In The Matter Of:
Narragansett Bay Commission

Stakeholders' Meeting
October 23, 2014
STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
NARRAGANSETT BAY COMMISSION

PROCEEDINGS AT HEARING IN RE:
STAKEHOLDERS' MEETING:

DATE: OCTOBER 23, 2014
TIME: 9:00 A.M.
PLACE: NARRAGANSETT BAY COMMISSION
ONE SERVICE ROAD
PROVIDENCE, RHODE ISLAND

BEFORE:
MICHAEL DOMENICA, MODERATOR

(MEETING COMMENCED AT 9:00 A.M.)
MR. DOMENICA: I need to tell you all
where the restrooms are. If you haven't found
them yet, right out the door here is the men's
room. I think the ladies' room is out there,
too. Very good.
Secondly, the exits, one is through the back
door there out the front, and if you go out to
the hallway and take a right, there's an exit to
the back of the building, as well.
Also, we have -- we're welcoming a new
stenographer today, Denise, and I think she's
ready to go.
UNIDENTIFIED SPEAKER: Trial by fire.
MR. DOMENICA: Trial by fire is right.
I'm trying to speak up a little louder, and I
think we all need to do that for Denise's sake.
And, also, be very sure to state your name when
you make a comment right upfront. That will be
very helpful.
Tom also reminded everybody to sign in.
There's a sign-up sheet there, and it looks like
everybody has their name tags. There's an
agenda. Anybody not have an agenda for today?
There's some at the table there.

While we're waiting for that, we'll get
started for the agenda. Again, Tom, you have
some comments to make for the start.
MR. BRUECKNER: Two things, I just want
to remind people that when they speak to state
their name and also to speak slowly.
(INTERRUPTION BY THE COURT REPORTER)
MR. BRUECKNER: My name is Tom
Brueckner, B-R-U-E-C-K-N-E-R. So there's fair
warning. I just have one parking lot issue from
the last meeting. There was some discussion
about secondary treatment being required for
satellite treatment facilities. I've had some
further discussion about this requirement with
EPA since then, and I would like to provide some
clarification on this issue.
Screening and disinfection is still an
alternative that is being considered. At this
point, secondary treatment is not required for
satellite treatment facilities. As was
discussed, these facilities could be installed
with only screening and disinfection, but
discharge permit would be required. The permit
would contain limits necessary for the effluent
to meet water quality standards, including
narrative limits where numeric limits cannot be
developed.
To date, authorities have focused primarily
on bacteria and residual chlorine for those
permits. The permits would be issued by DEM.
Providing only screening and disinfection would
be an interim solution unless water quality
standards were met. If not, the Clean Water Act
requirement to eliminate the discharge or provide
secondary treatment would need to be met in the
future when it was affordable.
If the storage near service or tunnel and
treatment alternative was implemented, the Clean
Water Act requirements would be met for the
design storm. As stated previously by EPA,
further expenditures would be required when
affordable to address CSO discharging occurring
for storms greater than a design storm.
So I just wanted to mention that we could do
the satellite treatment as an interim solution,
as was discussed. Secondary treatment would not
be required right away, which I think was
mentioned in the minutes and I just wanted to
clarify that point. Thank you.
MR. DOMENICA: With that, there are no
So just kind of starting everybody out, we

critical in this process.

times we heard affordability was really key and

process that we were going through, about 26

saying anything about the affordability and the

amounts. I believe even before we even started

range of options and the potential dollar

meetings that we had at the very beginning, and

Albertsen. If we remember from the stakeholder

MWH, and I'm here with my colleague, Jon

other parking lot issues, so I will give it to

Rich Raiche to lead the meeting.

MR. RAICHE: Good morning. I am Rich

raiche from MWH, the project manager for the MWH

par team, the engineering, and other discipline

consultants for our Phase III reevaluation.

Today, we've got a two-part presentation, one

before the break; one after the break. As usual,

we'll start off with the review of where we are

in the state called a process, and then Greg will

present on the affordability analysis, something

I'm sure everyone is very interested to hear

about. We will then take a break and come back

and conclude the alternatives analysis that we

began last month, starting off with getting into

the detail of the costs that we didn't present

last month, and then concluding the alternative

analysis process, and then some discussion of our

next steps in what to anticipate for the

November meeting.

So we've been at this for a while. We

kicked off the stakeholder process in February,

and then in April and May we went through the

exercise of defining the alternative, to working

with you to determine what these CSO alternatives

look like in each one of the locations. Then in

June we discussed evaluation criteria, things

beyond cost that we can use to determine which is

the best solution for each one of the

sub-systems. And then on September 4th, it seems

like it's -- it was just yesterday, but I guess

it was a month and a half ago, we started the

alternatives analysis.

Today we will conclude that with the

affordability and costs and move to plan

finalization in November. So with that, I will

hand it over to Greg to discuss the

affordability.

MR. BAIRD: My name is Greg Baird with

MWH, and I'm here with my colleague, Jon

Albertsen. If we remember from the stakeholder

meetings that we had at the very beginning, and

we started talking about a little bit of the

range of options and the potential dollar

amounts. I believe even before we even started

saying anything about the affordability and the

process that we were going through, about 26

times we heard affordability was really key and

critical in this process.

So just kind of starting everybody out, we

have thoroughly gone through NBC's financial

plans and their sources, retail revenues, their

debt, fund balance, and all of their uses,

operations of maintenance cost, capital projects,
debt service, reserves and targets, and all of

these things have kind of been formulated into a

long-term financial model for us to be able to

then start looking at some of the affordability

analysis.

When we look at some of the key financial

plan assumptions, they are conservative. We are

looking at 0 percent growth in the future years,

we are counting all of the revenues, septage and

late charges also. For debt proceeds, we're

assuming that they are going to be using the

Rhode Island Clean Water Financing Authority

loans. And then what that's not going to cover,

then they'll be going into the bond municipal

market.

We've escalated operations of maintenance

cost at 2.3 percent, and we're assuming 20 years

as far as any loan program or municipal debt

issuance. And we've embedded the various costs

and we've added a component, because when you're

looking at the size of NBC and the liability

associated with a lot of their different assets,

we have a conservative estimate on some of the

buildup of reserves to get to kind of the

industry standard of about 90 days of operations

and maintenance.

When we look at the capital plan and

projects, we have some major different

categories. We have the waste water treatment

facility improvements that total just under

75 million over the 2015 to 2026 12-year period.

We have the category of projects of

infrastructure management that has a muriate of

different uses. The next category is the sewer

improvement and interceptor repair. And over

that time period at a little bit more than

40 million, we have the first or the last

component of the CSO Phase II for just about

50 million, and then you can kind of see how

Phase III actually kind of rolls out during that

12-year period for an estimated amount in today's

dollars $740,730,396. So we're really talking

about a 12-year long-term capital program that

totals $915.8 million.

MR. BISHOP: Brian Bishop, OSTPA. I'm

just wondering, I thought we were working on

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MR. GADON: Harold Gadon, G-A-D-O-N.

MR. REITSMA: Thank you.

to about $175 million.

would be left with the things that NBC would need

if you pulled out any of the Phase III costs, we

adjustments for anything along those lines. So

this is what work they would need to be doing, so

MR. BAIRD: This represents

7 $915.8 million, and 81 percent of that is the

Phase III costs of 740 million, and the other 175

is just everything else that they're going to

need to do. Any other good questions on the

capital plan? Because this is really what starts

driving the debt service and the rate increases.

This is really kind of where everything is at.

When we --

MR. DOMINICA: Mike Dominica. If you

go out to 2026, which is 12 years --

MR. BAIRD: Correct.

18 MR. DOMINICA: -- maybe you explained

that already, if you're looking at a 20-year

planning period or a 20-year financing period?

21 MR. BAIRD: The financial model

obviously goes out beyond the 12 years, but we're

really just trying to catch the snapshot of what

Phase III, under the current requirements, how

that would actually kind of play out.

1 last category, the 740 --

2 MR. REITSMA: Those are the -- Rich

3 Raiche, MWH. What we plugged into the

4 affordability analysis are the baseline costs.

5 So this is what the Phase III, as currently

6 defined, the tunnel and sewer separation and

7 interceptors.

8 The escalation that you see there, the 740

9 versus the 600, these are actually in 2018

10 dollars. That's why it's a slight difference

11 from what you've seen before.

12 MR. BISHOP: So the baseline was

13 established then essentially on a kind of tabled

14 consideration of a third phase from the -- almost

15 from the first stakeholders?

16 MR. BRUECKNER: Tom Brueckner. Brian,

17 that's what was in the CDRA. That was the

18 proposed program.

19 MR. BISHOP: Okay. Sorry. I just

20 wanted to have that straight. Thank you.

21 MR. REITSMA: Jan Reitsma, Governor's


23 these are costs only for Phase III or for the

24 overall operations?

25 MR. BAIRD: This is all in. So the
1 and II. The major difference here is that we had
2 escalated all of the costs to 2018 dollars. The
3 $602 million were stated in 2010 dollars. So the
4 large part of that was first escalating that 2010
5 estimate to 2014 based on E and R records, which
6 are a little bit higher than national averages,
7 and then doing an additional 3 percent escalation
8 to get it to 2018.
9 MR. RHODES: Jared Rhodes, Statewide
10 Planning. Would I be correct in assuming the 740
11 does not include the debt service cost or does
12 it?
13 MR. BAIRD: We will get to that.
14 There's -- really this capital plan will be using
15 PAYGO and state revolving funds and municipal
16 debt to be able to capture all of this. So this
17 is kind of another representation of how that
18 actually plays out. We can see where it ramps up
19 and then kind of spikes up at the heighth of the
20 construction period in 2021 and 2022, and then it
21 kind of drops back down as Phase III is
22 completed.
23 If we had stripped away, say, the first
24 three years that have some number of waste water
25 treatment facility, Phase II and Phase III, then

1 have on hand and then going after the state
2 revolving funds and then issuing municipal debt
3 on top of that.
4 MR. BISHOP: Brian Bishop, OSTPA. Do
5 you have that represented in any compounded
6 sense? I mean, I can add it kind of quickly.
7 MR. BAIRD: Like about an 84 percent --
8 MR. BISHOP: By the time you get to the
9 end.
10 MR. BAIRD: -- increase. Yeah.
11 MR. BISHOP: Okay. Thank you.
12 MR. BAIRD: You must be glancing in at
13 my notes. So that's where -- you know, about an
14 84 percent over the 12-year period with the
15 heighth of that at the 12.4 and the 12.8 percent.
16 Any other questions on this slide? Now --
17 MR. BISHOP: If we cut seven stars,
18 could we cut down those peaks?
19 MR. BAIRD: Yeah. If this was kind of
20 a treadmill or a bicycle exercise, that might
21 kind of wear you out a little bit. But smoothing
22 is always a good thing.
23 A couple of other findings that we had, and
24 my colleague, Jon Albertsen, if he wants to jump
25 in on this, some of the historical average annual

1 we would probably be looking at about an average
2 5.5 to $6 million a year of capital projects.
3 Here's another interesting graphic. When
4 you think about it, obviously, NBC isn't doing
5 just capital projects, but they have the
6 operations of maintenance expenses. You can see
7 that the red bar is their existing debt service,
8 and then when you see the green, you can really
9 see what the assumption is of how they're
10 increasing their debt. And the red, the existing
11 debt, you know, tapers off just a little bit, but
12 nonetheless for -- to be able to issue additional
13 debt, you're almost issuing a little bit more
14 than double, than what their existing debt
15 capacity is. Then you can see the purple on top
16 being the capital projects.
17 When I look at rate increases, and a lot of
18 municipalities that might be able to smooth their
19 rates over a period of time, drawing on different
20 reserves, obviously, NBC needs to go through rate
21 cases with the PUC. So this is a representation
22 of the various rate increases on an annual basis
23 on rate cases that would need to be made
24 necessary to be able to provide a mix of funding,
25 once again, looking at any of the cash that they
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| 1. nothing to do with people's actual bills. It  
2. kind of just said, the entire area, you know,  
3. what was the focus. There was no consideration  
4. for taking into account income distribution. And  
5. there's always that issue as far as, you know,  
6. what medium household income, what year are you  
7. going to use on the whole concept of just a  
8. medium?  
9. So when we start thinking of the new  
10. analysis that we're able to do, now we're talking  
11. households, now we're drawing in actual bills.  
12. We're drawing, you know, those actual bills and  
13. applying to the actual households at the census  
14. track level. We're also taking into  
15. consideration the 16 different buckets of income  
16. distribution that actually occurs, and then we're  
17. following EPA guidance on, you know, taking some  
18. medium household income and adjusting it to  
20. By the time you do all of this, you're  
21. actually doing a weighted average, and you end up  
22. with different percentages, as you know, but then  
23. for our graphs and illustrations, we're  
24. benchmarking it back and calibrating it back to a  
25. 2 percent index, and then color coding that so |
| 1. So the Phase II indicators, the financial  
2. economic indicators, these are the rankings that  
3. we go through. Just to give some specifics of  
4. what we're actually going through, the first is  
5. looking at bond rating and figuring out if it's  
6. strong, mid range, or weak. We look at net debt  
7. and property value, unemployment rate compared to  
8. national unemployment rate, median household  
9. income compared to the national MHI, property tax  
10. and property value, and then the property tax  
11. collection rate.  
12. So in terms of the assumptions -- yes. Go  
13. ahead.  
15. Just so I understand the economic indicators,  
16. essentially what that rubric seems to indicate is  
17. that whatever the percentage of the median salary  
18. that these bills represent, if the economy is  
19. perceived as weak, that increases the perceptual  
20. burden despite the fact that it is really only  
21. the same percentage, that certain percentage of  
22. median household income.  
23. MR. ALBERTSEN: Correct. And, again,  
24. this is the baseline that's come up as a  
25. measurement by EPA in '97 and is what we're |
| 1. everything looks very consistent.  
2. So with that, I'm going to turn a little bit  
3. over to Jon.  
4. MR. ALBERTSEN: My name is Jon  
5. Albertsen. I'm with MWH, as well. I'm going to  
6. walk through just the nuts and bolts of the EPA  
7. calculation as outlined in the 1997  
8. documentation. So with that, there are two  
9. indicators that we go through. The first is  
10. Phase I, which looks at the residential impact to  
11. the people in the community.  
12. What we do is essentially figure out a cost  
13. per household and divide it by the median  
14. household income. If it's less than 1 percent,  
15. it's low burden; if it's between one and two,  
16. then it it's mid range; if it's greater than two  
17. then it's a high burden.  
18. Then alongside is the Phase II, the economic  
19. indicators or financial capability indicators.  
20. Essentially, we take six different metrics and we  
21. weigh and figure out, Okay, where does the  
23. it strong? When we rank those two, we score them  
24. both. Is it low burden or medium burden or high  
25. burden. |
| 1. following.  
2. So in terms of key assumptions, everything  
3. is similar to what Greg just went over when  
4. talking about the financial plan, except for  
5. we're having to bring some things into today's  
6. dollars because we're comparing it to median  
7. household income that's in today's dollars. So  
8. what we do for the Phase I residential indicator  
9. is to get a snapshot of, Okay, what's the cost  
10. per household for everything today and compare  
11. that with the median household income today.  
12. So current O and M in terms of 2014, we have  
13. 41 million. That doesn't include costs that are  
14. in the collection system or infrastructure in the  
15. communities or storm water costs. That's just  
16. cost for NBC. Annual capital of 45 million,  
17. which includes 42 million of debt service, along  
18. with capital expenses that we're saying pay in  
19. cash, these capital outlays of 3 million each  
20. year. And then we have future CIP, which  
21. includes the Phase III, which I know we looked at  
22. 740 million before, but when we bring that back  
23. to today's numbers and look at that, that comes  
24. to about 678 million of Phase III costs. So I  
25. know we've been talking about a lot of different |
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1 time periods with the Phase III costs, but now
2 we're talking about today's dollars with the
3 Phase III costs.
4 We have 153 million of waste water treatment
5 improvements and non--items associated with the
6 CSO Phase III, and 500,000 of annual
7 infrastructure management costs here at NBC.
8 In terms of future O and M, what we're
9 talking about here is additional O and M that's
10 going to result after we finish construction in
11 Phase III. When we look at funding and how we're
12 actually going to pay for these things, we're
13 going to aim to maximize the state loans as much
14 as we can. When we ran it through the model,
15 that's 51 revenue bonds, 26 percent of the Rhode
16 Island Clean Water Financial Authority loans, and
17 22 percent cash.
18 In terms of the actual rates that we're
19 assuming for this model, it's 3 percent for the
20 state loans at 20 years, and for the revenue,
21 5 percent at 20 years.
22 So part of figuring out this cost per
23 household is we have to figure out, Okay, what is
24 the residential portion of the total costs. So
25 use billing data, here at NBC, we figured out

1 just an annual payment basis, this is all
2 happening at one time, to get us 153 million of
3 total costs.
4 So when we take that amount and we take that
5 by the 61 percent that we said was the
6 residential share of those costs, we get the
7 97 million. Divide that by the 118,000
8 households to get $789.95 as a cost per
9 household. So that's the cost per household to
10 do what we're currently looking at as a baseline
11 Phase III cost.
12 Then we look at, Okay, what is the weighted
13 and adjusted median household income. Now,
14 included in this number is the median household
15 incomes of all of the communities that are served
16 by NBC. Then they are weighted by the number of
17 people that are served within each of those
18 communities, so that we can accurately represent,
19 Okay, what is the weighted MHI. Then we bring it
20 again to today's dollars, because the source data
21 was from 2012, bring that to 2014 dollars, to get
22 us the 47,165. We divide the 789 by the 47,000,
23 and we get 1.67, which brings NBC to a median
24 burden. This is just including the costs that
25 are paid by NBC for their services. Is there a

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1 that 61 percent of the total flows are used by
2 the residential users. The residential share of
3 the total cost is 61 percent. And then when we
4 look at the number of dwelling units and the
5 people that are being served, we have 118,638.
6 MS. KARP: Caroline Karp, K-A-R-P.
7 Could you go back one? The number of households,
8 is that the number that's currently served or the
9 number--
10 MR. ALBERTSON: Currently served.
11 We're bringing everything to today's dollars and
12 comparing it to MHI today to figure out what's
13 the cost per household right now.
14 MS. KARP: So let me clarify that now.
15 So assuming that the full Phase III gets built
16 out, which I think is a question (inaudible),
17 would additional households be included in that
18 service area?
19 MR. ALBERTSON: Potentially. But just
20 in this analysis--
21 MR. RAICHE: It's also service area
22 wide.
23 MS. KARP: It is service area wide.
24 But it seems as though there's an extension of
25 service area going on in Phase III, so I just

MR. RAICHE: There is no extension of
4 service area. This is the NBC service district,
5 total number of households. The only way to
6 expand the district would be to bring in other
7 towns or expand its presence in other portions of
8 towns.
9 MR. BISHOP: We're reasonably built out
10 in the service area.
11 MR. ALBERTSON: So to look at some of
12 these numbers and what they actually come through
13 as--and, again, there are actual worksheets
14 that EPA has outlined that we can go through and
15 follow. And this is kind of a high-level version
16 of those worksheets. So we have just over
17 86 million of current costs, and then we have the
18 67 million of projected costs. Let me be clear
19 that this 67 million that you're looking at is
20 the mix of funding assumptions that we talked
21 about on the prior tab. So it's looking at the
22 total construction, CIP that we have to do, and
23 using the revenue funding, using the state
24 funding, and using the cash funding to get us the
25 total cash outlay of the 67 million on looking at

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1 want to know, how many additional households are
2 being included if the service area gets expanded?
3 MR. RAICHE: There is no extension of
4 service area. This is the NBC service district,
5 total number of households. The only way to
6 expand the district would be to bring in other
7 towns or expand its presence in other portions of
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23 using the revenue funding, using the state
24 funding, and using the cash funding to get us the
25 total cash outlay of the 67 million on looking at
MS. PARTRIDGE: The other thing is
MR. ALBERTSON: Correct.
the cost for this thing, that's not actual usage?
MR. ALBERTSON: This is just a way to
measure affordability that was outlined by EPA
quite a long time ago. Essentially, what we're
saying is where we rank in terms of how
affordable or unaffordable it is. If it's
between one and two, that's a median burden. If
together is a very
high burden.
MR. BISHOP: I wanted to let you
finish. Sorry. Brian Bishop. So can we loosely
interpret -- I'm trying to figure how we loosely
interpret the $789 figure. Is that loosely
interpreted as the total cost per sewerage per
household per year in this model?
MR. ALBERTSON: Correct.
MR. BISHOP: And that includes
previous -- I mean, if I'm reading the top
correctly -- and this is theoretically by the end
of the model?
MR. ALBERTSON: It's essentially if
1. everything happened today right now and we just
incur all of the costs --
MR. BISHOP: Okay. So if you were able
to do this --
MR. ANDERSON: Right now if everything
was just done, it's attempting to get a snapshot
of, Okay, everything right now of the --
MR. BISHOP: So the imputed project
costs were changed to -- it's a modest point at
3 percent a year.
MR. ALBERTSON: That's a good point to
keep in mind, too, is that there's no
consideration for what people actually use, what
people are actually being billed, because there's
volume base costs. So this is just taking one
number for the whole community and dividing it by
the number of people that are served to get
essentially some sort of measurement. So moving
along --
MS. PARTRIDGE: Elaine Partridge, City
of Central Falls. So I'm trying to understand
this. The cost per household, that's just the
cost for this thing, that's not actual usage?
MR. ALBERTSON: Correct.
MS. PARTRIDGE: The other thing is
1 that, a three-family dwelling, it would be $789
per dwelling unit?
MR. ALBERTSON: Correct. Per
household.
MS. PARTRIDGE: So the actual landlord
would be paying almost $2,000? Is this a year?
MR. ALBERTSON: Correct. And, again,
this isn't just saying this is exactly what your
bill is going to be. In fact, Ray is going to
to get into a little bit more of our analysis of
when we look at rates of people and we do look at
community data. But this is what EPA prescribed.
Okay, give us a measurement of what your
affordability is and look at it from a very high
level.
MR. BISHOP: Brian Bishop. Just to be
relatively precise on that, because I think the
question was perceptive, it came from Central
Falls, are these census households? Because NBC
does not send a bill to each resident in a
three-family, so you're taking census households?
MR. ALBERTSON: So NBC, in their
billing data, actually tracks the number of units
that are in --
MR. BISHOP: Okay. Got it. So you're
1 using unit numbers tracking.
MR. ANDERSON: Correct.
MR. REITSMA: Okay. Just want to be
very precise. Thank you.
MR. ALBERTSON: Yup. So then we look
at the Phase II indicators, and we look at, Okay,
where do we rank? So in terms of bond rating,
strong. When we look at net debt to property
value, it's another indicator that NBC looked
very strongly. We look at unemployment rate in
this area compared to the national rate, and it
was actually 1.9 percent higher, so it was
somewhat weak. We look at MHI. It was
14 percent lower than the national, so that's a
mid range score for that financial indicator.
When we look at property tax to value, market
value, we have a mid range score. And property
tax to collection rate, it's in the mid range, as
well.
So then when you score all of those
different things, the end result comes that, for
the Phase II indicators, we are also in the
midrange area.
MR. BISHOP: This I don't think is a
criticism of your work at all, because you didn't
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<td>2  strength and weakness is any factor that</td>
<td>2  MR. ALBERTSON: Sure. Sure.</td>
</tr>
<tr>
<td>3  otherwise then indirectly relates to the actual</td>
<td>3  MS. KARP: Caroline Karp. I just</td>
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<tr>
<td>4  cost of living. Because the fact that our MHI is</td>
<td>4  actually want to come at this from a different</td>
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<tr>
<td>5  14 percent lower may not seem significant to</td>
<td>5  angle, which is to say, this is the best</td>
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<tr>
<td>6  North Carolina or somewhere, but the cost of</td>
<td>6  available algorithm to decide things about</td>
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<tr>
<td>7  living is so much less there that I don't think</td>
<td>7  affordability. At least the way you're</td>
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<tr>
<td>8  you could possibly consider our median household</td>
<td>8  explaining it, this is the version that's been</td>
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<tr>
<td>9  income as placing us mid range. Just</td>
<td>9  adopted by EPA at the moment, so I understand</td>
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<tr>
<td>10  instinctively I think there's something wrong</td>
<td>10  these data as saying this project looks</td>
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<td>11  with this.</td>
<td>11  affordable, but I am not clear that it answers</td>
</tr>
<tr>
<td>12  MR. ALBERTSON: I completely agree.</td>
<td>12  the underlying question about whether or not</td>
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<tr>
<td>13  And I will say that spoiler Greg is going to get</td>
<td>13  building a tunnel is desirable.</td>
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<tr>
<td>14  into a lot of these types of things. This really</td>
<td>14  Now, I missed a couple of meetings, so it's</td>
</tr>
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<td>15  is a good indication of affordability.</td>
<td>15  my fault here. But it looks to me like the data</td>
</tr>
<tr>
<td>16  MR. HOLMES: Phillip Holmes, Rhode</td>
<td>16  suggests affordable but doesn't address the</td>
</tr>
<tr>
<td>17  Island Shell Fishing Association. If you take</td>
<td>17  underlying issue. It doesn't address storm water</td>
</tr>
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<td>18  into account that when things cost more people</td>
<td>18  controls, because there's no way to finance this</td>
</tr>
<tr>
<td>19  use less of it, if you're basing your numbers on</td>
<td>19  without going back to the rate fees.</td>
</tr>
<tr>
<td>20  usage and the landlord of the three tenant</td>
<td>20  MR. ALBERTSON: Sure. All I'm going to</td>
</tr>
<tr>
<td>21  apartments goes to his tenant and says that the</td>
<td>21  say is I think I'm going to pass this to Greg</td>
</tr>
<tr>
<td>22  more water you use, the more your bill is going</td>
<td>22  right now, because all of these questions are</td>
</tr>
<tr>
<td>23  to be, people begin using less water. And the</td>
<td>23  leading to what we want to talk about in the</td>
</tr>
<tr>
<td>24  smart ones that use less water, the bills goes</td>
<td>24  remainder of this presentation. So I will toss</td>
</tr>
<tr>
<td>25  down. But when their bills go down, everybody</td>
<td>25  it back to Greg.</td>
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</table>

| 1  else's goes up. So what happens in the end is | 1  MR. BAIRD: Rich, did you want to pick |
| 2  everybody smartness up and uses less water, and | 2  up a part of that question as far as the -- |
| 3  then NBC has to adjust the rates to get their | 3  MR. RAICHE: In terms of the technical |
| 4  revenue back up. So by saving water, unless | 4  components of Phase III, that's the subject of -- |
| 5  you're the smart one and nobody else does it, | 5  that's the topic after the break. |
| 6  everybody else is going to pay more. I mean, | 6  MS. KARP: Could you say that again? I |
| 7  there's a dog chasing its tail thing going on | 7  missed it. |
| 8  here sometimes with conservation. | 8  MR. RAICHE: We will be talking about |
| 9  MR. ALBERTSON: I can answer that | 9  the technical components of the projects that |
| 10  question. Just real quick, so when you looked at | 10  comprise Phase III after the break. |
| 11  the rate increases, the financial model you | 11  MR. DOMENICA: But I think, Greg, |
| 12  viewed, you considered less is (inaudible) | 12  before you start, I think also, as it was pointed |
| 13  demand, and so that is something we definitely | 13  out earlier and correct me if I'm wrong, this |
| 14  considered. | 14  doesn't mean it's affordable, this is just the |
| 15  MR. BISHOP: Brian Bishop. I just | 15  NBC component. |
| 16  wanted -- I'm glad that Phillip used this as a | 16  MS. KARP: I understand. |
| 17  bit of an ambiguous difficulty to sort out, | 17  MR. BAIRD: And I think the general |
| 18  because one of the problems is that the cost of | 18  consensus, when everybody sees what the guidance |
| 19  CSOs is almost virtually unrelated to the level | 19  has been since 1997, which is really the starting |
| 20  of consumption, so that said people using less | 20  point that you have to start doing some |
| 21  water at home is not -- and the vast majority of | 21  affordability analysis, the general consensus or |
| 22  these increased costs are related to the CSO. So | 22  feedback is usually pushed back and they're |
| 23  that in this case, I'm not saying it's a good | 23  saying. Wait a minute, it really doesn't seem to |
| 24  idea or a bad idea to conserve water, but it will | 24  be a complete story, it seems like there's |
| 25  do very little relative to that real cost per | 25  missing some other components that could add a |
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1 little bit more complexity to the issue. And
2 that's where, you know, the Mayors and everybody
3 across the nation who are being faced with these
4 types of issues, they're coming up with the same
5 type of feedback saying, Wait a minute, there's a
6 lot of other things we need to consider if we're
7 going to really talk about affordability.
8 So right now, MWH is working with the US
9 Conference of Mayors and others, because the
10 methodology that we want to continue going on, we
11 want to address income distribution and skew. We
12 want to address the fact that we're really
13 talking about real neighborhoods, just not a
14 common blanket for the utility district as a
15 whole. And we really want to bring them to the
16 impact of what the actual bills are, because now
17 you're talking about the real consumption of
18 what's really happening, and it's not some global
19 number.
20 (BRIEF INTERRUPTION)
21 So this is where this next phase of the
22 approach that we wanted to go through kind of
23 meets and exceeds some of the EPA standards.
24 It's being supported by the US Conference of
25 Mayors, AWWA/WEF, and it really starts to give us

1 and see those numbers down below, less than
2 10,000; 10,000 to 14,999, these are the 16
3 different income buckets that exist for every
4 census track. And when you look at the
5 population in each of those census tracks, now
6 you can see where, say in this example for this
delineated census track, 60 percent of the
8 population is really following into the income
9 range of really, you know, a little less than
10 $25,000 for that household.
11 So this becomes a very critical component
12 when you start talking about, what's the true
13 impact, and it widens the picture and it says,
14 Okay, now we're going to start having a real
15 discussion on affordability.
16 So what we do is we take all of the actual
17 bills, we take the income brackets, you know, and
18 take it to midpoint. We take all of the census
19 data and we start trying to say, Okay, what's
20 happening today, and we put it into the different
21 models and then we say, Now, given those
22 percentage -- those rate hikes, how does
23 affordability actually change going out for the
24 next 12 years.
25 So this kind of goes back to the color

1 the ability to kind of focus and bring in some
2 other economic indicators, some other issues that
3 are occurring.
4 Part of what has allowed that is actually
5 some additional guidance. The whole IPF program
6 change that the EPA rolled out in 2012 that said,
7 Yes, we need to look at not just sewer but storm
8 drain costs and anything else that's going to
9 actually help us figure out what the true impact
10 is.
11 Now, here's an interesting graph. It tries
12 to illustrate some things. This is just
13 grabbing, say, for Providence County, that red
14 line going across, $49,000 is the median
15 household income. And here you can see, based on
16 all of the census tracks contained within the NBC
17 service area, there's a huge variance of income,
18 average income that's actually occurring. And if
19 you just take the typical 1997 approach to it, it
20 completely ignores income distribution, which we
21 take into effect.
22 The other element, and to be able to
23 illustrate the issue, if you take one census
24 track and now you want to weight that income
25 distribution, you want to now take into effect --

1 coding. So if it's a light green, it's kind of
2 the less than 1 percent. We kind of indexed it
3 back to a 2 percent index and calibrated all of
4 the different weights. So when you get into the
5 red, then that's really kind of tying back and
6 saying, Okay, now given the 2 percent index,
7 we're calling that unaffordable. And we have --
8 we had assumptions for inflation, we back out
9 those inflationary numbers, and so this still,
10 once again, kind of represents that 84 percent
11 increase over that period of time.
12 So this is what 2015 starts looking like.
13 You can see where the households that are greater
14 than 2 percent of the medium household income,
15 you have 45,218 households out of the 118,000
16 households. When you look at the City of
17 Providence and the City of Pawtucket and Central
18 Falls, they're really making up, you know, about,
19 what is that, 72 percent of what is considered
20 unaffordable even beginning at this 2015 number.
21 MR. REITSMA: Excuse me. I just want
22 to say, is there an overlay -- I mean, the
23 service area doesn't really extend to all the
24 areas you show. I'm just wondering what the
25 service area is. If it's just the colored
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1 blocks, not the light green?
2 MR. ALBERTSON: So if there's any
3 customers -- this is John Albertsen, MWH -- if
4 there's any customers in a census tract, the
5 whole census tract is showing up in this picture.
6 So there's at least one customer in that census
7 tract if it's showing up here. So, again,
8 there's maybe not a customer in the very top of
9 the map, but there may be someone in the bottom
10 corner of that census tract.
11 MR. BISHOP: Okay. I'm not sure of the
12 population. I think this is -- I understand you
13 can only work with the figures that you have, but
14 it does seem though that when it comes to skewing
15 this, even though I understand your weight -- I
16 don't know if you're weighting by census tract or
17 by town. When you said -- you were talking about
18 weighting the median income, I think you said you
19 were counting the people within a municipality.
20 MR. BAIRD: I think if we continue
21 forward --
22 MR. BISHOP: Okay. Okay. Maybe you
23 will show it. Sorry.
24 MR. BAIRD: -- you'll be able it see
25 the detail.

1 MR. RAICHE: Keep in mind though that
2 blocks that build this up, those are the census
3 tracks. So the size of the block is somewhat
4 misleading because the census tracks generally
5 have the same number of people in them. So we
6 have some small blocks in there for the three
7 cities and some large tracks in the outer-lying
8 towns. You essentially have the same number of
9 people in each one of the those.
10 MR. BISHOP: I mean, I think I'd be
11 interested to see like a number on those blocks,
12 it would be harder to see on the smaller ones,
13 but how many people are actually being served or
14 how many households are being served.
15 MR. BAIRD: The benefit of the model
16 that we have does get into some of that
17 granularity. Just a case in point here, right
18 now we're only talking about NBC. So we're going
19 to go through some slides here that's really
20 going to say, NBC's costs, the treatment
21 component, we're going to talk affordability
22 there, and then we're going to have to drill down
23 into the member communities. And we've selected
24 three case studies, City of Providence,
25 Pawtucket, and Central Falls, where then we go

1 down into that level of detail because now
2 there's some other costs that they have with the
3 collection system and their storm drain system
4 costs that have to be included to look at that
5 specific affordability issue that they're being
6 faced with. So right now we're only talking
7 about NBC as a whole, and then we're going to be
8 drilling down into that greater level of
9 granularity.
10 So when we take it to the next step, and
11 this is where I want you to kind of look at
12 what's happening, right now out of the 118,000
13 households, we're at about 45,000 so it really
14 represents about 38 percent of the total
15 households of the NBC service area. When you
16 move to 2020, that number goes up to 49,000 or
17 just under 50,000, so we've gone from a
18 38 percent of unaffordability households to now
19 42 percent.
20 MS. KARP: How are you extrapolating to
21 the future in terms of households and household
22 income?
23 MR. ALBERTSON: I can jump in on that.
24 So essentially we're doing the opposite. What
25 we're doing is bringing things into today's

1 dollars and we're discounting for inflation on
2 the right so that we don't have to guess that
3 kind of stuff. So, again, this is --
4 MS. KARP: (Inaudible) household remain
5 constant?
6 MR. ALBERTSON: Yes.
7 MR. BAIRD: So this is 2020, and then
8 when we get to, say, 2023, now the -- and the
9 entire service area, 62,000 households are
10 projected to be unaffordable, so that's peaking
11 at about 53 percent of the households in the NBC
12 service area. When we get to 2026, we're at
13 54 percent with about 64,000 households in that
14 service area. And here we have kind of the three
15 components for Providence, Pawtucket, and Central
16 Falls.
17 So unaffordability for Central Falls at this
18 point, and we're talking about the NBC service
19 area, would be 56 percent for Central Falls,
20 about 44 percent of the households on average in
21 Pawtucket, and Providence, unaffordable,
22 47 percent of the households.
23 MS. KARP: I just want say, it looks to
24 me that this is a worst case scenario, because it
25 assumes that the number of households remain
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1 constant, the median household income remains
2 constant, and the percent of unemployment remains
3 constant, and that's looking over ten years into
4 the future. So to me that's a worst case
5 scenario in terms of affordability.
6 MR. BAIRD: The interesting thing is
7 when you try to project out and you say, Okay,
8 how do you want to account for economic growth
9 and build that in and then you say, Okay, well,
10 if we're going to increase our O and M and we're
11 going to increase our capital costs and have this
12 inflationary factor, sometimes those two will net
13 themselves out. So when you look at trying to
14 project things out over a 12-year or a 20-year
15 basis, you try to neutralize it as much as you
16 can. So the best representation was trying to
17 take a snapshot in time and say, If you did grow
18 and things netted out or if you did grow, they're
19 growing at the same income bucket level, they're
20 growing at kind of the same demographics, then it
21 would kind of still hold true to this. So that's
22 kind of the in general assumption.
23 MR. BISHOP: If I can read that back to
24 you -- Brian Bishop -- so that --
25 MR. BAIRD: Please do.

1 MR. BISHOP: -- I'm sure I understand,
2 essentially what you're saying is that the cost
3 of the projects are norm now and don't assume
4 inflation -- the inflation and construction costs
5 that even were shown in that 2018 slide, I think
6 that we saw, that you're pulling back those
7 assumptions on inflation and cost that might
8 affect real bills in the future and just looking
9 at this is if it could all happen tomorrow.
10 MR. ALBERTSON: Yes. Correct.
11 MR. BISHOP: Okay. Thank you.
12 MR. DOMENICA: Greg, I have a question
13 to follow up on Caroline Karp. This is a
14 question -- I presume these calculations assume
15 the same percentage of the total cost as paid by
16 the residential component?
17 MR. ALBERTSON: Correct.
18 MR. DOMENICA: What if there's a shift
19 in that where you have a significant change in
20 the industrial commercial component in the area
21 where you lose a significant portion of your
22 industrial base? The costs then shift to the
23 residential.
24 MR. BAIRD: Yeah. Essentially if 100
25 new businesses moved into the area, then all of a

1 dollar approach here with -- if you had a worst
2 case or a best case, we're still trying to
3 maintain, Okay, you know, and having all of these
4 different meetings with NBC staff and sitting
5 down, What do we think kind of that mid road is.
6 MR. BISHOP: Again, I just wanted to
7 ask from a technical standpoint, how hard would
8 it be to take the results and approach you've
9 done and add a little bit of three dimensionality
10 to it around the number. If you have a number
11 that you think is, you know, a conservative but
12 not extreme assumption on those, whether they're
13 assumptions about economic growth, whether
14 they're assumptions about shift of the rate base
15 between commercial, maybe the best idea is we
16 borrow $75 million and we start making 38 Studios
17 bare because they'll use a lot of water. But
18 assuming -- in other words, if you take some of
19 those options and you give somewhat of a bracket
20 around that, is that an extremely difficult or
21 demanding task if you were given some relatively
22 simple parameters along those lines that people
23 have suggested?
24 MR. BAIRD: The models are actually set
25 up in a way so if O and M costs were going to be
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1. big or more capital costs were going to get added
2. or taken away, then that can basically project
3. everything out fairly quickly. It doesn't
4. automatically generate the maps, but nonetheless,
5. our model would demonstrate, and then we would
6. actually see how the rate increases would be
7. adjusted one way or another.
8. MR. BISHOP: I mean, in the old days,
9. you get those things at the store, you know, and
10. if you turn them this way, you know, you see one
11. picture, and you turn it the other way and you
12. see another picture. And now we have, I don't
13. know, overlays in computers and stuff to do that.
14. But I would think that -- I do think that people
15. might be interested in a range, because I don't
16. necessarily -- your work is finer grained than
17. EPA, so it's not a precise replication of EPA's
18. methodology. But I think this is graphically
19. useful, but however you wanted to argue this, I
20. think it might be fair to people to say, an
21. economically worse scenario could look like this
22. and an economically rosier scenario could look
23. like this.
24. MR. BAIRD: It would have to be a
25. pretty good move positive or negative --

1. MR. BISHOP: To change the colors.
2. MR. BAIRD: -- to change the colors.
3. MR. REITSMA: Jan Reitsma. I don't
4. know if it's too early to make this observations,
5. but, first of all, I appreciate the effort to
6. refine the analysis. At the same time, the more
7. I hear sort of the qualifications, the more I
8. question the utility. It seems that there are a
9. lot of things that could happen that throw out
10. the benefit of the analysis in terms of what
11. could happen with the economy one way or another.
12. So why are we doing this? I think what we can
13. take away is something that we already know, that
14. there's going to be a significant cost and that
15. could impact the population very significantly.
16. The question is, what are we trying to do?
17. Are we trying to justify not making investments?
18. And let me make a certain argument here. What
19. we're really trying to do, I think, is to
20. determine what is needed in terms of effective
21. waste water treatment, protecting Narragansett
22. Bay as one of our key assets. Hopefully, we're
23. not trying to get away from that. Right?
24. We're trying to come up and reevaluate what
25. the most cost effective way is to do that. And

1. maybe, you know, it's the ratio of the hard
2. infrastructure approach to the softer or
3. combination of hard and soft with premium
4. structure and whatever.
5. Sooner or later, we're going to have to make
6. a determination of, this is what we have to do if
7. we're still serious about protecting Narragansett
8. Bay and have cost effective waste water treatment
9. facilities and a system that's resilient, by the
10. way, that can last, and not in five years we have
11. to decide, Oops, it wasn't good enough.
12. Then we have to find a way to fund it. And
13. that really should be the focus. Not this thing.
14. Because affordability analysis can be used in a
15. lot of ways including not so noble ways, I would
16. suggest.
17. So I just assume get to the point of, Okay,
18. we know it's going to cost a lot. Now what? And
19. we need to start thinking about, what are the
20. more innovative ways that we can come up with the
21. monies to pay for it. That is, if I'm not
22. mistaken, looking at what's happening across the
23. country, finding public/private financing
24. mechanisms to start paying for it. Our people
25. talking about infrastructure, banks, the models,
1. MR. BAIRD: And this is where they
2. allow the affordability and economic factors to
3. be part of the consideration to say, Okay, what
4. are the various options that could potentially be
5. looked at. Now, I still want to be able to --
6. MR. DOMENICA: Do you have time for a
7. couple of questions?
8. MR. BAIRD: I do. I'm just wondering
9. if some of the slides --
10. MR. BISHOP: Why don't you go through a
11. few more.
12. MR. GAGNON: Why don't you go back.
13. No. Why don't you go back, please. I have a
14. question.
15. MR. BAIRD: Okay.
16. MR. GAGNON: Michael Gagnon --
17. MR. DOMENICA: City of Pawtucket had
18. his hand up.
19. MR. HILL: Lance Hill with the City of
20. Pawtucket. The term unaffordable or affordable
21. is a little bit of a misnomer, I think. It's
22. really meant to be an apples to apples
23. comparison, I think what you're saying. Because
24. perceptually, the residents of the City of
25. Pawtucket might have a different take on what's

affordable to them and what's not affordable to
them. The one thing that's sort of missing, I
think, is that if we don't do anything at all,
there's a large cost to all the other
stakeholders that are in the room. So they may
not necessarily just be NBC rate payers, these
are for all taxpayers.

8. MR. BAIRD: Right. And that's where,
9. when you look at even the discussion of that
10. 2 percent of your median household income, if
11. you're at the 10 to 15,000, you know, annual
12. salary, yeah, it could be 4 or 5, 6, 8 percent of
13. your household income going forward. Whereas, as
14. you kind of push out further in those different
15. income buckets, then you hit the 2 percent, and
16. then, you know, there's a lot of income buckets
17. where it's half a percent or less, even when you
18. cast it out.
19. So that perception of affordability can be,
20. you know, different for every household. When
21. you look in the industry, all of the discussions
22. on the value of water and all these different
23. pieces, so a lot of people are starting to stay,
24. you know, maybe 2 percent isn't really the good
25. index, because for the things that you have to do

we have to not do anything. This is just another
component that we have to look at as we look at
what's the cost effective projects that are going
to meet the water quality needs. So it's kind of
a balanced approach, but this is still one of
those things that needed to be discussed. So --
7. MR. DOMENICA: Can we hold the
8. questions? There's a few hands up. Can we hold
9. them and let Greg finish the presentation?
10. Remember your question. We'll come back to it.
11. MR. BAIRD: So kind of as a quick
12. without Phase III, without -- with Phase II, just
13. kind of what it would look like there on a map
14. dealing with the different census tracks. Now,
15. here's the other component. We've really been
16. talking about NBC's costs spread across the
17. 118,000 households. When we look at the member
18. communities, now we have each of these member
19. communities, they have a unique medium household
20. income, they have a certain number of households,
21. and to really then take it to that next step or
22. level granularity, now you need to really look
23. at, okay, taking into account the community
24. factors, what are some of the economics that
25. might impact them.
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1. We worked with PAR to try to say, besides
2. NBC's costs, we know that each of these
3. communities also have infrastructure and
4. collection system that basically needs to be
taken care of. When we look at the total pipe
5. length for their collection system or their sewer
6. pipes and we look at an estimated average pipe
7. age, you can see where there's some issues here.
8. And then we calculated the annual pipe
9. replacement miles per year to try to get back to
10. more of an average spot. You don't want most of
11. your pipe to get aged, because at some point you
12. can't replace it enough before it starts failing
13. without tearing up, you know, all of your
14. streets.
15. Then we've been able to calculate some
16. annual costs that would actually -- you know, on
17. an annual basis to meet this conservative annual
18. pipe replacement program, this is probably what
19. they would need to do.
20. Now, having said that, are they doing it?
21. No. Will they do it to this degree? It depends.
22. A lot of these municipalities, they don't have a
23. separate enterprise system or a separate rates
24. and fees associated with their sewer collection

1. system. It's general taxes. So out of the
2. property taxes, essentially if a sewer line
3. collapsed, then essentially it's an emergent
4. repair and they're going to pay that money to fix
5. that pipe and to fix the street and continue on.
6. And that's pretty much the general practice that
7. we're seeing.
8. The other element that we need to kind of
9. include is, you know, some of the different storm
10. drain capital improvement project needs. And so,
11. once again, the length of pipe, the average
12. years, and an estimate for the annual costs. So
13. these are the other components that we wanted to
14. be able to include when we are going to look at
15. our three case studies. Rich, did you have
16. anything to say?
17. MR. RAICHE: Unless there's a question
18. that comes up, we can talk about how the numbers
19. were derived.
20. MR. BAIRD: They probably want to see
21. the impact.
22. MR. BISHOP: Brian Bishop. I just want
23. to ask very briefly, what I don't see in this is
24. any sense that there may be costs for surface
25. water treatment pursuant to -- are we only

1. looking at sewer costs?
2. MR. BAIRD: This is not looking at
3. affordability impacts on the water side.
4. MR. BISHOP: Okay.
5. MR. RAICHE: But on storm water.
6. MR. BISHOP: Well, you talked about
7. storm water collection, but what it that needs to
8. be treated to the extent that it's not actually
9. part and certainly in some of the outlying
10. communities not part of the NBC combines who are
11. overflows?
12. MR. RAICHE: There is some information
13. about what cities and towns are currently doing
14. in terms of not only maintaining the pipes, but
15. also water quality improvement. However, what
16. that standard is here now is fairly lower than
17. what we anticipate coming out of EPA in the out
18. years. So we do have a small component of that
19. built in. But not knowing where the (inaudible)
20. Phase II is going to land with the next round, we
21. can't really make --
22. MR. BISHOP: So that's skewed to the
23. current baseline, whatever it is.
24. MR. RAICHE: It is. It could be worse.
25. These are fairly conservative assumptions on the

1. amount of pipe that needs to be replaced and what
2. needs to be done, but there are more worse case
3. scenarios out there on the horizon that could
4. factor in.
5. MR. BAIRD: It doesn't take into effect
6. maybe an asset management program that would look
7. at the condition-based replacement needs or the
8. risks that are associated with that. That would
9. need to be done more site specific.
10. Now, when we get into these three case
11. studies, trying to draw on the information, City
12. of Providence, on average, they're spending maybe
13. 50 to $100,000 on emergency repairs, we have the
14. estimated infrastructure costs, and we're
15. assuming that CIP would be debt financed using a
16. debt at 4 percent for 20 years. We needed some
17. assumption there. So now you can see kind of the
18. NBC costs that we had talked about, with
19. Providence's share of being able to take care of
20. the infrastructure, so everything that's been
21. taken care of from the treatment plant to the
22. collection system given these assumptions.
23. MR. HILL: Lance Hill with the City of
24. Pawtucket. Does the blue line, the blue table
25. here, you're saying that that is the cost
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1. factoring in the --
2. MR. BAIRD: That would be the average
3. bill for all of the census tracks associated with
4. the City of Providence starting in 2015 with the
5. rate increase escalations over the 12-year
6. period.
7. MR. HILL: And also doing the storm
8. water --
9. MR. RAICHE: That's the red bar.
10. MR. BAIRD: And then the red part would
11. include the 8.3 million per year on the waste
12. water CIP and the 1.2 million on the storm drain
13. CIP. And it assumes the current level. It
14. doesn't change on the emergency repairs. So when
15. we put that into the model, then we can see
16. where -- I'm going to point to this. Right here,
17. this is kind of that 2 percent index on NBC
18. costs. So that's where really in 2023 the NBC
19. component hits that 2 percent. And then when you
20. add in the City of Providence components, you can
21. see that that 2 percent has gone -- threshold has
22. reached a couple of years earlier in 2021.
23. This is the census tract in the City of
24. Providence with the number of households and the
25. average medium household income for each of those

1. census tracks. And that's where you can kind of
2. see over a time series with those rate increases,
3. because the large capital projects, how things
4. start changing over time.
5. When you put it into a map, then you can
6. kind of illustrate, you know, what's really
7. happening here to get to by 2026 the 33,880
8. households. There are 55 percent of the
9. households in these census tracks that have
10. reached the 2 percent.
11. Pawtucket: Currently, we've estimated about
12. 80 to 100,000 per year spent on maintenance of
13. the infrastructure, estimated infrastructure cost
14. improvements at about 4 million. And to try to
15. turn that average age back, about 195,000 per
16. year on storm water CIPs and the debt assumption.
17. So here, once again, we can kind of see the NBC
18. costs, and then kind of the red bar representing
19. what's on top.
20. MR. HILL: Again, Lance Hill with the
21. City of Pawtucket. Just to be clear, if the CSO
22. separation were to move forward, that red portion
23. would disappear from that; right?
24. MR. BAIRD: No.
25. MR. RAICHE: Essentially, were you to

1. do that, you would be taking that red portion and
2. putting it into the CSO. The same work would
3. have to be done in terms of rehabilitation of
4. existing pipes, but it would just be changing
5. buckets.
6. MR. HILL: But the additional
7. expenditures on replacing what you're assuming is
8. $4 million per year on waste water CIP, that
9. would be addressed the Narragansett Bay
10. Commission work Phase III?
11. MR. BRUECKNER: No, it wouldn't.
12. Because -- Brueckner, Tom Brueckner. What we'd
13. use is -- we'd put in new storm drains, but we'd
14. use the existing pipe for the sanitary flow.
15. That's how we'd separate it. So that old
16. sanitary pipe would still be in service for
17. sanitary flow.
18. MR. BAIRD: So NBC would take care of
19. the treatment and the interceptors, but the
20. entire collection system still is the
21. responsibility for the municipalities.
22. City of Pawtucket: When you kind of break
23. it down, once again, given the total service area
24. for the NBC only, it doesn't hit red, but when
25. you add in the Pawtucket work, given some of
MR. GAGNON: Personally?

MR. GADON: Maybe it would fall within a rate increase of 3 percent? How?

MR. GAGNON: Michael Gagnon, Town of Lincoln. Not -- and stay under the maximum tax ceilings, what's happening with their county, and that's where I think the discussion really gets fragmented. So aside from a discussion saying, Okay, the city doesn't necessarily want to figure out the funding mechanism to build everything to take care of their collection system, and do they want to transfer, you know, those assets over to NBC, and then NBC would need to build that into the rate base to take care of that.

MR. BAIRD: Working with NBC finance, working with NBC SRF.

MR. COLT: Okay. Two more if --

MR. ALBERTSON: We used the 25 million estimated 61 percent of the households at that 2 percent threshold, if a household was making less than 25,000 a year or 10, 15,000 with different subsidies, then it would be something a whole lot higher than the 2 percent. In any community, there's always those demographics. Even if I did Lincoln here, there could be some low income households, you know, in there, but then you're looking at kind of the averages and how that actually plays out in weighing those averages. So every demographic can kind of be found in different census tracks, but this is kind of a way we can see in general, what's the overall impacts as we move forward. With that, that was my last slide, so now we can open it up for questions and I can go backwards to point out anything, if we need to.

MR. GADON: No. Greg.

MR. BAIRD: In the discussions when I presented the methodology to the US Conference of Mayors/Mayors Water Council, there was a number of different discussions for some of the attending Mayors, and they liked the fact that this starts addressing some of those shortfalls in the '97 documents for income skew. And, yes, of course, they will say and come up with, you know, maybe we can do something different.

But then as many mayors were in the room, you're getting that many different ideas, and every jurisdiction has some sort of constraint. Either the, you know, debt ceiling, taxable ceilings, what's happening with their county, and that's where I think the discussion really gets fragmented. So aside from a discussion saying, Okay, the city doesn't necessarily want to figure out the funding mechanism to build everything to take care of their collection system, and do they want to transfer, you know, those assets over to NBC, and then NBC would need to build that into the rate base to take care of that.

MR. COLT: Ames Colt. Just more of a specific question. At the beginning of the analysis, you made an assumption about the maximum amount of financing available to NBC from the state SRF.

MR. BAIRD: Correct.

MR. COLT: How do you reach that calculation?

MR. BAIRD: It was our understanding that the state had said that, what, half of some of the state allocation funding could go towards that scenario that would be applicable to all of the communities.

MR. GADON: No. Greg.

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MR. BAIRD: It was our understanding that the state had said that, what, half of some of the state allocation funding could go towards that scenario that would be applicable to all of the communities.
1 MR. ALBERTSON: We know for sure. It could change, though.
2 MR. COLT: This is a question for NBC, as well. I think this is a very useful baseline analysis. We knew it was coming, but the numbers are good to have. To what degree can we use this model approach for additional analyses, particularly the degree to which we can increase the time frame of the Phase III project and see what a difference that makes?

11 MR. BAIRD: Well, remember how we spread -- we saw the graph for the spread of the projects over the 12-year basis? If negotiations, you know, with the UPA were such that under this other scenario, now instead of building it in a ten-year basis, now it's going to get stretched over a different period of time.

18 Then we would actually make adjustments into that CIP model and we would see where it showed up red, it would actually get essentially pushed out further into the future.

22 MR. COLT: So wouldn't we want to do some of that scenario analysis before we sat down and tried to negotiate an integrated permit or something like that?

1 MR. BAIRD: Rich, do you want to talk about the process?
2 MR. RAICHE: Yeah, sure.
3 MR. COLT: And then finally, just --
4 MR. RAICHE: Tom has another --
5 MR. COLT: Oh. Sorry.
6 MR. BRUECKNER: Well, I was going to answer your question. I think the intent here is, the next presentation will be -- Tom Brueckner -- will be on alternative costs. And then the next meeting in November will be to come up with a recommended plan and alternatives based on all of the discussion today. And that will be something that will be considered, so it's going to be, what we should build, schedule, and affordability, will be part of the next meeting.

17 MR. COLT: And then finally, more of a technical question, in terms of talking about capital improvement projects for both sewer and storm water pipe systems, you mentioned that if you fall behind too far, you run into a situation as a municipality where you essentially can't keep up. Is that sort of manifested in the terms of emergency costs exploding or how can we sort of anticipate that point?

1 MR. BAIRD: What's interesting is in Rhode Island, the Corps of Engineers has kind of pushed back to basically say, you know, Okay, if municipalities want to be able to continue drawing on the funds for the state revolving funds, they need to come up with an asset management plan and submit it. So that basically starts saying, now the individual cities are going to need to start analyzing not just know what assets we have, but get an idea of what the condition is, because everybody knows that if you're waiting for the sewer line to break and that segment of the street to collapse, that's going to cost two to three times, maybe four times more, let alone business and traffic disruption, than if it was done on a proactive basis.

18 So we've kind of built in some assumptions to say, let's start turning that around, but really, that's conservative or not, depending on what the condition is. And some cities might have done some inspection of their lines and they have an idea of how much more life there is there and they might have some maintenance that they could throw on to it to extend the life of that asset, and those are some of features that would be captured in an asset management plan to then potentially get, you know, additional state funding.

5 MR. DOMENICA: I see a number of questions here. We're about ten minutes behind schedule. A quick one.
8 MR. HOLMES: A quick one. If you're going to slow down the projects, you're going to have to slow down the individual pieces and take smaller bites one at a time. If you say, Well, we're going to put the pipe, once you get the machine on site and in the ground and moving, you want that thing to go as fast as possible, because it will cost you less in the long run. The more feet per day they manage to drill, then the more you're going to save. And the more you save, the more you're going to have to do.

16 The more feet per day they manage to drill, then you want those guys drilling. You don't want them standing around with shovels.

19 MR. BAIRD: You're right. And that's where on some projects, and this is part of the analysis when they said, how much, what dollar cost, and on what year, they had to take that into effect. Because if they said, Okay, we're going to take this component of the project and we're going to space it out, well, just the
which the numbers can't disguise. So I
trying to get the nub of the debate we're having
discussion that Jan began. Because I think he is
mostly being technical and I held from the
MR. BISHOP: Mike, I'm sorry. It's
of this; not just the seven communities.
state and perhaps we should not think about
lengthening the time of this construction but
in the country are looking at, what are your
strategic options, and at some point I would love
either to have a presentation about it or sit
down with a smaller group, perhaps, and look at
that. Because I think it's becoming more and
more critical that we look at that and see what
ways there are to get some relief on the issue of
rate pay or impact and affordability and all of
that.
MR. DOMENICA: Absolutely necessary?
MR. GAGNON: Michael Gagnon, Town of
Lincoln. I'd like to, before the break, leave
you with a little thought. Jan has brought up a
great point that the Bay is here for the whole
state and perhaps we should not think about
lengthening the time of this construction but
shortening the time, being a little more
aggressive, and expanding the tax base. So the
state in its entirety should be bearing the cost
of this; not just the seven communities.
MR. BISHOP: Mike, I'm sorry. It's
Brian Bishop. I know I spoke a lot, but I was
mostly being technical and I held from the
discussion that Jan began. Because I think he is
trying to get the nub of the debate we're having
which the numbers can't disguise. So I
appreciate the numbers. I have to -- I
appreciate the sentiment expressed, but my
position in viewing how the project is segmented
and the cost is covered very much focuses on the
sense that these clean water goals arise not as
some abstract desire of the state for a clean
bay, but of the responsibility for the people
that essentially use the resource, you know, here
as a receiving water, and I'm quite loath to try
and take the model of kind of offing those costs
to the larger people who benefit. And it's
not -- it is not to suggest that there is not
financial capacity. That's what a state
revolving fund is after, a fashion, is putting
the state's credit behind the credit here. So
I'm very cautious that we use that model. I'm
actually more akin, I think, if we look -- that's
what we did, that's what the stakeholders'
process is all about. We're here for the Bay.
So to the extent this seems to obscure that, I
second what Jan said.
But what the first process accomplished, was
to have a stop arguing about whether or not we
were going to spend $560 million or $570 million
and decide, what's the lowest hanging fruit and
1. the lion's share of the individual CSOs are contributing to the tunnel.
2. So the tunnel has a couple of components.
3. Both the tunnel capturing individual CSOs directly by drop shafts, and then a number of interceptors to bring the CSOs that more further afieled to that central tunnel location. And then we also have a number of regulator modifications that control some CSOs by forcing flow through the existing interceptor system to where it could be relieved by a drive shaft and tunnel.
4. The alternatives to that -- again, these are the ones that then become technically feasible after we eliminate the impossible, as Sherlock Holmes would say, our hybrid GSI and sewer separation areas. We determined that GSI, in general, is not sufficient to solve the CSOs across the district.
5. This is not anything that isn't being encountered in other areas in the country. The general conclusion is that GSI is a component of a CSO program, and generally GSI needs a corresponding gray infrastructure piece.
6. And in the instance of the sewer separation areas, we kind of have a hybrid, putting GSI in the Seekonk, except for these areas right by the outfall of Bill's Point, we used to use these as a sort of an outlier. Most of the CSOs that we're talking about dealing with are on the Blackstone in Seekonk. Almost all of them. Then we have one outlier. And that becomes difficult from an engineering standpoint, how to solve that problem. So we do have another alternative for that, and that is the stub tunnel, rather than a cross-town interceptor.
7. MR. REITSMA: Jan Reitsma. Is there a way to generally or ballpark quantify the portion of the green storm water infrastructure making up your general solution --
8. MR. RAICHÉ: We will come to that number in November. Nick will now speak a little bit about where we are on the GSI that can inform our analysis in the next three very short weeks, between now and November.
9. MR. REITSMA: And related to it, maybe this is late, I should have suggested it earlier, but it's sort of the concept of a second opinion.
10. MR. RAICHÉ: This is a second opinion.
11. MR. REITSMA: It's based on having had the opportunity to look at a lot of projects in a national competition and being stunned by some pretty aggressive applications of green storm water infrastructure in other communities including large cities. So the question is, if someone else were to take a fresh look and say, Gee, have we really given it our best?
12. MR. ANDERSON: Hold those thoughts. We'll do it. You're absolutely right. That's a very important distinction that we need to make.
13. QUESTION BY AN UNIDENTIFIED SPEAKER: GSI is a component of the GSI and sewer separation areas. We determined that GSI, in general, is not sufficient to solve the CSOs across the district.
14. QUESTION BY AN UNIDENTIFIED SPEAKER: And related to it, maybe this is late, I should have suggested it earlier, but it's sort of the concept of a second opinion.
15. MR. RAICHÉ: The sub-tunnel is a second alternative. One of the more difficult individual CSOs to accommodate is 220, which is in Pawtucket on the Moshassuck. It's sort of an outlier. Most of the CSOs that we're talking about dealing with are on the Blackstone in the Seekonk. Almost all of them. Then we have one outlier. And that becomes difficult from an engineering standpoint, how to solve that problem. So we do have another alternative for that, and that is the stub tunnel, rather than a cross-town interceptor.
16. MS. KARP: I have a question for all of the contractors in the Bay Commission. A while back you gave us this map showing the current state of the Providence River, up the Narragansett Bay, Seekonk River, and these areas wet weather data, because we're looking at CSOs and it makes sense there's a wet weather data. I want to be clear that I understand the goals. What are the Clean Water Act goals here? What are we trying to achieve in the Seekonk and the upper Narragansett Bay? And I ask that for a really important reason. And that is that right at the outfall of Bill's Point, we used to use this language of (inaudible), it seems to me if when we're zoning, we could still say, we have no reasonable expectation of reaching a fecal coliform of over 50 MPN right at the outfall. So it seems to me our goal is to try to restore use in the Seekonk, except for these areas right by...
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1 the DVDC, and restore use in upper Narragansett Bay, except that -- not right at Bill's Point.
2 We don't really want people swimming and fishing right at the outfall. So are all of these proposals basically geared at reaching 50 MPN or less than 50 MPN so that these waters are fishable or swimmable or are we taking into account that this is a heavily industrialized area, heavily populated, and we never -- really, we ought to be saying, (inaudibly) we don't expect to achieve that. It's really from the map you presented to us. So what are our goals here?

MR. BRUECKNER: Our goals are to meet the Clean Water Act requirements of EPA, which is to meet the water quality standards at all times. So the outfalls, though, realistically, is it going to be possible to get to 50 MPN unless you basically kill every living thing --

MR. BRUECKNER: That's what we will find out. I think the answer is for every storm, I find that hard to imagine.

MS. KARP: So that's not doable in my opinion, and we still allow for a certain number of overflows. So that brings on the question, what uses are we trying to protect, and in that weather, are we realistically trying to have people out fishing in wet weather in the Seekonk river or right below the outfall. It seems to me a reasonable society would say, what really -- what are the reasonable uses here and what are we ending at? Are we really ending at swimming in upper Narragansett Bay in wet weather? Probably not. So I just want to hear more explanation of water quality goals in reaching 50 MPN --

MR. BRUECKNER: Well, 50 MPN is not actually the standard everywhere. It varies whether you're in fresh water or shellfishing areas or swimming. So it could be 14, it could be 50, it could be 200 depending on where you are. But I think it was made clear by EPA through our numerous discussions at the beginning that the long-term goal is to meet water quality standards all in time. That's what the Clean Water Act requires.

So the only thing I can say to you, Caroline, is that NBC is working under the requirements established by EPA. We did not develop these standards for what we are required to achieve. That's what we have been directed to by mandate.

MS. KARP: But, reasonably, even with Phase I where we stand today, we know that the certain (inaudible) are unmeetable. You cannot design a system to catch 100 percent of the storm flow and treat 100 percent of that flow all the time. We're already designed not to meet the standards.

MR. BRUECKNER: Correct. And I think that it would be a use and cleanability analysis, which we haven't done yet. And even that is a short-term thing. It would last for only five years. So I don't think reasonableness is necessarily factored into what the EPA is requiring other than the discussion about affordability and what you can afford.

MS. KARP: How about the use of cleanability analysis, when does that come in?

There's still homes, for example, in the last round that were very vulnerable about use of cleanliness, as Save the Bay was. I want to hear something about uses here that we're trying to achieve. I think those uses are important, and I guess I want to know how that factors in.

1 MR. BRUECKNER: I think the answer is that we're not really looking at the uses. What we're focusing on is meeting the water quality standards, the criteria as we've been directed to do so in our concept agreement and in our permit.

MR. LIBERTI: Angelo Liberti with DEM.

Not to belabor this, because we could spend half a meeting or a full meeting on the details here, but I think where I try to steer us and I think where we started from here was that we're trying to put together a plan that we think is the correct plan, all factors considered, and move forward. That's what was done the first time around; that's what we're looking to do here.

There's only one place in the country that I know of that has done a full use attainability analysis and gotten a sign off, that the standards were reduced. And it's an effort that I don't think is worth going through. But I think we're going to end up here with a plan that everyone agrees with or the majority consensus that it's the right plan to move forward with, that it will impact the uses during certain conditions, and the uses will not be available at all times and at all places, but
1 it's a good investment. And then after it's  
2 implemented, that will probably be the more  
3 appropriate time to say, Okay, now we want to do  
4 the use attainability, we've done enough, we've  
5 achieved this level of water quality.  
6 Because we can struggle with ending this  
7 with an application to EPA for a downgrade and a  
8 use attainability. At this point, I think we  
9 still could look at the alternatives with a  
10 recognition that there's virtually no CSO plan  
11 out there that one hundred percent of the time  
12 meets water quality standards, and we're trying  
13 to put forward a good plan and move forward. And  
14 when we get to the end, we'll figure out when is  
15 the right time to do a use attainability.  
16 MR. DOMENICA: Let's put this  
17 discussion off until the next workshop, because  
18 this is a little off target for today's subject  
19 right here. And we will have time to look at  
20 this in conjunction with the whole picture next  
21 time. Also, we're running late, so let's move on  
22 here.  
23 MR. ANDERSON: My name is Nick  
24 Anderson, as many of you know, from MWH. And  
25 we're just going to touch on the green. And Jan  
26 said it very nicely, so let's get into it. Three  
27 slides, I promise.  
28 You remember we talked about conceptual  
29 designs, how we appraise the green? Green was  
30 judged in a slightly different way. It's a lot  
31 of the gray analysis. The reason being is that  
32 it's so desperate and diverse. At this stage  
33 it's very difficult to pin it down. And  
34 particularly in a time scan for a reasonable  
35 cost. We've got to kind of take a view on what's  
36 applicable.  
37 So we did these conceptual designs across  
38 the whole service area, maybe seven or eight  
39 designs, and then we just factored those across  
40 the service area. So the numbers you're about to  
41 see are conceptual design that's being escalated.  
42 It doesn't necessarily mean that we've gone right  
43 down to the minutia of it, but this is a typical  
44 conceptual design. If you remember, we also  
45 talked about the public and private aspects of  
46 GSI. This is exactly where you were going, Jan,  
47 with the aggressive nature.  
48 In many senses, this sort of encapsulates  
49 the whole project for me, in terms of, this isn't  
50 a question of are we going to do it, are we not  
51 going to do it; it's agency a question of where  
52 are we going to do it and how much are we going  
53 to do. And I think, probably the things we heard  
54 just before the break, sort of from my  
55 perspective on a technical level, sort of, I  
56 think that was the general feeling. Correct me  
57 if I'm wrong, but I think the room kind of  
58 agrees, something has to be done. We just have  
59 to pick the right thing.  
60 So moving on very briefly, the GSI  
61 technique, you can see, is very atypical. We  
62 looked for the best opportunities. And in  
63 amongst that, we did it in all those  
64 sub-watersheds that Rich talked to you about ever  
65 so briefly.  
66 What we've got here is a graph that shows  
67 the impact that GSI could have on the CSO  
68 overflows as they currently stand. Now, remember  
69 we've been talking about this three-month storm,  
70 so this is what these numbers represent. Now,  
71 GSI is not a one-time only fix, it will be used  
72 time and time again through a number of years.  
73 So once it's filled, it has a persistent reuse.  
74 That's an important factor to consider.  
75 Although these volumes may look somewhat  
76 tempered, should we say, and perhaps what you  
77 were hoping to see, what you will notice is that  
78 in terms of impact, they are very variable. So  
79 some have a very large impact, but it's a very  
80 large overflow in the first instance that, for  
81 example, is 205 where we've got the existing  
82 conditions doing almost 13 million gallons. If  
83 you do the public only GSI, then that reduces to  
84 about 11.8. And then if you do the whole thing,  
85 you're doing round about nine.  
86 So it's not to be underestimated.  
87 4 million gallons is a huge chunk out of the  
88 overflows, but it's not necessarily taking away  
89 the entire overflow. I think that's what we  
90 found. This is a very mature urbanized  
91 watershed. And squeezing in GSI under the terms  
92 that we've been talking about has not been the  
93 easiest of the challenges. There is room for  
94 maneuver in the future. There's no question  
95 about that.  
96 But in terms of what we could positively  
97 hang our hats on and putting a program together  
98 means that the GSI that we've looked at has not  
99 necessarily included things like green roots on  
100 residential properties, and it hasn't looked at
1. localized rainwater (inaudible) and things like that.
2. The reason being is that is somewhat beyond my control, legislation and the weather, both of which have a huge influence on my life. So I'm not really in control. But the point being, some of the smaller CSOs that you can see, 101, 206, and ones you can barely see, 27, 28, 29, they are very small overflows anyway. So introducing GSI into those particular watersheds will have a very positive effect that could actually (inaudible). That's important. Because what we're looking to do, as we say, is build a program that encapsulates green infrastructure. So when you put these numbers into a table --

16. MR. BISHOP: Sorry. I only wanted to ask, and it's obviously not meant to be seen here, but one of the concerns I have is not only the possibility of clipping the tiny ones, but the recalling that -- I'd like to look at this almost in a cost per gallon kind of metric.

22. MR. ANDERSON: Don't spoil it.

23. MR. BISHOP: Okay.

24. MR. ANDERSON: Okay. So just as a summary of those numbers, so what we're saying is that currently for these design conditions, we're doing just under 57 million gallons. You can see the numbers there, the differences, but the important aspect to take away from this particular slide is in terms of CSO reduction. If you did an all green solution based on parameters we set out, so this is purely only green, not part of a program, it's just doing everything that's green, so a green program, I should say, you get a 36 percent reduction in current CSO. If you only did the public GSI as identified, you get a 10 percent reduction. So the message really is that it is a part of the program but by no means the program. And I know that's not a surprise to any of you.

16. That's an interesting point, because, you know, as I say, there's a lot of cities out there doing some fairly aggressive GSI. And the beauty about GSI, unlike a tunnel or a series of interlocking storage boxes, you know, interspaced across the entire service area is that it's relatively short-term and so it's a little more pragmatic solution and offers you something a little different. You can do some early, you can hold it back, you can do some late. What it will do is in the future have a potential influence over some of the gray that you build. So that's the positive aspect of green. It's very much part of the proposals. I won't belabor too much, but as you can see, I kind of care a little bit about this. I got into civil engineering (inaudible) dig holes and put in concrete. I don't dig holes and I don't put in concrete anymore, and it makes me a very happy person. So --

11. MR. BISHOP: I have a University of Concrete T-shirt, so I set myself off.

13. MR. ANDERSON: So this is the last slide. And I think the important thing here is, we've got the CSOs as they're currently outlined in our plan, but if you go to the right and at the bottom, what you will notice is the cost. Now, remember the conceptual design? And you've got to remember how these costs were generated. Because the conceptual designs were priced out based on current construction costs for a green infrastructure, and they've been aggregated up. So you're not going to get the economy of scaling things like that, so I accept that. But I think they're very indicative as to the kind of costs that I've seen around the country.

2. At the moment, what we're looking at is if you did the public only GSI, you're going to be just over 300 million. That was a 10 percent reduction in CSO volume. If go to the full GSI, you're at just about 540, half a billion dollars, to get a 36 percent reduction. Now, obviously, those when you break them down per gallon have an interesting concept, because these are the numbers that are very important. As Rich goes through the gray, as we take this forward and we're talking about alternatives and getting your views on it, those two numbers in terms of public and full GSI in the bottom right-hand corner are all involved. Because they say $48.01 per gallon and $32.02 per gallon. That is for the extraction of a three-month storm. That is only for that design condition. So if you think about it, and for all of those who sort of looked on the Internet and have seen these big programs that are going on, and there are a lot -- Philadelphia, New York, huge, huge, yet they talk about cost per gallon of CSO reduction in 85 cents to 1.50. So you think,
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| 1 | Well, why are we at 48.32? Because they consider the reuse over the lifespan of the asset, and they used 25 years as a comparative lifespan. So what we're saying is, if you take the annual CSO scale over 25 years and you lump that little bit off each and every year and you aggregate that together, that gives you a cost of reuse. So when you read those numbers and they're around anywhere between 75 cents to anything up to two bucks per gallon, we're probably operating under these conditions at about $1.17. Right in the midrange, so very much applicable. And those programs are an awful lot bigger than this one because they're bigger places, bigger cities. They are taking a slightly more aggressive stance. |
| 2 | MR. BISHOP: Again, just to understand the numbers, those are the costs for -- if I took the big, you know, the public/private, and then I assume that's the combination number at 540? |
| 3 | MR. ANDERSON: Yes. |
| 4 | MR. BISHOP: Right. And that is a 36 percent reduction. So that doesn't necessarily meet the three-month storm, just to be -- okay. And, finally, I assume, maybe you have or maybe at the larger presentation, what I'd like to see is for the individual CSOs a comparison of those costs to the cost of others -- |
| 5 | MR. ANDERSON: So the reason it's being done, and I think the words you've been using, is it's an apples to apples analysis. So when Rich talks about the cost reduction associated with the gray, it's important that we consider them on the same level plane, and that is very important. What you will notice is if you scan the right-hand columns of all of them, as you will note, there's a wide fluctuation in terms of cost per gallon CSO reduction. We talked about the whys and wheres, the hydraulics and all that's associated with the system, but you do get a variable output. So, for example, if you take 107, you're in 200 bucks a gallon for removal. Not to get too transfixed on that number, but it's a relative number. So if you take 202, for example, they have very, very different, you know, impacts. So it's almost a case -- and I think we talked about cost effectiveness a little bit earlier. And this is what this entire project is about. Cost effectiveness. |
| 6 | And we're saying here that in some cases green is the right thing to do because it's cost effective in comparison to an alternative. And in some cases, it's not quite as favorable. |
| 7 | MR. BISHOP: Again, Brian Bishop. A slight technical -- I'm not missing -- there's not a comparison in this slide to reducing that same 36 percent with the hard infrastructure proposal. |
| 8 | MR. ANDERSON: No. |
| 9 | MR. BISHOP: No. |
| 10 | MR. ANDERSON: No. So what we will see next -- and I will get off the stage because I've talked way too much. I should have gone to Las Vegas or something. But the point being that, just focus on those two numbers, so you're looking at 48 and 32 as an indicator, but what we're doing when we come to do the program, this is what we will talk about a little bit next time, is that green will fit in in terms of the overall program. We're not just going to force it in because it seems like a good thing, and we're not going to leave it out because it seems like the wrong thing. |

The table below contains data for different CSOs and their associated costs for CSO reduction:

<table>
<thead>
<tr>
<th>CSO</th>
<th>Cost Reduction (%)</th>
<th>Cost per Gallon (USD)</th>
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<tbody>
<tr>
<td>107</td>
<td>36</td>
<td>75</td>
</tr>
<tr>
<td>202</td>
<td>54</td>
<td>200</td>
</tr>
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1. MR. REITSMA: And maybe you will get to this in that later stage, but, you can compare simply in terms of cost, in terms of GSI on the one hand and hard infrastructure on the other hand. What about in terms of cost savings that one offers? For example, to what extent does GSI offer you the chance to lower the cost of hard infrastructure? |
| 2. MR. ANDERSON: So at this stage, when we're looking at the alternatives, (inaudible) what we'll do in the program is look at that. So you did the evaluation criteria, so all of the recommendations that you see are based on evaluation criteria as well as cost. In terms of O and M, there are certain solutions which we are not recommending because the O and M can be better served by something else. |
| 3. MR. REITSMA: One thing I would like to add to that, at the risk of, once again, being seen as a one-issue person, resilience, resilience, resilience. We're talking about building tanks and other infrastructure right next to rivers and inundation areas and what have you, and I just would like us to think about whether green infrastructure actually might be...
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1. something that not only could save you cost but</td>
<td>1. Service and the state climatologist.</td>
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<tr>
<td>2. actually could be more resilient in the longer</td>
<td>2. MR. ANDERSON: I'm not disputing any of</td>
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<td>term.</td>
<td>3. that, but what I'm saying is, in terms of the</td>
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<td>4. MR. ANDERSON: The short answer is yes.</td>
<td>4. program is that we're trying to put together</td>
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<td>5. Of course it's yes. But, you know, from my</td>
<td>5. something to meet the need. If something is done</td>
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<tr>
<td>6. perspective, and I am getting off, honestly,</td>
<td>6. outside of this program, then it could have a</td>
</tr>
<tr>
<td>7. there's a program to be delivered here.</td>
<td>7. positive benefit. But there's only so much we</td>
</tr>
<tr>
<td>8. (Inaudible). In the long term, we've highlighted</td>
<td>8. can actually deal with. We hear about all the</td>
</tr>
<tr>
<td>9. an awful lot of green infrastructure that won't</td>
<td>9. various costs and affordability, but the truth is</td>
</tr>
<tr>
<td>10. be (inaudible). But that's not to say that that</td>
<td>10. that the program is going to be what we think is</td>
</tr>
<tr>
<td>11. can't be part of the future resilience</td>
<td>11. offering you the best as an overall, trying to</td>
</tr>
<tr>
<td>12. (inaudible). That does definitely offer you</td>
<td>12. cover as many bases as we can.</td>
</tr>
<tr>
<td>14. It's very pragmatic, because it's disparate</td>
<td>14. Nick, do you have one more slide?</td>
</tr>
<tr>
<td>15. and small, it's relatively easy to implement, but</td>
<td>15. MR. ANDERSON: That's it. I will get</td>
</tr>
<tr>
<td>16. there is a diminishing return on it. And that</td>
<td>16. off.</td>
</tr>
<tr>
<td>17. is, as part of this program, we have got to</td>
<td>17. MR. DOMENICA: We'll come back, Brian.</td>
</tr>
<tr>
<td>18. consider that but in a wider context we have to</td>
<td>18. MR. BISHOP: I just thought this was a</td>
</tr>
<tr>
<td>19. consider it. And that then looks to the future,</td>
<td>19. downtime. I could start rattling on.</td>
</tr>
<tr>
<td>20. as we're talking about a program, that lasts for,</td>
<td>20. MR. RAICHE: We have no downtime. I</td>
</tr>
<tr>
<td>21. as Greg and John have done, for 12 years, but it</td>
<td>21. just realized that in past stakeholder meetings,</td>
</tr>
<tr>
<td>22. also means there is a wider connotation.</td>
<td>22. I've put other presenters in the unenviable</td>
</tr>
<tr>
<td>23. MR. REITSMA: I have to correct a</td>
<td>23. position of wrapping it up, and now I find myself</td>
</tr>
<tr>
<td>24. possible misconception. People talk about</td>
<td>24. having 60 slides to go through in half an hour.</td>
</tr>
<tr>
<td>25. resilience as something that you need to worry</td>
<td>25. You have to remember for November 13th to put</td>
</tr>
</tbody>
</table>

| 1. about in the future. Part of that is that we're | 1. somebody else in the hole here. |
| 2. only talking about sea level rise, and some | 2. That's just to say that there are a number |
| 3. people talk about sea level rise as if that's | 3. of slides to get through. I will try to get |
| 4. only the next century. That's one misconception. | 4. through these, and maybe if we could hold some |
| 5. The second misconception is that we're not | 5. questions to the end, because we may answer them |
| 6. talking only about sea level rise, but it's about | 6. as we move along, unless there's something really |
| 7. increasing intensity of storms inland and inland | 7. blockbuster. |
| 8. innovation, which is already happening now. So | 8. So last month we looked at what the |
| 9. I'm a little worried about people saying, Oh, we | 9. alternatives were on a subsystem by subsystem |
| 10. can deal with that later on. | 10. basis. Because we wanted to look at what the |
| 11. MR. ANDERSON: No. The thing at the | 11. components of an overall Phase III plan would be. |
| 12. moment -- the only thing about climate change | 12. We discussed the evaluation criteria. We have 16 |
| 13. predictions that are actually correct is that | 13. evaluation criteria which includes resiliency and |
| 14. they're currently wrong. It's how wrong are | 14. co-benefits and construction phase impacts and |
| 15. they. | 15. those things. The only thing we didn't have were |
| 16. MR. REITSMA: We have the predictions | 16. the costs. |
| 17. for you in Rhode Island. | 17. So I'm going to speak first about what goes |
| 18. MR. ANDERSON: The point being, if we | 18. into the cost and what the cost of each one of |
| 19. could predict the future, we wouldn't be here. | 19. these alternatives is. Then I'll wrap up with |
| 20. But what I'm saying is, the flexibility of a | 20. conclusions of the alternatives analysis, which, |
| 21. program, when you're putting it together, needs | 21. again, takes those 16 evaluation criteria and |
| 22. to be the initial needs. And that's what we're | 22. weights the alternatives against each other. |
| 23. doing. | 23. So for sewer separation capital costs, we |
| 24. MR. REITSMA: We have the predictions | 24. talked a little bit about this back in May. When |
| 25. for you in Rhode Island from the National Weather | 25. we're talking about that, we're not just talking |
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1 about the cost of putting in the new pipe to have
2 a separate sewer system. We've got other
3 ancillary costs that we build in here. We've got
4 construction of the second set of pipes, but we
5 also have the water main and gas main are going
6 to be in our way, so we have to relocate them.
7 We have to restore the surface roads when we're
8 done. Often we have to do improvements, like ADA
9 sidewalks. So we've got additional costs for
10 that for the sewer separation. And the hybrid
11 sewer separation, we essentially took those GSI
12 costs that Nick just spoke of, subtracted out the
13 areas where we can do GSI, and then we have the
14 remainder sewer separation.
15 One of our alternatives to the sewer
16 separation for 039 and 056 is the West River
17 interceptor. This, in one instance, provides
18 some redundancy to the Branch Avenue interceptor,
19 but more than that, it actually provides physical
20 storage capacity along the horizontal length of
21 that. So when we look at the cost associated
22 with that, it's not just that pipe that we have,
23 because that pipe follows the West River itself,
24 we're going to have some riverbank restoration
25 issues. So we captured those costs in the

1 overall.
2 So if you look back, again, because we've
3 got a different category, we've got the sewer
4 separation areas and the tunnel areas. So if you
5 just look at the costs for those sewer separation
6 areas, we find we have a little bit of
7 variability on an area-by-area basis. And this
8 makes a little bit of sense. As we said for 035,
9 we already for most of that area have dual pipe
10 network so that the cost for separating that area
11 is relatively low. And we also have fairly tight
12 soils and steep slopes through that area, so GSI
13 is difficult. So when you look at those two
14 together, Well, gee, just straightforward sewer
15 separation in that area is a little bit more cost
16 effective.
17 We have a different story in 206. If we do
18 the hybrid approach in 206, we can have some cost
19 savings. And the other two, 35 and 56, it's a
20 slightly different comparison. Combining 35 and
21 56, we see that overall the West River
22 interceptor costs less as an option than either
23 the hybrid or the sewer separation.
24 Moving on to the volume storage, which is,
25 again, is either a deep rock tunnel or a near

1 surface tank, you know, when we talk about the
2 tunnel, we've got several things that are wrapped
3 up in that cost. We've got the deep rock tunnel
4 itself, a number of drop shafts, we have the pump
5 station. Because, again, what we're doing is
6 we're storing the CSO volume way down underneath
7 the ground and then pump it back out after the
8 storm is over and run it through the treatment
9 plant. So we have a big pump station. We do
10 have sewer restoration where we have the drop
11 shafts themselves. So take all of those costs
12 into account. That's supposed to be flashing so
13 you see where the tunnel is.
14 Then, again, we also have the areas where
15 we've got disparate CSO locations that we're
16 bringing to the centralized location. We've got
17 our three main interceptors. Again, we've got
18 utility relocations where we're doing our pits
19 (sic) for our trench lists, installation of those
20 sewers, we've got surface restoration, and all of
21 that is (inaudible).
22 When talking about the near surface tanks,
23 there are a whole bunch of things that we need to
24 put into these things to make moderately
25 palatable for the neighborhoods for which they

1 reside. We need some odor control, we need a
2 discharge pump station, we need some
3 consolidation conduits to bring them to the
4 semi-centralized location. In the case of the
5 sewer sheds for 201 through 205, that's an
6 instance where we absolutely need to do GSI to
7 get that volume down to a reasonable size so that
8 we can actually utilize the Front Street tank for
9 that volume. Those are inter-disbursed where we
10 could find locations to put these. We've got a
11 very densely developed city. It's very difficult
12 to find sites for these.
13 Last time we ran through these. But just as
14 a quick refresher, the tanks we're talking about
15 are High Street, which is beneath the little
16 league and high school ball field in Central
17 Falls, High Street, Webbing Mills tank, which is
18 a private site which would take up the parking
19 lot, the E Street tank, again, another private
20 site using the parking lot, Front Street, which
21 is currently a park and the City of Pawtucket
22 would like to have some sort of other development
23 there, but at the moment it is open and
24 available, the City Hall tank, which would use
25 the parking lot for City Hall, the public safety
There is variability site to site. A lot of effective than the tanks. effectiveness, the tunnel is slightly more cost surface storage. We see that on the cost those ones is that we've got about $10 per gallon average to handle the volume in the tunnel. These are along the tunnel route near the drop problematic to the communities. So then what we look at in terms of adding all these things up, and I put them into two different categories, we've got the category of subsystems that could tie directly to the tunnel. These are along the tunnel route near the dropshafts. And what we see is that on average for those ones is that we've got about $10 per gallon on average to handle the volume in the tunnel. Compare that with $14 per gallon for the near surface storage. We see that on the cost effectiveness, the tunnel is slightly more cost effective than the tanks. There is variability site to site. A lot of

MR. RAICHE: This again -- all of the numbers, including the numbers that Nick showed for the green, these are the volumes during the three-month storm, which we agreed are baseline for comparing alternatives. This isn't annual volume treated, which is why -- something like 40 bucks. If you hear other numbers, that's why these numbers are a little different. We use that as a baseline to compare the alternatives. When we need to use interceptors to get the disparate areas to the tunnel, it makes sense that our costs go up. To sort of capture those on average, it's almost $17. But you will see, as I sort of tipped off earlier, the one for the Pawtucket Avenue interceptor is significantly more expensive than the other ones, the High Cross interceptor and the Middle Street interceptor. That is largely due to partially the length, to get across from central Moshassuck over to Seekonk, but also the fact that the route for that is heavily trafficked and a difficult construction zone when you compare it to, say, Middle Ave., which comparatively isn't as difficult.

Again, when we look at that on average, the
1 tunnel and the tanks become competitive, but that
2 is really thrown off because the Pawtucket Avenue
3 interceptor versus the Morley Field tank is
4 really where that difference is. If you look at
5 the other tanks, the tunnel comes out more cost
6 competitive.
7 As Harold pointed out earlier, we have a
8 third alternative for 2020, which would be the
9 stub tunnel. The Morley Field tank has a low
10 cost associated with it, but it is a limited
11 installation, one, it has the impacts on a little
12 league field, so on the co-benefits and
13 construction phase impacts, it has -- it is a
14 problematic site.
15 Two, building the tank at that location, we
16 can really only accommodate the 220 flows. We
17 know we have other problems in the system.
18 Namely, the Branch Avenue interceptor problems.
19 We could conceivably help solve the Branch Avenue
20 interceptor SSO problems in the future with the
21 220 stub tunnel. There would be additional
22 infrastructure that would need to be built to
23 connect the Branch Avenue system to the 220
24 system. But if we did that additional, we've got
25 flexibility and resiliency to cross-connect the

1 two systems. So there's other criteria in here
2 other than cost that make the tunnel an
3 attractive alternative to what is apparently a
4 cheaper near-surface storage tank option.
5 MS. KARP: I have a question about this
6 220, which is on the Moshassuck. It looks to me
7 from the map as though there is -- on the
8 Pawtucket side of the river, there's a bunch of
9 abandoned mill buildings with parking lots in
10 addition to the old landfill site. If you go to
11 the other side, across the river, you have the
12 rail yards, and there's a lot of open space over
13 there. Because this whole river has been
14 engineered anyway, did you look at the option of
15 going -- basically diverting that whole flow
16 across the river toward the rail yards and making
17 use of that storage area that exists over there?
18 MR. RAICHE: To answer the parking lot
19 issue first, they are currently privately owned
20 and they do have uses. It's not terribly
21 frequent in nature, but there are uses on those.
22 Moreover, there are plans to expand the use of
23 it. It's one of the art districts and --
24 MS. KARP: This could be
25 subterranean at any --

1 MR. RAICHE: Correct.
2 MS. KARP: -- rate. So those
3 properties look, by and large, vacant and
4 abandoned, even though there are a few trees at
5 present. And it looks as though there's
6 relatively inexpensive use. I'm curious about
7 the alternative to look at around these prices.
8 Because Morley Field looks unpractical
9 (inaudible).
10 MR. RAICHE: There would be some cost
11 flexibility in there. The tank itself has sort
12 of a fixed cost, but the surface restoration
13 costs --
14 MR. BRUECKNER: I just want to talk
15 about that for a minute. When we've done other
16 projects and we've been on private property and
17 tanking the property, it is a severe impact. You
18 might not think so, but you essentially are
19 messing up somebody's business. And we have, on
20 occasion, had to pay costs for them doing
21 business during the time of construction. So
22 while it seems on the surface that it shouldn't
23 be such a difficult thing, it actually is much
24 more.
25 MS. KARP: Absolutely. I live near

1 there, but these look like vacant and abandoned
2 properties. These are not thriving, active
3 businesses. These are kind of rundown businesses
4 along the rail lines around the Moshassuck. So
5 to me, it's a question of, we're looking at urban
6 renewal at the same time, so this seems to me
7 like an opportunity not just to capture this very
8 large CSO so it drains to the Moshassuck, but
9 also to look at that area around it and what
10 would it take to make this a better neighborhood
11 for the people who live there.
12 MR. BRUECKNER: Actually, where 220 is,
13 it's essentially an industrial neighborhood and
14 very few residential houses in that area. And
15 most of those businesses are actually going
16 concerns that are quite successful, around the
17 vicinity of 220. On the other side of the river,
18 we have to get over to the other side of river,
19 you have a highway, that you have to get under,
20 and you have the rail yards. You cannot do
21 anything near a railroad. Impossible. So to say
22 that there's room on the other side of the river,
23 I don't see that.
24 MS. KARP: Okay. That's what the
25 zoning maps show, though.
UNIDENTIFIED SPEAKER: Try sitting
discussed the caveats --

MR. RAICHE: All right. In the beginning of this meeting, which was about developing a cost of screening for disinfection at these slides, we're championing on. We did also makeing, is not that you haven't thought of it but that you've taken relatively standardized solutions to cabin where this is going to go, it then presents as interfering with a ball field that is this rare piece of open community space in this area, and that becomes a negative, you know, along with some other possible infrastructure surfaces to an interceptor to say that spending twice as much is a good idea. And, you know, I think that she's reasonably skeptical about what really went into that.

MS. KARP: I just think if this were looking at a (inaudible) in particular.

MR. RAICHE: The Morley Field site,

although the other criteria is against it, would present the lowest cost tank for that region. Other locations, if they could be made to work by agreements with property owners, would have a higher cost associated with them but maybe score more favorably against a few of the other criteria.

MR. BISHOP: I'm going to finish that by, I mean, the kind of box I think is, how about we build a bridge and put the ball field on the other side of the river while they're working. I don't think that would actually cost a lot of money. And, ultimately, if faced with, you know, some constant infrastructure there as a possible alternative, the railroads might think it would be great to have the Providence and Worcester Little League team.

MR. RAICHE: All right. In the interest of trying to get through a few more of these slides, we're championing on. We did also develop a cost of screening for disinfection at the beginning of this meeting, which was about three hours ago, but it seems longer. We discussed the caveats --

UNIDENTIFIED SPEAKER: Try sitting here.

MR. RAICHE: We did pull together some costs associated with the screening disinfection. Knowing that this is not -- not only is it not an apples-to-apples comparison, it's probably not even a fruit-to-fruit comparison because of how it measures against the Clean Water Act in obtaining the water quality goals, but, you know, as we did say, perhaps it is an interim solution that could be implemented if affordability pushes the long-term solutions off the table for a while.

And so that brings us to integrating the costs with the analysis that we did last month against the 16 criteria. I've got a couple more slides here. I'm sorry. I ran ahead. These are graphical representations of those numbers that I just showed you. And perhaps it would have been better to show you the graphs upfront instead of the tables. But it does show a couple of interesting things. Each grouping is for one of the subsystems, and each one of the colored bars are the different solutions. So for 20 --

MR. DOMENICA: What's the vertical access?
MR. RAICHE: The other component with 
down my --
I'll have to count on Caroline and Jan 
to do in November.
MR. BISHOP: And I won't be here, so 
we need you to put those -- I mean, I can do it 
that while this is interesting in subgrouping, I 
think realistically when we consider the tunnel, 
we need you to put those -- I mean, I can do it 
if I take a --
MR. RAICHE: Yes. That is what we need 
to do in November.
MR. BISHOP: And I won't be here, so 
I'll have to count on Caroline and Jan to hold 
down my --
MR. RAICHE: The other component with 
the O and M costs, we could go through them, but 
in general, the tunnel is less costly than the 
tanks because we have a number of disparate 
locations to worry about and odor control 
facilities as opposed to essentially one pump 
station. And we have some O and M costs worked 
up for treatment, which are higher still, because 
there's more complex to operate and maintain than 
the other options. We've got chemical and power 
costs and labor and equipment costs.
So for the 3956 system, again, we've got our 
options of hybrid, sewer separation, and West 
River. And this is, again, looking at our 16 
evaluation criteria. What scores out the best is 
the West River interceptor. It compares better 
than its alternates on operational costs -- on 
capital costs and operational flexibility, as 
against opposed to sewer separation allows us to balance 
some flows.
Also, it has a higher reliability compared 
to some of the others. Not to say the hybrid had 
something in its favor. It did have co-benefits 
in its favor. But on balance, the West River 
interceptor comes out higher. Sewer separation 
is probably the least favorable with the 
construction phase disruptions (inaudible) being 
talked about associated with sewer separation.
For the 35 system, this is where we already 
have dual pipes. The sewer separation comes out 
as favorable. Again, we've got capital costs 
because of the dual pipe system. We know it's 
reliability. It does score poorly on 
construction phase disruptions and the sewer 
separation pieces and it lacks the co-benefits of 
the hybrid, but on balance, it would come out 
more favorably.
MS. KARP: I just have a fast question.
The two projects you just looked at, the two 
subsystems, the total CSR flow in these two areas 
look like they may make up 5 percent of the total 
that we're looking at. And I say this because it 
seems to me, if we were going to do this, again, 
in my view, reasonably, we'd look at the biggest 
problems first.
MR. RAICHE: So just as a point of 
clarification, what we embarked upon last month 
and this month is the subsystem alternatives 
analysis to determine the components of the 
overall plan that makes sense in each one of 
these geographic regions. Once we nail those
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<td>6 case that was presented by Jon and Greg in terms</td>
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<td>7 of project sequencing, frankly, I'd put the sewer</td>
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<td>8 separations at the tail end anyway, because the</td>
<td>8 for the tunnel, the things that are unfavorable</td>
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<td>12 MR. REITSMA: Would you, one more time,</td>
<td>12 contaminated soils or suspected contaminated</td>
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<td>13 refresh my memory as to what the co-benefits are</td>
<td>13 soils, once we start digging deep in those</td>
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<td>14 with reference to these two?</td>
<td>14 locations, that could be something that escalates</td>
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<td>15 MR. RAICHE: The co-benefits is a</td>
<td>15 the cost further. So we have some significant</td>
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<td>16 measure of the improvements to the community, to</td>
<td>16 construction phase risks. We have construction</td>
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<td>17 the neighborhoods based on doing these things.</td>
<td>17 phase disruptions, because these are possible</td>
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<td>18 So if we're saying that we're going in and doing</td>
<td>18 existing uses that would be disrupted during</td>
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<tr>
<td>19 some sewer separation and we're going to improve</td>
<td>19 construction. And, again, operational issue</td>
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<tr>
<td>20 the roadway and we're going to do some GSI in</td>
<td>20 impacts.</td>
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<tr>
<td>21 that neighborhood and put in some trees and</td>
<td>21 One thing to carry forward and consider is</td>
</tr>
<tr>
<td>22 things like that, those are the co-benefits.</td>
<td>22 that we could do screening and disinfection at</td>
</tr>
<tr>
<td>23 MR. REITSMA: Not internal to the</td>
<td>23 this location. The positive benefit is that it</td>
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<tr>
<td>24 project?</td>
<td>24 could derive interim water quality benefits.</td>
</tr>
<tr>
<td>25 MR. RAICHE: Those are ancillary</td>
<td>25 While not fully compliant with the Clean Water</td>
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| Benefits to the neighborhood. 206 is the | 1 Act, it is better than nothing if the long-term |
| opposite conclusion where the hybrid actually | 2 solution has to be delayed due to affordability. |
| comes out cost competitive, plus it has those | 3 There are a number of negatives. The operations |
| 4 additional co-benefits. It allows some | 4 and construction phase impacts are substantial. |
| 5 operational flexibility. Because the preliminary | 5 The other thing to consider in terms of cost |
| 6 we've done for GSI in that area includes some | 6 is that for this site there are no recoverable |
| 7 stub water tanks, which give us some -- we can | 7 systems. So if you put in the interim a |
| 8 operate those with some additional benefits. | 8 screening disinfection facility at this site and |
| 9 Sewer separation. You know, while perhaps | 9 then you put in the tunnel as the long-term |
| 10 it's a little bit more reliability than some of | 10 solution, there's nothing there that you could |
| 11 the GSI, it still scores out less favorably than | 11 reuse or sell. |
| 12 incorporating GSI into that particular solution. | 12 MR. BISHOP: I hear chlorine is big on |
| 13 Moving onto the 201-205 area, the Front | 13 the black market. Brian Bishop. I was |
| 14 Street tank along the Blackstone River. As our | 14 wondering, and this might be in Tom's wheelhouse, |
| 15 alternative, we've come out to the conclusion | 15 while I can understand the idea of reliability -- |
| 16 that the Pawtucket tunnel is the preferred | 16 modest reliability constraints related to more |
| 17 alternative. As we start sifting through these | 17 disarrate if even relatively large industrial |
| 18 near surface storage versus tunnel, most -- | 18 facilities comparing these near-surface tanks to |
| 19 almost all of these have the same conclusion, | 19 the tunnel, I'm not sure I precisely -- quite |
| 20 that the capital and O and M costs follow | 20 understand the flexibility constraints or the |
| 21 favorably for the tunnel solution versus then | 21 extent to which -- I guess what you're saying is |
| 22 near-surface storage. | 22 you can only pump into the existing interceptors |
| 23 We've got administration and institutional | 23 at a certain speed, maybe you could build |
| 24 considerations, as well as system reliability and | 24 yourself a little more flexibility -- |
| 25 operational robustness. A lot of that comes from | 25 MR. RAICHE: A lot of the flexibility |
| | |
1 has to do with the constraints on the existing
2 interceptor system. Because the tunnel
3 essentially becomes a tunnel conduit. From the
4 disparate locations down to the Buckland Point
5 treatment plant, you're going to have operational
6 flexibility on how you balance the tunnel
7 operations versus the treatment plant operations.
8 With the disparate locations, because so much of
9 the CSO is dependent on limitations in the
10 existing interceptor system, you don't have that
11 flexibility.
12 MR. BISHOP: But just to continue,
13 that's really relative to once you collected the
14 CSO, it's relative to the pace at which you
15 determine to treat it, perhaps in anticipation of
16 other weather. In other words, there's some
17 fixed rate at which you can withdraw this from
18 these out-area tanks given the limits of your
19 interceptor. Compared to, you may actually have
20 the capacity to treat it. On the other hand, if
21 you assume that you have both the tunnel and a
22 surface tank or two, it's plausible to balance
23 the operation of those to kind of limit those
24 flexibility constraints.
25 MR. RAICH: We could build more stuff

1 and have lots of flexibility. The City Hall tank
2 is an extremely problematic site. Again, we
3 steer towards the Pawtucket tunnel. While the
4 City Hall tank is a relatively small and shallow
5 one, it's cost competitive to build that tank
6 versus a drop shaft. There are a number of
7 knocks against it. And, frankly, the capital
8 cost difference isn't all that big.
9 The 213 tank, and this is going to be the
10 same for almost all the rest of the tanks, the
11 capital costs and O and M costs come up favorably
12 for the tunnel versus the tank. And then the
13 tank, we've got disruptions. Tidewater, same
14 story. And the Buckland Point tank is a similar
15 story.
16 Again, we have a secondary option here for
17 an interim alternative. Rather than actually
18 doing screening and disinfection at 218, it would
19 be plausible to build an interceptor from 218
20 down to the Buckland Point treatment plant and
21 accommodate that flow through that treatment
22 plant's wet weather facility, which actually
23 would give you -- we'd have to study it and
24 figure out what the headroom is in the plan, but
25 it would give you some additional --
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1. We do have a couple of areas that we need to study a little more. We'll advance those for November, the study of the stub tunnel versus the Morley Field tank. And we also have the consideration of interim water quality benefits from a couple of these treatment options.

2. How are we going to do this for November? We have completed, if you remember from the beginning of this process back in November, we have resurrected the water quality model that was used during the previous planning phase. We updated that and recalibrated it for current conditions, including post Phase I and anticipated benefits from Phase II, plus other things that have happened in these sewer sheds, like the upgrade to the Blackstone Valley Plant in Worcester.

3. We have run the models. These are just sort of examples of, you know, essentially the outputs from that for post Phase II. It gives us an idea of where water quality impacts are over time. So this first one is right after the initiation of a storm, this is a couple of days after the storm, and we see how the plume moves.

4. What we will do between now and November is run this through a couple of different scenarios. And this is exactly to Caroline's point. To help inform, Hey, instinctively those sewer separation areas are small, so do they have water quality benefits? And 220 is one of the real interesting ones, because moderately large but on a small water body, comparing the Moshassuck to the Seekonk. So we're essentially using it for sensitivity analysis to determine what gives us the most benefit.

5. So what we will be doing is putting together these pieces. We come to the conclusions for almost all of the subsystems what Phase III should physically entail. And now we're piecing them together, looking at the water quality benefits, looking at affordability, and determining, A, in what order should we do these things, and, B, what the compliance deadline should be to maintain affordability.

Mr. Moderator.

MR. DOMENICA: Very good. Thank you.
MR. HAMBLETT: Topher Hamblett, Save the Bay. I just want to, after all of this, pick up on something that Jan had mentioned earlier. We know that whatever the solution is it’s going to cost a lot. And there are a lot of great minds in this room, but I would say that they are operating in a limited framework here in terms of assuming the rate payer is going to pay for it right now, and assuming that the Clean Water finance agency will assist to a certain level. I think a couple of things. One, we are about to have a new Governor and a new treasurer in our State, and I think this needs to be brought to their administrations on November 5th.

MR. GAGNON: I second that.

MR. HAMBLETT: There are also around the country with green infrastructure and gray infrastructure and CSOs, there are cities and states that are doing things in very different ways, and I think we need to bring that kind of horsepower to this table. So I would -- I think that we should enlist or encourage the new administration to help us do that, because I think -- I mean, the rate, the rate projections, the rate increase projections are staggering, but we need to proceed with the cleanup of Narragansett Bay. So let's not limit ourselves in our thinking and in our expertise here. And I'm calling NBC and everyone else here to help press for more resources at the table here so we can do this right.

MR. HOLMES: Real quick. Could we go back one slide, please? My name is Philip Holmes. I'm with the Rhode Island Fisherman's Association. Could we go back one slide, please?

That's the one. We have a statewide problem, and we're talking about a locality solution. We're talking about Providence, Pawtucket, Central Falls CSO overflows. We have a plume on the western side of the river coming out of the Pawtuxet River, a separate plume separate from the Narragansett Bay Commission problem. This on the western side down a little bit. Right there.

That's the one.

That is an equally dangerous problem to the shellfishing industry. It's a statewide -- we need -- it's a locality -- Warwick, West Warwick, Cranston are largely responsible for that plume. They have three sewerage systems on the Pawtuxet River, they also have failed septic systems, cesspools, they have storm water runoff that is causing a problem. Even if we fix the Providence, Central Falls, Pawtucket problem and no one addresses the Pawtuxet River problem, we still have a statewide problem. And we need to -- I understand this is a Narragansett Bay Commission. I get that. But as a shellfisherman, I'm looking at Narragansett Bay as a whole; not just the Providence River system.

And we have a greater problem, and it is a statewide issue. I agree with Topher. We need to bring in money from -- I mean, Newport benefits. The Newport restaurants and all of that benefit from -- when Narragansett Bay's reputation goes up, will people want to come to Rhode Island and eat in the restaurants? They benefit.

MR. DOMENICA: We have to move on.

MR. HOLMES: But that -- do you know -- that's what I'm trying to get on. I agree with Topher. We need -- and November 5th is a good date to start on this on a statewide level.
1 be doing as it relates to their sewer
2 infrastructure that's aging in place and not
3 being maintained as well as their storm water.
4 Because all too often we hear discussions about
5 runoffs.
6 I will give an example of an enterprise fund
7 for a storm water utility district, and it's only
8 going to cost X to the rate payer. Well, that's
9 also on top of that chart we just saw today, but
10 that's not part of the discussion, because we can
11 approve a runoff and a runoff, and all of a
12 sudden we're ten-off. So we need to think
13 comprehensively when we're looking at these rate
14 structures and solutions and not just what our
15 particular vent is that we're advocating for. I
16 will stop there.

MR. BRUECKNER: I just wanted to
comment. If you have not signed in on the
sign-in sheet, could you do so before you leave?
We'd like to keep an accurate record of who
attended the meeting.

MR. LIBERTI: I'm sorry. But if we
could go back real quick. Could someone--
(INTERRUPTION BY THE COURT REPORTER)

MR. LIBERTI: I'm sorry. Angelo

1 Liberti. Could someone just explain what this is
2 we're looking at? I assume this is a model
3 prediction under some storm condition? I don't
4 think that was explained. I don't want people to
5 leave taking this as--
6 MR. RAICHE: This is not data. This is
7 model output for post Phase II. This is the
8 recalibrated model using the data that we
9 collected in the past 14 years, since the last
10 time the model was calibrated. And this is the
11 output.
12 MR. LIBERTI: Two different design
13 storms?
14 MR. RAICHE: No. It is the same storm,
15 a three-month storm, but it's two different time
16 steps. This is just a couple of hours after the
17 start of the storm, and this is a couple of days.
18 UNIDENTIFIED SPEAKER: Could you say
19 what the colors are?
20 (INTERRUPTION BY THE COURT REPORTER)
21 MS. KURT: Meg Kurt. Could you say
22 what the colors are?
23 MR. RAICHE: So the colors are
24 essentially the bacteria counts. So the maroon,
25 I guess, would be the worst, the purple is pretty
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