

1 METROPOLITAN ST. LOUIS SEWER DISTRICT
2 TECHNICAL CONFERENCE FOR DISTRICT TESTIMONY
3 & RATE SETTING DOCUMENTS
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8 MEETING
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1 APPEARANCES CONTINUED
2
3 COMMISSIONERS PRESENT:
4
5 Mickey Croyle
6 Tom Ratzki (via telephone)
7 John L. Stein (Jack)
8 Paul Brockmann
9 Russell Hawes (Acting Chair)
10 Leonard Toenjes (via telephone & in person)
11 Mark Schoedel
12 Steve Mahfood
13 Chan Mahanta
14 Brad Goss
15 Gerald Beckmann (via telephone)
16 Lloyd Palans
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1 PROCEEDINGS BEGAN AT 1:00 P.M.

2 COMMISSIONER HAWES: It's 1:00 o'clock. We
3 call the meeting of the Rate Commission of the
4 Metropolitan St. Louis Sewer District to order. This
5 is 2019 Wastewater Rate Change proceeding.

6 Mr. Schoedel, if you could please call the
7 roll.

8 COMMISSIONER SCHOEDEL: Jerry Beckmann?

9 COMMISSIONER BECKMANN: Present.

10 COMMISSIONER TOENJES: This is Len Toenjes.

11 COMMISSIONER SCHOEDEL: Brandy Bowdry?
12 Paul Brockmann?

13 COMMISSIONER BROCKMANN: Here.

14 COMMISSIONER SCHOEDEL: Don Bresnan?
15 Mickey Croyle?

16 COMMISSIONER CROYLE: Present.

17 COMMISSIONER SCHOEDEL: Brad Goss?
18 Russell Hawes?

19 COMMISSIONER HAWES: Here.

20 COMMISSIONER SCHOEDEL: Chan Mahanta?

21 COMMISSIONER MAHANTA: Here.

22 COMMISSIONER SCHOEDEL: Steven Mahfood?

23 COMMISSIONER MAHFOOD: Here.

24 COMMISSIONER SCHOEDEL: Lloyd Palans?

25 COMMISSIONER PALANS: Here.

1 COMMISSIONER SCHOEDEL: Tom Ratzki?
2 COMMISSIONER RATZKI: Here.
3 COMMISSIONER SCHOEDEL: Mark Schoedel
4 present.
5 Jack Stein?
6 COMMISSIONER STEIN: Present.
7 COMMISSIONER SCHOEDEL: Leonard Toenjes?
8 COMMISSIONER TOENJES: On the phone.
9 COMMISSIONER SCHOEDEL: Thank you.
10 Paul Ziegler?
11 Mr. Chairman, we have a quorum.
12 COMMISSIONER HAWES: All right. Thank you
13 very much, Mr. Schoedel.
14 Mr. Malone, are there any procedural matters
15 to bring to the floor here?
16 MR. MALONE: No. Lisa Stump wasn't able to
17 be here today. She's feeling under the weather. So
18 I'll be in the role of counsel today.
19 COMMISSIONER HAWES: Thank you, Mr. Malone.
20 With no further procedural matters,
21 Ms. Myers, would you like to name your witness?
22 MS. MYERS: Yes. Our witness starting today
23 is Rich Unverferth, the director of engineering.
24 COMMISSIONER HAWES: All right. Thank you.
25 (The witness was duly sworn.)

1 COMMISSIONER HAWES: Very good.

2 Does any member of the Rate Commission have
3 questions for Mr. Unverferth at this time?

4 Hearing none, Mr. Neuschafer is not here.
5 And we've got -- I cannot remember your name.

6 MS. JONES: Kami Jones.

7 COMMISSIONER HAWES: Ms. Jones, do you have
8 any questions on behalf of the Missouri Industrial
9 Consumers?

10 MS. JONES: Yes, I do.

11 COMMISSIONER HAWES: Thank you. Come on up.

12 EXAMINATION

13 BY MS. JONES:

14 **Q Good afternoon.**

15 A Good afternoon.

16 **Q I just wanted to start off by asking about**
17 **the estimated CIRP. I see in your testimony that you**
18 **stated that the next four-year cycle rate period is**
19 **going to be about an estimated cost of 1.6 billion; is**
20 **that correct?**

21 A That is correct.

22 **Q Could you tell me a little bit about the**
23 **breakdown of these costs?**

24 A Yes. I'm just going to utilize my -- the
25 rate proposal itself. The total cost of the CIRP is

1 about \$1.6 billion. I apologize if I say "million"
2 every once in a while. And it's broken into four
3 years and broken into several categories of projects.
4 We have asset management capacity related. We have
5 asset management renewal. We have city shed projects,
6 combined sewer overflow projects. We have
7 district-wide projects. We have other projects. We
8 have sanitary sewer overflow projects, and we have
9 projects associated with the treatment plant.

10 If you break it down, basically in major
11 categories, we have consent decree projects, projects
12 that are not related to consent decree but are
13 regulatory required, and then we have projects that --
14 our projects stop are more asset management, just
15 strictly asset management related due to the wear and
16 tear of those systems.

17 I'm on page 4-15 and 4-16 of the rate
18 proposal. We did provide some appendix which are --
19 actually, I take that back. I think we provided in
20 the first discovery request a breakdown of obviously
21 the total CIRP of 1.6, but then we pulled out and
22 created a spreadsheet for the regulatory required
23 projects outside the consent decree. That was
24 approximately 340 million. And then there were some
25 projects that we're doing to our pump stations along

1 the riverfront flood wall pump stations which was
2 approximately 14 million. Which I think ends up being
3 about approximately 1.2 of that 1.58 billion is
4 consent decree related.

5 **Q Thank you. When did MSD determine what**
6 **these costs were going to be?**

7 A For the four-year rate cycle, we put
8 together the plan of the projects that we have over
9 the four years and took those and combined them.
10 They've been developed as far back as 2012 when we
11 developed the master plan for the SSO master plan, the
12 CSO master plan. And then during the last -- over the
13 last two fiscal years, we've been refining the scopes
14 of those projects and defining the -- updating the
15 costs. So the costs are generally within the last
16 year before they're put into the four-year rate cycle.

17 **Q How did MSD go about determining these cost**
18 **estimates?**

19 A Our cost estimates are based on historical
20 costs the district typically sees for its projects.
21 And I'm speaking mostly of the sewer-type projects and
22 the rehabilitation projects. If it's a specific
23 project, we use industry standards or we have our
24 consultant and we've hired -- do a specific cost
25 estimate. I'm speaking more on tunnel or treatment

1 plant type work based on what is seen around the
2 country for this type of work. Obviously we don't do
3 some of this work every year so we have to use best
4 engineering practices for developing those estimates.

5 **Q So for the more specific projects, just to**
6 **make sure I understand, how would MSD determine like**
7 **the consent decree process -- projects --**

8 A Well --

9 **Q -- and process events for those?**

10 A Generally, most of the concept decree
11 projects that we're working on right now are combined
12 sewer overflow or separate sewer overflow are based on
13 historic prices that we've seen for the last several
14 years, the unit prices for pipe or excavation that we
15 see in the St. Louis region on bids that we see --
16 receive, and we update those unit prices and make
17 adjustments based on the prices we see.

18 **Q What about for the regulatory projects?**

19 A The regulatory projects -- generally the one
20 that we have in there now for the incinerator, which
21 is the largest, our consultants utilized information
22 available for similar type projects around the
23 country.

24 **Q Okay. For the incinerator projects, I**
25 **noticed that the numbers in the proposal, I think on**

1 page 7-92, these budget amounts, I just noticed that
2 the numbers are really round and kind of very rounded
3 off numbers. So I was wondering how that came to be
4 about or what kind of -- the way you put to these
5 round numbers.

6 A There is a study associated with how we
7 arrived at these numbers. I -- I wouldn't be able to
8 sit here today and say how did we come up with these
9 exactly. But, again, we used -- we developed the
10 assessment based on the information that we had
11 available for similar type facilities at other
12 locations. That's something -- I'm sure we could
13 provide that study.

14 Q What is the confidence level in these
15 estimates?

16 A Again, they're -- again, they're
17 predesigned. So, in other words, we're basing it on
18 the type of work we're planning on doing. So if you
19 you're looking at a conceptual level cost estimate, I
20 would think you're probably in the plus or minus
21 30 percent range. And then as you go into a
22 preliminary design work, you actually have a siting of
23 the facility, then obviously that price would -- or
24 that level of acceptability would go down.

25 Q When we spoke to Brian, he pointed out that

1 **for the last four-year period, capital costs were**
2 **lower than what was anticipated. Could you explain**
3 **why that was?**

4 A We have consistently seen lower bids on
5 projects, and there were at least two major tunnel
6 projects that came in significantly under what we had
7 estimate. It's not always easy to see why those
8 projects came in under estimate.

9 We know on the rehabilitation project, which
10 is a significant amount of the work that we've done,
11 which is the lining work, we're very fortunate to have
12 the two -- I'll call them world leaders, at least U.S.
13 leaders in that industry that are actually
14 headquartered here in St. Louis. They don't necessary
15 like to lose to each other and they like to keep their
16 people local. So we've seen specifically good prices
17 in that arena to bring down those costs.

18 On the open-cut construction site, we
19 continue to see good prices, good competition. When
20 we first started the consent decree, we weren't seeing
21 the number of bids that we saw. And I'm speaking back
22 in 2012 and '13. Once the industry saw the type of
23 work and the consistency of the work that we had
24 coming out and planning to bring out, they geared
25 themselves up, and so we started then seeing anywhere

1 from five to six to ten bids on projects, which
2 increases the competition, which lowers our prices.

3 Generally, we see our -- our estimates, our
4 engineering estimates, which are probably as close to
5 what we feel the bid is going to be, generally, we are
6 in the middle to the higher end. We aren't always.
7 But then there are cases where it's something that may
8 be more difficult than -- and it would be over our
9 estimate, but not very often.

10 **Q Have these lowered costs been accounted for**
11 **in the current proposal?**

12 A We do make adjustments to our unit prices.
13 Again, you're -- you're dealing with preliminary costs
14 so we leave some contingency in there just because we
15 aren't sure if the market could change some. But,
16 generally, we adjust -- we look at our bid items every
17 year, and if there's a certain bid item that we're
18 getting more reasonably, we'll make an adjustment to
19 that.

20 **Q I want to point for a second to the third**
21 **discovery request response. I'm looking at question 4**
22 **on page 4.**

23 A I'm sorry. I've got pages in-between here.
24 Make sure I got the right one. Question 4, page 4?

25 **Q Yes.**

1 A Okay. Sorry about that.

2 Q **You're fine. I'm just reading here that**
3 **about 471,000,000 was appropriated for projects**
4 **related to consent decree requirements and about**
5 **417 million was expended on them. I'm just**
6 **wondering -- these are kind of conservative numbers.**

7 A What you're seeing there is the district,
8 when we make an appropriation, generally we
9 appropriate -- in addition to the actual bid amount,
10 we'll appropriate a contingency of about 3 to 5
11 percent above the bid estimate and that 3 to 5 percent
12 will include like utility relocations that we
13 anticipate and maybe we've identified but we don't
14 actually have the contractor bid on. We have that as
15 an allowance.

16 And the other contingency is the way the
17 district operates. If we would have appropriated just
18 simply the bid amount, every time we -- there was a
19 minor change, we would have to go back to our board to
20 appropriate it. So we appropriated an additional
21 contingency amount to allow for things, unforeseen
22 things. But then, at the same time, we could end up
23 doing less on the project.

24 And I will say over the last four years,
25 particularly on the rehab -- excuse me -- the

1 rehabilitation, the CIPP side, we found this,
2 generally the final cost for that project is even
3 coming in under the bid. And that comes from when we
4 go out to the system to line a project or line a
5 sewer, something has changed where we pull that part
6 of out there, all the project, or it happened to have
7 already been lined and wasn't updated in our database.
8 So that particular type of project, we have -- we did
9 see some reduction.

10 As our databases get updated for -- with all
11 the lining that we've done for the last 15, 20 years,
12 we're seeing less of that now than we did, say, in
13 this last rate cycle.

14 **Q Okay. Again, keeping in mind that you need**
15 **a buffer for changes to occur and that some projects**
16 **you're able to get lower bids on, how do we know that**
17 **the estimates, even with those in mind, aren't too**
18 **conservative of estimates?**

19 A Again, like I said, we use the historical
20 information that we have in order to adjust those unit
21 prices. Not every job is the same so there are some
22 complexities. Some jobs we have a unit price, you
23 know, that we've seen, but it could be a little more
24 complicated. We're going to see a higher unit price.
25 So it's a give-and-take. I mean, we don't -- we try

1 to get as close as we can on our estimates.

2 **Q Okay. I'm turning now to your written**
3 **testimony. I'm looking at question 7 on page 2.**

4 A Okay.

5 **Q You state here that the CIRP needed to**
6 **provide project identification. Aren't the projects**
7 **already identified in either the consent decree or**
8 **stipulated by regulatory requirements?**

9 A There -- well, from a regulatory perspective
10 there, we have treatment plant assets, seven treatment
11 plants. We have a system out there that -- that we're
12 doing inspections on both at the plants and physical
13 inspections of our linear assets that are part of the
14 consent decree. But then those -- those will bring up
15 new projects. Like if we find an existing pipe out
16 there in poor condition, then that -- so that's why
17 it's considered an identification of process.

18 So, in other words, we have the defined,
19 let's say SSO plans. We have the defined CSO plans
20 and then we have the projects associated with that.
21 But continuously inspecting and investigating our
22 systems to identify something that could be of issue
23 to us and program that as well. So there are other
24 projects.

25 **Q Okay. Since there could be other projects**

1 **that come up, like you said, a pipe that's in need of**
2 **repair or something along those lines, does that mean**
3 **that the size and scope of the CIRP could change?**

4 A Typically, what we've done is when we
5 developed the consent decree and the overall financial
6 model back in 2012 when we had, for the most part,
7 defined what the SSO program might look like and the
8 CSO program, we did the ultimate financial model. We
9 had programmed in approximately 10 percent of the
10 overall budget, assuming a \$250 million CIRP, we
11 identified about 25 million to do asset upkeep. We
12 knew we were going to be doing a lot of inspection of
13 our systems. Our treatment plants are aging. So we
14 identified and we set that up as an annual amount. In
15 other words, we try to budget to that amount and try
16 not to exceed it.

17 There are instances that we identified
18 things that could go above that amount, but for the --
19 at least for the first six, seven years of the consent
20 decree, we've stayed within that number. We've
21 prioritized the work outside of the consent decree to
22 stay within that budget amount to the best that we
23 could, understanding that things could arise that we
24 weren't planning for.

25 **Q Okay. Just to make sure I understand.**

1 A Okay.

2 **Q So there's money allotted in the CIRP for**
3 **these types of unexpected projects already?**

4 A I don't know that I would call it
5 "unexpected." They -- we know, if you're out there
6 looking at investigating and looking at hundreds of
7 miles of sewer, if you're doing CCTV inspections, you
8 know that you're going to identify repair work.
9 You're going to identify lining work that's not part
10 of the overall CD program, and those are monies that
11 we set aside that are part of that 25. We call them
12 infrastructure repair projects.

13 If you look in the CIRP, we identify
14 infrastructure repair projects on the collection
15 system. Those are to fix -- if we have a collapsed
16 sewer, we have to get in there to fix it. That
17 includes lining of sewers that have poor ratings when
18 we do our CCTV. And we have infrastructure repair at
19 the treatment plants for projects that don't rise to
20 the level of a capital improvement project.

21 And -- and, again, everything we do
22 essentially rolls back to the CD because the CD has a
23 compliance that we look at our sewers. It says we
24 must rehabilitate our sewers. And at the treatment
25 plants, if we don't do the rehabilitation or the

1 repairs to the treatment plants, obviously we could
2 have a failure and not meet compliance from a
3 regulatory standpoint. So that's why you'll see those
4 dollars always either related to the consent decree or
5 to the regulatory requirement.

6 **Q Gotcha. So it would only go outside the**
7 **scope of what is already allotted in the CIRP if it's**
8 **something --**

9 A Correct. If it's a larger project, it would
10 be identified, which is kind of what we've done.
11 We've got some larger wastewater treatment plant
12 projects in this next four-year rate cycle that were
13 identified, where I talked a little bit.

14 Over the last four years, we've developed an
15 asset management prioritization system that looks at
16 doing condition assessment on our plants and tells us
17 that -- it helps us prioritize what we need to do over
18 the next four years.

19 **Q Thank you. I'm looking now at your**
20 **testimony, question 15, the bottom of page 4.**

21 A Okay.

22 **Q Here you state that the largest components**
23 **of this CIRP over this period will be capital**
24 **investment related to capacity improvements and the**
25 **wastewater system and sewage slush incineration. I'm**

1 just wondering about -- I guess first about the sewage
2 sludge incineration. The regulatory requirements
3 related to the fluidized bed incinerators, I'm
4 wondering how these are related and if you could
5 explain that a little more.

6 A The district at -- there's two major
7 treatment plants, our Bissell and our Lemay treatment
8 plant, currently have sewage sludge incinerators that
9 take the sludge from the treatment process and they
10 burn it and create a byproduct. And obviously
11 they're -- they put off fumes which are regulated by
12 the Clean Air Act. And during -- in 2012, there was a
13 modification. It's called the SSI Rule, Sewage Sludge
14 Incinerator Rule, which put on more stringent
15 requirements for the sewage sludge incinerators.

16 The district, at that time, in response to
17 that, I think we did about 15 -- I can't remember --
18 \$15 million worth of work on the incinerators to meet
19 those new standards. In the meantime, after we did
20 that, then there were some -- even some additional
21 regulatory requirements put on those incinerators.
22 And part of that being is that if -- if you invested
23 in your sewage sludge incinerators to the point to
24 where it's over 50 percent of the value of the
25 incinerator, then you had to do a complete upgrade and

1 bring those up to new air standards.

2 The district had made those initial repairs
3 and anticipated that we wouldn't need to make any
4 additional repairs till at the time -- say the 2025 to
5 2028 range. We felt like they were operating, but
6 just due to the condition and the age -- they were
7 built back when the original plants were built -- it
8 became obvious to us, it looked like they were not
9 going to make it.

10 The new technology for sewage -- and I'm not
11 a sewage sludge incinerator expert --

12 **Q Neither am I.**

13 A -- is a fluidized bed incinerator process.
14 It's a more efficient process that obviously provides
15 better air quality. And we had looked at it back
16 originally when we did the minor improvements and put
17 together some conceptual dollars.

18 When we saw that coming prior to this new
19 rate, we sat down and talked about the reevaluation
20 study that put together the new dollars. We went back
21 and updated those numbers, developed a comprehensive
22 plan to handle all the solids at all of our treatment
23 plants. Because every plant that we had, we had some
24 that was land applied. So we looked at our overall
25 plan for sewage sludge and developed the best solution

1 to have new incinerators at our Lemay and our Bissell
2 treatment plant and brought those up, and we decided
3 we needed to have that happen sooner. That was going
4 to be on top of one of our major combined sewer
5 overflow tunnels during this next rate cycle. It's
6 about a \$700 million tunnel. We saw what that was
7 doing to us financially. And I think Susan alluded to
8 that in her testimony. That's when we went back to
9 the EPA and made adjustments to the CIRP.

10 I hope that answers your question.

11 **Q That was very helpful. Thank you.**

12 A There's a response in Exhibit 61A from Susan
13 where it kind of gives specifics. Kind of the -- the
14 story that we were -- talked with the EPA about and
15 questioned by. Thank you.

16 **Q On the same token, related to the capacity**
17 **improvements, could you explain that a little more?**
18 **Is this just the increasability to handle increased**
19 **capacity or is there a little more to that?**

20 A No. The capacity is primarily referring to
21 sanitary system. We refer to those as our SSO
22 projects. And, one, in addition to eliminating the
23 overflows that happen within the system now, in
24 addition to that, the consent decree requires that we
25 ensure our system has the ability to -- to respond to

1 a rain event. Obviously, it's a sanitary, but there
2 are impacts to the sanitary system during a rain
3 event. That our system can withstand that rain event,
4 it can withstand -- have the capacity to withstand
5 that rain event without either overflowing a
6 manhole -- obviously because we're going to eliminate
7 all the overflows -- or backing up into people's
8 basements.

9 So, essentially, we've modeled the entire
10 sanitary sewer system, created what the impact of a
11 certain rain event, a five-year, 10-year rain event,
12 and determine where our system doesn't have that
13 capacity. And to -- in order to do that, we spent
14 multiple years, from 2004 through 2010, flow-metering
15 our system, inspecting our system, knowing everything
16 we know about it and using hydraulic models to
17 determine what level of capacity, and then we
18 identified where we didn't have that capacity to
19 develop the SSO master plan.

20 **Q Could you give me some examples of the types**
21 **of projects that would fall under this category of**
22 **capital improvement and making sure that the events**
23 **for rain --**

24 A The easiest way is if you have a watershed
25 that has a main trunk sewer that goes up through the

1 watershed where everybody's sanity flows comes down to
2 it, and then it has multiple branches off of it where,
3 you know, different subdivisions are. And what it is,
4 is when you get a rain event, there's impacts of that
5 rain event on that system.

6 In other words, regardless of how we try to
7 keep the stormwater separate, it will come into that
8 system and cause the system to overcharge. And
9 there's two ways that you can address those issues.
10 One -- and we're going at it both ways. One is go to
11 the system and try to find those sources of the
12 stormwater getting in the systems. We refer to that
13 as inflow infiltration, private I&I, which can come in
14 through a downspout connected. A public I&I, which is
15 one of our sewers that's maybe located next to a creek
16 and water seeping in the joints or coming in the top
17 of a lone manhole, things likes that. So we go at
18 that source, which is our I&I projects.

19 And then once that -- that type of work is
20 done, then we monitor the system again. We do
21 post-construction monitoring from that work, and then
22 we identify. Then we, again, do our modeling again
23 and determine where -- whether we up the capacity or
24 not.

25 In a lot of cases, there's an overflow that

1 exists. So we're monitoring. We're doing
2 flow-monitoring of the system. We're flow-monitoring
3 that overflow; is the overflow still happening or not.
4 So we look at that.

5 And then if we found that are -- we still
6 have enough flows, then we have to increase the size
7 of that sewer. So you have your -- your private I&I
8 projects. You have your public I&I projects. You
9 have post-construction monitoring to determine the
10 extents of where you still have the capacity issues.

11 And we have some instances where that was
12 enough. We were able to take the overflow out. The
13 remaining system is -- is handling that rain event.
14 In other words, our models are telling us that that
15 system now has the capacity.

16 At the end of the consent decree, our entire
17 sanitary sewer system, we have to provide
18 documentation that our system meets, has the capacity
19 assure -- it's called a capacity assurance plan, that
20 all of our system can meet those capacities to a
21 certain level of storm events. Obviously, you're
22 going to have extreme storm events that -- that the
23 system is not going to be able to withstand.

24 I hope that kind of answered your question.

25 **Q Yes. I just want to make sure I understand.**

1 **What -- I don't know if you can even provide this.**
2 **But what kind -- could you give me examples of what**
3 **kind of projects fall in under that private and public**
4 **SSI?**

5 A They generally specifically state that.

6 **Q Okay.**

7 A It will say the name of the sub watershed
8 and it'll call pot -- it'll say -- within the listing
9 will say "Private I&I removal," and then the
10 description will generally say, "Remove inflow sources
11 from 200 houses," and that's a specific project.

12 But what we've done on the public I&I, where
13 we line our sewer system or we do inspections and
14 determine maybe where we have sources and we
15 rehabilitate manholes. We rehabilitate -- what we do
16 is those -- those we generally -- we put in larger
17 areas. In other words, we combine them from -- say,
18 three different small areas, we'll do all that rehab
19 together. We found those package better in larger
20 packages. And that's another reason why we are seeing
21 good prices on those type of projects, that we're
22 combining them together.

23 And then if you do not -- I did leave one
24 part out. If that I&I did not work, then we have to
25 replace that project. And, generally, on those

1 projects, you'll see they're replacement or relief
2 project. In other words, the word "relief" will be in
3 the name of the project and it'll give that extent.

4 And what we've seen with the private I&I
5 removal, the public I&I and the post-construction
6 monitoring, we've -- in some cases we've been able to
7 remove the overflow. Some cases we've been able to
8 reduce the scope of what we originally had planned in
9 the overall CIRP as far as the amount of replacement
10 projects that we have to do.

11 **Q Thank you. That makes sense. Just a couple**
12 **more questions about this project.**

13 A Oh, take your time.

14 **Q I just want to make sure I understand**
15 **clearly. So these projects would be volume metric,**
16 **not with respect to certain constituents; correct?**

17 A Yes. Well, it could. Again, if there's an
18 area that has a number of backups -- in other words,
19 it's not just the overflow. In other words, our
20 system, in some cases, before it overflows, say, a
21 manhole or out a constructed overflow, it can back up
22 into basements. So originally when they were planned,
23 we looked at both -- how much was coming out of an
24 overflow.

25 In other words, the capacity assurance is

1 not just to prevent us from overflowing. It's
2 almost -- also to prevent it from going back into
3 people's basements during those rain events. So it
4 is -- if I understand your question on
5 constituent-based, yes. And if the systems don't --
6 the systems themselves don't know what -- how -- you
7 know, it's just how it was developed.

8 **Q Okay.**

9 A Generally. I hope I --

10 **Q Yeah, I'm kind of trying to get at the --**
11 **like TSS and BOD aspects of it as well. Just trying**
12 **to figure out if, based on the volume of things like**
13 **that, it would have an effect on the projects, if that**
14 **makes sense.**

15 A Yeah. I'm not -- I'm not certain of the
16 correlation of what you're talking about. I mean,
17 when I think of TSS and BOD, I'm thinking of our
18 treatment processes and the amount of work that goes
19 on at our plants for capacity.

20 In other words, when we look at capacity, we
21 have to look at our -- the ability of our plants to
22 accept that flow that's coming to them. Which, in
23 some cases, if -- where we do have access flow that's
24 still coming because we've reduced the overflow or
25 transported the flow with larger sewers, generally the

1 plant has the capacity to -- and if we can't exceed
2 that capacity, that's when you know that the large
3 storage projects we have, like the underground
4 tunnel-type storage.

5 In other words, you're -- you're taking that
6 store -- flow and you're storing it during the rain
7 event and then you're putting it to the plant so it
8 can be fully treated. Again, we have to make sure the
9 plant has that ability to take that flow for the time
10 that it has to.

11 **Q So there would be probably capital**
12 **improvement projects related to making sure to take**
13 **that flow as well?**

14 A Exactly. A lot of -- the way we approach a
15 lot of this work on the plants -- we were seeing
16 larger flows. So the district as far back as the '90s
17 and the early 2000s had been doing capacity upgrades
18 to their treatment plants, both our Missouri River
19 plant, obviously the lower Meramec was a newer plant,
20 but at our Bissell and our Lemay treatment plant.

21 In fact, one of our first combined sewer
22 overflow was increasing our secondary capacity at our
23 Lemay wastewater treatment plant, which is a combined
24 sewer/wastewater treatment plant. In addition to
25 that, we put in a process for disinfection of the

1 wastewater, the -- the overflows at both our Lemay --
2 and all of our plants, those were included.

3 I think in the four-year rate cycle, there's
4 some improvements at our Coldwater plant for some
5 clarifier replacements, and so projects at our -- at
6 our Bissell plant for trickling filter media
7 replacement. That's our secondary treatment there.

8 That, again, plants -- you know, if you
9 build a physical plant or a pump station, we have
10 sewers that are over a hundred years old. They -- you
11 can't -- you hope you can design them that they'll
12 last a hundred years. Plants with mechanical,
13 electrical, things like that, do not have that kind of
14 a life. So you build in that replacement over time.
15 And that project that Bissell and Coldwater are, it's
16 time for that -- replace that aging infrastructure.

17 **Q That kind out of goes into my next question.**
18 **I was wondering if there had been some analysis done**
19 **on like inspecting -- they inspected operating life**
20 **of -- for these projects?**

21 A Well, what we've done, and it just happened,
22 it's taken us two or three years. If we were sitting
23 here at the previous rate cycle, typically projects at
24 our plants that may have been at a rate cycle,
25 basically we were looking at their potential for

1 failure within a five-year period, and said, "We've
2 got to do these or they won't wait till the next rate
3 cycle."

4 What we've done since that time is
5 implemented an asset management. I think I provided
6 the details in the third discovery request. I'm not
7 an expert at it. I know we've done it, but we're
8 doing -- we created a monetized prioritization for
9 projects that would be outside of the planned consent
10 decree projects that would help us prioritize.

11 In other words, a part of that is then going
12 out at these -- at these treatment plants, at these
13 pump stations, and doing condition assessments. And
14 that's what we're in the process of doing. So then we
15 can foresee what do we have coming in the future,
16 but -- and so that's the type of thing we're using
17 right now.

18 **Q Thank you. In the second discovery request,**
19 **there was some discussion of future expenses. I think**
20 **it was estimated to be about 400 million for nutrient**
21 **effluent --**

22 A Which -- which question was that? I want to
23 make sure I'm following you.

24 Question 2. I found it.

25 **Q Yeah. There's an estimate of about**

1 **400 million for nutrient effluent limits. And I was**
2 **wondering if you had any idea when those would hit?**

3 A We follow it. This is -- nutrient control
4 is something happening all over the United States
5 right now. We've seen more of it happening in -- in
6 lake regions. Like the Great Lakes area, the
7 Chesapeake Bay area. But the nutrient issue is a
8 problem, particularly in the -- in the Mississippi
9 Basin, and the effects it has on the Gulf of Mexico.

10 There's a lot of sources for nitrogen and
11 phosphorus and the nutrients that our rivers seed.
12 Treatment plants aren't the only one. So the
13 wastewater industry, we've not fought back and said,
14 hey, we don't think we should do it, but what we've
15 done is pushed back and say, we aren't the only
16 source, and if we're going to be asked to invest in
17 that source, we should share in that. And a lot of it
18 has to do with agriculture.

19 So it's been -- slowly, but surely, been
20 delayed. The district has gone and we've done a
21 comprehensive study of the nutrients and the impacts
22 of our nutrients at our plants and we have developed a
23 plan and that was the basis.

24 Similarly, we did the comprehensive solids
25 handling plan, and we've developed -- based on what we

1 think the limits would be in our plants, there are
2 ways that -- that could be mitigated through potential
3 sharing of costs with ag because it's -- sometimes
4 it's cheaper to do source control with the agriculture
5 as opposed to us upgrading our processes to the point
6 to where it becomes fairly costly.

7 So what we've done is we've come up with a
8 plan that we feel will address these. And then as a
9 long range, financial plan and it's -- I can't tell
10 you exactly where we place this in there, but it was
11 after the majority of -- not completely after the
12 consent decree, but where the bulk of the work of the
13 consent decree came in. So we're kind of -- we -- we
14 monitor it. We participate on a national and state
15 level to monitor those activities.

16 **Q Just to make sure I understand. Are we**
17 **confident that these costs will hit?**

18 A These will -- these will come our way at
19 some point.

20 **Q Thank you. That's all.**

21 COMMISSIONER HAWES: Thank you, Ms. Jones.
22 I appreciate that.

23 Mr. Malone, do you have any questions of
24 Mr. Unverferth?

25 MR. MALONE: Yes, I do.

1

EXAMINATION

2

BY MR. MALONE:

3

Q Good afternoon, Mr. Unverferth. How are

4

you?

5

A Good.

6

Q Do you have your direct testimony with you?

7

A Right here.

8

Q Okay. I want to ask you about one of the

9

factors that the Rate Commission has considered. That

10

is will the proposed rate change against the

11

district's ability to provide sewer and drainage

12

system in the facility-related services. Is it your

13

testimony that the proposed rate change will do so?

14

A Yes, it is.

15

Q Okay. And can you tell us what metrics or

16

criteria you use to determine if the rate change will

17

enhance the district's ability to provide these

18

services?

19

A One, though the district is currently under

20

consent decree, the district -- to comply with certain

21

requirements, of that consent decree, the district

22

currently operates under permits at its treatment

23

plants. In order to comply with those plants, the

24

district has to continue to operate and maintain and

25

build the necessary capital improvements to comply

1 with those two items.

2 **Q Okay. Are there any other factors you**
3 **considered in making that determination?**

4 A No. Those are the -- the two main factors.
5 Other than from a maintenance -- operations or
6 maintenance -- in other words, we have to ensure that
7 our system can operate efficiently continuously to
8 meet those permits.

9 **Q Okay. And so if the rate change isn't**
10 **approved, would that limit the district's ability to**
11 **provide adequate service?**

12 A Yes, it would.

13 **Q Okay. And you also testified that you're**
14 **not anticipating any grant funding during this rate**
15 **cycle; is that correct?**

16 A That is correct. There's been limited grant
17 funding available. We do monitor. We do make -- stay
18 in tune. We visit our legislators regularly and try
19 to look for any opportunities. In fact, most
20 opportunities have been involved is more like on the
21 loan side than any grants.

22 **Q Okay. And if a grant opportunity did arise,**
23 **can you explain how that would impact the CIRP? Would**
24 **that result in more projects being added during this**
25 **rate cycle or accelerated?**

1 A No. We would -- we would more than
2 likely -- similarly to the loans, we would try to look
3 at the projects we already have in the queue in order
4 to apply that to the current projects.

5 **Q Okay. So if we receive grant funding, that**
6 **would be using less debt to fund the CIRP?**

7 A I guess we would have to look at the
8 circumstances of how that project was planned on being
9 funded. The majority of them are being funded by --
10 by borrowing or bonding. So there's -- yeah, that's
11 the potential, that we would reduce the amount of
12 bonding we would need.

13 **Q Okay. And is it also your testimony the**
14 **district isn't aware of any future regulatory**
15 **requirements that will be imposed during these -- this**
16 **rate cycle?**

17 A That is correct.

18 **Q Okay. Are you aware of any beyond the rate**
19 **cycle that are on the horizon?**

20 A The one I just spoke of with MIEC. The
21 nutrient requirements, ammonia nutrient requirements
22 for local waterways is something we are monitoring,
23 and that's being performed in other areas of the
24 nation right now.

25 **Q Okay. And in the event that -- that that**

1 **regulation was implemented, would that necessitate a**
2 **consent decree?**

3 A It would be something similar to the method
4 we used for the -- moving the incinerator regulatory
5 requirement up. We would probably look to see what
6 impact -- when it was hitting compared to the other
7 capital program and how it was going to impact the
8 overall program. But if we felt like it would
9 necessitate, we probably would at least have the
10 discussion with them.

11 Q I see. Okay. All right. And then one of
12 the factors in the operational rules for the Rate
13 Commission to consider is how the district is taking
14 measures to ensure that the cost of constructing and
15 maintaining the district's facilities and providing
16 related services are being incurred in a reasonable
17 and efficient manner.

18 I think you touched on this a little bit
19 with Ms. Jones, but would you be able to expand upon
20 what steps the district is taking?

21 A Obviously, we continuously work with our
22 construction stakeholders and our -- and our
23 engineering stakeholders to apply the best practices
24 with regard to our plans that we put out to bid. We
25 try to put them out in packages that we know that will

1 give us good bids. In our discussions with them,
2 we -- on the engineering side, we try to package it to
3 where, not only we allow -- in other words, to allow
4 the most in participation that we can provide from
5 both our contractor and consultant resources.

6 MS. MYERS: What document are you referring
7 to?

8 MR. MALONE: I think it's --

9 MS. MYERS: No, I was asking --

10 MR. MALONE: Oh. Just there I was looking
11 at the operational rules. It was section 3-4F.

12 MS. MYERS: Okay.

13 **Q (By Mr. Malone) Okay. And then if I can**
14 **direct your attention to -- I'm looking at pages 7-43**
15 **through 7-53 in the rate change proposal. Do you have**
16 **that handy?**

17 A Forty-three?

18 **Q 7-43 through 7-53, specifically the general**
19 **services agreements that are described on these pages.**

20 A Okay.

21 **Q Can you explain how these general services**
22 **agreements are -- give us some examples of how these**
23 **have been used in the past.**

24 A The district -- this -- there's several --
25 there's several types. We utilize general service

1 agreements for sewer design at our treatment plants.
2 So I'm just going to go -- let me make sure I'm
3 getting them in the right order here.

4 I'll just start with the general services
5 for construction management. The district utilizes
6 outside resources to assist with construction
7 inspections, primarily at our wastewater treatment
8 plants and our pump station, to bring on specific
9 expertise in those areas. The district has a
10 construction inspection staff that will generally do
11 the inspection on -- on typical sewer projects, CIPP
12 rehabilitation. But when it comes to our pump
13 stations and treatment plants, the -- we're looking
14 for more expertise on the construction inspection site
15 because you're dealing with mechanical equipment and
16 electrical equipment, pumping equipment, things like
17 that. And those projects have a little more
18 criticality as far as the type of inspection versus
19 just monitoring the work that's going on by the
20 contractor. So when we have those types of
21 projects -- particularly I talked earlier about the
22 small wastewater treatment plant projects. We utilize
23 that for the construction management services.

24 When you move to the next type, very
25 similar. We have small projects that come up over --

1 over the life of the rate cycle where we need design
2 services for that. We do a lot of contract management
3 on our -- on our sewer projects. But most of our
4 sewer design is actually done by the consultants. So
5 this is a specific contract to -- I call it staff
6 extension -- providing us an expertise in staff
7 extension for the design of pump stations and
8 treatment plant type work, whether it be for studies
9 or -- or actual design type things, similar to
10 construction. Then we'll have a separate one for
11 construction.

12 If you move on to the geotechnical services,
13 the district does not provide -- have geotechnical
14 resources currently within its staff. So we contract
15 those geotechnical services. This is to provide soil
16 drilling, soil analysis, and -- and recommendations
17 for geotechnical work on the projects primarily that
18 the district's in-house folks do the design on.

19 In other words, I have an in-house design
20 staff that does design on small projects. And then
21 infrastructure repair work that we need that
22 expertise -- in other words, we hire consultants in to
23 provide those services and for some of our green
24 infrastructure projects that we design internally.

25 The next one is the landscape design. The

1 district, as part of the green infrastructure program,
2 we are designing and building, as part of the consent
3 decree, green infrastructure program, rain gardens
4 and -- primarily in the combined sewer area. And,
5 typically, requires expertise in plantings and
6 landscaping type activities that we don't have that
7 resource internally. So we contract that out.

8 The next one up is property appraisal
9 services. Those are -- the district -- for our
10 easement acquisition. Prior to going out and
11 acquiring those easements, the district has those
12 easements appraised. So that's an outside resource
13 that we -- that we get. And we get multiple contracts
14 on this just to allow the opportunity for several
15 contractors to work on that.

16 The next one is -- hold on here. Sewer and
17 channel design. Again, this is a staff extension to
18 provide additional resources to do contract design
19 work on that infrastructure repair work project that
20 come up during the course of time. If our -- if our
21 staff is fully consumed doing other projects, then
22 that gives us a resource to do that type of work
23 primarily on the engineering side.

24 Survey. The district does have limited
25 survey crews that are utilized to the extent they're

1 available. So this is an additional survey resource
2 for in-house design folks. And I believe that was the
3 last one.

4 **Q Okay. And so for each of these categories,**
5 **for geotechnical, landscaping, appraisal, does the**
6 **district -- when you need these services, are they put**
7 **out to bid or do you have a list of approved**
8 **contractors?**

9 A No. Every -- all of our selections are
10 based on like a quality-based selection, particularly
11 with the engineering services, both in the
12 construction management and the design. The appraisal
13 services, I -- it's a selection that's based on cost
14 and qualifications.

15 **Q I see. Okay. And just so I'm clear on**
16 **this. So, for instance, you have the landscape**
17 **design, there's 200,000 allocated for -- that are**
18 **budgeted for fiscal year '21. Is it -- am I correct**
19 **then that for individual projects in the CIRP,**
20 **landscape design costs are excluded from what's in**
21 **this document or --**

22 A Yeah. Those are typically just for the
23 professional services.

24 **Q Okay.**

25 A In other words, that 200,000, for lack of a

1 better term, is a -- is money then that if we have a
2 small rain garden project where we're looking for
3 landscaping services -- generally planting plans,
4 things like that -- once we design the size of the
5 basin, what we -- we'll do individual task orders
6 within that. So it's a task-order base. In other
7 words, it wouldn't be just one project. It could be
8 multiple projects where we go to them and get a lump
9 sum estimate for a specific task within that, and that
10 would last over a year. In other words, generally
11 we -- we have those as renewable contracts for two
12 years.

13 **Q I see. And so where a project is listed in**
14 **CIRP, that's going to require geotechnical service --**
15 **services or appraisals or surveys, those costs aren't**
16 **included in the figures listed in the CIRP?**

17 A They are not.

18 **Q Okay. All right.**

19 A Generally what you'll see -- because these
20 are projects that generally are mostly being designed
21 by our internal staff, is that you will always see the
22 construction costs then in the CIRP.

23 **Q I see. In the rate change proposal, there**
24 **is, I think, 26 million that's being spent on data**
25 **collection, which is post-circuit television**

1 inspection, physical inspection, so on and so forth.

2 Can you explain how this information is used?

3 A Is there a specific location --

4 Q I don't have a page number offhand.

5 A Is it -- is part of -- is it in this
6 listing? Is it part of the -- oh, okay. I think I
7 got it. 7-27?

8 Q Yes.

9 A No. Okay. And what's the question?

10 Q I think my question is, can you just explain
11 what the purpose of this is, what benefit is provided
12 by doing so.

13 A One, there's a -- there's a requirement in
14 the consent decree for the district to inspect --
15 internally inspect a certain quantity. I don't know
16 the exact one. Mr. Berthold may be able to give you
17 an exact amount of sewage.

18 Our sewer system that the district is
19 required to inspect on an annual basis, I think it's
20 in the range of about 1 percent per year of the entire
21 sewer system. It's about 6500 miles of sewer system
22 that the district staff does do some of this internal
23 CCTV. This provides an added resource to look at
24 these -- to perform this contracted -- and contracted
25 resources to perform these activities.

1 In addition, these are utilized in some
2 instances where district staff on the larger diameter
3 projects, in the combined sewer area, we have very
4 large sewers which require, in some cases, manned
5 entry. That's -- that's a performance that the
6 internal district staff does not perform. So we
7 utilize these outside resources to do that. And they
8 provide us with a condition assessment of that system
9 and provide us with information so we can prioritize
10 our rehabilitation program.

11 **Q I see. And does the consent decree dictate**
12 **whether you use closed circuit TV or physical**
13 **inspection?**

14 A It does not. It just says we must inspect
15 our systems. Closed circuit is obviously the most
16 efficient way to take a look at, at least the smaller
17 diameter. When you get into the larger diameter, we
18 utilize some -- and Mr. Berthold may be able to
19 provide some of that information. We continuously
20 look at newer technologies to do that better.

21 **Q Okay. So the district has some flexibility**
22 **to determine the appropriate method?**

23 A Yes.

24 **Q Okay. I think that was all.**

25 MR. MALONE: Pam, do you have anything else?

1 That's all I have. Thank you.

2 THE WITNESS: Thank you.

3 COMMISSIONER HAWES: Thank you, Mr. Malone.

4 Does any member of the commission have any
5 questions for this witness?

6 Mr. Stein, please.

7 COMMISSIONER STEIN: Thank you.

8 EXAMINATION

9 BY COMMISSIONER STEIN:

10 **Q Mr. Unverferth, I would direct you to**
11 **page 4-39 of the rate proposal. And the last**
12 **paragraph on that page, it starts out, "The cost of**
13 **service analysis indicates a significant increase in**
14 **the surcharge rates for BOD, COD and TSS. This**
15 **increase is caused by several factors, most**
16 **significantly that the capital cost allocated to these**
17 **functional categories increased by approximately**
18 **70 percent of fiscal 2017 for the test year of fiscal**
19 **2021."**

20 **Can you speak to some specific projects that**
21 **are driving that capital cost increase?**

22 **A** Two off the top of my head. I would have to
23 go back and look. One is the -- I think the year they
24 used was fiscal year '21 as their -- as their basis.
25 And if I remember looking, we are replacing -- there's

1 two major projects. There's obviously smaller
2 projects that are -- can be attributed to our primary
3 and secondary flows. It's clarifier replacement at
4 the Coldwater Wastewater Treatment Plant. It's within
5 the list. And the second is replacement of the media
6 filter at the Bissell Wastewater Treatment Plant. I
7 did -- I heard those questions yesterday.

8 I did a little analysis, and it looked like
9 on the last rate cycle, we did about \$10 million in
10 work at the treatment plants, and over this next rate
11 cycle, if you exclude the incinerator project and you
12 just look at work outside, it averages out to just
13 under 20 million. And, again, those are rough
14 numbers. But after hearing those discussions
15 yesterday, I kind of glanced at that and took those
16 averages.

17 **Q Thank you.**

18 COMMISSIONER HAWES: Mr. Schoedel?

19 EXAMINATION

20 BY COMMISSIONER SCHOEDEL:

21 **Q Yes. You mentioned that your estimates for**
22 **the next four years were revised within the last two**
23 **year so that the capital numbers in the CIRP, you**
24 **think are pretty accurate return estimates?**

25 A Yeah. If you look, our program, it takes

1 almost four years to get through to where our projects
2 are funded. We take it from a conceptual level, a
3 preliminary level. What you see in that four years,
4 generally at least the first two to three years are at
5 the preliminary level where we've gone down and we've
6 redefined the scope of the project and developed our
7 latest cost estimate to what we think the solution
8 could be.

9 Obviously, you get into design. Again, they
10 could -- the model could show that we don't
11 necessarily have to do as much work. So that -- that
12 generally you are looking at an estimate that's been
13 done within two years of when you first start
14 seeing -- two years ahead of the design.

15 **Q Do you mind answering my next question? So**
16 **you have reengineered these projects as well, based on**
17 **reduced flows and new technology that you've**
18 **experienced over the previous four years that could**
19 **help reduce the cost for these projects?**

20 A Very much so, yes. Once we do the I&I,
21 which I explained earlier, public I&I, we would remove
22 downspouts, things like that, we do post-construction
23 monitoring, and we have -- and we've had everything
24 from being able to cancel projects to reducing scope
25 of projects or even size of projects. So that could

1 happen within a rate cycle because we're -- the way we
2 scheduled them with the consent decree is we went
3 public-private, and we're doing the monitoring during
4 that process, but at the same time, you have to give
5 that relief project the go-ahead and program that
6 because you have a timeframe when that overflow has to
7 be out.

8 So we do -- it's unfortunate we do have to
9 program that relief project because if we don't
10 program it, and we just wait to see, then we may not
11 meet our schedule.

12 **Q Sure. Thank you. With the GSA services, I**
13 **notice it's pretty well the same number for each year.**
14 **So there's no escalation for those services no matter**
15 **if it's the appraisal or landscaping or the geotech or**
16 **the engineering; so flat fees?**

17 A Yeah. We -- we generally -- with the
18 multiple contracts, it allows us to utilize -- you
19 know, utilize those differently. We found those were
20 good numbers to support us over that period of time.
21 In fact, we won't go for renewal -- in other words, I
22 won't bring it back to our board for the additional
23 funding if I don't need it. In other words, if I
24 happen to utilize that contract, then I've seen where
25 we've had a two-year contract with a firm that lasts

1 three years with the money. So, in other words,
2 we use -- so then every once in a while, you'll see us
3 actually skip a year of procurement and move on.

4 **Q Okay. Thank you.**

5 COMMISSIONER HAWES: Any further questions?
6 Mr. Brockmann?

7 EXAMINATION

8 BY COMMISSIONER BROCKMANN:

9 **Q Mr. Unverferth, you talked earlier about**
10 **adjusting bid items based on previous experience where**
11 **you're getting lower prices. But then I hear you just**
12 **now talked about you reestimated a project two years**
13 **in advance after starting to do the engineering on it.**
14 **So I guess, I take it, a lot of these numbers here do**
15 **not reflect, or at least the latter part of these**
16 **numbers in here do not reflect the most recent lower**
17 **bids that you've received?**

18 A The preliminary estimates would probably not
19 see the effect of that. It would be our final design
20 estimate based on -- in other words, our estimate that
21 becomes closest to what we're bidding it would reflect
22 those. The preliminary would -- we do go back and we
23 will adjust our preliminary numbers, but you're not
24 going to see that here.

25 **Q So, conceivably, if the bidding market**

1 stayed as good as it has been for the past four years,
2 some of these numbers are -- you would admit are
3 probably high on the latter part of this rate request?

4 A Yes, theoretically.

5 Q Okay. I'm intrigued a little bit by the
6 tunnel projects and a couple questions on there. How
7 many are included in the consent decree, and a total
8 cost of how much?

9 A Tough question here. I could name them, but
10 I don't think -- I don't think I'm going to be able to
11 give you the construction estimates on them.

12 Q Okay.

13 A We could provide them -- if you ask for
14 that, we could provide you a detail and when they're
15 currently scheduled. But, currently, under
16 construction we have a Maline tunnel construction
17 project. I believe the cost -- the bid cost for that,
18 I think the appropriation was about 90 million. We
19 have the Jefferson Barracks Tunnel, which is the
20 sanitary tunnel in the south. It runs from our Lemay
21 treatment plant to South County. That was about a
22 \$77 million appropriation. And we currently have the
23 Deer Creek Tunnel Project under construction, I
24 believe was 167 million. That's a 20-foot diameter
25 tunnel that runs from, essentially, Deer Creek and

1 Shrewsbury up to the other side of the Galleria.

2 The CSO -- the Maline is a CSO tunnel. It's
3 about half a mile long and that's a 30-foot diameter.
4 It captures combined sewer overflows from the Maline
5 Creek. And then there's a pump station associated
6 with all three of those. Those are ongoing. Tunnel
7 projects, the next one that will be done, based on the
8 current program, is the tunnel from South County up to
9 our Fenton Treatment Plant, which will remove our
10 Fenton Wastewater Treatment Plant and eliminate
11 several pump stations along the way that currently
12 pump down to our lower Meramec plant.

13 Those are problems from -- again, with
14 capacity at those pump stations so the tunnel will not
15 only eliminate a wastewater treatment plant, but
16 address capacity issues at pump stations along that.
17 I think that's about a 10-foot diameter. I do not
18 know the cost estimate for that.

19 The next tunnel after that would be the
20 large CSO tunnel that the district has plans to
21 address overflows along River Des Peres. It's
22 approximately 9 miles long starting at a wastewater
23 treatment plant at the Lemay Pump Station -- I mean,
24 Lemay Treatment Plant up into -- following along River
25 Des Peres up to around the Macklind area. That's

1 about a 30-foot diameter tunnel. There's a lot of
2 associated sewers with that. So I say -- and the
3 current estimate is in the \$700 million range. And I
4 don't know if that includes -- but then there are two
5 more tunnels after that.

6 **Q So the majority, I'm hearing, are conveyance**
7 **tunnels rather than storage tunnels?**

8 A The -- the -- the River Des Peres Tunnel is
9 a storage tunnel.

10 **Q Okay.**

11 A And -- but generally the Deer Creek -- both
12 of them -- in other words, like I said, they're
13 designed for both conveyance and storage because you
14 can't convey this flow direct. Our plants wouldn't be
15 able to hold it. In other words, we'll have to manage
16 those flow. In other words, part of that
17 construction, the pump station is managing those flows
18 depending on where the flows are coming out. In other
19 words, they'll be real-time control over those
20 facilities to manage the flow to the treatment plant.

21 **Q All these tunnels, does gravity flow into**
22 **them?**

23 A Yes. Typically there is.

24 **Q So most --**

25 A Oh, I'm sorry -- yes, you're right.

1 **Q** So then most of them, if they're conveyance
2 **tunnels, it's gravity flow once they get to a**
3 **treatment point, or are you having to then pump it out**
4 **of the tunnel to the treatment plant?**

5 **A** There we're pumping from a tunnel to another
6 trunk sewer system to the plant.

7 **Q** Okay. And all these tunnels are vented, and
8 **you don't anticipate any odor issues or anything with**
9 **these tunnels?**

10 **A** Everything we do with regard to large pump
11 station facilities, large storage tanks, we take into
12 consideration odor at locations. There's vent shafts,
13 there's -- and -- and that is taken into
14 consideration.

15 **Q** Okay. Switching subjects a little bit.
16 **Insurance requirements for your contractors, do you**
17 **have a specific requirement for a different price**
18 **category of project, or is it the same insurance**
19 **requirement for all of your projects? How is it**
20 **determined that -- do you know offhand what your**
21 **insurance requirements are?**

22 **A** I don't know that I'd be in a position to
23 answer all that. Generally, most of them have the
24 same insurance requirement on the construction. We
25 have looked at, and we were working with our current

1 insurance on creating a matrix that may adjust that,
2 depending on the size of the project. I know if it's
3 a very large-scale project, we do make adjustments to
4 those insurance based on that complexity. I can't
5 give you exact numbers. I -- I -- if you ask, I
6 could -- ask in discovery, I could probably give you
7 the specifics of those insurance --

8 **Q I just heard that some of your insurance**
9 **requirements for smaller projects are pretty high for**
10 **like a 5 million general liability.**

11 A We have had that discussion, and we made
12 adjustments on some of those projects. We've had
13 discussions with our insurance. Like I said, we are
14 in discussions on creating a matrix based on the size
15 of projects in trying to bring those in line,
16 particularly on the smaller projects.

17 **Q Does a bidder have to have the insurance in**
18 **place before they bid? Is that one of the bidding**
19 **requirements?**

20 A Typically, they have to provide before we'll
21 enter the contract.

22 **Q Okay.**

23 A Or provide that insured insurance, yes.

24 **Q Okay. I have no further questions.**

25 COMMISSIONER HAWES: Mr. Palans?

1 COMMISSIONER PALANS: Do you want to -- go
2 ahead.

3 COMMISSIONER GOSS: No, go ahead. I'm sure
4 mine will be shorter.

5 EXAMINATION

6 BY COMMISSIONER PALANS:

7 Q Mr. Unverferth, just refer to your direct
8 testimony, if you would. From a big picture
9 standpoint, in question 10 in your direct testimony,
10 you say that the wastewater CIRP is primarily composed
11 of projects required to comply with the consent decree
12 or other regulatory requirements; correct?

13 A Yes.

14 Q And, in fact, the rate proposal also
15 emphasizes that the capital improvement and
16 replacement program, or CIRP, is the primary cost
17 driver for the district's financial plan, representing
18 about two-thirds of anticipated expenditures in fiscal
19 '21 to fiscal '24; correct?

20 A That is correct.

21 Q Let's talk about the CIRP projects. This is
22 your bailiwick?

23 A Yes.

24 Q Could you tell us approximately the total
25 number of CIRP projects that the district is dealing

1 **with?**

2 A Currently I would -- again, I would be
3 guessing. We bid approximately in the range of around
4 projects a year. So, typically, we would have
5 close to a couple hundred projects active at any one
6 time.

7 **Q In terms of total CIRP projects to comply**
8 **with the consent decree, what are we talking about in**
9 **terms of number?**

10 A I would -- I would only be guessing. I
11 could get that number. In our master plan, I think on
12 the sanitary side, identified a number of projects,
13 but, in some cases, we split those projects up. I
14 discussed that a little bit earlier. We'll pull --
15 you know, if it's a large project, say an SSO, it
16 might have three projects associated with it: A
17 public I&I project, a private I&I project, and a
18 relief project.

19 And with that, you have appropriations for
20 design work for that so a project could have -- a
21 specific project to eliminate an SSO could have, you
22 know, a half a dozen individual appropriations that I
23 have to take to our board in order to do that the
24 engineering design contract and the actual individual
25 construction contracts.

1 **Q** Let's talk about it in terms of cost. You
2 indicate in the proposal that this is a multi-decade
3 effort to comply with the consent decree; correct?

4 A Yes.

5 **Q** It's going to take at least for the next
6 years; correct?

7 A Correct.

8 **Q** And this multi-decade effort to comply with
9 the consent decree is estimated to cost \$6 billion,
10 and that's in 2018 dollars. That's what the proposal
11 says; correct?

12 A Correct.

13 **Q** So how much more money is required to
14 perform other CIRP projects that you presently know
15 of?

16 A That we presently know of, again, you're
17 saying non --

18 **Q** Nonconsent decree-related CIRP.

19 A No. Those are -- I'm trying to find the
20 best way. Obviously we know -- in the current four
21 years, I know from what we've seen over the past
22 several years, in the current CIRP about 1.2. So
23 there's probably an additional 300 million in this
24 particular rate cycle. That's been the largest non-CD
25 that we've had since we've entered the CD.

1 Typically, we've been closer to that 25 to
2 \$30 million a year -- I'm sorry -- yes. So we'd be
3 looking at -- at only about a \$120 million, in that
4 range, for every four-year rate cycle. So if you take
5 out, say -- I'm going to speculate, but if you take
6 out the incinerator project, you take out the
7 potential for future nutrients, which we've
8 identified, those are the two big projects that we
9 kind of see coming. There's other projects. So you'd
10 be talking about \$120 million a year. The consent
11 decree -- I'm sorry. \$120 million a rate cycle. So
12 you say four more rate cycles. So what is that?
13 That's a half billion dollars of non-CD.

14 So, in other words, you'd be adding --
15 again, don't quote me on this -- but I'm saying
16 probably another half a billion dollars in today's
17 dollars that would be added onto that.

18 **Q I'm not asking -- I'm not asking you to sign**
19 **your name on this --**

20 A No.

21 **Q -- and write a check.**

22 A You are correct. There are additional
23 projects outside the consent decree that the district
24 will need to perform over the life of this --

25 **Q So, as we sit here today, your best estimate**

1 is \$6 billion to cost perform the multi-decade consent
2 decree requirements, CIRP, and roughly another half a
3 billion dollars for non-consent decree related CIRP
4 projects?

5 A If you take out what we've expended -- so
6 I'll do it this way. There's about 4.3 billion left
7 in the consent decree, and then you add another half a
8 billion. That's in addition to the incinerator
9 project, which is in the \$300 million in the future
10 itself. Essentially, you're adding another -- so what
11 did I say? Half a billion? You're adding another
12 billion and a half so you're at 7.5.

13 Q Okay. Fair enough. Thank you.

14 A Am I saying that right?

15 Q Yeah. You're doing well. I just want to
16 understand. I think all of us want to understand the
17 sizing of --

18 A Yep.

19 Q -- this. While I'm talking about the
20 sizing, could you tell us how you go about sizing the
21 CIRP project? And when I ask that question, I know
22 you've referenced in your testimony in question 16 --
23 the answer to question 16 on page 5, how the costs are
24 determined. Could you -- could you elaborate that in
25 terms of specifics? What's the process you go through

1 **to size a project?**

2 A Well, I mean, again, we've gone from our
3 experience in bidding of projects, you know, over a
4 number of years of what the local capacity -- again, I
5 talked earlier about our discussions with the local
6 stakeholders and contractors. In fact, Mr. Brockmann
7 hit on the ability to bond projects, the ability to,
8 you know, obtain the insurance, the capacity, the
9 local contracting community to do the work. Those are
10 things that have to be taken into consideration. You
11 know, what -- what is the length of time it would take
12 to construct a project?

13 You know, do we want a project that we
14 really want to take three years to build a project,
15 you know, and -- or do we want -- do we want -- and
16 what we typically found is we've tried the program to
17 where it's going to take anywhere between one and two
18 years to construct a project. So we look at the size
19 and the scope of that project.

20 Now, do we hold ourselves to that? No.
21 Obviously, when you have a large tunnel project, you
22 bid it as a large project. We have a large --
23 actually bidding right now, part of this rate cycle,
24 probably the largest open-cut project that we've done,
25 and we're using WIFIA funds to do it. It's the Deer

1 Creek Sanitary Relief Project.

2 It's got about a \$55 million estimate.

3 That, we know -- there's -- we don't have ten
4 contractors that are going to bid on that job. But,
5 at the same time, I have to have that job done in
6 order to eliminate ten overflows; so we have to look
7 at our schedule constraints.

8 So we're bidding that as one project in
9 order to meet our -- by 2023 to have those overflows.
10 That's about a four-year project. And there is
11 ability for them to even work in multiple areas on
12 that. So it's going to take a larger contract.

13 I hope I answered your question.

14 **Q That's helpful. That's helpful. I know**
15 **that when we went through the stormwater rate cycle,**
16 **you used a cost benefit analysis to prioritize the**
17 **capital projects. What did you do to prioritize the**
18 **capital projects with respect to wastewater? How is**
19 **the priority determined?**

20 A I'm going to break them into the categories,
21 because that's really how we did -- the prioritization
22 is different for the three. What I call are the two
23 main drivers, the mine sewer overflow program and the
24 separate sewer overflow program.

25 I'll start with the separate sewer overflow

1 program.

2 What we did is we started a major planning
3 process looking at our entire sanitary wastewater
4 system. I talked about the flow monitoring program
5 and the investigation of I&I. That lasted about six
6 years. All of our prioritization of that type work,
7 planning work, and ultimately the list of projects
8 required to remove those overflows and reach capacity
9 was based on -- there's like four categories that are
10 listed in the SSO master plan.

11 But it really was an impact on the
12 environment, that's the overflows, and how much is
13 really overflowing. We were monitoring those
14 overflows. And one -- every time it looked like rain,
15 it was overflowing. Obviously, that got a higher
16 priority. Where did we have extensive building
17 backups? Where were people getting sewage in their
18 homes on a regular interval more than once? Every
19 time it rained, people were getting -- so that's how
20 we prioritized.

21 And when we met with EPA, they looked at
22 those, and we were able to share that information that
23 we had -- were working to develop that plan. And
24 that's one part of why they prioritize the sanitary
25 sewer program in this first -- in other words, we have

1 to remove 85 percent of our overflows in the first 10
2 years of the consent decree, and that's why -- because
3 that had the larger environmental risks. So those
4 projects -- and for that 15 percent that are beyond
5 2023, we had to give them a specific reason why we
6 couldn't have those out by 2023.

7 So we had to -- and, generally, because I
8 had to have a project done here before I could do that
9 and before I could do that. So the sequencing of
10 projects which puts some of those sanitary sewer
11 overflows out there.

12 But, generally, what drove the priority
13 is -- was where those are at in the activations of it,
14 and that's generally what drove the sanitary program.

15 **Q I know on the stormwater side there was, for**
16 **lack of a better term, a matrix created that, in**
17 **effect, looked at yard flooding, building flooding,**
18 **erosion, bank stabilization. A number of factors.**
19 **And then that was prioritized based upon cost benefit,**
20 **the cost of the project versus the properties that**
21 **were benefited by the project. And you've just**
22 **identified two primary factors that I understood you**
23 **to say that determine priority on wastewater: Impact**
24 **on the environment and building backups. Are those --**
25 **did I hear that correctly?**

1 A Here are the four that we use in our
2 prioritization. This is in the SSO master plan,
3 and -- I'm sorry. I don't know the exhibit number.

4 **Q What page?**

5 A I'm on page 5-2 on prioritizations. It's
6 the potential for human health and environment risks,
7 the frequency of activation. That is of the
8 overflows, the estimated volume of those overflows.
9 And then technical engineering judgment, and it goes
10 in, you know, a little more detail within the --
11 within the program. Yes, it's the executive summary,
12 because it's volumes -- 37-C is the -- so there was
13 actually scores. If you go into each individual
14 watershed.

15 **Q Okay.**

16 A They looked at -- in other words, there's a
17 plan for every individual sanitary watershed. I can't
18 tell you how many. But we looked at those projects.
19 And some of them may have a higher priority project --
20 might be a higher priority, but it couldn't be done
21 because I have sequence -- I had other projects that
22 needed to be done before. So you can't just say this
23 is the highest priority project, I need to do that,
24 because you could create -- in other words, I have to
25 do a project here and here.

1 With regard to the sanitary sewer overflow
2 projects, using a cost benefit, one, because of
3 sequencing that could happen and, secondly, we have to
4 have -- we have to do them all anyway. So what we did
5 is we programmed them to -- to sequence out over the
6 23-year period, obviously meeting the consent decree
7 requirement of 85 percent by 2023.

8 **Q As you cost these projects out, capital**
9 **projects for wastewater, what do you do to update**
10 **those estimates? How regularly do you update the**
11 **estimates?**

12 A What we -- generally, we will -- we've
13 developed a conceptual cost originally when we did the
14 master plan. In other words, we came up with the
15 costs and scope. And, generally, prior to
16 programming, what we do is that then becomes from
17 conceptual cost at that time to a preliminary cost.
18 That's where we -- approximately two years before the
19 design, in that one to two-year range, we take a look
20 at the scope that was originally identified in the
21 master plan, take a look at any new data that we may
22 have, whether it be from CCTV or flow metering, that
23 type of data, and we revise that scope.

24 And including with that -- and I didn't
25 mention this earlier. I talked about -- to

1 Mr. Schoedel about reducing scopes and things like
2 that. What we have found in -- in -- within the
3 sanitary sewer areas, the district, part of the
4 consent decree was a very intensive maintenance and
5 operation program.

6 In other words, extensive cleaning of the
7 system, lining of the system for repairs. That type
8 of thing. We've seen impacts of that work to the
9 extent that we -- in certain areas, there was a
10 project that we -- our meters were showing we had
11 capacity problems, and turned out there was actually a
12 maintenance issue. In other words, one of our trunk
13 sewers had capacity issues. So that project
14 essentially could go away.

15 I didn't mean to change the subject there,
16 but while I was thinking about that, I wanted to bring
17 that up.

18 But -- so on the sanitary side, we -- as far
19 as the cost estimates go, within two year of our
20 design we refine the scope, and then that -- once
21 that's done, that preliminary, generally, will go into
22 the CIRP and in the four-year rate cycle, and then
23 we'll move to design.

24 And in the design, obviously they'll be
25 designing the sewer, developing the final scope of the

1 project, doing more refined hydraulic analysis where
2 they're actually sizing, and your scope can be refined
3 in those areas. In other words, they're using the
4 most up-to-date flow metering data.

5 And then -- then it gets what I call the
6 final cost estimate. That's the cost estimate --
7 generally, that's the last thing we do before we put
8 the project out for bid. In other words, with the
9 final set of drawings, then we do -- so there is --
10 and we generally will see -- because scopes change
11 from conceptual to preliminary, then we'll see scopes
12 change again from the preliminary to the design,
13 simply because at that preliminary level, we don't
14 have a geotechnical understanding of the project. We
15 don't have the constraints. We try to identify
16 constraints where we may have to tunnel under a major
17 arterial road, things like that. Those costs tend to
18 come back in during the design process.

19 **Q I just want to compare the process you used**
20 **in stormwater for sizing and scope with the process**
21 **you use for wastewater. With regard to stormwater, as**
22 **I recall, the testimony was that there was a -- very**
23 **little engineering was performed, very quick analysis**
24 **was performed, and a minimal amount of detailed**
25 **information was utilized. Compare your size and scope**

1 of wastewater projects with what I just described,
2 what the record described, as the sizing and scoping
3 of stormwater.

4 A So there is a big difference. One -- one,
5 we spent literally years of development of the CSO
6 long-term control plan and the SSO long-term control
7 plan, understanding our system out there. In other
8 words, identifying our complete system, doing, you
9 know -- at one point, we had close to 500 flow meters
10 throughout the system. In other words, we had to have
11 a full understanding of our system to understand where
12 those capacity issues were in order to identify those
13 scopes, and then we took those scopes and refined them
14 into the master plan.

15 So prior to even the conceptual development
16 of a project, we've done a lot of legwork. And keep
17 in mind, we -- you know, we had to have that in order
18 to ensure where we didn't need to do projects.

19 On the stormwater side, essentially you
20 would get a complaint. You would go out, speak with
21 the property owner, understand the issue, measure
22 where it might be, visit that site, say, "Here's what
23 we think the solution was," and you put it into a
24 database, and that database sat there till you
25 understood you had funding available to potentially do

1 that project. And that -- that plays a little bit
2 into it, having that -- you know, the resources and
3 funding available to do a program like this.

4 And we put those in place in order --
5 because we wanted a good plan for SSO, we wanted a
6 good plan for CSO because we wanted to do -- we had to
7 know what was necessary to comply.

8 **Q So is it a fair characterization that the**
9 **wastewater sizing and scoping is much more detailed,**
10 **much more specific, much more studied, than was the**
11 **stormwater sizing and scope?**

12 A That would be a fair statement.

13 **Q You testified earlier, and I think the**
14 **record yesterday reflects, that we are seeing, or MSD**
15 **is seeing lower -- historically low CIRP cost pricing**
16 **for capital pricing. Is that your understanding?**

17 A Yes. Generally, we've seen lower good bids
18 for pretty much the life of the consent decree.

19 **Q And you've -- you referenced in your prior**
20 **testimony today that you've seen consistently lower**
21 **pricing on CIRP projects; correct?**

22 A Yes.

23 **Q And you've seen, in your words, good pricing**
24 **on CIRP projects; correct?**

25 A Yes.

1 **Q And you have -- you described good**
2 **competition resulting in a number of bidders being**
3 **interested to participate with MSD on the CIRP**
4 **projects; correct?**

5 A Yes. And I qualified that a little bit.
6 You know, not every project is the same, but I would
7 say if we had a typical project, typical
8 rehabilitation project where we're lining sewers,
9 making part repairs and rehabilitating manholes, we
10 have multiple packages of that very similar because
11 they know what to expect on those jobs. It helps get
12 us good bids.

13 On the open-cut relief sewers, those aren't
14 quite as consistent. In other words, we make -- you
15 know, not every -- in other words, you might have
16 three jobs that you have -- you get good bids on, and,
17 all of a sudden, one is an outlier because they're --
18 there are complications on certain projects. I mean,
19 if there's sections that -- maybe you have short
20 sections of tunnel that a contractor, you know, is
21 concerned about, or an area that we've -- very tight
22 construction, you know, we'll see that.

23 In other words, we'll still maintain our
24 unit prices that we use, but they may elevate their
25 prices to cover things that they see that we maybe

1 didn't see.

2 Q Mr. Unverferth --

3 A "Rich" is fine, too.

4 Q "Rich" is better.

5 In the commercial world, we have seen a
6 number of cycles going back to the recessionary period
7 of 10 years ago when the capital markets collapsed,
8 and we had a perfect storm. And this is me just
9 talking. I'm not asking you a question, but I just
10 want to get to my next question. We had a perfect
11 storm of horribles. We had high interest rates, no
12 monies available for borrowing, high costs of
13 utilities, banks were not making loans to other banks.
14 It was a perfect storm of bad things happening for the
15 economy.

16 As I understand where we are today in
17 viewing the consent decree and the performance under
18 the consent decree, we have historically low interest
19 rates. That's what the financial advisor testified to
20 yesterday. And we have very low or historically low
21 CIRP project pricing. That's my understanding of kind
22 of the snapshot of where we sit today. Is that fair?

23 A That would be fair.

24 Q And Mr. Gee and others testified as to the
25 liquidity position of the district being very good.

1 We're AA rated. We're highest rated, I think in
2 Standard & Poor's, and we have a sufficient number of
3 days of liquidity that more than suffice to provide a
4 cushion for us. That's all a precursor for my next
5 question.

6 Why aren't we doing more in this cycle with
7 this opportunity, lower interest rates, and low cost
8 of CIRP pricing?

9 A One, when we originally developed the --
10 I'll call it the overall financial model for the
11 consent decree -- as -- as we put that work over the
12 23-year period, we did, is one, we wanted to maintain
13 a pre-level CIRP through that process. In other
14 words, to make sure that our rates didn't have a big
15 fluctuation. And I'm not the finance guy. But that's
16 generally what we tried to do, is maintain our rates.

17 We knew our rates were going to decline to a
18 certain level. So -- and one of -- if I look at my
19 CIRP, one, I wasn't going to be able to do, one, the
20 capacity internally to produce that type of work, in a
21 fluctuating manner is difficult to do, with -- with
22 internal resources and getting those external
23 resources. But at the same time, the capacity of the
24 community to -- to do that type of work is another
25 thing that has to be taken into consideration.

1 One of the other things was, as we've
2 developed and we've gone and we've basically had
3 double-digit increases in our rates for the past --
4 since 2006, once we started the planning effort and
5 got into the consent decree, it's been a general
6 consensus, I think from the Rate Commission, that we
7 did not want to just jump our rates in order to do
8 more work. In other words, we wanted to maintain.

9 In fact, the last Rate Commission -- we
10 do -- we do move up if we have to for schedule
11 purposes, but we do not try to bring work in from a
12 future rate cycle into the current rate cycle. Once
13 we determine what that listing of project is, we were
14 asked specifically not to bring projects into the rate
15 cycle.

16 Now, it's not as easy as it sounds just for
17 me to pull a bunch of work out and start putting it
18 out to bid. The SSO program is pretty regimented.
19 Like I said, it almost takes four years just to get
20 the project out. So that's pretty planned.

21 The CSO side, obviously we just moved a
22 large project out and moved another project in. But
23 now that we've moved back in, I have -- I have that
24 front end of completing our planning and -- and
25 designing that project, which is generally at least a

1 couple years of a process. So it's not as easy just
2 to say I'm going to move projects into the CIRP. So
3 we've pretty much stuck with the four-year plans and
4 moved that.

5 **Q Do you think it would be prudent for the**
6 **district to reconsider this proposal to modify the**
7 **proposal in a reasonable way that would adjust the**
8 **rates -- the rates from 2 percent and 4 percent over**
9 **the next fiscal years for ratepayers, and also combine**
10 **it with a borrowing capacity, increased borrowing; so**
11 **as to perform more CIRP projects during this cycle?**

12 **A** I -- to be honest with you, I think that
13 would be up to you to tell us to do that if we -- if
14 you felt like that was the direction that the Rate
15 Commission would like to go. We -- we went based on
16 what -- how we've gone in the past. In other words,
17 tried to avoid excessive -- and then if we did not
18 spend the funding from the previous rate cycle, is
19 that that money then is available, whether it be
20 bonding capacity, or the next rate cycles in order
21 to -- to try to maintain lower ratings.

22 **Q Is it your testimony that the district did**
23 **not consider this opportunity in this cycle?**

24 **A** I -- I developed a capital plan based on --
25 obviously we went to the EPA and asked to move back a

1 portion of the consent decree; so I -- the answer to
2 that would probably be no because we moved a large
3 project up and moved a program back in order to
4 maintain -- without creating a peak in the CIRP.

5 **Q Thank you, Mr. Unverferth. Thank you.**

6 COMMISSIONER HAWES: Thank you, Mr. Palans.
7 Mr. Goss?

8 THE WITNESS: Rich is fine.

9 COMMISSIONER GOSS: Do you need a break?

10 THE WITNESS: I wouldn't mind, no.

11 COMMISSIONER HAWES: Let's take a 12-minute
12 break. We'll reconvene at 3:00 p.m.

13 (Whereupon, a brief break was taken.)

14 COMMISSIONER HAWES: We're going to
15 reconvene. It's 3:00 p.m.

16 Mr. Goss, you had questions for
17 Mr. Unverferth.

18 COMMISSIONER GOSS: Just a few.

19 EXAMINATION

20 BY COMMISSIONER GOSS:

21 **Q Rich, just to follow up on one of Lloyd's**
22 **questions. In that executive summary, I just want to**
23 **make sure I understood. It's understood you have a**
24 **table D, which is all of the projects that you**
25 **identified, or the district had identified, for the**

1 capital improvements, and then you have a table C-1,
2 which is a schedule. So if I look at table D, that
3 would tell me all the projects?

4 A We're speaking of the SSO master plan?

5 Q Yeah. I'm looking at 37-C, is the exhibit
6 I'm looking at. I'm sorry.

7 A Okay.

8 Q In the appendix, there was a section D and
9 then there was a section C-1, and it looked to me like
10 D was all of the projects you folks have identified,
11 and C was, okay, this is how we schedule them to be
12 accomplished, and I just want to make sure that was
13 correct.

14 A That is correct. C-1 is the overflows that
15 are associated with those projects and the -- and
16 the -- not really the order, but in the sequential
17 buckets, we call them, that they have to come out. In
18 other words, there were certain ones we have some
19 flexibility to go from one bucket to another. Like if
20 a project slips out, we get one done early, which we
21 have done.

22 In that schedule C-1, there are some
23 highlighted ones in yellow. There's about ten that
24 those were very high activators, and the EPA said, at
25 all costs, these have to come out by 2023. Now, we've

1 been able to schedule them in there without having
2 to -- even if it meant going to that overflow and
3 providing temporary storage until we could do the
4 project, we didn't have to do that. We were able --
5 we were -- right now we're planning to have those out
6 by 2023.

7 **Q Okay. I wanted to ask you a little bit**
8 **about the tunnels that you were building as part of**
9 **the capital improvement projects. What's the useful**
10 **life of one of those tunnels? I mean, the one you**
11 **took us on the tour of was huge.**

12 **A** Yes. I -- we would generally estimate
13 that -- again, outside of the pumping station that has
14 to bring that flow out of that -- you know, in other
15 words, it's gravity in -- typically, you're looking at
16 the actual tunnel itself, you know, being in a lot of
17 cases submerged. You hope to get a hundred-year life
18 out of that particular facility. Whether we built
19 that for a hundred years -- obviously we have larger
20 tunnels that were built, you know, at the turn of the
21 century that have lasted that long.

22 Now you are dealing with a corrosive
23 environment, you know, with sanitary sewers. So
24 obviously, you know, with the -- you know, with the
25 concrete that's there that's going to be their

1 structures, obviously you would have to monitor for --
2 to make sure the corrosion or -- but as far as the
3 tunnel replacement, you're probably -- you know,
4 you're looking at a hundred years with some routine,
5 obviously, maintenance occasionally.

6 And then the pumping station is probably
7 different -- there are different lives. The facility,
8 the main part of the structure, the pumping station,
9 you're looking at 50 years. But when you start
10 talking about electrical, mechanical, controls, things
11 like that, probably 25.

12 **Q Okay. So at this point, you're not having**
13 **to put in any kind of reserve account for replacement**
14 **because of the extended life? That's not part of this**
15 **budget process?**

16 A It is -- it is not. I kind of talked a
17 little bit. We are putting into place that asset
18 management program that would do -- at a certain
19 interval do a condition assessment to try to estimate
20 the future life of, and then what would it take
21 cost-wise to bring it back or extend that life.

22 In some instances, an asset management
23 program, it's more reasonable to rely on to run to
24 failure than just say a pump ran into failure and
25 replace the pump. That's more on smaller pump

1 stations. The larger pump stations, you would
2 rehabilitate that to get more life.

3 **Q And in terms of maintaining these tunnels,**
4 **what do you have to do? I mean, what's the process of**
5 **that?**

6 A One of the things that you have to look at
7 is -- again, because they're storage and conveyance,
8 after a rain event, they may hold sewage for some
9 period of time. So you could end up with some grit
10 buildup, that type of thing. So as far as
11 maintenance, that would be -- occasionally give --
12 having to maybe remove debris in the bottom of them.
13 Particularly with a CSO tunnel that isn't used every
14 rain event, and -- and remove debris, that type of
15 thing, if you're talking physical tunnels --

16 **Q Yeah. You don't have to sandblast the thing**
17 **or anything like that?**

18 A No.

19 **Q It's not that sort of thing?**

20 A No.

21 **Q Okay. And then yesterday, you may recall, I**
22 **asked Mr. Hoelscher some questions about U City**
23 **project and the Clayton project and some social**
24 **justice issues that have been brought up. Can you**
25 **elaborate on that, the process associated with those**

1 **considerations? And specifically as it relates to the**
2 **U City project, I thought I saw that it had been**
3 **scheduled in this capital improvement program. So my**
4 **understanding is that's now been pushed back and so**
5 **what -- what's replaced that, if I'm accurate about**
6 **that?**

7 A Just a little history on the University City
8 project. The University City watershed drains to the
9 River Des Peres and comes down basically the main part
10 of River Des Peres with sanitary flow. So the
11 separate sewer area where this particular tunnel was
12 to take place is above an area which is a combined
13 sewer area. And part of the sanitary flow is, if we
14 remove overflows in the separate sewer area, we can't
15 just send them downstream and cause overflows.

16 So as we close up the system, remove
17 overflows, in order to not put those flows down to the
18 combined sewer system and cause overflows, that's
19 the -- that's the need for the storage tank. In other
20 words, we'll hold those flows and control those flows
21 so we don't cause overflows downstream.

22 So when we originally planned that, it was
23 on an area of Olive where there's several -- about
24 three major sewers came together at that location to
25 another sewer downstream, and what we were trying to

1 do is avoid replacing the sewer downstream. In other
2 words, to utilize the existing trunk sewer.

3 So we identified a location, a key location
4 there, that we could store that flow. It happened to
5 be an area that was in floodplain that was actually
6 the U City -- University City actually was seeking
7 FEMA funds and working with the Corps of Engineers,
8 and we were working with the Corps of Engineers to
9 even buy out -- there's some apartments at this
10 location.

11 Our original plan in the SSO master plan was
12 a shallow tunnel in that area kind of parallel to the
13 creek. But when we went into preliminary design and
14 did some geotechnical work, the geotechnical plan
15 would not hold up. In other words, we couldn't keep
16 it shallow enough or get it deep enough in that
17 location in order for it to work.

18 So then we looked at a method, what we did
19 in some other areas, like St. Ann and up in the
20 Hazelwood area, of an aboveground tank, where we
21 actually pump into a storage tank aboveground because
22 of the subsurface conditions that we had in that
23 particular area. And there were a number of homes
24 that flooded in that area. And we felt -- we
25 identified and we felt like -- something we've

1 similarly done is these are people that flood in a
2 hundred-year rain event. They don't necessarily want
3 to be there to begin with. In other words, the city,
4 at that time, was seeking to get some of that property
5 out of the floodplain.

6 **Q Right.**

7 A So we -- we went that route. Well, we ran
8 into resistance. They -- they came to our board and
9 said, "This isn't really what we want." So the
10 district agreed we will step back. In other words, if
11 we took those homes -- and some -- and it's different
12 in every area. Some people will be happy to get out,
13 and some people, "No. We've been here forever. We
14 don't want to go anywhere." And our board was not in
15 a position for us to -- they didn't want us using any
16 eminent domain or to be able to build this facility
17 regardless.

18 So we started looking at alternative sites.
19 And, one, because we felt like this was a good
20 location, or if we went across the street, obviously,
21 along Olive, there was a commercial lot, a partially
22 abandoned strip mall-type property, but there were
23 still some active commercial on the side.

24 Obviously, we went to the city there. We
25 started approaching the property owner, looking at

1 what a partial aboveground, belowground storage tank
2 at that location would look like. Started some
3 conversations with the property owner.

4 Well, then there was some concerns on the
5 part of the city, what would that do to future
6 redevelopment? So we had an area where they -- we
7 kind of pulled back and said, "Well, we're not going
8 to go in this area that floods. We don't want to be
9 in it." So what we did, and the district agreed and
10 with our board agreed, we would go back and take a
11 look. Because the city was pushing us to say, "Can
12 you put this anywhere else?"

13 And so it took some additional work on our
14 part and our consultant to look at what other options
15 might exist and potentially moving downstream. One of
16 the issues of moving downstream is that there's more
17 flow that comes in downstream of this location. And
18 part of that is a combined sewer area so we had to
19 look at what that might look like, potentially
20 increasing the size of the tank.

21 So right now we are doing some -- in other
22 words, we pulled back. We're doing some preliminary
23 analysis for the potentially putting this belowground
24 in the Heman Park. So that's kind of where it stands
25 right now. We worked pretty hard with U City. Right

1 now we've just got an agreement to do some preliminary
2 borings. Again, similar to the site up there, we have
3 to make sure if we build an underground storage tank,
4 is there -- what's down there?

5 **Q Right.**

6 A So right now, we're doing some preliminary
7 analysis. In addition to that, there is a -- one of
8 Mr. Brockmann's future tunnels, there's a combined
9 sewer tunnel in that area that's later in the combined
10 sewer program to capture combined sewer overflows.

11 Now, we have -- we can't combine those
12 together because that's combined sewage, and this is
13 strictly a sanitary storage facility. But we are
14 looking for whether it makes sense to sequence some
15 operations or some of that construction. If we're
16 going to be in the park, let's be in there one time;
17 let's not be in there more than once.

18 So that's -- that's really where it stands
19 right now. Very -- it's what happened there is not
20 uncommon. You know, we -- again, we developed a
21 conceptual plan that we thought was going to work.
22 It's -- it's not as simple as, oh, we're going to
23 realign the sewer to avoid it because it's such a --
24 it's such a facility. And, again it was a -- you
25 know, a residential area.

1 **you mentioned the tunnel that's going in along River**
2 **Des Peres, the big -- the next tunnel. When is that**
3 **scheduled? Is that scheduled to be done during this**
4 **rate cycle? Or because of the consent decree, has**
5 **that been pushed back to the next rate cycle?**

6 A We -- we have basically slid that back to
7 just outside. In other words, that would start in the
8 next rate cycle, and then we'd -- and we had
9 planned -- that's -- the large tunnel would start
10 then. And in that rate cycle is when we have the
11 incinerators, planning to do that towards the tail end
12 of that construction. That's about a six-year
13 project. So we basically just flipped that. And
14 because -- when we move that tunnel back, it would
15 have been on top of another CSO tunnel, we just slid
16 the tunnel -- the three CSO tunnels, we slid those
17 back to five years, and we got the extension on the
18 consent decree.

19 Q **So that next large tunnel -- you know,**
20 **obviously the Deer Creek is the first big tunnel. The**
21 **next big tunnel will be after this rate case. It'll**
22 **be in a subsequent rate case?**

23 A Correct.

24 Q **And your funding model takes that into**
25 **consideration as far as what's going to happen?**

1 A Yeah. I don't know --

2 **Q At the end of the five-year cycle?**

3 A I don't know how much -- I think it's all
4 within the rate model. I think we provided eight
5 years of -- and I'm going to look back to Marion to
6 find out.

7 THE WITNESS: Did we provide eight years of
8 CIRP, or just in the rate proposal?

9 MR. GEE: In the proposal itself.

10 A In the proposal itself is four years, but I
11 think in the model, that revised CIRP is -- in other
12 words, moving that tunnel is in the model itself.

13 **Q (By Commissioner Toenjes) Okay. I guess I'm**
14 **just concerned that we don't see -- you know, when we**
15 **get another big project like that come online, that**
16 **we'll see a big spike, I guess, when we get to that**
17 **point.**

18 A No. We -- we -- in other words, actually --
19 that actually allowed the CIRP to level out by sliding
20 it back, simply because that -- we're still in this
21 next rate cycle, or -- yeah, this next rate cycle.
22 There's still a significant amount of sanitary sewer
23 overflow work. In other words, we have that 20 --
24 deadline, but the bulk of the SSO sanitary sewer
25 overflow program was in the first 10 years.

1 BY COMMISSIONER SCHOEDEL:

2 Q Mr. Unverferth, you stated for Mr. Palans
3 that the number of non-CD projects are starting to
4 increase?

5 A At least in this next rate cycle. We --
6 there were a couple of large projects that came to
7 fruition in addition to the -- the normal what we've
8 seen.

9 Q So the original rate models in this to
10 comply with the CD developed in 2012, how much asset
11 management was included at that time?

12 A Don't hold me to this, but I think at the
13 time, we typically put -- I thought we set it at like
14 25 million annually, and then -- and there was a year
15 after, about 15 years, we upped that to 50 million
16 knowing that we were going to see obviously some of
17 our collection -- some of our treatment plants
18 reaching useful life at that time, and that was --
19 from what we knew at that time. And I -- I don't
20 recall if that original model, we had placeholders in
21 there for -- even at that time, we knew nutrients were
22 coming. I would have to go back and look at the
23 original model. I do not believe we did it for that.
24 I think we just --

25 Q Once all the CD projects are complete, and

1 **assuming no more additional regulatory requirements,**
2 **what do you think your annual asset management book**
3 **will be required to take care of the system, knowing**
4 **that you no longer have good wood sewers, as**
5 **Mr. Hoelscher mentioned, in the system?**

6 A I'd -- she's getting me to refer this to
7 Bret. I don't know if Bret would have an answer.
8 I -- it would be difficult to sit here -- I think I
9 would have to put a little thought to it, to that, to
10 what I think that might look like. Particularly at --
11 if you ask me four years from now in the next rate
12 cycle because of some of the things we're doing on the
13 asset management side, and Bret can probably elaborate
14 on this with regard to condition assessment at our
15 major -- obviously the treatment plants are the big --
16 not that sewers aren't a big dollar amount because
17 they can be, but I think we can program that at a
18 level.

19 A A treatment plant, there could be potential
20 for just like this one, you know, a \$20 million
21 project that could come in. And by doing this asset
22 management program where we're actually being able to
23 prioritize that, I'm not saying we will be there in
24 four years, but it's where we want to go.

25 Q **Well, ending with this, there's**

1 **affordability, and hopefully rates would go down**
2 **eventually once all these project are done. But I**
3 **think it really determines what your ongoing asset**
4 **management will be with the system that's not made of**
5 **wood anymore.**

6 A Very -- very good point. I agree.

7 THE WITNESS: Okay. Mr. Toenjes, we -- the
8 rate proposal does go out for eight years. Table 7.7
9 on page 7.115, and -- and it does include the tunnel
10 starting with the next rate cycle.

11 COMMISSIONER TOENJES: Thank you very much.
12 I appreciate that.

13 COMMISSIONER HAWES: Any other questions
14 from the commission?

15 Yes. Mr. Brockmann.

16 EXAMINATION

17 BY COMMISSIONER BROCKMANN:

18 **Q I realize your incinerators need to be**
19 **replaced. But have you ever spent any time**
20 **investigating using a byproduct or something like**
21 **Milwaukee does?**

22 A We -- we are as -- in our discussions in the
23 development of the biosolids, our overall biosolids
24 handling for the entire district, we're looking at two
25 things as we move into more design program part of the

1 incinerators. We're looking at potential uses for
2 waste-E, both within the plants and adjacent to the
3 plants. There are some folks adjacent to Bissell that
4 could potentially have a use for waste-E and steam
5 for -- for their processes and projects that they have
6 there.

7 So we have had some preliminary discussions
8 there. And obviously the byproduct of the ash from
9 the incinerators and the use of that ash, particularly
10 in concrete products, things like that. But there
11 definitely will be things that we will look at and
12 design it such that that those things are taken into
13 consideration.

14 COMMISSIONER HAWES: Any further questions?

15 Ms. Myers, do you have any questions for the
16 witness?

17 MS. MYERS: No, we do not.

18 COMMISSIONER HAWES: All right.

19 Mr. Unverferth, thank you very much.

20 THE WITNESS: Thank you.

21 Ms. Myers, if you'll call another witness.

22 MS. MYERS: Our last witness is Bret
23 Berthold. He's the director of operations.

24 COMMISSIONER HAWES: You may come forward
25 Mr. Berthold.

1 (The witness was duly sworn.)

2 COMMISSIONER HAWES: Thank you very much.

3 Does any member of the Rate Commission have
4 questions at this time for Mr. Berthold?

5 Ms. Jones, do you have any questions for
6 Mr. Berthold?

7 MS. JONES: Yes, I do.

8 COMMISSIONER HAWES: Please come forward.

9 EXAMINATION

10 BY MS. JONES:

11 **Q Good afternoon.**

12 A Good afternoon.

13 **Q I just have a few questions.**

14 **As I understand it, the rate proposal rates**
15 **are less than what was projected in 2015, and this**
16 **was, in part, because of operation and maintenance**
17 **costs being less than what was projected; is that**
18 **correct?**

19 A Part of the reason they're lower, yes.

20 **Q Can you explain the basis for those lower**
21 **costs?**

22 A We have made some changes to our CMOM
23 program that have lowered costs for us to maintain --
24 inspect and maintain our sewer system.

25 **Q Do you have an idea of what the overall**

1 **reduction was from what was previously projected?**

2 A It was approximately a million dollars a
3 year in operational costs year over year.

4 **Q And you said that operation and maintenance**
5 **costs was a part of those lower projected rates. Are**
6 **there other -- what are the other things that went**
7 **into those lower costs?**

8 A Recently we've seen a reduction in
9 electrical costs; so going forward, we didn't see
10 our -- the amount of electricity and costs associated
11 with it going up as rapidly as we had previously
12 projected.

13 **Q Thank you. That's all.**

14 COMMISSIONER HAWES: All right. Thank you,
15 Ms. Jones.

16 Mr. Malone, please, do you have any
17 questions?

18 MR. MALONE: Yes, I do.

19 COMMISSIONER HAWES: Okay. Please come
20 forward.

21 EXAMINATION

22 BY MR. MALONE:

23 **Q Good afternoon, Mr. Berthold.**

24 A Good afternoon.

25 **Q Do you have your direct testimony with you?**

1 A I do.

2 Q Okay. Regarding question 13, you testified
3 that there was a record low number of basement backups
4 in 2018. Do you have the raw numbers how many there
5 were?

6 A I do, and I could supply those for you. I
7 don't know them right off the top of my head. I
8 believe it was just 150.

9 Q Okay. And you compared those to the
10 historic levels. Do you have a sense of what the
11 numbers -- what the historic high was?

12 A I don't know what the historic high was, but
13 it was north of a thousand.

14 Q Okay. And do you remember when we were at,
15 roughly, a thousand backups?

16 A Yes. It was prior to the start of the
17 consent decree.

18 Q Okay. Can you describe what steps you
19 attribute to the decrease, or what actions or factors
20 you attribute to the decrease?

21 A We have a proactive inspection and
22 maintenance program. It's call our CMOM program that
23 we execute on a daily basis that is driving those
24 numbers lower.

25 Q Okay. And you anticipate further reductions

1 **as the -- as the consent decree goes on?**

2 A Minor reductions. You know, we started out
3 at a very high number, and we're kind of reaching the
4 view of the curve where it's harder and harder to
5 reduce those. It is weather-dependent as well. In
6 2018, we had a relatively dry year versus what's going
7 on right now. So it is weather-dependent, but our
8 CMOM program is driving those numbers down.

9 Q **And a similar question regarding the dry**
10 **weather overflows. You've got those down -- down 50**
11 **percent over historic levels. Do you anticipate**
12 **further reductions there?**

13 A I would foresee further reductions as we
14 continue with our maintenance program, and it's also
15 as the engineering department constructs and builds
16 larger sewers and everything like that, I would
17 foresee for those to go down.

18 Q **Okay.**

19 A They'll never get to zero, though.

20 Q **I see. And as to the historic levels, do**
21 **you have those figures available?**

22 A I have them available, and I'd be happy to
23 provide them to you.

24 Q **Okay. Is that also right before the consent**
25 **decree, we were at the historic levels?**

1 A It's -- you know, we've had for a long time
2 very high numbers. As we've improved our maintenance
3 program and proactively inspected our sewers, those
4 numbers have been driving lower and lower every year.
5 But, there again, there is some variability just due
6 to weather and circumstances.

7 **Q I see. Okay. I think that's actually all I**
8 **have.**

9 COMMISSIONER HAWES: Thank you, Mr. Malone.
10 Any questions from the commission at this
11 time?

12 Hearing none, Ms. Myers, do you have any
13 questions for the witness?

14 MS. MYERS: I do not.

15 COMMISSIONER HAWES: Thank you very much.
16 Are there any matters to come before the
17 commission before we adjourn?

18 COMMISSIONER TOENJES: When is our next
19 meeting scheduled?

20 COMMISSIONER HAWES: That's a good question.
21 When is our next meeting scheduled?

22 Mr. Malone.

23 MR. MALONE: May 9th.

24 COMMISSIONER HAWES: May 9th for rebuttal
25 testimony is our next meeting. Do we have a motion at

1 this time?
2 COMMISSIONER GOSS: Motion to adjourn.
3 COMMISSIONER HAWES: Second?
4 COMMISSIONER CROYLE: Second.
5 COMMISSIONER HAWES: All right. Motion
6 seconded. All in favor?
7 (Chorus of ayes.)
8 COMMISSIONER HAWES: All right. We are
9 adjourned.
10 (Whereupon, the MSD Hearing was adjourned at
11 3:30 p.m.)
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REPORTER CERTIFICATE

I, REBECCA L. TUGGLE, a Registered Professional Reporter, Certified Court Reporter, and Certified Shorthand Reporter within and for the State of Missouri, do hereby certify that the MSD hearing held on April 9, 2019, commenced at Metropolitan St. Louis Sewer District, 2350 Market Street, Room 109, St. Louis, Missouri 63103; that said hearing was reported by myself, translated and proofread using computer-aided transcription; and the above transcript of proceedings is a true and accurate transcript of my notes as taken at the time the proceedings were had.

I further certify that I am neither attorney nor counsel for nor related nor employed by any of the parties to the action in which this hearing was taken; further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto or financially interested in this action.

Rebecca L. Tuggle, RPR, CCR, CSR

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