

Public Utility Committee Meeting Transcript – 10/21/2015

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>> Garza: Good afternoon. My name is Delia Garza, I'm the chair of the public utilities committee. I'm going to go ahead and call our meeting tomorrow. It is 3:07. We're meeting at the chambers at city hall. The first item is approval of minutes. I'll entertain a motion to approve those minutes. We'll get back to the minutes. We'll go to citizen communication. And I have -- these are folks who can speak on any issue that's not on the agenda. And the first one is Sharon Blythe. >> Good afternoon, council people. My name is Sharon Blythe. And I live in northwest Austin along spicewood springs road. We have a wastewater lift station at the entrance to our neighborhood. That water utility was supposed to refurbish where we wouldn't have any problems with like overflow into bull creek, which is about 20 feet away from the lift station. They went off and signed an letter of agreement with the neighborhood, went off and engineered it, but the way they engineered it is they engineered it specifically where all the sewer smell is now wafting into our neighborhood up the hill. They put in big huge pipes about 10 feet in the air with no scrubbers and no mitigation for the smell. We have been gassed basically out of our neighborhoods. And they are now out there working, but they seem to be scratching their heads on what the solution could be. My concern is why couldn't they have done it right the

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first time rather than us having to come to city council and complain about the smell? That is completely irresponsible for the citizens for water utility to do that. They're double billing now because they have to do work. That makes no sense to me. I hope they can get it resolved, but I want to put it on your radar screen that water utility does want to perpetually doing things two or three times to do things right. So I would hope that Greg ma stars on and the water utility folks would get this done as soon as possible to bull creek cannot con tomnated, our neighborhood is not contaminated and the situation will be resolved. Thank you very much. >> Zimmerman: Hang on before you go. You're in district 6, right? >> Correct. >> Zimmerman: The cynic would say that you shouldn't be complaining because Austin water does not charge you extra for the stink, right? >> Right. >> Zimmerman: Seriously, we do need to get it fixed F we have a case open we'll just stay on that. Sorry for the inconvenience. But this was part of the mud acquisition. There was an annexation out there and there used to be a mud. >> Years ago in 1997 we were annexed by the city with the promise that the city would take care of all of our public utilities as well as police and fire, but little has been done in our neighborhood quite frankly since they annexed us. And we live in a kind of middle class neighborhood, but we pay a lot of taxes to the city and would appreciate it if the city would come through with their end of the deal by taking our tax dollars and not giving much back. Thank you very much. >> Zimmerman: But there has been a lot of infrastructure work. That whole area was torn up and there was a new sewer drainage area not far from where I live in

canyon creek. I know there's a lot of money to be spent, but there's more work to be done. >> And obviously the water treatment plant tunnel went

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right by there too. I guess you would call that infrastructure too, but I think it's a problem that is done and through now, I guess, for the water tunnel, but our neighbors took exception with that being built right there too. >> Zimmerman: Okay, thanks. >> Garza: Mr. Anderson, you're next. >> Councilmembers, my name is Dave Anderson. I'm here to just talk briefly about telecommunications infrastructure and the public right-of-way. As most of you know we tried to get a discussion about this item put on the agenda for this committee and so just kind of wanted to touch briefly on -- how do we make this work? I can just go through it right now. There we go. Just real quickly, this slide should serve as a baseline slide that tells you how fast mobile bandwidth needs are growing in Austin. One point that's really important to see is that 70 percent of all 911 calls, this is a nationwide stats, originate from wireless devices. This is a quick picture for one carrier of coverage in the downtown area. You see the yellow, which is poor coverage. I took the liberty of imposing some A.P.D. Data. This is theft data from 2013 to 2015. So you can see potentially where there may be issues associated with poor coverage, or in this case

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this is through-put or capacity. Again, same data superimposed. So we may have a little bit of a problem there. I can go back to that if you would like, councilmember. >> That's okay. >> I'll come back to it afterwards. Not only is there potential for public safety issues associated with inadequate wireless coverage, but there's a competitiveness issue when we look at our peer competitor cities throughout the country. Obviously wireless access is important to them. Small cell solutions, the client that I represent is crown castle. This is one way to get around that to address that need specifically. You can see the picture, it's pretty self-explanatory. These networks are focused on areas where there are a lot of people using a lot of devices, downtown areas, stadiums, et cetera. They can look at a variety of different ways. I'll draw your eyes to the cactus. I think that's very interesting, but that tells a little bit of a story about how they can be fit into a number of different environments, whether that's our great streets environment or whatever. They can be tailored to meet different city's needs. Here's a brief bulleted list of what crown castle has done with the city of Austin. We've briefed each of your offices on it in the past I don't want to belabor it. And we'll end with this just wanted to make this committee aware of the needs, especially in downtown Austin, make you aware that crown castle has spent significant time and money investigating potential solutions via their old franchise agreement with the city.

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If there was -- since there is a need downtown and if there was an impetus to put something in place prior to or along with the development of this larger process that the telecommunications regulatory affairs, Austin energy, et cetera, is undertaking, it might make some sense. It serves an immediate need and it actually may inform that process if this is a shorter duration. It may inform the process so you end up with a policy that's more robust than if you didn't have a [indiscernible] To float. Our request is to try to get an understanding of what that process is like, just the process. How long is it going to last. We would ask that the committee consider getting an update from telecommunications and regulatory affairs at the November meeting. That's it. Thanks for your time. >> Garza: Thank you. Yeah, my staff said that we were considering putting it on today's agenda, but we spoke with staff and staff said they

were coming up with a policy or a presentation to present, so that's why we didn't. But we can continue asking questions to see when we can get this on the agenda. >> Absolutely. Understood. >> Zimmerman: Just one quick question. How does the Google gigabit ether net rollout potentially affect bandwidth congestion? I understand they're behind their schedule, right? So have they rolled any gigabit ether net out? >> I can't answer that. We're unsure. Certainly there are different carriers that each have their own capacity and coverage needs. So if you looked at different parts of the city, my AT&T coverage may not be my neighbor -- same as my neighbor's Verizon coverage. It may be different than my

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daughter's sprint coverage. So you think you can dance overall you want to get a web that works for the majority of citizens of your constituents or visitors to the city, et cetera. >> Zimmerman: The 4 glte I've tested some of the speeds and they're staggering. I've gotten 40 mega bits, 100 mega bits per second, some bursts, so it seems like some of the internet options that are wire based are actually slower than some of the LTE stuff now. So -- >> Yeah. I think it depends on where you are. >> Zimmerman: Depends on where you are. If we we got more gigabit ether net rollout that might ease some of the demand on the other networks. >> And let me make this clear, that crown castle is at the end of the line in wanting to participate and rollout this larger policy, but we think that there may be a need, and it might make sense to address downtown issues more quickly. But I'll leave it at that. Thank you very much. >> Garza: So next item on our agenda is, 3, discuss possible action regarding water utility billing issues. And we do have speakers signed up. We don't normally have -- this was put back on the agenda for a report back from the water utility because there were so many concerns. We had a full public hearing last time. We don't normally have two, but there's not a lot of people signed up so we'll go ahead and listen -- hear from all the speakers. I'll go ahead and start hearing speakers. >> Zimmerman: Could I move that we approve the minutes? We did get them and we can get that done. I move that we approve the minutes. >> Garza: Second to that? >> Houston: Second. >> Garza: All those in favor of approving the minutes say aye? That passes 4-0.

[3:19:23 PM]

The first speaker is Vicky couch. And is Tom couch here? You have six minutes, Ms. Couch. You can start. >> Thank you. Councilmembers, my name is Vicky couch. And I am secretary of the renewed green slopes water wastewater solutions committee. The hoa issues were brought before you September the 16th along with some graphics that depicted the sporadic usage that our committee was being billed. Since that meeting Austin water has been, per -- per your direction Austin water has been on our property numerous times with detection equipment seeking underground leakage. Austin water expressed concerns to us regarding the pipe distribution center within our community, primarily because certain pipes have been capped in undeveloped areas. I do want to thank several people for their cooperation and their help. Alice flora, division manager, consumer services division. And Rick Coronado, assistant director at Austin water. They were so helpful and so cooperative. Thank you very much very much. As of last Friday there were three valves on the property that were not located. Leakage was suspected, but not confirmed. Eliminating the areas Austin water checked for leaks, several members of our community Saturday went into an undeveloped area that is part of the property adjacent to our grounds in an attempt to find a possible leak in the community. They did discover water in a hillside about two hundred feet inside the woods. With a bit of manual work

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they uncovered a one inch pipe and a broken valve pouring out underpressure a full one inch stream of water. It was truly unbelievable. An emergency crew from Austin water was called out and investigation by them confirmed the pipe was a part of the hoa distribution system, however Austin water at the time would do nothing about the leak because we are a planned unit development. Sunday a plumber was called out and with the help of members of the community the area where the leak was found was exposed so that water to the community could be cut off and the one inch pipe capped and the leakage stopped. And as you can see this is the flow of the water. What is the purpose for my presence here today? We still have two valves to find. On Saturday the Austin water crew displayed a gps program showing our hoa's distribution lines in exact detail. In order to locate the two remaining valves or caps, Austin water said that we have -- to avoid future leaks on this scale the hoa would like to obtain a copy of the data that Austin water has so that we can quickly locate the valves and caps. The complexity of such a request requires a contact within Austin water to explore the method of obtaining this information. Would you please have -- could we get directed to a person where we can get assist in this regard. Second and most important now the leak has been stopped. The biggest issue we face is one of paying for unused water and wastewater. Our reserves have been depleted and we now face a special assessment which will be a huge burden on the residents of our community. Again, nothing has changed from report in September except we found the leak. We still have a huge water, wastewater consumption in the millions of gallons in the last three months is not sporadic, but consistent. This leak has developed for the past year and we have struggled to pay for it. There is no way we could have known the location of the leak if Austin water could not find it with their

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technology, how was it possible that we would discover the leak? We tried -- as we previously told you, we checked homes, we checked our grounds. We could not find it. To get some perspective, based on our water consumption in 2014, each month was average of water used was 500 something gallons of water. In 2015 there was an increase up to over nine thousand. In 2015 through October the increase was 3824 gallons of wastewater in 2015. Based on the paper Billings of due dates of January the second through 2015 through October 7 we have paid Austin water \$128,480 for water and wastewater. This does not include late charges. It also does not include the bill that we have due on November the 2nd, which is \$17,670.48. In reviewing the paper bills available there were instances of double billing, estimated meter readings and questionable reading data. -- Dates, I'm sorry. The demographics of our community have not changed. We do not have an irrigation system, lawns, watering pools. Few families with children reside. We are -- in our community we are residents of Austin. We pay our property taxes on our homes. And even though we do not receive full benefit of the city of Austin services, we pay our utilities. We heard the director of Austin water stilt at the September 16 meeting reapply to a meeting asked what happens if the leak was not discovered? We heard if there was a substantial surge in water usage the individual would

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be flagged so there usage would be checked. This has not happened in our case. In our original presentation in September 16th, we requested a satisfactory rectification of the inconsistent water billing from Austin water. At this time we kindly request that Austin water provide us with a past use history in order to determine an accurate average total usage. We believe this information will be useful for two reasons. [Buzzer sounds] One, calibrate and adjust our present debt in accordance with -- I'll hurry up. I won't take a minute. Adjust our present debt in order to determine a fair compensation to the hoa for these high buildings. This may take a form of direct reimbursements or overpaid funds or

realistic adjustments in our current our future billing. They would help compensate for the significant difference between the historical average and the unprecedented surge in recent buildings. These adjustments would now be more realistic primarily due to the newly discovered leak and any other possible inconsistencies not yet discovered or discussed. And just quickly, ladies and gentlemen, our community's survival is in your hands. We ask for your help to assist in the quality of life in our community and to provide ownership of our own homes. We thank you very much. >> Garza: Thank you. I received an email late yesterday that the leak was just discovered recently. >> Yes. We went in on Saturday, eliminating the areas that Austin water had been. We went in to a very remote wood, brushy area to look for this leak. It's an undeveloped part of the property that at one time was supposed to have houses on it. So some of the members of our community went back there and they did find after macheting through all this, they found of all things -- I thought I read that part. They found -- okay. They found, like I said,

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an -- they uncovered a one inch pipe and a broken valve pouring out under pressure a full inch stream of water. That is the pictures that I showed. It was unbelievable. When they brought out the plumbing people and they actually dug down in there, this thing has been flowing for a year. Maybe not at that rate, but it has been leaking since January of 2015. And it's just unbelievable the water. >> Garza: My understanding is that the water utility will work with the billing when a leak is discovered. Is that correct? I don't know if anybody from the water utility -- >> That's what we were told here at the meeting by the director. >> Garza: Okay. Since we're in citizen communication, though, we'll hear from the rest of the speakers, but when you come and present, Greg, I'll have some more direct questions. That is my understanding and we will have somebody work with you while you're here. >> Okay. Thank you. >> Zimmerman: Hang on a second. Before you go a quick question about the data here. The reason I was skeptical of that is there are two readings here you notice in may of 2015 and June of 2015 that show these very, very low Numbers of 222,000. >> May I say something? I have no knowledge of this report. This was not done through the committee. So I'm not real sure -- >> Zimmerman: Somebody has their hand up there. >> [Inaudible - no mic]. >> Zimmerman: These Numbers may be incorrect, is that what you're saying? >> [Inaudible - no mic]. >> Zimmerman: They are correct. I'll still confused. We'll pick it up later. >> Garza: The next speaker and is Margaret braddick here? You will have six minutes, sir. >> I want to start off when I made this presentation it was based on fact that we did not find a leak. We could not find a leak.

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As Vicky couch is from the neighborhood as well in the community, she informed us that -- has given you the facts that there was a leak found. So that was on Saturday at about one P.M. Where myself and the hoa president, Cody, walked around in the woods and I actually heard running water. So we found cascading down the hill -- I can't give you estimates of how much water, but a lot. Where there was a lake on the ground underneath in a ravine. So I had a presentation I'm going to give, but I'm going to forego that since it runs about seven minutes. I'll just go off my sheet of paper that I've given you. Average use per home of four people can be estimated at 250 gallons of water per day with habitual use for daily necessity. 250 gallons a day can be factored to equal roughly 1700 gallons per month for a single home. 7500 gallons per 109 occupants of green slopes equals 1816 gallons a month. We're assured this is a maximum for green slopes for we have homes occupied by three, two and single persons. An average of under 600 gallons per month, give or take about 20,000 gallons for an entire year of 2014 for about 209 units, as seen by this pie chart, you can see the average is rounding -- for each

month and how they're equal throughout the whole year. Until you get to December 2014 where we jumped up at about 1,258,000 gallons and you can see that's just double what we're -- our average is. The next page you can see just prior to signalling of new digitized meter the water huge jumped to 1,258,000 and then down and

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then up again. It was a huge decrease in reading and then up to above Normal average to an increase of roughly double the amount of 500,000 plus gallons per month. As you can see on the spreadsheet, you see where in the first row it says 61700 is a Normal average and then up to a million and then down again. And this is why we couldn't fathom a leak. So then it jumped up again. And then in may and June we jumped way down our Normal average. And then up again. So we were confused on these averages and how it figured into our thinking as far as a leak. And usage because it doesn't add up for our community since we don't have irrigation and since we don't have a pool and so forth and so on. That we're only factoring Normal necessities. I'll turn to the next page. We wanted to also point out the difference in gpm was noticed to be about 20 gallons per minute. Increases shown below on water it was invoice for the month the new digital meter was installed. You can factor in the figure and factor out that it was well to 20 gpm. So you also see when the new meter was installed, there's two meter reads. The first was 110963 and the second was 34532788 which was the digital meter. And when it started off it was at 20. So I believe in the seven-day period prior to them taking out our old meter, they actually I guess tried to figure out what our average gpm was. And then started off the new meter at our new average, which was, I guess, 20 gpm. I've done some research on the new meter and octave

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ultrasonic meter and it is equipped with an alarm. As per the instructions that you can download from their website, you can see that it says prior to installation check the following, the flow rate and volume units are correctly programmed, the flow meter is correctly installed per the install lace, location and position recommendations. I'll skip to the next -- on the installation notes of this PDF that you can download. It says the measuring tube should be completely full at all times for proper flow measurements. When sensors are not wet this will show a loss of signal. And even down further it says to avoid measuring errors and malfunctioning of the flow meter, due to air or an empty pipe, please observe the following precautions, installation of the flow meter should be at the lowest point of the system if possible since air will be collected at the highest point of the system. I do want to iterate that this meter is at the highest point of our system. Where we found the leak that is actually at the lowest point of our system and so as we slope down, the pipes also slope. So at the highest point the meters installed and then at the lowest point where we found our leak. Meter readings over specific daily time frames compared with readings for monthly 2014 averages in gallons per minute suggest that the flow rate has either been altered or the system has been opened at other end to allow free flow. I want to iterate that was prior to us finding the leak. But I wanted to say that through my research we found that every single day in October we ranged about 30 to about 50 gpm, gallons per minute. As of last year executively the months -- consecutively the months show that we ranged about 11 to 13 gallons per minute. [Buzzer sounds] So from the uses seen above Normal at 30 plus gpm it can be advised that this

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increase was due to a leak later found by green slopes. I think it's important and imperative to also discuss that we have two unused meters installed. At the upper end of green slopes at yucca hill point

we have a meter that reads about 100 to 200 gallons per day which we don't understand if it's back below, if it's reversing and putting water back into the city mains, but we are being charged for this reverse flow. And we would like to request that another master meter is installed at that location. So green slopes would like to understand why this meter has not been upgraded. We would also like another to measure forward and reverse flow accurately so we are not charged for the water returned to city mains. And I did provide details as far as the invoices where three times we were billed for that extra meter. >> Garza: All right, thank you. >> I'll leave it at that. You have the documentation. >> Garza: Okay. We'll ask some questions of staff in a second. Richard Hoss. >> I'm a resident of Green Slopes. I spoke last time at the meeting they referred to. First I want to thank this committee for prompting some action that we could never get from the water department. However, in the immediate visit we had by the leak detection person and according to him he's the only leak detection person with the city water department. In his two days out there, actually it was a longer period because they

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installed these devices on the valves and came back after the weekend to see what the readings were. We were told by that person and also by an subsequent email that there was no leak. That was revised later on saying there was probably a leak, but with all the sophisticated equipment they were unable to find the leak. We had to find it through plain old-fashioned beating the bush. Also we were told there was a main priority over there to come out and find these valves that we could not find and have no plans or maps showing where the valves are. In the two days the people were out there looking for the valves, most of their time was spent coming to me asking me if I could show them where this was or where that was. And there was actually no valve discovered. The only valve that was discovered was the one broken off at the pipe where the leak actually was. And the only way I can describe that leak is the amount of land that was washed away by that water going downhill, the erosion was incredible from that leak. And you could hear it from quite a ways away. I think the original estimate of 200 feet from our actual property lines is probably a little short. I think it was farther than that out. But anyway, we have fixed the league. We can't wait -- we're taking readings now ourselves to make sure that that's showing up properly. And we can't wait to see how the water department is going to respond to their promise of working out something as far as rebates either through changes in the billing and whatever for the water that was wasted, and the wastewater I might add because we've been billed for wastewater according to the water, when the wastewater was -- there was no increase in wastewater at all. And I guess that's all I

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really have to say. >> Garza: Thank you. Do you have a question? >> Zimmerman: Quick question. I think the one very legitimate concern is the wastewater billing, but obviously the -- if the leak is on the green slopes' side of the meter, I think everybody recognizes that was the huge problem. But I think you do have a point about the wastewater because wastewater is estimated presuming certain percentage of the water that goes through goes into the sewer system and obviously we have -- some quaint final data Tuesday what was not going into the sewage system. >> And the wastewater charges that we've experienced over the last year have been greater than the water so it is a bigger part of our billing. And we still have a concern about with the leak why we saw the spikes that we did see in our usage and our billing. It was a leak would normally not cause that kind of spiking. We don't understand that. But we're happy to have found the leak. We're happy to have taken the initiative to do that. And appreciate the committee's help in getting us attention from the water department. >> Zimmerman: Those two readings in May or June with the dramatic reduction in usage, if we're to believe those, that's proof that

there is no leak. That's what's so crazy about that. >> That's what led everybody to think there was no leak, including the city. That was hard for us on he owe and I've got to admit, I was a strong campaigner that no, this is not a leak situation. I believed that it was not -- mostly on the strength of those spikes and also on the strength of having walked the entire grounds, the populated grounds myself with the president of the association, and found nothing that -- none of the green grass situations or anything like that that indicates a leak. So between that and the spikes, it was like no, we don't have a leak problem here. There's something else going on. We're hoping that's all it

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is. We don't know yet that's all it is going on, but yes, there was a leak and yes, we have fixed it. >> Garza: Thank you, sir. >> Thank you very much. >> Garza: Barbara -- I'm going to mispronounce this. Flaley. >> Thank you. Barbara sally, lost creek. >> Garza: You have three minutes. >> We spoke last month. Austin water utility director Greg me star rose loses credibility for us when he makes the following statements. He contributes our complaints in lost creek, we have over 200 of them, to weather and to our unfamiliarity with the tiered rate structure. We've had a tiered rate structure for years. Our mud put that in specifically so that we would get used to that before being annexed by the city. And his failure to check that simple detail is a problem. He attributes our complaints to pools. Pools do not cause unexplained surges in bills unless you have both an automatic fill and a leak. Wastewater. Our wastewater was to be a fixed amount based on an average of our winter use. Our wastewater charges in fact are all over the map. History. Austin water staff has informed us that although they asked for our mud data, they refused to import our mud history into their system. It makes it pretty hard for the automatic systems that are so highly vaunted by them that will trigger an automatic investigation to an unexplained Ano, ma'amulous bill. Those won't be triggered without any history. And to make matters worse these erroneous bills are

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becoming our only history. So next summer when the city of Austin needs money to be put in the general revenue again, Austin water will turn to us and say look, you always used 35,000 gallons a month in August, every month that you've been with the city you have, all one month of that. In addition, your rates are too high. You're turning over 40.8 million into the general revenue from Austin water and almost 150 million from the utility's total. You're supposed to be charging to deliver the product and for the infrastructure, not for huge amounts to go into general revenue. We ask that you take us seriously. We need significant and widespread relief. Otherwise you tie our hands and we'll be forced to pursue remedies that other entities all over the city are pursuing against the city of Austin successfully. Finally, I would ask that given that Austin water has said they don't want to make money, then adopt councilmember Zimmerman's proposal that refunds be made as a gesture of goodwill and as an important first step. Thank you. >> Garza: Thank you. Madeleine Connor. You have three minutes. >> Thank you. Good afternoon. And thank you for allowing us to speak again. We know it wasn't an ordinary thing to do. And we met with Ellen troxclair last Sunday and she very graciously said she would try to get the opportunity for all of us to speak on this very important issue. Again, since last month we haven't had any relief for our some 200 residents in the lost creek neighborhood who have been suffering from

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these anomalous bills. They have been unexplained by Austin water and the director's explanations are

bordering on insulting and they are not logically grounded. That a single mother called me-- I'm neighborhood association president also. A single mother called me the other day and said, you know, I got a 1,600-dollar bill. I got an 800-dollar bill and I got a zero-dollar bill, all in my mailbox yesterday. Completely illogical. There could not be -- she said during the month in question that she received those bills that they weren't even there. Her kids were in camp. Maybe it wasn't just -- she said she got them all at one time. Her kids were in camp, she wasn't there. She's a single mom. She can't pay these. She says, I called and I got this person on the phone who is obviously reading a script. It's the same old story. Well, it's really hot. And you must have used -- you're not used to the new billing structure. Which is just more deflection, more dog and pony show. These people need relief. I got a call from another gentleman, their house was completely vacant for the time in question. They bought it, were going to fix it up and move into it. They had such a horrible experience that they received a 2,300-dollar bill for the month the house was vacant. Ms. Couch, who I never met before from green slopes, the same thing happened to us on Sunday. We got -- next door just exploded with pictures of water that is all chalky looking just rushing down

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into the creek. I wish I had been more prepared like Ms. Couch, but our pictures could have been their pictures. They looked the same. So all of this suspicious, very change, unexplainable, certainly not explainable by the director's theories of recent weather conditions and blocked rate structures does not explain this. [Buzzer sounds] These people need immediate relief. They need somebody -- for Austin water to say okay, we're going to put a voluntary stay of your obligation to pay these bills and we're going to do it retroactively. Because there's no explanation of what's going on. And anyway, I do very, very much appreciate you allowing us to speak on this very important issue again. >> Garza: Did you say you did a detective a leak? You said you had a similar situation? >> Let me explain what happened. I didn't have a personal leak. All I know is that some postings were coming up on the neighborhood next door thing and they had pictures of water gushing down the hillside and into Barton creek. This white kind of chalky, milky water. And that happened Sunday. And I called Austin water and I told them what happened. They said we finally have somebody there on the scene. It's so suspicious that all of these billing problems and these meter problems and the pressure problems. And it turns out we weren't alone on the water main breaks. It's not explained by block rate structures and it was hot. These people need immediate relief. They have to get some relief and we are asking you to step in. If someone's bill is out of

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whack 10%, 15%, stay their obligation to pay this. These people can't afford this money. They don't have this money. >> Garza: The example you gave, are you saying she got that from one month or she came back from vacation after three months and got three bills? >> What she told me was that in one day -- I can't remember if it was this month or last month. People call me up and they're like hysterical. You get a 2,300-dollar bill in your mailbox and you're used to paying 80 or 40 or 50 and you don't know whether this will continue forever. She said in one day she got three bills from the city of Austin -- from Austin energy and it was one for \$1,800, one for \$600 and one for zero. And there is absolutely no evidence of billing problems. The bills themselves reflect an obvious-- we won't have any evidence at this point. We can't go out like Ms. Couch said. We don't have the equipment or the data or anything to be able to figure out what the problem is. But saying that we need to xeriscape our yards and St. Augustine drinks too much water. These explanations just don't hold water, no pun intended. They've got to go. We're asking for the council and the committee to do everything it can to provide these hundreds of people

across the city with this relief that is absolutely necessary. >> Garza: You said the tiered structure was already in place. My understanding was the rates went up recently. Is that not right? >> Well, they did --

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>> They had tiered rating -- [inaudible - no mic]. >> We're used to the tiered structure for awhile, but regardless if your average billing has been 8,000 to 12,000, you know, a rate structure isn't going to change anything. Well, a little bit. If you're getting billed for 70,000 gallons all of a sudden, that's what's happening here. It's not oh, the rate structure is just a surprise for you. You're not budgeting for that yet. You weren't used to it. It's just another example for a very logical -- it's very logical that the problem lies in their system somewhere, some kind of pressure problem, some kind of billing problem, some kind of meter problem, something. It's not because we have St. Augustine on our yards. It just can't be. >> Zimmerman: This is district 8, isn't it? Could we get copies of those bills? I would like to get copies. >> Yes. We're doing everything we can. And like I said, Ellen troxclair's office has worked with us. We have a list of the people. It's not in the most beautiful form because I'm not very secretary Taylor. Ms. Sally and I are planning on putting like a little sign and card table on the main intersection and just say water bill problems because we need those bills. We need people to sign up and let us know who they are. It's a real problem and it can't be just swept under the rug because, you know, it was hot. These are still the explanations that are going on. I mean, I was pretty

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insulted last month, but I'm even more surprised to see they're still deflecting. So anyway. >> Garza: So how long have y'all been paying city of Austin or Austin water rates? >> You know, I really don't know. Maybe Ms. Sally knows. The issue is it's been at least a year. >> Yeah, we started -- we switched to city of Austin rates. It's the same water the whole time, but the exorbitant rates about mid December. >> Garza: Of last year. >> We've had the tiered rating for three years. The mud put that in so we would be used to tiered rating. >> Troxclair: To follow up on councilmember Garza's question, you switched to the rates more than a year ago, not only the tiered structure, but also Austin water rates. >> Yes. And again, if you've got a rate system that is how many percentage, whatever, it's not the rate. It's that they're charging you for 70,000 gallons that you didn't use. And you've probably really only used 7,000 gallons. So whether you're charged 10% more, five percent more or whatever, and it's -- it's still 70,000 gallons. You know, it doesn't really matter what the multiplier is that much. >> Troxclair: If you're looking at the actual gallons of usage. >> Right, exactly. Thank you. >> Garza: Thank you. We're going to now hear a report from Austin water.

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And if I could first start just by asking some questions that were brought up in the previous citizens communication. I believe there was a request to find out where valves are located. Is there a way to -- does Austin water know that and is there a way to give those folks that information? >> Greg mezaros, Austin water. I think you were referring to the green slopes. You might recall from the last session that we committed at the request of the council to take public resources and apply them on the private system of green shores to try to locate the leak. That's highly unusual and I would never direct the staff to do that unless it's an extraordinary circumstances. So I want the council to understand that this is all private system distribution network. And what we did is we did a round of leak detection there where we put hydro phones and leak recorders on valves that we could listen to. We indicated that several of their valves were paved over and that we didn't know exactly where they were. They're paved over, you

can't see them, so obviously we can't attach leak detection devices. We've indicated that they should recover those valves. We may have data maps. We'll certainly give them to them, but I want to be clear it's not our valves, it's their valves. We will not do construction work on their system. That's private system work. That would be highly inappropriate. The leak was on a private system. That was their private system that was leaking. And they had an indication that we wouldn't fix it. No, we would not fix it for them. That is a private responsibility for them to do. But certainly, councilmember, if they need map data that they don't have and we have it, we'll fly supply it to them. >> Garza: Thank you. I want to thank you for going out and doing that because I know it's not the practice of the utility to

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go out on private property. >> It's a practice of elimination. We eliminated most of the system and said it's probably not leaking. If it is leaking it is probably in one of these remote areas that isn't developed and that's what they ended up finding. >> Garza: And there has been a certain that there has been a leak detected so what does Austin water do to adjust bills because there is knowledge now that there was a leak. >> I'll have to consult with our team on our options there. Let me say a few things there. This is a multi-family application. We have leak credit policies that apply to residential, but when you get into commercial and multi-family, the expectation is that they manage their interior distribution systems properly and the rules that govern leak credits for those kind of customers are much more restrictive. So we'll have to review the options that we have on possible leak credits there. I do believe that if their water averages or their wastewater averages were inflated because a leak was operating during that time that we probably do have opportunities to provide some billed credits back to them for that. Other applications of that leak I don't know without reviewing the rules and options with the staff. So I really wouldn't want to just try to wing it here today on what that is. >> Garza: And can you >> Garza: Can you explain what the possible reason would be for the spike, the gentleman showed that they were historically one -- you know, I think it was, like, 600,000, then they spiked to a million. And if that was indeed because of a leak, how could they go back down to 200,000 and spike back up? Can you explain what could have caused that? >> I don't know if I can say for sure what happened there. I think in part obviously they had a leak. I don't know how that leak was influencing their system. The other thing is they had an

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old meter that we believe was malfunctioning, and that it was likely underregistering and operating kind of erratic and that we, as you heard, replaced it with this new modern meter. I think that that was a part of the issue, but quite honestly we probably have to review it. >> Garza: Okay. And can you just -- >> Leaks can cause spikes. A leak may have been intermittent, valve may have been fluttering at the time. I don't know exactly. When you have a leak of that scale, it's hard to say, you know, how it's influencing some of that. >> Garza: All right. And then there was a question about getting in one day a bill -- three separate bills. Can you explain why that might have snapped. >> Can you say that again? >> Garza: She said a woman received a bill for 1600s, hundred dollars and zero in the same day. >> We'd need a property address for that. >> Garza: I know you couldn't speak to that specific one, but is that something in a happens? Is this an error that might happen, someone getting three bills? >> I would think not, but I would -- maybe if ae wants to respond. >> Elaine Kelly, vice president with Austin energy. It's possible the customer was in a rebill situation. If we had the address or account number we could look at that. I sincerely doubt there were three bills for the same usage period so we would have to look at that. >> Garza: Can we make sure that somebody from staff meets with all the people that are here today and addresses their concerns? Okay. You can go ahead with your presentation. >> Go ahead. Can

you start the. . . Again, Greg Meszaros, Austin water here with our team. Just wanted to provide some update to some of the activities with water billing concerns from our last

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meeting. I'm going to have a slide or two about customer service updates, call volumes and responses and the like. We have seen water-related calls to the Austin water call contact center. Since August the center has processed over 10,000 high bill-related calls. Many of those are inquiries where customers call, ask about the high bill. We've been training the staff that answers the calls to provide them additional time to review their usage, go through a checklist, explain the process, our rates. Often that is enough to kind of explain the situation and satisfy the customer but many customers do escalate. We've seen escalations where they go to the next level of review with supervisors and even onto Austin water from the call center, about 40% increase in escalations from Normal patterns. We have seen call volumes peak and are in decline so we think in terms of the high-bill episode that we're on the downside of it. I would expect with the rain coming this weekend we'll see water demand, all our costs for the system fall rapidly. For this summer we're probably through most of those high bills. Just a little bit on high bill escalation resolutions. We've had over 2400 additional escalations beyond the initial call and between ae and Austin water we've closed out 2,100 of those. We still have a few more we're working through and will continue to do so until we get through them all. >> Kitchen: Question. On the ones -- the 2,100 resolved and closed, could you provide us with information on the resolution of them? In other words what happened with them? >> Yeah. The bulk of them are -- there was no credit given.

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We have had a handful of leaks that we've given credit for, that there was a demonstrated leak with a bill and maybe -- I think less than ten bill adjustments on those escalations. >> Kitchen: So less than ten out of the 2,100 were bill adjustments. >> Yes. >> Kitchen: What would have been the number on the leaks? >> That would have been within -- >> Kitchen: That would have been the same? >> Yeah, yeah. Am I correct? Yes. >> Kitchen: So the rest of the 2,100 are just -- resolution means nothing found and closed and they still, oh, the bill? >> That's correct. >> Garza: Are you on this presentation? >> No. That's the second agenda item. It's the high bill one. >> Troxclair: Okay, thanks. >> Yeah. >> We did follow-up on citizens that spoke to the committee last month. Obviously you heard a lot from green slopes. We did a lot of follow-up work there. That community is 140 homes on a 4-inch water meter installed in 2015. When we upgraded the meter we performed significant leak detention on their private lines and hybrids. I won't repeat it all. I think you have a pretty good sense what have we did there. There was also three or four citizens that provided testimony to you last month. We followed up with each one of those citizens, went over their bill with them, explained their bill, looked at their issues. One example, a customer had said they were getting charged for wastewater and they weren't connected and it was actually a solid waste fee they were seeing, wasn't a wastewater fee. We explained all of those issues and communicated the findings. We did not grant any credits to those customers other than finding the leak at green

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slopes. We have seen a significant increase in irrigation audit requests and particularly from the new M.U.D. Areas, lost creek and river place, lost creek in particular. That's a good thing. This is where we've been going out and performing free of charge, we have certified irrigation specialists that will go out and review your irrigation system and provide you recommendations on optimized settings and

opportunities to optimize how your system is set up. We've done 144 of those and we have 159 scheduled through the end of November. So that's a pretty good chunk of those for us. Our findings are 82% of our -- 83% of our audited systems are set improperly, that the irrigations are set to water on multiple days instead of the one day per week, that they have multiple start times, and they have excessive run times or a combination of all three of those. Council, we'd be happy to bring in our irrigation auditors and have you sit with them at this committee and go through this in detail if needed but that is, in our opinion, the facts are demonstrating that that is a significant portion of the high water use, particularly in lost creek and river place. I'll go over that in a little more detail. Just a little more there. The irrigation system use we estimate is producing 384% more water for irrigation on those properties than is necessary. And we have examples of irrigation systems, very common, set up to deliver 100,000 to 300,000 gallons per month for that one property. And I'll give you some examples. This is the -- 30 of the first 30 irrigation audits we here over the last month and many are in lost creek. I've, you know, deleted customer names and things like that. But you can just scan through this list. You can see, you know, the date of the audit, the zip

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code, what the controller was set at, was it set wrong on days, start times, how much water that system was programmed to deliver per month and the green bar is our recommended water for that same property and then you can see the percentage increase and kind of how that plays out. You know, a few of the customers you could see were right on target. Some were actually -- programmed their systems to deliver less than even an amount we would recommend so they're kind of in conserving mode but many, many of them were significantly higher and you can see just one example there was set up, if you ran that system as programmed for a whole month it would deliver 340,000 gallons on that one property and, again, this is based on factual review of these irrigation systems. >> Garza: Go ahead. >> Troxclair: Quick question about the previous slide. >> This slide here? >> Troxclair: The previous slide. >> About the zip code? I thought there were only three loss creeks that could possibly be lost creek. >> This is 30 of the hundreds we've done. We have the whole list and would be happy to supply it to the council. >> Troxclair: I think she's probably bringing that up because you said many of them are in lost creek but if you look at the zip codes. >> There's 150 and I think a good chunk are in lost creek, first 30 in sequential order. I didn't mean necessarily many of these are in lost creek. >> Troxclair: Thanks for clarifying. On the previous slide you said 83% of audit systems were basically set inappropriately. What about the other 17%? >> Those were probably set either at recommended levels or below. >> Troxclair: But I'm guessing the people with -- that are requesting the irrigation audits are people who got an unusually high bill. >> I would assume, but -- maybe -- I don't know. Yes, probably so. I would think so.

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If they requested the audit, it's probably -- they had a reason to want to have it reviewed. >> Troxclair: I'm just trying to find out what happened with the other -- if the reasoning from Austin energy is that people are using their irrigation systems inappropriately or that 83% are, I'm confuse the other -- curious the other 17% who indicated they were only watering once a week at appropriate pressures and times. >> That's probably what the issue was, yes. It's just this list here. This is just an example. You can go down and see you have the one at 78739, their system was programmed to use 14,199 gallons for irrigation that month based on size of that property we recommended that that -- they had that thing set about right. So if they were running it for a month, just for irrigation water, they would use 14,199 gallons for that month. >> Troxclair: So if -- again, 83% were -- maybe were watering too much and you said only 10% were leaks, then it seems like there's a significant percentage that probably complained

about high water bill but didn't have any of the issues that you are identifying here. >> Not necessarily. I'll just use that example there, right in the middle, 14,199 gallons, see that. >> Troxclair: Mm-hmm. >> Walk through that. That irrigation system was set to run appropriately. That is, it was probably set to run one day per week, didn't excessively water in terms of zone experts multiple times. So they're using 14,199 gallons of water just for irrigation. So they also have interior water which may be 55 to 10,000 gallons, on top of that 24,000 gallons of use. I don't know if they have a pool or not. They may have a pool which

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would be water on top of that. Although that irrigation system is set to water properly, they may still have a 30,000-gallon per month bill. And their bill was probably 3 or \$400 under our rate regime. They may very well have called and said this is a residuals ridiculous high bill but everything is fully accurate. I don't want to communicate, councilmember, because their irrigation system was set appropriately that means our billing system was not working. >> Troxclair: Right. >> You can have an appropriately set irrigation controller and still use a lot of water. >> Troxclair: Right. But that same person would probably have -- under your example, had a bill that was 3 to \$400 every month if everything is operating as planned. So all -- I have a lot more questions later so I can save them. Just since you brought it up do you know what percentage of Austin homes have a. >> Speaker1: >> Which percentage of Austin homes have a pool? No, I don't know that. >> Troxclair: I would guess it's pretty small percentage? >> We probably have a sense of how many have irrigation systems. I think we thought it was like 10% of our customers have automatic ircombination systems. We have a little bit of data on that. I could get to that in a minute. >> Troxclair: Okay, thanks. >> Garza: Councilmember kitchen. >> Kitchen: My questions were similar and we can get to those in a minute. Basically, this provides some information. And thank you. Appreciate that. But I think my additional question and perhaps councilmember troxclair's question was also, so what happened on those folks that there was no leak, there was -- they were set appropriately? This doesn't take us all the way to the resolution. It shows part of what's going on. You don't have to answer now.

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We can get to those after you get through the presentation. >> Okay. >> Troxclair: Thank you for asking more clearly. [Laughter] >> Some other data points, we did take a subset of the calls that Austin water handled and we asked the customer -- these are high bill complaints, slugs escalation photos Austin water. We did a sampling where we asked 141 customers as we were processing their high bill escalation, do you have a pool or irrigation system. 86% have irrigation systems, 121, and of that 121, about a third also had a pool. And the reason I tell you that and as I mentioned at the last meeting, we see high bills tightly correlated to folks that have irrigation systems and pools that -- you know, well over 885% of our high bills are associated with those customers. So if the billing system were failing in some fundamentally way, it would not fail just for those customers. If the meter reading system was failing in some fundamental way, it would not fail just for customers with irrigation systems. If it were to fail for some reason in a systematic way that would be spread through every type of customer. We see these high bills tightly correlated to customers that have high water delivery systems. And that -- again, that's just what we see as the data coming in. And in that line of thinking, since our last meeting, we have done additional systemic checks to verify to the best of our ability that there is no problem in our system that's driving this from a failure of the system. You might recall from the last meeting we were able to break

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down the river place M.U.D., where we looked at how much water went into the river place M.U.D. And how much of that water passed through the meters and how that compared to historic norms. We've also taken over the last month and done that for lost creek and we've done that for our Austin water system as a whole. And I want to share the results. This is lost creek's M.U.D. Lost creek's M.U.D. Had a master meter that metered all flow imposing into lost creek because up until December it was a stand alone M.U.D. We provided wholesale water to them through that master meter and we have maintained that master meter. We've continued to read that master meter even though we're reading each individual meter. We have a good comparison of all the water that went into lost creek. You can see the different colors represent the different years. Red is 2015. So for may, June and July, the amount of water that went into lost creek was less than the historic norms. We provided less water to them than historically. And in August, it -- you know, as it had across our whole system, it climbed up and they were right at their historic norms. So this sense that they're using -- they're being billed for way more water this year than in previous years is inaccurate. That is inaccurate. That if you look at all of the water that goes into lost creek over the years, they are actually below -- Austin water billed them less total water through may through August than in previous years. You know, August was clearly, you know, more on their central tendency but because of the rain in may and that carry over into July the total amount that went into lost creek was less than historic areas. We've then taken that total water that went into lost creek and we said let's look at all the water that went through the meters in August. So what went into lost creek

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through that master meter and what went out through the thousand or 2,000 individual meters. 96.6% of the water that entered lost creek through the master meter went out through the individual meters. And that's exactly what you would expect. That a little bit of water is lost through leaks and breaks and meter inefficiencies. You know, it's a pretty new system out there so you don't lose a lot. Just a tiny fraction. Then the bulk of it goes through the meters and that's what's billed for. So this sense that -- I mean, if the meter system were going crazy, you would see that number be 200%, that the water that was billed was 200% larger than what went into the system. And that's not the case. Again, it's lining up. I know people may not believe me, but that is what the data is showing. We also did that for our systemwide check. You might recall this graph, our daily pumpage for our large plants, you know, this is kind of how -- as we talked last time the pattern peaked in August, high use in August and falling a bit through the fiscal year, through the end of September. What we did is took that high period, August, and we said all the water that the pumps planned, which is measured separately, we measure that separately, that's what went into the system. How much went out through the 225,000 meters that we maintained in August? And what we found is 88% of the water that went into the system in August went out through customer meters. And that is consistent with prior years and exactly what you would expect. Our big system loses more water than a small system, you know, 8, 10, 12% water loss, you'll get a report a little later. The data shows what went out of the meters is what the plants produce less any losses. So, again, we don't see 150%.

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If that number was 150% or 170% you might say how would the meter system meter 50% more water than went in? But that's another systemic check. That's not what's happening. Now, I know there's been a lot of discussion about the meter process. >> Garza: Quick question. >> Oh, sure. >> Garza: So if 88% of

what came out of -- I'm trying to think of of -- I'm a visual person -- this giant pipe that feeds all of Austin and 88% that have went through people's meters that means 12% was lost somewhere, which you're, I guess, hypothetical is it -- hemoptysis, it leaked somewhere. >> Water theft, leaks, typically meters underregister so don't register above. Some of that is called parent loss, goes through the meter, maybe 1,000 gallons goes through the meter but only 996 gallons bill. Your meter doesn't catch all the water. >> Garza: So that 12% would have been never billed? Is that correct? >> That's correct. >> Garza: Okay. >> That's correct. Some of it's, you know, maybe used for, you know, legitimate purposes. We try to catch all the water but the fire department might use water they don't report or something we don't always -- you know, every drop of water the fire department isn't always metered. It's that whole basket of potential uses that water goes through but it doesn't go through the meters or the bulk. >> Garza: I just thought of a question. As a former firefighter we used to check hydrants and we would open them all the way and then close them just to make sure we were working. So that -- that kind of output is not - >> That's not -- >> Garza: It's coming out of the waterfront, the water utility but it's not being billed? >> Right, it's not in that 88%. >> Garza: S in the 12%. >> The fire department does turn on reports and we estimate that water but that's not in that number. That's why that number is a little smaller. >> Zimmerman: Quick question. Back up to the slide -- that one. Something grabbed my eye here. Look at the high peak to the

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right side that says 207 million. And that looks like it's around the first part of August. Okay? >> You mean the red number at the top? >> Zimmerman: Yeah, red number at the top, 207. Look what happens -- pep had he understand these incredible spikes. Because weather has been dry, right? The whole month it was dry. Look what happens just a couple of weeks later. I go all the way down to about 125 million. That seems like a staggering, you know, variation when things seem to be pretty constant as far as the weather goes, which has always been cited as the number 1 reason why we're using more water, because it's dryer, which it was. Help me understand those huge spikes. >> Sure. In part the spikes are connected to the one day per week watering schedule. For example, Mondays are essentially no water days other than I believe the schools are allowed to water on Mondays. When you see these ups and downs, those are typically Mondays, are the low points, because of the one day per week watering schedule. Multi-family, commercial, and others, their watering schedules are -- I might need help here with one of my conservation teams but like on Thursdays and Fridays -- and typically they use more water. So you'll see it -- the heavier spikes on those days. Residential customers can't water through the week. They're only supposed to water on Saturdays and Sundays. The one day per week watering schedule based on odd and even addresses is what causes the middle mini. >> Speaker2: I racings on our plant pumpage. The other influences to that are -- councilmember, this sounds strange but if you have a cloudy day that will change some of our water demand, if it just looks like rain that will lop off ten, 20% a day.

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If it rains even a short duration, we'll get a drop. We'll show you this graph after the rain this weekend and the Numbers will fall to probably less than 100 to 90 like that. As soon as we get rain, it will fall 50mgd a day. So that's in kind of broad terms what drives some of those considerations. Holidays have an influence. Other kind of factors of that nature. >> Troxclair: Did you just say that every residential -- that they only -- all the homes water Saturday and Sunday or either Saturday or Sunday? >> Yes. >> Troxclair: There's no during the week water. >> Like I said I probably need help with my team. Could somebody come help me with this? >> Zimmerman: I guess the reason -- we've updated our one day per

week schedule so I don't remember the exact days. >> Zimmerman: That would make sense if the entire city watered one day a week I would expect to see a huge spike and do I. I see four huge spikes. There's a periodicity every month, like four spikes per month but that would suggest everybody watered on the same day and the whole city. The reason you would spread out the watering maybe by zip code offer whatever it is is you're trying to level those because you don't want to be pumping 1 million gallons less one day than you do the next. >> Yes, sir, that's exactly what we tried to do. Water conservation division. The watering schedule is for Mondays, it's for public schools. For Tuesdays and Fridays, commercial properties, depending on their address. Wednesdays and Thursdays are automatic irrigation systems for residential properties. And Saturdays and Sundays are irrigation with hose and

[4:26:08 PM]

irrigation systems. So that was intended to level out the pumping and distribute it evenly throughout the week as best we could. >> Zimmerman: It doesn't look like it's working. Those are incredible quantity of spikes. 40% or something. I didn't expect to see that. >> Garza: I looked at mine and it's by the last digit of your address so that would mean you would have to have exactly -- to keep it constant you'd have to have exactly the same amount of Numbers with certain Numbers as the last number in their address. It seems like it would be impossible. Anyway, go ahead. >> We've tried a couple different schedules. You don't want to change schedules too often because then people get confused like obviously I didn't remember it all correctly. The other thing that you don't see here is we have storage in our system, we have ground-level food banks elevated tanks and that provides an equalization so we're not meeting this demand turning pumps off and on crazily, part of this is equalized through storage and that helps us kind of manage that process. And we kind of get in the groove. You know, we know the pattern, our team can anticipate, hey, this is likely to be an up or down day and we optimize storage and we kind of get our plants ready to meet those demands. >> Troxclair: Sorry, one more question. >> Sure. >> Troxclair: The -- I think at our last meeting I had asked for graphs that included previous Summers. Is that what is on page -- I didn't see it in your presentation but that's what's on page 6 of 13 of the report? >> We had delivered that to your office directly. I do have that graph in here. It's buried really deep into my backup slides. >> Troxclair: Okay. >> We did follow up with that. And it -- you know, the pattern looks very similar in the sense of, you know, typically July you/august is our peaks and then they start to fall into the fall. The low months are december/january. Although that climb, you know, like we talked last time, the difference between the

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may/june average and july/august, that's a higher proportionate difference because of the really dry weather. Obviously, July, August, September, through October, this is one of the driest three and a half month periods in the history of central Texas. It's been extraordinarily dry. Hopefully that stops this weekend. >> Troxclair: Are you going over those slides later? >> I can. I have a whole bunch of backup slides if we need to. >> Troxclair: I'll save my questions for later. Thanks. >> Obviously a lot of questions about the metering process, how does the metering process work, do we have estimates, how many estimates, what about core X and so we have several slides here to give you a better sense of metering and estimation and how that all works. With that I'll turn it over to our ae team and Kerry, I believe. >> Good afternoon, Kerry Overton, deputy general manager at Austin energy. Part of our function is to support where we bill for multiple services including water metered services. The way in which we achieve or accomplish the meter reading within the city for our services, we use a third-party contractor, cortex, who provides the first level meter read for 100% of the reads throughout the city. The way they do that is they read each meter over a 30 day period -- 20 day period in a bill cycle, that's one month,

business days, and so in fact the way our cycle works they will read 1/20 of all of our meters in one month so that within a month 100% of the cycle would have been read. Part of the quality controls within those meter reads are initial reads that come into the example starts from the very beginning of the intake process and that is, number 1,

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the system does not allow the meter reader to see any prior reads on any of the premises that they are entering a read in at that time. Also, the system is programmed with parameters that prompts the meter reader to validate -- to look at a high or low if they enter a number that is extremely out of range based on algorithms in the system. And that forces them to re-enter or relook at that read and to validate it. We also within the process -- our reads are validated even external to corix by Austin energy and our field services group, each other we take a field service sampling of the reads within the next day of the reads that come in from cortex and we look at those reads over a sample base and we've found about 95% of the reads they entered into the system were accurate. The remaining 2.5% of those reads are handled through a standard reread process. What's important to note, this is an entity impractical process. It continues to go on until we actually obtain a valid read and I'll talk even more about that on the slide and in the next. There's one other validation process that we use, even more specifically during this time period of the escalations of which Greg's presentation basically focused on. In this particular time period, we looked at about 6700 rereads that were put into the system based on customer's escalation. Our own sampling tested that only 200 of that 6700 were invalid. And so that equates to a 97% accuracy of the initial read.

[4:32:13 PM]

Yes, sir. >> Zimmerman: Sorry. Before you go on, I'm a little confused on this. The meter read is basically a snapshot. >> Yes. >> Zimmerman: So what could happen is if I'm really unlucky do I a great job reading the meetings as soon as I driveway the guy decides to fill up his swimming pool, somebody comes back the next day or even at the end of the day and says, oh, that meter reader was off by 8,000 gallons, maybe he wasn't off. So how do I know if it was accurate or not? >> Yeah. >> Zimmerman: It's a snapshot of a moving target. >> Well, you're pointing to a case where a very, very small number of accounts within 24 hours would change significantly during that time period, but, you are correct, it's not exactly. So it's within the parameters of looking at historical day of what a daily read would amount to from the monthly calculations. And so if it's still high and we had some, as you saw, 200, as we stated 200 of that 6700 still is what we would consider invalid. We don't know if it's incorrect but it didn't validate based on even our daily amount what have we thought the read should be so what we'd do is continue to go out and issue a reread for it until we can find that it is within the range. >> Troxclair: Before you go on. >> Yes. >> Troxclair: Okay. You said 200 of 6700 were inaccurate. Is that -- that is what you're using to say 97.5% accuracy rate? >> I'm saying two things. In the first -- in the middle bullet, , what we're seeing is that our physical going back out into the accounts, in the field, on a random sample proved that corix in their initial read had read at a correct rate of 97.5%. >> Troxclair: I'm trying to understand what kind of sample size is that.

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So you went out and reread 6700 meters out of your total population? >> Let me clarify. Two different things. >> Two different things. For the bullet point, which is a quality assurance review that we do, it's several hundred meters across a week. So it's a few hundred. For the last bullet point, we went back and

looked at the -- at 6700 of the escalation that's came in since August, and we checked their LE reads to determine -- rereads to determine if a bill had been regenerated to correct a read, and in only 200 cases had a bill been regenerated. >> Troxclair: So 6700 you -- is the -- is 100% of the people who called who wanted a meter reread or who had issues? >> It's a set of the total. >> It's a set of that total. Mathematical -- >> Troxclair: So what is the total? >> I think it is 8900, I believe, folks that escalated. We received much larger call volume but this was over a certain time period. >> Troxclair: Okay. So if you went back -- so 6700 out of 8900 -- >> That's correct. >> Troxclair: Is a pretty decent sample size. So on -- that's just of the escalated issues. Of the non-escalated issues, of your regular practice where your quality assurance, what is a sample size for that? >> For the quality assurance, it's -- I can't -- I was going to say 350 meters and we randomly sample throughout the month, and I think that's 350 a week but I can verify for you. >> Troxclair: Out of the entire population? >> Out of the entire population that's read. So, yes, it is a small sampling but we do verify that. >> Troxclair: Thanks. >> I think I'm just want to go make sure -- want to go make sure I understand because maybe I'm misunderstanding. The slide deck said 2400

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escalations. So am I -- is that -- am I looking at apples and Oranges here or. . . >> Sorry, let me confirm. Yes, okay, I think it's two levels. The first level is over 10,000 customers had contacted us with a question about a high -- bill inquiry. That's where the 6700 came from. >> Kitchen: Okay. >> Out of that population. 2100 then further escalated where there was a more in-depth review, including irrigation audit or other leak checks, other things. >> Kitchen: 2100 of the 10,000 or 2100 of the 6700? >> 2100 of the 10,000. >> Kitchen: What was the 8700 or so that you mentioned a minute ago? Was it 87? Yeah, 99, I think? -- 98, I think? Mm-hmm. I'm trying to understand. I understand what the 10,000 was. What was the 89? >> The 10,000 I believe is updated through our most recent report and the 8900 was probably where we were at October 1. >> Kitchen: Those are comparable Numbers, 10,000 and 8900. Then the 6700 was escalated. >> 6700 was out of the original 10,000 calls, where we sent out rereads to the field. >> Kitchen: Got you. >> We verified of those rereads only 200 did not validate. >> Kitchen: But 2100 of that 6700 for some reason were escalated? >> 2100 calls beyond the 10,000 -- I'm looking at jj to make sure I'm saying this correctly. 2100 calls beyond the 10,000 escalated and required further review, slugged an irrigation audit or leak check or something else. Including an irrigation audit or leak check. So there was something fibril we needed to look at further. >> Garza: If we were looking at a total number of calls it

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would be about 1200? Because you said -- >> 12,000. >> Garza: I mean, 12,000. >> Since August, yes. >> Troxclair: I think where we're confused, you're saying there were 2100 escalated calls but 6700 rereads. So why were there -- >> So -- >> Troxclair: So many mover rereads. >> You could have -- a customer can request a reread at any time so that doesn't necessarily mean it's escalated, that we noticed the usage is out of line and some further research needs to be done. So if the first call the usages looks in line but the customer requested reread or we want to validate we'll offer the reread so that's where the 6700 came from. >> Troxclair: Of the 200 where there was -- where the meter wasn't read accurately what happened with those? >> It would have been rebilled and that's the situation that I'm thinking happened with the customer that got three bills in one day but we'll have to look. You'll cancel the old bill and rebill it correctly across the proper billing time once a valid read is established. >> Troxclair: So there have been 200 people who have received some kind of refund? Or rebill? >> It would have been rebilled, yes. I wouldn't say refund, but it was rebilled. >> Troxclair: Okay. And only ten, Mr. Meszaros said earlier

ten were because of -- ten people were rebilled or refunded because of the leak? >> Yes. >> The correlation for what -- with what Greg had mentioned in terms of what happened at a credit is not exactly the same data associated with an invalid read. An invalid read is not necessarily one that's incorrect. But what happened at the point in time, each of the accounts have some kind of high-low parameter with an algorithm that's in the system. So in some of the cases some of the customers escalated and after they actually talked to our agent and went through the historical data, even they agreed that they used more that month and so in that case

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that account would have been closed with no additional disagreement by the customer or no other inquiry to investigate it even further. If it's invalid, which is different than the ending point, if it's invalid, what we would do is we would still issue a reread and really on our next slide multiple things can happen. Number 1, we will issue a service order for Austin water. They would go out to the field and visit. Anything can happen, all the way to a meter check or a meter equipment replacement. There's several steps that could happen at that point. But also when they obtain a -- an additional read, it may prove out that it's within the line of what the customer had been using during that time period. And that now becomes a valid read for the system. >> Troxclair: Okay. >> So it's not invalid and it stays. The process continues to work until we obtain a valid read. >> Troxclair: Thanks. >> And I guess I'll kind of jump here now because, to answer your questions directly, that's kind of what we're talking about now. So there's the reread process. And basically, let me explain it in two ways. One is we will read the meter in that validation process. If it's still -- if it still appears to be high, meaning even the validation is showing that it's a high read, what we would do is we would continue to move forward, issue a bill for that customer, because we don't want to hold it. We want to make sure that they obtain a bill on a regular schedule within time to review it, but we also simultaneously will kick off the leak review process. Okay? And the second reason that we would look at it, in terms of what happens in that reread process is if we read the

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meter and we're unable to obtain a valid read, then what we would do is we would continue into the process and as we said there's -- some of it would be field services, other activities, but in the billing process, we also would do an estimation of that bill based on historical data. And when you -- as we looked at our process, it's a very, very small number. So approximately less than 1% of the water bills are estimated on a monthly basis. But, again, as we mentioned, even with the estimation in place, we will continue to bill that Cher. We would go out the next month and still get a read. If it was part of the high or high-low -- and I think most people are not wanting to speak of the low. But of the high reads, we would still issue a reread until that read becomes valid. So the 1% is not the same meters. It's different meters being looked at and reviewed at a different time period in the process. And the point to high this together and thousand all right back to the billing -- how it relates back to the billing system, if we find an estimation throughout that process that covered multiple months, let's say two months and possibly three months looking back, once we retain the valid read, what we would do is divide the total consumption that was high back over the equivalent three months or two months in this example so that we would not arbitrarily force a customer into a higher tier based on the one review when the valid read came in. So looking back once the valid read is obtained, the fraction of -- that was now valid would be spread out over multiple

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months so that one month's worth of usage wouldn't take a customer out of a certain tier rate. >> Zimmerman: I don't understand. I'm sorry, I don't follow this. The last line down here is -- it's kind of talking about what we first heard from the water utility because we did have very, very unusual dry months, very, very wet followed by very, very dry. So that last sentence there, last bullet point, is kind where have we are. So I'm having trouble understanding what you said about the makeup. If there's a catch-up reading, if I had several months of estimations that were low and now I have a cash catchup reading that looks out of whack historically so the algorithm is messed up, what happens next? Are you saying you put that over future bills? >> If the reading is validated and you've had one or two estimated bills in a row and we get a good read, what we don't want to do is re-- bill all that usage in one month so the customer is automatically pushed to the highest tier. >> Zimmerman: But those bills have already been sent out and paid for the prior photos were estimated. >> If it's estimated we'll try up, cancel and rebill with the valid read. Then what we do look at is -- and, yes, there's some intervention to say, okay, we have all this usage and it's over two months. Let's look historically what has this customer used and rebill a portion in this month and rebill a portion in this month so their usage doesn't get pushed all in one month to the higher tier. Because technically the usage should have been over two months. >> Zimmerman: Is there a way you could give me -- this is kind of cutting to the chase of what I thought was going on. Can you give us some examples of redacted water bills that kind of show what that would look like? I would love to see that. >> If the bill is estimated it will be marked estimated bill. >> Zimmerman: Okay. >> We can give you kind of an example of a customer issued a estimated bill, then the bill

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corrections. >> Zimmerman: Terrific, thank you. >> Hey, Greg? >> Troxclair: While he's coming up, can you tell me -- you keep talking about the high-low threshold. Can you tell me what triggers a high read or a low read? >> I'll have to validate within the meter reading system what the parameters are but they usually align with the billing system and it's, I think, four times higher on the high end and I'm not quite sure of the low end, 20. . . >> Troxclair: So if somebody -- the meter reader only has to re-enter the number or have a reread triggered if the bill is four times higher than expected? >> Yes. If the consumption is, yes. I know that sounds like -- clan sounds like a huge swing but we do have irrigation systems and other things to consider so it's an algorithm that you're just looking to catch really big outliers and work from there. So. . . >> Troxclair: I was reading in your previous -- in the report that you handed out to us about the meter issue. Is the customer notified when there is an average applied to their bill because of unusual meter reads? >> When a bill is estimated? >> Troxclair: Yeah. >> Yes, the bill segment will be marked estimated bill. >> Troxclair: Okay. And it sounds like the system that you described is intended so that y'all are notified if there's a huge spike so that you can -- that initiatives a process within -- >> Before the bill goes out. >> Troxclair: Right. But it seems like a lot of -- so why did that process not happen with some -- with a lot of these people who are calling with four times -- with bills that are four times what they were before? >> When we did see an increase in the high-lows and we did do

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rereads that validated the original read. In fact some bills we even estimated and then because -- even billing was like, you know, we're having higher age but they've seen things over time so they allowed them to estimate and validated the read and they still went. So the reads have been validated. >> Troxclair: Even before you started getting inquiries from councilmembers' offices you were doing a higher percentage of rereads -- >> I wouldn't necessarily say a higher percentage of rereads but we do

see seasonal highs and lows, and August is one of the months you'll see higher usage come through. >> Garza: Would you happen to know the number? You said there were about 10,000 calls and about 6700 were rereads -- rereads, is that right? >> At 6700 was a portion of the 10,000. So -- >> Garza: Of those, do we know how many of those bills were sent out with estimated on them? >> I don't know. I do know that less than 1% on a monthly basis is estimated on the water bills. We do keep track over time so. . . >> Garza: Okay. Thanks. >> I don't think our escalations team did not see a preponderance of folks calling and estimating with an estimated bill. That was not something that was even on -- you know, recognized. >> Garza: Okay, thanks. Was there somebody -- okay. >> We just have just one conclusion slide obvious Austin energy and Austin water will jointly work through this high-bill episode. As we've been communicating we don't see a systemic failure of either the billing or meter system. Irrigation Austin to be an important tool for customers

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as they're getting valuable feedback on how to optimize outdoor use. Obviously as we get out of the irrigation season into the winter months you can't really do those but in spring we'll mount up again. And you might recall from the last PUC meeting we had committed to do outside review and a test of some of the billing data and that audit, that rfq is underway. Ae is managing that process. The responses are due, I think, Friday, it looks like, and then there will be a four-week deliverable, it will take about four weeks to do it and you'll have some results on that. And I think that's all we have for you. >> Garza: So after this rfq for this audit, will you be able to provide our committee with another update with the results of that? >> Certainly. >> Garza: Audit? Okay. >> Yes. >> Zimmerman: If meters are connected to bills, I think, which is generally true, you get a bill for a meter, so we have, in the ballpark of 230,000 meters and 1% of that would be 2300. So I guess by these Numbers we could be estimating 2300 bills per month? >> I would -- >> Yes. >> Zimmerman: If I did the math right. >> But the reread process continues and once the valid read is obtained -- >> Zimmerman: You're also saying that the bills that are estimated do show on the bill but it's an estimated read. >> Correct. >> Zimmerman: So that's -- okay. Because I -- I've never yet seen or heard of a bill that showed that it was estimated until you brought that up. You know, that's -- okay. Thank you. >> Kitchen: I have a question. >> Garza: Sure. And for Mr. Meszaros? >> Kitchen: Yes. >> Garza: Okay. Councilmember troxclair asked about this slide. Can you -- do you have this

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slide that you can show? Because I think it's -- >> I don't think I have it digitally. I have a hard-copy slide of it. >> Garza: Okay. >> Sure. >> Garza: Then can you just explain what that is after councilmember kitchen asks her question? >> Kitchen: Ready? My question just has to go back to the billing system audit. So I understand that -- I think we talked about it at the last meeting, but so sometimes in the end of November is when we should expect that to be done? Am I reading that -- >> The rfq closes Friday and then as, you know, typical city purchasing will need to do contract negotiations so I don't know what length of time that will add in, maybe a week or so. We've asked for a four-week deliver frankly the selected vendor. Whether it's November or December we would be willing to show those validated results with you. >> Kitchen: Okay. My question is just whether you can -- whether you can stay collections until there's a complete audit or actually what happens going more to the point, what happens if there were to be a problem found? Is that something that could be fixed? My understanding that -- could you give a credit if you found a problem? >> If a customer is billed incorrectly -- >> Kitchen: Right. >> And billed off a bad read or there's some other issue, then, yes, standard city utility regulations, we rebill the customer at the correct amount and, you know, would give them any credit

back if it was billed at, you know, a wrong rate or wrong usage. >> Kitchen: Okay. Thank you. >> Garza: To follow up on that, I remember a question last time was folks being -- not direct deposit, the

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opposite, direct withdrawal? [Laughter] Automated pay. I remember we had a question about if we could stop that. I don't remember what the response was. >> We followed back with some information to councilmember kitchen's office. So we -- it was a very small percentage of the water bill customers that were on water pay, on auto pay. And we are working to encourage those customers on the water side to set limits but we had had no direct escalations regarding a customer's account -- any issues with their checking account, you know, no one had notified us of that and that's not something we track. We've put some measures into place to hopefully encourage customers to set limits on auto pay. >> Garza: Okay. >> Zimmerman: One more. Maybe just one more question and -- on the green slope situation, where I guess it was finally shown that there's a pipe blowing out water. And so what is -- or is there a process or have you heard enough that you'll now investigate an adjustment in the wastewater charges? Because obviously we have evidence that there was water not going through the wastewater system. How would that be investigate? >> Yes, we will review that and determine what appropriate credits to apply, if any, and we'll report back to the council on what we did in that case. >> Zimmerman: Sounds good. Maybe next month we would have that answer and can review that? >> I guess we can even email you something before then. >> Zimmerman: That sounds good, thanks. >> I'm not saying we're giving a credit. I'm saying we're going to follow our rules. >> Zimmerman: Yeah. >> Troxclair: About the audit, can you go over what issues that we've talked about will be covered in the audit? >> For the last meeting, the audit will focus to ensure that usage that is entered

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into the billing system calculates and bills correctly according to water's tariff. So it will make sure things tier correctly and then bill correctly. >> Troxclair: So is it going to cover the accuracy of meter readings? >> It does not. And that was not part of the discussion last time. We have had a -- as the city and water has a part in this, we undergo annual meter to cash audits, and we haven't found any issues during those. But the current audit only be reviewed. >> Troxclair: When was the rfq put out? >> I don't know that it's being handled -- it's being handled through our finance department. I want to say two or three weeks ago. >> Troxclair: Okay. I mean, I don't remember if we specifically talked about -- actually, we did. We did talk specifically about meter reading. I remember councilmember Zimmerman showed a picture of covered meters and how could this possibly have been read correctly. I followed up with Dr. Meszaros as well as and then got sent to somebody else who was handling the audit to ask specifically whether the meter reading would be covered in the audit because a lot of the questions and concerns that we've heard have to do with the accuracy of the meter reading. So if we are looking to address the concerns of people who have gotten these high bills, I just -- I mean, I guess there's nothing we can do now that the rfq has gone out, but it seems like that's a really important aspect for us to cover. I know that y'all have your internal controls, but is there a way that we can cover meter reading in the audit? >> I wouldn't say it would be part of this audit. This was more of a financial audit through a cpa firm. It was a bill validation. So that was the scope of that. >> Troxclair: Okay. I'm just -- I'm really frustrated by that because I -- most of the problems that we've heard about are not concerned with the billing system.

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>> Zimmerman: Bin go. >> If I give you that number you can bill that number because it's the number

you get. >> Troxclair: I think first of all, I really do -- he I appreciate y'all -- I know you have spent so much staff time and resources on this issue and I'm grateful that y'all are willing to do the audit. I know - this is above and beyond what your Normal, I guess, business day looks like and so I just really appreciate you being responsive to our requests. >> Troxclair: I know the reason you did the ought was to provide some answers to the community, but I'm frustrated if it sounds like the things covered in the audit are not responsive to the things we've heard in the committee. >> I'll try a couple of comments on this. One, I think as this high bill episode unfolded, and even at the last meeting, there was a lot of media coverage and a lot of speculation that the new billing system is not working right. And so -- and that's repeatedly come up in the past. So we did have in our heads that one of the important checks was to demonstrate that the billing system was functioning properly. That it just wasn't spitting out inaccurate bills. And I think that was a part of the driving of the audit. The meter system issue is a little fresher than that. The audit process hasn't caught up with that. I don't know if there's an opportunity to look at that. We do have extensive external controls. Councilmember, I don't know what more we can do to demonstrate that between the hundreds of thousands of rereads, the quality controls that it does. I mean, can you give me a sense of what more you would want -- we have internal auditors that follow audit standards. I have internal auditors, ae has internal auditors. Maybe we could do more there

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if you think that would provide additional analysis. I mean, we could have somebody follow the meter reader around. I mean, I don't know what we could do to satisfy people that the meter reading system is working properly. >> Troxclair: I think part of the problem and part of the reason that y'all initiated an external audit of the billing system is because through this episode the frustration that a lot of people in my district and across the city have felt with dealing with Austin energy and Austin water, an external audit, I think that some of them, a lot of them, many of them who called my office have lost faith in the utility itself,, so it's hard to turn around and say -- it sounds like do you have great measures in place to ensure that you're doing right thing and customers are being billed correctly and probably the vast majority of customers are, but obviously it's because we're having this conversation still and there's still a lot of people frustrated in the community and there are still outstanding questions that I was hoping the audit would help us answer. And I think when that information comes from an outside source and doesn't come from within Austin water it helps the community to trust the results. And so if there is a way to expand the scope of the audit or to -- or to -- I don't know what the answer is, but no, I don't think -- I don't think that the people who are here today are going to trust an internal audit by Austin water because they're already frustrated with the responses they've been receiving. >> Let me consult with ae and city manager's office on options that we would have to provide perspective on the meter reading through an external review. Let me -- maybe there's something we could work into that. Let me work that through. >> Troxclair: I'm not saying that it should be specific, that it should be even limited to only meter reading. There's probably more things that the audit could cover as well if we're wanting to

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do a truly comprehensive audit, but I know the meter reading in particular -- I know I followed up with you and the city manager on meter reading in particular and then I also followed up with someone else. I guess -- I'm trying to look for the email, but within the financial department who is handling the audit will lost creek and their past issues with clerks because I know Barbara can speak to the fact that lost creek mud had to give refunds to their customers because of meter reading issues. I guess how long ago was that? A couple of years ago. So I passed that information along and I just -- okay. So you're going to follow up and let us know if there is something more that we can do. Because I think that would help

you too. If all the information that you're presenting us is truly accurate and it really is just hot weather, then an external audit would help you too by validating the reasoning that you're giving to us. >> Yes. I would say there's some constraints. One constraint is if what you're asking is a mega audit of everything -- I shouldn't say is that way. Of thousands of hours of effort, what we were trying to configure is an audit that could give you feedback very rapidly. If we're going to go out for an audit that's above \$50,000, we're going through full procurement, rfqs, it will go through boards and commissions, come back to council, that will be three to six months to do the selection process. So I just want to be clear is if we expand the audit and it gets big, the rfq we went out probably will have to be scrapped, we'll have to reconfigure it through a different procurement process. Doing a 30,000 audit is different than doing 150,000-dollar audit. I mean, the other thing -- obviously the council has the access to the city auditor too and I don't know if that's a way -- I'm not suggesting that you scramble their eggs here too, but that's maybe another way to do a check.

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I don't know. >> Troxclair: I guess I would be curious to hear from the rest of the committee members on their thoughts on the audit. I was really hoping that that was going to provide us with some more answers. >> And I do want to consult with ae. There may be a way for us to work it in. I'm trying to give you a sense of some of the constraints we have with procurement. >> Zimmerman: One quick thing. I think the answer to councilmember troxclair's question about auditing, the line we've talked about here a couple of times where the bills at greenslopes had this incredibly dramatic drop in the usage. That to me is the kind of audit that we're speaking to because with the evidence that we have now it seems virtually impossible -- it is impossible that with that big leak in an open pipe that we could suddenly go to half of what the Normal consumption is when there's no leak. So that really throws us off. And hopefully that kind of audit would identify this. And I still hope that you could come back next month and tell us what happened to this bill and why we got misled by this. Right? You agree it's extremely misleading to see these two months of water bill usages that absolutely plummet while it looks like we have a pipe that's just opened to the atmosphere and pumping out staggering amounts of water. >> Yes, although I'd be careful in comparing a large meter, a four-inch meter, which is as big as two podiums, to a small residential meter that the behavior of large meters and small meters and the hydraulics of those are significantly different. When we're saying like residential customers, that's a much different meter animal. We have extensive data on meter tests, small meters fail low. And we've done a lot of meter tests with this on our test bench. You could audit our test bench and look at the meters that we've -- we pull a meter, we run it through the test bench and get data. You will hear about that

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today. They don't fail high. And we can supply that health bench data. You could come with us, councilmember, and stand by our test bench and watch us test 10 residential meters and see what happens. Let's go pick meters from lost creek and bring those in and test them. We've already committed to testing, Rick, what is it 50 meters from river place? >> 100. >> 100 meters from river place. We can have an auditor stand at our test bench and watch every one of the meters test and they'll fail low. >> Zimmerman: I know that, I know something about meters. I used to work in chemical processing plant and I was an engineer that solved these problems. Got that. I want to go back to this reporting, the Numbers here. Of going from a million gallons down to 222,000. I want to focus on that. And I'd like for the water department just to go through and try to figure out how these bills happened. How did that happen? I don't need to pay for a huge 100,000-dollar audit. I still want explanation for what happened here. So are you saying the larger meter that can pump a million gallons a month that

has a different failure characteristic? Are you saying it could have mechanically failed and underreport bid 500 percent? >> It depends on how that meter was set up and how old that meter is. Often those are compound meters where they're more than one meter in one. They have low flow characteristics, high flow metering devices. Green shores is very complex. It's a loop systems that meters have different friction points, that when we replace with the new meter, the bulk of their flows are going through there. Sometimes they have fire meters that don't register flow except during extremely high demand periods. That meter may have been functioning on a lower demand until that leak started speeding up and then it ran into the compound meter. There's -- in short, yes, large meters are significantly more complex than small residential meters. We'll do the best we can to try to explain that

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phenomena. I don't know in the end if we can exactly explain why that meter aye rated a bit. There's -- gyrate a bit. >>> How many boots on the ground meter readers do we have. How many do we have reading them? >> Our clerks contract is about 50 employees. 35 of those read meters and another 15 provide soft services, which is delivery of 24 hour notices, reread, some field activities. >> Zimmerman: On boots on the ground people that are going meter to meter? >> About 35 reading the meters. >> Zimmerman: They have to cover 230,000-meters each month. >> Correct. >> Zimmerman: Those guys are busy. >> To read a residential meter, which is the majority of the readers, is less than a minute. So they average reading over 11,000-meters per day, which averages about to 330-meters per reader. And at a minute factoring in breaks it's less than an eight-hour day. And many times too multiple meter are in one box and especially on the residential side, which is again the majority of the meters, those are on the front property line, so it's easy access. >> Zimmerman: But some of the meters we've inspected personally are covered with dirt and weeds and grass. It took several minutes to dig them out. >> These are professionals that do that and have tools and tricks that are used. I think we responded back to your office with a photo of the meter that we think is the one that you showed, and we were able to obtain a clear read off of that. So there are ways. And clerks is one of the larger meter reading vendors in the United States. >> Zimmerman: Thanks. >> Kitchen: I was going to say I think it is useful, the billing audit, so I think that that would be good to proceed with. So I wouldn't want you to not proceed with that. In terms of the questions about the meter reading and

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the questions that councilmember troxclair asked about, I appreciate you -- you offering to go back and see what you could do, you know, in terms of validating -- validating to the extent possible the -- both the accuracy and the process for meter reading. That would be helpful for us. >> Troxclair: And I think you mentioned you were going around to river place to check 100-meters or something. >> We had worked with a resident -- Rick, why don't you come up and explain what we're doing before I get it mixed up? >> Troxclair: Just so you know where I'm going with this, I am still -- I know that y'all's call volume has gone down and mine did maybe in the past couple of weeks, but I'm getting a whole new renewed set of people who are calling to complain about their bills. So I'm going to continue to -- >> Push them on through. >> Troxclair: To push them through and be a liaison for them to get a response. I think the neighborhood association there has been very helpful in trying to be a resource for the residents and to try to provide them information in a very concise and calm manner and to really only escalate the ones that y'all think are truly a concern. So I appreciate y'all trying to address the issues calmly and really only focus on the people who still are having problems. But they are really dedicated to this issue of seeing, as they've been at the last meeting and at this meeting too, we also talked a lot about it at the lost creek picnic on Sunday and they're all going to be at my town hall that we're having

on Monday. So all that to say I'm sure that they would be interested in participating in whatever services you can provide them or what are you're doing in river place. I think lost creek on would also love if you're offering to have someone come around and check meters with you, I think they would probably

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love to do that. She's still here if you want to talk to her more about what y'all might be able to do to address some of their concerns. >> Sure. So you don't need a detailed report. >> Troxclair: No. If you're going something above and beyond for river place I want to offer the same for lost creek because they're in the same boat. >> Garza: You mentioned -- we talked about an audit of the meter reading and I know you might have just been throwing out a number, but you said 150,000 would have to go through council approval. Is there a way for you -- you said you were going look into it and see what could be done. Could you let me know as the chair what -- I guess I want to know an estimate of what an audit like that would cost. And so there's different ways I guess that a councilmember would sponsor an ifc to ask for that or just to see what our options are with an audit like that, if you could send me that information. >> Yes. >> Garza: Thank you. >> Zimmerman: Sorry, one other quick thing. The Numbers we've been talking about don't include, of course, water we pump to our wholesale users. We have some municipal utility districts around the area. So the pumping totals we're talking about don't include any of the water that goes to the wholesale customers. >> Those graphs did include that. >> Zimmerman: They do include that, the wholesale users. >> Yes. >> Zimmerman: So do we have roughly what percentage are we selling to the big wholesale users like the muds, municipal utility districts? >> If you look at like all of the wholesale customers together, we have maybe 15 or so. It's probably three to five percent of our water. >> Zimmerman: About three to five percent. >> I'm just -- >> Zimmerman: That big number is what I'm looking for, yeah.

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>> Troxclair: One more thing that we didn't really touch on but I wanted to ask about is I've heard a lot from lost creek in particular about their water pressure and a lot of people are finding that their water pressure is way above and beyond what it has been in the past or what they thought it was. Is there anything with the transition from the mud to the water utility that would have affected their water pressure or could have affected their water pressure? >> Not that we found. We've had our engineering team out there at river place monitoring the system, monitoring pressures, reviewing our settings, reviewing the system. Our most senior consulting engineer on distribution system, Janet Atkinson, has been spending a lot of time out there. Nolan others from systems planning, and we have not seen any evidence that the system is operating different today than it was before. We've looked at their surge tanks. I don't know if anyone wants to comment more on that here. >> Rick Coronado, Austin water. We have kind of -- when we took over lost creek, the system was maintained as is, so they have what we call a hydro pneumatic system so it's a higher pressure system that has an elevated -- a ground storage tank. We maintain the same levels of that tank. They looked at some of the reduced Zones to make sure that everything was operating correctly. And so so far all the information shows that it's still operating as is before and after we took over the system. >> Troxclair: Okay. And that is -- if somebody wants to check that does -- if somebody is concerned that their water pressure might be too high do they -- is that a service that you provide to come out and check it? And I know there's a fee and -- can you tell me for people who are worried about water pressure that think that might be a cause or want to make sure that they have the right amount of pressure, what do -- what can I tell them?

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>> A couple of thoughts. One, like lost creek is a heavy elevated area so it has a lot of pressure Zones. You can get higher pressures even when the system is operating normally. It normally operates at a higher pressure. And customers on their own at their property often have pressure-reducing valves to reduce their pressure at their property. At their individual home. So that's kind of a personal selection. Yes, we can provide some pressure checks at homes and we have. Although I have to qualify we don't have hundreds of -- I can't handle 1,000 lost creek homes and individual pressure at every home, but if there's a particular area of lost creek or a particular customer or so that's concerned and if you have emails or they contact us, we'll do our best to go out and monitor and check the pressure at their location. >> Troxclair: Okay, thanks. And so I want to understand what our next steps are going forward because for me I think part of the problem -- not part of the problem, but -- yeah, part of the problem is that we clearly have the tiered rate structure that in an unusually dry, hot month, unduly punishes otherwise responsible water users. So I guess from a policy perspective going forward I want to make sure that we are doing what we can as a council to put policies into place that -- that still meet our water goals, but protect people from having five times the bill when they really didn't expect it or didn't change their patterns. So can you -- so we don't have to have the whole conversation now, but I want to know -- I'm curious if you have ideas about, you know, placing some kind of cushion or some kind of automatic cap when we have these huge spikes or adjusting the tiered rate structure to a place where

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so many residential homes wouldn't be -- that were captured in this spike would not be captured in the future in addition to, you know, hopefully having options regarding an audit. So is that something that you could kind of compile for us and bring back to either the full council or to this committee as far as if you -- if you don't want this to happen going forward, here are things that we could implement? Because I know that your hands are somewhat tied in the fact that we adopt the rates, we adopt the structure, so at some point I understand the water utility's position that we show that this person used so much water so this is the rate that's in place and you have an obligation to follow through with the policies that the council has set. So it seems to me that we -- in addition to trying to address this particular instance, we have a responsibility as a council to put policies into place that prevent this from happening in the future. So help me with what we can do. >> It's a complex question. The rate design that we use for residential customers is the product of many years of policy-making by the city council. There's been in my life as director, a little over eight years, there's been five task forces that have reviewed our rate structure. And without variation they've all recommended strengthening this pricing signal. A the one time we had three blocks. We went to four blocks, we went to five blocks. The council heard a lot of testimony about increasing the upper blocks, keeping the higher box lower, the upper box higher. There's been hundreds of people involved in that. We could summarize that for you, but it is not easy just to say and here's three alternatives to that. It is a complex process. And it's like a balloon. If you squeeze the balloon at the high end it's going to get bigger at the low

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end. Certainly there are many rate designs. You could go flat rate. If you went flat rate billing it -- you could have rates that encourage water use. Others would say that unduly punishing high water users that the rate design isn't doing that, that it's motivating them to change behavior. There's many perspectives on this matter and it is a very complex matter. But we have many -- >> Troxclair: I understand that the purpose -- I think that the purpose of the rate structure by all these task forces and iterations that we've gone through is yes, you want to keep rates as low as possible for the lowest tier of

water users, and the more water you use the more you're going to pay. And that is a way to incentivize consumer behavior. Like what you said, it gives an incentive for people to conserve water. It gives an incentive for people to install xeriscaping. It has people pay attention to how much water they're using. But I'm not sure when those policies were put in place they thought, do you know what? There's going to be one really dry month and a single mom who normally pays \$100 is going to have to pay \$800 and that is our goal. That's what we want. I don't think that this is what was intended. And this is an unusual circumstance, if it truly is just because of a weather pattern. It's an unusual circumstance and I don't think that the people who are being penalized or had these huge, huge, huge increases, I don't think that it was the intention of the policy of the rate structure to penalize, again, otherwise really conservative or responsible water users. So it seems like there is maybe a disconnect between yes, I understand the purpose of the tiered rate structure and I understand why we have the different tiers, but surely there is some -- even a one-time circumstance. Hey, we know that this might happen again and we're going to say in a month where we have this many people who

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received a bill that was more than, you know, twice or three times or four times what they've ever received that we're going to give them a one-month grace period or reduction or cushion. There's got to be something that we can do in an unusual circumstance that doesn't necessarily change -- try to change the entire rate structure or to incentivize high water use, but it is stopgap in an emergency situation. >> Kitchen: Yeah. I'd like to follow up on that. I think what might be helpful for us to understand is, you know, what are the situations -- what are the situations in which you might have someone paying a high bill is like this? We're learning about this particular situation. Maybe it's due to the dry month or whatever, there might be particular circumstances and you can help us identify what those circumstances are, that would throw somebody into a higher rate category and have them pay a lot more than they normally would. If we can understand what those situations are we can determine from a policy perspective whether or not those are ones that is -- are appropriate to make some kind of adjustment or change in the policy or something because what councilmember troxclair was saying is it is to encourage lower water and it's not doing that because of particular circumstances. And it may be that there's a particular high usage that's maybe one time. And so it's catching some people -- maybe that's not the intent of the policy. So in order for us to have a discussion on the policy, and decide whether it's appropriate to leave it that way and understand it happens sometimes or do something about it, we need to understand what all the circumstances are.

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So you can help us by identifying what those are. If there's other factors that we're not thinking about right now, it would be helpful to let us know. So to distill that down my question to you would be what happens? You know, what are the circumstances in y'all's experience that would put someone into a higher rate category or dramatically raise their bill? Just so we can understand. >> You don't want the answer now. >> Kitchen: No. That would be a piece of information that would be helpful. >> We'll do our best. >> Troxclair: I think it would be helpful for the committee to make a motion so it would signal to the committee that we're continuing to work on this. I am open to suggestions but I guess I would like to just make a recommendation that you come back to -- do you want to come back to the committee or the full council, with options if we do want to do a fuller scale audit on a high bill and instances that might provide assistance to people in unusual one-time circumstances. >> Garza: I guess I would suggest it comes back to the committee. Is there a second to that? >> Zimmerman: I'll second that to come back to committee. >> Garza: All in favor? So 4-0 recommends to come back to the city with options for an

audit of the meter reading and examples of what causes those one-time spikes. And suggestions on how to address those. I will -- I want to bring to the attention an email we got from city legal that could have an impact on it any kind of policy changes that says that according to our code we can't reduce our

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bills or change in the absence of demonstrated factual procedure in a given case. I want us to remember the context that we're working in as you bring forward those options. Thank you for all the work that you've done and thank you to the residents who came here. I'm sure some of you had to take off of work to be here. Thank you for your continued input on this issue. >> I've asked them to get with us. Is someone from the water utility going to get with Ms. Couch? We're going to move on to the next item. For discussion and possible action, regarding aging infrastructure on the amount of water loss, which is relevant to the previous discussion we just had. I don't have any speakers signed up. Are there any that came since I had a list? If not can we go ahead and have staff come up and start that presentation? >> Good evening, councilmembers, I'm Rick Coronado, assistant director over pipeline operations. And with me today is Chris Chin, also assistant director of engineering services. We're going to discuss today the topic of water loss

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management. I'm go over some of the system details, what is water loss, what encompasses water management program, as long as a leak management performance, how is Austin water comparing management strategies which include components like leak response, pressure management, active leakage control asset management and allow for questions and feel free to ask any questions while I'm doing the presentation. Just on the terminology what is real loss or the physical losses that you might see through some of the pipes, the joints, some of the reservoirs, hydrants, just the physical losses that are accounted. Unavoidable annual real losses represents kind of the lowest what we call the technically achievable annual real losses and also loose a performance -- there's a performance measure that we refer to as the infrastructure leak index as something that we gauge how well a distribution is managed. Apparent losses is something that you might kind of refer to and is inaccuracies or kind of accounting losses that don't get to -- they get to the customer, but they're not actually billed. Some of those are caused by inaccuracies in customer meter reading, consumption and billing data handling errors as well as some of the assumptions of unmeasured use and unauthorized use such as theft. So kind of to give you a feel for the systems we're talking about, we mentioned earlier we have over 230,000 meters in the system on the water side. We have over 3700 miles of pipe of main. So this -- kind of the schematic represents our network. Over 27,000 hydrants in the city that we maintain.

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73,000 of those valves that are out in the system. We'll talk about maybe the storage capacities over 170 million gallons. These are all components that kind of -- can potentially leak in the system. So that's kind of the real loss management we have to take into consideration or the size of our system. So this is just the visual. Okay, so what is that 3700 miles of main look like? Well, it's kind of the distance between Austin and San Francisco and back. So if you kind of took that length and kind of just networked it in the city of Austin's area, that would be a significant amount of infrastructure to maintain and to manage for leaks. Leaks, water loss. So just to give you an overview, what is in our water loss management? It's not only what I refer to as the apparent loss, but also the real loss. As you can see, the schematic is, you know, there are errors that could happen anywhere from the actual meter to the billing system to theft.

There's losses that can happen in the real loss management, which is the underground piping network. You might have what we call background leaks or unreported leaks. And also reported leaks. I'll go into a little more detail as we go forward. So American water works association and the international water association comes up with some strategies for utilities like us to kind of approach water loss management, and this one in particular is our apparent loss management strategies. One of the ones that Austin water is embarking on is trying to identify more information that addresses the customer meter access. And I have a -- customer meter accuracy and I have a

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slide that says what does Austin water do to ensure that it is up to industry standards. There are discussions for potential controls that Austin energy has in place for some of the data transfers areas as well as the transfer errors and not a whole lot is in unauthorized consumption because technically -- so to give you a feel and a flavor for what is Austin water doing to ensure the accuracy of our meters? We have at one of our service centers what we refer to is a bench -- that's the photo you see is kind of a bench testing. We also have what we call a field trailer that we use and several field trailers that we use to test meters that are three inch and larger out in the field. It's more economical to test those out in the field than it is to test the smaller meters. s smaller meters can be tested on the bench scale especially if you have new meters that you're going to install, we'll take a batch of the new meters that come in and test that for meeting the specifications. It has to meet the 98.5 to 105.5 accuracy test and we used those bench tests to test for that and ensure that what we're buying is appropriate to put out in the field. To test the water loss audits, in 2010 we embarked

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on something usual, utility -- unusual, utilities don't do this, is take a random sampling of the system, to see the meters are in the ground, how accurate are they to ensure that we're accounting for that to our customers. They did a 128 random test of meters in 2010 and the composite is it was about 97.9% accurate at that time. We probably will embark on some additional follow-up to that to see if there's been any additional change in that accuracy. Since there's no standard for that we took it upon ourselves to do it on a five to 10-year cycle. In addition we've started in this last December to start replacing some of the strategically -- some of the older meters that the billing system can reflect on as well as some of the higher usage meters. So on an industry-wide standard those are two areas that you can work on to replace meters. So we're looking to heavily replace the higher usage meters and we just started that program back in December. We'll also be doing that for river place in the upcoming months. If ae or the billing system throws out a work order, work order management system, we will go replace the meter. It's more economical for a residential meter replacement than it is to test it out in the field. We stopped testing residential meters out in the field about 10 years ago and we now just replace them with accurate meters or new

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meters. There are strategies meters we can touch on and I'll touch on two or three of these and I'll get with Chris to finish up with the active leak detection as well as the asset management part. So the first strategy you see is the far left arrow. It says speed and quality of repairs. So any time the process is that any time a customer sees a leak or any of our utility folks see a leak, they'll notify either 311 or dispatch and we'll respond timely to try to address those leaks. And we'll have performance measures I'll share also on how we track that response. As well as speed and quality of repairs, we also have a pressure

management strategy to help achieve lower real losses. And when I refer to pressure management strategies, they're reflective of the entire city, not just any one particular area. We have systems in place that make sure that we ensure that we're achieving standardized pressures throughout our dedicated pressure Zones. In addition to that, we have another strategy which we've kind of embarked on in the last couple of years, more of an active leakage control. That's separate from you see a leak that surfaced in the city and then now you go pinpoint where that is. Those are reactive leakage control measures. What I'm referring to is active leakage controls. You're finding that leak before it actually surfaces to the street level or to the ground level. And we'll talk about that strategy. As well as the last strategy is more of an asset management strategy that kind of replaces some of the aging infrastructure or problematic assets that have surfaced based on possibly

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some of the additional leaks that have occurred on pipe segments or material base that maybe the material is problematic, so there are some asset management priorities that we'll also discuss. To give you a sense of what our performance measure is for water loss control we refer to the index as one of our performance measures. And in order to us to compare ourselves with other utilities we look at also what American water works association considers as [indiscernible] That would be appropriate for assistance to be facing water resource issues such as limited water resources that are difficult to obtain or maybe the cost of that resource is high, so we target a less than three ili. Currently we're hovering right around three, just above. We've proactively looked at this every year to make sure that we have strategies in place that can address some of these real loss and also apparent loss issues. >> Some of the other things you notice is that this is kind of a performance measure snapshot, this value is taken at the end of the calendar year? >> I'm sorry, this slide is the question. I had a slide -- from 2012 up to 2014 I see it's been going up. Are there any factors that you could help us understand the reason for that? >> We look at this every year. As I was mentioning this is a one day or a one-year snapshot.

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During 2012 we discussed issues with the datasets. That was probably an occasion that some -- indication that some of the data was not in line with what the usage was. We did have a new billing system implementation so there may be some issues with the data set that we compiled. We really haven't found the smoking gun on, okay, we had a whole lot of breaks during that year. The same with the current year. It was another change in data set. The water -- we had to switch from a fiscal year to an annual year of data. So we're missing three months that we probably wouldn't have captured or would have captured on a fiscal year. So we really haven't found anything there, but we'll address those every year to see what strategies that we can look at to improve. One of the strategies that we are looking at is the accuracy of the small meters. So that's one strategy to look at is, okay, we want to be confident that our accuracy is reflective of the report that we submit to the water development board every year. >> Kitchen: Okay. Thank you. >> I talked about this as a component, real losses, just to give you a visual fact here is every system has some level of leaks and those are probably in the background leaks. And that's what's calculated through the unavoidable annual real losses. In a strategy like this, background leaks would probably be removed or you would minimize background leaks if you had replacement of pipes or joints. That doesn't necessarily mean that you will eliminate your leaks. In the next category you have unreported leaks. Those are the leaks that we're going to target in

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some of the active leakage detection strategies, essentially look for leaks before they surface, and also the last category is the reported leaks. Those are actually the leaks that have already surfaced and are usually a component of a customer calling in to let us know that there's a leak out in the street and we'll address responding to that leak. So in the strategy of leak response and repair, if you -- let's see. 2009. So in 2009 we recognized that there was -- recognized that we needed to have an initial or a response to leaks that were occurring off of business hours and we created an off-peak shift, which is an evening shift to help with responding to these leaks. Most of the leaks today are repaired within a day or less 75% of the time. There are some outliers that it may take longer to do so. We have also recently started tracking a lot of the leaks and what we referred to is a water leak map and that's valuable on our website to kind of give you a feel for what are the current leaks that are outstanding right now? Which ones did we repair in the last 24 hours and which ones are we still pending to investigate? And I'll give you a snapshot of what that tool looks like. So in performance on just leak repair times, we've recognized that we want to address the leaks that are surfacing to the top, surfacing of the road. We'll send out a -- the

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process is a customer will call dispatch or 311. We send out what we call a service coordinator. That service coordinator has about an hour to get to a site, and that performance measure is to evaluate the leak. Is it something that's immediate and needs priority one attention, which would be addressed within three hours? Or is it something that needs to be addressed within the next business day? That would shift to a different priority? Sometimes the first first responder out there -- the first responder out there doesn't fix the leak. It could be a meter leak and it doesn't address that. If they have to excavate and find the leak that is located, we could switch over to a work order system that allows a different group to attend to that. In this graph in 2010 there was a large push to improve the leak response, however it was so large of an effort that our response time went too high so we had to back down on you see the 87% peaked, we responded to these leaks within a day 87% of the times. We have since started managing that between premium time and also response to try to get back to a manageable level. And currently we respond to leaks 75% of the time within a day. So I refer to as this water leak map and this is something new that's been posted out on the website. It hasn't been marketed as much, but definitely it gives the customer a feel and a look for if they see a leak whether or not when they've called in that leak, whether or not we've responded to it what level are we at or an estimated time of repair. The green are those that have been repaired in the last 24 hours. We repair -- we probably see in an average of maybe 20 to

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30 leaks a day. That peaks out during the summer. Definitely we've east Austin in the order of 70 eagle pass -- we've seen in the order of 70 leaks, but in the winter it's lower. The red represents those resident leaks that are pending some level of repair. And blue Santa represents that we've sent somebody out there to start investigating. They haven't really closed or prioritized that leak yet. This is a tool that again keeps the focus on that strategy, on repairing and responding to leaks. The next strategy I mentioned was on pressure management. We have over 170 million gallons of storage. This represents a storage -- actually, this is reuse. Don't think we're drinking out of this tank. We have over 40 pump stations throughout the city and we manage a lot of the city's controls in one of our service centers or control rooms that can take a look at every single level of these tanks in one control room. Not only do we manage levels, but we also manage pressures as well as we can control pump stations from a control center. So we refer to that as our scata system and our scata control room that manages all the

distribution points. And typically we have also a program in place that ensures all the instruments are calibrated for sensitivity and level and anything else we need to operate the system. Like I mentioned, anything else can leak, even a tank, so it's important to manage that pressure in order to avoid any overpressurization of the system or overflows. That's when you'll have real losses is if you overflow this tank and have to account for that.

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>> In addition, we also have some in-house capabilities and where we use some individuals that are trained on leak detection equipment. We have a very few selected individuals who actually can perform some leak detection. They typically are responding to leaks and pinpointing where that leak is so that way the crews can excavate and identify where the repair needs to occur. On occasion we've deployed some overnight leak detection. And one of the examples here I'll show where we actually deployed overnight leak detection and actually some of the leak loggers identify a leak and we responded to those leaks and repaired them. Some of the equipment that we use are kind of ground mics that listen to some of the components like valves. We use also some noise leak correlators as well as leak loggers. In the instance of some of the trials we did to try to identify proactively some of the leaks, we deployed over 50 what we call permaloggers or leak loggers. What we do is we put those on valves and we listen to them. Essentially it's a lift and shift. We put them on the valves, we leave them there overnight, typically a week, we come back, retrieve those loggers. Those loggers have recorded some level of leak. We'll download that information from the software and then we'll identify where those potential leaks may be. This gives you an example of what we did in the glen lake water district.

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We have identified 50 loggers and identified leaks there. We were able to address the leaks, repair them and remove those loggers. This is something new in to try to reduce the water we lose in our real loss water strategies. So this is something we'll see more and more. I mentioned that lost creek has a master meter. That could be done similarly where lost creek has a master meter and it has also all the individual home meters to identify whether or not there's exorbitant amount of water that's being lost in a certain area. It's meant to discretely define certain areas of town, one that you have a master meter going that feeds the area and one -- and the other is that you're monitoring all the billing data at the same time that the master meter is being monitored. >> Chris chin, Austin water. We have gone over this slide before, but my focus I will give you a high level overview about Austin water's effort for pipeline asset management. And both are -- both are very important real loss control. So and currently we have a small diameter leakage detector counter and large diameter leakage detector

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and that helps to identify leaks in our distribution and transmission system. And we also have a renew Austin program and that program establish an end to replace our aging infrastructure. The reason why we set up a large diameter and small diameter and also pipeline replacement program is that because not only we have 300 miles of water assets, we also have very complicated system. As you can see from this chart, we have many different pipe materials. We have an asbestos pipe, iron pipe, pvc pipe, concrete, other pipes. And this also represents the service life that Austin water has been providing service since 1912. That's over 103 years. And throughout this 100 something years technology and materials choice has been changed. So you can see that we still have about almost 90% material asbestos, cement pipe. Cast iron is over 25%, closer to 29 percent. All those pipes represent those aged

pipe, be it like ac pipe was popular before the 1970's and cast iron pipe were popular before 1960's. And you can see almost half of the pipe are over 50 something years. And now only we have a -- not only do we have different pipe materials, we look at different pipes and what's the impact on the leak. You can see that maturity of the leak and break is from all cast iron pipe. That represents over 80% of the issues.

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The rest 10 percent is on ac pipe and the other is also about 10 percent. As you can see over 90% are associated with pipes over 50 something years. Not only we have different pipe materials, we also manage a wide range of pipe sizes. And this many are counting -- this mainly is counting our distribution pipes and not counting any service line to individual customers. As you can see we have some still pipe diameter less than six-inch or six-inch. Those are in you combine closer to 30%. With a new modern standard we try to keep our pipeline size minimum of eight inch. And those eight inch or six-inch and below, those are -- those represent those pipes are very old. >> Zimmerman: Because you're trying to keep the dynamic pressure down in the pipe? The larger the pipe the lower the pressure? >> In old time people, since there's not a lot of people, so people use like a four inch, two inch or six-inch. But with the growth of Austin city, we found eight inches most economical. And also they have a better pressure. Less loss throughout the transmission. As the city grows the more we have to deliver, we want to minimize the friction loss through the pipe. And based on the different pipe size we also look at number of breaks. As you can see, still correlate to the aging infrastructure. Six-inch represent closer to 60% of our breaks. Our breaks average about one breaks or two breaks per day. So as you can see each year we have hundreds of breaks that our staff is working very hard to address those. And based on that understanding of our system,

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that's why we have two different leakage detection program. One is the focus on small diameter leaks. And as Rick mentioned, detection leaks are sometimes hard. We're using acoustic method and some materials that work well with those technologies, and some are not. And for small diameter while we are using a specialist firm, they are expert in this field. They send people out and they work through the city, all the customers, on average every six years want to cover each other once. So that means we cover the whole area. But since there's a lot of asset, so based on economical point of view we locate almost like between 100,000 to 300,000 per year to spend on these efforts to identify leaks. As you can see, we sometimes average each year we can identify about 100 of those leaks and normally are not above surface to the ground. And for the large diameter we also spend quite a lot of effort. Those large diameter are 24-inch and above. If something goes wrong each one leak will possibly represent hundreds of small leaks. And for example, recently we have identified major leak along Johnnie Morris line, that's a six-inch line. And just one of that leak represent almost a half inch ed per day quantity. So if we can identify a leak, then great. And that could save us a lot on and minimize the loss. But sometimes it's good to catch. Sometimes we puzzle and not catch any leak. At the same time we are also looking at condition. Those pipe is also a major impact to us, so we are not

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only looking at the leak, we also look at the pipe condition itself. Concrete cylinder pipe is sometimes hard to know what's the conditions. We're using a defense technology to identify some of the corruptions and wide breaks and to predict service life. >> With the aging infrastructure, we have -- these are -- this is a renew Austin program that started since 2012. As of last year, we have replaced almost over 50

miles of small-diameter water mains. If you compute, it computes to 3700 miles. That's a still a small amount of distance, but it's very complicated to replace pipes through a very busy street and that also has an impact to the city. So that's why we don't want to do a lot at a time. To replace those. Our goal is to replace a minimum, like 10 miles per year. Sometimes in a year we might get up to it might be 15 miles. Then in terms of money spent that equivalent about \$15 million per year. Forehow we select the area, so we are looking at the data that I just present to you, looking at the age of pipe, pipe material, the performance, the history, the number of breaks. Then we also look at the criticality importance of those assets, so then we prioritize those. And then once we identify them, we make that into an actual C.I.P. Project. And so our criteria includes the number of breaks, pipe material, pipe size, age of

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pipe, pipe condition, and criticality. And not only we identify that, we -- as Austin water, we also coordinate cooperate with other city departments. The idea is if we -- take out a road open, a trench, we also look at weather there's other things that can be replaced at the same time. For example, sewer lines, the storm drains. It might be the road is nearly at the end of a service life, needs to be resurfaced again. So we can pick up those streets first and then at the same time we replace the main. So once everything down the road will stay there for quite a long time. The question is how about the large diameter pipe and we also have a different contract in place. We call it -- it's a delivery in quantity contract. So those are just like responsible responsible. Once we identify a leak, then we can mobilize a contractor to come in to help us to fix those leaks. If those are -- those large diameter require different skill sets and Normal we don't have that capability in house. With that, I think we are open to the -- questions. Thank you. >> Garza: I don't think we have any questions. You did such a great job. >> Thank you. >> Garza: Thank you. >> Thank you. >> Garza: With that we are adjourned at 6:03 thank you.