECK
MATTHEW PITTA
7 JOANNE MACERONI
MELISSA CARTER
8 GEORGE PALMISCIANO
JOHN HART
9 CHRISTINE COMEAU
MEG KERR
10 SHERRI ARNOLD
JAMIE SAMOS
11 AMBAR ESPINOZA

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1 (HEARING COMMENCED AT 1:10 P.M.)

2 MR. DOMENICA: Again, welcome to
3 the second Stakeholder Meeting regarding the
4 Narragansett Bay Commission's Phase III, CSO
5 Program. Thank you all for your participation
6 in the first workshop. A couple of ground rules
7 before we start the presentation, which today is
8 on Gray Alternatives, otherwise, sometimes known
9 as traditional structural types of controls for
10 combined sewer overflow management.

11 Before we get into the presentation
12 and before Ray says a few words, just a few
13 housekeeping issues. First of all, I think
14 we've been able to adjust here, but Stakeholders
15 only at the main table here, you should have
16 gotten, it looks like everyone did, a sign for
17 your affiliation and name, which is helpful. So
18 one representative from each Stakeholder group
19 at the table.

20 If there's other representatives
21 here, they can certainly attend at the back, but
22 one speaker would be welcome. Please use the
23 microphones, state your name very clearly. We
24 had a little bit of difficulty last time

25 associating comments with names and

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1 affiliations, so state your name clearly, be
2 sure to use the microphone. With regard to the
3 minutes from the last meeting, the minutes will
4 be posted on the website, the Commission's
5 website. They are draft final. You probably
6 haven't read them yet. If you have comments on
7 them or corrections to them, please send those
8 to Tom Brueckner, and the changes will be
9 referenced in the next set of minutes from this
10 workshop.

11 With regard to parking lot issues,
12 I was probably confusing last time when I talked
13 about parking lots. I was not talking about
14 four-wheel automobiles, I was talking about the
15 Board back there where if subjects come up that
16 are pertinent, but not related to the discussion
17 at hand at this particular workshop, the
18 subjects we're covering, we would put it on a
19 parking lot, list a board, and integrate it in
20 future workshops, address it at that point when
21 it's tied in more explicitly to the subject or
22 the date.

23 So we'll continue to do that.

24 There's no board there this time, but Jamie and
25 I will take notes of issues. We'll tag them as

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1 parking lot issues, keep track of them. They'll
2 be referenced in the minutes that come out from
3 this, and again, we'll integrate those into
4 future workshops so that we're sure we cover
5 them.

6 The agenda for today, you should
7 have an agenda for today. I mentioned that it's
8 grey infrastructure. At this point here, I
9 think it would be helpful for all of us with the
10 new faces to go around the table, and again
11 introduce ourselves, your name and affiliation.
12 It would be helpful.

13 MR. MANCINI: Phil Mancini, Town
14 Engineer, Town of Johnston.

15 MR. BORDEN: I'm Tom Borden from
16 the Narraganset Bay Estuary Program.

17 MR. COLT: Ames Colt, Rhode Island
18 Bays, Rivers and Watersheds.

19 MR. GAGNON: Michael Gagnon,
20 Director of Public Works, Town of Lincoln.

21 MR. HOLMES: Phil Holmes,
22 representing the Rhode Island Shellfisherman's
23 Association.

24 MR. GERRITT: Greg Gerritt, Friends
25 of the Moshassuck, and the Environment Council

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1 of Rhode Island.

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3 MR. MANCINI: Al Mancini from the
4 Division of Public Utilities and Carriers.

5 MR. GADON: Harold Gadon, Citizens
6 Advisory Committee to the NBC.

7 MR. REITSMA: Jan Reitsma, Office
8 of Governor Chafee.

9 MR. HABERAK: Joe Haberak, Rhode
10 Island DEM.

11 MR. CARR: David Carr, Cumberland
12 Sewer Superintendent.

13 MS. ASCHMAN: Doris Aschman, Rhode
14 Island Department of Health.

15 MR. HILL: Lance Hill, City of
16 Pawtucket.

17 MR. COUTU: Steve Coutu, DPW
18 Director of East Providence.

19 MS. DORMODY: Sheila Dormody,
20 Sustainability Director for the City of
21 Providence.

22 MR. CAPIZZO: Christian Capizzo,

23 Rhode Island Attorney General's Office.

24 MR. WALKER: Michael Walker, Rhode

25 Island Commerce Corporation.

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1 MR. TURIN: David Turin, US EPA.

2 MR. DOMENICA: With that, Ray.

3 MR. MARSHALL: Just one quick

4 thing, I have no jokes. I just want to thank

5 you all for coming and taking some time out of

6 your busy schedules to provide the input that we

7 need to reshape Phase III, so, thank you, very

8 much, and whatever you have on your mind, make

9 sure you get it out on the table into the

10 record, so we can move forward in a positive

11 fashion. That's it, thank you.

12 MR. DOMENICA: And Tom would like

13 to make a few comments about some of the parking

14 lot issues from last time.

15 MR. BRUECKNER: Tom Brueckner,

16 Narragansett Bay Commission. And I was going to

17 say the same thing, I think everyone tends to

18 forget to say their name before they speak, so

19 I'll just remind you again. Each time before

20 you speak, for the benefit of the stenographer,

21 it would be helpful to say your name.

22 I know going through the minutes

23 from the last meeting, sometimes the
24 stenographer was not able to get the person's
25 name on the record for the next meeting. The

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1 other thing is to make sure you speak up, and
2 I've asked the stenographer if she cannot hear
3 you or you're speaking too fast, to let you
4 know, or if you don't say your name, let you
5 know. So we'll try and cover that.

6 Now the minutes that were posted on
7 the website were the draft minutes. We reviewed
8 them, and we asked the stenographer to make some
9 changes based on just some typos, primarily, and
10 one or two names that were incorrect, which she
11 did make the changes. Those new minutes were
12 posted today by Jamie, so you probably haven't
13 seen those.

14 And as Mike mentioned, as we go
15 through this discussion about parking lot issues
16 and any corrections you have, you can bring them
17 up at this point in the meeting, and they will
18 be a part of today's record. That's how we'll
19 change the minutes from last time. And this is
20 not a hearing, this is just really to keep a
21 good record of what was said so we can go back

22 to it for the next meeting. It's important that
23 we at least get the gist of what you're saying
24 down. Now, that being said, we talked about
25 parking lot issues, and I went through the

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1 minutes from the last meeting and found a few
2 items that I wanted to talk about today as
3 parking lot issues that I think we want to at
4 least carry forward for discussion, or be aware
5 of that it's an issue that hasn't been
6 necessarily resolved, but we want to keep it on
7 the table.

8 So the first one, and there was a
9 lot of discussion at the last meeting about this
10 topic, is affordability, and I have several
11 categories under affordability, and I'm going to
12 go through them, and I will state what my
13 understanding was as to what was said during the
14 meeting and what our parking lot issue
15 resolution will be. So if I say something
16 attributed to someone, and you feel that it
17 wasn't quite what you said, I'm paraphrasing,
18 feel free to correct me and say what you really
19 have intended to say if I did it wrong.

20 The first one is on EPA
21 affordability guidance. And I went through the

22 minutes, it was suggested by Mr. Colt that the
23 new EPA guidance on affordability is more
24 flexible than the previous 1997 guidance. Mr.
25 Turin of the EPA said in response, that the new

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1 guidance was actually not that much more
2 flexible but it is on the various costs that can
3 be considered. In terms of affordability
4 analysis, meeting household income, debt
5 payment, and other forms of financial obligation
6 can be factored in.

7 During Mr. Bard's presentation, he
8 indicated that the affordability analysis being
9 conducted by MWH will provide a greater degree
10 of granularity by looking at median household
11 income on a census tract basis, and that this
12 could substantially affect the determination of
13 what is affordable. So subsequent to the
14 meeting, I asked Mr. Turin if MWH's approach to
15 drilling down to census tracts to determine
16 affordability was consistent with the new EPA
17 guidance on affordability.

18 And the other question posed today
19 was if the cost that MWH is considering in their
20 affordability analysis, specifically, for CSOs

21 wastewater treatment facilities, sewer
22 infrastructure and stormwater are consistent
23 with EPA guidance. Dave said that EPA would
24 have a representative at the May meeting to
25 address these questions, and there's one other

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1 question, as well, that I'll get to in a minute
2 that we're going to ask him to speak about at
3 the May meeting. So that's really the
4 affordability guidance. I just want to make
5 sure that the path that we're headed down with
6 our consultant and our understanding about how
7 affordability works is consistent with what
8 EPA's new policy says. And I think having
9 someone here from the EPA to talk about their
10 policy, have them talk about it directly, would
11 be helpful to us.

12 The second area is determination of
13 median income. Ms. Karp's suggestion that
14 median income should be based on median income
15 of property owners, instead of the income of the
16 occupants of the residence. A response from the
17 floor said that EPA methodology uses the median
18 household income of the residents of the
19 community.

20 So our response is that in order to

21 be consistent with EPA methodology, we will use
22 the median household income of the residents of
23 the appropriate political subdivision via the
24 district community census track, whatever.
25 Models for adjusting rates for most impacted

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1 communities.

2 Ms. Dormody asked if MWH knew of
3 any models being used in other places that are
4 able to adjust rates for the most impacted
5 communities or neighborhoods, including lifeline
6 rates. Mr. Bard responded that the ability to
7 adjust rates in this way is dependent on
8 internal policies and state law. He did not say
9 if he was aware of any existing models that
10 addressed rate adjustment based on need. This
11 issue will remain open pending further
12 information on determination of affordability by
13 EPA, and based on that, if we need to consider
14 such a rate adjustment. So this is still a
15 parking lot issue that will probably be touched
16 upon at the next meeting in May when the EPA
17 representative talks about affordability, and
18 also carried through by our consultant.

19 The next item was commercial rates.

20 Mr. Walker asked MWH what they were doing with
21 regard to rate impacts for industrial and
22 commercial users. Mr. Bard responded that 1997
23 EPA guidance only focuses on the residential
24 indicator. Our proposed approach will be to
25 complete the affordability analysis using the

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1 residential indicator as prescribed by EPA. We
2 will also estimate what the comparable
3 commercial and industrial rates will be based on
4 the affordable residential rate. Basically, as
5 the percent increase is for the residential
6 rate, we're going to assume the same percent
7 increase for industrial and commercial rates.
8 If allowable under EPA guidance, commercial and
9 industrial rates will be considered as another
10 factor in the affordability analysis similar to
11 local debt, and things of that nature,
12 unemployment.

13 NBC rates: Ms. Karp asked if NBC
14 rates are pegged against water consumption. The
15 answer is yes. Current NBC residential rate
16 structure is a customer charge of \$202.47 per
17 year, that's a flat fee. And a water
18 consumption charge of three dollars or 267 per
19 hundred cubic feet. Meeting water quality

20 standards: Mr. Bruekner stated, that was me,
21 that EPA understands that you can't afford to do
22 everything right away. So their approach is you
23 do what you can afford now, but if we don't meet
24 quality water standards when Phase III is
25 complete, then EPA will ask what needs to be

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1 done next to meet water quality standards, and
2 what it's going to cost. And that you're never
3 really done spending money until you meet the
4 standards.

5 Later in the meeting, Mr. Reitsma
6 suggested that this is not the way the EPA
7 works, meaning, they don't require that you keep
8 spending money up to your limit of affordability
9 until you meet standards. So we've asked the
10 EPA to clarify their position on attainment
11 water quality standards and affordability. They
12 said they would do so at the May meeting.

13 The next topic that I culled
14 through that there were some questions on had to
15 do with water quality. Ms. Karp's suggested
16 that we ought to explore everything with the
17 state of the water or bay, and not assume that
18 Phase III is preordained. Also, the impact of

19 discharges from Worcester and Woonsocket should
20 be considered when determining what NBC has to
21 spend on controlling CSO discharges.

22 Mr. Holmes stated that he would
23 like to see water quality improve to support the
24 salmon fishery. This reevaluation is to
25 determine what is the best affordable

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1 alternative, which may be entirely different
2 from what is currently proposed. The
3 reevaluation will consider the impact of
4 discharges from rivers upstream of the CSO area
5 through modeling of the receiving waters, using
6 fecal coliform as an indicator of water quality.
7 The reevaluation will not be able to identify
8 what needs to be done to reestablish the salmon
9 fishery or other fisheries for that matter, as
10 it is probably a major study onto itself.

11 The impact on water quality then
12 will be derived from the Phase III program, will
13 be what it will be. We'll try and estimate what
14 it will be based on, again, bacterial
15 improvements, but associated with that, there
16 would be improvements in other parameters for
17 water quality, obviously, if we control
18 bacteria, and other pollutants will also be

19 controlled to some extent.

20 And then the last topic that I
21 culled through was alternatives. Ms. Karp
22 stated that rainwater should be infiltrated back
23 into the system, instead of into tunnels. Mr.
24 Wrightsman stated that the people at the
25 Stakeholders meeting have a lot of capability to

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1 come up with solutions that can save money, and
2 that there are new ways of doing things, and we
3 ought to empower the people proposing those.
4 The infiltration of rainwater will be evaluated
5 under the green infrastructure alternatives, and
6 I spoke to Jan just before the meeting to see if
7 he wanted to speak, if he had any particular
8 solutions in mind that we are not currently
9 evaluating. So I'll ask if he would like to say
10 anything at this point.

11 MR. REITSMA: I'm glad that my
12 remarks caused a rephrasing of what was said
13 about EPA because I think if I recollect what
14 was said was EPA approached this as you spend
15 what you can now, and then we have some money
16 again to spend some more. I took issue with
17 that characterization, which is not the way

18 you're characterizing it now.

19 So it's very common for people to
20 characterize EPA's thinking that way, and I
21 suggest it's not a productive way. I think EPA
22 is because the leadership is interested in
23 working with regulated parties to come with cost
24 effective ways. That was the tenor of my
25 comment. I'm glad EPA will have a chance to

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1 speak for itself. With the respect to
2 innovative and new ways, paying for expensive
3 projects, I think what I was getting at was that
4 A, this is the kind of thing that doesn't only
5 apply in the area of wastewater treatment, it's
6 encountered in every infrastructure area that we
7 deal with:

8 Transportation, being the great
9 example, as well. How on Earth are we going to
10 prevent this from going down the drain with our
11 infrastructure given the budget constraints that
12 we have, and whatever. And there are people,
13 including actually people on the staff of the
14 consultants, because I spoke with one that we
15 presented at the last meeting, who has a special
16 interest in this, as well as the special
17 expertise, who are looking at alternative

18 financing mechanisms with their colleagues, and
19 the so what I'm suggesting, let's look at that
20 as an issue in and of itself, instead of just
21 thinking within the traditional ways of how we
22 finance these things.

23 There may be ways to come up with
24 alternative financing structures, as well as
25 putting solutions together that have different

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1 element that ultimately might be more
2 cost-effective than when we do things the way
3 we've always done. That was the tenor of that
4 comment, and I'll be glad to work with the other
5 folks, some of them around the table, to come up
6 with more specific examples.

7 MR. BRUECKNER: So what I'm hearing
8 is that the comments about putting our heads
9 together had more to do probably with financing
10 of the components of the program than not so
11 much necessarily with the alternatives we're
12 looking at for the actual implementation of the
13 water quality improvements.

14 MR. REITSMA: I think it's both. I
15 was primarily focusing on finances.

16 MR. BRUECKNER: Based on what we

17 presented last time in terms of what we're
18 looking at for alternatives, and we'll be
19 talking about that again today and the next
20 meeting. I don't know if there are any
21 alternatives that you suspect we may not be
22 looking at in terms of to be built for water
23 quality improvement, is that safe to say?

24 MR. REITSMA: No, and I don't
25 consider myself to be the expert in that regard,

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1 either.

2 MR. BRUECKNER: Okay, fine. I
3 would ask if anybody else has any other comments
4 on any of the minutes, or anything that was
5 discussed at the last meeting?

6 MR. BISHOP: The only comment I
7 had, Tom had pointed out that there was some
8 question coming, given the time from the last
9 session which is what resulted in me being a
10 Rhode Islander and going to where we used to
11 meet instead of where we are meeting. I think
12 there was some question of what my thoughts
13 having participated in the previous venue as a
14 skeptic, I would say, of any really kind of
15 major industrial investment in CSO control, and.

16 I started, you know, how did I feel

17 at the end of the process, or was I supportive,
18 and I think, I believe Tom suggested to me that
19 speaking in my stead, because I was off
20 investigating sewer disposal in Jamaica, that
21 he's right to say that, essentially, I agreed
22 with what I understood to be the collective will
23 when we left the last time, if there's anything
24 kind of on the table now that gives me any pause
25 in saying, you know, hey, we're right where we

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1 left off, I tend to think that the kind of
2 belief -- I didn't have the belief that what we
3 had agreed was Phase III is the way to
4 accomplish this, or this is all the way of
5 delaying the next step, I would actually
6 miraculously associate myself with Carolyn's
7 comments to an extent that I didn't consider
8 Phase III to have been an inevitability, or in
9 Jan's perspective that it had something to do
10 with just waiting until we had the money for
11 Phase III.

12 I really thought we were going to
13 look very, very hard at the extent to which
14 Phases I and II accomplished what they were
15 modeled to accomplish, whether we'd gain more or

16 less, what they actually cost compared to what
17 they modeled to cost, and at least try and use
18 that real-world experience to guide perceptions
19 of what at the time may have been a penciled-in
20 Phase III. So with that kind of reservation, I
21 would, otherwise, say Tom's right that I
22 basically thought I was in pretty much in
23 agreement where we left the last time.

24 MR. BRUECKNER: I just want to
25 follow up, because you weren't here at the last

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1 meeting, but with regard to water quality
2 improvements from Phase I, we will be evaluating
3 that as part of this process, because we
4 actually have real data after Phase I was done,
5 and we have a slide on it.

6 MR. BISHOP: I saw the slide.

7 MR. BRUECKNER: With regard to
8 Phase 2 improvements because it won't be going
9 on-line until the end of each year, we will try
10 to anticipate through modeling what those
11 improvements will be, and similarly with regard
12 to Phase III, whatever alternatives take, we'll
13 try and evaluate or model what the improvements
14 expected would be with Phase III.

15 But I think it's safe to say, and

16 it was one of the first items I talked about in
17 this parking lot, was the question about Phase
18 III and water quality standards. What do you
19 have to do, what do you have to spend in order
20 to meet water quality standards? And I think as
21 Jan just referred to, that's the big question,
22 we're going to have the EPA come in the next
23 meeting to talk about that very thing, how much
24 money do we have to spend, and when have we met
25 water quality standards, when do we start, so

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1 that's very germane to what we're going to do in
2 Phase III.

3 MR. TURIN: I think as Jan
4 mentioned last time, you've talked about it
5 again today, I really would think that the way
6 to think about it is that the obligation is to
7 meet the water quality standards, and the EPA,
8 and Congress and Clean Water Act on regulations
9 implementing the law, don't envision that we are
10 lightly, if ever, writing off attaining water
11 quality standards for any specific waters.

12 And I think the important thing is
13 to keep in mind that that is the goal. The goal
14 is not how much money you spend, it's not about

15 how much money you spend, but, of course, we
16 recognize that meeting water quality standards
17 is not something that's being done in a vacuum,
18 and there's a certain amount that can be
19 afforded up to a certain point, and then you
20 work on how and when can we make the next step
21 toward meeting water quality standards.

22 Now, I just think that the
23 semantics, you know, is important, that the goal
24 is clean water, the goal is not to have sewage
25 going into the waters of the state, whether it

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1 affects shellfishing or recreation or just the
2 aquatic community, and I think to continue to
3 represent it, it's the money that comes first is
4 just amiss, not a good characterization.

5 MR. BRUECKNER: I think what I was
6 saying, Dave, is basically what you're saying,
7 that we right now for Phase III would spend,
8 according to the affordability criteria from the
9 EPA, what we can afford to spend. If when we're
10 done we don't meet water quality standards,
11 which is the goal that we would meet the
12 standards, that at some point in the future you
13 would then have to continue to address the
14 issues affecting water quality, and spend more

15 money in order to meet standards. I don't know
16 if you're saying that's not correct.

17 MR. TURIN: It's the phrasing, and
18 I don't want to belabor it here, because I am
19 going to have someone that works very closely
20 with our, in terms of our analysis affordability
21 studies that people do, so I will defer to him,
22 but I just wanted to say this is the second or
23 third time today, and another time last week,
24 where the money is being put first, instead of
25 the water quality objective being put first.

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1 And, you know, like I said, I think it's more of
2 a way that you're thinking about how you're
3 solving the problem, I think that the water
4 quality goal isn't changing, the water quality
5 goal is what it is, and then you do an analysis
6 to figure out how close to that can we get.

7 MR. DOMINICA: Tom, I just suggest
8 that this is really the subject of an expert's
9 stakeholder's workshop to some degree, and
10 probably future follow-up for that discussion as
11 we go through this process. So I think we have
12 a good sense of the tension here between the
13 two, which is inherent from the Clean Water Act.

14 It was there from the beginning, it's still
15 there, so I suggest we just leave this issue on
16 the parking lot until next meeting to follow up.
17 Phil?

18 MR. HOLMES: On page 60, line 5, I
19 was misquoted. The word that I said was
20 bullraking, if you're not a Rhode Islander, you
21 wouldn't know what it was, but you wrote down
22 pole raking. And what I was saying about the
23 salmon fishery is not that I want to see a
24 salmon fishery, it's more of a type. We once
25 had a salmon fishery, but we don't have it now.

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1 If we got back different types of harvesting,
2 whether it's shellfish or fish, the whole state
3 would be better off because they'll be more
4 income into the general population because of
5 the increase in fisheries.

6 You've seen an increase in oyster
7 farming, and that's good. We've seen an
8 increase in the number of soft-shelled clam
9 landings done by diving, that's good.
10 Quahog landings are up, that's good, but we need
11 variety, essentially, what I was trying to
12 state.

13 MR. DOMENICA: Thank you.

14 MR. COLT: The minutes are more of
15 a transcript of the whole meeting, so when I
16 started to dig into them this morning, I
17 realized we weren't going to be able to get
18 through them all. It would be helpful if they
19 were condensed somewhat in the future. I know
20 that's an extra step, but that would be helpful.
21 You tabled the discussion we were having. I
22 think I would say, overall, we are not alone as
23 a state in terms of trying to figure out how to
24 replace and upgrade aging or decrepit
25 infrastructure, both for water, wastewater,

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1 transportation, and so forth. Other states are
2 in a similar boat. And how we solve this
3 problem long-term has, I think, a direct impact
4 upon the ability for our state, particularly our
5 urban economy to grow. So there's a great deal
6 at stake in terms of really trying to use the
7 innovative planning framework that is slowly
8 coming forward as a tool to deal with these
9 issues, and I'll leave it at that.

10 MR. DOMENICA: And we have a young
11 lady joining us at the Stakeholder table, if you
12 could just introduce yourself for the

13 stenographer.

14 MS. CALABRO: I'm Rachel Calabro,
15 I'm from Save the Bay.

16 MR. DOMENICA: Thank you, Rachel.
17 Anything else, Tom, any other comments?

18 MR. BRUECKNER: I'm all set.

19 MR. DOMENICA: Okay, thank you.

20 And with that, Rich Raiche will lead us through
21 the grey structural divisional alternatives.

22 MR. RAICHE: Mercifully, for you
23 all here assisting me in this presentation, and
24 hopefully interactive discussion of Grey
25 Infrastructure Alternatives, are Tim Thies and

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1 Keith Gardner. So the general outline is that
2 we'll start off with a bit of a basis of what
3 our goals that we're trying to accomplish today
4 are, and again, the nuts and bolts of the grey
5 alternatives. The reason we're all here is to
6 find alternatives to what the currently defined
7 Phase III set of solutions is.

8 It's a substantial undertaking to
9 reevaluate all of these alternatives, and in a
10 defined plan and come to a consensus on what
11 your redefined Phase III should incorporate.

12 So what we've done is we've

13 segmented out into a couple of sets that we hope
14 to work with you, the Stakeholders, over the
15 course of the next five meetings as sort of a
16 structural framework. You know, we do ask that
17 you have some discipline along with us as we go
18 through and step through all of the alternatives
19 and how to evaluate them, because we do sort of
20 need that framework so that we don't go off
21 course. We do have this goal of wrapping up the
22 redefined plan by the end of the year.

23 So today as in May, we will be
24 looking at alternative developments. And we as
25 consulting engineers can go through and evaluate

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1 the technical feasibilities of various different
2 approaches to solving these problems. In
3 essence, in some instances, you simply can't fit
4 a square peg into a round hole no matter how
5 hard you try to jam it in there. But once you
6 do find some technically feasible alternatives,
7 there's a lot of nuances to how you implement
8 them, and maybe nuances isn't the right word,
9 because those other aspects of how you implement
10 those solutions have a dramatic impact on cost
11 of construction and operation, and the impacts

12 to all the residences and the businesses in the
13 region.

14 So that's what we hope to work with
15 you over the course of the next two meetings,
16 the focus on grey this month, and green next
17 month. The following two meetings in June and
18 September, we're broadening the horizon of
19 alternatives and options and defining what they
20 look like, then the next two meetings goes
21 through the process of screening them down and
22 evaluating them against each other, so that we
23 have from a world of different pieces across the
24 entire service area to sort of effect real
25 alternatives to Phase III, as is currently

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1 defined. Then the plan is that by October, we
2 will have a really good sense for how all those
3 different pieces fit together and develop a
4 plan. So, again, today and May our focus is the
5 top of the harbor. You're just defining what
6 these alternatives are, and we will loosely use
7 words alternatives and options, you know, it's
8 sort of a limitation of the language you get a
9 little bit lazy in it, but, for example, we'll
10 say alternatively sewer separation or tanks, or
11 green stormwater.

12 What we want to do is define what
13 those look like for this application. What
14 we'll do in today's meeting and next month's
15 meeting, we'll start with a general overview of
16 that classification of alternatives, we'll talk
17 about it in sort of general terms, and hopefully
18 define a little bit of what this collective
19 groups feeling on those alternatives are, we'll
20 then dive down into specific applications of
21 those alternatives for each one of the CSO
22 locations, so we'll be looking right at the
23 neighborhood basis and identifying specific pros
24 and cons for that alternative in that location.
25 And again, we want to work with you in a

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1 collaborative sense to define what these things
2 look like. As we go through this process, it's
3 inevitable that you'll start thinking about how
4 you evaluate those alternatives, I mean, it's
5 simply human nature to kind of want to jump to
6 the end of the story.

7 And again, that's sort of more of
8 the focus of the subsequent two sets of
9 meetings; however, if you just go into a room,
10 and say, all right, let's list what are

11 evaluation criteria are as sort of an esoteric
12 exercise, you sort of draw a blank, it's a weird
13 thing to do in the abstract.

14 So, actually, in the process of
15 defining what these alternatives are and talking
16 about specific applications in neighborhoods is
17 actually quite good that you start thinking
18 about how you might evaluate that.

19 So what I would suggest that if you
20 have that sort of thought, please do raise your
21 hand and identify your name for the
22 stenographer, and we'll put it in the parking
23 lot, so that in June when we go and focus on
24 alternative evaluation criteria, we'll have like
25 a nice working pool. So please don't feel the

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1 need to censor yourself, because it's not the
2 topic of conversation today. So, again, we need
3 an organizing principle to go through what is a
4 very large plan, and we'll step through,
5 essentially, the process of how we've laid it
6 out over this meeting and the next, is to start
7 with a baseline, and then move progressively
8 further away from that set of alternatives.

9 Now, the baseline Phase III plan
10 that's identified by the previous planning

11 effort is sort of a rough sketch, and there are
12 a lot of details that need to be redefined, and
13 there was a lot of intelligence that was gained
14 from the implementation of Phase I and Phase II
15 that we want to use to inform and better define
16 what Phase III is.

17 So that's sort of why we're
18 starting with that as an alternative in and of
19 itself, including the sewer separation in the
20 tunnels and the interceptors that are
21 consolidation cost conduits that are associated
22 with the tunnels, and then moving into localized
23 combined flow handling, and then concluding
24 today's meeting with stormwater control, which
25 really sets the stage for May's meeting with the

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1 focus on green stormwater options. Before we
2 start diving into each one of these, it may be
3 obvious to some people, or even if it is stuff
4 that we deal with on a daily basis, it's a
5 pretty good idea to recap for ourselves, sort of
6 the fundamental differences between these
7 alternatives. So for sewer separation, you
8 know, what does it do and where does water go?
9 And you need to think of how the water moves and

10 is discharged, both in terms of the volume and
11 in terms of quality.

12 So with sewer separation, it does
13 that, it segregates the stormwater from the
14 sanitary flow. All the wastewater goes to the
15 wastewater treatment plants, and all of the
16 stormwater gets discharged directly to rivers.

17 The result of sewer separation in an area is
18 that that it entirely eliminates the CSO.

19 So the flip side is that you do
20 have a discharge of polluted urban runoff
21 directly to the rivers, which is something that
22 in the past 10 to 20 years, it has been
23 discovered to be a major component of water
24 quality degradation in receiving water body.
25 Then you move into storage, both deep tunnel and

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1 near-surface storage tanks. You're
2 philosophically, you're keeping the combined
3 system in the collection system, so the
4 stormwater and sanitary flow are still combining
5 in the collection system. So we still have
6 sanitary flow and storm flow comingling, and
7 what you're doing is around design parameters
8 you're storing that combined flow. Now the plus
9 side of that is that you then pump out those

10 storage facilities and you're treating that
11 combined flow at the centralized treatment
12 plant, and you still do have CSO discharges to
13 the rivers. Any storm that exceeds the design
14 capacity is that you still do have the CSO
15 discharge.

16 The plus side, unlike sewer
17 separation, is that for any storm smaller than
18 that design event, and possibly more importantly
19 for the first flush of large storms where the
20 stormwater is most polluted, you're still
21 capturing that, then sending it to us at Field's
22 Point and Bucklin Point Treatment Plant for a
23 high level of treatment prior to discharge.
24 There are water quality benefits to that
25 approach. Another approach that we'll be

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1 talking about today is localized treatment and
2 discharge, we generally mean screening and
3 disinfection, a sort of satellite small
4 treatment facility. Under this, again, it has a
5 design capacity, so you still have a CSO event
6 and any time you have a rain event, larger than
7 your design capacity, you do have some minimal
8 treatment of that CSO, on the flip side is that

9 because you still do have the infrastructure
10 there to collect the stormwater and send it to
11 the centralized treatment plants, is that for
12 smaller storm events, much like the storage
13 options, you are getting a high degree of
14 treatment of polluted urban runoff.

15 Again, today we'll wrap up with
16 stormwater control, which is really a system
17 optimization. Again, if you were with us last
18 time, remember our discussion of source pathway
19 receptor categories. The sewer separation is
20 the pathway near surface and tunnel storage, as
21 well as localized treatment of discharge are
22 receptor solutions.

23 The stormwater control really seems
24 to manipulate the border between source and
25 pathway. And the idea that you're trying to

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1 segregate as much stormwater to the combined
2 system as you can. From a volume and quality
3 standpoint and point of discharge, it has a lot
4 in common with the storage and treatment
5 discharge categories, and that below a design
6 capacity you're sending all of this polluted
7 urban runoff to the treatment plant, and above
8 the design capacity you're still essentially

9 triggering a CSO event in the rivers.

10 MR. DOMENICA: Rich, before you go
11 on to the next slide, one interesting point
12 about stormwater or sewer separation that I
13 think is appropriate right now, as Rich
14 described it, it's taking the stormwater out of
15 the combined sewer separate stormwater system,
16 all of your stormwater now goes to the receiving
17 water of some sort, so you have two separate
18 systems.

19 One thing that wasn't recognized
20 early on in the late '80s, early '90s, is that
21 when that happens, it's an interesting
22 phenomenon, with combined sewers because of the
23 way they were designed, combined sewers were
24 designed to take up to sometimes three times dry
25 weather flow, at least twice dry weather flow,

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1 sometimes two times dry weather flow to the
2 wastewater treatment plant for treatment. So in
3 designing a combined sewer to handle wastewater,
4 it was also designed, in fact, to handle some
5 amount of stormwater, so traditionally with
6 combined sewers, the first flush of the storm
7 when the streets were cleaned with the first

8 part of the rainfall, went to the wastewater
9 treatment plant. When you separate sewers, that
10 first flush goes automatically to the receiving
11 water.

12 So there's not only a sense of
13 separating the sewers, you also lose some of the
14 secondary treatment that is applied to that
15 first flush of stormwater when you separate
16 sewers, and that's been one of the factors with
17 regard to water quality that's been important
18 over the last 30 years.

19 MR. RAICHE: I would say to add on
20 to that comment that as we enter the next decade
21 and more attention is paid to stormwater
22 discharge is that perhaps the old way of doing
23 things did have benefit. John Sullivan from
24 Boston Water and Sewer had said repeatedly that
25 he wished that he had more combined sewers in

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1 Boston because he captured the first flush and
2 sent it on to Deer Island. And as we're looking
3 at municipal separate stormwater discharge
4 permits, municipalities are going to need to
5 address water quality discharges from stormwater
6 sources.

7 It is a great concern as to how to

8 do that, because the state of the art for
9 wastewater treatment has advanced significantly,
10 but stormwater significantly is lagging behind.

11 That is a little bit of a teaser to what we'll
12 be doing in September.

13 So sewer separation, again, is
14 exactly what it sounds like. You're taking what
15 is usually a single pipe in a row that collects
16 both sanitary and stormwater flow, and putting
17 in two pipes: One dedicated for one, and one
18 dedicated for the other. We've already started
19 to tease a little bit of the advantages and the
20 disadvantages.

21 Clearly, the advantages are reduced
22 stormwater discharge to the NBC system, which
23 then relieves the stress on the interceptor
24 system that causes CSOs throughout the system.
25 And we do sort of have a benefit at the

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1 treatment plant because you are sending less
2 water to the treatment plant, and you can see
3 less of it there. There is the potential,
4 although while you're digging up the street and
5 putting it up in to your pipes, to sort of
6 improve the streetscape in areas that haven't

7 been touched for a very long time. Now, again,
8 the disadvantages are you're increasing
9 stormwater discharge to rivers.

10 Now, we were just sort of harping
11 on the quality side, there's also a quantity
12 impact, as well. Any of these rivers, and we're
13 talking specifically of the Blackstone, and I
14 suppose Seekonk, as well, the west, and
15 Moshassuck Rivers.

16 So any of these rivers that have
17 flooding potential are now putting more
18 stormwater directly into them so you're
19 exacerbating flooding issues. And during
20 construction, there is major disruption to the
21 neighborhood in these dense areas ripping up the
22 entire street, and it is sort of difficult to do
23 because you also have elicit discharge
24 connections. So I'll hand it over to Tim.

25 MR. HILL: I just want to say the

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1 other advantages to a sewer separation,
2 obviously, our residents suffer a lot of
3 problems, backup from the pipe, they back up
4 into their homes, which is a major concern for
5 our residents there. Separating those sewers
6 will alleviate some of those problems.

7 MR. THIES: That's exactly the sort
8 of interjection that we are hoping to have. I
9 spoke a lot, and I do hope as we progress that
10 we'll have ideas come out like that, but that's
11 exactly the sort of contribution that we're
12 hoping to have.

13 MR. GADON: I know one of the
14 reasons is for the review of Phase III, and the
15 delay is to determine if there was any creative
16 scientific solution that was worthwhile. It
17 looks to me like the alternatives being
18 discussed are looking to redefine them. Is
19 there anything new or exciting, creative coming
20 up?

21 MR. THIES: I would say in general
22 that the new and exciting stuff for today is
23 loaded to the second half of today's
24 presentation, and May is really the focus of
25 everything that's new. I don't think very much

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1 of anything from May's discussions were really
2 seriously considered during the previous
3 planning effort.

4 MR. THIES: So like Rich mentioned,
5 NBC has some very recent experience with sewer

6 separation from the Phase II project, and one
7 thing to take away from the sewer separation
8 process is that you're going to be into every
9 street in your catchment -- okay, you're going
10 to be disrupting every single street, and that
11 has a lot of impact.

12 The complicating factors when you
13 open up every street, go up exponentially, so
14 it's really something to consider when you're
15 looking at a sewer separation project.

16 Some of the factors include the
17 impacts of the neighborhood, you get reduced
18 visibility to some of the businesses along those
19 streets, particularly if you're closing some of
20 those streets for work. It's disruptive to
21 pedestrians who are trying to cross the street;
22 there's dust, there's noise from the
23 construction, so it has a lot of impact to the
24 neighborhood. There's also a lot of utility
25 issues. Some of these CSOs were put in a

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1 hundred, a hundred and fifty years ago, and a
2 lot of utilities grew up around them, and
3 they're on top of some of these CSOs. They go
4 into these streets digging up these streets to
5 put new pipes in.

6 You've got to deal with all of the
7 utilities that are already in the street. You
8 know, in some cases, a stormwater sewer
9 separation project turns into a whole utility
10 replacement project.

11 You're into the pipe replacement
12 for water, for gas, and that gets very expensive
13 in some areas. A lot of times utilities aren't
14 located where we anticipated, we're replacing
15 other utilities that we didn't even know were
16 there.

17 One complicating factor which Rich
18 touched on would be that because you're into so
19 much of the street, disrupting so much of the
20 street, that it may be an opportunity to improve
21 the street, improve the streetscape in areas,
22 and maybe add safety improvements like ADA
23 compliant crosswalks and sidewalks, that could
24 be seen as a benefit to those streets, but it
25 does add cost to the project. And then there's

1 restoration, you know, you're in the street, you
2 saw cut the pavement, you try to stay within
3 that saw cut, you find that the pavement's not
4 in good shape, you might wind up replacing all

5 the pavement in that street, you might wind up
6 replacing sidewalks in places that you hadn't
7 anticipated.

8 So there's a lot of restoration
9 issues that come along with this. And it's not
10 unreasonable to assume that restoration costs
11 could be 50 or 60 percent of the whole cost.
12 The actual cost of pipe replacement and pipe
13 installation might actually be the small part of
14 the whole project when you get into some of
15 these complicating factors.

16 So as part of the original Phase
17 III baseline, sewer separation was proposed in
18 four different catchment areas, three in
19 Providence and one in Pawtucket. The first
20 catchment area in Providence was the catchment
21 area for 035.

22 Now, an interesting thing about 035
23 is this is just south of the 037, 027 catchments
24 that are undergoing sewer separation right now.
25 So one of the things that we'll consider when

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1 looking at the sewer separation from this area
2 and the viability of it is that we're going to
3 be impacting a lot of the same neighborhoods
4 that were impacted as far as 027 and 037, and

5 we're going to impacting a lot of the same

6 residents that live in this area.

7 Now, this particular catchment is a

8 mix of residential and commercial development.

9 It's about 136 acres in size, it's bounded by

10 North Main Street, Rochambeau Avenue, Hope

11 Street and Doyle Ave. And like I mentioned,

12 it's just south of 037 and 027 which just

13 completed their -- or working on their sewer

14 separation projects right now.

15 What we'd like to do is open it up

16 to the Stakeholders Group and find out, you

17 know, are there other considerations, other than

18 the things that I've mentioned about

19 neighborhood impacts and utility impacts, so

20 there are other things specific to this

21 catchment area that we should be considering

22 when we look at sewer separation for this area.

23 I'd like to open it up to the Stakeholders.

24 MR. DOMENICA: One question I had,

25 you made a comment that separation in this area

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1 could affect the same neighborhoods in which

2 separation projects had been done previously,

3 why would that be?

4 MR. THIES: Well, the separation
5 project that's being worked on right now is up
6 in this area. So, really, it's the
7 neighborhoods just to the north, but you talk
8 about the same corridor, the same transportation
9 corridors that run through both neighborhoods.

10 MR. DOMENICA: So it wouldn't be
11 doing work back in those neighborhoods?

12 MR. THEIS: Correct, but the
13 residents that commute down those streets,
14 they're going down through construction again
15 where they just completed construction.

16 MR. BISHOP: I'm wondering if you
17 had as part of this presentation, or we can get
18 the people who've been doing this work. I mean,
19 I drive through it, I'm very aware of the
20 distinction that they'd be more potential
21 disruption there.

22 What I'm interested in is how
23 extensive have the other utility replacements
24 been, or how effective? You have an immense
25 number of things that's a potential gain, you

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1 have dealing with the storm, but I'm interested
2 in how much other, you know, positive
3 accomplishments, or potentially accomplishments,

4 when people think about where'd this money come
5 from, that potentially comes from other sources,
6 many of them may be essentially ratepayers, the
7 same ratepayers in another basket, so I'm not
8 really trying to push that off in a bad way, I
9 just want to understand it.

10 MR. BRUECKNER: All of the gas
11 lines were replaced on a 50/50 split with
12 National Grid, and a lot of the waterlines were
13 replaced because they're in the location where a
14 sewer was going to the storm drain. Most of the
15 streets were repaved, and I believe some of the
16 other lines like Verizon had to be taken off and
17 then moved, as well. So most of the utilities
18 were affected.

19 MR. BISHOP: Does that include all
20 of the services to the homes?

21 MR. BRUECKNER: No, just on the
22 street.

23 MR. DOMENICA: Could you tell the
24 Stakeholders whether there was a new sewer for
25 separation, was it a new sanitary sewer, or a

1 new storm sewer put in?

2 MR. BRUECKNER: It was a new storm

3 sewer and a new catch basin.

4 MR. DOMENICA: The difference there
5 is interesting, because a new storm sewer means
6 that you have a lot of control over the
7 connections to that storm sewer, so you're much
8 less likely to get illegal discharges or
9 bacteria discharges, or sanitary discharges to
10 the receiving water, because you're putting in a
11 new storm sewer that goes to that receiving
12 water when you control all of the the
13 connections. And a new sanitary sewer, when you
14 do it that way, you get a nice new sanitary
15 sewer that goes to the plant, but you're always
16 concerned about the remaining storm sewer that
17 stays there whether there's a legal discharge
18 ensuing.

19 So you can still get violations or
20 bacteria because of those illegal or unknown
21 discharges of that sewer, so it's a significant
22 difference sometimes whether you put in sanitary
23 or storm.

24 MR. HABERAK: I'm just curious,
25 Tom, maybe you can address this, and, you know,

1 maybe you can address the picture. What the
2 percentage of streets that require these storm

3 sewers was and will be, because I noticed some
4 of the streets have blue in it, and some of them
5 are orange. I'm assuming that one has existing
6 storm sewer service and one needs new storm
7 sewer service. But just maybe speak on, is it
8 every street that needs new storm sewers, or was
9 it 50 percent, or 25 percent?

10 MR. BRUECKNER: I'm not sure what
11 represents these numbers here.

12 MR. GARDNER: I don't have the
13 percentages off the top of my head, but the one
14 distinction in this neighborhood as opposed to
15 027 and 037 to the north, those are mostly
16 single pipe existing systems, you know, brief
17 review of the plans for this area indicate that
18 a lot of these streets do have two pipes.

19 Now, it should be very -- I really
20 want to note that if those aren't dedicated to
21 storm and sewers, as far as we know, a lot of
22 times when you have two pipes that were put in
23 50, 60 years ago, when new developments,
24 redevelopments come along, you have all the
25 cross connection that Mike was mentioning where

1 you have a lot of potential for the discharging.

2 So in the end you do end up doing a lot of the
3 same work that you would do with the single pipe
4 system, potentially, so if that answers your
5 question.

6 MR. BRUECKNER: One other thing I
7 want to mention is that when you do sewer
8 separation, we found that there are a number of
9 homes that their downspouts are tied into the
10 sanitary lateral from the house. Those need to
11 be disconnected, which we haven't done yet, but
12 we know from other communities that this is a
13 major, major undertaking, that is extremely
14 labor intensive in terms of dealing with the
15 homeowners and very disruptive to the
16 homeowners. So that's another negative aspect
17 to me to sewer separation.

18 MR. COLT: It looks from this
19 graphic that this time around you are not
20 hitting Hope Street, it looks like you're just
21 to the left, which is good, and then I believe
22 you said the northern boundary is Rochambeau,
23 that is an equally busy street. I think -- and
24 it looks like Camp is part of that main north,
25 south to the east of North Main. I think in this

1 case, the education effort was very good, you

2 had a big impact with Phase II on the Hope
3 Street business district, you got through that,
4 and I have every reason to expect NBC would have
5 an equally good public relations and education
6 campaign, but I think you are going to have to
7 face the fact that people will say you were just
8 here, why are you back again? And that requires
9 sort of more in-depth education about what this
10 whole project is about as a whole. The other
11 thing is you are going to tear up North Main
12 again, and I guess there was some issues with
13 DOT.

14 Ray, you told me this before, about
15 they're requiring certain load-bearing
16 characteristics for North Main that are kind of
17 obsolete, and that significantly extended the
18 work which is still ongoing on North Main.

19 And then finally, is there some way
20 we can invest in the acceleration of this work,
21 obviously, to minimize the disruption to
22 residences and businesses that are going to be
23 affected? And I'm sure you take that into
24 account already with project planning, and so
25 forth, but at least with North Main, is there a

1 quicker way we can do it if we're going to do
2 this.

3 MR. MARSHALL: I don't have an
4 answer as to whether there's a quicker way, but
5 one thing we're able to do in Phase II is DOT
6 was very cooperative, they worked with our
7 contractor, which is Britto, in that particular
8 area, and they were able to find a way to do
9 this particular phase of the project a little
10 quicker, rather than go back to a concrete base,
11 they were allowed to add additional asphalt
12 layers in order to come up with an equivalent
13 loading factor, so that will expedite the
14 restoration of that area, as opposed to Hope
15 Street where we weren't allowed to do that.

16 MR. DOMENICA: With regard to the
17 questions here. With no intent to cut off
18 discussions about the alternatives in general
19 and sewer separation at this point, we don't
20 want to take too much time getting into the
21 details, but we'll come back to this later as
22 one of the alternatives for the Phase III areas.

23 This was more to understand the
24 overall principles of the technology, its
25 limitations, advantages, disadvantages, as

1 opposed to its application for this particular
2 area, so if you have general comments, feel free
3 or relate it to the overall technology.

4 MR. BISHOP: I just wanted to add
5 that one of the caveats that Tom just gave
6 regarding downspouts from homes. In some way it
7 goes to the point I was making about whatever it
8 is, the last hundred feet from the work that's
9 done in the street, eventually, the homes which
10 may have antiquated lead service and other
11 problems, and it's not necessarily that this can
12 solve all, it may not be practical, I'm quite
13 concerned not just with the disruption around
14 homes, but -- and this will come up, I'm sure,
15 relative to some of the green alternatives that
16 disconnecting down spots from homes from these
17 connections.

18 In everything I've experienced in
19 these areas is that clay soils, and I think that
20 that to me, it's not just the work, but the
21 reality of trying to move to essentially a
22 country style in a French drain infiltration
23 system in clay soils in a city is not
24 necessarily in the, you know, it wouldn't be
25 conceived of us improving the quality of life

1 inhabitants.

2 MR. REITSMA: I wanted to follow up
3 on the issue that Brian raised, and maybe flip
4 it, as well. If we knew what construction is
5 going to be needed for other infrastructure in
6 these areas, would that make a difference for
7 evaluating viability of sewer separation versus
8 other alternatives? You don't need to answer
9 that today, but it's something you need to think
10 about.

11 I think the larger issue is to what
12 extent are we in fact approaching these kinds of
13 things in integrated fashion instead of one by
14 one, and it maybe sort of moot if all we're
15 dealing with is relative catchment areas instead
16 of larger areas. It's just an issue that may be
17 we can address when we get back to it.

18 The other question I have that I
19 would like to see addressed maybe at a later
20 time is when we're talking about things like
21 separating sewers and more sewer infrastructure,
22 are we looking at things like what is the life
23 of the system, but also what is going to happen
24 over the life of the system in terms of
25 resilience, weather patterns, flooding, all that

1 kind of stuff. I have no idea whether that's
2 already being integrated into the evaluation, if
3 not, I think in some of the areas that you're
4 looking at it probably needs to be considered.

5 MR. HOLMES: I'd like someone from
6 the Narragansett Bay Commission to give us an
7 honest answer about how they really feel about
8 sewer separation, on a straightforward hit us in
9 the head with it, how do you really feel about
10 it?

11 MR. BRUECKNER: I hope it's not
12 something the Stakeholders want us to do again.

13 MR. DOMENICA: One of the issues
14 there is that when you maintain the existing
15 storm sewer system, those systems were designed
16 probably 20, 30, 40, 50, 60 years ago for
17 hydrologic patterns design criteria in place at
18 those times.

19 Generally, those systems were
20 designed maybe for a five-year storm. Anything
21 beyond that, they're going to fill up, overflow
22 into the streets, and the resulting
23 ramifications with the change in hydrology in
24 the watersheds with the imperviousness, in
25 higher density development, more imperviousness,

1 change in rainfall patterns. The performances
2 in the existing storm sewer system won't be what
3 it was 50 years ago with regard to the area that
4 it's serving.

5 MR. GADON: Those paved streets do
6 not have potholes.

7 MR. DOMENICA: And that's another
8 thing, too, is that part of the evaluation is
9 the need to replace certain existing
10 infrastructure anyway, whether it's storm or
11 sanitary. There can be drivers there with
12 regard to long-term asset management that would
13 move this decision one way or another. Other
14 comments?

15 MR. THIES: Okay, so I'll move
16 through these next couple of catchment areas
17 kind of quickly to keep us on track. So the
18 other two catchment areas in Providence that
19 were proposed for sewer separation was Outfall
20 039 and Outfall 056 which are actually adjacent
21 to each other.

22 This is Outfall 039, 056 is just
23 north of it. These are both on the west side of
24 Providence. You've got Admiral Street running
25 right down the middle of Douglas Avenue, as

1 well. Rhode Island School for the Deaf is right
2 there. You've got Providence College down here.

3 A lot of the same types of issues
4 in this area, you've got dense residential
5 development, you've got commercial development
6 in this area, so you're going to have a lot of
7 the same types of disruption that we saw 027 and
8 037, so these two areas were both proposed for
9 sewer separation as part of the original
10 baseline. Then we have Outfall 206, this one is
11 in Pawtucket. This is a relatively small
12 catchment area.

13 This is only about 14 acres, but
14 it's also a mix of residential and commercial
15 development, there's also a number of community
16 resources in this small catchment area, we've
17 got a couple of churches in this area, and we
18 have a YMCA, it's actually located right next to
19 the outfall.

20 So, again, this one there's some
21 heavy transportation corridors in this area,
22 like you said, dense development here. You
23 know, are there any other comments about these?
24 I know I went through them kind of quickly, but
25 these other three catchment areas, the two in

1 Providence and the one here in Pawtucket?

2 UNIDENTIFIED SPEAKER: Those were
3 Phase III?

4 MR. THIES: Those are Phase III.
5 This was the original proposal for Phase III.

6 MR. GAGNON: I'd just like to back
7 up a little bit. Tom, why are you so against
8 the sewer separation?

9 MR. BRUECKNER: Based on our
10 experience, the disruption to the neighborhoods
11 is unbelievable, and quite a difficult thing to
12 coordinate with the businesses and the
13 residences in that area. That's one issue.

14 The second was that when you're
15 done, you have a stormwater discharge. And one
16 of the topics of discussion at the last meeting
17 was stormwater. Going forward, there's a
18 commission that's looking at stormwater issues
19 and how to handle them in the region. And to me
20 this just creates more of a problem.

21 Down the road, instead it's like
22 kicking the can down the road. What are we
23 going to do with the stormwaters that we've now
24 added to the rivers in the future. So those

25 two. The other is maintenance. What we're

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1 finding is that the existing storm catch basins
2 that tie into the sanitary sewers, or combined
3 sewers, are not maintained. So if we add more
4 pipes to the streets, it will not be maintained,
5 they probably won't work the way they should, so
6 it's more infrastructure that needs to be paid
7 for down the road, maintained.

8 MS. DORMODY: And just to add to
9 Tom's comments, that new stormwater
10 infrastructure would be managed by the
11 municipality, not by the city, not by the
12 Narragansett Bay Commission. And as we're
13 having a parallel conversation, the
14 municipalities' efforts to maintain the storm
15 sewer is underfunded, to say the least.

16 MR. DOMENICA: Any other comments?
17 All yours, Rich.

18 MR. RAICHE: I think it is
19 worthwhile as we step through these
20 alternatives, that if there are these sort of
21 major stumbling blocks, or even deal breakers on
22 the details that we're presenting here, I think
23 that would be a good thing to get on record and
24 incorporate as early as we can in the design.

25 The Main Street restoration issue is certainly a

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1 good one to flag for 035. Are there any similar
2 stumbling blocks or major design considerations
3 that we need to account for in either one of
4 these areas that we need to discuss.

5 MS. CALABRO: I live in this
6 neighborhood and the West River has serious
7 flooding issues, that if you start adding a new
8 stormwater discharge to the west you could have
9 some issues.

10 MR. BISHOP: Just a point of order
11 on that. I do think that for the most part that
12 assumes that you didn't separate the sewers, you
13 would collect. I understand that some of the
14 stormwater at first flush, it can be collected
15 or intercepted by the existing sewers, but there
16 is an existing stormwater discharge in those
17 areas which is what we're here about, so that
18 this is isn't entirely new stormwater.

19 Now, the relief of it, or some
20 other possible relief might relieve flooding,
21 but it's not entirely new.

22 MR. RAICHE: If you maintain the
23 combined system, you know, yes, there is an

24 overflow, but every drop up to that overflow
25 goes into the interceptor. When you separate,

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1 none of it goes into the interceptor, and all of
2 it goes into the rivers.

3 All right, before we move onto the
4 next group of alternatives, are there any other
5 sewer separation concerns or, you know, anything
6 that is deemed advantageous or disadvantageous?

7 MR. HILL: There's an obvious
8 advantage for these sewer separation and
9 operational costs with the water treatment
10 facilities, because there wouldn't be enough in
11 the street that wastewater, as the stormwater as
12 wastewater. Have those costs been calculated?

13 MR. DOMENICA: Good question. No
14 one has mentioned whether sewer separation is
15 more or less expensive in terms of what it cost.
16 Any sense of that?

17 MR. BRUECKNER: We do have some
18 cost associated with our current Phase I tunnel,
19 obviously, because we do provide treatment, but
20 to compare it against sewer separation where
21 there's no treatment required now for
22 stormwater, but maybe in the future, it's hard
23 to make that comparison because you don't know

24 what it's going to be 10 years from now in terms
25 of stormwater treatment. And I guess the

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1 question is, I don't even know what you do for
2 stormwater treatment 10 years down the road, are
3 you going to build another treatment plant to
4 treat stormwater? So it's just so far down the
5 road in terms of costs and what you'd have to
6 do, I can wrap our hands around it because we
7 don't know.

8 MR. HILL: The stormwater that's
9 currently going to the treatment facility, if
10 you didn't have to treat that as an operational
11 savings, do you have any idea of what that would
12 be?

13 MR. BRUECKNER: I think I had done
14 an estimate for someone. I guess it was about
15 10 percent extra we were charging, or it was
16 costing us for treatment for CSOs.

17 MR. RAICHE: The volumes that we're
18 talking about versus the total treatment
19 capacity of Bucklin Point. The volumes that
20 we're talking about because they're very small
21 in relation to the overall treatment capacity of
22 Bucklin Point Treatment Plant, your cost savings

23 is probably pretty small. It would be an
24 interesting exercise to go through, and we might
25 be able to do that. I can't really say one way

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1 or the other if we can come up with rational
2 numbers for that.

3 MR. GAGNON: Tom, you mentioned
4 there was a, roughly a 10 percent cost to
5 treating the stormwater overflow. Is that borne
6 by the Stakeholders equally, or is it
7 proportioned to contributors?

8 MR. BRUECKNER: All the ratepayers
9 pay for that.

10 MR. DOMENICA: Anything else?

11 MR. RAICHE: So the next major
12 category we'll get into is the district tunnel,
13 which is a fairly big alternative. On the
14 source pathway receptor spectrum, again, this is
15 a very large receptor solution. Again, it's a
16 secondary treatment of combined flows, including
17 the Urban runoff.

18 The construction impact is supposed
19 to say sewer separation, which is very impactful
20 to sort of a large neighborhood area. They sort
21 of have small footprints around your working
22 shafts. Once it's constructed, it has low

23 operation and maintenance cost. Now, it's
24 important to point out that tunnels are really
25 only cost effective for very large flows. Their

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1 construction of the tunnel has to be very deep.
2 You don't want anything to infiltrate or
3 ex-filtrate. You need it to be significantly
4 deeper than foundations and other utilities,
5 because you don't want to disrupt anything on
6 the surface. So it's certainly not a cheap
7 endeavor, however, it benefits more from the
8 economy of scale than virtually any other
9 alternative that we'll be talking about.

10 So if you are implementing a large
11 systematic solution, tunnels suddenly become
12 cost effective. The Phase III tunnel, again, in
13 case anyone forgets, plans to extend from the
14 Bucklin Point Treatment Plant in East
15 Providence, up to the border of Pawtucket and
16 Central Falls, essentially, following the
17 Seekonk and Blackstone Rivers and essentially
18 either through direct connections or a system of
19 consolidation conduits or interceptors, or
20 maintenance, a regulator modifications then use
21 the existing set of interceptors, captures

22 essentially all of the overflows to the Seekonk
23 and Blackstone Rivers, and interceptor across
24 town 220, which discharges to the Moshassuck.

25 Now, the routing for this thing,

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1 and essentially why it came into play during the
2 previous planning study is that the routing
3 captures the two largest, essentially number one
4 and number two largest output, 218 and 205, and
5 picks up some intermediate ones.

6 So the next thing we want to talk
7 about, let me state, there isn't a single
8 alternative to the tunnel again. To get through
9 a tunnel as an alternative, you need to be
10 capturing a whole bunch of flow. So all these
11 things that we're talking about, you know, the
12 rest of this afternoon, and then into the May
13 meeting, all of those we need to add or negate
14 to add an alternative to the tunnel. But there
15 are some ancillary components to the tunnel,
16 namely, the interceptors for the consolidation
17 conduit, where we can start to look at
18 alternatives.

19 MR. DOMENICA: Rich, would this be
20 a good time for a break?

21 MR. RAICHE: I think this will be a

22 short segment, so we can finish this and get
23 into a breakpoint. What we're talking about
24 here is there are two interceptors involved with
25 Phase II so the commission has an experience in

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1 going into these. These are very large diameter
2 sewers, typically, you're going to little deeper
3 so the extent of open cut and cover in
4 construction impacts the neighborhoods and
5 travelways less. The advantage is that part of
6 a tunnel solution that eases the siting
7 requirements for the drop shaft in the tunnel,
8 itself, and once implemented it's got low
9 operation and maintenance cost, and again, helps
10 relieve the strained collection systems.

11 You do still have the potential for
12 major disruption during construction. Again,
13 you're into deep construction, so it is on a per
14 foot basis a little bit more expensive than,
15 say, putting an eight-inch PVC sewer, and it may
16 require easements or land acquisitions to
17 facilitate.

18 So again, we're talking about three
19 major interceptors here is it's a high cross
20 street in the middle up in Central Falls, and

21 then a long one across Pawtucket on Pawtucket
22 Avenue.

23 Again, as we just did with the
24 sewer separation here, is we just want to
25 quickly kind of go through these. We've

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1 identified some major design consideration. And
2 giving your knowledge of the area, we also want
3 to incorporate that into our preliminary
4 findings. Tim will take over this piece and
5 then we'll adjourn for some refreshments.

6 MR. THIES: I'll try and go through
7 these briefly. Like Rich mentioned,
8 interceptors were proposed into three of the
9 catchment areas as part of the original Phase
10 III baseline. Two in Pawtucket and one in
11 Central Falls.

12 The first one in Central Falls is
13 the Middle Street interceptor, and this picks up
14 CSOs 201 and 203. And Middle Street in Central
15 Falls is a two-lane road, just north of
16 Interstate 95. It's between 95 and the
17 Blackstone River. The northern half is a
18 two-lane, one-way road just north of the off
19 ramp for Exit 30. South of that is a one-lane
20 road, single one-lane one-way road with

21 residential properties on both sides.
22 So it's a heavily traveled traffic
23 area. The interceptor that was originally
24 proposed is a 30-inch diameter interceptor about
25 12 to 15 feet deep that runs down Middle Street,

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1 and it goes down Middle Street where it
2 intersects Cross Street. The interceptor was
3 going to be off-sized to about 66 inches in
4 diameter.

5 The reason for the increase in size
6 is because at that point it's going to be
7 picking up flow from 204 and 205. And like Rich
8 mentioned, 205 is a very significant outfall, a
9 lot of flow coming out of there.

10 From the intersection of Cross
11 Street and Middle Street, it was going to pick
12 up, like I said, 205 is to the northernmost drop
13 shaft to the Blackstone Tunnel. The other one
14 was the interceptor on High Street and Cross
15 Street in Central Falls. A couple of
16 interesting things about this proposed
17 interceptor.

18 Just to the north in the northern
19 area of the interceptor, right here, there is a

20 railroad crossing there, so the interceptor
21 would actually go underneath this railroad
22 crossing, right near it next down from a
23 two-lane street to a one-lane street, it would
24 go through that corner, it's kind of a blind
25 corner. So that roadway there has some issues

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1 in and of itself, to add the construction of an
2 interceptor right there would make it even more
3 complicating. The interceptor that was proposed
4 here was a 42-inch diameter interceptor, and it
5 was going to be 8 to 15 feet deep along High
6 Street, and to move along High Street, it was
7 going to transition to Charles Street where it
8 would bump up to a 48-inch interceptor. And
9 again, it would actually run down Cross Street
10 and go over the Cross Street bridge. It would
11 actually be hung from the Cross Street bridge,
12 and that was how it was originally proposed.

13 So that would be a 48-inch pipe,
14 and it would take it to the northernmost drop
15 shaft of the Blackstone Tunnel. So you can see
16 that there are some real challenge to this
17 interceptor alignment. And the last interceptor
18 I'll talk about is the Pawtucket Avenue
19 interceptor, and this was intended to pick up

20 flow from Outfall 220.

21 Now, Outfall 220 has a floatable
22 structure that NBC has just completed, and this
23 structure is intended to pick up bottles and
24 cans and prevent them from making their way out
25 into the river. This was formerly Outfall 219

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1 and 220, but when they built that floatable
2 structure, they combined it essentially into one
3 overflow structure. We just referred to it as
4 220, 219, now we're going to refer to 220. And
5 this was proposed, this interceptor was going to
6 go along Pawtucket Avenue and it was going to
7 run essentially across the western half of
8 Pawtucket, and because of the elevation change
9 across that route, there's actually going to be
10 a very substantial pump station installed at the
11 Outfall 220 to pump it up over Pawtucket Avenue
12 where it could go from a 48-inch diameter for
13 main two-way, 52-inch diameter gravity line, so
14 you're talking about some very substantial pipes
15 in the street.

16 There was an alternate proposed for
17 this interceptor, which I'll talk about in a
18 second. But you have here for this interceptor,

19 they said you're going across Pawtucket Avenue,
20 which is a state roadway Route 1.

21 MR. GERRITT: You're crossing the
22 watershed line there.

23 MR. THIES: As part of the line,
24 you're running through a lot of very dense
25 neighborhoods, residential, commercial

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1 neighborhoods. You have a number of schools in
2 this facility. The proposal was to take to the
3 Outfall 217, and you have a substantial National
4 Grid facility down there at 217. So there are a
5 number of challenges with this interceptor.
6 Before I move on to the alternate, the alternate
7 that was proposed, is there any other comments
8 about these three interceptor proposals?

9 MR. WALKER: The High Street
10 railroad bridge, is that Amtrak's main line, or
11 is that the link to Worcester?

12 MR. THIES: I'm not sure.

13 MR. WALKER: Either way, any of the
14 effort in there has got to be considered keeping
15 that rail line opening and functioning at all
16 times. If it's coming from Worcester, that's
17 the main cargo route that's coming down, and if
18 it's the Amtrak mainline, that will just add

19 time and money, so regardless, that's got to be
20 a piece of infrastructure that has to be kept in
21 service.

22 MR. REITSMA: Again, the ability of
23 infrastructure like this to withstand what we're
24 now worrying about in terms of extreme weather
25 events, flooding events of a longer duration,

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1 what happens during those events?

2 MR. THEIS: No, those will be
3 considered as we evaluate the viability of each
4 one of these alternatives.

5 MR. REITSMA: One more question.
6 You're moving stormwater from one watershed to
7 another. In this case that's usually something
8 that's frowned upon. In this case, it may not
9 be frowned upon, because there's some issues
10 with the Moshassuck, with flood problems. Are
11 there perspectives on that yet?

12 MR. GERRITT: I mean, when they get
13 floods on the Pawtuxet or Blackstone, the
14 Moshassuck, the nature of that valley is it's a
15 much bigger valley and the river still exists,
16 because 13,000 years ago with the geology
17 issues, and so at least from, you know, the

18 lower part of the Moshassuck you don't get major
19 flooding issues because the river is so much
20 lower than the streets, and there's very few
21 houses along that because of the long-term
22 industrial history.

23 MR. DOMENICA: Going back to the
24 first part of your question, Jan, I do think
25 it's important for the Stakeholders to be sure

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1 that the Stakeholders understand that
2 interceptors don't eliminate all overflows.
3 There's a limit to how much an interceptor can
4 take, there's always a bigger storm.

5 So one or more of these outfalls
6 need to be left open for relief of that
7 interceptor during big storms. So water quality
8 standards that preclude any violation of
9 instream standards need to be crossed within
10 terms of approval of effective technology; is
11 that correct, Tim?

12 MR. THIES: That's correct. I
13 would always like to point out that the existing
14 interceptor crosses that same divide. So I'm
15 going to touch briefly on the alternatives that
16 was evaluated as part of the 220 interceptor,
17 and this was what they called the Stub Tunnel,

18 and this was a 10-foot diameter tunnel that
19 would connect Outfall 220 to the Blackstone
20 Valley Tunnel across Pawtucket, right at the
21 treatment plant, right at the Bucklin Point
22 Treatment Plant. One of the benefits of this
23 alternative is that it would actually reduce the
24 diameter of the Pawtucket Tunnel slightly,
25 although the length would eventually stay the

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1 same. This would probably be more or less
2 disruptive than installing something down
3 Pawtucket Avenue into those neighborhoods. It
4 would also eliminate the pump station at 220,
5 but it would involve a new drop shaft and a new
6 working shaft at Outfall 220.

7 MR. GERRITT: So this would be a
8 deep tunnel?

9 MR. THIES: It would be a deep
10 tunnel, somewhere between 75 and 190 feet deep.
11 So is there any other discussion about the
12 interceptor or the Stub Tunnel before we take a
13 break?

14 MR. DOMENICA: Thank you, Tim.
15 Let's take a 10-minute break. We have about an
16 hour left, so grab refreshments back there.

17 Rest rooms are out the door to the right, and
18 we'll reconvene in 10 minutes.

19 (SHORT BREAK)

20 MR. THIES: So the next category of
21 alternatives we'll take a look at is localized
22 and combined flow handling. You've got the West
23 River interceptor as an alternative, near
24 surface storage and localized treatment and
25 discharge. In terms of near surface combined

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1 flow storage, we've got advantages and
2 disadvantages.

3 Again, this provides for storage of
4 peak flows, and again as we said at the top,
5 this is the sort of approach where we then have
6 the opportunity to treat it as the centralized
7 treatment facility after the storm subsides. In
8 terms of construction impacts, again, you sort
9 of have a localized footprint, as opposed to
10 sewer separation, we have a larger one.

11 A disadvantage for a combined flow
12 storage is that it is combined flow so you are
13 essentially dealing with rather dirty water, so
14 you do need to have screening and floatables
15 control, and substantial odor control. Those
16 things contribute to higher capital costs for

17 construction, and then continuing operation and
18 maintenance costs.

19 You do have limited siting
20 potential for these things in dense urban areas.
21 There's a certain footprint to hold the volume
22 of combined flow that we're talking about, which
23 then leads into the land acquisition
24 requirement. In terms of treatment and
25 discharge, which again here we're talking about

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1 screening and disinfection, much like the
2 storage option provides capacity relief in the
3 existing infrastructure. But again, much like
4 the localized storage with combined flows,
5 you've got high capital costs, high operation
6 and maintenance costs, you're essentially
7 creating a small treatment plant, satellite
8 treatment plant at remote locations which is
9 difficult to operate and maintain. You do still
10 have residual pollutant loading to receiving
11 waters.

12 We're not treating the combined
13 flow to a high degree, it's more screening and
14 disinfection, so you do have water quality
15 impact, and then you also have sort of

16 logistical problems with these small treatment
17 facilities. That would likely include
18 chlorination and dechlorination for
19 disinfection, so then we're talking about
20 storage of chemicals and delivering the
21 chemicals to these remote locations.

22 And again, we have to be right near
23 or very close to where these outfalls are, and
24 these outfalls are largely in residential and
25 business neighborhoods, and in addition to the

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1 actual constituents.

2 MR. BISHOP: The one thing, and
3 this had occurred to me before in these areas is
4 that in terms of this treatment one of the
5 ironic things is that you have less of that
6 problem where the most major outflow at the
7 sewer treatment plant.

8 You already have an industrial
9 facility there, it wasn't feasible at Field's
10 Point to take the enormous overflow there and
11 actually pump the water into existing treatment,
12 but here where it's there, it was a ship
13 channel, you didn't have any options.

14 I personally think that we should
15 be looking pretty seriously at whether or not

16 large overflows that have the potential for
17 supporting some institutional structures even
18 into the perceived water body, you know, might
19 be cost effective.

20 MR. THEIS: The one alternative
21 either tank or treatment, you'd be at or near
22 the outfalls we're looking at, so in urbanized
23 areas it's a bit of a challenge to find these
24 locations. We do have a handful of them that we
25 want to discuss. Today, the main ones are the

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1 West River alternative. This is essentially an
2 alternative to the sewer separation for 039 and
3 056, right here in sort of northwest Providence.
4 The location near 220, which we've already
5 identified as sort of a tunnel solution that
6 would require sort of difficult interceptor
7 across Pawtucket or possibly as an alternate
8 subtunnel, so we can talk about localized
9 solutions for 220.

10 And then for the northern outfalls,
11 the 100 series in Central Falls, either as an
12 alternative to the interceptor that Tim just
13 discussed before the break, but also look at 205
14 and 218, which again are the two largest

15 outfalls that we were talking about before, and
16 how we discussed that an alternative to the
17 tunnel will require a suite of smaller projects,
18 and the localized flow handling would be a
19 component of the overall program as an
20 alternative, so we need to dive a little bit
21 deeper into each one of these sites.

22 I should mention that Keith Gardner
23 is now going to step through these alternatives,
24 the localized flow. He will be mentioning a
25 number of numbers, flow capacity either for

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1 storage or for treatment. These numbers are
2 based on previous reports, and at the kickoff
3 meeting last month, we told you that we're
4 building a model for the Bucklin Point service
5 area, and that model would be used to determine
6 real design capacity for these facilities, that
7 model is not yet built. We sort of have a
8 parallel endeavor going on for that.

9 So until we have those defined
10 numbers, we're simply going to use the historic
11 numbers as a starting point for those
12 discussions. They may or may not vary up or
13 down significantly or insignificantly, but we
14 wanted to have a discussion today just to get

15 things going.

16 MR. GARDNER: Okay, we're going to
17 go through several of the alternatives that we
18 looked at. If you take a look at some of these
19 second requirements of the abutters to these
20 facilities that would be significantly impacted
21 by the localized flow control at these
22 locations.

23 So the first one we'll take a look
24 at here is the West River interceptor being
25 evaluated, as Rich mentioned, as an alternative

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1 to the sewer separation for the proposed Phase
2 III facilities at 039 and 056. It should be
3 noted that this was previously included. It was
4 part of the 1994 CDR recommended alternative.
5 As proposed, it would be six feet in diameter,
6 4,600 feet in length and approximately 10 to 25
7 feet below grade.

8 The route traveled would start up
9 in the north adjacent to 056, connect to Branch
10 Ave. interceptor, and travel down to Silver
11 Spring Street here where it would connect into
12 the Moshassuck Valley interceptor. So starting
13 up here at Branch Avenue, it would run in front

14 of the shopping plaza before going beneath the
15 Louisquisset Pike, Highway 146, and beneath the
16 river it would travel behind several commercial
17 properties, the Hopkins Middle School and their
18 playing field, behind an elderly housing
19 facility before connecting back into the
20 interceptor down here behind Walmart on Silver
21 Spring Street.

22 The West River interceptor is a
23 little different than the other alternatives
24 we're taking a look at. It's the only
25 interceptor relief for storage alternative, the

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1 others will be tank or treatment facilities. So
2 the West River interceptor has some of its own
3 advantages and disadvantages. It would provide
4 much needed relief for the Branch Avenue
5 interceptor.

6 It also provides an alternative to
7 the very disruptive sewer separation of 178
8 acres in the 039, 056 neighborhoods, but the
9 construction of the six-foot diameter
10 interceptor along the riverbank in front of
11 several businesses, behind the school and behind
12 an elderly housing facility makes it
13 nondisruptive. Construction methods such as

14 pipe jacking and microtunneling can ease that
15 impact to the residence or constituents there.
16 But it does require several good-sized
17 construction sites and a relatively straight
18 alignment which this provides in some areas. It
19 would also require an acquisition of a new
20 easement across many properties which can be
21 difficult.

22 So before we go on to the next one,
23 as did with the interceptors and sewer
24 separations, I will open this up to any
25 discussion of other impacts or limitations of

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1 this type of option. And feel free at any point
2 if something comes up in the next couple of
3 slides, if you want to jump back and make
4 mention of this, we can certainly do that.

5 MR. BISHOP: Do I understand that
6 when you describe this collection, is that
7 because it's ultimately going to a drop of the
8 existing tunnel?

9 MR. GARDNER: So it's essentially a
10 collection of existing flows from the
11 interceptor, so it's interceptor relief.

12 MR. BISHOP: When it gets to the

13 Walmart, is there a drop shaft there, I mean,
14 you're basically tying into the existing tunnel?

15 MR. GARDNER: You're tying into the
16 existing interceptor system.

17 MR. BISHOP: Okay. So that's going
18 all the way back to the treatment plant?

19 MR. GARDNER: As I said, feel free
20 to jump back if something comes to your mind.

21 MR. DOMENICA: How long would it
22 take to construct something like that? What are
23 you talking about in terms of a rough duration?

24 MR. BRUECKNER: Two to three years.

25 MR. BISHOP: I assume that, and I

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1 know that we could call these the Bruekner
2 alternatives, because they eliminate sewer
3 separation, but I'm not sure -- if you look at
4 the size of 039, I mean, I'm wondering, really,
5 what anybody was contemplating in, you know,
6 something that extensive for that remote and
7 small of an output. It seems like an awful lot
8 of construction in either case to go through.

9 MR. BRUECKNER: On the slide,
10 you'll also notice it says provide relief for
11 the Branch River interceptor. The current
12 interceptor that takes the flow down Branch

13 Avenue is surcharged in wet weather, meaning
14 that it backs up substantially, and actually in
15 some locations creates sanitary overflows which
16 are illegal.

17 So this approach also provides for
18 a relief of that interceptor in wet weather so
19 you avoid those surcharging issues, and the
20 answer with regards to Moshassuck River
21 interceptor is no, there isn't a lot of capacity
22 in that line either, and this really would be a
23 storage facility, this interceptor would be
24 storage until the storm's over. So that's when
25 you really pick up for it.

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1 MR. GERRITT: It looks like the end
2 of this one is actually close as the crow flies
3 to the northern terminence of the big tunnel.
4 Has that been considered?

5 MR. BRUECKNER: Yeah, we thought
6 about that, but that drop shaft was built, and
7 is tied into the main spine tunnel in Outfall
8 032, and we really don't have any capacity built
9 into the main spine for this, so it's not
10 something we want to look at. If anything, if
11 we were going to take this flow someplace, we'd

12 take it over to the other tunnel, the new
13 tunnel, if we were going to build that.
14 MR. BISHOP: Can I just ask if you
15 were or if anybody can quantify the way that the
16 overflows are quantified, if you can quantify
17 the surcharge on Branch Avenue, in other words,
18 the additional benefit that you're getting? I
19 don't know how big of a circle that would be
20 compared to what we're looking at.

21 MR. BRUECKNER: It would be a small
22 circle, but it's a real bad problem because
23 you're getting basically a sanitary sewer
24 discharge on to the street in very big storms,
25 and it's illegal.

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1 MR. BISHOP: Just everybody buy a
2 bottle of bleach.

3 MR. GARDNER: All right, onto
4 Outfall 220. We've talked about this location
5 several times already, as far as the location
6 the outfalls go, but it is a very large
7 overflow. So in local facilities, this remote
8 location would be looked at as an alternative in
9 the proposed 220 Pawtucket Ave interceptor, and
10 the 220 sub-tunnel.

11 The storage tank at 220 would be

12 approximately 7.6 million gallons, just to put
13 that into perspective, that's about a 250-foot
14 square and 16 feet deep, so it's a pretty large
15 facility. So a tank was previously proposed at
16 this site, it was proposed at Morley Field, an
17 existing ball field between Moshassuck Street
18 and Greenville Street on the banks of the
19 Moshassuck River.

20 As we've discussed earlier, the
21 area in Pawtucket surrounding this outfall is
22 predominantly commercial. There's a large old
23 mill type facility here, and a few large parking
24 lots. In addition to the ball field, there's a
25 shopping center down here, I believe there's a

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1 grocery store and some other commercial
2 facilities. A treatment and discharge facility
3 at this location would be approximately the same
4 size and located on the same type of a site.
5 The big difference there is it would have a much
6 larger aboveground footprint, as far as a
7 utility to house equipment, chemical storage,
8 those types of additional requirements that
9 would go along with the treatment facility. So
10 at this point, I'd like to open it up again for

11 discussion.

12 MR. BORDEN: Can you compare the
13 treatment of -- what's the primary, what does it
14 compare to?

15 MR. THEIS: It's essentially
16 screening, disinfection and discharge, that's
17 the only high rate types of treatment that we
18 would need to look at.

19 MR. BRUECKNER: That's with the
20 screening disinfection alternative. If you're
21 using the in surface storage as the storage
22 tank, it's equivalent to secondary treatment
23 because the intent would be after the storm,
24 you'd pump that into the interceptor when
25 there's room in the interceptor, it would go

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1 into the treatment plant.

2 MR. GERRITT: I know that area
3 really well, and actually north of 220, there's,
4 you know, basically, some land that isn't being
5 used. And I assume if they're doing an
6 underground tank that you'll have to tear up
7 Morley Field and put it back together, whereas
8 the land north of 220, there's really nothing
9 there, and, you know, it's a big parking lot,
10 you know, another 150 feet up, but that parking

11 lot is hardly ever used. It would seem to me
12 that they should put it under the parking lot,
13 or something like that, rather than under the
14 ball field.

15 MR. BRUECKNER: We dealt with this
16 issue. We did use that parking lot for
17 construction laydown, and that parking lot
18 actually is used, part of it by the facility on
19 the weekends.

20 They have the Farmer's Market
21 there, and they have events in the facility at
22 night sometimes, and they use that for parking.
23 So that's not true, that parking lot, a lot of
24 the times is vacant, but much of the time is
25 used, and our preference is not to go on to part

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1 of the property if we can avoid it. We rather
2 use the public property, if possible, and they
3 may lose a couple of seasons on the ball field.
4 That's kind of the way we've been going.

5 MR. GARDNER: I do want to point
6 out before you get to the next question that the
7 sights that are shown here in most cases are
8 sites that were previously just identified as
9 potential alternatives, so we'd like to open

10 that up. If you know the area better, we'd love
11 to hear from you.

12 MR. BISHOP: I just ask, if I take
13 it from what you said, Tom, there's really
14 essentially two options, either primary
15 treatment at this site or a storage tank, not
16 both?

17 MR. BRUECKNER: Correct. And
18 really the advantage to the primary disinfection
19 is you can probably treat the whole volume of
20 the storm because it's continuously flowing
21 through it, whereas when you have a near storage
22 facility, the amount of volume that you capture
23 is going to get secondary treatment. But once
24 you fill up the tank, you're done, then you have
25 no overflow with no treatment.

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1 MR. HABERAK: Tom, I assume the 7.6
2 is three-month storm?

3 MR. BRUECKNER: The 7.6 is the
4 three-month six-hour storm as it was identified
5 in the CDRA.

6 MR. HABERAK: So what you're
7 basically saying is four times a year you'd have
8 overflow of raw sewage of raw CSO flow with the
9 storage tank?

10 MR. BRUECKNER: Right, that would
11 be sized for the three-month storm assuming
12 that's
13 what we're going to be doing for design, which I
14 think it is, and that would be based on the
15 revised flows being developed through the new
16 model, probably a better model than the one we
17 had previously.

18 MR. HABERAK: Could you build a
19 larger tank there to minimize some of the
20 overflows that would be untreated?

21 MR. GARDNER: That is something we
22 could look at, yeah. The next local flow
23 control site that we would take a look at here
24 is up in Central Falls, it's at the northern
25 extent of High Street/Cross Street interceptor

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1 that stands for the Phase III baseline. We
2 would take flows from essentially CSOs 101 and
3 103, and bring those down to the northern
4 terminance of the Pawtucket Tunnel.

5 So a local storage tank at this
6 site would, you know, could be an alternative to
7 that northern portion of the interceptor, but as
8 we showed earlier, it does have some significant

9 construction impacts of crossing beneath the
10 railroad overpass right here.

11 A storage tank at this location
12 would be about 5 million gallons. Again, that
13 is just an estimated flow. To talk about scale,
14 we'll revise that number as part of our
15 evaluation. It would also involve a
16 consolidation to bring flows down from 101, so
17 essentially bring flows down to the location at
18 103.

19 A facility was previously evaluated
20 at this location. It was proposed under a
21 waterfront park, which is Pierce Park, there's a
22 ball field right there, again, it's a public
23 facility, some other surrounding abutters here,
24 there's a detention facility right down here.
25 It's a maximum security prison.

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1 As with the 220 location, the
2 treatment and discharge facility would be
3 approximately the same size, per just scale
4 purposes of a 5-million-gallon tank is about a
5 200-foot square and 16 feet deep, so you would
6 have a large utility building for the equipment
7 and tank storage.

8 MR. WALKER: Who owns these if

9 they're primary treatment and discharge, and who
10 operates them?

11 MR. DOMENICA: NBC.

12 MR. WALKER: Okay, so it would go
13 into the calculation on affordability?

14 MR. DOMENICA: Yes.

15 MR. HABERAK: Tom, I would suggest
16 again, I assume you picked the tank size based
17 on the three-month storm. I'd suggest that you
18 look at the economics. At this point, you'd
19 have statistically four overflows a year. If it
20 costs you slightly more to go to a 6 MGD plant,
21 and you would only have three overflows a year.

22 It looks to me just like if you
23 look at the driver on the size of the tank was
24 just the size of the storm, as opposed to the
25 cost to build a tank, is just a suggestion that

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1 I would have. I'm assuming that the 5.1 you
2 just said, that's the volume from a three-month
3 storm, so we'll pick a 5.1 --

4 MR. BRUECKNER: I assume we'll do
5 it off a cost curb, anyway, for the preliminary
6 costing.

7 MR. BISHOP: Just a mathematical

8 point, I think if it actually captures the
9 three-month storm, you're talking two overflows
10 a year.

11 MR. BRUECKNER: No, it's four. It
12 occurs every three months.

13 MR. BISHOP: Right, and it captures
14 the three-month storm, so it's the six-month
15 storm you've got to worry about. Capturing the
16 three months, you don't have an overflow.

17 MR. BRUECKNER: Anything over the
18 three-month storms are the three-month, one-day
19 storm would go over.

20 MR. BISHOP: No, your next step is
21 -- you're saying, well, we can't get the
22 four-month storm. It's a practical matter the
23 way we think about these things. I'm pretty
24 sure it's an exaggeration of the number of
25 overflows we have.

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1 MR. DOMENICA: Sometimes it's a
2 little obscure.

3 MR. RAICHE: We'll address the
4 design capacity of any and all facilities at a
5 later meeting, probably we're at number 2, 3, 4,
6 number 5, we'll get down to the details of that,
7 including sensitivity analysis issues and basics

8 of the design. But for today's purposes, we can
9 look at the ballpark sizes.

10 MR. HILL: I'm sure there's data on
11 how often these things overflow on a yearly
12 basis.

13 MR. DOMENICA: I have a question,
14 Joe, on your comment suggesting sizing. Could
15 it be per gallon cheaper to do four, six-month
16 storms than three. Is there anything in the
17 consent decree or alternatively, do water
18 quality standards dictate something here, or is
19 this just cost-effectiveness.

20 MR. HABERAK: There's nothing in
21 the water quality regs. It looks like you just
22 take the size off a three-month storm, so you're
23 strictly talking about cost-effectiveness, and
24 if you can add another million gallons to the
25 storage capacity for 5 percent more cost. What

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1 value does that have on the number of overflows?

2 MR. DOMENICA: Or would it mean
3 water quality standards?

4 MR. HABERAK: I think, basically,
5 if you're going to have an overflow, it's not
6 going to meet water quality standards. This

7 will have overflow untreated, there's not going
8 to be any treatment of this overflow. So the
9 only way truly to meet water quality standards
10 would be to capture all the overflows, so now
11 you're kind of moving toward the goal is
12 capturing all of the overflows. So if you can
13 make it a little bit bigger and capture
14 significant and more volume --

15 MR. DOMENICA: Perhaps, it wouldn't
16 be as much in violation.

17 MR. HABERAK: Correct.

18 MR. BRUECKNER: Which gets into the
19 issue of affordability.

20 MR. DOMENICA: We're going to limit
21 questions to the Stakeholders group at the table
22 there.

23 MS. CARTER: I just wanted to
24 clarify about the design storm. So the CSO
25 National Policy that EPA issued several years

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1 back uses two approaches. One is the
2 presumptive approach which is if you're treating
3 to a level of control of four overflows a year,
4 then you're meeting your water quality
5 standards. There's another approach, the
6 demonstrative approach where you go through a

7 lot more water quality analysis to determine
8 whether you're meeting your water quality
9 standards.

10 So the four overflows per year is
11 based on the presumption approach, and that's
12 what's tied to the three-month storm. So the
13 standard including most everywhere is if you are
14 designing to a three-month storm, you're meeting
15 a level of control of four overflows per year.

16 In some other communities they've
17 used real storms. Those are all negotiated with
18 the regulators if they're going to use a real
19 storm year to control a number of overflows, but
20 it's very, very common to use a three-month
21 storm.

22 MR. BECK: I think most importantly
23 is probably relative to the evaluation of
24 alternatives when it comes to separation versus
25 other alternatives, and I think where we could

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1 have some clarity since, you know, in one aspect
2 we're comparing it to the goal of the number of
3 overflows so that design storm makes sense, so
4 when you compare it to the backdrop of meeting
5 water quality and you start to compare it to

6 other alternatives of separation, the comment
7 was made about capturing the first flush.

8 So what I would like to hear is
9 some discussion when we get to that point. The
10 amount of flow that's actually getting into the
11 system and receiving, how much of that first
12 flush in the watershed is actually being treated
13 if only three-month storms can get into the
14 interceptor, and I think that's a very important
15 aspect of the evaluation.

16 MR. DOMENICA: Good luck to the
17 parking lot.

18 MR. HABERAK: And just real quickly
19 to speak on the whole presumptive versus
20 demonstrative approach. EPA policy does say
21 that if you have four overflows per year, you
22 presume you will meet water quality, but we know
23 we have a bacteria standards that if you have
24 any overflow you're not going to meet water
25 quality. So we have dealt with EPA and other

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1 communities in the state that has a CSO, and
2 they basically said to meet water quality you
3 have to eliminate overflows.

4 MR. DOMENICA: Well, that's a very,
5 very important statement, very important because

6 we're dealing with a whole rash of alternatives
7 that don't eliminate all overflows. So what
8 you're saying is then sewer separation and
9 elimination of all combined overflows would meet
10 water quality standards?

11 MR. HABERAK: If you eliminate all
12 overflows because you've got to meet water
13 quality standards --

14 MR. DOMENICA: You mean, in theory,
15 for CSO, but really in the water body, are you
16 actually going to attain water quality
17 standards?

18 MR. HABERAK: Any violation would
19 not be related to the CSO, no, you'd eliminate
20 its CSOs. But I just wanted to clarify that,
21 you know, the presumptive approach is if you
22 have more overflows, you'll presume you'll meet
23 the water quality, but when we met with EPA they
24 said no, that's not meeting water quality.

25 MR. TURIN: We have not applied the

1 presumptive approach at any communities in New
2 England because the states in New England all
3 have numeric bacteria criteria that apply all
4 the time. There are regions in the country

5 where that is not the case. And in those
6 regions, they can in certain circumstances apply
7 a presumptive approach, but that's not the case,
8 generally.

9 MR. DOMENICA: I thought that Maine
10 had seasonal excursions for bacteria. They
11 don't have to meet bacteria standards in the
12 winter.

13 MR. TURIN: I don't know if that's
14 in their water quality standards or that's been
15 in a separate process in order to reduce
16 toxicity associated with chlorination. I think
17 that's been on a case-by-case basis because the
18 seasonality of the water uses up there.

19 MR. DOMENICA: Okay.

20 MR. REITSMA: So apart from the
21 regulatory drivers, I'm just wondering that is a
22 matter of planning or the from a commonsense
23 perspective, and looking at what the trends are
24 in terms of climate weather patterns, and other
25 situations we often complain about, a

1 hundred-years storm and five-hundred-years
2 storms occurring twice a year, or whatever.
3 Whether it makes sense to think a little bit
4 differently about this so when the suggestion is

5 made if you look at whether it might be
6 cost-effective. We keep that in mind, and not
7 just because the regulation might be triggered
8 down the line, but it makes sense.

9 MR. DOMENICA: Anything else?

10 MR. GARDNER: Getting back to site
11 specific localized to flow handling. If a local
12 flow handling site makes sense at Outfall 103
13 and 101, we can also take a look at it for 104
14 and 105.

15 They're intertwined in that if the
16 Pawtucket Tunnel ends up being the receptor of
17 these overflows, an interceptor is going to be
18 needed to pick up these outlines, 101, 102, 103
19 and 104. And if it doesn't make sense at 103,
20 we need to bring an interceptor to take that
21 flow down to Pawtucket Tunnel and it's going to
22 pass right by 104 and 105. So these two
23 locations are intertwined in that respect.

24 Now, the Central Falls historic
25 mill district is located along the Blackstone

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1 River in this area. It is important to note
2 that in the CDR this facility was identified at
3 this location, and to quote, it noted that

4 "Because of the hydraulics imposed by the
5 existing CSO regulator the depth for this
6 facility at this site would have to be close to
7 20 feet because of higher ground surface.
8 Available through information suggested, this
9 step may involve significant excavation."

10 So essentially what that means is
11 that deep excavation in this area based on
12 previous information is going to be very
13 expensive, you're going to be into rock. So it
14 would be a cost prohibitive site. Treatment at
15 this location would be the same
16 as --

17 MR. BISHOP: I was just going to
18 ask if the depth of excavation required for
19 treatment is the same as the depth of excavation
20 required for this tank. You talked about the
21 footprint being the same.

22 MR. GARDNER: So the depth of
23 excavation, I mean, you can pump up to either
24 facility and have an aboveground facility. We
25 haven't really talked about that, but that is an

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1 option to pump up when rock's an issue. So if
2 there are any other eliminating factors for
3 tanks in this area, please let me know.

4 So moving on to an area that we
5 really haven't talked too much about. We
6 mentioned earlier that the overflow for 205 is
7 one of the largest overflows in the Bucklin
8 Point service area. I think it's about 13
9 million gallons as estimated in the three-month,
10 six-hour storm at the town of the CDRA. So our
11 local facility at this location would pick up
12 Outfalls 205, as well as the other 200 series
13 outfalls.

14 Now, due to the large volume of
15 picking up all of that flow which is about 13 to
16 15 million gallons all at one facility. The
17 previous series broke that down into two
18 facilities; one 6-million-gallon facility right
19 on the river here, and another 7-million-gallon
20 facility upstream that would pick up just a
21 portion of 205.

22 Now, the alternative site at the
23 time was an undersized used parking lot as of
24 2013, there was ribbon-cutting ceremony for a
25 large medical commercial user at this location.

1 So we'd have to identify a new site
2 upstream to pick up enough flow that would make

3 a facility along the river here feasible.

4 A 15-million-gallon storage
5 facility at this point, you know, it's a pretty
6 narrow facility. It is private property, but it
7 is only about a hundred feet wide, so storing
8 that type of volume in that small of an area is
9 pretty deep, in the area of 30, 35 feet, so
10 that's a very large facility that we would be
11 looking at in that area. So a facility in this
12 area would be looked at to reduce the scope of
13 the Pawtucket Tunnel.

14 The Pawtucket Tunnel was proposed
15 to come up and end right about the same
16 location. The Mill Street interceptor would
17 still be needed to pick up the overflows in 201,
18 203, and 204. It should be noted here that a
19 treatment and discharge facility located along
20 the river here would need to capture the entire
21 volume. We wouldn't be evaluating treatment off
22 in the catchment area because of force main
23 needed to get that treatment water to a
24 receiving water body, so we're not taking a look
25 at that at this time.

1 So at this point I'd like to open
2 it up to discuss potential site limits for a

3 facility of this size.

4 MR. WALKER: I'm just wondering why
5 if you predominantly looked in the past at
6 public facilities, why you went to Freight
7 Street to a parking lot in the building that had
8 the tenant that was relocated that now is
9 occupied, and that whole area is pretty dense
10 other than unless you're going to undercut the
11 neighbors across the street on Freight Street
12 there at the cemetery. That's about the
13 quietest part of that whole area.

14 MR. GARDNER: I'm assuming that
15 that's probably why those sites were chosen at
16 that time. There really isn't a lot of open
17 space in this area.

18 MR. WALKER: It's very dense, it's
19 dark, industrial with neighborhoods that
20 supported the industrial development that
21 occurred in that area of Pawtucket and Central
22 Falls in its history. So if you can't do that
23 underground storage tank of that 15 million
24 gallons, then what?

25 MR. BRUECKNER: Tom, I think that's

1 why they recommended a tunnel.

2 MR. WALKER: I just wanted to have
3 the obvious stated. That's all.

4 MR. GARDNER: One of the things
5 that we'll take a look at in the future is does
6 the area allow GSI for this catchment. Does it
7 get it there? The volumes that we're talking
8 about is very large, so we'll get into that with
9 a little more clarity next month.

10 MR. BISHOP: I did want to ask on
11 that point, though, you suggested that if you
12 use treatment, you'd have to do it all in that
13 location, or a location adjacent to the river,
14 and generally, you presented the footprint of
15 treatment as requiring the same footprint as
16 storage.

17 Again, I'm wondering if that's a
18 hard-fast relationship, if there's a, you know,
19 if there's a length-to-width ratio, an
20 application in these facilities that matters, or
21 whether or not that actually may have more
22 technological adaptability to a site like this
23 where you can't fit the storage you're talking
24 about?

25 MR. GARDNER: The layout of the

1 site absolutely matters. It's something that we

2 would take a closer look at is if this is deemed
3 technically feasible. One of the reasons that I
4 wanted to point out that the entire volume would
5 be needed at the river facility is that with the
6 storage option we were looking at capturing a
7 portion of the flow upstream and then a portion
8 of the flow downstream.

9 Theoretically, you could do storage
10 upstream and treatment downstream. That's
11 something that you could take a look at, but as
12 the gentleman from Commerce RI mentioned,
13 there's not a lot available land in this
14 catchment to make that work.

15 MR. BRUECKNER: I think that maybe
16 looking at a flow through here maybe at a
17 smaller footprint, may be something we could
18 consider.

19 MR. GARDNER: This is just a photo
20 of that front street location. So the second
21 largest overflow in the Bucklin Point service
22 area is Outfall 218. It's located on the border
23 of Pawtucket and East Providence at the Seekonk
24 River.

25 It's located on Beverage Hill Ave.

1 between School Street and Prospect Street. The
2 area that's surrounding this facility is
3 primarily industrial commercial with a couple of
4 pockets of residential neighborhoods. The Boys'
5 and Girls' Club in Pawtucket has recreational
6 facilities on the river at their Elson Campus,
7 Dunnell Park is further up, upstream Pawtucket.
8 The Mount St. Mary's Cemetery to the southeast
9 in East Providence and is cut off from this map,
10 but just to the south here is the Bucklin Point
11 Wastewater Treatment Facility. So local control
12 in this area in Pawtucket would be intended to
13 control discharges from Outfall 218.

14 So if you want to add a site like
15 this location here, an empty parking lot would
16 be 400 by 150 by almost 30 feet deep. It's a
17 lot of flow in a very small area to be captured.

18 MR. BISHOP: I just wanted to
19 inquire where the actual existing outfall
20 outlets. I see the diamond, maybe there's an
21 exposed surface waterway from where that diamond
22 is, or is that really where the outfall is?

23 MR. GARDNER: That is the location
24 of the regulator for the outfall, and the actual
25 discharge to the river is over here.

1 MR. BRUECKNER: Actually, it
2 discharges upstream in that brook, that's
3 Bucklin Brook, and the outfall is really is
4 where that blue diamond is. Just downstream
5 from that blue diamond is another floatables
6 control facility that was installed eight years
7 ago. That provides floatables control now. So
8 the actual outfall pipe ends where that blue dot
9 is, that's also where the regulator is.

10 MR. BISHOP: And if I could
11 continue is, do we have any sense of -- one
12 thing that's done on these drawings, and maybe
13 it's more relevant here because it's so close to
14 the treatment plant of the topography. What the
15 vertical elevation of that outfall is compared
16 to the treatment plant, or the possibility of
17 the surcharge of pipe maybe right into the river
18 into the treatment plant?

19 MR. BRUECKNER: I think the
20 elevation is there, but the question is where
21 we're going to do it in the treatment plant and
22 what we're going to do with it, because the
23 treatment plant currently picks up the flow from
24 a discharge right at the plant just before
25 overflow. We talked about that at the last

1 meeting.

2 That overflow -- now we upgraded
3 the plant to provide wet weather treatment for
4 that overflow, and I don't think we have the
5 capacity built in right now for 218 right now,
6 so we have to go back and make further
7 modifications to the the plant to accommodate
8 additional wet weather flow from 218 if we were
9 going to do that, and we have to build an
10 interceptor down to the plant because the
11 current interceptor, obviously, doesn't have the
12 capacity for that flow.

13 MR. BISHOP: It just occurred to me
14 in terms of thinking outside of the box, most of
15 the interceptor construction has been talked
16 about as jacking things underground, and here
17 we're right around the corner in the water from
18 there. If I had this flow to convey, you know,
19 I might be trying to run a pipe on the water.

20 MR. BRUECKNER: Or we could just
21 run it downstream. There might be a capacity
22 there and do an open cut, but again, you've got
23 the disruption associated with that.

24 MR. BISHOP: I understand that,
25 it's just that there doesn't appear to be, at

1 least from where it currently outfalls running
2 towards the river, there's not a neighborhood
3 disruption, and if there's any possibility of
4 taking advantage of the water body to house or
5 hold the pipe.

6 MR. GARDNER: I'm not sure I'm
7 following what you're saying, use the water body
8 for storage?

9 MR. BISHOP: Well, either possibly
10 use the water body for storage. You're actually
11 an an area where it's wide enough, but I'm
12 talking about, I mean, last I heard they put
13 pipes in the water. That's a technology that
14 exists, I think.

15 MR. BRUECKNER: Put a pipe in the
16 water to get it from point A to point B?

17 MR. BISHOP: Rather than excavating
18 through neighborhoods or jacking a pipe to get
19 to that.

20 MR. BRUECKNER: It would be more
21 costly to do under water, and probably not
22 allowed environmentally. To get a permit to
23 that would be probably impossible when there's
24 an alternative across the land to do it.

25 MR. HABERAK: I don't know if

1 anybody here knows, but just south of that
2 Outfall, I think it was Pawtucket Ready Mix, I
3 thought that they closed.

4 MR. BRUECKNER: The land was for
5 sale, and I went to a meeting the other night,
6 and the prospective buyer wants to construct a
7 trucking warehousing operation there, and it
8 basically would take up the whole site.

9 MR. HABERAK: It's vacant now, but
10 there's plans for it.

11 MR. BRUECKNER: I think this
12 emphasizes one of the problems with these types
13 of facilities is siting. And particularly
14 because it's so densely populated, that means
15 there is so much commercial residential, makes
16 siting difficult.

17 MR. GARDNER: If I could follow up
18 on that and also following up on the comment
19 that Mike Walker made specifically about that
20 one area in Pawtucket that I think it applies to
21 other areas, in particular, river waterfront
22 areas. How we go about communicating with the
23 right people in the communities, I happen to
24 know that in Pawtucket and Central Falls a great
25 deal of community planning has happened with

1 respect to waterfront redevelopment, quite a bit
2 of both public and private investment in that to
3 which this is all very relevant and vice versa.
4 And I'm just curious, for example, Pawtucket how
5 that gets integrated with this discussion.
6 Typically, in Central Falls they would be keenly
7 interested in seeing some of this, and maybe you
8 already had the discussions with them, but how
9 do we make sure that conversation happens?

10 MR. BRUECKNER: What we've
11 typically done is after we've come up with a
12 conceptual plan, it looks good on paper.
13 Technically does it work, that would be the next
14 thing, as well as meeting with either property
15 owners or local communities to verify that it's
16 something that you can actually do. For
17 example, you look at the Pawtucket Ready Mix
18 site, I thought about six months ago, I thought,
19 that would be a great site for a tank. Well,
20 that was six months ago, and now not so much.
21 Somebody wants to do a construction that's going
22 to contribute to the economy and jobs in that
23 area, and help their business, and we're not so
24 wild about that idea anymore because somebody
25 else can use that site very productively.

1 MR. REITSMA: I just want to point
2 out that there are in the case of Pawtucket,
3 there's fairly advanced plans on the table that
4 are available that could be useful for you to
5 take a look at.

6 MR. DOMENICA: Anything else?

7 MR. GARDNER: I think we can
8 summarize some of the advantages or
9 disadvantages. I also have the neighborhood
10 ramifications that contribute to development
11 ramifications. And I think we definitely put
12 community development in the mix that wasn't
13 currently on there. We only have a couple of
14 minutes, and I do want to try to reset the
15 stage.

16 This was intended as a bit of a
17 segue into the next meeting. A couple of points
18 in terms of stormwater flow control and
19 management. Now we we're just talking about
20 receptor type solutions, and now we're talking
21 more about control and pathway interruption.

22 On the grey side of stormwater we
23 do have some options, and they involve
24 hyaluronic controls. The idea is that anything

25 that keeps stormwater out of the combined sewer

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1 amounts to sewer separation, and if we can throw
2 out catch basins we keep stormwater on the
3 surface and divert to someplace where we can
4 deal with stormwater, it's a lot easier than
5 dealing with combined flow. And there are
6 certain technology that we don't need to get
7 into, particularly. And then dealing with
8 stormwater in terms of storage and treatment for
9 combined flow, because it's relatively clean
10 compared to combined flow, you have lower
11 capital costs than any of those facilities. So
12 we did want to, at least for this meeting, get
13 back and say, all right, how would this impact
14 the sewer separation areas? Because you do need
15 to have a certain set of topography and the way
16 water flows in order to do these sort of things
17 in a catchment.

18 But we did want to sort of define
19 -- what can we do in terms of just stormwater
20 control in the sewer separation areas that might
21 then limit the extent of sewer separation? So
22 for 035, again, the area along North Main
23 Street. We do have certain conditions in there
24 that are conducive for it. In terms of

25 stormwater management of what would we do,

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1 because it's a state road, in terms of

2 stormwater management there.

3 And we do know that the soils down

4 there are not very good for infiltration. We do

5 sort of have conditions there that we can look

6 at in our next meeting in terms of stormwater

7 control. But in comparison, the 039, 056 area

8 we don't have those conditions very much. We

9 have very shallow curb reveal. Well, we've got

10 a topography where major transportation

11 thoroughfares wind up becoming essentially dams,

12 so we have difficulty doing these sort of

13 stormwater controls in those areas. It's

14 entirely not suitable on the southern end. On

15 the northern end, we've sort of a edge in

16 between Douglas and Admiral where we might be

17 able to do something, but it's only marginally

18 successful.

19 MR. WALKER: You talk about the

20 marginal curb reveals, but how much of that is

21 attributable either now, or would be

22 attributable in the future on effectiveness on

23 pavement overlay that is going to change your

24 profile down the line. So if you do this, does
25 it impose some other restriction or requirement

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1 on either the municipality or the state in the
2 future to either maintain it at the current
3 reveal, or they can't make a change, or is it a
4 permitting activity, what does it mean? And I
5 hope you're going to talk about that next month.

6 MR. GARDNER: Yes, exactly. In
7 order to manipulate the direction of the
8 stormwater flow on the surface you would need to
9 look at a certain street grading, and then other
10 things, kind of like raised crosswalks, and all
11 those sort of things would need to stay in
12 place, so in this case, Providence would need to
13 be on board with what we're doing with the
14 surface streets and maintain that, otherwise,
15 the system breaks down. That's exactly the sort
16 of details that we can table for the next
17 meeting.

18 MR. WALKER: And I'll take that a
19 step further that what I wouldn't want to see is
20 a shifting of where the expense occurs for the
21 life cycle, so that the affordable issue gets
22 missed when we're in the discussion of
23 alternatives.

24 MR. GARDNER: Just a couple of
25 pictures just to illustrate the curb reveals.

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1 206 is a different story. We do actually have
2 some potential for 206, the stormwater control.
3 We've got some median curb reveal. So I'm now
4 30 seconds over. I think we just want to have
5 some time for additional questions before we
6 adjourn.

7 MR. BRUECKNER: I just want to make
8 one comment. Please make note that time for the
9 next meeting is 9:00, not 1:00. All the
10 remaining meetings will be starting at 9.

11 MR. BISHOP: I think I was maybe a
12 little too specific in where I started with Tom,
13 but in looking in a very general way at the
14 possible options obviating a tunnel or obviating
15 some of what had been proposed for Phase III, it
16 seems obvious that the overflows driving the
17 tunnel project look to be 204, 205, 218, and
18 there is currently some treatment apparently in
19 places at the treatment plant already.

20 And so I think what I intended to
21 say was I would really, that's an area where I
22 don't think there's magic technology, but I

23 think that there are potentially ways of
24 thinking about capturing that. Even short term,
25 if we're talking about when can the ratepayers

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1 afford to build another tunnel when they're
2 paying for the one they've already built, I do
3 think that where there may not be permanent
4 solutions, you know, whether or not there are
5 in-water solutions, whether or not you can dam
6 the brook and provide surface storage in order
7 to have, you know, short term, you know, water
8 quality effects, and I don't know -- obviously
9 we know there's a cement plant, now a trucking
10 plant going in there.

11 I don't know what the precise
12 neighborhoods and the topography are like, and I
13 know there are plenty of things that people
14 don't like, or plenty of effects that you have
15 to consider, but I would certainly look at, I
16 think we don't really have any thought at all,
17 whatsoever, about short-term ideas, or possibly
18 interim.

19 We've always looked at whether or
20 not that any other ideas are the long-term
21 solution, or should we just invest in a more
22 expensive long-term solution. So I'd be very

23 interested in looking at the neighborhoods and
24 topography around in the immediate area of those
25 big overflows.

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1 MR. GADON: How many of your staff
2 stay here on a constant basis? Are they
3 permanently situated here right now from MWH?

4 MR. BRUECKNER: No, they're from
5 Boston.

6 MR. GARDNER: We don't sit in the
7 offices here. We have posts to encourage them.

8 MR. GAGNON: I'd just like to state
9 sort of what I hit on before was that the cost
10 of the upgrade of the storage tanks, the
11 tunnels, whatever they should be, should be
12 proportioned to those people that are causing or
13 those communities that are causing the combined
14 sewage overflow, and I'll leave you with that.

15 MR. BRUECKNER: One last thing,
16 Mike, parking lot issues. I think there might
17 have been some that came up. If you can read
18 what you've got, we'll put it in the record, and
19 we'll have it.

20 MR. WALKER: I have a question on
21 water quality standards, which we deferred to

22 the water quality standards meetings.

23 MR. BRUECKNER: We're going to have
24 the EPA here.

25 MR. DOMENICA: There were a number

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1 of comments regarding neighborhoods that I won't
2 go through now, but with regard to particular
3 suggestions on neighborhoods or points, but
4 those will get picked up in the alternatives
5 development. I think there's a question on
6 application demonstrative approach, which is
7 water quality standards, along with the
8 affordability issues.

9 MR. BRUECKNER: And one last thing.
10 The stenographer will prepare the minutes, and
11 as soon as we get them in their final form,
12 we'll have them on the website. As soon as
13 they're available, we'll send them to everyone.

14 MR. DOMENICA: Okay, thank you,
15 very much. Drive safely.

16 (HEARING CONCLUDED AT 4:15 P.M.)

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1 C-E-R-T-I-F-I-C-A-T-E

2

3 I, PAULA J. CAMPAGNA, CSR, a Notary
4 Public, do hereby certify that the foregoing is
5 a true, accurate, and complete transcript of my
6 notes taken at the above-entitled hearing.

5

6 IN WITNESS WHEREOF, I hereunto set my
7 hand this 30th day of April, 2014.

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PAULA J. CAMPAGNA, CSR, NOTARY PUBLIC/CERTIFIED
COURT REPORTER

21

MY COMMISSION EXPIRES: April 25, 2018

22

23 IN RE: CSO Phase III Stakeholders Group

24 DATE: April 10, 2014

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