William Biddlecombe	Joe Dike	Sam Artino	Monty Tapp	Mark Claus	Matt Grieves	Joel Hagy
Councilmember	Councilmember	Councilmember	Mayor	Vice-Mayor	Councilmember	Councilmember

CITY COUNCIL UTILITIES COMMITTEE — COMMITTEE MEETING

Wednesday, March 1, 2023 @ 5:00 PM

Huron City Hall - Main Conference Room

I. Call to Order

II. Roll Call

III. Approval of Minutes

III.1 Approval of Minutes of 10-5-2022 Utilities Committee Meeting

III.2 Approval of Minutes of 11-2-2022 Utilities Committee Meeting

IV. Old Business

V. New Business

V.1 Jack Evans Introduction

V.2 Update on Third Transformer (closes on February 28th)

V.3 Update on RFQ for Secondary Intake (closes on February 28th)

V.4 Trash RFP

VI. Other Business

VII. Adjourn

CITY OF HURON UTILITIES COMMITTEE
Minutes of the Meeting
October 5, 2022 – 5:00pm

The Huron Utilities Committee was called to order by Committee Chairperson, Joel Hagy, on Wednesday, October 5, 2022 at 5:00pm in Council Chambers at Huron City Hall, 417 Main Street Huron, Ohio.

MEMBERS PRESENT: Joel Hagy, Matt Grieves, Stewart Hamilton, Mitch Swanbeck. Not in attendance: Stephanie Walls*.

Approval of Minutes

Motion by Mr. Grieves to approve the June 2, 2021 minutes. All in favor.
Motion by Mr. Grieves to approve the minutes of June 1, 2022. All in favor.
Motion by Mr. Grieves to approve the minutes of July 6, 2022. Yeas: Grieves, Hamilton, Swanbeck; Abstain: Hagy.
Motion by Mr. Grieves to approve the minutes of August 3, 2022. All in favor.

Stephanie Walls arrived at the meeting at 5:04pm.

Old Business
None.

New Business

HPP Update
Mr. Hamilton said that staff had some legislation run through Council before it came through this committee, which he doesn't normally like to do, but it was a last-minute option. He wanted to run through it with the committee so that they understand it. Referring to a summary of the legislation shared on the screen (copy attached hereto as Exhibit "A"), Mr. Hamilton said the pricing of power is just astronomical right now. It is governed by gas prices. What we are doing is looking at green options – wind, solar, landfill, etc. This wind option came up for them – it was 7MW originally, but then it was changed to 5.8MW and 0.8. When he spit it up, the 5.8 MW is purchased for HPP, but it is designed to go to Mucci, and 0.8 is bought by HPP for all other HPP customers. What they have done in the past is have a separate agreement for the Mucci purchase, but we are not doing that anymore. We are going to buy everything under HPP from now on because when we split up the purchases, the HPP customers don't get to see that volume discount. They are paying more for their power because the power used by Mucci is not bought as part of their bucket. Instead of doing 6 MW and 1 MW, they did 7MW at $47.75/MW. When the wind doesn't blow, there will be no power generation. That is the maximum allocation, but HPP probably won't get that on a regular basis. They are classing this purchase as supplemental power. The portfolio is comprised of base, intermediate and market shares. What they are trying to do with this is fill some of market share volatility that they normally don't purchase in advance – they are trying to fill some of that volatility at the top end. Most of the time, they only talk about the cost per MW, or MWH or KWH. The total liability, just for this contract, is $8.7 Million over 3 years. They send all of that cost on to the customer, but it is only fair that Council, the Utilities Committee and Finance Committee start to understand how much the City is committing to when signing these contracts.

Mr. Hagy asked if there is any obligation for Mucci or any other HPP customer to purchase power from us. If a customer said they are going to go shopping and find a lower rate, can they do that? Mr. Hamilton said they can't leave our system, as it is a closed system. What they could do is take us to court, which

would be long and messy. Mr. Hagy said that it sounds like they are counting on the City to get them the best rate. Mr. Hamilton said that is correct, and they have always treated Mucci's portion of power separately, just because they purchase so much. Bringing them all back into the fold makes it easier to manage this whole power portfolio over time. Mr. Hagy said it makes sense for us, but does Mucci have any objection to it? Mr. Hamilton said when he told Dave Loewen that he is buying it all together, he kind of laughed because he knew it was coming. He and Dave talk a lot, and they are both very direct. David is now used to him, and he is used to Dave – he is sure he saw it coming.

Mr. Hamilton continued on to say with this being supplemental power, there is a chance they may end up "long" on this deal, which means they overpurchased - they end up getting too much power that they don't use. This $47.75 is just for this contract (wind portion). Over the next 3 years, the market prices are estimated to stay around $70/MW, and they are buying it for $47.75. If they end up long, what AMP does (that is who they buy their power from) is sell whatever we don't use back to the market. That power is sold back at market share. If we ended up with 2 MW over, they could sell that back to the market at the end of the billing month. Ms. Walls said that would be likely be for more than they paid for it, which Mr. Hamilton confirmed. Normally, they buy very conservatively and let the customers ride the market for the last year. HPP is primarily an economic development tool, and not a profit-making tool. Yes, it helps the City to do some things, but it is primarily there to help the customers. They felt that as high as the market is scheduled to stay over the next couple of years, the pricing for this contract was safe. Mr. Hagy asked if renewable energy fluctuate with natural gas. Mr. Hamilton said it does not. Mr. Hagy asked if renewable energy stays pretty steady, is it correct that there is not a large opportunity for it to come down during that 3-year period. Mr. Hamilton said the only volatility in the renewable market is capital costs. When the sun shines, the solar panels generate; when the wind blows, the wind generates. Nearly all renewable placed have paid off their capital assets at this point, so you just pay for generation. Some of the newer ones want you to sign a 10-year contract because they know they have to cover their capital costs. Those with capital costs require a longer-term contract. Mr. Hagy said some businesses these days are using renewable energy as an advertising tool, and asked if Mr. Hamilton knows if any of our customers are interested. Mr. Hamilton said we have one customer that has started talking about it, but the problem they are running into is Mike Spacek has been the only face that anyone has ever know from HPP, and they don't even know HPP belongs to the City, they think it is Mike Spacek's. As they change that and visit the customers (they are starting to reach out to him, but there are still some he hasn't gotten to), they can open up the discussion. AMP as a program for renewable energy, so as they keep moving HPP out there, it will become more popular.

Being unfamiliar with HPP, Mr. Swanbeck asked if the City is selling the power, or just doing to negotiating. Is the power sold at a profit to the City? How does that all work? Mr. Hamilton said he probably should have started with the basics; since they were all here before him, he assumed that already knew all of this. HPP is a closed system, so if you are a customer of theirs, you can't get out. They purchase on behalf of the customers, and can only purchase from AMP, which is American Municipal Power. Mr. Swanbeck asked if the City is invoicing the entity that is using the power, which Mr. Hamilton confirmed. AMP invoices the City to include their markup, and the City then passes on that cost plus our writeup and a tax so the City can make some money off of it, too. The kilowatt tax is allowed to go to the General Fund, so the City can use those funds for whatever they want. The regular portion has to go back into the Utility Fund, which can only be used for the utility. That is why there are two different markups on our invoice. Mr. Hagy said if we have a pot of energy, is 80% non-renewable oil/gas/coal, and 20% will be renewable if we execute this agreement. Is the renewable energy more expensive than the fossil fuel? Mr. Hamilton answered that it was 3 years ago, but no longer. Any fossil fuel-driven electric in the $70-$90 range, which is more than renewable energy. In the past, they were more expensive. Mr. Hagy said if you have a bucket split 80/20 and Breckenridge and Mucci are eating out of the bucket, do you have to dictate that the first 1/8 of renewable is used first, and then fossil fuel is used. How do they keep track of which energy they consumed during the month? Mr. Hamilton answered that

it used to be that energy was used based on the oldest contract first. Mucci still has a 4-year contract in place that expires at the end of next year, and they are getting their power for $27. Someone is losing at the other end of that contract because they signed a long-term contract. That pot is just for Mucci. The City gets to a point at the end of the month where they have excess power, AMP will ask what they want to do – allocate some or sell it back to the market. If they do that, they will use the more expensive power and sell the cheap power back to the market because they make a larger profit margin. Mr. Hagy said, to the end user, they are paying x dollars per KWH, and it doesn't matter. Mr. Hamilton answered that because they take the total cost of their average KW to determine pricing. With regard to that $27/KWH contract, the City never had Mucci sign anything to say that they would take the power. Even though we bought it and assigned it to Mucci (that is how they did it in the past), that should really be going to HPP customers as much as Mucci. That is why they are getting away from the separate purchasing, and getting it all back into that main pot. The City is liable for these purchases, and if Mucci decides to switch off the lights, they are liable for those purchases, not Mucci. That's nothing against Mucci, they are just a big consumer. Any big consumer would be the same. In March of this year, Mucci sold $170,000 back to the market. When you buy it that cheap and it is selling for $94 MW, they made a killing. That should really have been HPP power, not just Mucci power. That's the guts of that 3-year contract, and he feels very confident with it. Mr. Hamilton referred to another Power Point slide (copy attached hereto as Exhibit "B") reflecting the energy totals they use for HPP. This information is provided on regular basis by AMP. As evidenced by the trajectory of the 2018 line (in orange) up to the current usage (red line), HPP has grown exponentially, with the majority of that being Mucci. Most people's high usage is in the summer. Because Mucci switches the lights on over the wintertime, all of HPP's power consumption is mainly in the winter. This is beneficial for HPP, because most people are scrambling to acquire energy in the summer and the price gets driven up. HPP wants its energy during the slow months of the year, so that is good for them.

Since he started, Mr. Hamilton has added the Erie County Landfill and the Locust Ridge Wind reflected on the pie chart attached hereto as Exhibit "C." Over 50% of the portfolio, at this point, is renewable. Mr. Hagy asked if landfill is considered to be renewable. Mr. Hamilton answered that it is because you are taking the methane gas and they are generating locally – it is free gas, so there is no upcharge for supply or delivery. AFEC is Fremont's natural gas power generating facility. They were almost 70% on that energy source when he arrived, but the prices of that source skyrocketed because natural gas has skyrocketed. They had to back themselves out of that in favor of the renewable sources. There is a loss rate when you push electric over the wire – you lose x amount the further you go, so that's why Locust Ridge and Erie County Landfill have lower loss rates. HPP pays for loss rates from AMP because they have to pay for AMP's loss rate. HPP then pays another loss rate to its customers. Over the next 3 years, the renewable percentages will either stay there or grow a little. They have gotten the market (the volatile portion) down to 10%. Mr. Hagy said the City executed this agreement last week, so the chart shows what it looks like now. Mucci consumes about 37 MW per hour, in general, versus 1.5 MW for the rest of the customers. You can see that they are the big hitter. That big contract they have is only for 31 MW, so that's why we tried to fill that missing 6 MW portion for them at the most affordable price we could.

Mr. Hagy said right now we are landlocked because the transfer station is south of the railroad tracks. Part of the Sawmill Parkway redo is to get conduit under the tracks so that HPP can then service some of Sawmill Parkway, and then eventually, maybe even the Sawmill Creek development that is going in. Now that we will be north of the tracks, we can expand HPP, which he believes is the vision. Mr. Hamilton said he has a picture he will show them in a little bit. Mr. Swanbeck asked if the marijuana growth center buying power. Mr. Hamilton said they are the ones that called him up and beat him with a big stick every month when the invoices go out, because they are quite a high user. All of the businesses on that road have to use HPP. Ardagh does not use HPP power because they are on the north side of the tracks. Mr. Hamilton has his eye on them. Mr. Hagy stressed that it's hard to get the railroad to agree to anything, and they have managed to get them to agree to allow them to cross with the conduit.

Mr. Hamilton referred to a chart showing projected power rates up through 2027 (see chart attached hereto as Exhibit "D"). Mr. Hagy asked why it goes down from 2022 to 2023. Mr. Hamilton answered said that they are expecting prices to stabilize – it's all about how you project the supplies. They don't think the price is going to drive down consumption, the costs are based on the processing cost. They think natural gas will drop next year, so there are places at can drop. That might depend more on the Nord Stream Pipeline.

Mr. Hamilton showed an aerial photo of the HPP substation site (copy attached hereto as Exhibit "E"). He indicated the substation on Rye Beach and the green line shows conduit right to the side of the tracks. HPP currently supplies everyone in the Corporate Park. What they are going to do is get under the tracks (which they already have a permit for) and they may be able to, hopefully, get this done this year. They are going to get to the corner of Sawmill Parkway. As part of the Sawmill Parkway project, which they are just about to kick off, they were originally going to do a whole load of electric conduit. If you look at the plans for the Parkway, just to put storm sewers in they have to drop and elevate water lines and it is so congested you can't get anything else in there. What they are going to do is put in an electric utility right-of-way (ROW) up and down each side outside of the existing ROW. They will put an easement in, and they are going to run all of their electrical there underground. Everything they will do, unless they absolutely can't, will be underground. Once they get their easements, they will then go down that utility ROW. Their other option, and what they would like to do eventually, is come across to the back of Ardagh. They have their own transformer already, so that will give them redundancy for Mucci. If they lose a transformer, they can't supply Mucci. They don't have enough processing power from the distribution site. If they come across and pick up Ardagh, they will take their equipment over, put it under HPP, and that will give them even more redundancy. By bringing companies like this on, it makes HPP not as unbalanced with just a single customer. They really have to start moving away from just one customer.

There is no hope that ODOT is going to let them attach anything to their bridge over Route 2. They don't ever allow it because every time they have to do something to the bridge, they've got to mess with utilities. Mr. Swanbeck said he doesn't blame them. Mr. Hamilton said the two crossings (railroad and Route 2) are the 2 things he wants to achieve sooner rather than later, as well as working on the easements on Sawmill Parkway. As they pick up other customers, it will mean just boring through conduit – it's not that big of a job. Instead of trying to achieve a big job at once, they can pick the customers up as they go. That way, it can pay for itself instead of spending $1 million putting all of the conduit in and then hope they come. It doesn't seem very sustainable in the long term. Mr. Swanbeck asked when the conduit would be run down Sawmill Parkway. Mr. Hamilton said the conduit that crosses the street will be done during the reconstruction. The reconstruction includes taking the entire top of the road off from the cul-de-sac all the way back, fix the base, dig up all of the storm sewers, and elevate and drop water lines. There is a lot of underground utility work going on already. Anytime they need to cross the road or anytime they expect to have lights (they will put city lights in, not FirstEnergy lights), all of that will be ready and all they will have to do is run down and connect them outside of the ROW. Mr. Hagy said it is exciting getting to the north side. Once there, the schools can participate as well as city buildings. Mr. Swanbeck asked how deep the conduit will have to be. Mr. Hamilton said the minimum of 24", but they usually want to put it down further – they will probably put them down 36". Water mains are usually 4'-5', and storm sewers are usually 2'-3' - it depends on the utility.

Indicating another chart on the screen (copy attached hereto as Exhibit "F"), Mr. Hamilton explained this this is another way that they came to look at the pricing. The yellow line shows where pricing may be in 2023, so you can see why his gray hair is becoming grayer by the day. They are still looking at putting a third transformer in. That project will probably be $3.5 - $4 Million, and they are going to buy the same equipment they already have so they will have set of spares online. It allows them to go to the same source when they purchase instead of having to go out to bid, which will save a lot of time. They are

looking at 24 months for delivery, so even if they order, it isn't going to happen anytime soon. They are going to schedule for the install probably in October of 2024. Mr. Hagy said the timing sounds right – they aren't going to have the copper ready to go until then. Mr. Hamilton said they have to remember that the substation is broken into 2 halves; there is a transmission side owned by AMP-T, and the distribution side, which transforms the energy down to user levels and distributes it to customers. HPP owns the distribution side. HPP used to own all of it, but sold off the transmission portion last year.

Update on Water Rates

The water rates are going to Council for a first reading on Tuesday, October 11th. Council did not vote on the rates at the last session, they just gave staff direction and picked an option to take. Mr. Hagy said they didn't take the committee's recommendation. Mr. Hamilton explained the logic was that while both the Utilities Committee and the Finance Committee picked the same 2 options, when they started looking at the beans, they opted to go lighter on the residents. It just means that staff will have to do their jobs, like he previously talked about, and seek out funding for these capital projects. Mr. Hagy said he would have fought for the other option (kidding). Mr. Swanbeck asked what percentage increase water customers will be looking at. Mr. Hamilton answered that it will be 5% annual increases across 10 years. Mr. Hagy said they had recommended 3A and 4, in that order, and the Finance Committee recommended 4 and 3A, in that order. Council ended up going with Alternative 3A, which was one of their choices. Mr. Hamilton said this committee is more about the utilities, and the other committee is more about the beans – it's just how you look at it. When they started doing this, he went back and looked at all of the sections of the water rate ordinance that hadn't been touched since 1980. The new water rates will take effect on January 1, 2023. After 3 readings, they will be into November, plus they have to wait thirty (30) days for the ordinance to go into effect. They will only just make that deadline. They updated Section 2, which is the water rates (down near the bottom) and repealing a section in there that charges people $8.00 to have a fire suppression system as an availability cost. It costs the City more to mail those invoices and manage the accounts than we charge, so he talked to Finance and Fire, and both agreed that it is not cost-effective to do it. Fire opined that they shouldn't charge them for something like that, because that is telling them that they have to spend money for a fire suppression system and then the City also charges them for that privilege. Everyone was on board about repealing that. Section 4 was restated to say what happens when there are multiple units controlled by one meter. If you have a 1" meter and you have 10 apartments supplied by that 1" meter, then every apartment in there gets a minimum usage or availability charge. The old way that section was written was, anyone who shares a meter gets charged. You can't defend that or manage that, so they restated it so that the owner is responsible for the water bills that belong to their complex. The first line item would be the availability charge for the delivery diameter of the water line. If it is a 1" line, then they would get the availability charge for that, and the other person would get the standard, or 5/3"/3/4" availability charge. If someone came back to us and said, "prove this is the way you're supposed to do it," it will now be in the ordinance, and this is how it has always been done. What they really did was clean up the language to reflect how they have come to do it. They are also repealing the tanker sales, which is when the people used to be able to pull to the water tank and fill up a truck. They haven't had that connection there for years, so that is being repealed, as well. Mr. Hamilton. Appendix A busts out rates over the next 10 years. Each year, the availability charge for a 1" line would be $68.23, and everyone else would be %2000 in availability charges. Each year, both of those go up by 5% and it is listed out for the entire 10 years. This is the new rate structure. Ms. Walls asked if it is possible for Council to waive the third reading, or do they have to do the three readings. Mr. Hamilton answered that it is Ohio law that you cannot waive three reading or make legislation an emergency, even on the last reading, on anything that has to do with rate structure has to be 3 readings. Ms. Wall said she was thinking in terms of the January start. Mr. Hamilton said he initially through that they could do 3 readings and then do the last one as an emergency, but that is not allowed. Anytime they touch a rate this is required, as they would if HPP rate structure is changed. The public has to have time to have their say. That concluded Mr. Hamilton's update on the water rate ordinance.

The County's part of the increase for Alternate 3A is a one-time 3% as the only high-volume user. They have been in discussions with County, and they are all good with the 3%, as long as (there is always an "as long as" with the County)... Mr. Hamilton asked if there were any members of committee there when the County asked the City to do water shut-offs for them for people who are behind on their sanitary sewer bills. None of them were. Mr. Hamilton said the County has no way to enforce delinquency on your sewer bills, so they asked the City to cut off the water if they are delinquent with the sewer. Cleveland does that, as do a lot of other cities. It got too complex the last time they were trying to combine billings, and the City and the County working together on a single bill wasn't going work. In talking to the County this time around last week, the County said they are good with the water rates, as long as the City goes back to look at the water shut-offs for sewer delinquencies. When he and Matt first heard this, they both said no, but after meeting with them they learned that they have $160,000 in delinquencies on those sewer bills in the City. That is a crazy amount. Apparently, people know that the County can't do anything to them, so they just don't pay their sewer. What the County asked them to do would be to take over that process, and he and Mr. Lasko politely said, no. However, as they worked through it, if they want to manage their delinquency process, staff would talk to the Utilities Committee and Council and say, would you be amenable to an agreement with the County that basically says that all they do is the shut-offs and turn-ons. Staff would extend a process that would have to go through the standard 30/60/90, and would make them do an additional step with door hangers for 30 days, before shut-offs. If they got past that process, which would take them to 120 days, then our guys would then go out to turn the water off. As Mr. Hamilton looked through it, he became a little more comfortable because he thinks as soon as people realize there is a penalty for non-payment, 95% of those people are going to pay up, and the 5% who don't pay up, should. This is still in the discussion stage, but he wanted to get the committee's gut reaction on how they feel about the City turning water off to help them collect. Mr. Hagy said he would be careful because he used to have rental houses, and unbeknownst to me, that renter never paid their sewer. He got a property tax bill, and they added it to his property tax bill. His point is that it was $1,100, so there may be people out there that literally not pay their sewer – they don't have $1,100. To add misery to misery, then they won't have access to potable water. That number could be very big for some poor people. Mr. Hamilton said he would like to think that the County would come up with some kind of payment plan for those people. He thinks getting acceptance that it's owed and getting a path to get it rectified would turn most people around. He was vehemently against it when it first came up, but he has mellowed to it over the last couple of weeks as he thought it through. Mr. Hagy is guessing that a lot of those people that owe are homeowners who rent and have no idea that they owe, because that's what happened to him. He had no idea – it had gone years. Ms. Wall asked if a home does not have water, is it technically uninhabitable – are there going to be unintended consequences for having homes that don't have water? Mr. Hamilton answered that the City turns water off on a regular basis for non-payment. As soon as they turn the water off, people show up with cash. He doesn't think that he has ever come across anyone who has been turned off for a long period in time. Even in Sandusky, they will come and pay the 25% to get the water turned back on again. People will pay once the water is turned off. Legally, long-term, the home would not be habitable. The other option is the sewer department goes in and closes the sewer. Ms. Wall repeated that the likelihood of a long-term shutoff is not great. Mr. Hamilton said that people will not do without their water. Mr. Hagy said he doesn't think your average person understands the distinction between the City's water and the County's sewer. Ms. Wall agreed that it is not really clear. Mr. Swanbeck asked when the City turned the sewer over to the County. Mr. Hagy said he didn't know for a fact, but he thinks it has always been that way, except they used to combine the bill. When the billings were combined, there was no confusion. Mr. Hamilton said the water system belongs to the City, the sanitary belongs to the County, and stormwater belongs to the City. It is all convoluted in typical government fashion.

Mr. Grieves asked how they should be talking about the increase in sewer rates. Jokingly, Mr. Hamilton answered that he would give him the County's phone number. The City has double and triple checked all of the readings on their side. How the County generates their sanitary bills is they take our consumption

for every location that has sanitary provided by the County, and run a calculation on their system of which we are fully unaware of that says, if you use this, then you would create this amount of sanitary, and that is what the invoice is based on. It has nothing to do with the City's pricing on anything. Mr. Hagy said if you left your sprinkler on for a month, you are going to pay for what would have gone down the sewer. Ms. Wall asked if this is a "thing." Mr. Grieves said everyone's bill is double. Ms. Wall said hers went up $30. Mr. Hamilton said there are some that have gone up $600. The County is looking at their side, but their billing person is out sick. That may be something to do with it, and he doesn't know that they can dig in deep enough until they know exactly what it is. The City has verified its side, so what they pass to them is correct. Mr. Hagy asked if usage was higher. Mr. Hamilton answered that it is the summer months, so usage going to be up for nearly everyone – they are watering their yards, sprinkler systems, more showers.... Mr. Hagy asked if usage would be double what it was last August – his was more than double. Mr. Hamilton answered that based on their calculations, your sanitary bill will go up exponentially. Some of the amounts billed are too far out. Joe Dike sent them a picture of his bill for the Pier Pub – he ended up having a leak, which was the cause of the increase. There may be reasons for a lot of them, but it's not anything that we as a city can answer. We have verified that our readings are correct and the consumption we sent to them was correct. He talked to their Assistant Utility Director and they've got an extra 25 days in their billing cycle, when it's usually 90 days – this bill was for 115 days, so there is extra consumption there. He thinks there are a lot of moving parts in this, but he thinks at the end of the day it is going to come down to something going awry in the billing system. Until their billing specialist gets back, he doesn't think we are going to find out what it is. What you will hear and see a lot is that this is only going to get worse when the water rates go up. The sewer bill is based on consumption only, not how much the City charges. They have got to make sure that people understand that; it is based on the amount of water you use, not how much you were charged for that water. All they are doing is taking that usage and converting it into what they think goes back into the sanitary system. Ms. Wall said her initial reaction was not positive – there is just something about it the idea of shutting off one service in response to a delinquency on another. She doesn't like that idea. If the reality of it is that that threat would serve as a deterrent/incentive to encourage payment, then she can see where a cooperative relationship between the City and the County could be a good thing. She is just anticipating what effect it would have, and if the end result would be compliance with sewer billing, then that's a good thing. If the end result is homes with no water, she doesn't like that. Part of it is just the anticipating what it would do – that is her general thought.... Mr. Hagy said that is really his point, as well, that some of these may be very, very high, and they literally can't pay it – he would just keep that in mind as they are discussing. Mr. Hamilton explained that they are looking at 70 to 100 homes for a total of $160,000. Mr. Grieves said that's a big number for that number of homes. Mr. Swanbeck asked if Mr. Hamilton has any idea how far back this delinquent billing goes – have these particular households been in arrears for 1 year, 3 years, 5 years? Mr. Hamilton answered that from what he understands, the majority of them are long-term. Anecdotally, what they believe is going on is people are playing the tax game. If you don't pay your sanitary bill, you get assessed on your tax bill. Those people would then pay the real estate taxes and take a deduction on their income tax return – people were playing that game and he thinks that's where a lot of it started. One person started to do it, and another one thought it was a good idea. There is no consequence for doing it, there's only an upside. Mr. Hagy said he thinks they are renters, because he was shocked. He asked the County why they didn't reach out to him, since he owns the house. They could have called him 2 years ago and he would have walked over to pay it – they don't tell you. If your renter just doesn't pay, a lot of those... Mr. Swanbeck asked if the County know if somebody gets behind, that they are in a rental home? Mr. Hagy said probably not, he's probably right. Mr. Hamilton explained that based on their GIS system, Mr. Dike would have been listed as the owner, and they assessed him because he owns the property. Mr. Hagy said the County ended up figuring out who he was when the renter moved out, but it was about $2,500. Mr. Hamilton said he would reach out and figure out how many of these are renters. If they proactively reach out to the owners, half of these may go away – that's a good point. Mr. Hagy said they don't tell you until you get your tax – after your renter is gone. If you have a long-term renter in there, it could just keep going and going. There's no ramification for the renter to not pay it until they back the

sewer up into the basement. Mr. Hamilton said that's all he has for the committee, and he tried to keep the meeting under an hour.

Mr. Hagy asked if there was anything else to be discussed. There being none, the meeting of the Utilities Committee was adjourned at 5:55pm.

Respectfully submitted,

Terri Welkener
Executive Administrative Assistant/Clerk of Council
(minutes were prepared from digital recording)

EXHIBIT "A"

CITY OF HURON
A GREAT LAKE PLACE

TO: Mayor Tapp and City Council
FROM: Stuart Hamilton , Service Director
RE: Ordinance No. 2022-51 *(submitted by Stuart Hamilton)*
DATE: September 27, 2022

Subject Matter/Background

The City of Huron has an opportunity to enter in to agreement with American Municipal Power (AMP) to purchase 7MW of wind Generated power at $47.75 per MW, over a contract period of three years. 1MW of this generation is aimed at stabilizing prices for HPP customers in the market portion of our power portfolio, which is extremely volatile, and is projected to be for the foreseeable future. 6MW is aimed at fulfilling a missing portion of Mucci power requirements, which currently they have to purchase off the open market. One downfall with wind power generation is that, if there is no wind, there is no power. So, with that being said, we will class this power as supplemental power which means when we receive our full allocation, it will be extremely beneficial, but if we do not, we understand that we will have to go back out to the market.

The total cost of the life of this contract will be $8,784,090.00. If we end up long (over purchased) on this on any given month, we would sell any excess back to the market. The indicative market shows that prices will stay above $75 MW for the next few years which should put us in a strong position if we sell back.

Financial Review

This contract will not impact the financial operations of the City. The City's rider on top of this generation contract with AMP will ensure the City's cost to service HPP is covered. Revenue from HPP customers and payment of the AMP bill are tracked in the Electric Fund (Fund 654).

Legal Review

The matter has been reviewed, follows normal administrative procedure and

Recommendation

If Council is in agreement with the request, a motion adopting Ordinance No. 2022-51 is in order.

Ordinance No. 2022-51 Wind Energy Purchase Locust Ridge Contract.doc
Ordinance No. 2022-51 Exhibit A Wind Energy Purchase Locust Ridge Contract.pdf

EXHIBIT "B"

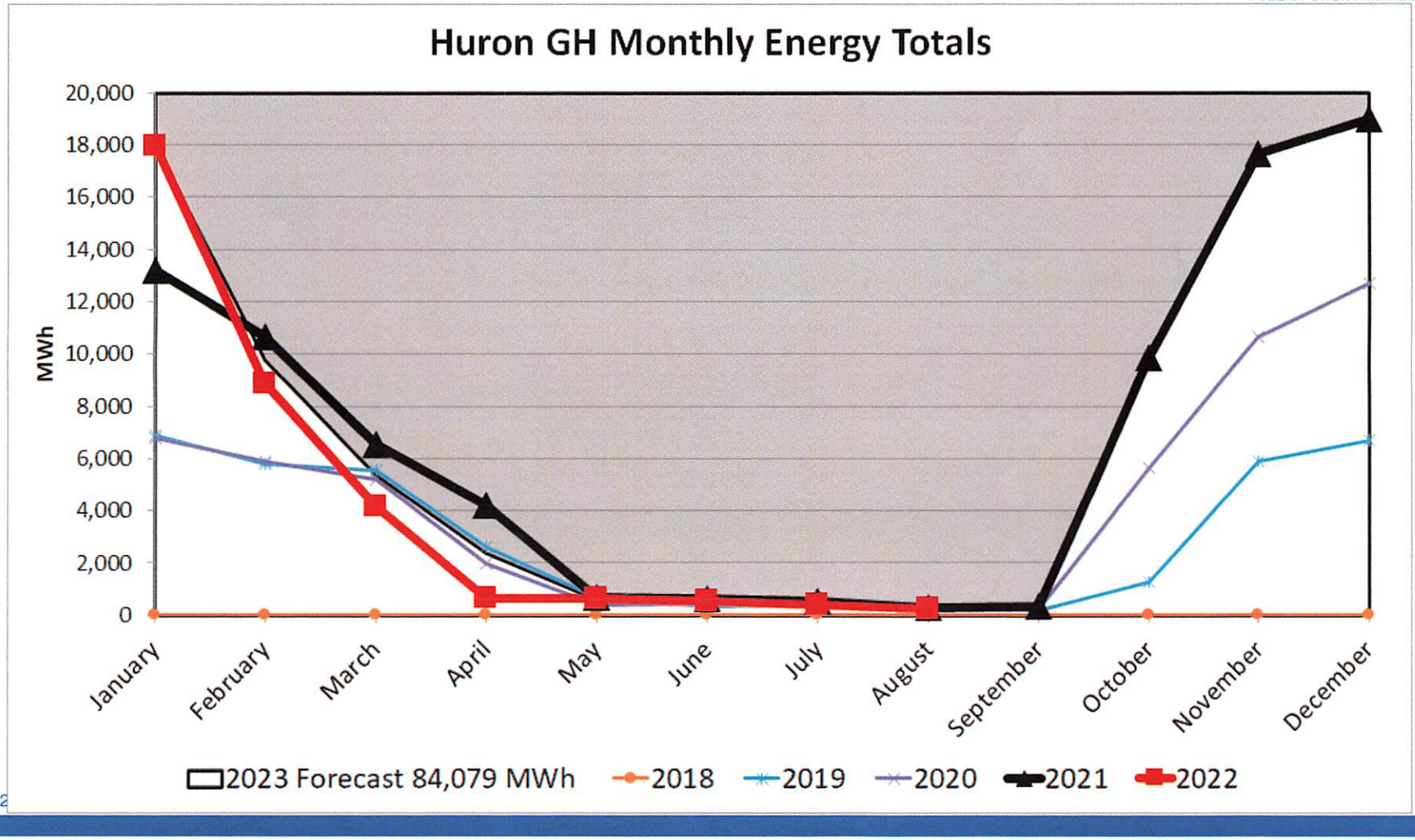

Huron GH Monthly Energy Totals
MWh
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
January
February
March
April
May
June
July
August
September
October
November
December
2023 Forecast 84,079 MWh
2018
2019
2020
2021
2022

EXHIBIT "C"

Huron 2023 Energy Sources

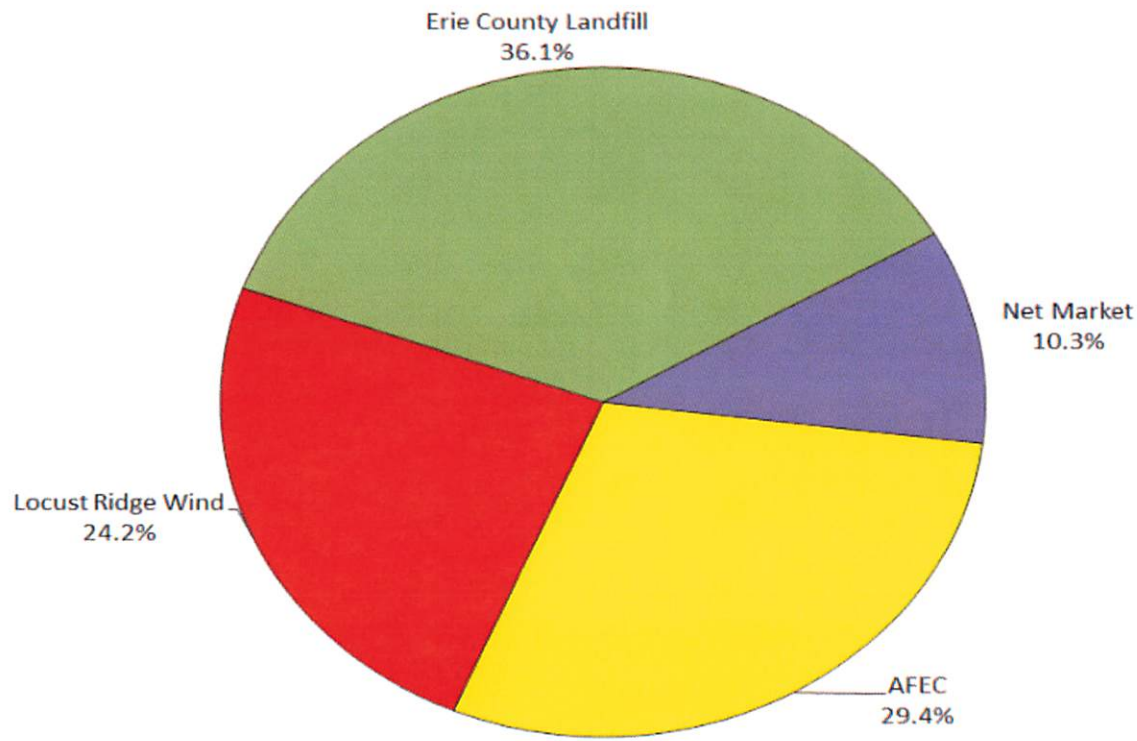


EXHIBIT "D"

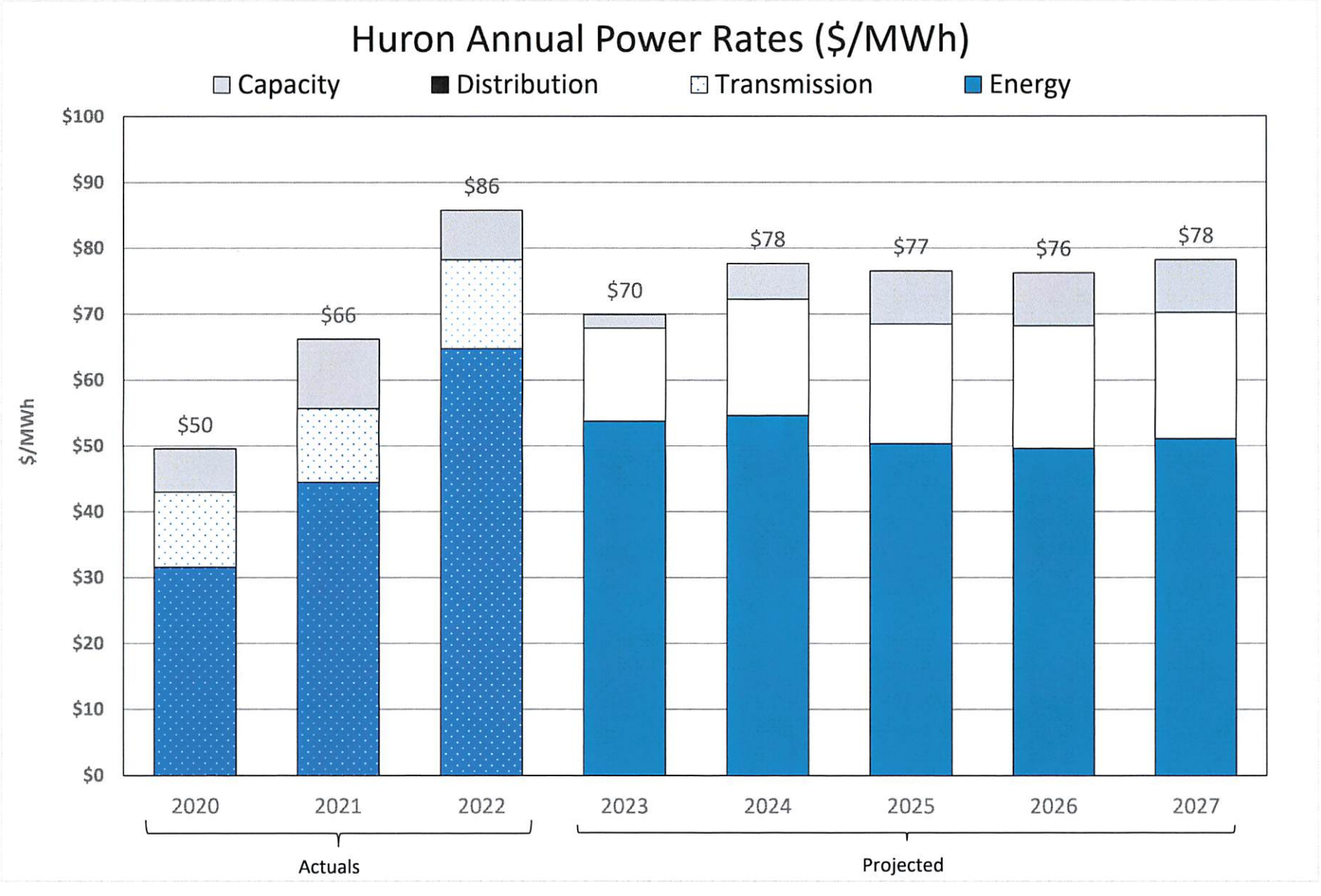

Huron Annual Power Rates ($/MWh)
Capacity
Distribution
Transmission
Energy
$/MWh
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
$50
$66
$86
$70
$78
$77
$76
$78
2020
2021
2022
2023
2024
2025
2026
2027
Actuals
Projected

EXHIBIT "E"

DISTRIBUTION FEEDER ROUTING PLAN - SOUTH

CONCEPT DRAWING

E-101
DRAWING NUMBER

ENGINEERED PROCESS SYSTEMS

P.O. BOX 471 • HURON, OHIO 44839
PHONE: (419) 433-7048 • FAX: (419) 433-6672

HURON PUBLIC POWER SYSTEM EXPANSION

CITY OF HURON

417 MAIN STREET • HURON, OHIO 44839

ISSUE	DESCRIPTION	DATE
P1	PRELIMINARY FOR DISCUSSION	8/17/21

PRELIMINARY DRAWING
NOT FOR CONSTRUCTION

DISTRIBUTION FEEDER ROUTING PLAN - NORTH

CONCEPT DRAWING

E-102

DRAWING NUMBER

ENGINEERED PROCESS SYSTEMS

P.O. BOX 471 • HURON, OHIO 44839
PHONE: (419) 433-7048 • FAX (419) 433-6872

HURON PUBLIC POWER SYSTEM EXPANSION

CITY OF HURON

417 MAIN STREET • HURON, OHIO 44839

ISSUE	DESCRIPTION	DATE
P1	PRELIMINARY FOR DISCUSSION	8/17/21

PRELIMINARY DRAWING
NOT FOR CONSTRUCTION

CONCEPT DRAWING

DRAWING NUMBER
E-201

ENGINEERED PROCESS SYSTEMS

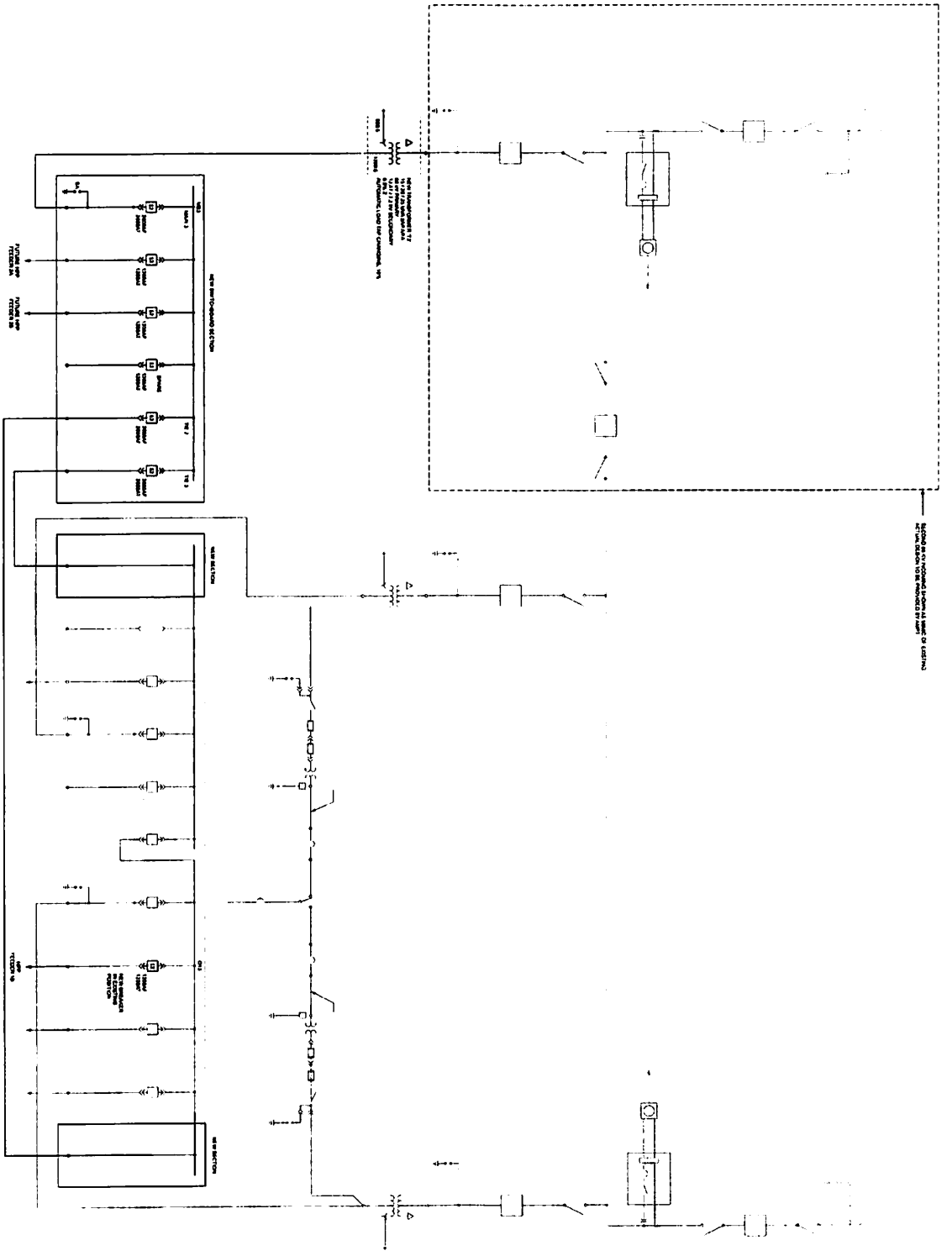
P.O. BOX 471 - HURON, OHIO 44839
PHONE: (419) 433-7048 • FAX: (419) 433-5572

HURON PUBLIC POWER SUBSTATION EXPANSION

CITY OF HURON

417 MAIN STREET • HURON, OHIO 44839

ISSUE	DESCRIPTION	DATE
P1	PRELIMINARY FOR DISCUSSION	8/17/21



ONE-LINE DIAGRAM - SUBSTATION 12.47 KV EXPANSION

CONCEPT DRAWING

DRAWING NUMBER
E-401

ENGINEERED PROCESS SYSTEMS

P.O. BOX 471 • HURON, OHIO 44839
PHONE: (419) 433-7049 • FAX: (419) 433-5572

HURON PUBLIC POWER SUBSTATION EXPANSION

CITY OF HURON

417 MAIN STREET • HURON, OHIO 44839

ISSUE	DESCRIPTION	DATE
P1	PRELIMINARY FOR DISCUSSION	6/17/22

PRELIMINARY DRAWING
NOT FOR CONSTRUCTION

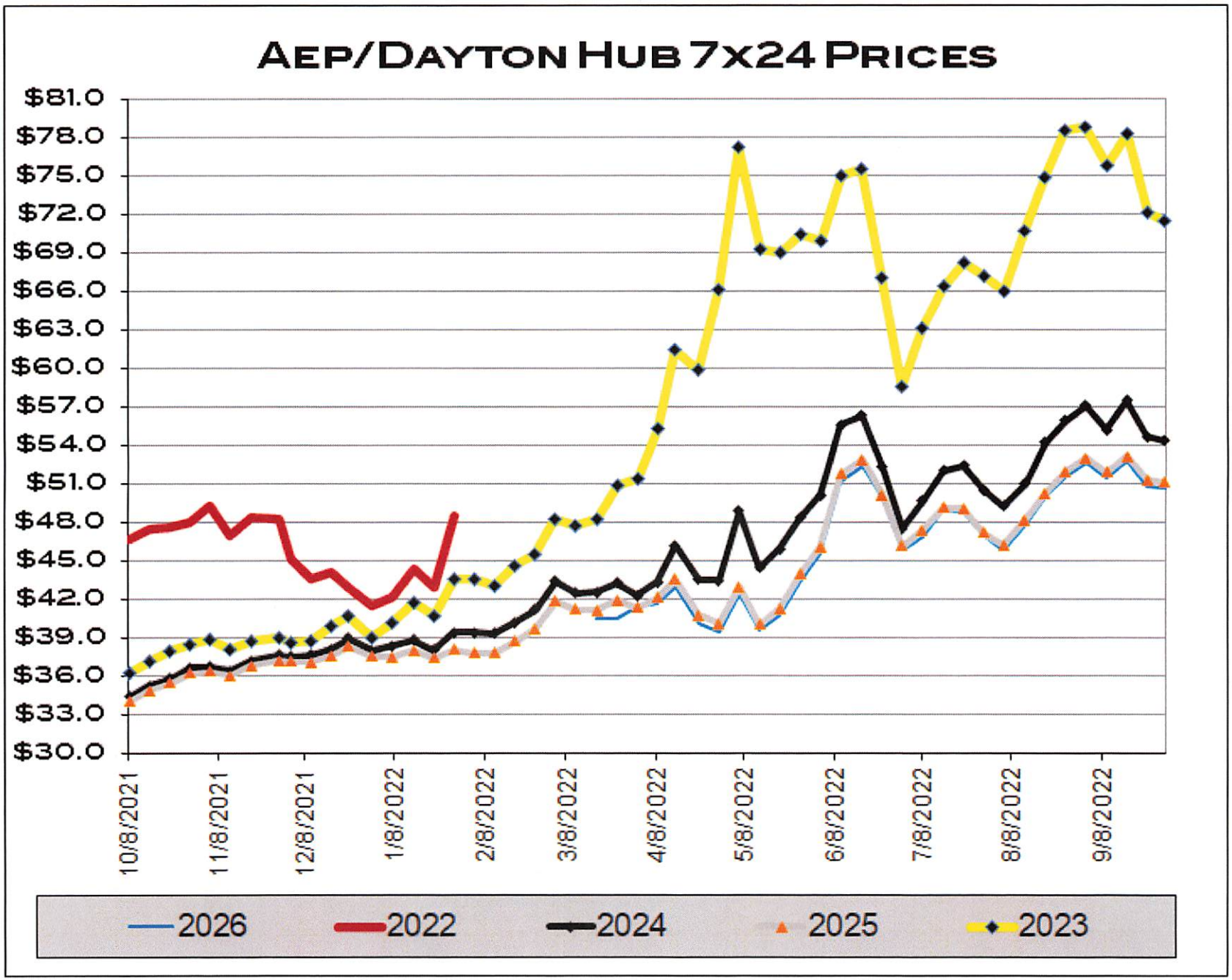

AEP/DAYTON HUB 7X24 PRICES
$81.0
$78.0
$75.0
$72.0
$69.0
$66.0
$63.0
$60.0
$57.0
$54.0
$51.0
$48.0
$45.0
$42.0
$39.0
$36.0
$33.0
$30.0
10/8/2021
11/8/2021
12/8/2021
1/8/2022
2/8/2022
3/8/2022
4/8/2022
5/8/2022
6/8/2022
7/8/2022
8/8/2022
9/8/2022
2026
2022
2024
2025
2023

EXHIBIT "C"

CITY OF HURON UTILITIES COMMITTEE
Minutes of the Meeting
November 2, 2022 – 5:00pm

The Huron Utilities Committee was called to order by Committee Member, Matt Grieves, on Wednesday, November 2, 2022 at 5:00pm at the Huron Water Treatment Plant, 10 Waterworks Drive, Huron, OH 44839.

MEMBERS PRESENT: Matt Grieves, Stuart Hamilton, Mitch Swanbeck and Stephanie Walls. Not in attendance: Joel Hagy.

Approval of Minutes

Motion by Mr. Swanbeck to approve the October 5, 2025 minutes. Second by Mr. Grieves. All in favor.

Old Business
None.

New Business

General Water Update/Poggemeyer Sludge Management Report (SMR)
Mr. Gibboney directed the committee's attention to the SMR on the screen. This deals with the byproduct waste from treating the lake water, which is a combination of waste from their sedimentation processes, as well as their filters themselves. As background, although most committee members have been somewhat updated before, they have a NPDES (National Pollutant Discharge Elimination System) Permit on that lagoon for a sewer discharge permit. It's a 7-year permit to discharge/decant the liquids to the creek, where it ultimately goes back to the lake. For each renewal of that 7-year NPDES, the EPA tightens down on all of the constraints to discharge. They add more parameters. They used to monitor just two (pH and total suspended solids), but now they've got a dozen, one of which is total chlorine, which is the current flag that is driving this study. They, like all water plants, use clean water to wash their filter's backwash, so there is chlorine present in that water, and that came as no surprise to them that they would find chlorine in that lagoon. They set the benchmark at .03%, which they have to be under, and is practically zero. They are over .03%. They are close at times, but are usually around 0.1%. As such, the easiest response is to take the chlorine out of the water. That certainly is an option, and that is in the study, as well, but they have expanded to look at other options to get rid of that permit entirely. As they go forward in 7-year increments, it is only going to become more challenging to meet those discharges, and the EPA actually set it is way, to be a discharge elimination permit – they want to eliminate these permits. They want you to discharge somewhere other than back to where you are receiving the water. That is ultimate goal of the permit. The lagoon is roughly an acre, and is about 15 feet deep when it is fully dredged. It is about 4 feet deep when it is at its exhaustion period, and they need to dredge it. The solids naturally drop to the bottom and the liquids discharge over the top.

The introduction of the SMR Report touches on where the plant currently is. The plant produces 3.4 million gallons per day. They have expanded, but they are just waiting on the stamped paper from the EPA to get expanded to the 5.87 million gallons per day. They have had a lagoon since the early '70's when they eliminated direct discharge. All of the plants used to just send all of the sludge right back to where it came from – to the lake. That was no longer allowed, so everybody kind of split ways. Some

systems pump it directly to sanitary and pay dearly for it as they are sending them mud. Other plants (Huron and Sandusky) have lagoons with a couple of acres dedicated to the land management for that style. Demographics of the population base are provided. Ms. Wall asked of chlorine ever breaks down. Mr. Gibboney answered that the chlorine, as it comes in contact with any bacteriologicals, begins to dissipate, to the point that it will be completely gone (no residual), however, the dose they put in the finished water is elevated (meaning it has an extra residual to deal with bacteria in our system, so that extra residual also goes to that lagoon and there's simply not enough volume there to take it down to a zero level quickly enough). Ms. Wall asked if they could mix something in with it that would help it to break down. Mr. Gibboney answered that that would have to be bacteria, basically, and it would have to be somewhat of a metered feed, as you would need to consistently keep it down, if possible. It's very similar to the action of dechlorinating. They would dose the lagoon continually with a sodium thiosulphate, which is what is most common used. They have already gone through this report once, scrutinized it, and made corrections where necessary, but it still goes through the normal treatment process they have, which is unchanged from when many of the committee members toured the facility.

When it comes to compliance issues, doing nothing is not an option. The permit they just renewed was not optional, they have to renew it. There are new parameters on there, and they were given 6 months to study, 6 months to engineer, and 6 months to construct. Given the state of procuring equipment, items, etc., it is probable that if they needed a minor extension, they would likely entertain that if it was needed. That is how it is initially played out. The permit was issued in May, so they are about 6 months in. The knew right off the bat that chlorine would be present, so they engaged Poggemeyer right away, without waiting the 6 months for the study period, which was the study period by the plant to take residuals. They have had Poggemeyer working on this the entire time already knowing that this was going to be an issue. The current waste handling system involves taking all of their sludge, accumulate it about 2 years in the lagoon, dredge it into stockpiles and retention dikes where it sits for about a year to dry up enough that they can haul it, and they typically take either onsite for fill or offsite to the old City dump. As they look far out, they obviously can't continue to add earth indefinitely to any one location. The landfill will take, it's a matter of getting from A to B. Asked about cost, Mr. Gibboney answered that it is still undetermined. He has talked to the landfill several times, and has gotten a response of anywhere from $0 to it having a charge – they never really indicated a cost on that. No action puts them into permit non-compliance. They have looked at several options – a couple of them are quite robust. There are couple of options that deal with all of the sludge in its entirely, both the solid and liquid form. At the bare bones, all that they have an issue with is the decant, which is the clear liquid that is coming off the top. It is not potable, obviously, as it has been reactively sludged, but it is a very clear flowing water, has very little residual chemicals, if any.

The recycling alternative is the first alternative they bring up. Recycling is fairly commonplace. You take your decant, you have to have a meter, and you return it to the beginning of your process; you take that liquid and move it back to the beginning of the plan. It is extremely common, and was the preference not even 10 years ago. Now, there is some concern that if you were to have algal toxins or any contaminant in your lake water, you would then be recirculating that contaminant around and around and around; it goes to the lagoon and comes back in again, an it just keeps circulating and you never get rid of it. They are assuming that if we pull from the lake, we settle out the algal toxins, they go to the lagoon, they go to the creek, and then they go back to the lake, but likely not a half mile out back over our intake versus recirculating it. That being said, they have 10 years of data on our toxins, and they are very low on detections. The western basin, more towards Toledo, is significantly higher. Here, it is rare that we have an attack. Once in a blue moon in the summer we will detect some. The likelihood of having a significant recirculation is not there, at least in a 10-year window. You can recycle 10% of your

treatment process flow, so if the plant is running at 3 million gallons per day, you can recycle 300,000 gallons. The good news is, what they produce into that lagoon is well below a 10% ratio, so it really would have no effect on them, even when they are emptying tanks to inspect, or things of that nature. They will not go over the 10% window, so that it not really a concern.

A second option, which is very similar, is to discharge into the sanitary sewer. Instead of recycling it, you just throw it in the sanitary. It is viable, as the sanitary is large enough here. We could discuss it with the County. They do not have any rate structure beyond their normal structure. If you are a household, a business or an industrial discharge (which this would be), it doesn't matter, they all have the same rate structure. We output about 100,000 gallons per day to that lagoon, and they have a rate of $6.14 per 100 cubic of sewage water, so that comes in at roughly $800 per day to send it to sanitary. That is likely not a viable option on a continuous basis. It could be looked at on a emergency basis, certainly, but on a day-to-day basis, it is likely not an avenue we would like to go down as it is roughly $300,000 per year to do that.

The report then gets into more large-scale, multi-million-dollar improvements. This would be where you are actually doing more of what they do at a sewer plant. You are screening, thickening and dewatering. You are taking the sludge itself, you may be sifting it into different masses, there are centrifuge options and felt presses, as well, to extract out as much water as you can, and then you've got a much more solid cake, as they technically call it, that a lot of those systems can dump right into a semi-truck size dumpster that is hauled off. As you can imagine, that is a lot of equipment, that's a building to house that equipment, and obviously, people's time to operate that equipment and haul away subsequent sludge. All of the costs involved come up in a table at the end. He is not forgetting them, they will be showing up, but they are in the multi-million-dollar range.

The next option is very similar, so now they are doing felt thickening dewatering disposal. Again, it is very similar to the first process. They are using a felt thickener in this proposal, as well. These are, truth be told, were options that he would only see at larger scale operations. Cleveland has these options in place due to volume them produce, it is warranted. Elyria has it in place, as well, and they are 6 times larger than Huron. All of the comparatively sized plants are doing either decant recycling (Sandusky does that). Vermilion sends everything to sewer, but they pay a hefty annual fee out of their budget to do so. A lot of the other systems are doing the same thing, with sludge being an option if they have some land.

They jump into thickening dewatering disposal, which is a third option and eliminates screening, which is really unnecessary. Screening is typically going to be dealt with in a wastewater system, as you have a multitude of foreign objects or debris within that stream. Our sludge is silt with sand, and is very consistent. To screen it would really be difficult operation, if anything different from what it is. Otherwise, it remains the same with a thickening process, a disposal into a dumpster of sorts, and then ultimately it can be hauled anywhere (ideally, a landfill situation).

They do mention in this report, as well, the possibility of giving it away – can they have it land applied? The big difference is aluminum-based sludge versus lime based sludge. All of the plants on Lake Erie use alum in their coagulant to get their turbidity out of the water. The inland plants use lime. Farmers love to lay lime down, and if you have lime sludge, it helps with the pH of the crops, and you would have a very easy permit process to land apply lime sludge. They do not yet have one for aluminum sludge. It will hopefully be coming eventually, but as of now, they have no permitted mechanism to simply give it away. It can be placed on City-owned properties and it can be landfilled, but those are the current limitations on that sludge. Elyria has their own semi-truck, so they have a person that is just hauling all

of the time. Cleveland contracts out the hauling, but they have a 2-story tall press building that presses all of the sludge and drops it into semis. That is a scale that Huron is not going to get to.

Many of these options are very much the same, so this is another thickening and dewatering, they are just using different techniques to dewater. Overall, all of those options that he just went over (the thickening options) require a building, a lot of equipment, and time and effort to do so. They are looking to "keep it simple, stupid" and look at how they can get their end goal accomplished with the most efficient means for their operators so they don't have to have somebody operating a completely different system at a cost that is yet to be determined.

Option 4 gets them out of the thickening processes and gets them to dechlorination, which is an option. As the mention, you can use sodium thiosulphate or other chemicals to dechlorinate the water. The engineer's rough cost estimate is $128,000. He thinks the main scrutiny he would provide to that is that this satisfies this permit, but it does not satisfy what they could add to it in any other given permit, so there is a decent likelihood that they would be starting a wastewater plant, a small treatment process, that would expand over the years. This option would be a prefab structure (a glorified weathered-in shed) out there at the lagoon that would dose the sodium thiosulphate to the water as it enters that lagoon, which would dechlorinate so the effluence does achieve the end go, however, it comes with that asterisk.

With regard to Ohio EPA review and approval, everything must be approved by them prior to implementation. They noted that for the recirculation, as well. The EPA may or may not be receptive to recycling due to the potential for toxins.

The recommended alternative, and this is just from the best of Poggemeyer's options, is to look at some of the larger, more robust systems. They are looking at complete sludge management. It gets rid of the sludge, as well as the decant. They would require a small-scale pilot testing, so a miniature version would have to be implemented. The engineer's estimate of probable cost for the recommended alternative, which was a dewatering press, is $5.6 Million. It is a very large jump from dechlorination at $128,000. The recycling of the decant to the plan is about $200,000. It is a substantial jump to get to a thickening process, and all of the thickening processes, which you will see in the tables, are in the same general vicinity of $5 Million. As always, there are some funding opportunities listed that are typical avenues that we go down – OWDA, Public Works Commission, Ohio EPA, so there is some potential to secure some low- to no-interest loans as they move forward. There is a table that shows all the options and the total costs for those options.

What they have right now as far as managing the sludge works very well. They dredge for 2 weeks, and then they will haul for 2 weeks every other year, so it's not overly labor intensive. He personally doesn't have a need to reinvent the wheel, for lack of a better term, it's the decant that's the concern. If we start feeding one chemical out there, the next permit might require a pH adjustment, and now we would be feeding another, and before you know, you have a package wastewater plant sitting out there. If they eliminate the permit, then there is no regulatory oversight beyond we're limited to 10% recycle, but they would be able to recycle indefinitely. The permit is essentially tossed at that point in time.

Some images of the dewatering processes are provided in the report. They are fairly large units and they would go inside a decent sized structure, whether it be a centrifuge or a thickener. It would have to be able to process 100,000 gallons of decant per day. They are substantial in size. The gain we get is that the lagoon is alleviated altogether, but he doesn't know if there is a need to do that at this point in time.

Asked if the dewatering is not his choice, Mr. Gibboney answered that while the engineer's recommended alternative is to completely restructure how they deal with the sludge. Their proposal is to thicken it in a building through one of the methods they cited – centrifuge, thickener, belt press, etc. – and that would obviously drop directly into containers that would be hauled offsite, and your decant would then recirculate. However, just the cost of the construction for those mechanisms at $5 Million is astronomical compared to what they currently manage. They rent a long-reach excavator for 2 weeks, and then they rent a bulldozer to form up their various dikes and piles, and generally use their own labor for the dump truck hauling. It would be a stretch even at $20,000 per year in managed funds for that lagoon as opposed to the $5 Million investment that would obviously have maintenance of its own built in there. There are a lot of moving parts, and they are pressing dirt and soil, so it's going to get into those parts.

When the permit draft came out showing that they were going to add a bunch of parameters, one being total chlorine, they talked to the engineers and asked if they could recycle. They answered that they could and that it would cost $100,000 - $200,000. That is still an option. At least that is one direction that Mr. Gibboney is very hopeful to look toward. They certainly dechlorinate, it's not hard to do. However, without "guaranteeing it," he can almost tell you that the next permit in 6 more years is going to have more than 12 parameters on it. They are going to add more parameters. They want clean water with no residuals going to the lake, just like wastewater plants, so they are adding the same parameters to the permit that the wastewater plants have to comply with. Dechlorination is $128,000 including the shed. There is one circuit of power running out there for a feeder. Asked what the manpower is for that system, Mr. Gibboney answered that it would have to be checked daily, but they wouldn't be checking on it on an hourly basis as they do in the plant. If you have a misfeed and you had a residual of chlorine, you would be out of compliance, which would not result in a fine or anything like that, but if it recurs, it could become a compounded issue. It is a pretty robust permit every 7 years to even apply for. The National Pollutant Discharge Permit has to be advertised all over, it runs through several levels of the State and Federal government, so if they can get rid of that permit, it saves a lot of time and effort, and saves all of the sampling costs. They are pulling roughly 12 parameter samples every month that are contracted out to labs more robust than what they run at the plant, and they would get rid of that expense, as well, without the permit.

Mr. Hamilton said the dechlorination is not finite/fixed, so while it might be $120,000 right now, in the future it's going to be that amount multiple times over, because we will still be under the permit, while the whole point of this is to try to get away from being under the permit. Page 32 shows that the estimated cost for recycle is $249,000. The recycle would be comprised of a meter (they would have to meter how much water is moving that direction) and a value that modulates the rates of water, as you wouldn't want 100,000 to go all at once to your recycle. You want to add it slowly throughout the day. It is a fairly simply option, mainly piping from one end to the other to get things to the head of the plant, and then a means to meter it. The unknown with that option, which he would like to explore if the group concurs, is to see what the EPA's appetite would be for that recycle option, given that they have 10 years of data on the toxins, which is a very low amount. There isn't a whole lot of data that would support a denial of that. Asked if recycle is his #1 choice, Mr. Gibboney answered that if cost was near nothing, then sanitary would be his choice, it just gets rid of it all together – toxins or no toxins, it's gone. Ultimately, it would still go back to the lake in the form of the sewer plant. Given that there is no option for discounted cost for sewerage that takes it away on a routine basis, it could be a tie-in for an emergency, if we had high toxins, but if you shoot it to that sanitary avenue, which is limited to a day or two, they could get by on that at $800/day and then go back. They wanted to ultimately present this and get a feel for what the group collectively thought, and they know the group knows how many large-

scale projects are coming the pipeline already. Some of these options discuss a high cost if they choose to go that direction. Mr. Gibboney asked if there were any questions on how they deal with their process.

The engineer stated in the report that the EPA may have a problem with the recycle option, but they may not. A lot of the plants that do it already, such as Sandusky, have been doing it for decades. You are grandfathered in at that point – unless there is a reason, they are not going to strip that ability from you when there hasn't been a reason. They would be looking at a new application for that option. That's obviously one of the cheaper options. Candidly, the cheapest option is to dechlorinate, but it comes with that asterisk of, there will be more parameters. The permit renewed effective 5/1. It had a lapse period because the State was behind, and it will expire in 6-1/2 years. Ms. Wall said that she can definitely see not wanting to spend money on something that is not going to be a lasting solution. At the same time, it might buy us some time. We do have other initiatives, and while it's not a permanent solution, who knows what it's going to look like in 10 years from a regulatory standpoint. It may be that at one point we have to do the big ticket. Right now, it would be bunching up with other expensive initiatives. It would just give us more time to plan for a big ticket. Mr. Hamilton said to remember that the recycle option is only $200,000, too. The two of them are kind of in the same price range. Ms. Wall said she thought one of them was per year. Mr. Gibboney said if the recycle option is allowed, that is a one-time cost. If the only option is sanitary, that is the one is that $300,000/year that never goes away. Mr. Hamilton said the two affordable options for right now are the dechlorination or the recycle. $200,000 and below. Jason's preference is the recycle because it is a longer-term, less restrictive process, where the first one keeps us under the permit, which we will keep getting constantly assessed under. Mr. Swanbeck added that it would make send to get rid of the permit. The EPA admitted that they purposefully add parameters to restrict more and more discharges. They want this permit eliminated; they want people to get rid of it in a fashion that doesn't reintroduce it to the waterway. That is their ultimate goal. Whether or not sanitary is affordable becomes an issue, but he is inclined to at least look to the EPA and see if they can't at least get an opinion out of them as to whether or not entertain recycling given their 10 years' worth of toxin date – see if that's digestible, or perhaps they kick it back and say yes, but we'd like an alternative if there is a high toxin reading. Then, at least, we could reanalyze and see if we want to pivot in a different direction, or simply route it to sanitary only during those specific events. They haven't had any events in the past 10 years, so that would be zero at this point. Ms. Wall asked what happens to the sediment in the recycling process. Mr. Gibboney answered that the sediment result remains unchanged in the recycling process. It takes them the 2 years to fill the lagoon. The sludge itself is not at issue – it is an issue for the City in that they can't just give it away, but that's an issue that exists in all of the options. They don't monitor the residuals in the sludge at all. They limit you in that you can't get rid of it, so they know that it's either going to a City-owned property or a landfill. In that regard, they are not overly concerned what residuals are in it because it is being controlled. It is not going to John Doe's house and he is growing vegetables out of it in his garden. They have been out over the years since toxins became a true thing. They sampled the sludge to see what residuals, if any, are present. The sludge at present is not an issue. They are able to manage it with their 2-week process, but it's not overly difficult. They have the real estate to dispose of it – you need the room to be able to do it. Vermilion is landlocked, so they have a problem. The dewatering may work for them because they don't have the space. Instead of a lagoon, you just put it through that process. If that dewatering system was $200,000, he would say go ahead and go with that. Mr. Hamilton says the decant goes back to the Lake, and that's all they care about. The rest of the stuff, we are on our own and can do whatever we want with it. They are looking for guidance from the committee – they now know Jason's preference. He asked if the committee has any other preferences.

Ms. Wall said that she did not, but she sounds like they are, ultimately, they are probably going to heading in one of the more expensive directions, or do you think the recycling option will be a lasting solution? Mr. Gibboney answered that if they stay at the size they are at (the expanded size – 5.8 mill gal/day) it is comfortable to maintain what they have through sludge management. If they were to have some unprecedented growth – Anheuser Bush built a massive plant – where they get to a point where they have to expand again and they are now the size of Sandusky's water plant, it could then get to that point. At that time, too, the amount of revenue you would be receiving from that facility would then pay for that. There are a lot of if's in there.

Regarding EPA's approval of recycling the decant, Mr. Gibboney said that they may require that there is an alternate means, such as use of the sanitary sewer, if the toxins are high – that is possible. He doesn't know if they will or will not say that. It would be an additional cost to have that option, but it would be minimal. To bring things over to the beginning of the plant brings it over to the northwest corner, and their sanitary is just a couple 100' of pipe away. It's not an enormous endeavor to do.

Mr. Hamilton asked Mr. Gibboney to run through a quick update on the bigger projects. The water rate discussion has gone to Council twice now, and two of three readings. If they ultimately pass that legislation, it is for the 5% over 10 years, with a one-time 3% increase for the County. There is one more reading at the next Council meeting, and if passed, will go into effect on January 1, 2023. It also includes some minor housekeeping to some of the chapters in the water ordinance that hadn't been scrutinized or altered in many, many years, so they cleaned up some language. A couple fees were adjusted to modern day amounts. They have had some good discussions with the County. While nothing is signed yet, they have spoken with the County and they are generally accepting of that 3% increase. They are looking to modify their contract slightly to allow additional purchase. Right now, they are capped 1.5 million gallons per day, and are looking to raise that the 1.7 million, and then raising the ceiling to capture a higher window of consumption. Overall, it is good as it is consumption that never goes away, it is a stability fund – it is there on a daily basis. That is progressing quite well.

The emergency intake project was talked about at the committee level, where the boat basin site was discussed. They then went to their engineering friends to OHM, who is working on an Request for Qualifications to go out to the engineering firms. They want to see what experience level a lot of these firms have. It is similar to bidding, but this will allow them to cite qualifications. Maybe one of those engineering firms has done three of those intakes – what a credential that would be to include, and would be a good company for us to select. He knows they are polishing that as he has answered some questions on it today. That should be completed pretty soon, where they can advertise that RFQ – there are a good half dozen firms in the area that will likely answer the RFQ, and we will see who is the best fit. Due to the enormous amount of permitting involved (Army Corps to get into the waterway, EPA permit), the are realistically looking at next year for engineering and constructing in 2024. We would be too hard-pressed to do it any quicker with those permits.

With regard to water mains, South Main Street is their water main replacement project, and includes Forest Hills, Valley View and Hickory, a small portion of Huron Street. They have an engineering proposal for that project that will be executed very soon, which will get the ball rolling on the survey process. They will have to see how the market and availability is, but late next year, worst case scenario it would spill over, but hopefully, they can meet that deadline. That's in line with the capital projects and asset management plan that they have presented before. There are a good dozen projects on there, and those are the most recent projects on there. Coming behind that they have the larger water tower that they have talked about further down the road, Old Plat water mains, and things of that nature.

Mr. Hamilton added that as part of the South Main Street water main replacement project, they will be doing the roads on the back of that, as well. It is kind of like taking multiple projects and trying to build them at the same time. Mr. Gibboney said that they did defer the roads last year on Forest Hills, Valley View and Hickory. Their rating was poor, but when you are going to tear it up for a water main, you don't want to put in the new road and promptly tear it up. Government sometimes does things like that, but they are trying to do things in the right order.

Mr. Gibboney added that, from his end, it will be pretty cool to watch some of these projects come through, especially the river intake. That has been an issue since at least the '90's on paper. Further back, it has probably been an issue for decades with that intake in winter. It will be nice to have a backup to get past that issue.

Mr. Hamilton said Mr. Gibboney went through the budget at last night's Finance Committee budget meeting, and asked him if there were any major concerns. Mr. Gibboney answered that there were no major concerns. There was really nothing other than what has been outlined in their plans for several years, even their operating budget is fairly fine-tuned at this point. He knows what the annual maintenance is for equipment each year, so it's fairly fixed. Chemicals have been their only intractable element. Over the last year and a half, it's been extremely volatile. Most of their chemicals have tripled in unit cost. With some of them, they can change how they treat slightly to reduce usage. Other ones, you need a residual, so you're going to use what you have to use. Those have definitely gone up in a manner they have never seen before. That has been a bit unpredictable – they will see the bid openings later this month for chemicals for next year. He has thrown an estimate in the budget that he feels is appropriate – but he can still adjust that. Hopefully, those numbers will start to curve back. It is kind of a delayed Covid so-to-speak, as what a lot of them are claiming are material supplies that they need. It seems as though with the chemicals, they were late to that reaction. Otherwise, they have been able to get the chemicals. There has only been one that has been challenging to get. Worst case scenario (they've done it), they just deliver partial loads and have more smaller deliveries. He would take that over nothing.

Mr. Grieves asked if there was anything else to be discussed. There being none, the meeting of the Utilities Committee was adjourned at 5:51pm.

Respectfully submitted,

Terri Welkener
Executive Administrative Assistant/Clerk of Council
(minutes were prepared from digital recording)

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DESIGN GROUP
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SLUDGE MANAGEMENT GENERAL PLAN
CITY OF HURON, OHIO

OCTOBER 2022

A Report Prepared for:

Mr. Jason Gibboney
Water Superintendent
City of Huron
500 Cleveland Road West
10 Waterworks Drive
Huron, Ohio 44839

SLUDGE MANAGEMENT GENERAL PLAN
CITY OF HURON

Prepared by:

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Amir Fard, P.E.
Project Professional

Reviewed by:

_____

Thomas J Borck, P.E. (OH & MI)
Project Manager Leader

Poggemeyer Design Group
1168 North Main Street
Bowling Green, Ohio 43402
Phone: 419.352.7537

Project No: 20225705.001A

ABBREVIATIONS/ACRONYMS

ACH:	Aluminum Chlorohydrate
Ave.	Average
CSO:	Combined Sewer Overflow
D:	Day(s)
DS:	Dry Solids
EPA:	Environmental Protection Agency
gal. or Gal.:	Gallon(s)
gph or GPH:	Gallons per Hour
HAB:	Harmful Algal Blooms
HAB_S:	Harmful Algal Blooms
lbs:	Pounds (Weight Unit)
LMI:	Low to Moderate Income
Max.:	Maximum
mgd or MGD:	Million Gallons per Day
Min.:	Minimum
MHI:	Median Household Income
NPDES:	National Pollutant Discharge Elimination System
PAC:	Powered Activated Carbon
PFAS:	Polyfluoroalkyl Substances
OEPA:	Ohio Environmental Protection Agency
OPWC:	Ohio Public Works Commission
OWDA:	Ohio Water Development Authority
RD:	Rural Development
SCEIG:	Small Communities Environmental Infrastructure Group
USDA:	United States Department of Agriculture
WTP:	Water Treatment Plant
%w/w:	Weight Percent
%:	Percent

POGGEMEYER DESIGN GROUP
A Kleinfelder Company

TABLE OF CONTENTS

1. INTRODUCTION

The City of Huron is located in Erie County, Ohio, and owns and operates the Huron Filtration Plant housed within the City's Public Works Complex, a 3.4 MGD surface water treatment plant (WTP) which is in the process of being upgraded with tube settlers in the sedimentation basins and rerated to 5.872 MGD. The City of Huron established its own water department and built a filtration plant in 1909. Since then, the original waterworks (1909) was abandoned, and a new filtration plant was commissioned in 1957. The current filtration plant (1957) has been expanded and upgraded multiple times and is a full-service department regularly recognized by the Ohio EPA for quality of operations.

The Huron Water Treatment Plant (WTP) utilizes water from Lake Erie to produce drinking water for 3,600 service connections in the city as well as water sold to the Erie County Water and Sewer District. The Huron WTP is a traditional surface water treatment plant; the processes utilize coagulation, flocculation, sedimentation, and filtration.

The primary raw water intake is located approximately 2,200 feet from the shore of Lake Erie where a 36-inch diameter line brings water from the intake crib through a screen to a raw water wet well located on shore. Although the city has recently seen a decline in population, this decline is offset by the large volume of tourists that come to the region and the addition of some large industrial/commercial water users. The facility is expected to increase its water use incrementally over the next several years due to the potential to serve new customers in the service area

The City was being proactive and resolved potential changes with waste handling regulations at the time NPDES permit renewal came due. Permit was renewed effective May 1, 2022. The purpose of this general plan it to review sludge drying and handling options and to review ways to reduce the waste stream from the WTP.

A current process diagram is included in Appendix B.

2. BACKGROUND

2.1 Location

The City of Huron, Ohio is located in Erie County along the shore of Lake Erie (Figure 1). The total land area is 4.84 square miles.

Figure 1: City Location Map

2.2 Demographics

The population was 6,922 in the 2020 census, a 3.2 percent decline from a population of 7,149 during the 2010 census. In the 2019 Population Estimates for Cities, Villages, and Townships document published in May 2020 by the Ohio Department of Development, the City of Huron was estimated to see a -0.4 percent average annual rate of change from 2010.

Erie County overall also saw a decline in population by 1.9 percent from the 2010 to 2020 census from 77,079 to 75,622, respectively. This decline was less than the Ohio Department of Development

population projections for Erie County, published in April 2018, that estimated a decline in population of 5.4 percent. The Ohio Department of Development estimates the population will continue to decline in Erie County over the planning period.

While a decline in population may result in less water customers, some of the decline is offset by the large volume of tourists that visit the area each year.

It is difficult to predict with certainty flows to the WTP from population alone due to the population volatility in the area, with large fluctuations in tourism and large water customers. Additionally, the City is connected to the Erie County Water District that could add additional customers to the City of Huron water system.

Additional demographics for the City of Huron can be found in the table below:

Table 1: City of Huron Demographics

Community Aspects	Indicator Number
Number of Households	3,027
Median household income	$61,833
Population per square mile	1,478.1

2.3 Existing Facilities

The City of Huron owns and operates its own WTP that was built in 1957. The Huron Filtration Plant is located at 10 Waterworks Drive in Huron, Ohio 44839. A location map of the Water Filtration Plant can be found below in Figure 2.

Figure 2: Site Location Map

The facility is a 3.4 MGD plant that is in the process of being rerated to 5.872 MGD, utilizing coagulation, sedimentation, flocculation, and filtration. The primary raw water intake is located approximately 2,200 feet from the short of Lake Erie. A 36" diameter pipe brings water from the intake crib through a screen to a raw water wet well located on shore. Sodium permanganate is fed at the intake before the raw water enters the wet well. From the wet well, low service pumps convey the raw water through the plant for treatment.

Inside the plant, raw water enters a rapid mix basin where ACH and PAC are added. The flow is then split into five (5) treatment trains consisting of a flocculation basin, a flocculation settling basin, and a dual media filter. The filtered effluent is then chlorinated and fluorinated before flowing to the clearwells.

The WTP has three underground concrete clearwells, each built during different plant upgrades. The clearwells are normally operated in series providing the longest flow path through the clearwells. Each of the clearwells can be isolated and removed from service for maintenance if needed. Clearwells #1, 2, and 3 have a capacity of 72,320, 67,170, and 265,840 gallons, respectively.

3. NEED FOR THE PROJECT

3.1 Compliance Issues

The current climate for managing water treatment plant residuals is in a state of flux. It is becoming increasingly difficult for water treatment plants to remove sludge from their lagoon and land apply it or have it used as a beneficial use application. This is especially difficult for plants that do not add lime for softening such as the City's facility. The City also has a current NPDES permit for discharge of water from the lagoon back into Lake Erie. This permit was renewed and the City would like to consider if it is possible to eliminate this discharge permit.

3.2 Current Waste Handling System

Currently, the plant does not utilize any sludge processing system. There is one lagoon (two drying beds) which receive the settling tank sludge draw-off, as well as the gravity sand filter backwash water. The sludge accumulated in the lagoon is disposed of by being hauled offsite on a frequent basis.

In March 2022, the City hired Poggemeyer Design Group, a Kleinfelder Company (PDG-Kleinfelder) to conduct a preliminary study titled "Sludge Management Plan". The aim of this study is to develop a general plan for the management of the waste products from the water treatment plant. The City provided two (2) spreadsheets containing operational data for the year 2021. This general plan considers the data presented in the spreadsheets as the basis of the preliminary plan. The spreadsheets are included in this report in the appendices.

4. ANALYSIS OF ALTERNATIVES

4.1 Identification Of Alternatives

4.1.1 No Action

A "No Action" alternative was considered, but this alternative just pushes the problem down the road. The only benefit to this option would be that there may be more regulatory clarity in the future, but most likely the City would be forced into some sort of sludge drying technology to dispose of the waste solids more efficiently by reducing hauling costs.

4.1.2 General Comments

The preliminary plan outlines five (5) main and two (2) compromising options. These two (2) options are recycling the supernatant from the lagoon back to the head of the plant before any treatment occurs and using existing NPDES discharge with dechlorination. These two (2) options will be addressed next and under Item 4.7 in this report. Due to the physical constraints of the plant's layout, all 5 options utilize the mechanical sludge handling equipment rather than the civil structure-needed systems that require a larger footprint. In two (2) options, a mechanical sludge strainer/screen is used at the front of each process option to remove the coarse debris and floating debris such as paper, wood, plastic, textiles, etc. The screen option could be eliminated during the detailed design once more information about the sludge characteristics is available, or pilot studies of different options are performed. One adverse effect of the separator screen being located at the front head of the sludge handling process is that this equipment reduces the solids loading of the downstream systems. The screen (strainer) is considered normal use in municipal wastewater and industrial water treatment applications; however, it is considered optional for water sludge system and the sake of this report.

Maximum, minimum and average values for the different flow streams delineated in all five options were extracted from the operational spread sheets provided by the City. The basis of calculations in this report are the average figures. The assumed values are shown in yellow

4.2 Recycling Alternative

The City of Huron desires to eliminate their direct discharge to Lake Erie if possible, to do away with their current NPDES permit. To make this happen would require recycling 100 per cent of the flow back to the plant flow stream and/or discharging into a sanitary sewer. The water plant has not recycled any of the

waste stream previously. To recycle water from the waste stream requires a maximum return rate of 10 per cent of the incoming flow and it must be returned to the head of the treatment plant before any treatment. This would be possible with the current lagoon system and a decant structure. This would require construction of a new decant line from the lagoon, a decant structure, flow meter and control valve to regulate the flow back to the head of the treatment plant.

With some of the recent regulations and emerging contaminants there are concerns for these contaminants in the waste stream. The concerns with 100 percent recycling are any contaminants that are removed from the water stream remain and are returned into the treatment process again. This would be a concern if there is an HAB event in the lake and microcystin were found in the lagoon. This has become a concern for the regulatory agency to introduce these contaminants back into the treatment process and have the potential for contamination of the finished water. This would be true also of other potential contaminates found in the raw water source. This could be true also if PFAS were ever discovered in the raw water source.

Recycled wastewater from the treatment process must be returned to the very beginning where water enters the plant before any treatment. The decant from the lagoon would need to return back to the shore well and at a flow rate of less than 10 percent of the flow into the plant. If water is entering the plant at a 3 MGD flow rate, that would mean that no more than 208 gpm can be recycled back to the head of the plant. To adjust the flow rate to match the incoming water flow it may work best to install a pump to feed the waste back to the shore well. This alternative can be included with any of the other alternatives or done without any of the other options. A secondary option of discharging to the lake with a NPDES permit or discharging into the sanitary sewer if there is contamination found would be strongly recommended for this option.

The engineer's opinion of probable construction cost for this option is $249,900. The expected useful life is 50 years for the recycle line. Complete preliminary engineering cost opinions are included in Appendix A.

4.3 Sludge Screening, Thickening, Dewatering and Disposal

This option separates the filter backwash from the settling tank sludge draw-down. The sludge from the settling basin contains much more suspended solids and dirt or grit compared to the backwash water. The sludge blow-off would flow through a sludge screen or strainer and the de-gritted sludge would flow into a sludge holding tank. The backwash water from the gravity filters would flow directly into the sludge

holding tank bypassing the screen. This tank has the capacity to hold the accumulated sludge for approximately five (5) days. The accumulated sludge is pumped from the holding tank to a sludge thickener.

The daily sludge production rates for the treatment plant are lower than most of the industry dewatering system capacities allowing the dewatering process to be operated in batches. It is estimated that the thickening and dewatering process can happen during 2 working days (10 hours each day). This is to facilitate the selection of sludge handling equipment among the available products in the market.

There are several types of thickening equipment that can be used but we used a rotary screw thickener as a common point of reference considered for this report for size and budget purposes. Thickened sludge is then pumped from the thickener to dewatering equipment. The dewatering equipment for this option is a screw press. Dewatered sludge is transferred to a dumpster via a belt or screw conveyer. The supernatant lines of both thickener and dewatering systems can be recycled to the head of the water treatment process or discharged into a sanitary sewer line or direct discharge.

Due to the uncertain operability of a screen and considering that if it operates optimally; the sludge thickening and dewatering equipment would receive diluted input, the manufacturers did not recommend a screen installed in front of the thickener.

Calculations and overall flow diagram for this option are shown schematically in Appendix C.

4.4 Sludge Screening, Belt Thickening, Dewatering and Disposal

The second option is very similar than the first only using a belt thickener. As in the first alternative, the filter backwash is treated separately from the settling tank sludge draw-down. The sludge from the settling basin contains much more suspended solids and dirt or grit compared to the backwash water. The sludge blow-off would flow through a sludge screen or strainer and the de-gritted sludge would flow into a sludge holding tank. The backwash water from the gravity filters would flow directly into the sludge holding tank bypassing the screen. This tank has the capacity to hold the accumulated sludge for approximately five (5) days. The accumulated sludge is pumped from the holding tank to a sludge thickener.

The daily sludge production rates for the treatment plant are lower than the minimum flow rates for most of the industry dewatering system capacities allowing the dewatering process to be operated in batches. It is estimated that the thickening and dewatering process can happen during 2 working days (10 hours each day). This is to facilitate the selection of sludge handling equipment among the available products in the market.

For this option we used belt thickener equipment for size and budget purposes. Thickened sludge is then pumped from the thickener to dewatering equipment. The dewatering equipment for this option is a screw press. Dewatered sludge is transferred to a dumpster via a belt or screw conveyer. The supernatant lines of both thickener and dewatering systems can be recycled to the head of the water treatment process or discharged into a sanitary sewer line or direct discharge.

Due to the uncertain operability of sludge strainer (screen) and considering that if it operates optimally; the sludge thickening and dewatering equipment would receive diluted input, the manufacturers did not recommend the use of this equipment in this application.

Calculations and overall flow diagram for this option are shown schematically in Appendix D.

4.5 Thickening, Dewatering and Disposal

The third option is the same as the first with the elimination of the screening process. This alternative has both the sludge draw down from the settling basins and the filter backwash flow collected together into a sludge holding tank. This tank has the capacity to hold the accumulated sludge for approximately five (5) days. The accumulated sludge is pumped from the holding tank to a sludge thickener.

As in the previous alternatives, the daily sludge production rates for the treatment plant are lower than the minimum flow rates for most of the industry dewatering system capacities allowing the dewatering process to be operated in batches. It is estimated that the thickening and dewatering process can happen during 2 working days (10 hours each day). This is to facilitate the selection of sludge handling equipment among the available products in the market.

For this option we used belt thickener equipment for size and budget purposes. Thickened sludge is then pumped from the thickener to dewatering equipment. The dewatering equipment for this option is a screw press. Dewatered sludge is transferred to a dumpster via a belt or screw conveyer. The supernatant lines of both thickener and dewatering systems can be recycled to the head of the water treatment process or discharged into a sanitary sewer line or direct discharge.

Calculations and overall flow diagram for this option are shown schematically in Appendix E.

4.5.1 Belt Thickening, Dewatering and Disposal

The fourth option is the same as the second with the **elimination of the screening process**. This alternative has both the sludge draw down from the settling basins and the filter backwash flow collected together into a sludge holding tank. This tank has the capacity to hold the accumulated sludge for approximately five (5) days. The accumulated sludge is pumped from the holding tank to a sludge thickener.

As in the previous alternatives, the daily sludge production rates for the treatment plant are lower than the minimum flow rates for most of the industry dewatering system capacities allowing the dewatering process to be operated in batches. It is estimated that the thickening and dewatering process can happen during 2 working days (10 hours each day). This is to facilitate the selection of sludge handling equipment among the available products in the market.

For this option we used belt thickener equipment for size and budget purposes. Thickened sludge is then pumped from the thickener to dewatering equipment. The dewatering equipment for this option is a screw press. Dewatered sludge is transferred to a dumpster via a belt or screw conveyer. The supernatant lines of both thickener and dewatering systems can be recycled to the head of the water treatment process or discharged into a sanitary sewer line or direct discharge.

Calculations and overall flow diagram for this option are shown schematically in Appendix F.

4.6 Thickening, Dewatering and Disposal

The fifth option is a hybrid system that utilizes a combined thickener and dewatering unit. This was proposed by Schwing Bioset as a substitute for separate thickening and dewatering equipment. This alternative has both the sludge draw down from the settling basins and the filter backwash flow collected together into a sludge holding tank. This tank has the capacity to hold the accumulated sludge for approximately five (5) days. The accumulated sludge is pumped from the holding tank to a sludge thickener.

As in the previous alternatives, the daily sludge production rates for the treatment plant are lower than the minimum flow rates for most of the industry dewatering system capacities allowing the dewatering process to be operated in batches. It is estimated that the dewatering process can happen during 2 working days (10 hours each day). This is to facilitate the selection of sludge handling equipment among the available products in the market.

For this option we used rotary screw press equipment for size and budget purposes. This alternative would also eliminate the need for a pump from the thickener to dewatering equipment. The dewatering equipment for this option is a rotary screw press. Dewatered sludge is transferred to a dumpster via a belt or screw conveyer. The supernatant lines of the dewatering system can be recycled to the head of the water treatment process or discharge into a sanitary sewer line or direct discharge.

Calculations and overall flow diagram for this option are shown schematically in Appendix G.

4.7 Use Existing NPDES Discharge with Dechlorination

The least costly option is to keep the current waste system as it is and add a dichlorination station to the lagoon discharge. The City is currently having issues meeting the NPDES requirements for chlorine on this discharge. As the lagoon begins to fill the chlorine has less opportunity to dissipate and it becomes necessary to remove the residual chlorine from the waste stream.

Dechlorination is relatively simple and is an almost instantaneous process. It would require construction of a small building or fiberglass hut that would house the dechlorination chemical and a metering pump. This would be discharged at the lagoon as the decant leaves the lagoon. This would also require power provided to this location for the metering pump.

The engineer's opinion of probable construction cost for this option is $128,000. Complete preliminary engineering cost opinions are included in Appendix "A".

4.8 OEPA Review and Approval

The current climate at the review agency for water treatment plant sludge is a difficult one. The rules and regulations are changing and there is a significant level of unknowns with what is going to happen in the future with solid waste disposal from water treatment plants. The agency requires justification of beneficial use for disposal on lands other than landfills without soil enhancement such as nutrient addition or pH adjustment. This material is also becoming more difficult to dispose of at landfills due to potential structural instability.

5. SELECTED ALTERNATIVE

5.1 Recommended Alternative

The recommended alternative could be considered to be one of two options. Alternative 3 and Alternative 4 are very similar options. Either type of equipment are used widely today in both water and wastewater sludge management. Both options are similar in capital cost and viable options. Alternative 5 is also viable and may be slightly less expensive, but we would recommend considering a small-scale pilot to determine efficiency of the system. The recycling alternative is also a good option but would also require a secondary disposal location in the event of contamination in the sludge that would cause potential impacts to the treatment process if introduced into the raw water stream.

Options three (3) and four (4) are technically similar. Generally, gravity belt thickeners are less costly than the rotating drum units such as screw press and centrifuge.

5.2 Engineer's Opinion of Probable Cost

The engineer's opinion of probable project cost for the recommended alternative is $5,625,500. The expected useful life is 50 years for the recycle line and 30 years for the dewatering station. Complete preliminary engineering cost opinions are included in Appendix "A'.

5.3 Funding

HURON COMMUNITY INFORMATION

Demographic Information	City of Huron	Erie County	State of Ohio
2010 Population:	7,243	77,454	11,512,431
2010 # Households:	3,591	37,808	5,107,273
2010 MHI:	$59,766	$46,593	$47,358
2010 % LMI:	28.09%	37.4%	
2020 Population:	6,922	75,622	11,799,448
2020 # Households:	3,027	31,319	4,717,226
2020 MHI:	$61,833	$58,408	$58,116
2011-2015 % LMI:	39.48%	35.83%	

FINANCING ELIGIBILITY SUMMARY FOR ENVIRONMENTAL PROJECTS
(WATER AND WASTEWATER PROJECTS)

(NOTE: this information is not to be considered inclusive of all potential financing, but merely is a starting point for workshop or planning discussions)

US Department of Agriculture/Rural Development (USDA/RD) (Formerly FmHA): Community qualifies for USDA/RD loan assistance at the Market lending rate for water and wastewater projects, which through 09/30/2022 is 3.25% fixed rate for a term of up to 40 years, depending on the project needs and the useful life of the infrastructure constructed.

Applications may be submitted at any time during the year. Questions should be directed to the State office in Columbus or the local office in Massillon, Ohio, which covers communities in Erie County. That office is located at 2650 Richville Drive SE, Suite 102, Massillon, Ohio 44646. Contact person: John Miller, Phone 330-830-7700 ext. 4 or john.miller@oh.usda.gov. Office Hours are 8:00AM – 4:30PM Monday through Friday.

OWDA: Current Market rate is 3.65% for 20 years and 3.79% for 30 years (rate applicable through 07/31/2022). Loans are available for water/sewer projects only on a 5 - 30 year basis. Planning loans for 5 years are available at the same rate. Community cannot pay off planning or construction loans early, without penalty. However, OWDA recently has ruled that all projects must pay a percentage of the planning loan back annually, starting one year from the date of loan inception vs. the historic payment pattern with a balloon payment due at the end of the 5-year planning loan period.
There are discounted rates for communities who qualify based on distressed economic criteria, findings and orders, and previous OWDA loan recipients.

Regular construction/planning applications are received monthly throughout the calendar year. Applications are submitted to OWDA and are reviewed monthly. Contact Ken Heigel at OWDA for more information and details.

Ohio Public Works Commission (OPWC or Issue 2): The next round of applications will be due to Erie County September 2023, with funding available after July 1, 2024. Only infrastructure projects (i.e., water, sewer, roads, bridges, culverts, etc.) can be funded through this program.

Loans, grants, and credit enhancement (interest rebates) are available for communities in Ohio. Interest rates on loans vary throughout the 19 OPWC Districts in Ohio. Erie County is located in OPWC District 5 and that District's rate is currently 0% for up to 30 years or the useful life of the project infrastructure.

Applications for new/expansion projects do not rate as well as repair/replacement or upgrading of infrastructure. Any infrastructure projects that would benefit the community by job creation/retention would rank higher on the District's ranking sheet. OPWC funds can also be used to fund infrastructure to industrial park sites.

Ohio EPA: Loan funds are available for water and wastewater projects, as well as combined sewer overflow (CSO) projects. Water projects for Huron would qualify for Small System Construction Loan at 1.90% for 20 years and 1.99% for 30 years (rate applicable through 07/31/2022). It is also possible that the City may qualify for 0% loan money for HAB improvements. It is possible that this new emergency

intake could qualify for a 0% loan. Therefore, it is important that projects be nominated and on the OEPA list of intended projects. Water projects are nominated annually on March 1 and Wastewater annually on August 1 for the next program cycle funding

Contact Michelle Hister at (419) 352-7537 for additional information and assistance.

Small Communities Environmental Infrastructure Group (SCEIG): This group is an association of state, federal, local, educational and service agencies. The goal of the group is to assist small communities in identifying the most appropriate resources to help the communities resolve problems associated with environmental infrastructure. The group will address the needs of specific communities if a member agency feels that a project cannot be funded without a coordinated effort. Community must present a profile/information sheet for review and is invited to make a presentation to the SCEIG. The SCEIG meets monthly on an appointment basis. The project will be evaluated and the SCEIG will make funding recommendations to the community. The group will continue to work with the community to obtain financial assistance, as available.

6. CONCLUSION

It may be beneficial to consider pilot testing some of the dewatering equipment to determine efficiency of the equipment and water removal effectiveness for your sludge. There are a variety of equipment manufacturers and processes that could impact the operational costs over the years of service. The hard costs of the buildings, electrical and component costs are minor when compared with the life cycle cost of operating the equipment over 20 or 30 years.

APPENDIX A

Engineer's Opinion of Probable Cost

Table 1) Probable Project Cost Table

No.	System/Equipment	Fee [$] / Unit or System	No. of Units / Systems	Option 1 Cost [$]	Option 2 Cost [$]	Option 3 Cost [$]	Option 4 Cost [$]	Option 5 Cost [$]
1	Sludge Screen/Strainer	150,000	1	150,000	150,000	0	0	150,000
2	Sludge Holding Tank	750,000	1	750,000	750,000	750,000	750,000	750,000
3	Sludge Transfer Pump Thickening Feed	20,000	2	40,000	40,000	40,000	40,000	40,000
	Sludge Thickener Gravity Belt Thickener	250,000	1	N/A	N/A	0	250,000	0
4	Sludge Thickener Rotating Drum type such as Centrifuge or rotating Volute Thickener	500,000	1	N/A	N/A	500,000	0	0
5	Sludge Transfer Pump Dewatering Feed	20,000	2	40,000	40,000	40,000	40,000	0
6	Sludge Holding Tank Mixing System	70,000	1	70,000	70,000	70,000	70,000	70,000
7	Sludge Dewatering Equipment	200,000	1	N/A	N/A	200,000	200,000	0
8	Sludge Conveyer	50,000	1	50,000	50,000	50,000	50,000	50,000
9	Polymer Prep & Dosing System Thickening Feed	40,000	1	40,000	40,000	40,000	40,000	0
10	Polymer Prep & Dosing System Dewatering Feed	40,000	1	40,000	40,000	40,000	40,000	0
11	Dumpster	10,000	1	10,000	10,000	10,000	10,000	10,000
12	Dewatering/Thickener - Screw Press	300,000	1	0	0	0	0	300,000
13	Misc. Pumps (if required)	-------	------	40,000	40,000	40,000	40,000	40,000
14	Misc. Tanks & Equip. (if required)	-------	------	45,000	45,000	45,000	45,000	45,000
15	Piping, Valves and etc.	-------	------	75,000	75,000	50,000	50,000	50,000
16	Site Works	-------	------	100,000	100,000	100,000	100,000	90,000
17	Electrical	-------	------	150,000	150,000	150,000	150,000	100,000
18	Control & Instruments	-------	------	150,000	150,000	150,000	150,000	100,000
Total Equipment & Machines Purchase		-------	------	2,450,000	2,200,000	2,275,000	2,025,000	1,795,000
Installation & Shipment Cost (50% of Equipment Cost)		-------	------	50	50	50	50	40
Installation & Shipment Cost				1,225,000	1,100,000	1,137,500	1,012,500	897,500
19	Recycle Line and SS Discharge	250,000		250,000	250,000	250,000	250,000	250,000
20	Building, 1500 ft^2, Conditioned	-------	------	750,000.00	750,000.00	750,000	750,000	750,000
Total Construction Cost Estimate [$]				4,675,000	4,300,000	4,412,500	4,037,500	3,692,500
-----	Contingency 15%	----------	------	$701,250	$645,000	$661,875	$605,625	$553,875
-----	Project Cost 25%	----------	------	$1,168,750	$1,075,000	$1,103,125	$1,009,375	$923,125
Grand Total Project Cost Estimate [$]				6,545,000	6,020,000	6,177,500	5,652,500	5,169,500

Note 1: The contacted manufacturers declined to quote for the options 1 and 2. They believe that the sludge screen/strainer (Item No. 1) reduces the suspended solids content of their thickener/dewatering equipment inlet way below their normal industry practice range.

Recycle Line and SS Discharge Probable Cost	Quantity	Units	Unit Price	Total Price
Decant Structure for Lagoon - 210 gpm	1	LS	$150,000	$150,000
6" line to Shore Well	415	LFT	$60	$24,900
6" line to Sanitary Sewer	450	LFT	$60	$27,000
6" gate valves with boxes	2	EA	$1,500	$3,000
Restoration	1	LS	$22,000	$22,000
Subtotal Construction Estimate				$226,900
Contingency (10%)				$23,000
Total				$249,900

Existing Discharge with Dechlorination Probable Cost	Quantity	Units	Unit Price	Total Price
Dechlorination Structure	1	LS	$75,000	$75,000
Chemical Feed Equipment	1	LS	$25,000	$25,000
Power to structrre	1	LS	$7,500	$7,500
Chemical Feed Discharge Manhole	1	LS	$5,000	$5,000
Restoration	1	LS	$3,500	$3,500
Subtotal Construction Estimate				$116,000
Contingency (10%)				$12,000
Total				$128,000

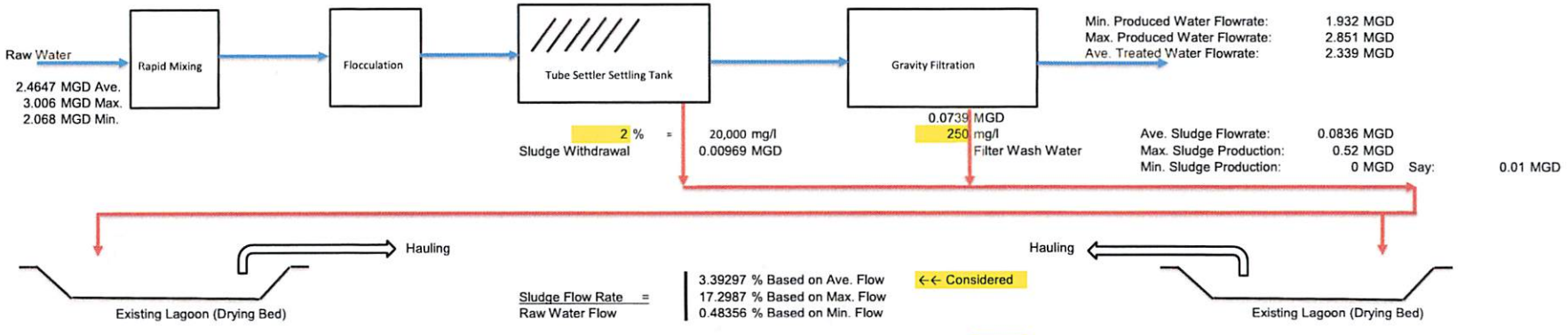
APPENDIX B

Current Process Schematic

Appendix B

Current Situation

Annual Raw Water Intake:	899.62 MGD	Ave. Raw Water Flowrate:	2.46472 MGD	Max. Raw Water Flowrate:	3.006 MGD	Min. Raw Water Flowrate:	2.068 MGD
Annual Produced Water:	853.72 MGD	Ave. Produced Water:	2.33896 MGD	Max. Produced Water Flowrate:	2.851 MGD	Min. Produced Water Flowrate:	1.932 MGD
Annual Sludge Production:	30.524 MGD	Ave. Sludge Flowrate:	0.08363 MGD	Max. Sludge Production:	0.52 MGD	Min. Sludge Production:	0 MGD



Sludge Flow Rate / Raw Water Flow =

3.39297 % Based on Ave. Flow ←← Considered
17.2987 % Based on Max. Flow
0.48356 % Based on Min. Flow

Filter Backwash Flow = 2 % to 3 % of Treatment Plant Capacity (based on General Industry Practice) →→ Selected Ratio = 3 % based on Ave. Flow

Settling Tank Withdrawal = 1,615.57 lbs/day Dry Solids (DS)

Filter Backwash = 154.17 lbs/day Dry Solids (DS)

Total Sludge Production = 1,769.74 lbs/day Dry Solids (DS)

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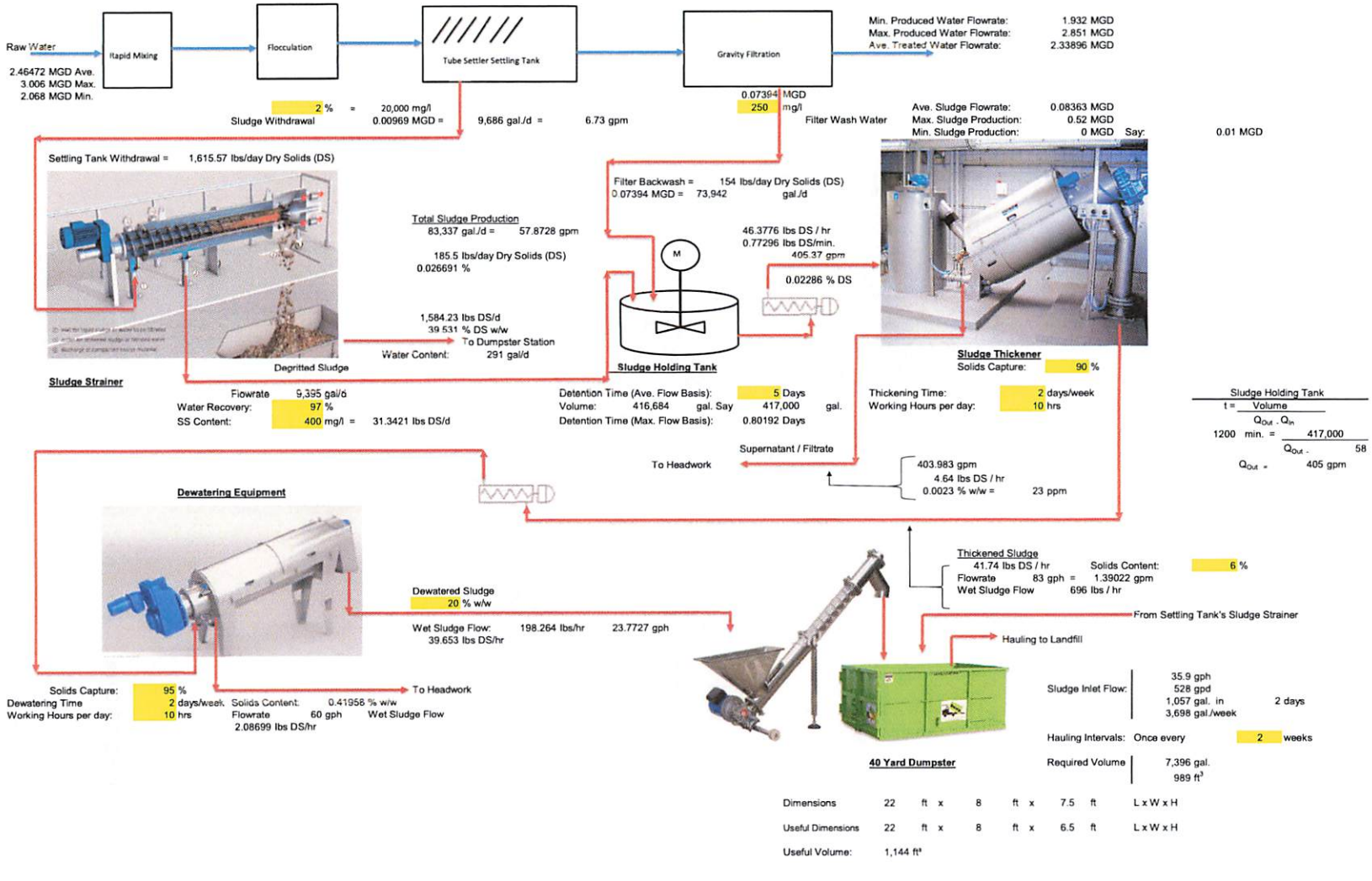
APPENDIX C

Proposed Schematic for Option 1

Appendix C

Proposed Plan - Option 1

Annual Raw Water Intake:	899.624 MGD	Ave. Raw Water Flowrate:	2.46472 MGD	Max. Raw Water Flowrate:	3.006 MGD	Min. Raw Water Flowrate:	2.068 MGD
Annual Produced Water:	853.722 MGD	Ave. Produced Water:	2.33896 MGD	Max. Produced Water Flowrate:	2.851 MGD	Min. Produced Water Flowrate:	1.932 MGD
Annual Sludge Production:	30.524 MGD	Ave. Sludge Flowrate:	0.08363 MGD	Max. Sludge Production:	0.52 MGD	Min. Sludge Production:	0 MGD



Sludge Holding Tank

$$t = \frac{\text{Volume}}{Q_{Out} - Q_{In}}$$

$$1200 \text{ min.} = \frac{417{,}000}{Q_{Out} - 58}$$

$$Q_{Out} = 405 \text{ gpm}$$

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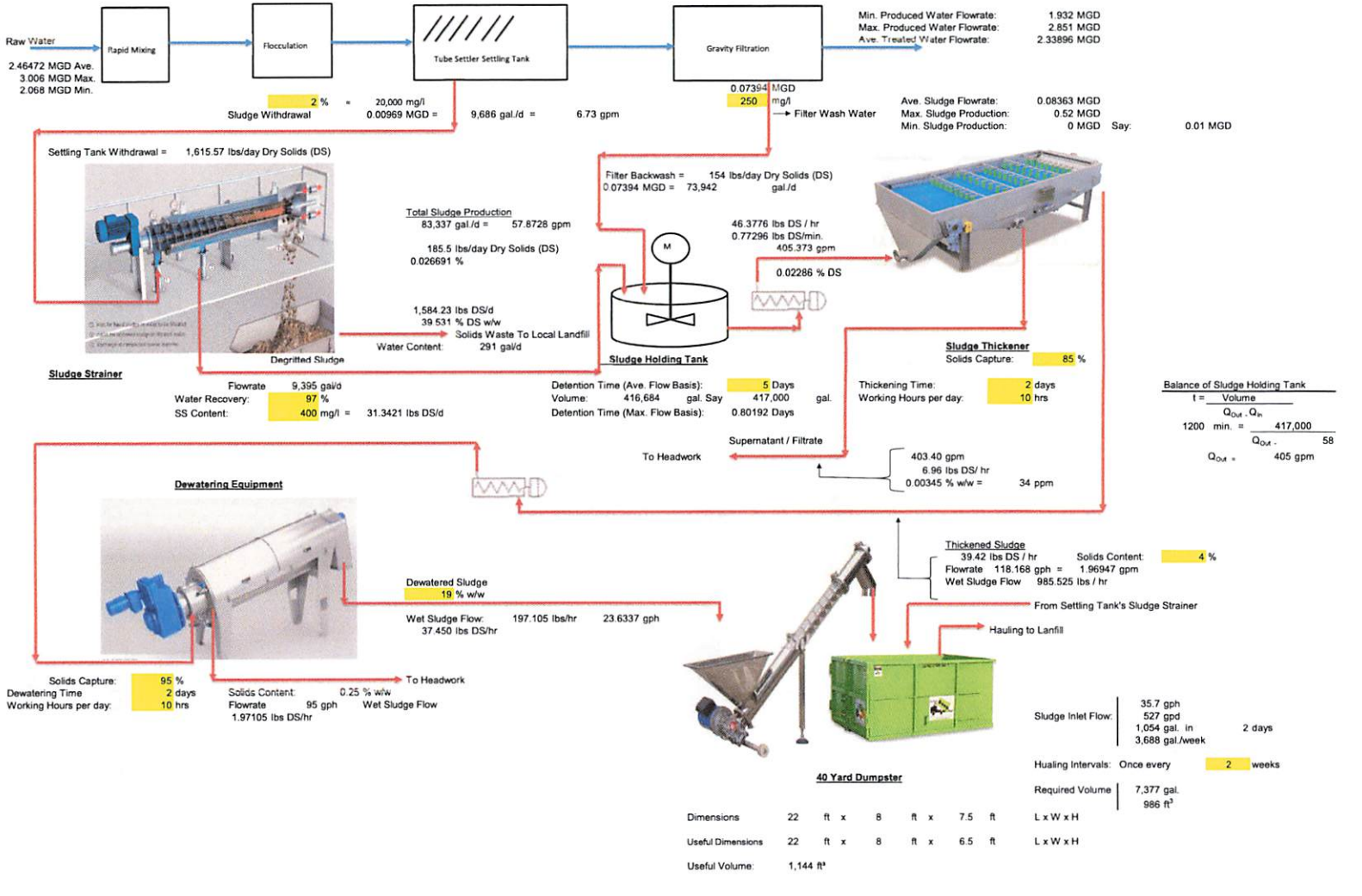
APPENDIX D

Proposed Schematic for Option 2

Appendix D

Proposed Plan - Option 2

Annual Raw Water Intake:	899.624 MGD	Ave. Raw Water Flowrate:	2.46472 MGD	Max. Raw Water Flowrate:	3.006 MGD	Min. Raw Water Flowrate:	2.068 MGD
Annual Produced Water:	853.722 MGD	Ave. Produced Water:	2.33896 MGD	Max. Produced Water Flowrate:	2.851 MGD	Min. Produced Water Flowrate:	1.932 MGD
Annual Sludge Production:	30.524 MGD	Ave. Sludge Flowrate:	0.08363 MGD	Max. Sludge Production:	0.52 MGD	Min. Sludge Production:	0 MGD



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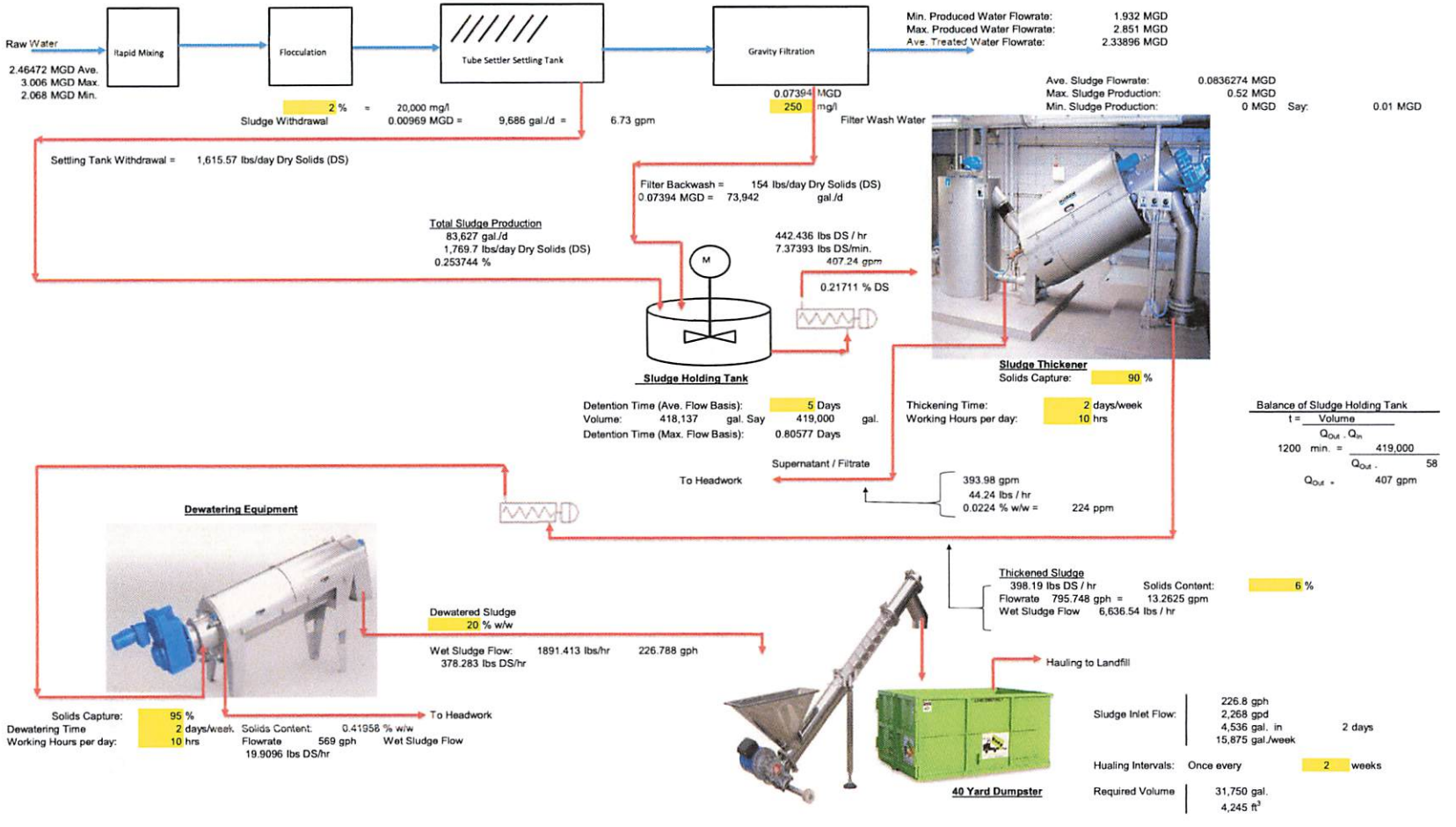
APPENDIX E

Proposed Schematic for Option 3

Appendix E

Proposed Plan - Option 3

Annual Raw Water Intake:	899.624 MGD	Ave. Raw Water Flowrate:	2.46472 MGD	Max. Raw Water Flowrate:	3.006 MGD	Min. Raw Water Flowrate:	2.068 MGD
Annual Produced Water:	853.722 MGD	Ave. Produced Water:	2.33896 MGD	Max. Produced Water Flowrate:	2.851 MGD	Min. Produced Water Flowrate:	1.932 MGD
Annual Sludge Production:	30.524 MGD	Ave. Sludge Flowrate:	0.08363 MGD	Max. Sludge Production:	0.52 MGD	Min. Sludge Production:	0 MGD



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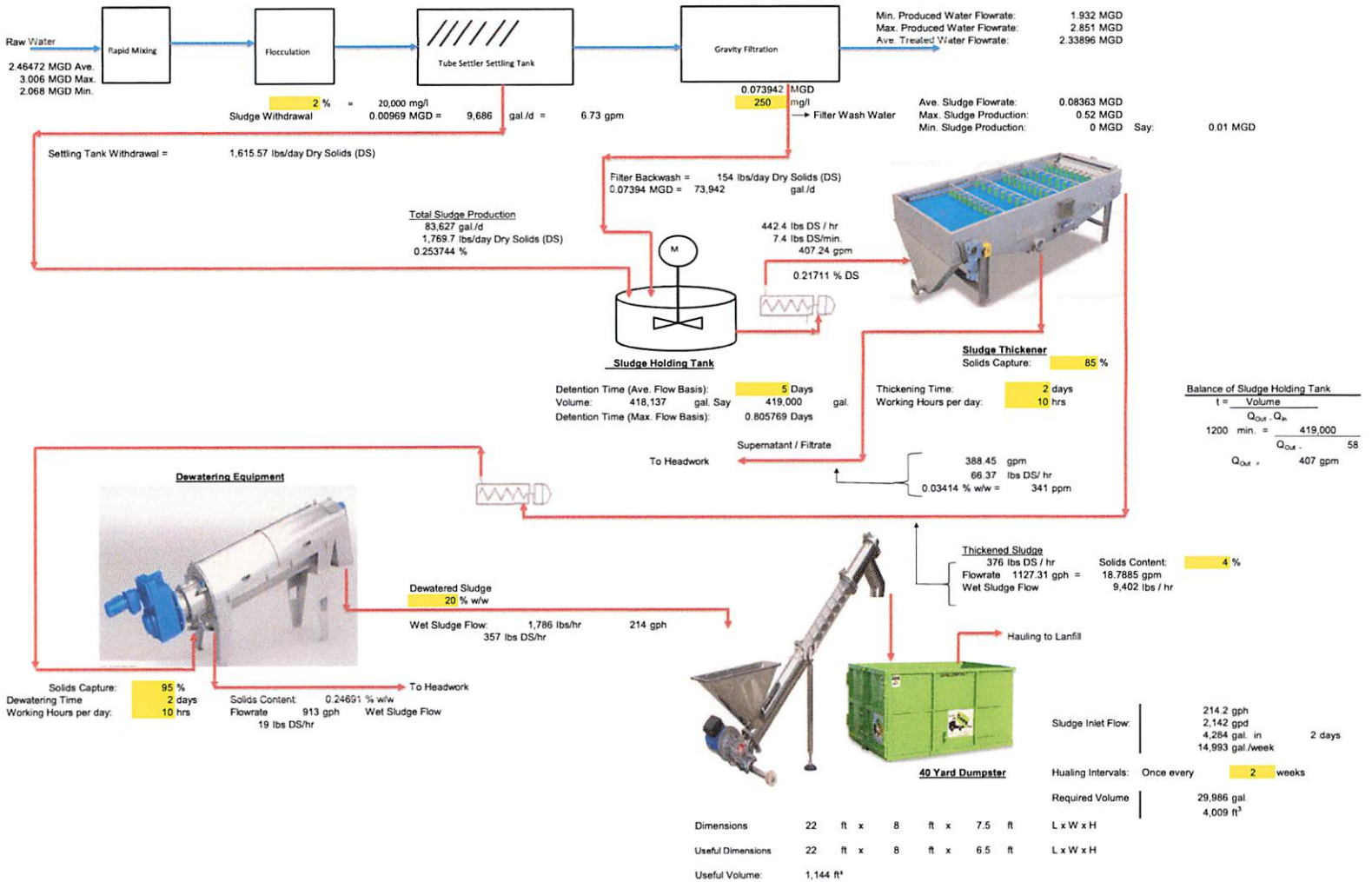
APPENDIX F

Proposed Schematic for Option 4

Appendix F

Proposed Plan - Option 4

Annual Raw Water Intake:	899.624 MGD	Ave. Raw Water Flowrate:	2.46472 MGD	Max. Raw Water Flowrate:	3.006 MGD	Min. Raw Water Flowrate:	2.068 MGD
Annual Produced Water:	853.722 MGD	Ave. Produced Water:	2.33896 MGD	Max. Produced Water Flowrate:	2.851 MGD	Min. Produced Water Flowrate:	1.932 MGD
Annual Sludge Production:	30.524 MGD	Ave. Sludge Flowrate:	0.08363 MGD	Max. Sludge Production:	0.52 MGD	Min. Sludge Production:	0 MGD



APPENDIX G

Proposed Schematic for Option 5

Appendix G

Proposed Plan - Option 5

Annual Raw Water Intake:	899.624 MGD	Ave. Raw Water Flowrate:	2.46472 MGD	Max. Raw Water Flowrate:	3.006 MGD	Min. Raw Water Flowrate:	2.068 MGD
Annual Produced Water:	853.722 MGD	Ave. Produced Water:	2.33896 MGD	Max. Produced Water Flowrate:	2.851 MGD	Min. Produced Water Flowrate:	1.932 MGD
Annual Sludge Production:	30.524 MGD	Ave. Sludge Flowrate:	0.08363 MGD	Max. Sludge Production:	0.52 MGD	Min. Sludge Production:	0 MGD