City of Newberg
City Council Minutes
January 12, 2024 Tour of
Water Treatment Plant

Walking Tour -
Meeting called to order at 2:01 pm.
Councilors Present: Mayor Bill Rosacker, Councilors Molly Olson, Mike McBride, Robyn Wheatley, Peggy Kilburg, Elise Yarnell Hollamon and Derek Carmon

Councilors Absent:

Staff Present: City Manager Will Worthey, Public Works Director Russ Thomas, Superintendent Dan Wilson, City Recorder Rachel Thomas, Records Management Clerical Assistant Melissa Morris, Graphic Design Specialist Emily Salsbury

PUBLIC COMMENTS
None.

REPORTS AND PRESENTATIONS
Superintendent Dan Wilson led walking tour of Newberg Water Treatment plant. A quorum of councilors was initiated, no business was discussed or decisions made. Questions only were directed to tour leader, Public works director or city manager. Councilors quickly dispersed at the end of the tour, ending the quorum, following public meeting laws.

The tour was called to order by Mayor Bill Rosacker who clearly laid out public meeting law, reminded the present group of councilors and employees that questions must be directed only to staff and no discussion was to be held among councilors. The Mayor then alerted the group that the City Recorder's Office would be taking notes and recording the session in order to produce minutes of the walking tour.
Mayor Bill Rosacker handed the meeting off to Superintendent Dan Wilson.
Dan Wilson Started with the history of the Water treatment Plant.

- Before 1950 the City got all their water from springs that were either from the hills or the base of Chehalem Mountain
- 1948-1949 The city drilled their first two wells to use solely in the summertime. They found after using them for a couple summers that the water contained large amounts of iron. Due to this, the iron in the water started turning citizens of Newberg's fixtures, sinks, pots and pans, etc. orange. They wanted to then treat the water.
- Dan Wilson pointing to the large outdoor basin closest to the plant building showcases it as the first basin built to start the filtration process. This was the used as a trickling system to filtrate the water going to the city which is essentially big boxes full of rocks. The water would trickle across the rocks, producing an aeration effect, and oxidize iron like chlorine does, in the process rusting things along the way, it would then come into the large basin. The water would travel through a channel into a chamber which would then be considered clear water. The filtered water would be pumped out of there and treated.

- This worked fine for a period of time. Until the city of Newberg realized they needed more water and more wells were drilled. They decided at this point that the trickling filters did not do an adequate job with the added flow and volume of water.
- 1970 another Basin was built and the city build two more filters, so that the water could also get chlorinated. The chlorine would oxidize the Iron, go through the basins and go through two more filters, then flow to a clear water well underneath the ground and then be pumped out.
- This seemed to work until 1980 when the city decided it needed more water.
- Dan Wilson pointed out that about every 10 or so years the city had to have a little construction project to accommodate for the added amount and flow water and growth of the city.
- 1980 they added two more filters and also added some controls, a PLC, this was in a big cabinet, these were air actuated valves.
- Dan Wilson starting working at the plant in 1983 just after all of this was constructed and commented on how this process worked well.
- in about 1994-1997 the water quality went down and the city needed more water. The current leaders of the city did not want to reconstruct the plant at that point. so they took apart the filters and replaced with Leopold blocks, a tighter more porous system that would clean the water better. The plant then started adding polymers to the water to make the filters work better. this resulted in a much better and cleaner product, which in turn made the system run better, and the plant could produce enough water through this fixed system.
- About this same time, based on the clean water act of 1985, the city started hearing about lead and copper. There are no lead and copper in the water but a lot were in people's plumbing. The City of Newberg well water is considered as aggressive water, it works on plumbing. Due to this testing needed to be done. Results of the test concluded that no lead was in the water but there was a lot of copper, one of the highest in the state.
- The state based on an EPA rule, made the City of Newberg enact changes to resolve the copper issue.
- Based on a lot of testing the City then started to hydroxide or caustic soda to raise the pH of the water. By raising the pH the plant neutralized the water making it less aggressive
- Now a rule is in place that a report is sent to the state each month with the test results that show the City of Newberg's water pH average is never below or above 7.
- Around 2004, The plant saw that their air actuated valves were starting to fail and were hard to maintain. It was decided that these valves would be replaced with an electronic system. Instead of an air moving valve it was then electricity. This proved to be effective. However now after 20 years these are starting to fail and they are being replaced more often. It is expected that more will fail.
- After 2006 -the event of the golf course: the golf course used a lot of water, in the summer of 2006. At that time the city could only produce about 6-6.5 million gallons of water per day, and the golf course in that summer, used so much water along with the city citizens, the town was using over 6.5 million gallons per day, which was concerning to people of the city.
- Dan Wilson asked Russ Thomas to verify that the city increased it's water production in 2006 or 2012. Russ Thomas confirmed it was 2006
- Councilor Robyn Wheatley asked to Dan Wilson: "The golf course was using City water?" Dan Wilson replied "yes, they were at that time." Mayor Bill Rosacker also answered with "They are not anymore. Councilor Robyn Wheatley continued with the clarifying question "That is why they made the switch?" In which both Dan Wilson and mayor Rosacker replied with "Yes"

- In 2006 two more filters were added in order to increase the water production level to 9.5 million gallons. Dan Wilson explained that the plant can only produce approximately 8 million gallons of water while still maintaining water quality standards. More water could be pushed through, however, after approximately 24-48 hours the quality of the water reduces drastically.
- Council Robyn Wheatley asked "what does quality mean? Dan Wilson replied with "more Iron gets into the system."
- Dan Wilson further explains that he always has a spare filter for replacement, a "clean up filter" so when he has to clean a filter he has a backup to put Online. When the plan has to run more than 6.5-7 million gallons or when a filter has to be cleaned, all filters need to be used and that is a cascading process as the filter life starts to get shorter and shorter and the water gets slowly dirtier.
- To treat the water, The water comes into the basins, it gets injected with enough chlorine to oxidize the iron and carry a residual all the way through the plant and out into the system. A residual must be maintained as it enters the system. Iron does not really sink, it is light and fluffy, but it does coagulate and clump up. It is skimmed off the top and goes into the basins, at that point polymer is added. Dan Willson continues to explain that polymer is a long sticky molecule that comes in three forms: Positive, Negative or Neutral. The plant always uses a negative polymer because Iron is negative and it traps the iron in the filters better. The water then goes through the filters, iron is caught in these filters until th filters are clogged then cleaned.
- The group moves closer to the building to a separate deck overlooking more filtration systems and water basins. Dan Wilson asks if there are any questions.
- Robyn Wheatley asks "you said you hit it when chlorine there and it has to be chlorinated throughout the whole process; but doesn't it lose..." Dan Wilson replies with "We do, it has to be chlorinated throughout the whole system. We are dosing it with chlorine based on the amount of Iron in the water." Councilor Robyn Wheatley clarifies "you know it is getting enough because you test it at the end?" Dan replies "Yes we test it, that is the other report I have to send to the state every month because I have a minimum amount of chlorine residual I have to maintain of water going into the system. If I do not ever meet that minimum chlorine residual requirement, you all will know it because you will get a notice of a couple changes saying we have to boil our water. That rule has been in place for ten years or so. That is one of the reasons we would have to boil our water. Another would be, the coliform samples we collect, about 30 or so coliform samples in the system on a monthly basis. If they ever come back for fecal coliform you would see a boil water notice. In Portland this has happed a few times. however we get our water from wells on the other side."
- Councilor Molly Olsen jokingly states "You would say well done"
- Councilor Mike McBride asks "When did we buy that land over there? How did that come about when buying land from a completely different county?"
- Dan Wilson: "We didn't originally buy the land, we originally bought spots for wells. We ended up buying the land in the mid-early 2000's and we don't actually own it all."
- Mike Mcbride clarifies: "Mid 2000's?"
- Dan Wilson answers: "Yes mid 2000's, so 2003 or 2004"
- Mike McBride asks "So we haven't owned the land all this time? I did not know that."
- Dan Wilson says "No, the one farmer that was willing sell that property, so we bought it. It is still farmed so we have a lease with the farmer."
- Mike McBride replies" Yea, I know about that."
- Dan Wilson goes on to say "All we owned was a 200 foot square around each well. What we own is water rights, what we owned before was just water rights."

- Councilor Mike McBride asks: "When did we actually get the water rights, was it the 1940's or 1950's?"
- Dan Wilson answers "The first well was drilled in 1949" and continues to ask if there is anything else.
- Dan Wilson points out Filters -1-6 and explains that filter 2 is in operation while 1 is not in operation. He further explains where the water arrives and where it travels through the troughs and through the filter media, then into clear well.
- Councilor Mike McBride asks "Filter Media?"
- Dan Wilson replies "Filter Media is about 36 inches deep or so. It is Anthrocyte coal, it is no different than a lot of..."
- Councilor McBride "This is just concrete sides and the filter media is below?"
- Dan Wilson replies "Yes the filter media is below, it is about 36 inches below the bottom of that trough."
- Russ Thomas answers "Think of a water filter in the fridge."
- Dan Wilson compares to filters to a Britta water pitcher filter and goes on to explain that the plant had 6 filters and they can go on to process about 800 gallons per minute.
- Robyn Wheatley asks "If we were going to expand we would have to add more filters? That is what we have done in the past?"
- Dan Wilson replies: "That is what we have done in the past, these first two filters were built in 1970, so we are using the same technology to treat water as we began in 1970 and there is better technology to treat water now than there was then. The new treatment plant that they proposed would have closed filters, they would be pressure filters. The two biggest selling points to the new treatment plant were the enclosed filters and the fact that they were going to use air again to oxidize the iron. So you would quit using 80% of the chlorine that we use but at the same time that raises the pH so you would no longer be using caustic soda to raise the pH so you would not completely eliminate the use of chlorine but you would eliminate the use of a lot of it. The majority of the chlorine is used to oxidize the iron."
- Councilor Wheatley "So this is a cost savings?"
- Dan Wilson "Yes it would be a balancing act of saving."
- Group moves inside to get out of the cold
- Group is brought to the control room of the water treatment plant
- Dan Wilson explains that the control room is where lab work is done, monitoring chlorine, has devices to measure chlorine and pH. As well as a control station that has flows and levels displayed. Dan shows the display to the group and explains it as an overview as what is going on as a whole. He points out that well 7 is running at the moment.
- Councilor McBride confirms the location of well 7
- Councilor McBride and Wheatley ask if he has to tell the system which well to run? As well as if there is a button that starts the well up?
- Dan Wilson tells the group that he can make a choice on which well to run. He then explains that every morning the screen on the display prints out and he can see how much water was produced, how much water was used to backwash filters, how much water came into the plant, how much went out of plant, and reservoir levels of water in storage. Based on how much water was produced and if reservoir levels went up or down he can see if he needs to produced more or less water. So right now he could see that the reservoirs had gone up about 13,000 gallons since 0700 that morning. He showed that he has about 8 million gallons in storage and has a total of 12 possible, which is really more like 11.5. He makes decisions on how much water to produce based on if the reservoir levels are going up or down and how much he thinks the city will use.
- Dan Wilson explains that the plant cycles the reservoirs, he will fill them up and turn the plant off, use the reservoir water then turn the water plant back on. The wells themselves are supposed to run 16 hundred gallons a minute, but it actually runs a little under 15 hundred a minute which is about 2 million gallons a day. The town currently uses around 1.7-1.8 million gallons of water per day. So the plant gains about 30,000 to 400,000 gallons per day.

- Dan Wilson continues to explain that over the weekend or holiday's there isn't anyone in the plant other than to check levels, but cannot make any changes. So he needs to make sure that there is enough water gain through the week to go into the reservoir but not fill it by the time he returns. Every Monday they collect samples, they like to do this when the water is leaving the plant and going into the system as this is when the chlorine residual is the freshest.
- Mr. Wilson goes on to explain that everything in the system gets downloaded everyday so he can see how many and how much of the chemicals are used. The Plant must keep track of all of this as there are reports they have to send into the state every year, detailing how much is used. He then shows on the display where it shows that there is 1 part per million of chlorine leaving the plant, as well as the level in the basins and filters, and shows where he loses chlorine through the process. Dan then shows the pH levels on the screen and reiterates the importance of maintaining a pH level of 7. He then shows the average chlorine residual and explains he has to submit an average minimum chlorine residual that goes out the door everyday.
- Councilor McBride asks: "Who does that go to?"
- Dan Wilson replies: "The state, the level has to be 0.2 that is the minimum it can be."
- Mr. Wilson continues to explain while his monitors do this process for him, if they were to quit, he would have to do this process manually, every 4 hours. So if his devices fail, the plant would need someone here 24 hours a day checking these levels every 4 hours.
- Mayor Rosacker asks: "I see here we are at 1048 gallons of chlorine is being used what time period is that in?"
- Dan Wilson replies that is not actually chlorine but it is hypochlorite and it is .08% chlorine. For every 15 gallons of hypochlorite is 1 pound of chlorine. He further explains that everything on the display is from 0700 this morning.
- Dan Wilson explains his feed rate, and how much iron eats the chlorine when it is first dosed.
- Mayor Rosacker asks: "We generate chlorine?"
- Dan Wilson replies: "Yes we do you can see that in the one building over there"
- The Mayor asks: "We get salt delivered?"
- Dan Wilson replies: "Yes, salt is delivered. We take salt and water and you hit it with electricity and it generates hypochlorite"
- Mayor clarifies: "So we have solvent salt delivered?"
- Dan Wilson answers: "Yes. That silo over there is filled with rock salt."
- Mike McBride asks: "The demand is low, so, are we only running 2 wells?"
- Dan answers "I have 1 well running. Well #4 does not produce water anymore, so I have #5,#7,#8 & #9."
- McBride asks: "Why doesn't #4, if it is coming from the same aquaphore, why doesn't #4 or isn't full of water?

- Dan Wilson answers: "Well, because this well was drilled in 1965-1966 they are really only designed to last 25-30 years."
- McBride clarifies "The motor or the well themselves?"
- Dan Wilson replies "The well, this was the last one drilled that doesn't have screens, all wells have casing, this one has a casing that has slots cut into it with a torch and thats how they did it back then, and that is no different that iron build up anywhere else, it builds up and blocks and corrodes."
- McBride asks: "So that is why?"
- Dan Wilson clarifies: "They have been cleaned several times, but even if you clean regularly, we clean one every year and rotate so every five years one is taken out of service and deep clean and inspect and put it back in service. This extends the life of the well. This one is old enough, we have tried it several times and we never get the water back."

- Councilor McBride: "Can we drill another well next to it?"
- Dan Wilson replies: "That is what has to happen."
- Mayor Rosacker: "Just to be clear that isn't our problem, we have plenty of well land?"
- Dan Wilson: "Right the thing with these is, the wells are basically straws in a milkshake, you do not want to take too much water out of one location, they affect each other. Not only that you can suck them so fast that it starts to suck air, so it is better to have more wells that produce less water than one big one that produces more water. It is harder on the aquifer underneath and harder on the ground itself."
- Councilor McBride: "How deep are the wells?"
- Dan Wilson replies showing the display on the screen: "As you can see the elevation of the ground is 90 ft,"
- Councilor McBride: "These are 90 ft deep?
- Dan Wilson answers: "That is ground level, well sea level, from the ground down to the water about 40 ft."
- Mayor Rosacker asks for clarification about the depth of the well as a whole, and Dan replies that they are approx 70-80 ft in depth, basically to the bottom of the river.
- Councilor McBride asks: "So do most of the farmers over there that have the wells.."
- Dan Wilson: "No, the farmers do not use wells."
- Councilor McBride clarifies: "But I have seen pumps out there in the fields?"
- Dan Wilson: "Right, but they are pumping water out of the river."
- Councilor Molly Olson asks Dan Wilson: "Are your controls, accessible remotely"
- Dan replies: "Yes."
- Councilor Olson: "How's your lock down?"
- Dan Wilson: "It's pretty locked down, and I can know who gets into it. You have to log into two different systems to get to this."
- Mayor Rosacker: "If we were going to keep this plant, what order would we be looking at to rebuild things here?"
- Dan Wilson: "If you are going to keep this plant on into the future, all you are going to maintain is what you have. The 2 pipes leading into the basins are 8 inch pipes, this is the choke point for the water. We have a 30 inch line and a 24 inch line across the river, they all choke down to two 12 inch lines then into two 8 inch lines coming into the settling basin. So the 8.5-9 million gallons is all that is ever going through this. We do not really have the land to build more filters so what you have here is what you are going to get from here. If you keep this all you can do is maintain what you have. You are going to spend money keeping this running and functioning and in service."
- Mayor Rosacker: "We know we need to increase capacity, we are going to have to add filters, so work us through that process?"
- Dan Wilson replies " If you want more capacity, you are building another plant somewhere else."
- Councilor McBride: "What if we do bigger lines, instead of the 8 inch?"
- Dan Wilson explains that in order to create bigger lines, they would have to tear it up and still keep the plant in service as there is no backup and that it would not be possible.
- Councilor Molly Olson gives the analogy that it would be similar to building the new bridge right next to the one you are tearing down.
- City Manager Will Worthey: "Mathematically, we already know as a data point for those who may not remember that early in the 2030s that is not enough capacity to cope to keep up with our charted out and expected housing growth. So there is a fact to remember."
- Dan Wilson: " This place is sitting on loose soil, any earthquake or natural disaster could send this down the hill. it may or may not happen. So we are throwing those dice."
- Mayor Rosacker: "That is not the case with the land we purchased?
- Dan Wilson replies: "Yes it is, that is the same case with that land over there. If you are going to build a new plant it is going to have to be by the waste water plant. That is where the underground line comes up basically at the top of Dogridge and Wynooski. You have got raw water lines that are already over there. That is bottom line, the city has one source of water, this is it. All the eggs are in one basket, so that is why you all were elected you get to make those decisions. We will operate whatever is here to operate."
- Mayor Rosacker: "Most Cities only have one supply of water, most cities do not have more than one supply."
- Dan Wilson: "That is true to a certain extent, most of them have a supplemental source. Portland has wells it turns on, when bull run is slow or they are having issues with it."

- Dan Wilson replies: " I would recommend changing the treatment process of some sort going to some different filters. You are a little land locked with the land situation we are in. I would say you need to have a different treatment processes, the process we are using is the same process since it was first designed in 1970 we have expanded every 10 years, plus or minus since it was built in 1950."
- Councilor Molly Olson asks for clarification from Dan as there have been multiple similar questions asked: "You cannot expand capacity of this plant without building a new facility somewhere?"
- Dan Wilson clarifies that the plant can be maintained but does not believe any more water capacity can be gained from the current system or building without a complete change of process.
- Molly Olson asks: " But, you would have to shut this down?"
- Dan Wilson answers: "This would have to be non-operational to build on this piece of property."
- Councilor McBride: "Looks like you have more land over here?"
- Russ Thomas then explains that they cannot build where councilor McBride pointed out due to proximity of the river, and the instability of the soil. That the city would incur the same costs to stabilize the soil if not more. The City discovered with a geo-technical study that the property has liquifiable soil.
- Mayor Rosacker : "It is not attainable for us to move the plant somewhere else where to soil is better?"
- Russ Thomas answered: "It is."
- Mayor Rosacker asks Russ Thomas's opinion on where he would move the plant
- Dan Wilson answers that over near the waste water treatment plant where the soils have been tested and certified by ODOT, as they built the bypass close by, it is outside what it is known as the department of geology for the State of Oregon. The plant area is known as a high risk zone, for landslide and earth movement, over near the waste water it is considered as low, and stable and the main line that comes from the wells under the river comes up there.
- Mayor Rosacker asks: "Why did we nuy the 2.5 acres here?"
- Russ Thomas explains that they were unaware of the issues at that time.
- Dan replies: "It does not mean that property is useless, water plants have a lot of weight and depth to them that a manufacturing or even housing would not have to deal with."
- City Manager Will Worthey: " In Summary, you are saying that this plant is tapped out without completely being taken apart or processes added which would mean shutting it down and..."
- Dan Wilson: "Yes, you would have to build something, whatever you build, this plant has to stay in operation while you build."
- Will Worthey: "OK, so there is one. Secondly, you are saying that the soil's directly adjacent from here have no way to support more filters? that is what you are saying?"
- Dan Wilson: "On this piece of property right here there is no more room for more filters. the only place they can go is closer to the river. Unless you are going into the road or across the street there is no more room on this property."
- Councilor Wheatly: "That is more dangerous because it is closer to the river?"
- Dan Wilson: "Yes."
- Mayor Rosacker "how much did we pay for the piece of property over there?"
- Russ Thomas answers "about $450,000."
- Mayor Rosacker: "How much was the estimate for to making that seismically good?"
- Russ Thomas answers: "An excess of 4 million dollars just for soil prep."
- Mayor Rosaker: "Of the price we were going to spend could we sell that for $600,00 now?"
- Dan Wilson: "Yea we could recoup the expense of that property for the development of this land in the future, so it is not money down the drain it is an investment. We took a rough estimate to relocate the plant there, in addition to that we would have to have storm drain improvements, and waste water lines to transfer at this point across."
- The Mayor then clarifies that we are not still designing a new building to be on the discussed property and we in fact stopped. Dan answered that we stopped designing once they found out the estimate to fix the soil.
- Councilor Molly Olson clarifies that the mayor was asking about design of the building, and was answered by the Mayor and Dan that he was in fact speaking about the design of the building on the discussed property.
- Mayor Rosacker: "So at this point, we are looking at a new design on a new piece of property?"

- Dan Wilson: "Or continuing what we have shelved, because what we have designed at this point is still solid, it was just based on soil. and that design does not have to be all of that, just build the treatment part of it, a lot of the design was built into it."
- Councilor McBride: "At the council meeting when we talked about that, I do not think we stopped that. I thought it was still proceeding? and costs of what a new facility would be, I thought it was still going on to some point?"
- Will Worthey: "Our contract has ended."
- Bill Rosacker clarified the date it ended was the month previous when the council decided that 40 million dollars was out of budget
- City Recorder Rachel Thomas then reminds the council that we are not to get into council discussion and brings the conversation back to the tour.
- Mayor Rosacker asks: "What could we do for less that 40 million dollars, to increase our water supply?"
- Russ Thomas replies: "Just what Dan says, need to have a different filtration system because what we are going to run against other that pipe size if filter capacity. "
- Mayor asks: "Do we have to build a new plant or can we do this in pieces?"
- Dan Wilson: "The new plant was designed to replace this one completely, you can always build a new treatment plant and leave this one in place and add capacity. You could build a 2 million dollar facility and add more as you go. At some point no matter what you do to this place, it will not continue to..."
- Will Worthey: "So once again to repeat back, does the potential to build a smaller but extensible plant at a new location and grow there over time while still running this plant, is that doable?"
- Dan Wilson: "I do not know why not."
- Russ Thomas: "The raw water we bring from the well field comes across over there , basically what we would do would be divert a portion of that flow..."
- Dan Wilson "You could design it so maybe we only need to add during the summer time during peak demand or that kind of ..."
- Mayor Rosacker: "So if I am hearing you correctly we could design a process where we could slowly phase this over the next 40 years?
- Dan Wilson: "You could slowly build replace this at some point. You would basically supplement this, build something over there to supplement this and slowly expand that."
- Councilor McBride: "The only downside to that if you build a small one over there and God forbid somehting happens to this one, then you do not have a big enough plant to meet the needs, so then what do you do?"
- There is discussion that at this point we do not have a back up at all, so if it happened now we would be in the same boat.
- Councilor Olson: "If you have ever disgned something like a house, if you do it piecemeal the cost is higher, someone needs to look at that trade off."
- Dan Wilson agrees and points out that the other thing that has not been considered, that there are two reasos to change your treatment system: 1. You need more capacity or do not like the water quality or 2. Someone makes a rule that changes the way you treat the water. You are never going to be out of the woods from the State coming in and saying your wells are too close to the river, you need to treat your water like it is surface water. This plant cannot treat surface water, you are in a completely different process at that point. The city always has that risk. This summer the plant will be taking unregulated contaminated samples. These are samples that systems throughout the united states have to collect every so often and they are designed for people to collect samples of chemicals and contaminates that are not regulated by anybody. After they are collected, they see what is in the water and make regulations. Dan Wilson says: "PFAFS are the big ones at the moment, Oregon has very little of it at the moment. Water is not likely to have but we will be testing for it this summer. Every time you take a sample you run the risk of finding something and then you will have to change your treatment process. This plant is designed to treat the water one way and it is not going to change. Any new facility that would get built would have to be designed so that it could at some point possibly treat other..."
- Councilor McBride: "Could you use the UV type rays that supposedly cuts down on chlorine?"
- Dan Wilson responds: "That is a disinfection process."
- Mayor Rosacker clarifies that we need the chlorine to help get the iron out of the water as well.

• Dan Wilson confirms that Chlorine is used to oxidize iron and to carry but even: "UV kills pathogens, but after you use UV your water is clear but you still use chlorine to carry it out into distribution as it protects the water if there is a leak or a line breaks. So the chlorine is protecting that water which is why you need it for protection at that point for line breakage or leakage. That is why every time a new line is build theres a disinfection process. It is dosed and tested for chloroform before getting put in service. The State has a lot of power over the City to tell us what to do, We are at their mercy in some ways. We are considered a large water system to the state. There are about 18,000 water systems in the state and we are in the top 1% of those, because of the number of people we treat. anything over 10,000 people is considered a large water system. "

- Dan Wilson continues to explain the other things that could change the decision making of the council. He tells a story of a chip manufacturer in the 1990s was wanting to build, they wanted 2 million gallons a day of water.
- The group throughout remembered this story and confirmed knowledge.
- Dan Wilson: "Right now if somebody wanted 1 million gallons of water, we could supply that water."
- Councilor McBride comments on how something like that would provide a lot of high paying jobs for the city and would help pay for education.
- Dan Wilson then further explains: "We could do that but also, they would have to pay a system development charge to replace that capacity that would be the deal. At some point, we are going to develop all this property that is all going to have to be. They would be putting pressure on the citizens of the town who have already paid for their capacity so any time you add people to that system they put more pressure on the system and they need to pay their part."
- Councilor Wheatley asks for clarification on the charges
- Dan Wilson responds explaining System development charges are deigned to expand the system.
- Dan Wilson then shows The PLC's which is the programmable logic Controller and explains this is the interface and operator for the display. This can be manually manipulated. This system replaced 8 ft tall system that was previously installed.
- Molly Olson speaks of her engineering background and experience with PLC replacement.
- Dan Wilson clarifies that it is basically a bunch of on and off switches, like 0's and 1's
- Dan Wilson then asks what else people would like to see, letting the group know they could see the rest of the building but there is not much to see.
- The group decided to see the chlorine room.
- Dan explains the rest of the building is just his office, the pipe room and electrical room ans once again asks again for questions.
- Dan Wilson explains quickly that we went from gas chlorine to self generated chlorine which was a big deal as they do not have to have a hazardous materials plan don't have the safety issues that come with gas chlorine. at this point the system is about half life. so another 7-8 years.
- Mayor Rosacker: "Is liquid chlorine not an option?"
- Dan Wilson "It is the same as gas the cylinders come as liquid but it is gas, it is also a poisonous gas. Your other option is hyperchorite at 12.5% you still have a hazardous material handling plant. gas chloride or hyperchlorite or self generated."
- Mayor asks for clarification on hyperchlorite
- Dan Wilson: "We use this when our system is down but it still at 12.5% but it is continually being purchased. there was a period of time when there was a huge issue with it in Seattle.
- Mike McBride explains his awareness as it was the first year he was on council that it came up.
- Dan Wilson explained the issue that there was a shortage.
- Molly Olson asks if self generated is more reliable and less dangerous
- Dan Wilson replies: "Yes."
- Mike McBride jokes about needing some for his Pool
- Dan Wilson explains how easy it is to make hyperchlorite but not to use it for pool use.
- Dan Wilson also states that the plant generates over 1000lbs per day.
- The tour disperses throughout the building, some go to the chlorine room, some leave, some continue to look

ADJOURNMENT Meeting adjourned at 3:35 pm.

Bill Rosacker, Mayor

Rachel Thomas, City Recorder