

LINCOLN WATER COMMISSIONERS

August 25, 2021

Special Meeting Minutes

The regular monthly meeting of the Lincoln Board of Water Commissioners was at the Town Hall with Commissioners Kenneth Booth, Edward Fox, Edward Sliney, Julie Labreche and Louis Long present. Also present were Acting Superintendent Lewis Prescott, Anna Nascimento and Legal Counsel Stephen Antonucci. The meeting was called to order at 6:05 p.m.

New Business

a. Pare Engineering Presentation – Water Availability

Acting Chair Labreche relayed under new business they have Pare Engineering water availability with Tim Thies.

Tim relayed he has a slide presentation if anyone would like one. Acting Chair Labreche replied yes she would please. Mr. Thies gave everyone a copy and also address if anyone can hear him and thanked the Commission for having him. Acting Chair Labreche replied thank you for coming. Tim expressed that he is there to talk about two things Water Availability and Capital Planning. Just in case if anyone who do not know him, he is going to do a little introduction. He works for a company name Pare Engineering Corporation down the street at Blackstone Park Place. They are setting on Engineering Firm and they have been there over 50 years on all matters are engineering. He have been with Pare over 19 years going on 20 years and his specialty is the environmental division in the waste water and specifically in the water system engineering, design, planning, capital upgrade. He has been doing the work for over 20 years so has he mention the purpose of his presentation tonight consist of two things one is to talk about Lincoln Water Commission on the capacity of water right now. As it relay to the supply and right now for the water available thru the supply. Then to underline the process to developing the capital improvement that they ask for and accepted. This is going to be kind a level he can spend hours and hours. But if they have any questions, they may feel free to ask.

Mr. Thies relayed the first thing is going to talk about is the Lincoln Water supply, the supply availability are extremely low. So what they have out there are the water consumption, it is how much water they have consumed within the Town of Lincoln Water over the last 9 years. This is an annual consumption over the last 9 years and in the year 2015 it is like a peak in around 807 billion gallons of Town water they consume in 2015. So the ball point of the last 9 years is about 763 million gallons and it was in

2017. As they can see over the last 9 years it has been somewhat regular and is has not been steady is pretty typical for the water system. A lot of water system do not use the same amount of water every day, same amount of system growth it rains some years for one season. So there is always some variability in the water system, but this is where they have the water availability for the last 10 years between 750 and 860 million gallons. That is quite 200 in an average for some from 2.1 to 2.4 million gallons every day in estimate in consumption for last 10 years or so. Some are 217 million gallons a day in average consumption. This is their consumption on the slide presentation by month over that same period. Also they can see it here it vary in their consumption every month with those peaks. Therefore, they have 9 peaks there in what those are representing is that some are water precipitation. The low spot there are winter time wiser and as they can see they are weather dramatically between summer time usage and their winter time usage. In addition, that red line going thru the process that is their average wipes that is an average of their monthly wipes which is around 67 million of gallons per month. And that is their average for the last 9 years so when they talk about water supply increment. They talk about in term of average in the winter usage then they talk about in the summer usage that they can see a huge jump in the water usage in the summer time. So in the summer time they peak is what they do as the engineer, when they do assessment in the water system they assess their supply. If there is water available in the summer time that meet and if there is water available that match their availability for that kind of match.

Since 2017, Lincoln Water Commission has their vision for their proposal some are residential and some are commercial that come in town they are looking for water. So what he has on the screen is a dozen of new development that has come across his desk so he tabulated what is the request of demand is, what they will expect for their demand will be on average day. And what they will have to do for the average of a max day. For the max day, it will be on a summer time if they have an extreme demand and it is not every day in the summer. It is just that one period in the hot day in the summer. For a lot of people that use a lot of more water each day that is the max day, part of it is the consistency of what is projected with all this development come into transition will project an average daily with Lincoln Water Commission of that 170 million gallons. That is an average day demand but in the summer time they are projecting the water to go about 4 hundred thousand gallons per day. So these proposal that are on his desk some of these were approved and some are under constructions and some have not been approved they are in variance stage. These are on those they have been look at for the concept so here is a summary the total system can have and what is projected in the future. Like he has mention in the future the average can go up to 1.2 million of gallons a day with all these new development. In other word 20 million gallons over 2.2 that will bring a total average of 2.4 million gallons but really when it gets to start critical it is in the summer time. Therefore right now in the summer time, they get about 4.8

million gallons, the new demand will add about 0.4 million of gallons which is about 400,000 a day. Which it can require about 5.2 million gallons a day, now the capacity they have right now from the natural public water is 5 million gallons a day. Of course, it depends on some of the hydraulic module hundred gallon a day but it is 5 million gallons a day for its capacity. So as they can see right now, without a new development just as today from their pump capacity in that station 4.1 million gallons with an edited development. They all come into institution if they all want to use it they can come to a formal request right now. Several years without being compromised by now, so as a rule when they look at capacity at the value of their demand. Once it get by 80% of their capacity in the summer time, they really need to look for a new capacity for their new supply. Therefore, when their new demand start to hit about 80% of supply of capacity. In this case, the capacity is at 5 million of gallons their 80% of that development is 4.2 to 4.3 million of gallons a day. So really when they get to that 4.2 to 4.3 million gallons a day structure in the summer time. When they should be is a new supply and for they should try to look for.

Acting Chair Labreche asks this 4.2 million gallons per day demand, which was including all this project that has been look at in 2017. Mr. Thies replied that is what this number represent right here and this is what they do right now 4.8. They have new development and they got their total of 40%. Acting Chair Labreche said again to Lewis Prescott she does not remember properly but she was in the office last time one day. And she thought he mentioned that they were hitting already 4.8 million gallons this summer. Acting Superintendent Prescott replied that is correct this summer he even took a photograph and he also think he send some pictures. As they can see right from the Scada system, they hit 4.8 million gallons a day. Acting Chair Labreche said all right she just wanted to point that out and she thanked him. Mr. Thies relayed what he is trying to illustrate with this slide the time to start planning for supply is now before they hit the 4.2 million gallons from their supplier. Therefore, they are coming up to that to have more water they are using now plus what is being requested. That they think they can rebuild the supply back in the summer time. Again it does not need it every summer, it is just one part in the summer they are going to need one part in the summer they are going to need more water. That is why there is a map that represent so they are a couple things to think about when the demand exceed thru the supply. It does not mean when they use 5 million gallons a day the water drawn and it is not it means on days the capacity total what happens is going to hit thru the storage. So the systems has a storage which they used the storage every day and they will need to knock it down for back fires or emergencies. They serve a lot of purposes but at the end of the day and every day they will need to replenish that storage with their supply. If their demand exceed of what they have available supplies they are going to get more supplies because they are going to have to replenish the tank. They are going to drop the water down and then they are going to fill it at some point. And if they add all those

day together back to back they are going to start really to fill it. They used their storage every day, the usage of the storage is not the issue and it is that when they over used the storage and start to pre-use their storage to a point. Where they get started on storage now they are getting to their fire storage. So they are getting on their emergency storage before a lot of tanks were going that now are getting 120 PSI it means they have too many on wells. They have exceeded their emergency storage and actually they may not have water for their emergencies. Or they might starting to get that low pressure that the RI Department of Health requires and they have to get to a level water for the system to find the storage to stop. Every system has a requirement and every system must have enough supplies capacity so it is now accessible storage with it has enough supplies to meet their demand they have every single day. Now the time during the day where they can manage the pipes like in the morning when they come from work that is when they can renew their storage. But at the end of the day they are going to be able to fill that storage so if their demand start to exceed the available supply they do not want let this situation go on for too long for them to start looking for storage. Before he moves to Capital Planning are they any question about the supply capacity versus what is being requested.

Commissioner Booth stated to Lewis when he talked about storage if he encounter about the days he has been having trouble with the tanks with this 4.8. Did he replenish that storage every day? Acting Superintendent Prescott replied he can show them on the chart with 3:30am they start to experience depth with all the tanks. The Old River Road tank between 3:30am and 7:30am in the morning they lose 7 feet a couple pumps right away he cannot catch up. If finally catches up around 11 o'clock so it look like it starts at 3:30am in gets down a good 7 to 8 feet just for the Old River Tank for one example. Then when the irrigation system goes down and whether or not people go to work it goes back up. He experiences it on hot days every morning and that is for all the tanks that is the experience from the tanks that does not hold that much. So it is like the primary tank he will see 4 feet or 5 feet will drop on that day it is also hard to catch up. Also when he has 2 pumps running at the same time. Commissioner Booth asks at this point should they be what they experience on the Lonsdale Fire if there is a fire behind the tank is that tank going down because of the pressure of the water supplies. Mr. Thies replied that is correct therefore if they have a significant fire they will use a lot of water to put it out right. So they are talking 100,000 gallons of water and millions of gallons to put out a fire right and there seems to have a lot of storage and they can get over that quickly. If they already start that on the position of storage from that fire after and also can be in trouble as if the fire did not have enough water to put up that fire. They can cause excessively low pressure in their system there that is a big problem. If they start letting that pressure drop when they draw too much water but they do not have enough in the tanks. The town would say they do not have enough because on the pressure problem it is very common with the pressure.

Acting Superintendent Prescott says if he may just regarding the Old River Tank 125 PSI and he keeps it fuller to 122 approximately but he is getting behind the 122. And there is time when he is doing 4.8 million he has that depth from 3:30 to 7:30 in the morning that the tank is 150 feet. In alarm is set up at 96 feet on that day on the tank and if there is a fire they know what is going to happen with that they are going to have a problem. Mr. Thies said when they talk about storage tank and what it means is that water tank profit from that. Acting Superintendent Prescott explain the station pressure takes on the Providence side where they get their water from. In addition just the other day he had 130 PSI he was pumping for whatever reason people were shutting their water sprinkler off and he was doing maybe 2 to 3.8 million gallons per day. Mr. Thies explains what Lewis is talking about it if those who do not know one of their limiting factors in their system is how much water they can draw from Providence Water. Therefore they buy all their water from Providence Water their pressure at their own connection and it is not very high in the 30's or mid 40's. Acting Superintendent Prescott relayed on a good day it is in the mid 47%. Also it is fair enough to the pressure down so they cannot allow it, just like they cannot allow the system over 100 PSI. So they start random pumps to pumps their station to draw a lot of water it will drop their pressure with 100 PSI. And the Providence Water says they have to have their pumps down. One in factor it will intake. Acting Superintendent Prescott stated they have had that in the past with the Providence capacity got back and they had to set the pumps on timer. They also have to block them from running. And of course, they were having issues with the variance because they do not have what they need but it has happened. Mr. Thies asks any other question on the water supplies.

Mr. Thies relayed the next thing he is going to talk about is how the availability and they begin the process of capital planning. The value of capital planning the supplier is a piece of that plan so what he has here as a bunch of capital in the system of storage of the watering from the suppliers. And they are number one in the capital and that is what they should be planning for. So what he is talking about there is to plan for infrastructure to either upgrade or replacement of infrastructure usually over the 20 years of time. But there is a time wise to look at for the capital plan. Their system is made of all sort of pumps, pipes and tanks. They all have different use since pumps have additional life for 10 to 15 years for watering they should go to get 100 years of watering, the tanks could be 100 years for their tanks. For the time wise for the planning that will need 20 years and they try to update that every 5 years. So they are always on top of their capital plan for infrastructure. Therefore their capital planning it means by capital their financial instruction which capital planning includes assessment, design and then funding of future rehab and replacement of their break. Like he said if they want to their water shorten by their pumping station so he can plan for their storage tank. What he means is that they should do physical assessment from the storage tank on average daily

basis. As far as he knows they do regular assessment as far as doing their 3 and 5 storage tanks that is the difference.

Acting Superintendent Prescott replied yes they have seen doing something like that. Mr. Thies explain so they have to keep on top of that on looking at their shortage physical condition of their storage tank it is all about understanding the amount of shortage that is in there for average for their system. And it is functional to be used for their system right also that change all the time that is not a static thing to look at it. Once to be done because as the system change, it decompose the changes of characters overtime they can go from a commercial system to a residential system. They add development to the system and constantly to look at the storage pressure of what they have on the storage to still function and usable. After that is there enough water in there to suit their need and by usable what he means is the storage that is the tank usable for all their customers and how their customers are accessing it. In addition, still maintain the minimum pressure 120 PSI. He will show them an example this stuff figure they put together for another system that they are looking at it and they want to understand how they improve their usable storage. They had a tank up here a million gallon but that dark blue line up here that is all that is usable. They let the water drop below that line the pressure system drop below 100 PSI despite the pressure. So the pressure is set by and it is all about how high level is in their tank that is how it gets produce in the system. If they live next to the storage tank, they are not a lot of issue between themselves and the tank so the pressure could be reduce as well. But if they live down the hill then they will be a lot of issue on the top of the tank maybe a high pressure and they have customers that live anywhere in between. It is all about this water level and where this water is going that is what sets the pressure impulsion. So if they set the water to low, the customer that are at higher pressure then they are going to drop the pressure at 100 PSI. But if they are at the lower so much but they got some customers next to the tank their pressure will commence to drop it is not for all the customers. If they relocate the tension to how low they can get this water drop and still keep below the 120 PSI.

Therefore he used it as an example to some extreme example as very low storage once the water go down thru the line the water pressure start to go below 120 PSI not for everybody but just a bunch of customers. So they want to look how a new tank that they can build and will allow to get more usable storage. In addition, they look out different configuration tank and elevation tank for allowance tank is about mind blowing. They were not great combination of storage tank that they can put out there that would really increase the storage. They have to look at them another need for pressure but this is the kind of thing they need to look at in their capital they want to look one of their tank. They want to look how much storage, how much in their total, how much it is available on a regular basis. Also how much is available for fire fighter and how much is available for emergency storage. Then they want to compare that to what their system meets. So

they might have a tank that have 200,000 gallons of water that is available to pipe on, based on a configuration compressing tank, based on shape that is entirely but they are a development. If they need 500,000 gallons of water to a particular supplier but while the tank is much larger than the other tank they might be looking for more storage. They might need to replace that tank to increase that little storage for the little component for some policy for fire, for domestic reason or for emergency reason their pump station shuts down unexpectedly for prompt inspection. They have to reinforce their storage tank and these are the kind of thing they need to do in their capital planning in accessing to look at the capital plan for the storage. So it is a mix of physical assessment that this value originated of functionality of the storage. Capital planning for their pump, the pump are the most careful that are the equipment in the system this requires regular inspection in short terms. While doing the things that they need to do in their pump to make sure their expectation and making sure their parts are replaced regularly that they run smoothly that is regular short term that they should do every day that is what the Water Commission is doing every day with their pumps. But they are also looking for a long term that is a long term at every pump. Every pump in the whole world is going to fell someday and no pump would last forever but they should have it in their capital a plan to replace those pumps. So they are not far unexpectedly with two pumps down. They should have a plan to replace on a regular basis that is another big part of capital plan and their system had to operate their pump. They also need to look at the pumps that are sitting out in the open doing their thing inside the building which a lot of other systems. A lot of mechanical systems, structural systems that support this, these are really good system. In addition on those pump they want to look at the replacement and upgrade part of the pumps in the electrical system mechanical system the building structure. They might want to look at the side of the pumps depending on phase but they want to plan on these upgrade. So again this type of stuff are going to fail eventually and therefore it should be in their plan to replace their pumps station and mechanical system should also be in their plan. This are all the things that should be counted on it with a time wise to do it, to replace their pump every 10 years, replace their electrical system every 25 years and replace their mechanical system every 25 years that is kind the things there should have in their capital plan.

The last piece should be their pipe network so their pipe network is a little bit more difficult to assess because their pipe are going to be a failure. As far as their access they cannot visual go out there and do visual inspection of all the pipes in the system since all the pipes are buried underground. Therefore capital planning for their network are a little different, capital planning is based on diligent record keeper from what usually breaks, like making certain things done so they understand where from proper system. And it is a diligent record keeping and also doing engineering assessment. They can engineering assessment from their pipes and not have actually inspect them they look at things like main break history they can chlorate on the material age and

prep on similar pipe, similar materials age and put two and two together this pipe recently that have the same age and same material they should be targeting for the replacement repair. They can do periodic flushing and flow testing they can also assess the condition of other pipes and the interior of the condition of the pipe. They can do some assessment of the condition of the pipe and that really big piece of this really comes from of creating a computer model of their pipe network. And that can really enlightening for an engineer to understand where the critical pieces are from this issue. That really big piece of this is an institutional knowledge of the folks that are out there every day working with those pipes and responding tremendous and making sure of that knowledge and understand what they know that is the real key to understand what the key points are. So he is going to show them some examples on some that they did some capitals also it is a little hard to see of some pipe network from another system in Rhode Island and what they did here they have a computer model for hydraulic system. They populate that model of this character for this system and they know how the water move in that system it has been sent for years so they generate an analysis for their system that identify their very objective for the most critical pipe in their system. That is very creative and understand what is critical in their system it takes in effect that the water main aged with great history and it is located in a dead end area of the system. How much flow is caring on a daily basis to be on a comprehensive rate? They are able to be on a two dozen criteria and then have their module spit out a score a rank in their system for all of their pipes in all around the city. So for this is 0 is the pipe rank score tank down to 10 of rank for this particular system and 0 not being super critical and not being particular able to break a pipe that is not their priority requires attention and the line in red are high priority and really need attention. It needs to be replaced, it needs some attention in the system and it just needs some attention. Unfortunately this system did not have anything at the end but they did have a lot of yellow color and what this identify is that this pipe right here on 295 that is a pretty good pipe in the system for various reason not because on the sole line of the 295 right there. It carry a lot of flows and it has a number of breaks on it that is the number one maintenance system that they need to address in that creating a capital with that 5 years plan. So they are able to generate the hydraulic module a tabulate form on this to show them very precisely on the ranking on every single pipes that is in the systems and that is index by street to say what is the pipe and they know on this street the score on that pipe they go right on that table and go in. He also know that they generated this figure to see a little bit and kind of understanding what is on the table. But this illustration represent to help people to look and understand what the priorities are and work like this to represent others so they can say this hydraulic are in red or purple. This all is looking at a good hydraulic module and this is one thing.

Commissioner Booth asks so he managed the hydraulic module on the other hand he brings more to the table. If they have a comprehensive module where they will be able

to bring it to a certain location. To what if there is a scenario if they can pull a development in there in the perfect system and leaves 300,000 gallons a day and put it in that location to see how the whole system react similar in the tank it got that type of typical aspect of it which let them plan. Mr. Thies replied that is exactly when they talk a little bit more of hydraulic module that is correct and this is a hydraulic application module when they use for a capital plan but modeling is becoming a tool for everyone as right now just like a utility truck and everyone is going to have a hydraulic module. So they can understand not just a capital plan is and they can understand what the water situation is. What if he want to add a development to this, what if he want to make implementation on this plan, what if he wants to replace this pipes. It is really that engineering tool that system is understanding to pass and everything that they do in the system. Then the way the module are built now in days they are totally intergraded with GIS map and rap to get the system to find the format for mapping or working in the management before assessment so it is really what they want to do with the module. Because they will take all this mapping and all this mapping will go and they wanted to be integrated with the mapping for generating more water right out of the mapping. So if they say they have an issue with this pipe and they can lower it right from the GIS mapping system, right into the mapping they can set it to the fourth quarter. They can send somebody to take a look at the pipe they can complete that program and re-uploaded to that program and they will have a chronic record of that map. And it will tell them exactly when the last time someone work on it was and it is all fully equipped for a GIS map system beyond just the hydraulic analysis become a tool for the water system in addition to this engineering system. So those are the things they do in an assessment for this system and the set to create a capital program that every system follows the first one is to do an assessment. For all that stuff they carry for storage the tank, the pipe network, the pumps if they do an assessment of all the tanks he would imagine an hydraulic module either an hydraulic module they can use it to assess a tank, the pumps, their supplies. And if they want to do it for a neighbor or this source would require within the town they would need a module to help them understand how it is going to react to an assessment. So the first thing to do is to understand what the prompt communication to that system is and what is the condition of his pump system. Commissioner Booth asks does Lincoln Water has a hydraulic module. Mr. Thies replied so what Lincoln has is what they called a skeptical model so that is probably 12 years ago another consultant put it together their model for their system. They called skepticism that is probably that is not complete hydraulic module and is mostly transitioning and the server captioning well it is not in the system at all. For example, if he want to do something like this this is a complete system all it is every pipe in that system. If they want to do something like this they would be able to do it with the model and they have all the criteria it is severely with all the details on what they have been doing as new development comes in they are filling the module around that

development so that they can assess that properly and understand the impact of that system. Also that neighborhood to rapid so they have been some short piece notice when there more that comes in they would know more and when they come in and they tell them a little bit more. The model still very similar it is not in any way shape or form for the full complete system model but it is suitable for what they have in the system. He asks Commissioner Booth if he answer his question. Commissioner Booth replied yes.

Mr. Thies relayed the next steps for creating a capital and identify most critical system improvements on it and it might be rehabilitation tanks, it might be looking at supplies, they should be looking at supplies and they should be looking at pumps and identify what is the most critical system improvements are right now. The thing is that they need within the next 5-20 years then find out the next implementation that are important to put it in the plan and those get to put into options by 5-20 years to come. Because they think they need to do for the next 20 year or so for all this assessment to be done and the most critical are the easiest right away and they are the other one that need to be done after that. They need to come up with a schedule for that and then they come up with a financial analysis and that is the third option basically how it pays for all this project. Since none of this unfortunately are going to be free all this cost a lot of money therefore they have to do a financial analysis for how they are going to pay for this and how are they going to do the structure for this. Are they going to borrow or they are going to pay cash or are they going to raise their rate. And they set up in the system and said they need to do a rate increase to pay for this. So their financial analysis may well include a breakdown so they can understand how much income they have coming to pay for the profit directly or to pay for their finance. Then part of the program once they figure out the finances they need to figure out the project that needs to be due it is easy to implement and to get in on the schedule. That is really the key to try to fit it on the schedule and it is very easy to fall behind on the schedule they get out thoroughly and start with the project. When they get to that part of 5 years' time line they really take on themselves and they are a lot of things that is intentional and there is other priorities that comes up. But that is going to be the key with checking their capital program to make sure that they are on track. Once they begin to implement this they have to take this plan every 5 years and then go back and see what they have done within the 5 years. Also see if it has been adequate and has he meet their goals if not they are going to reassess what their goals are and maybe take a step back to see the step that he has missed. Or maybe he will move on a new file once every 5 years to go back and look at it and say he is doing what he is supposed to be doing. There is a living document that gets updated for sort of count and some of this might sound familiar to them from day one so RI Department of Health requires that every system do a comprehensive Infrastructure Replacement for every system is required for every 5 years to submit the capital plan to the Department of Health. Every plans are done by a decision and basically they are done by a plan that he can walk them thru by assessment, identify by

profit, and then identify by financing and then they come with an implementation and every plan has to follow that requirement. Lincoln Water has been doing their plan but with Lincoln Water plan it is a little icon it is a specific project they have to have specific project. The identification of special plumbing of the mechanism how they probably do it and how they are going to pay for it and schedule. So there is a plan out there that is approve by the Department of Health for Lincoln Water is going to plan. So what he recommend is for there to put a plan and manage their next plan to put it together and really focus on very specific project. Some plans talk about all they need to replace are 5000 kilo water meters they do not say what street they do not say what water main and they do not also say why it is just what it needs. In some case is that all the money they have to use that much water if that is the case it is what it is and there is very specific model for this water on the street. Then identify the plumbing so his recommendation for the next plan to put it together and be very specific on those project and plumbing and the sketch. He also asks if there is any other questions.

Commissioner Booth asks so that when he is looking at a hydraulic model this is the type of assessment comes into place to rank for this as a priority. Mr. Thies replied and says absolutely. Commissioner Booth express then it is a priority their experience within the water system and everybody has their idea what they think happened from the ground when they activate and calibrate the rank of the model and the pipe. The thing they thought happened then that change their priority. If they have an idea they can replace it this pipe this water comes down here but really it does and they think it does that is what the guy before told them. And the guy before him told him but that is not what the hydraulic model how it happened. Therefore it is an eye opener to have a good hydraulic model which they put it together to identify the weak point in the system. Mr. Thies explain that they have done an assessment that generate this plan an analysis for some of them it is just reaffirm what they thought about the system they said he has always known that pipe was critical in his system. And he always known to put in general their objective evaluation to it to justify why to pay for that model. For some other system they were surprised since they have no idea why that this particular watering is so critical in their system. They also did it for another system prior their involvement and they have a different system of doing it they prioritize different things and as a result they were out there replacing everything and spending more money on 2" main 4" main all on dead end street that is what they thought they needed to do. Also they spent all this money to replace water pipe they did not have to on the street and not paying attention on the things like 24" cast iron water pipe that brings all the water to the plan to their system that were installed in 1888. Because the way the assessment was set up to advertise small main it was just assume the small main need to be replace but they were to small they assume dead end also needed attention to be upgraded. In reality small cast iron, small water main on Dead End Street were serving two houses but they did not have fire hydrants that service three houses for one time

that they were doing because of the assessment that was done previously. They were out there ripping the ground to the deuterium on some of the capital project planning that needed to be done. The revamp of that site that needed to be done a different way to be done as an assessment long and be hold the capital of the list for 2020 has listed all their water every single day from the tank plans to their water system installed in 110 years old. Every focus on their capital plans it could be much more focus on that actual project and they did not have a separate way to assess the pipes.

Acting Chair Labreche relayed she does not know how to phrase it and question what would be involved in doing this hydraulic model for the Lincoln Water. Mr. Thies replied so they have this short hydraulic model for some of these pumps and he also know that they keep records of the pipes. They have the building record right now for the hydraulic model they can see some of the portal and rebuild them right that is what he is looking at. So it is not a huge effort to do this for their system and it is not expensive and rather to evaluate all the work to come at this in the future it is relative quiet frankly relative available that can come from this in term of capital project. To build the model for this system in their side it takes day to day what they have already and they probably looking at a \$20,000 range for their system in this size.

Acting Chair Labreche stated she did not want to put her in the spot and question in an average time that this would take. Mr. Thies replied it all comes down how quickly they can get the data and he does not know what the data is it is typically in the 25 hundred. Because they put a column together and everything together but they would need to calibrate onto the system and they do the whole testing in the system and compare that to the result of the model to approve and making sure they are pretty close to the actual model. So it is about building the model, calibrate the model and building the model and they are all different things to it. Acting Chair Labreche thanked Mr. Thies and stated does anyone else have any questions. The Board of Commission thanked Mr. Thies for coming and providing all the information. It was also very informative. Mr. Thies relayed if they have any other information they can go to in the back of his packet and all his contact information are there and he is around the corner.

Acting Superintendent Prescott stated to Tim he has one question for him so the tank building at the office on Old River Road that is 650,000 gallons tank would it be recommended that was replace in 1955-1956. Would he recommend to put a larger tank an elevated tank plus 1,000,000 gallons tank. Mr. Thies replied so he does not want to presume the outcome for the assessment but that is definitely something they would look at because that tank is very tall right. Therefore the unique about this tank they do not build those tank like that anymore that tank is very skim and it holds a lot of water and very skinny and very tall. Which means the amount of water for the storage is not that much which if he has a significant demand like fire down the street they are going to lose that tank very quickly. It is just because of the shape of that tank it does

not have a lot of storage for it and it might have a lot of storage total but it is not a large storage. Acting Superintendent Prescott expressed he does not have a lot of usage storage. Mr. Thies replied yes it looks probably but he does not want to presume he imagine there is a chunk of some storage are not usable. Acting Superintendent Prescott relayed like he said he has the alarm sustain but normally at 96 feet and that will give him enough time to react and he will respond on some way, shape or form but if he cannot give it anymore. It is not a tank that will give 50 feet of the ground also it is only 47 PSI at the based on the tank and it is 115 feet. Mr. Thies stated like he said if he let that tank drop 50 feet below 20 pound they are going to have a drop. Acting Superintendent Prescott explain he only has it at 47 to 150 feet or 120 feet which ever it might be for 47 PSI but if he cannot go below 20. Mr. Thies express so half of that tank is unusable. Acting Superintendent Prescott replied he is only playing with the pressure less than 27 feet. Mr. Thies explain that they do not build a lot of those tanks that style right now because of that issue with the usable storage and there is a lot issue because they spend looking at time and replacing them. Also they did and what they called is an elevated tank which imagine that tank with like fake coal and big storage all the water stored on top of that and non-stored down below. And what that provide too much wider on the top of the tank and they have much more storage for every vertical foot storage. When the sprinkler comes on at three in the morning that tank plummets and probably use to drop 10 feet of that tank but if they put an elevate tank they might lose 6 inches it does not bumper that could bumper to match much better. Acting Superintendent Prescott relayed they will need something similar but it is the high service tank that they constructed in 2007. Mr. Thies relayed like he said he does not want to presume an outcome but they have to assess that tank and very likely a candidate for something they could look at and grade it. Acting Superintendent Prescott replied he thinks so. Mr. Thies thanked the Board.

Commissioner Booth relayed in context of what they have heard from Mr. Thies presentation in the issue that is in here timing. Would it be appropriate the procurement of that and the engagement of moving forward to do a hydraulic model? And bias of that he has seen the benefit of it also is of those things that they stop looking of the available funding of the line, all the money coming in to funding from the government who will come thru the Rhode Island Infrastructure there. Which is set up day government to fund infrastructure project for water and waste water the issue there is they have to have the project on the priority with trying to find out what they have on the priority list with them. If they are not on the priority list because if they are not on that list, they are not eligible for funding and to get on that list if they slip the project they are going to have the documentations for why, where and good estimates on what it is going to cost. He also sees two hydraulic models necessary tools to move forward and as quickly as they can and he also does not know if it is appropriate for the next meeting maybe to have something on the agenda to move forward to get that ball rolling. Because for a lot

of reason this issue with water availability really has been harden for a lot of years there a lot of slipping if Lewis comes one morning and that pressure drops 20 PSI the town is flooded of water thru the town. If they have a fire and they are at the peak demand if they do not have water in those hydrants the liability expose are huge one. Their town insurance rate will be set by ASO based on the ability to provide to the fire protection. In addition, this is a weakness that cannot wait too long on to address and they have to look at a pattern and to colorize the room right now until they get an idea of what they really want, of what they have and how they are going to be able to supplement. Acting Superintendent Prescott stated he thinks what they need to do Ken right up front is not only the hydraulic analysis to do something to start the rate analysis study if they want to do a rate study. If they know where they stand they still have to do something with the rate. Commissioner Booth replied right they do but they are couple of issues one the things they talk about if they have high demand they will put restriction and cut back on lawn watering which they might have to do. But at the same time they are cutting the revenue out he also need to pay for all the projects and they have to be able to solve the problems. If they have to put a moratorium in place for a short term until they have a hold on exactly what they have. Acting Superintendent Prescott replied right they have to know where they stand. Commissioner Booth explain then they will need to know how they are going to fix it and availability of more water from Providence or possibly from Pawtucket. Also to look into that then to accelerate to get that back on. Acting Superintendent Prescott asks if he does not think they should think about they talk about getting the brace on and he said it is up in the air who can actually do that or has not retire. Commissioner Booth relayed so one of the dilemmas he thinks they are facing is they need a Superintendent in place because they are certain things that need to be done in house. He thinks the hydraulic model can move forward because that is not something since it is just based on data and fact that they have. Financial analysis and rate study is something that they should probably be connected to the tank and they are a few experts around. But some they may potentially have a conflict because that analysis what needs to do is to have extra review on all of them to be potentially their representation with fighting with the PUC and with Providence Water for their rate increase. Therefore they cannot hire someone they hire because of conflict also they are a few people to hire that is something they need to look into and analyze the finance of what they have so far. Acting Superintendent Prescott relayed they need to have someone to study for what the rate should be. Commissioner Booth stated they can put it on the next agenda so they can discuss it. Acting Superintendent Prescott explain so they can give them an idea of what they should do out of rehabbing the system. Commissioner Booth replied right but rehabbing the system there is one issue, having a system with is more issues and the other is day to day operation. Since he mention the water drawn in July was by 32% and less than last year so that is revenue they are not getting and also they are not getting he is not a big fan but it is a reality is rate increase.

In addition, they have not have any rate increase since 2014 but Providence Water has raise their rate to them in the last October. Therefore, they are eating that increase so if they are in business it coast a lot to raise their product to pay for. So they are not even and also at the risk of losing their funding to run day to day they should do. Also it is very crucial and he is right. Acting Superintendent Prescott explain what they need to do is a rate schedule but also with the rate schedule they have to make it less complicated number one and make it even out because there are some area that does not get increased. They have never been an increase since they have had their rate increased. Acing Chair Labreche relayed not that she is interrupting but they have been going around and around therefore she thinks for September's meeting in the agenda they can put the Hydraulic Model for discussion as well as analyzing the rate increase. She thinks it should definitely be on the September agenda so they can talk about that in the next meeting.

Motion to adjourn passed unanimously. (EdF/LL)

There being no further business before the board the meeting adjourned at 8:01 p.m.