



OFFICIAL NOTICE AND AGENDA
of a meeting of a City Board, Commission, Department
Committee, Agency, Corporation, Quasi-Municipal
Corporation, or Sub-unit thereof.

A Meeting of Wausau Water Works Commission will be held in the
Council Chambers, 1st Floor City Hall, Wausau, WI 54403 at 2 :30 p.m. on
Tuesday, March 3, 2020.

AGENDA

1. Approve Minutes of February 4, 2020 Meeting.
2. Director's Report on Utility Operations
 - DWTF Bids
 - DWTF Alternative Energy Considerations
 - Aspirus Clinic Utilities
 - Wastewater Permit Limits
 - Nitrification Issues
 - Industrial Park Rehab Project
 - Filling Positions for Wastewater
3. Discussion and Possible Action to Hold a Household Hazardous Waste Cleanup Event. Presentation by Meleesa Johnson, Director of the Marathon County Solid Waste Department.
4. Discussion and Possible Action on Accepting Leachate from the Landfill.
5. Discussion and Possible Action on Revisions to the Mechanic/Technician Incentive Pay for Wausau Waterworks Employees.
6. Discussion on the Water/Sewer Rates and Cost Share for Residential Versus Commercial.
7. Discussion on the Sewer Interceptor I/I Report near the Thomas Street Corridor.
8. Discussion and Update on Relocating the Discharge of CW3 and EPA's Response Moving Forward.
9. Discussion on the DWTF & WWTF PIM's.
10. Discussion and Possible Action on Reclassifying Sr. Sewer Maintainer Position to the Collection System Supervisor.
11. Discussion and Possible Action on Bottling Water for 2020 and Continuing Donations for Non-Profit Special Events.
12. Approve Payment to Haas and Sons Inc. for Work Done on the Water Main, on the East Side of the Thomas St. Bridge.

Adjourn.

Signed by: /s/ Robert B. Mielke
Presiding Officer or Designee

** Next Water Commission Meeting Scheduled for April 7, 2020.*

THIS NOTICE POSTED AT CITY HALL AND EMAILED TO CITY PAGES AND DAILY HERALD: February 28, 2020 at 12:00pm.

In accordance with the requirements of Title II of the Americans with Disabilities Act (ADA), the City of Wausau will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs, or activities. If you need assistance or reasonable accommodations in participating in this meeting or event due to a disability as defined under the ADA, please call Michelle Weasler/Wausau Water Works at (715) 261-7289 or the City's ADA Coordinator at (715) 261-6620 or e-mail clerk@ci.wausau.wi.us at least 48 hours prior to the scheduled meeting or event to request an accommodation.



Minutes of February 4, 2020

A meeting of the Wausau Water Works Commission was called to order at 1:30 p.m. in City Hall on February 4, 2020. In compliance with Wisconsin Statutes, this meeting was posted and receipted for by the Wausau Daily Herald on January 31, 2020.

Members present: President Mielke, Commissioners Force, Miller, Herbst.

Others present: Eric Lindman, Dave Erickson, Scott Boers, Valerie Swanborg, Steve Opatik/Becher Hoppe, Tonia Westphal/Clark Dietz, Mike Gerbitz/Donohue.

1) Approve Minutes of the January 7, 2020 Meeting.

Miller moved to approve the minutes of the January 7, 2020 meeting. Seconded by Herbst and the motion carried 4-0.

Force questioned the 30 day extension for the review of the Wastewater Plant by the DNR. That was 30 days ago, are they still delaying? Lindman advised they've asked for another 15 days.

2) Director's Report on Utility Operations.

Force advised that one of the things we talked about last time was rates being charged to individual homeowners and the rates being charged to commercial and industrial establishments. He's not sure where we're at on reviewing that. Lindman advised he's talked with Ehler's about it. They're finishing up our rate case first and then they're going to help us break some of that apart. Force asked if we'd have something for our next meeting. Lindman responded that he will try.

Mielke advised that this will be presented to residents, commissioners, etc. so everyone can see what's happening. There's going to be an increase but compared to other cities it's not going to be as bad as some think.

Force explained that his main concern is that we are charging the residents fairly compared to our commercial/industrial customers.

Force also thanked Boers for including the water usage numbers in the newsletter.

Director's Report placed on file.

3) Membership to The Water Research Foundation, Invoice Attached. Dues have increased about \$250.00 from 2019.

Boers explained that this is an organization that does a lot of research for water and wastewater. The \$250.00 is just an annual increase that typically happens with things like this. We would typically just move this forward however it's getting to the point where it's a few

thousand dollars for the water side and a few thousand for the wastewater side. Erickson and Boers agree that it's a useful tool and has helped with the facility plans. Becher Hoppe has contacted them for information. They are always willing to share their studies and it is helpful information. Force asked what specific information we are getting from them. Boers advised it's helping with the plant in terms of manganese removal, surface water and the typical numbers across the board that we can use for comparison.

Motion by Herbst to approve membership. Seconded by Force. Motion carried 4-0.

4) Discussion: WDNR Enhanced Disinfection Requirements for Proposed DWTF.

Lindman advised they had a conversation with the DNR last year when we were going through the preliminary design of the drinking water treatment facility. They were taking a look at our ground water history and indicated that Wausau appears to have the potential classification of ground water under the direct influence of surface water. This requires us to have more strict disinfection requirements. The letter in the packet is formally confirming that. They want the drinking water facility to be designed like we would be treating surface water or ground water under the direct influence. A lot of this was put in as an add alternate in the bid package and was designed. Depending on the bid environment that we have we'll see what those costs come in at. The DNR is basically telling us we need to install this in the new facility. Force asked if this is connected to wells 10 & 11 as he sees those mentioned in the letter. Lindman responded it's not just those wells, it will be us as a water utility potentially having this classification. The DNR is preparing a policy on what type of testing and information that the community has to go through and then the DNR will provide a final determination. The way it looks right now, we will eventually get classified as having ground water under the direct influence of surface water. Force asked where that is taking place in our jurisdiction or what is the evidence for that classification? Lindman explained it would be based on the number of Bac T's that we get from the wells, the wells are shallow and close to the river, etc. There are a number of things that they look at. Boers added that we do get Bac T positives on some of our wells. Well 11 we occasionally get an E.coli positive so we take the well offline, treat it and it goes back in service. Our wells are all relatively shallow with sand and gravel aquifers. It isn't uncommon to have surface water bacteria occasionally migrate into that and that is what we will be protecting against with the new disinfection requirements. Force asked what technology will be used. Boers responded we will be using chemical oxidation and filtration. Treatment using membranes would be at a risk of clogging up due to the amount of iron and manganese in our water. Force asked what the cost is. Boers responded that it will depend on the bidding environment.

Miller brought attention to the last line in the first paragraph in the letter from the DNR. It says "Wausau must begin providing", so it doesn't sound like we have a choice. Do we or don't we have a choice? Boers responded we will not have a choice. Miller continued with the mention of giardia and cryptosporidium, is there more than that or is it that well defined? Boers explained that those are typically the items of concern but if you're treating for those, it typically takes care of everything else.

Force asked if we were to remain in the current plant would we have these requirements as well. Boers confirmed we would.

5) Discussion and Possible Action on Amendment #5 to the Industrial Park LS Pump Addition and Industrial Park FM Access Points.

Lindman advised this is an amendment from Clark Dietz. They are working on the industrial park lift station projects. We added a third pump and there's some operation and maintenance manuals at the close of the project that remains to be done. There's also some

additional work that they've had to do with the railroad for the force main access points. This total amendment is for \$12,800.00 which brings the total contract up to \$301,900.00.

Motion by Force to approve the amendment. Seconded by Miller. Motion carried 4-0.

6) Discussion and Possible Action on a Proposal from Donohue to Complete the Programming/Integration at the DWTF and WWTF.

Lindman brought attention to an email in the packet from Gerbitz/Donohue and the proposal for the programming and integration at both the water and wastewater treatment plants. We had discussed this at the last meeting and pushed it forward to this meeting until the proposal came forward with the costs. Force requested feedback from Erickson and Boers, would this make sense to them?

Erickson responded that he is convinced this would be the way to go for the wastewater plant. Donohue has a good understanding of what they need and how to set up the system for the operators. They've done this other places and it would be difficult to spec this out for other people to bid on the project. It makes sense to have Donohue do it.

Boers agreed with Erickson. We've spent a considerable amount of time with Donohue. They're designing the plant and the protocol on how the plant runs. It just makes sense that they design the programming to make the equipment do what's been talked about. This will put a standard to our programming so we don't have things jumping back and forth and things being missed. It will also streamline the wastewater plant and water plant.

Force asked if the purchase of the hardware is included this package. Gerbitz responded that underneath the general contractor will be what they call the systems integrator and they will be providing the hardware. This is for the software that runs the facility and all the programming to run the facility. The advantage to having Donohue do this is that there is a redundancy between water and wastewater and they will share a platform. It would be very difficult to put together a conventional bidding package that has a programmer to do that for both sites. Also, if they weren't able to do it they would have to pull that out of the water and wastewater projects and bid them out separately. Gerbitz added that these are not added costs, this was already in the project budgets and it is just a matter of who is doing the work. The number they had for these services in the last cost opinion were slightly above the number for wastewater. These are not surprise costs.

Motion by Miller to approve. Seconded by Herbst. Motion carried 4-0.

7) Discussion and Possible Action on Approving a Bid for the Launder Covers at the WWTF.

Lindman advised that the launder covers were a specialty order item and have a long lead time. We wanted to purchase that material ahead of time so they're available and the contractor that gets the bid would have them here to install this year. It's pretty specialized equipment so Donohue submitted an invitation to bid on our behalf. There were only 2 in the region that were able to do that and only NEFCO provided a cost. He would recommend that we move forward with the contract and get these on order. Force asked what the cost is and some clarification on what these are for. Erickson responded these are the covers for the troughs around the clarifiers. Lindman responded it will be \$110,000 and an alternate for \$45,000 if we build a 4th clarifier. The request would be approval for the base and the alternate if we're able to build that.

Motion by Force to approve the contract from NEFCO. Seconded by Miller.

Motion carried 4-0.

8) Discussion and Possible Action Regarding Accepting Leachate from the Marathon County Landfill at the Wastewater Treatment Plant.

Erickson advised we don't really have any information yet. We've talked about this the last couple of meetings. We're working with the Marathon County landfill to accept their leachate. One of the things that's developed is in reviewing permit applications from the DNR to construct another phase on their landfill asked for their wastewater people to review whether it's reasonable to treat leachate. They have asked Donohue to comment on how much leachate we could treat. There are potential issues and risks such as passing our toxicity test or interfering with our UV system. We think we can address those problems but have to be careful about committing to something if we can't continue under our permit. Gerbitz explained that it's good to establish that when they were developing the facility plan, the facility was not accepting leachate and there were no plans to accept it in the future. Things changed with the PFOS issue so the landfill is in the situation that it's in. Capacity was not built in to take all the leachate from the landfill. It could take approximately 20-35% but not all of it. It makes sense to try but manage it carefully. Force asked where the rest would go. Erickson responded Stevens Point, Portage and possibly Green Bay. Force asked if we would pilot test. Erickson said we did this past fall and didn't see any issues with it. However, there are tests done at different times where it could prove to be an issue. Force asked about PFOS and if that would go in our effluent. Erickson advised whatever comes in either goes in our effluent or biosolids. Force asked if we know if more PFOS would be coming in with the leachate compared to normal. Erickson responded that we don't, we're waiting for testing procedures and sampling protocols. Force advised being a good neighbor is one thing but taking additional PFOS is another. Erickson responded that it's important to talk about this but in reality we're sharing the same customers. The solid waste from the homes in Wausau go to the landfill so it would affect us either way. Force asked what the cost would be for treating their leachate. Erickson explained that they owe us some test results. Our municipal code has a unit cost per pound for BOD, TSS, phosphorous, aluminum, etc. They haven't given representative numbers on those yet. Depending on those numbers we could negotiate a higher price if that's what made sense. They may also decide to treat it right at the land fill because they would have to pay us the fees and also truck it to the plant.

Force asked what type of action is required on this item. Miller asked if this would generate revenue, break even or is there a potential to lose money. Erickson responded that we would be generating revenue but if there were problems we'd have to work with them to get them resolved. Lindman advised the action would be to move this forward and prepare a letter to Marathon County to discuss the acceptance of leachate. Erickson advised he wouldn't say we are committing, it would be to continue working with Marathon County and taking the leachate on a trial basis as we review test results. Mielke added that if the determination is made that we are getting too much or we're not able to treat it that we can back track and they're on their own. Erickson agreed that would need to be outlined in the agreement.

Lindman said we can prepare something and wait for the testing to come back so we can see all of the parameters of concentrate that we're accepting.

Force asked how urgent this is because they have nothing to look at and would like to table this until there is more information to review.

Motion by Force to table this until more information is available. Seconded by Miller. Motion carried 4-0.

Force brought up the household hazardous waste that he had asked about a couple of meetings ago. Has anything come of that or have we discussed any of that with the hazardous waste people at the county. Mielke responded that he has not spoken with them about it. Lindman advised that he had passed that on to Ric Mohelnitzky since he arranges the large item drop off events. Force asked if that could be on the agenda for the next meeting.

Lindman agreed we'll bring it back next month.

9) Adjourn.

There being no further business to discuss, motion was made by Miller to adjourn the meeting. Seconded by Herbst. Motion carried 4-0.



March 3, 2020

MEMORANDUM

TO: President Mielke
Commissioner Herbst
Commissioner Force
Commissioner Gehin
Commissioner Miller

FROM: Eric Lindman, P.E.
Director of Public Works & Utilities

SUBJECT: Director's Report – February 2020

- The Aspirus clinic downtown is still moving forward with a construction start date for early summer 2020. In 2019 the utility funded the replacement of some old W&S lines in the roadways that were vacated and I had stated at an earlier meeting that all of the work had been completed. There is a 1-block stretch of road, 2nd St from McIndoe to Fulton, which will have facilities replaced this spring. This work was not done in 2019 because this section of 2nd St will not be vacated until McIndoe becomes vacated. We anticipate the vacation being effective in June 2020.

WATER DIVISION

1. Bids for the DWTF were opened on Thursday February 27, 2020 at 4:15 pm at City Hall. A summary of the bid results are attached for your information. There were 3-bidders and the bids were favorable. There is a lot of review that still needs to be done related to the bids, decisions that need to be made and final determination/recommendations to determine alternates and equipment before a final bid result and award can be made. We anticipate holding a special Commission meeting in April to present final bid results of

the DWTF and WWTF for your consideration. The WWTF is currently advertised for bid with a scheduled bid opening on April 7, 2020 at 3:30pm after the April Commission meeting.

2. Alternative energy generation considerations was not part of the DWTF bid. This work is still in development and will be a separate contract and potential agreement. It is anticipated there will be incentives for this work and the potential for tax credits. We will continue to work on this and bring options back at a future meeting.

WASTEWATER DIVISION

1. The Wastewater Plant is on track to meet permit limits for February. We have been sending our daily phosphorus tests to Agsource, but their computer system was hacked, so we have not received those results for most of the month. Based on our in-house monitoring and testing, we expect to be within our permit limits.
2. We are still operating a fourth aeration tank to avoid nitrification issues, with mixed results. Our alum use for phosphorus removal had initially decreased but has since returned to normal.
3. The Industrial Park pump replacement and rehabilitation project has been advertised. The bids are due on March 17th.
4. We are advertising to fill two new positions, one Sewer Maintainer and one Plant Mechanic, and to fill Ken Bloom's position as Wastewater Lab Technician. We are waiting for the City HR consultant to reclassify the Senior Sewer Maintainer position before we can advertise to replace Ken Rye. Ken's last day was March 2nd.

Thursday, February 27 - 4:15 PM
Council Chambers, City Hall, 407 Grant St, Wausau, WI

Bidder #1 - CD SMITH			
Acknowledgements & Forms	Addendum No. 1 / 2 / 3 / 4 / 5 / 6		
	Bid Security 5%		
	Subcontractor List		
	Disclosure of Ownership (if applicable)		
	DBE 6100-4 and 8700-294A		
	Executed		
Basis of Bid			
Unit Price Schedule			
	Total of All Bid Prices	32,193,618	Bid Price
Alternates			
1	Structure 500 Operations and Maintenance Building	5,236,000	Bid Price
2	Hydraulic Elevator	374,000	Bid Price
3	New Air Stripping Equipment	80,000	Bid Price
4	Horizontal Paddle Flocculation System	512,000	Bid Price
5	Parallel Plate Settler System and Clarifier Solids Collector	422,000	Bid Price
6	Additional Well Improvements	387,000	Bid Price
7	Crushing of on-site Materials	168,000	Bid Price
8	Contractor-Provided Builder's Risk Insurance	90,000	Bid Price
	Notes		

Bidder #2 - MIRON			
Acknowledgements & Forms	Addendum No. 1 / 2 / 3 / 4 / 5 / 6		
	Bid Security 5%		
	Subcontractor List		
	Disclosure of Ownership (if applicable)		
	DBE 6100-4 and 8700-294A		
	Executed		
Basis of Bid			
Unit Price Schedule			
	Total of All Bid Prices	31,036,434.23	Bid Price
Alternates			
		5,042,000	Bid Price
		368,000	Bid Price
		80,600	Bid Price
		524,000	Bid Price
		428,000	Bid Price
		328,000	Bid Price
		102,500	Bid Price
		46,000	Bid Price

Bidder #3 - MARKET & JOHNSON			
Acknowledgements & Forms	Addendum No. 1 / 2 / 3 / 4 / 5 / 6		
	Bid Security 5%		
	Subcontractor List		
	Disclosure of Ownership (if applicable)		
	DBE 6100-4 and 8700-294A		
	Executed		
Basis of Bid			
Unit Price Schedule			
	Total of All Bid Prices	34,668,053	Bid Price
Alternates			
		5,709,408	Bid Price
		365,086	Bid Price
		81,231	Bid Price
		493,853	Bid Price
		423,917	Bid Price
		309,856	Bid Price
		127,178	Bid Price
		55,593	Bid Price

Bidder #4 -			
Acknowledgements & Forms	Addendum No. 1 / 2 / 3 / 4 / 5 / 6		
	Bid Security 5%		
	Subcontractor List		
	Disclosure of Ownership (if applicable)		
	DBE 6100-4 and 8700-294A		
	Executed		
Basis of Bid			
Unit Price Schedule			
	Total of All Bid Prices		Bid Price
Alternates			
			Bid Price
			Bid Price
			Bid Price
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			Bid Price
			Bid Price
			Bid Price

Wausau Water Works Commission

March 3, 2020

Agenda Item
Discussion and possible action regarding accepting leachate from the Marathon County Landfill at the Wastewater Treatment plant.
Background
The Marathon County Landfill needs to identify new locations to discharge leachate. The leachate has a high BOD loading and a potential to disrupt the wastewater treatment processes or cause a WPDES permit exceedance. Landfill leachate is typically disposed of at municipal wastewater treatment plants.
Fiscal Impact
None. The fees charged would offset the costs of treating the leachate.
Staff Recommendation
The wastewater plant will accept the leachate on a conditional basis. The leachate characteristics and plant performance will be closely monitored. The amount of leachate accepted will be based on that monitoring and adjusted as necessary.
Staff contact: David Erickson (715 261-6941) and Eric Lindman (715-261-6745)

Marathon County Landfill (Hauled Rates)

	Concentration	Amount	Rate	Cost
BOD =	6100 mg/l	50.87 lbs	0.25 \$/lb	\$12.72 \$/1000 gallons
TSS =	180 mg/l	1.50 lbs	0.46 \$/lb	\$0.69 \$/1000 gallons
Phosphorus =	2 mg/l	0.02 lbs	4.38 \$/lb	\$0.07 \$/1000 gallons
Aluminum	2 mg/l	0.02 lbs	0.40 \$/lb	\$0.01 \$/1000 gallons
Volume =	1000 gals	1.34 units	1.45 \$/unit	\$1.94 \$/1000 gallons
Total				\$15.43



Memorandum

Date: February 27, 2020

To: Mr. Chris Bellovary, Wastewater Engineer, Wisconsin Department of Natural Resources

Copy: City of Wausau

From: Mike Gerbitz, PE

Re: **Treatment of Leachate from the Bluebird Ridge Landfill**
Wausau Wastewater Treatment Facility
Wausau, Wisconsin

This Memorandum (memo) is a response to your December 17, 2019 email regarding leachate treatment at the Wausau Wastewater Treatment Facility (Facility). A copy of that email is enclosed with this memo.

Historical Leachate Flows and Concentrations

The email provided some historical leachate data from the Bluebird Ridge Recycling and Disposal Facility (BRRDF). Data for the conventional pollutant parameters (BOD, TSS, and TKN) is presented in Table 1. No daily flow volumes were provided in the data set, probably because they are not available. The average daily flow (Q) shown in Table 1 was calculated using the current annual leachate volume (3.89 Mgal/year ÷ 365 days/year) and the wet-month daily flow was calculated using 12% of the current annual volume (3.89 Mgal/year X 12% ÷ 30 days/month).

Table 1

Historical Leachate Flows and Concentrations				
Dates	Q (mgd)	BOD (mg/L)	TSS (mg/L)	TKN (mg/L)
19-Apr-17		5,700	150	560
16-Oct-17		6,000	200	680
19-Apr-18		10,000	280	790
24-Oct-18		6,400	93	720
Average	0.0107	7,025	181	688
Wet-Month	0.0156 [12% of annual total]			

Anticipated Leachate Loadings

The values in Table 1 were used to calculate total daily leachate loadings from the BRRDF. These values are summarized in Table 2. Anticipated average daily loadings were calculated using the average daily flow and parameter concentrations. Anticipated average wet-month loadings were calculated using the wet-month daily flow and average parameter concentrations.

Table 2

Anticipated Average Daily Leachate Loadings ¹			
	BOD (ppd)	TSS (ppd)	TKN (ppd)
Average	624	16	61
Anticipated Average Wet-Month Daily Loadings ¹			
	BOD (ppd)	TSS (ppd)	TKN (ppd)
Wet-Month	912	23	89

1 - Based on current situation.

Historical Loadings Received at the Facility

Table 3 shows historical Facility loadings. These values are the same as those provided in the City of Wausau 2040 Wastewater Facilities Plan (Feb 26, 2019). That Plan was reviewed and approved by the Wisconsin Department of Natural Resources on Sep 30, 2019.

Table 3

Recent Historical Facility Loadings			
Parameter	AA ¹ (ppd)	MM ² (ppd)	MW ³ (ppd)
BOD	10,676	13,774	16,656
TSS	11,222	15,609	18,132
TKN	1,912	2,467	2,986

1 - Annual Average

2 - Maximum Month

3 - Maximum Week

Design Basis Facility Loadings

Table 4 presents Design Basis loadings for the Facility. These values are the same as those provided in the City of Wausau 2040 Wastewater Facilities Plan and represent loadings expected by the year 2040. The Design Basis loadings were developed without any leachate contribution because the Facility was not taking leachate at the time the Facilities Plan was developed and had no plans to accept leachate.

Table 4

Design Basis Facility Loadings			
Parameter	AA ¹ (ppd)	MM ² (ppd)	MW ³ (ppd)
BOD	11,190	14,438	17,458
TSS	11,763	16,361	19,005
TKN	2,004	2,586	3,130

1 - Annual Average

2 - Maximum Month

3 - Maximum Week

Near-Term Loading Capacity for Leachate Treatment

Table 5 shows the anticipated near-term loading capacity available for leachate treatment *assuming the Facility is operated to nitrify year-round, consistently comply with its current WPDES Permit, and consistently provide high-quality effluent*. These values were calculated by subtracting Table 3 values from the corresponding Table 4 values.

Table 5 also shows the anticipated total current daily BRRDF leachate loadings. Anticipated BOD loadings from leachate exceed the near-term capacity for those loadings. Anticipated TKN loadings from leachate consume a large fraction of the near-term capacity for those loadings.

Table 5

Design Basis Less Historical Facility Loadings			Leachate Loadings ⁴		
	AA ¹	MM ²	MW ³	AA ¹	MM ²
Parameter	(ppd)	(ppd)	(ppd)	(ppd)	(ppd)
BOD	514	664	802	624	912
TSS	541	752	873	16	23
TKN	92	119	144	61	89

1 - Annual Average

2 - Maximum Month

3 - Maximum Week

4 - Anticipated values based on historical data

Findings

Finding 1

From a hydraulic perspective, anticipated flow rates are not a concern. The Facility has adequate hydraulic capacity to accept all leachate. Wet-month flows from the landfill represent less than 0.2% of maximum month flows received at the Facility.

Finding 2

The Facility does not have adequate BOD capacity to accept all leachate assuming the Facility is operated to consistently comply with its current WPDES Permit and produce high-quality effluent. Anticipated BOD loadings from leachate exceed the reserve capacity expected in the near term.

Finding 3

The Facility is expected to have marginal TKN capacity to accept all leachate assuming the Facility is operated to consistently comply with its current WPDES Permit and produce high-quality effluent. Anticipated TKN loadings from leachate will consume a large fraction of the reserve capacity expected in the near term.

Finding 4

The Facility should be able to accept some leachate and be a component of a leachate-disposal strategy for the BRRDF. The amount the Facility can reliably accept should be determined carefully and gradually based on real-world operating experience. These efforts and practices will likely find that the amount of leachate the Facility can reliably accept varies with the seasons and Facility operating states. Nevertheless, the Facility is likely to prove capable of accepting a fraction of the leachate based on the conventional pollutant parameters (BOD, TSS, and TKN).

Finding 5

Leachate may have other constituents that prove problematic for the Facility and its performance -e.g., constituents may degrade UV disinfection system performance during the disinfection season or cause problems associated with whole effluent toxicity testing. The Facility must and intends to reserve the right to stop accepting leachate in the event leachate proves problematic.

Finding 6

The Facility is capable of treating loadings greater than those shown above if the WPDES Permit is modified to report CBOD and the facility is operated in a non-nitrifying mode.

Closing Statements

The Facility has not accepted leachate from the BRRDF in the recent past and, at the time of Facilities Planning, had no plans to accept leachate. Nevertheless, the analysis above shows that the Facility is likely a partial solution to the BRRDF leachate disposal issue. Moreover, the Facility is willing to work with the BRRDF to be a partial solution.

The Facility may prove capable of accepting a considerable fraction of the average annual leachate, perhaps on the order of 20 – 35% of the current quantities. Future quantities, after expansion landfill expansion, are expected to more than double current quantities.

The Facility should work carefully to gradually accept an increasing quantity of leachate to define the amount that can be treated without detrimental effects. Even small amounts of leachate may prove unsuitable because of toxic effects or other performance-degrading characteristics. In that event, the Facility would be forced to stop taking leachate entirely so it does not jeopardize WPDES Permit compliance.

From: Bellovary, Christopher W - DNR
To: Gerbitz, Mike
Subject: Wausau WWTP and Bluebird Ridge Recycling and Disposal Facility Leachate
Date: Tuesday, December 17, 2019 4:53:47 PM

Good afternoon Mr. Gerbitz,

The Bluebird Ridge Recycling and Disposal Facility (aka, BRRDF, Bluebird Ridge Landfill) approached the City of Wausau to find out whether the City could accept their leachate for treatment. My understanding is that the landfill is looking for an entity to treat its leachate ~~because the nearby industrial treatment plant that had been treating the leachate belongs to a paper company that will be shutting down.~~ *← This is incorrect / ME*

Note - Our opinion on accepting leachate was conditional / ME
~~Apparently, the City stated that the new plant should be able to accept the entirety of the leachate (which also includes some gas condensate).~~ Since you designed the plant, I wanted to find out if you agree, or if you do not, how much leachate do you believe the plant could successfully receive and still reliably meet the City's permit limits.

The items I was most concerned with were (a) the significant BOD loading, particularly during peak months after the landfill expansion, and (b) the related increase in solids production.

	<u>Current</u>	<u>After Expansion</u>	<u>After Closure</u>
Annual Leachate Production:	3.89 MG	up to 10.5 MG	3.84 MG

	<u>4/19/2017</u>	<u>10/16/2017</u>	<u>4/19/2018</u>	<u>10/24/2018</u>
BOD (mg/L)	3,700	6,000	10,000	6,400
COD (mg/L)	5,400	9,200	18,000	9,400
TSS (mg/L)	150	200	280	93
NH ₃ (mg/L)	380	540	600	780
TKN (mg/L)	560	680	790	720
pH	7.12	7.3	6.84	7.37
Hg (µg/L)	0.16	0.26	0.26	0.25
P-Cresol (µg/L)	2,200		6,200	
Phenol (µg/L)	490		1,400	

I planned to use the concentration from the April 19, 2018 sample for my own calculations, but with only four samples, peak concentration is likely a bit higher.

Unsurprisingly, spring and fall are the peak months of leachate production.

2018, % of annual

Jan 2.3%

Feb	3.1%
Mar	11.2%
Apr	12.0%
May	7.4%
Jun	6.6%
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Dec	5.9%

The leachate is currently pumped into a 6,600 gallon tanker truck when it is hauled to a treatment plant for disposal. The landfill is required to have up to 4 days of leachate storage onsite, so there may be some small degree of flow balancing if the two entities work well together, but not all that much.

Christopher Bellovary

Wastewater Engineer – Water Quality Bureau
Wisconsin Department of Natural Resources

Phone: (608) 267-7625

Christopher.Bellovary@Wisconsin.gov



Memorandum

Date: February 27, 2020

To: Mr. Chris Bellovary, Wastewater Engineer, Wisconsin Department of Natural Resources

Copy: City of Wausau

From: Mike Gerbitz, PE

Re: **Treatment of Leachate from the Bluebird Ridge Landfill**
Wausau Wastewater Treatment Facility
Wausau, Wisconsin

This Memorandum (memo) is a response to your December 17, 2019 email regarding leachate treatment at the Wausau Wastewater Treatment Facility (Facility). A copy of that email is enclosed with this memo.

Historical Leachate Flows and Concentrations

The email provided some historical leachate data from the Bluebird Ridge Recycling and Disposal Facility (BRRDF). Data for the conventional pollutant parameters (BOD, TSS, and TKN) is presented in Table 1. No daily flow volumes were provided in the data set, probably because they are not available. The average daily flow (Q) shown in Table 1 was calculated using the current annual leachate volume (3.89 Mgal/year ÷ 365 days/year) and the wet-month daily flow was calculated using 12% of the current annual volume (3.89 Mgal/year X 12% ÷ 30 days/month).

Table 1

Historical Leachate Flows and Concentrations				
Dates	Q (mgd)	BOD (mg/L)	TSS (mg/L)	TKN (mg/L)
19-Apr-17		5,700	150	560
16-Oct-17		6,000	200	680
19-Apr-18		10,000	280	790
24-Oct-18		6,400	93	720
Average	0.0107	7,025	181	688
Wet-Month	0.0156 [12% of annual total]			

Anticipated Leachate Loadings

The values in Table 1 were used to calculate total daily leachate loadings from the BRRDF. These values are summarized in Table 2. Anticipated average daily loadings were calculated using the average daily flow and parameter concentrations. Anticipated average wet-month loadings were calculated using the wet-month daily flow and average parameter concentrations.

Table 2

Anticipated Average Daily Leachate Loadings ¹			
	BOD (ppd)	TSS (ppd)	TKN (ppd)
Average	624	16	61
Anticipated Average Wet-Month Daily Loadings ¹			
	BOD (ppd)	TSS (ppd)	TKN (ppd)
Wet-Month	912	23	89

1 - Based on current situation.

Historical Loadings Received at the Facility

Table 3 shows historical Facility loadings. These values are the same as those provided in the City of Wausau 2040 Wastewater Facilities Plan (Feb 26, 2019). That Plan was reviewed and approved by the Wisconsin Department of Natural Resources on Sep 30, 2019.

Table 3

Recent Historical Facility Loadings			
	AA ¹ (ppd)	MM ² (ppd)	MW ³ (ppd)
BOD	10,676	13,774	16,656
TSS	11,222	15,609	18,132
TKN	1,912	2,467	2,986

1 - Annual Average

2 - Maximum Month

3 - Maximum Week

Design Basis Facility Loadings

Table 4 presents Design Basis loadings for the Facility. These values are the same as those provided in the City of Wausau 2040 Wastewater Facilities Plan and represent loadings expected by the year 2040. The Design Basis loadings were developed without any leachate contribution because the Facility was not taking leachate at the time the Facilities Plan was developed and had no plans to accept leachate.

Table 4

Design Basis Facility Loadings			
	AA ¹ (ppd)	MM ² (ppd)	MW ³ (ppd)
BOD	11,190	14,438	17,458
TSS	11,763	16,361	19,005
TKN	2,004	2,586	3,130

1 - Annual Average

2 - Maximum Month

3 - Maximum Week

Near-Term Loading Capacity for Leachate Treatment

Table 5 shows the anticipated near-term loading capacity available for leachate treatment *assuming the Facility is operated to nitrify year-round, consistently comply with its current WPDES Permit, and consistently provide high-quality effluent*. These values were calculated by subtracting Table 3 values from the corresponding Table 4 values.

Table 5 also shows the anticipated total current daily BRRDF leachate loadings. Anticipated BOD loadings from leachate exceed the near-term capacity for those loadings. Anticipated TKN loadings from leachate consume a large fraction of the near-term capacity for those loadings.

Table 5

Design Basis Less Historical Facility Loadings			Leachate Loadings ⁴		
Parameter	AA ¹ (ppd)	MM ² (ppd)	MW ³ (ppd)	AA ¹ (ppd)	MM ² (ppd)
BOD	514	664	802	624	912
TSS	541	752	873	16	23
TKN	92	119	144	61	89

1 - Annual Average

2 - Maximum Month

3 - Maximum Week

4 - Anticipated values based on historical data

Findings

Finding 1

From a hydraulic perspective, anticipated flow rates are not a concern. The Facility has adequate hydraulic capacity to accept all leachate. Wet-month flows from the landfill represent less than 0.2% of maximum month flows received at the Facility.

Finding 2

The Facility does not have adequate BOD capacity to accept all leachate assuming the Facility is operated to consistently comply with its current WPDES Permit and produce high-quality effluent. Anticipated BOD loadings from leachate exceed the reserve capacity expected in the near term.

Finding 3

The Facility is expected to have marginal TKN capacity to accept all leachate assuming the Facility is operated to consistently comply with its current WPDES Permit and produce high-quality effluent. Anticipated TKN loadings from leachate will consume a large fraction of the reserve capacity expected in the near term.

Finding 4

The Facility should be able to accept some leachate and be a component of a leachate-disposal strategy for the BRRDF. The amount the Facility can reliably accept should be determined carefully and gradually based on real-world operating experience. These efforts and practices will likely find that the amount of leachate the Facility can reliably accept varies with the seasons and Facility operating states. Nevertheless, the Facility is likely to prove capable of accepting a fraction of the leachate based on the conventional pollutant parameters (BOD, TSS, and TKN).

Finding 5

Leachate may have other constituents that prove problematic for the Facility and its performance -e.g., constituents may degrade UV disinfection system performance during the disinfection season or cause problems associated with whole effluent toxicity testing. The Facility must and intends to reserve the right to stop accepting leachate in the event leachate proves problematic.

Finding 6

The Facility is capable of treating loadings greater than those shown above if the WPDES Permit is modified to report CBOD and the facility is operated in a non-nitrifying mode.

Closing Statements

The Facility has not accepted leachate from the BRRDF in the recent past and, at the time of Facilities Planning, had no plans to accept leachate. Nevertheless, the analysis above shows that the Facility is likely a partial solution to the BRRDF leachate disposal issue. Moreover, the Facility is willing to work with the BRRDF to be a partial solution.

The Facility may prove capable of accepting a considerable fraction of the average annual leachate, perhaps on the order of 20 – 35% of the current quantities. Future quantities, after expansion landfill expansion, are expected to more than double current quantities.

The Facility should work carefully to gradually accept an increasing quantity of leachate to define the amount that can be treated without detrimental effects. Even small amounts of leachate may prove unsuitable because of toxic effects or other performance-degrading characteristics. In that event, the Facility would be forced to stop taking leachate entirely so it does not jeopardize WPDES Permit compliance.

From: [Bellovary, Christopher W - DNR](#)
To: [Gerbitz, Mike](#)
Subject: Wausau WWTP and Bluebird Ridge Recycling and Disposal Facility Leachate
Date: Tuesday, December 17, 2019 4:53:47 PM

Good afternoon Mr. Gerbitz,

The Bluebird Ridge Recycling and Disposal Facility (aka, BRRDF, Bluebird Ridge Landfill) approached the City of Wausau to find out whether the City could accept their leachate for treatment. My understanding is that the landfill is looking for an entity to treat its leachate because the nearby industrial treatment plant that had been treating the leachate belongs to a paper company that will be shutting down.

Apparently, the City stated that the new plant should be able to accept the entirety of the leachate (which also includes some gas condensate). Since you designed the plant, I wanted to find out if you agree, or if you do not, how much leachate do you believe the plant could successfully receive and still reliably meet the City's permit limits.

The items I was most concerned with were (a) the significant BOD loading, particularly during peak months after the landfill expansion, and (b) the related increase in solids production.

	<u>Current</u>	<u>After Expansion</u>	<u>After Closure</u>
Annual Leachate Production:	3.89 MG	up to 10.5 MG	3.84 MG

	<u>4/19/2017</u>	<u>10/16/2017</u>	<u>4/19/2018</u>	<u>10/24/2018</u>
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Christopher Bellovary

Wastewater Engineer – Water Quality Bureau
Wisconsin Department of Natural Resources

Phone: (608) 267-7625

Christopher.Bellovary@Wisconsin.gov

Wausau Water Works Commission

March 3, 2020

Agenda Item
Update of Mechanic Incentive Pay (Water Utilities) Section 5.10 of the Employee Handbook
Background
Section 5.10 of the Employee Handbook currently grants an incentive to certain water and sewer employees for completion of North Central Technical College's electrical and instrumentation training program. Below is the current Handbook language: Employees classified as a Water Plant Operations Technician in the Water Department or Plant Maintenance Mechanic in the Sewage Department are eligible for an educational incentive pay of \$0.50 per hour upon achieving 50% of the electrical and instrumentation training program as confirmed by North Central Technical College officials. Upon completion of the electrical and instrumentation NTC program and receipt of a State of Wisconsin Journeyman card, the employee will receive an incentive pay of \$1.00 per hour. The current incentive system requires an extensive amount of hands-on experience, more than the Wastewater Superintendent has available in the normal course of work. As such, employees have been finding it difficult if not impossible to qualify for the incentive.
Fiscal Impact
\$18,720 plus benefits
Staff Recommendation
Proposed Language: 5.10 – Mechanic/Technician Incentive Pay (Wausau Waterworks) Employees classified as a Water Plant Operations Technician in the Water Utility, or Plant Maintenance Mechanic/Technician in the Wastewater Utility, are eligible for an educational incentive pay based on Electrical and Instrumentation (E&I) training and experience. Employees may earn up to \$1.50/hour after completion of course work and documented experience working within the utility as defined below. These employees are expected to become a Qualified Person as defined in OSHA 1910.332 (3) and NFPA 70E 110.2 A (1). Employees in those positions who have completed one of the following are eligible to receive an incentive pay of \$0.75 per hour: 50% of the coursework credit hours and on the job experience as defined in their NTC E&I Technician Apprenticeship Contract, or

Wausau Water Works Commission

March 3, 2020

- b. An NTC Electrical Maintenance Certificate (8 credits) and a minimum of 750 hours of direct E&I experience, or
- c. Completion or partial completion of other certifications may be approved for this incentive by the Public Works Director and Director of Human Resources, provided they are established as equivalent by a committee consisting of the Water Superintendent, Wastewater Superintendent, and the Electrical Inspector.

Employees in those positions who have completed one of the following and become a Qualified Person as defined by OSHA and NFPA are eligible to receive the full incentive pay of \$1.50 per hour:

- a. Completion of their obligations as defined in their NTC E&I Technician Apprenticeship Contract, or
- b. An NTC Industrial Electronics and Maintenance Technician Technical Diploma (25 credits) and a minimum of 1200 hours of direct E&I experience, or
- c. Is licensed as a DSPS Journeyman Electrician or DSPS Industrial Journeyman Electrician, or
- d. Completion or partial completion of other certifications may be approved for this incentive by the Public Works Director and Director of Human Resources, provided they are established as equivalent by a committee consisting of the Water Superintendent, Wastewater Superintendent, and the Electrical Inspector.

Employees who consistently fail to meet the requirements and expectations of a Qualified Person would become ineligible for the Mechanic/Technician Incentive Pay.

Staff contact: Eric Lindman (715-261-6745) and Toni Vanderboom (715-261-6634)

Eric Lindman

From: Brian Roemer <BRoemer@ehlers-inc.com>
Sent: Friday, February 14, 2020 9:39 AM
To: Eric Lindman; Jon Cameron
Cc: MaryAnne Groat; Valerie Swanborg
Subject: RE: Wausau - Water Revenue Res vs. Comm/Industrial
Attachments: Pages from WEGS_2018_1740.pdf; PSC Query - Water Operating Revenues - Sales of Water.xlsx

Eric,

From our experience, yes it is normal/typical for residential users to generate the majority of the revenue. Looking at the numbers, see attached PSC Query of all utilities 2014-2018 of %Kgal sold by Utility Class by Customer Class and %Rev by Utility Class by Customer Class, yes it is typical. Should you desire to break out by specific Utility feel free to use Sheet 1 tab and select utilities in the pivot table tab on the right.

Regarding the table you provide in your email, all of the other utilities have a similar Non-Res rate structure (a declining block structure) and therefore would tell me there has been nothing unique to control the Rev % as total but rather the difference would be in the nature of their customers' usage. Further, looking at Eau Claire's Tariff their disparity between Res (Tier 1 only as single block) and Non-Res Tier 2 rate is greater @ \$0.35 than Wausau @ \$0.16 meaning their declining rate structure is steeper. Meanwhile their Non-Res Tier 1 and Tier 2 volume rate is cheaper by \$0.59 and \$0.68 respectively. These two items would point to Wausau's current rate structure more ability to generate Non-Rev \$. The only contradicting factor is with their Non-Res Tier 1 volume level is higher (takes 1,500 CF more to get out of Tier 1 rate block) and therefore I would presume their Non-Rev customers have more % of usage in Tier 1 than Wausau's. Lastly, please see the Wausau v EC tabs. I am questioning the data in the table in the email below. For example, it looks like EC's % of Res Rev \$ to total \$ is around 59% and % of Volume is 45%. I have also attached EC 2018 PSC Annual Report. Looking again at the Wausau v EC tabs it looks like Wausau's Res % of \$ to Total \$ has actually gone down compared to EC from 2014-2018.

If you would like a breakdown of how many utilities use the declining block rate structure for Non-Res customers (like your tariff) you would have to ask LouAnn and/or Andrew. LouAnn has provided me information in the past regarding how many utilities have "x" rate structure since it is not readily available on their website. I welcome a discussion on the rate structure and any desired changes as we have previously discussed with the WRS Tariff Changes Sheet and email exchanges regarding Andrew's (PSC) inquiries.

Thanks,
Brian

Brian Roemer
Municipal Advisor
O: (262) 796-6178 | ehlers-inc.com



Our Wisconsin Public Finance Seminar is February 20-21, 2020. Please join us!
[Learn More](#) | [Register Now](#)

From: Eric Lindman <Eric.Lindman@ci.wausau.wi.us>
Sent: Friday, February 14, 2020 8:04 AM
To: Brian Roemer <BRoemer@ehlers-inc.com>; Jon Cameron <JCameron@ehlers-inc.com>
Cc: MaryAnne Groat <mgroat@ci.wausau.wi.us>; Valerie Swanborg <Valerie.Swanborg@ci.wausau.wi.us>
Subject: Wausau - Water Revenue Res vs. Comm/Industrial

Jon/Brian,

The Commission asked us back in November to get a breakdown of the utility rates, residential vs. non-residential. I worked with Donohue to get a fairly simple breakdown of the rates by percentage and then we compared with other communities we had information. The Commission's main question related to the rates; is it normal/typical for residential users to generate the majority of the revenue? They felt like the non-residential should be higher percentage. The Commission feels we should be looking at the rates to better balance the revenue as they do not feel residents should be carrying this much of the burden.

My question to you is do you have expertise to help us answer this question for the Commission? I am certainly not a rate expert so I had no answer for them other than comparing us to other communities. Let me know your thoughts about trying to break this down for the commission and provide them an answer to their question.

	Eau Claire	La Crosse	Whitewater	Sheboygan	Wausau
Residential Revenue as % of Total	47%	35%	47%	58%	62%
Residential Volume as % of Total	56%	27%	42%	57%	46%
Revenue % - Volume %	-9%	8%	5%	1%	16%
Rate By Donohue	Yes	Trilogy	Yes	Yes	No

Eric Lindman, P.E.

Director of Public Works & Utilities
City of Wausau
407 Grant St.
Wausau, WI 54403-4783
P: 715-261-6745
C: 715-292-2606

=====

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Wausau vs. Eau Claire - % vs. \$\$\$

Row Labels	2014	2015	2016	2017	2018		2014	2015	2016	2017	2018
Eau Claire Municipal Water Utility	\$7,460,471	\$7,582,116	\$7,661,411	\$7,552,936	\$7,804,886						
461	\$7,460,471	\$7,582,116	\$7,661,411	\$7,552,936	\$7,804,886						
Commercial	1368939	1378752	1373132	1283388	1318740		18.3%	18.2%	17.9%	17.0%	16.9%
Industrial	1042019	1043758	1035997	1080819	1098186		14.0%	13.8%	13.5%	14.3%	14.1%
Irrigation							0.0%	0.0%	0.0%	0.0%	0.0%
Multifamily Residential	322579	334775	355937	371035	385007		4.3%	4.4%	4.6%	4.9%	4.9%
Public Authority	350122	377087	379026	332863	335816		4.7%	5.0%	4.9%	4.4%	4.3%
Residential	4376812	4447744	4517319	4484831	4667137		58.7%	58.7%	59.0%	59.4%	59.8%
Wausau Water Utility	\$3,512,302	\$4,219,091	\$4,362,203	\$4,339,663	\$4,719,797						
461	\$3,512,302	\$4,219,091	\$4,362,203	\$4,339,663	\$4,719,797						
Commercial	695302	825881	866609	866737	916363		19.8%	19.6%	19.9%	20.0%	19.4%
Industrial	312768	419909	502471	545530	585391		8.9%	10.0%	11.5%	12.6%	12.4%
Irrigation	129697	314186	260009	211336	328716		3.7%	7.4%	6.0%	4.9%	7.0%
Multifamily Residential	74740	96107	127902	119461	145600		2.1%	2.3%	2.9%	2.8%	3.1%
Public Authority	192573	236265	226061	220588	249092		5.5%	5.6%	5.2%	5.1%	5.3%
Residential	2107222	2326743	2379151	2376011	2494635		60.0%	55.1%	54.5%	54.8%	52.9%
Grand Total	10972773	11801207	12023614	11892599	12524683						
						Diff	-1.3%	3.5%	4.4%	4.6%	6.9%



I/I and Interceptor Sewer Rehabilitation Study

Prepared for: City of Wausau, Wisconsin

Prepared by: Clark Dietz, Inc.

Date: January 2020

Professional Consulting and Design Services

Table of Contents

SECTION	PAGE
1.0 INTRODUCTION	1
1.1 Project Summary	1
1.2 Purpose.....	1
2.0 SEWER SYSTEM DESCRIPTION.....	2
2.1 Study Location.....	2
2.2 Wastewater Sampling.....	2
2.2.1 Sampling Locations	2
2.2.2 Sampling Procedure	2
2.2.3 Sampling Results	2
2.3 Groundwater Levels	2
2.4 I/I and PCP in Sewer System.....	3
3.0 IMPROVEMENT RECOMMENDATIONS.....	4
3.1 Rehabilitation Options	4
3.2 Cost Estimates	5
3.3 Recommendations	6
4.0 CONCLUSION	7
4.1 Future Investigation	7
4.2 System Improvements	7

TABLES

Table 3-1	Comparison of Trenchless Sewer Rehabilitation Methods.....	5
Table 3-2	Trenchless Sewer Rehabilitation Methods Estimates of Probable Cost.....	6

APPENDICES

A	Location Map
B	Wastewater Sampling Locations
C	Wastewater Sampling Results
D	Locations of Monitoring Wells
E	Recorded Groundwater Levels
F	Detected PCP in Manholes
G	Groundwater Elevation in Study Area

1.0 Introduction

1.1 Project Summary

The City of Wausau requested an Infiltration and Inflow (I/I) Assessment and Interceptor Sewer Rehabilitation Study for a small section of their sanitary sewer collection system located in the near southwest side of the City from Riverside Park south to the wastewater treatment facility (WWTF). There is a Wisconsin Department of Natural Resources (WDNR)-regulated cleanup site in this area due to groundwater contamination. The owner of the site treats the groundwater to remove Pentachlorophenol (PCP) and then discharges the treated groundwater water to the City's sanitary sewer.

An Infiltration and Inflow (I/I) Assessment and Interceptor Sewer Rehabilitation Study has been completed for the City of Wausau, Wisconsin. This report provides a condition assessment for a small section of the City of Wausau's sanitary sewer system located in the near southwest side of the City from Riverside Park south to the WWTF. This report evaluates suspected deficiencies within this area and recommends possible improvements. The evaluation includes a summary of recent wastewater sampling and groundwater monitoring data which was provided by the City of Wausau.

1.2 Purpose

The purpose of this study is to determine if the interceptors in the area are experiencing I/I. The provided sampling results show a presence of PCP in the sanitary sewer collection system downstream of the regulated site sanitary sewer discharge. It correlates that if a pollutant is present downstream in the sewers, which wasn't present at the discharge "source", it must be entering the sewers via I/I. The chemical pentachlorophenol (PCP) is known to exist in soils in this area. The study will examine if and where PCP has been detected in this part of the sewer system and attempt to determine the area(s) it may be entering the sewer system.

If I/I is occurring in the area, steps should be taken to prevent it in the future. The study includes recommendations for replacement or rehabilitation of the existing sewer system. Recommendations are based on compliance with all applicable federal, state, and local codes and standards. The study includes a preliminary cost estimate for these improvements.

2.0 Sewer System Description

2.1 Study Location

The study examined portions of two interceptor sewers located in the center of the City of Wausau near the wastewater treatment facility (WWTF). The study location is shown on the map in Appendix A. The map, and all others in this report, were prepared by City staff using Wausau's current GIS system.

One section of the interceptor is located in Thomas Street and flows from the west to the east. At Cleveland Avenue the sewer increases in diameter from 18-inch to 20-inch. At McCleary Street near the Thomas Street Bridge the 20-inch sewer turns south and decreases back to 18-inch diameter. A separate 30-inch interceptor sewer flows from the north through Riverside Park on the west side of the river. At River Street this sewer increases in size to 36-inch diameter. At Adrian Street the interceptor turns to the east and takes in the 18-inch interceptor at McCleary Street. The 36-inch interceptor then continues to flow to the east toward the WWTF.

2.2 Wastewater Sampling

2.2.1 Sampling Locations

Wastewater was sampled in a total of eight manholes along the interceptor sewers identified in Section 2.1. The sampling locations were selected with assistance from WDNR staff and are shown on the map in Appendix B. The sampling locations were chosen to test wastewater both upstream of and downstream of the treated groundwater discharge point as well as within the area known to contain PCP. Multiple samples were taken from the same manholes on different days to confirm/verify information and data. Samples were taken in manholes located above and below the normal groundwater levels. The sampling manholes vary in depth from approximately 8.7 feet to 17.4 feet.

2.2.2 Sampling Procedures

Wastewater grab samples were collected by Wausau Water Works staff on January 8, 2019, March 26, 2019, June 10, 2019, and June 12, 2019. The samples were analyzed by Badger Labs and Synergy Environmental Lab, Inc.

2.2.3 Sampling Results

The sampling results are included in Appendix C. On January 8th, five of the seven samples collected showed the presence of PCP. In the March sampling effort, five of the eight samples collected contained PCP. On June 10th and 12th, two of the three samples collected showed the presence of PCP. In all the other samples, the level of PCP was below the limit of detection (LOD, 1.84 µg/L).

2.3 Groundwater Levels

Groundwater elevations in the study area have been monitored for many years in monitoring wells located on or near the Wauleco industrial site. TRC Companies, Inc., the firm that conducted the groundwater monitoring, supplied the City with ten years' worth of groundwater elevations from wells located near the interceptor sewer. A map showing the monitoring wells is included in Appendix D.

The groundwater sampling results are included in a table in Appendix E. Two level outliers were removed from the calculation of the normal average groundwater elevations. The first is a high water level that occurred in the summer of 2011 which resulted from a water main break. The second is the lowering of Lake Wausau in fall of 2016 that resulted in abnormally low levels.

2.4 I/I and PCP in Sewer System

The map in Appendix F shows the PCP sample results, the dates the samples were taken, and the locations of the manholes sampled. It should be noted that there are two separate interceptor sewer lines that run through this area. These two lines intersect at MH5 at the intersection of McCleary and Adrian Streets. The interceptor line from the west connects on the north side of MH5 and the interceptor line from the north connects on the west side of MH5. For the January and March sample events, there were two samples taken from MH5: one from the north inlet and one from the west inlet, each representing a different interceptor sewer.

January Sample Event

In the January 8th sampling event, PCP was sampled on the interceptor line that runs west to east. Samples along this west to east interceptor were taken from MH7, MH6, and MH5. The farthest west sample location, which is upstream of the treated groundwater discharge point, is MH7 and the result was below the LOD. The sample taken at MH6, which is downstream of the treated groundwater discharge point, showed detection of PCP. The next sample downstream was from MH5, which showed PCP detection significantly less than that from MH 6.

During the January 8th sampling event, PCP was also sampled on the interceptor line that runs north to south. Samples along this north to south interceptor were taken from MH162, MH53, and MH 5. The sample taken from MH162, north of the study area, was below the LOD. The sample taken from MH53 showed detection of PCP and the sample from the downstream MH5 showed a higher detection level of PCP. Both of these lines connect at MH5.

March Sample Event

In the March 26th sampling event, PCP was again sampled on the two interceptor lines that run west to east and north to south. Samples on the west to east interceptor were taken at MH6, MH5, and MH2, upstream to downstream respectively. MH6 was below the LOD, MH5 was below the LOD, and in MH2 PCP was detected. MH2 is downstream of MH5 where the two interceptors connect.

On the interceptor line running north to south samples were taken at MH162, MH53, MH54 and MH5, upstream to downstream respectively. MH162 was below the LOD, MH53 detected PCP, MH54 detected PCP slightly higher than MH 53, and MH5 detected PCP slightly higher than MH54. Again, MH2 detection was slightly less than MH5. Both interceptors connect upstream in MH5 and dilution could reduce the detected concentration.

June Sample Event

In the June 10th and 12th sampling event the north to south interceptor was the only line tested. Samples were taken from MH 51, MH52, and MH53. The sample at MH51 was below the LOD and the MH52 and MH53 samples both detected PCP at a very similar level.

General Observations

PCP concentrations did not increase steadily in either the east- or south-flowing interceptor. The level varied somewhat from one location to another. The volume of wastewater in the system increases as it moves toward the WWTF, and the PCP concentration will vary in the water entering the system. Mixing also occurs in the sewer system. All these factors will affect the overall concentration of the chemical.

The map/graph in Appendix G shows the observed groundwater elevations in relation to PCP found in the wastewater samples. The map shows that manholes below the typical groundwater level are more likely to contain PCP in the wastewater. This indicates that PCP is first entering the groundwater and then entering the wastewater system.

Since PCP was not detected in the wastewater manholes located farthest to the north and west of the study area, it appears that contamination is not entering the system from these areas. It is instead occurring directly within the study area. Further narrowing down the area of influence or most likely possibilities for PCP I/I, it appears the north-south interceptor has I/I issues for groundwater containing PCP.

3.0 Improvement Recommendations

The results of the wastewater sampling and groundwater monitoring discussed in the previous section indicated that I/I is occurring in the study area. I/I occurs in almost all sewer systems, and especially in older systems or those that have been degraded by the type and volume of flow. In this case, repairs are recommended to prevent PCP from continuing to enter the sewer system.

3.1 Rehabilitation Options

Sanitary sewers can be replaced or rehabilitated by conventional open cut construction or different types of trenchless rehabilitation. The type of construction will depend on other aspects of the project. When the primary purpose of the project is to perform a complete pavement replacement, new sewers will likely be installed via open cut methods, since the road will already be demolished. This is especially true if the cost of the project is being shared between various funding sources, so that the sewer utility is not covering the entire cost of the project.

If pavement replacement is not planned, trenchless rehabilitation technologies may be a better option. These rehabilitation methods are long-term solutions that can be applied to many sewer defects, such as cracks and offset joints. Large breaks and cave-ins will likely require spot excavation and pipe section replacement.

In this case, significant environmental costs may be incurred if open cut methods are utilized. Contaminated soils may have to be removed from the site and remediated or disposed of. This type of determination, however, is outside the scope of this study.

The cost of trenchless rehabilitation varies depending on the size and length of sewer. Using sewer lining as an example, for a 12-inch sewer, the cost of lining is approximately \$60 per linear foot. For comparison, the cost of 12-inch sewer replacement is approximately \$220 per linear foot when it includes pavement restoration. With lining and other trenchless technologies, the construction cost per foot increases as pipe size increases and the total length of pipe to be rehabilitated decreases.

These sections of the interceptor sewers are subject to I/I but are likely not in need of full replacement. City staff have used Wausau's camera equipment to inspect some of the sewers in the area and found no major leaks or deficiencies. City staff has not indicated that there are immediate plans for road replacements in the study area. These conditions warrant the use of trenchless rehabilitation to reduce I/I and therefore PCP in the sewers. Rehabilitation will also increase the life of the pipe. Several methods of rehabilitation are available, including pipe bursting, slip lining, spray-in-place pipe, and cured-in-place pipe.

The table below outlines the advantages and disadvantages of different trenchless rehabilitation methods. Costs for each method were obtained from contractors with trenchless rehabilitation experience. They are based on rehabilitation of 36-inch pipe. The costs are associated with pipe-only rehabilitation and do not include incidental costs such as bypass pumping, traffic control, and erosion control. Cured-in-place pipe stands out as the most economical and least impactful to the project area.

Table 3-1
Comparison of Trenchless Sewer Rehabilitation Methods

METHOD	DESCRIPTION	COST (Pipe Only)	ADVANTAGES	DISADVANTAGES
PIPE BURSTING	New pipe pulled through a fragmented old pipe.	\$550-650/LF	Completely new pipe	Bypassing required, cannot pipe burst RCP, not recommended if host pipe is within 5 feet of other utilities, excavation required at each penetration/lateral
SLIP LINING	Smaller diameter, smoother, new pipe pushed inside of remaining old pipe.	\$250-350/LF	Can be done without bypassing, brand new pipe	Cost, excavation pit required for every 1000 feet, excavation required at each penetration/lateral
SPRAY-IN-PLACE PIPE	Geo-Polymer coating applied to the inside of the existing pipe.	\$400-500/LF	No excavation required, lining is structural after curing	Cost, all infiltration will require grouting prior to application, bypassing required
CURED-IN-PLACE PIPE	Inverted resin impregnated felt liner, inflated and cured to the inside of the existing pipe.	\$150-250/LF	Lower cost, no excavation required, liner is structural after curing	Bypassing required, long curing times requiring overnight engines, heavy infiltration requires grouting prior to lining

Source: Mequon-Thiensville Interceptor Rehab Memo, Clark Dietz, Inc., August 16, 2019

3.2 Cost Estimates

Wastewater sampling indicated that PCP enters the sewer system directly within the study area. Pipe rehabilitation is therefore recommended to start at the intersection of Thomas Street and First Avenue and continue to the treatment facility. The map in Appendix A shows the interceptor sewers in the study area, which includes approximately 4900 feet of pipe. The table below shows high-level preliminary planning cost estimates for the various types of pipe rehabilitation. Since the sewer varies in size from 18-inch to 36-inch, estimates at the lower end of the cost spectrum were used to calculate the total project cost.

Table 3-2
Trenchless Sewer Rehabilitation Methods
Estimates of Probable Cost

Item	Pipe Bursting	Slip Lining	Spray-in-Place Pipe	Cured-in-Place Pipe
Estimated cost per foot of rehabilitated sewer ¹	\$550	\$250	\$400	\$150
Preliminary cost estimate ²	\$2,695,000	\$1,225,000	\$1,960,000	\$735,000
20% construction contingency	\$539,000	\$245,000	\$392,000	\$147,000
Estimated construction cost	\$3,234,000	\$1,470,000	\$2,352,000	\$882,000
Legal, Engineering, and Design (10%)	\$323,400	\$147,000	\$235,200	\$88,200
Total Estimated Cost	\$3,557,400	\$1,617,000	\$2,587,200	\$970,200

¹ Based on Mequon-Thiensville Interceptor Rehab Memo, Clark Dietz, Inc., August 16, 2019.

² Based on 4,900 feet of sewer rehabilitation, 18-inch to 36-inch diameter.

The interceptor sewers are located under street pavement along most of their length. Open cut sewer replacement would require removal of the existing pavement and excavation of the existing sewer, necessitating a complete reconstruction of the affected streets. The cost of open cut sewer replacement and street reconstruction can be expected to be at least double the cost of CIPP lining. Potential hauling and remediation of the soils excavated from the project site will also increase the cost of open cut construction.

3.3 Recommendations

After considering the four trenchless pipe rehabilitation methods, cured-in-place pipe lining appears to be the best option for remediation of the sanitary sewer interceptor. CIPP lining has the lowest cost and will be the least intrusive to the project area. CIPP lining is a widely accepted process for pipe rehabilitation and there are several qualified contractors in Wisconsin with extensive CIPP installation experience.

Prior to beginning a CIPP remediation project, it will be necessary to determine and specify the thickness of the liner to be used in the interceptor. The condition and shape of the pipe as well as the type of curing resin to be used will affect the liner thickness. The contractor should be required to submit a cured liner sample to the City prior to starting the work.

Cured-in-place pipe lining requires all flow to be bypassed around the rehabilitated pipe while the liner cures. This is typically a 12- to 24-hour process. Past rehabilitation projects have shown that bypass pumping is an expensive operation for contractors and variability in bypassing costs is common. The rehabilitation contractor should be required to submit a bypass plan prior to starting construction, and City staff should offer options for disposal of the bypassed sewage.

4.0 Conclusion

Wastewater sampling and groundwater monitoring in the study area show that PCP is present in the interceptor sewer near the treatment facility. The interceptor sewer that appears to have the most significant I/I is the north to south interceptor. In the samples upstream of the study area, no PCP was detected. PCP was detected regularly in the downstream samples of the north to south interceptor. PCP is not normally present in sewage, indicating that it is entering the sewer system along the interceptor. It is likely that PCP is entering the system through groundwater infiltration.

4.1 Future Investigation

Further data about the interceptor sewer will be required in order to verify if groundwater is entering the sewer. The sewer should first be inspected by televising along the route where PCP has been detected. The inspection will show the sewer's problem areas, and whether groundwater I/I is actually occurring in the study area. The inspection will also help to verify the project limits. Plans can then be made for future repairs and upgrades. The inspection results should be reviewed soon after they are completed, as conditions can change quickly. Televising of the interceptor may show that lining is recommended at least along certain lengths of the sewers. If leaking joints and cracks are common, lining could potentially reduce I/I. The inspection will also show whether there are large breaks or significant defects that require spot excavations.

Manhole inspections should also be a part of the sewer televising contract. The manhole condition and potential problem areas will be noted in the inspection reports. Repairs, lining, and rehabilitation of manholes in poor condition should be combined into the sewer rehabilitation/lining work for the best bid pricing. Many lining contractors also perform manhole rehabilitation.

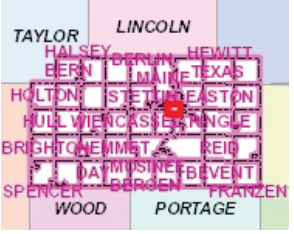
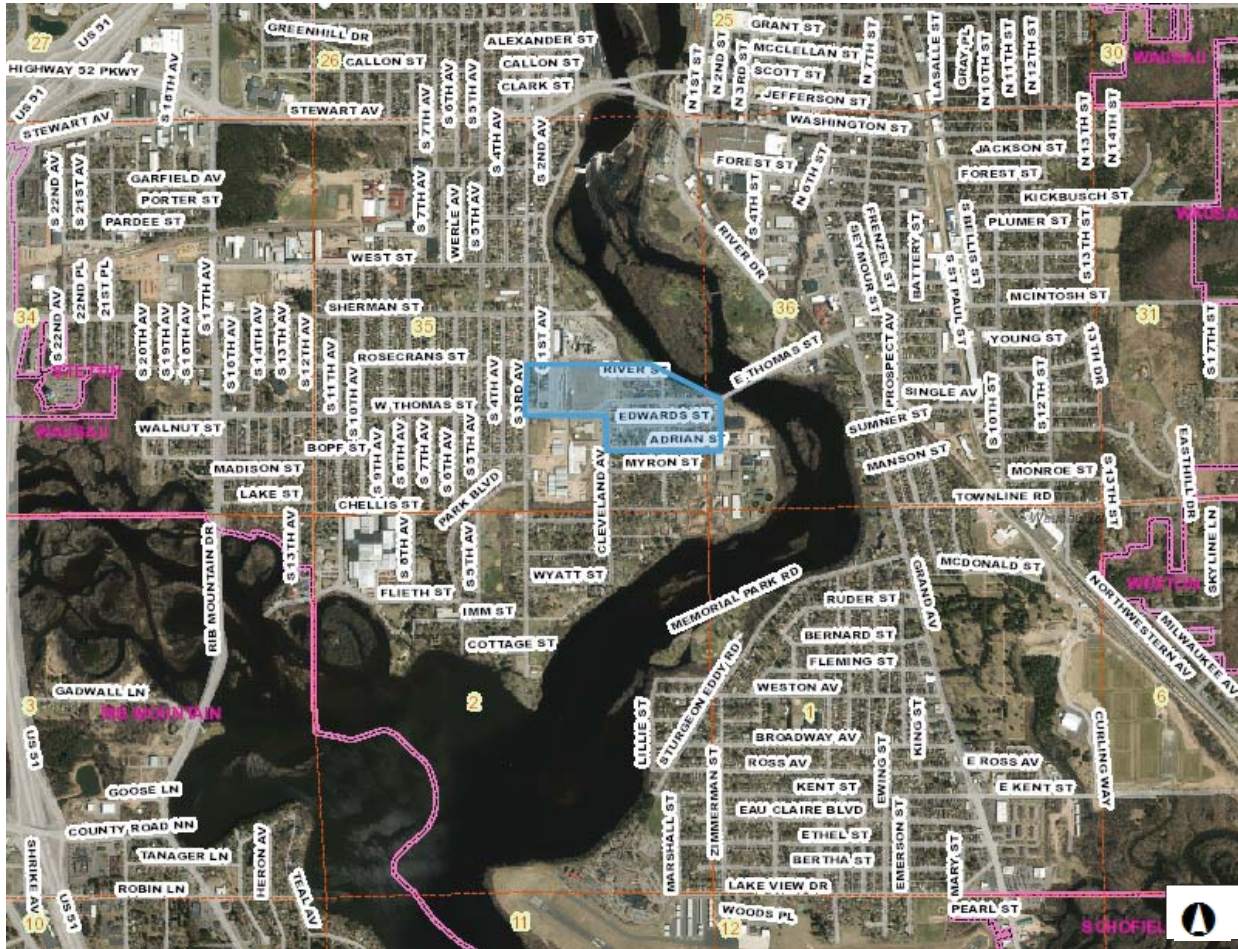
4.2 System Improvements

If the sewer and manhole investigations show that contaminated groundwater is entering the sewer system, plans should be made for system rehabilitation. The repairs can include the entire interceptor length as shown in Chapter 3, or only the worst areas of the system. The contract documents should include a map showing the sections to be rehabilitated and detailed specifications for the repair work.

Appendix A – Location Map



Land Information Mapping System



- ### Legend
- Section Lines/Numbers
 - Right Of Ways
 - Municipalities
 - 2015 Orthos
 - Red: Band_1
 - Green: Band_2
 - Blue: Band_3
 - Surrounding_Counties
 - CLARK
 - LANGLADE
 - LINCOLN
 - PORTAGE
 - SHAWANO
 - TAYLOR
 - WAUPACA
 - WOOD

992.57 0 992.57 Feet

NAD_1983_HARN_WISCRS_Marathon_County_Feet

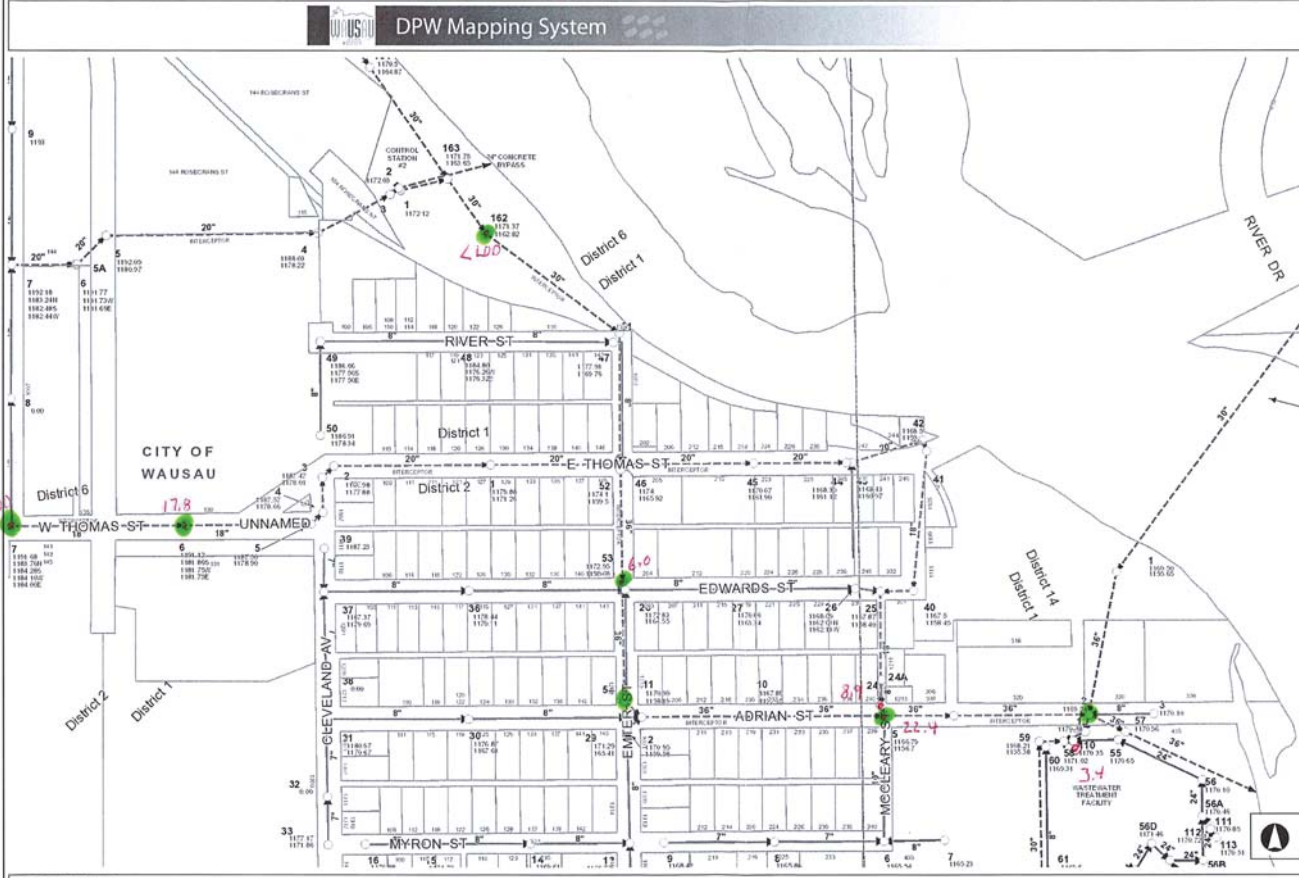
DISCLAIMER: The information and depictions herein are for informational purposes and Marathon County-City of Wausau specifically disclaims accuracy in this reproduction and specifically admonishes and advises that if specific and precise accuracy is required, the same should be determined by procurement of certified maps, surveys, plats, Flood Insurance Studies, or other official means. Marathon County-City of Wausau will not be responsible for any damages which result from third party use of the information and depictions herein or for use which ignores this warning. THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

Appendix B – Wastewater Sampling Locations



- Legend**
- Parcels
 - Section Lines/Numbers
 - Right Of Ways
 - Manhole
 - Gravity Main
 - Collector
 - Force Main
 - Liftstation
 - Abandoned Gravity Main



Map Created: 1/21/2019
111.42 0 111.42 Feet
NAD_1983_HARN_WISCONSIN_Marathon_County_Feet

DISCLAIMER: The information and depictions herein are for informational purposes and Marathon County-City of Wausau specifically disclaims accuracy in this reproduction and specifically administers and advises that if specific and precise accuracy is required, the same should be determined by procurement of certified maps, surveys, plat, Flood Insurance Studies, or other official means. Marathon County-City of Wausau will not be responsible for any damages which result from third party use of the information and depictions herein or for use which ignores this warning.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

Appendix C – Wastewater Sampling Results

WAUSAU WATER WORKS
407 GRANT STREET
WAUSAU, WI 54401

Project Number: 19001453
Report Date: 1/21/2019
Sampled By: CLIENT

Attn: DAVE ERICKSON/KEVIN FABEL

Samples: 7 WASTEWATER

Sample Number: 49003143
Sample ID: MH #7 THOMAS ST
Sample Date: 1/8/2019
Date Received: 1/8/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	<1.9	ug/l	1.9	6.03	1	8270C	01/15/19	7*

Sample Number: 49003144
Sample ID: MH #6 THOMAS ST
Sample Date: 1/8/2019
Date Received: 1/8/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	17.8	ug/l	1.9	6.03	1	8270C	01/15/19	7*

Sample Number: 49003145
Sample ID: MH #162
Sample Date: 1/8/2019
Date Received: 1/8/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	<1.9	ug/l	1.9	6.03	1	8270C	01/15/19	7*

Sample Number: 49003146
Sample ID: MH #53 EMTER ST
Sample Date: 1/8/2019
Date Received: 1/8/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	6.0	ug/l	1.9	6.03	1	8270C	01/15/19	7,J,K1*

Sample Number: 49003147
 Sample ID: MH #5 MCCLEARY
 Sample Date: 1/8/2019
 Date Received: 1/8/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	8.9	ug/l	1.9	6.03	1	8270C	01/15/19	7*

Sample Number: 49003148
 Sample ID: MH #5 ADRIAN ST
 Sample Date: 1/8/2019
 Date Received: 1/8/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	22.4	ug/l	1.9	6.03	1	8270C	01/15/19	7*

Sample Number: 49003149
 Sample ID: RAW INFLUENT
 Sample Date: 1/8/2019
 Date Received: 1/8/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	3.4	ug/l	1.9	6.03	1	8270C	01/15/19	7,J,K1*

***Quality Assurance Code(s):**

- 7. Analyzed by sub contracted lab: Certification #445037560
 - J. Insufficient sample size to complete analysis.
 - K1. Analyte detected between the LOD and LOQ.
- All LOD/LOQs adjusted for dilution and/or solids content.

BADGER LABORATORIES, INC.
 WDNR Certified Lab #445023150
 Approved By:

Amanda Vordus

BLE:gr
 CC: KEN BLOOM – WAUSAU WWTF

SAMPLE REQUEST & CHAIN OF CUSTODY FORM

CLIENT NAME / ADDRESS Wausau WWTF 435 Adrian Street, Wausau, WI 54401 BILLING ADDRESS / EMAIL 407 Grant Street, Wausau, WI 54403		TURN AROUND TIME STANDARD 10 DAY: ☒ RUSH (200% upcharge): ☐ DATE NEEDED: _____	
REPORT TO: Dave Erickson / Ken Bloom EMAIL: Ken.Bloom@ci.wausau.wi.us PHONE: 715-261-6940 PROJECT NAME / SITE: PCP Sampling - Collection System		MATRIX DW = DRINKING WATER WW = WASTEWATER GW = GROUNDWATER CW = COOLING WATER S = SOLID/SLUDGE P = PAPER F = FUEL OTHER: _____	



Neenah: 501 W. Bell St. Neenah, WI 54956
Green Bay: 2150 Memorial Drive Suite 106 Green Bay, WI 54303

Certifications
WI DNR Cert. Lab #445023150
WI DATCP Cert. #105-205
GB-WI DNR Cert. Lab #40522620
GB-WI DATCP Cert. #105-450

ANALYTICAL REQUESTS

SAMPLE ID	SAMPLE COLLECTION		PRESERVATIVE (SEE BELOW)	MATRIX (SEE ABOVE)	GRAB or COMPOSITE	LAB USE ONLY	
	DATE	TIME				PROJECT #	SAMPLE #
MH# 7 Thomas St.	1/8/19	8:25AM	NP	WW	Grab	1453	3143
MH# 6 Thomas St.	1/8/19	8:32AM	NP	WW	Grab		44
MH# Keel	1/8/19	7:55AM	NP	WW	Grab		41
MH# 53 Enter St.	1/8/19	7:40AM	NP	WW	Grab		46
MH# 5 McCleary	1/8/19	7:30AM	NP	WW	Grab		47
MH# 5 Adrian St.	1/8/19	7:30AM	NP	WW	Grab		48
Raw Influent	1/8/19	8:32AM	NP	WW	Grab		49
Raw Influent	1/8/19	8:52AM	NP	WW	Grab		L
Raw Influent	1/8/19	8:52AM	NP	WW	Grab		

PRESERVATIVE: NP=NO PRESERVATIVE; H2SO4=SULFURIC ACID; HNO3=NITRIC ACID; HCL=HYDROCHLORIC ACID; NaOH=SODIUM HYDROXIDE; ZA=ZINC ACETATE

CHAIN OF CUSTODY RECORD

FILLED IN BY CLIENT SAMPLED BY: Ken Bloom		FILLED IN BY BADGER LABS RECEIVED BY: JT		ADDITIONAL COMMENTS:
DATE/TIME SAMPLED: 1-8-19 7:30AM - 9:00AM		DATE/TIME RECEIVED: 1/8/19 10:20		
RELINQUISHED BY: Ken Bloom		LOGGED IN: SSD		
DELIVERY METHOD: Badger Lab Pick-up		ICE?: Y/N:		

19001453

WAUSAU WATER WORKS
407 GRANT STREET
WAUSAU, WI 54401

Project Number: 19004457
Report Date: 4/12/2019
Sampled By: CLIENT

Attn: DAVE ERICKSON/KEVIN FABEL/KEN BLOOM

Samples: 8 WASTEWATER

Sample Number: 49009609
Sample ID: MH #2 ADRAIN ST
Sample Date: 3/26/2019
Date Received: 3/26/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	- SEE ATTACHED SYNERGY REPORT REPORT -							7*

Sample Number: 49009610
Sample ID: MH #13
Sample Date: 3/26/2019
Date Received: 3/26/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	- SEE ATTACHED SYNERGY REPORT -							7*

Sample Number: 49009611
Sample ID: MH #53
Sample Date: 3/26/2019
Date Received: 3/26/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	- SEE ATTACHED SYNERGY REPORT -							7*

Sample Number: 49009612
Sample ID: MH #54
Sample Date: 3/26/2019
Date Received: 3/26/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	- SEE ATTACHED SYNERGY REPORT -							7*

Sample Number: 49009613
Sample ID: MH #11
Sample Date: 3/26/2019
Date Received: 3/26/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	- SEE ATTACHED SYNERGY REPORT -							7*

Sample Number: 49009614
Sample ID: MH #6
Sample Date: 3/26/2019
Date Received: 3/26/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	- SEE ATTACHED SYNERGY REPORT -							7*

Sample Number: 49009615
Sample ID: MH #5 NORTH CLEARY
Sample Date: 3/26/2019
Date Received: 3/26/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	- SEE ATTACHED SYNERGY REPORT -							7*

Sample Number: 49009616
Sample ID: MH #5 WEST ADRIAN
Sample Date: 3/26/2019
Date Received: 3/26/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	- SEE ATTACHED SYNERGY REPORT -							7*

*Quality Assurance Code(s):

7. Analyzed by sub contracted lab: Certification #445037560

All LOD/LOQs adjusted for dilution and/or solids content.

BADGER LABORATORIES, INC.
WDNR Certified Lab #445023150
Approved By:



BLE:gr

Synergy Environmental Lab, INC

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

JOHN LARSON
BADGER LABORATORIES & ENGINEERING
501 W BELL STREET
NEENAH WI 54956

Report Date 11-Apr-19

Project Name
Project #

Invoice # E35935

Lab Code 5035935A
Sample ID 9609
Sample Matrix Water
Sample Date 3/26/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
Semi Volatiles										
Pentachlorophenol (PCP)	22.9	ug/l	1.84	5.85	1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorobiphenyl-surrogate	85	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorophenol-surrogate	24.1	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Nitrobenzene-d5-surrogate	79	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Phenol-d6-surrogate	19.7	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
p-Terphenyl-d14-surrogate	99	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2,4,6-Tribromophenol-surrogate	98	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1

Lab Code 5035935B
Sample ID 9610
Sample Matrix Water
Sample Date 3/26/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
Semi Volatiles										
Pentachlorophenol (PCP)	< 1.84	ug/l	1.84	5.85	1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorobiphenyl-surrogate	22.7	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorophenol-surrogate	11.1	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Nitrobenzene-d5-surrogate	21.4	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Phenol-d6-surrogate	8.6	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
p-Terphenyl-d14-surrogate	22.4	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2,4,6-Tribromophenol-surrogate	24.4	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1

Project Name
Project #

Invoice # E35935

Lab Code 5035935C
Sample ID 9611
Sample Matrix Water
Sample Date 3/26/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
Semi Volatiles										
Pentachlorophenol (PCP)	21.7	ug/l	1.84	5.85	1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorobiphenyl-surrogate	76	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorophenol-surrogate	23.3	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Nitrobenzene-d5-surrogate	68	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Phenol-d6-surrogate	16.1	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
p-Terphenyl-d14-surrogate	78	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2,4,6-Tribromophenol-surrogate	86	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1

Lab Code 5035935D
Sample ID 9612
Sample Matrix Water
Sample Date 3/26/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
Semi Volatiles										
Pentachlorophenol (PCP)	19.3	ug/l	1.84	5.85	1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorobiphenyl-surrogate	71	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorophenol-surrogate	18.7	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Nitrobenzene-d5-surrogate	64	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Phenol-d6-surrogate	12.9	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
p-Terphenyl-d14-surrogate	69	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2,4,6-Tribromophenol-surrogate	81	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1

Lab Code 5035935E
Sample ID 9613
Sample Matrix Water
Sample Date 3/26/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
Semi Volatiles										
Pentachlorophenol (PCP)	20.9	ug/l	1.84	5.85	1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorobiphenyl-surrogate	79	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorophenol-surrogate	20.6	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Nitrobenzene-d5-surrogate	72	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Phenol-d6-surrogate	< 1	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
p-Terphenyl-d14-surrogate	72	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2,4,6-Tribromophenol-surrogate	90	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1

Project Name
Project #

Invoice # E35935

Lab Code 5035935F
Sample ID 9614
Sample Matrix Water
Sample Date 3/26/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
Semi Volatiles										
Pentachlorophenol (PCP)	< 1.84	ug/l	1.84	5.85	1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorobiphenyl-surrogate	85	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorophenol-surrogate	29.2	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Nitrobenzene-d5-surrogate	79	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Phenol-d6-surrogate	17.6	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
p-Terphenyl-d14-surrogate	84	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2,4,6-Tribromophenol-surrogate	97	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1

Lab Code 5035935G
Sample ID 9615
Sample Matrix Water
Sample Date 3/26/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
Semi Volatiles										
Pentachlorophenol (PCP)	< 1.84	ug/l	1.84	5.85	1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorobiphenyl-surrogate	81	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorophenol-surrogate	28.1	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Nitrobenzene-d5-surrogate	71	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Phenol-d6-surrogate	18.8	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
p-Terphenyl-d14-surrogate	85	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2,4,6-Tribromophenol-surrogate	96	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1

Lab Code 5035935H
Sample ID 9616
Sample Matrix Water
Sample Date 3/26/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
Semi Volatiles										
Pentachlorophenol (PCP)	29.3	ug/l	1.84	5.85	1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorobiphenyl-surrogate	74	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2-Fluorophenol-surrogate	24.7	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Nitrobenzene-d5-surrogate	66	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
Phenol-d6-surrogate	16.2	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
p-Terphenyl-d14-surrogate	75	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1
2,4,6-Tribromophenol-surrogate	87	REC %			1	8270C	3/28/2019	4/4/2019	MJR	1

Project Name
Project #

Invoice # E35935

"J" Flag: Analyte detected between LOD and LOQ

LOD Limit of Detection

LOQ Limit of Quantitation

Code

Comment

1

Laboratory QC within limits.

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature



CHAIN OF CUSTODY RECORD

Synergy

Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # No 3275

Page ___ of ___

Lab I.D. #	Quote No.:
Account No.:	
Project #:	
Sampler: (signature)	

Sample Handling Request
Rush Analysis Date Required _____
(Rushes accepted only with prior authorization)
☒ Normal Turn Around

Project (Name / Location):		Analysis Requested					Other Analysis																		
Lab I.D.	Sample I.D.	Collection Date	Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 524.2)	VOC (EPA 8260)	8-PCRA METALS	Pesticide/Phenol	PID/ FID
5035151	9609	3-16					1	WW	NP																
	10						3																		
	11						1																		
	12						1																		
	13						1																		
	14						1																		
	15						1																		
	16						1																		

Comments/Special Instructions ("Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Sample Integrity - To be completed by receiving lab
Method of Shipment: Overnight
Temp. of Temp. Blank: _____ °C On Ice: X
Cooler seal intact upon receipt: X Yes ___ No ___

Relinquished By: (sign) ALA Date 3/26/96 Time 1500
Received By: (sign) _____ Date: 3/27/96 Time: 1130
Received in Laboratory By: CIR

SAMPLE REQUEST & CHAIN OF CUSTODY FORM

CLIENT NAME / ADDRESS Wausau WWTF 435 Adrian St. Wausau, WI 54401		TURN AROUND TIME STANDARD 10 DAY: ☒ RUSH (200% upcharge): ☐	
BILLING ADDRESS/ EMAIL 407 Grant Street, Wausau, WI 54403		DATE NEEDED: _____	
REPORT TO: Dave Erickson / Ken Bloom	PO NUMBER:	MATRIX DW = DRINKING WATER WW = WASTEWATER GW = GROUNDWATER CW = COOLING WATER S = SOLID/SLUDGE P = PAPER F = FUEL OTHER: _____	
EMAIL: Ken.Bloom@ci.wausau.wi.us	FAX:		
PHONE: 715-261-6940			
PROJECT NAME/ SITE: PCP Sampling - Collection System			



Neenah: 501 W. Bell St. Neenah, WI 54956
Green Bay: 2150 Memorial Drive Suite 106 Green Bay, WI 54303

19004257

ANALYTICAL REQUESTS

SAMPLE ID	SAMPLE COLLECTION		PRESERVATIVE (SEE BELOW)	MATRIX (SEE ABOVE)	GRAB or COMPOSITE	LAB USE ONLY	
	DATE	TIME				PROJECT #	SAMPLE #
MH #2 Adrian St.	3/26/19	8:26AM	NP	WW	Grab	4457	9609
MH #13	3/26/19	8:38AM	NP	WW	Grab		10
MH #53	3/26/19	8:59AM	NP	WW	Grab		11
MH #53	3/26/19	8:59AM	NP	WW	Grab		1
MH #53	3/26/19	8:59AM	NP	WW	Grab		
MH #54	3/26/19	9:17AM	NP	WW	Grab		9612
MH #11	3/26/19	9:21AM	NP	WW	Grab		13
MH #6	3/26/19	9:33AM	NP	WW	Grab		14
MH #5 (North-McCleary)	3/26/19	9:47AM	NP	WW	Grab		15
MH #5 (West-Adrian)	3/26/19	9:50AM	NP	WW	Grab		16

Certifications

WI DNR Cert. Lab #445023150
WI DATCP Cert. #105-205
GB-WI DNR Cert. Lab #405222620
GB-WI DATCP Cert. #105-450

PRESERVATIVE: NP=NO PRESERVATIVE; H2SO4=SULFURIC ACID; HNO3=NITRIC ACID; HCL=HYDROCHLORIC ACID; NAOH=SODIUM HYDROXIDE; ZA=ZINC ACETATE

CHAIN OF CUSTODY RECORD

FILLED IN BY CLIENT: SAMPLED BY: Ken Bloom	FILLED IN BY BADGER LABS RECEIVED BY: JT	ADDITIONAL COMMENTS:
DATE/TIME SAMPLED: 3-26-19 8:26AM - 9:50AM	DATE/TIME RECEIVED: 3/26/19 11:50	
RELINQUISHED BY: Ken Bloom	LOGGED IN:	
DELIVERY METHOD: Badger Lab Pick-Up	ICE?: Y/N:	

WAUSAU WATER WORKS
407 GRANT STREET
WAUSAU, WI 54401Project Number: 19007842
Report Date: 6/25/2019
Sampled By: CLIENT

Attn: DAVE ERICKSON/KEVIN FABEL/KEN BLOOM

Samples: 2 WASTEWATER

Sample Number: 49016919
Sample ID: MANHOLE #52
Sample Date: 6/10/2019
Date Received: 6/11/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	SEE ATTACHED SYNERGY LAB REPORT							

Sample Number: 49016920
Sample ID: MANHOLE #53
Sample Date: 6/10/2019
Date Received: 6/11/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	SEE ATTACHED SYNERGY LAB REPORT							

All LOD/LOQs adjusted for dilution and/or solids content.

BADGER LABORATORIES, INC.
WDNR Certified Lab #445023150
Approved By:

BLE:gr

WAUSAU WATER WORKS
407 GRANT STREET
WAUSAU, WI 54401Project Number: 19007967
Report Date: 6/25/2019
Sampled By: CLIENT

Attn: DAVE ERICKSON, KEVIN FABEL, KEN BLOOM

Samples: 1

Sample Number: 49017233
Sample ID: MANHOLE #51
Sample Date: 6/12/2019
Date Received: 6/13/2019

Parameter	Results	Units	LOD	LOQ	Dil.	Method	Analyzed	Codes
PENTACHLOROPHENOL	SEE ATTACHED SYNERGY LAB REPORT							

All LOD/LOQs adjusted for dilution and/or solids content.

BADGER LABORATORIES, INC.
WDNR Certified Lab #445023150
Approved By:

BLE:gr

Synergy Environmental Lab, INC

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

JOHN LARSON
BADGER LABORATORIES & ENGINEERING
501 W BELL STREET
NEENAH WI 54956

Report Date 21-Jun-19

Project Name
Project #

Invoice # E36334

Lab Code 5036334A
Sample ID 16919
Sample Matrix Water
Sample Date 6/10/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
Semi Volatiles										
Pentachlorophenol (PCP)	11.6	ug/l	1.84	5.85	1	8270C	6/17/2019	6/17/2019	MJR	1
2-Fluorobiphenyl-surrogate	62	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
2-Fluorophenol-surrogate	20	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
Nitrobenzene-d5-surrogate	57	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
Phenol-d6-surrogate	11.5	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
p-Terphenyl-d14-surrogate	79	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
2,4,6-Tribromophenol-surrogate	79	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1

Lab Code 5036334B
Sample ID 16920
Sample Matrix Water
Sample Date 6/10/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
Semi Volatiles										
Pentachlorophenol (PCP)	11.8	ug/l	1.84	5.85	1	8270C	6/17/2019	6/17/2019	MJR	1
2-Fluorobiphenyl-surrogate	66	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
2-Fluorophenol-surrogate	23	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
Nitrobenzene-d5-surrogate	59	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
Phenol-d6-surrogate	13.6	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
p-Terphenyl-d14-surrogate	79	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
2,4,6-Tribromophenol-surrogate	87	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1

Project Name
Project #

Invoice # E36334

Lab Code 5036334C
Sample ID 17233
Sample Matrix Water
Sample Date 6/12/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
Semi Volatiles										
Pentachlorophenol (PCP)	< 1.84	ug/l	1.84	5.85	1	8270C	6/17/2019	6/17/2019	MJR	1
2-Fluorobiphenyl-surrogate	60	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
2-Fluorophenol-surrogate	18	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
Nitrobenzene-d5-surrogate	52	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
Phenol-d6-surrogate	8.8	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
p-Terphenyl-d14-surrogate	85	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1
2,4,6-Tribromophenol-surrogate	88	REC %			1	8270C	6/17/2019	6/17/2019	MJR	1

"J" Flag: Analyte detected between LOD and LOQ

LOD Limit of Detection

LOQ Limit of Quantitation

Code *Comment*

1 Laboratory QC within limits.

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature



CHAIN OF CUSTODY RECORD

Synergy**Environmental Lab, Inc.**1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # No 327

Page 1 of 1

Sample Handling RequestRush Analysis Date Required _____
(Rushes accepted only with prior authorization)

Normal Turn Around

Account No.:

Quote No.:

Project #:

Sampler: (signature)

Project (Name / Location):

Reports To:

Invoice To:

Company

Company

Address

Address

City State Zip

City State Zip

Phone

Phone

FAX

FAX

Analysis Requested**Other Analysis**

Sample I.D.	Collection Date	Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)	Preservation
16919	6/10				2	3	ww	np
16920	6/11				1	1	1	1
17233	6/12							

DRO (Mod DRO Sep 95)

GRO (Mod GRO Sep 95)

LEAD

NITRATE/NITRATE

OIL & GREASE

PAH (EPA 8270)

PCB

PVC (EPA 8021)

PVC + NAPHTHALENE

SULFATE

TOTAL SUSPENDED SOLIDS

VOC DW (EPA 524.2)

VOC (EPA 8260)

8-RCRA METALS

1-6 Butanol

PID/FID

Comments/Special Instructions ("Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Relinquished By: (sign)

Time 17w

Date 6/13/92

Received By: (sign)

Time

Date

Received in Laboratory By:

Time: 9:20

Date: 6/14/92

BADGER LABS

Neenah: 501 W. Bell St. Neenah, WI 54956
Green Bay: 2150 Memorial Drive Suite 106 Green Bay, WI 54303

Certifications

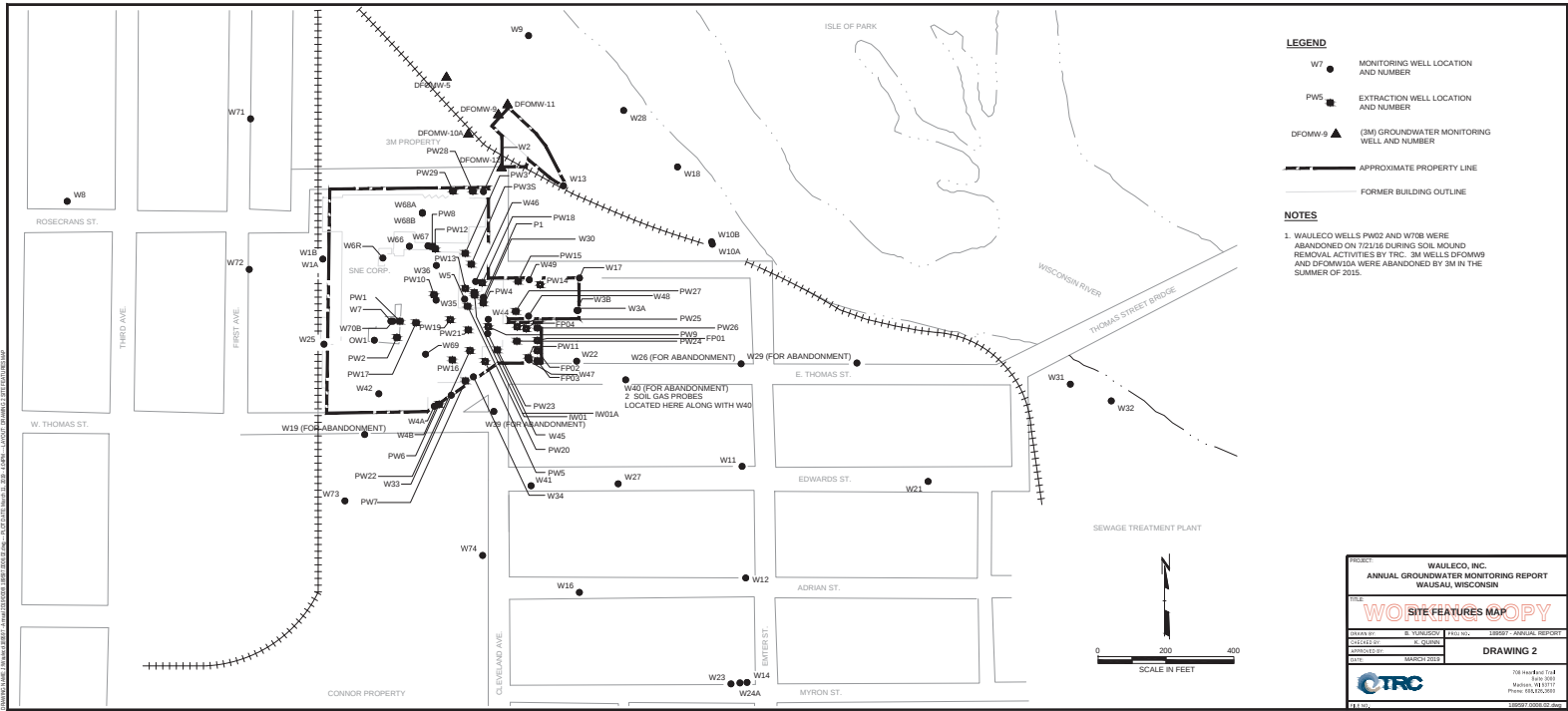
WI DNR Cert. Lab #445023150
WI DATCP Cert. #105-205
GB-WI DNR Cert. Lab #405222620
GB-WI DATCP Cert. #105-450

ANALYTICAL REQUESTS

[illegible]

CHAIN OF CUSTODY RECORD		ADDITIONAL COMMENTS:
FILLED IN BY CLIENT SAMPLED BY: <i>Ken Bloom</i>	FILLED IN BY BADGER LABS RECEIVED BY:	
DATE/TIME SAMPLED: <i>6/12/19 12:27 PM</i>	DATE/TIME RECEIVED: <i>6-13-19</i>	
RELINQUISHED BY: <i>Ken Bloom</i>	LOGGED IN:	
DELIVERY METHOD: <i>Pick-Up</i>	ICE?: Y/N:	

Appendix D – Locations of Monitoring Wells



LEGEND

- W7 ● MONITORING WELL LOCATION AND NUMBER
- PW5 ● EXTRACTION WELL LOCATION AND NUMBER
- DFO MW 9 ▲ (3M) GROUNDWATER MONITORING WELL AND NUMBER
- APPROXIMATE PROPERTY LINE
- FORMER BUILDING OUTLINE

NOTES

1. WALLECO WELLS PW02 AND W708 WERE ABANDONED ON 7/22/18 DURING SOIL MOUND REMOVAL ACTIVITIES BY TRC. 3M WELLS DFO MW9 AND DFO MW10A WERE ABANDONED BY 3M IN THE SUMMER OF 2015.

PROJECT: WALLECO, INC. ANNUAL GROUNDWATER MONITORING REPORT WAUSAU, WISCONSIN	
TITLE: WORKING COPY SITE FEATURES MAP	
DRAWN BY: E. TUREKOWSKI	FILE NO.: 150077 ANNUAL REPORT
CHECKED BY: K. SCHULZ	
APPROVED BY:	DRAWING 2
DATE: MAR 2018	
708 Highland Trail Box 903 Wausau, WI 54981 Phone: 715.835.5001 FAX: 715.835.5002	

Appendix E – Recorded Groundwater Levels

10 Years of Groundwater Elevation Data in Area of Thomas Street
Wauleco Project Site
7/2/2019

Date	Monitoring Well								
	W10A	W11	W12	W18	W21	W26	W29	W31	W40
1/20/09	1160.84	1160.66	1160.38	1160.74	1160.63	1160.84	1160.72	1160.76	1160.75
4/24/09	1160.95	1160.87	1160.57	1160.87	1160.76	1160.95	1160.80	1160.79	1160.74
7/28/09	1160.82	1160.70	1160.40	1160.73	1160.63	1160.85	1160.68	1160.72	1160.44
10/20/09	1160.71	1160.70	1160.43	1160.74	1160.65	1160.69	1160.68	1160.73	1160.57
11/18/09									1161.41
12/17/09									1161.32
1/13/10	1160.83	1160.75	1160.46	1160.88	1160.67	1160.77	1160.75	1160.80	1161.17
4/22/10	1160.79	1160.76	1160.50	1160.80	1160.67	1160.76	1160.71	1160.75	1161.18
7/12/10	1161.01	1160.92	1160.61	1160.99	1160.73	1160.94	1160.79	1160.77	1162.07
10/8/10	1161.43	1161.43	1161.00	1161.07	1160.93	1161.34	1160.94	1160.76	1163.12
1/12/11	1161.06	1160.90	1160.53	1161.13	1160.78	1160.97	1160.89	1160.92	1161.44
2/24/11									
3/15/11	1161.11		1160.56	1161.13		1161.01			1162.30
4/5/11	1161.49	1161.42	1161.01	1161.39	1161.17	1161.39	1161.20	1161.08	1163.15
5/26/11	1161.57		1161.00	1161.32		1161.45			1164.59
6/23/11									
7/26/11	1161.01	1161.12	1160.74	1161.07	1160.77	1161.07	1160.79	1160.76	1162.41
8/31/11	1161.06	1161.02	1160.65	1161.01		1161.01			1162.23
9/28/11	1161.09	1161.08	1160.73	1161.13		1161.07			1162.63
10/24/11	1160.92	1160.92	1160.60	1160.94	1160.77	1160.92	1160.80	1160.79	1161.45
11/21/11	1160.77	1160.79	1160.49	1160.83		1160.80			1161.12
12/19/11	1160.80	1160.82	1160.52	1160.85		1160.83			1161.00
1/16/12	1160.77	1160.75	1160.45	1160.80	1160.67	1160.78	1160.72	1160.74	1160.85
2/16/12	1160.72	1160.70	1160.41	1160.79		1160.73			1160.68
3/15/12	1161.73	1161.29	1160.93	1162.18		1161.33			1160.97
4/27/12	1160.85	1160.85	1160.55	1160.87	1160.74	1160.84	1160.77	1160.79	1161.02
5/24/12	1160.83	1160.83	1160.52	1160.83		1160.83			1161.24
6/19/12	1161.11	1160.96	1160.65	1161.38		1160.97			1161.24
7/24/12	1160.91	1160.85	1160.55	1160.99	1160.76	1160.88	1160.81	1160.82	1161.32
8/17/12	1160.91	1160.84	1160.54	1160.98		1160.88			1161.15
9/25/12	1160.87	1160.81	1160.50	1160.98		1160.86			1160.96
10/17/12	1160.85	1160.88	1160.58	1160.93	1160.83	1160.90	1160.97	1160.85	1160.91
11/15/12	1160.94	1160.95	1160.65	1160.94		1160.95			1161.29
12/18/12	1160.85	1160.85	1160.58	1160.89		1160.86			1161.05
1/15/13	1160.77	1160.78	1160.53	1160.79	1160.73	1160.79	1160.75	1160.76	1160.82
2/25/13	1160.75		1160.47	1160.83		1160.76			1160.63
3/29/13	1160.80		1160.54	1160.92		1160.79			
4/24/13	1162.17	1161.80	1161.36	1162.47	1161.72	1161.81	1162.08	1161.87	1162.32
5/21/13	1161.34		1160.96	1161.18		1161.27			1162.20
6/13/13	1161.63	1161.54	1161.14	1161.38		1161.53			1162.48
7/15/13	1161.29	1161.23	1160.86	1161.18	1160.95	1161.24	1160.96	1160.84	1162.37
8/27/13	1161.01		1160.65	1161.08		1160.99			1161.39
9/20/13	1160.92		1160.58	1160.98		1160.90			1161.27
10/22/13	1160.99	1160.94	1160.63	1161.01	1160.83	1160.95	1160.84	1160.82	1161.49
11/19/13	1160.95		1160.62	1160.92		1160.94			1161.37
12/19/13	1160.93		1160.57	1161.02		1160.90			1161.21
1/20/14	1160.93	1160.86	1160.59	1160.98	1160.75	1160.88	1160.83	1160.85	1161.13

Date	Monitoring Well								
	W10A	W11	W12	W18	W21	W26	W29	W31	W40
2/18/14	1160.93		1160.59	1160.99		1160.89			1161.09
3/20/14	1160.99		1160.66	1161.09		1160.97			1161.12
4/25/14	1162.00	1161.68	1161.19	1162.04	1161.49	1161.69	1161.64	1161.60	1162.38
5/21/14	1161.90		1161.13	1161.87		1161.66			1162.68
6/19/14	1161.22		1160.76	1161.10		1161.14			1162.29
7/17/14	1161.08	1161.03	1160.66	1161.05	1160.83	1161.08	1160.87	1160.82	1161.97
8/15/14	1160.91		1160.53	1160.95		1160.89			1161.51
9/25/14	1161.32		1160.86	1161.16		1161.28			1162.67
10/20/14	1161.42	1161.36	1160.98	1161.33	1161.07	1161.33	1161.11	1160.99	1162.46
11/25/14	1161.67		1160.83	1162.09		1161.32			1161.87
12/22/14	1161.66		1160.96	1161.68		1161.48			1162.05
1/21/15	1161.55	1161.26	1160.81	1161.61	1161.19	1161.36	1161.32	1161.32	1161.83
4/27/15	1161.16	1161.13	1160.76	1161.07	1160.96	1161.14	1160.99	1160.94	1161.65
7/14/15	1161.14	1161.09	1160.72	1161.14	1160.95	1161.11	1160.98	1160.91	1161.93
10/30/15	1160.97	1160.93	1160.61	1161.07	1160.89	1160.96	1160.93	1160.94	1161.25
1/25/16	1161.34	1161.15	1160.75	1161.43	1161.08	1161.21	1161.13	1161.15	1161.79
4/26/16	1161.70	1161.39	1160.94	1162.01	1161.27	1161.45	1161.49	1161.59	1162.33
7/19/16	1160.98	1160.94	1160.58	1160.98	1160.78	1160.98	1160.81	1160.79	1161.63
9/8/16		1161.07	1160.70		1161.06				
9/27/16		1160.90	1160.60		1160.52				
9/30/16									
10/3/16									
10/6/16									
10/10/16									
10/14/16									
10/17/16									
10/21/16									
10/25/16									
10/28/16									
11/1/16									
11/4/16									
11/7/16									
11/10/16									
11/14/16									
11/18/16									
11/21/16									
11/23/16									
11/28/16									
12/2/16	1161.00	1160.50	1160.14		1160.86		1161.01		
12/5/16	1160.95	1160.64	1160.26		1160.81		1160.92		
12/9/16	1160.90	1160.67	1160.30		1160.80		1160.89		
12/20/16	1161.19	1160.81	1160.40		1160.98		1161.14		
1/9/17	1161.23	1160.83	1160.43	1161.47	1160.93	1161.11	1161.12	1161.28	1160.95
4/24/17	1162.38	1161.93	1161.30	1162.19	1161.66	1161.96	1161.80	1161.63	1162.74
7/7/17	1161.46	1161.36	1160.91	1161.36	1161.12	1161.49	1161.13	1161.04	1162.57
10/12/17	1161.15	1161.12	1160.73	1161.22	1160.99	1161.15	1161.03	1160.98	1161.63
1/8/18	1161.25	1161.05	1160.65	1161.41	1161.04	1161.14	1161.17	1161.22	1161.18
4/20/18	1161.35	1161.27	1160.86	1161.46	1161.26	1161.32	1161.32	1161.32	1161.34
7/9/18	1161.23	1161.15	1160.71	1161.21	1160.95	1161.27	1160.99	1160.99	1161.67
10/18/18	1161.90	1161.81	1161.30	1161.79	1161.42	1161.81	1161.46	1161.32	1163.22
1/4/19	1161.34	1161.23	1160.84	1161.31	1161.10	1161.27	1161.16	1161.12	1161.75

Date	Monitoring Well								
	W10A	W11	W12	W18	W21	W26	W29	W31	W40
4/24/19	1163.52	1162.66	1161.92	1163.51	1162.36			1162.62	
5/10/19	1162.51	1162.06	1161.49	1162.77	1161.81			1162.05	
Average	1161.20	1161.08	1160.71	1161.24	1160.99	1161.10	1161.02	1161.06	1161.66
Low	1160.71	1160.50	1160.14	1160.73	1160.52	1160.69	1160.68	1160.72	1160.44
High	1163.52	1162.66	1161.92	1163.51	1162.36	1161.96	1162.08	1162.62	1164.59

Notes:

¹ Test results from 6/23/2011 were removed. Results were abnormally high due to water main break.

² Test results from 9/30/16 - 11/28/16 were removed. Results were abnormally low due to lowering of Lake Wausau.

Appendix F – Detected PCP in Manholes



- Legend**
- Parcels
 - Section Lines/Numbers
 - Right Of Ways
 - Manhole
 - Gravity Main
 - Force Main
 - ⬆ Lift Station
 - - - Abandoned Gravity Main
 - Railroad

Map Created: 5/8/2019
100.00 0 100.00 Feet

NAD_1983_HARN_WSCRS_Marathon_County_Feet

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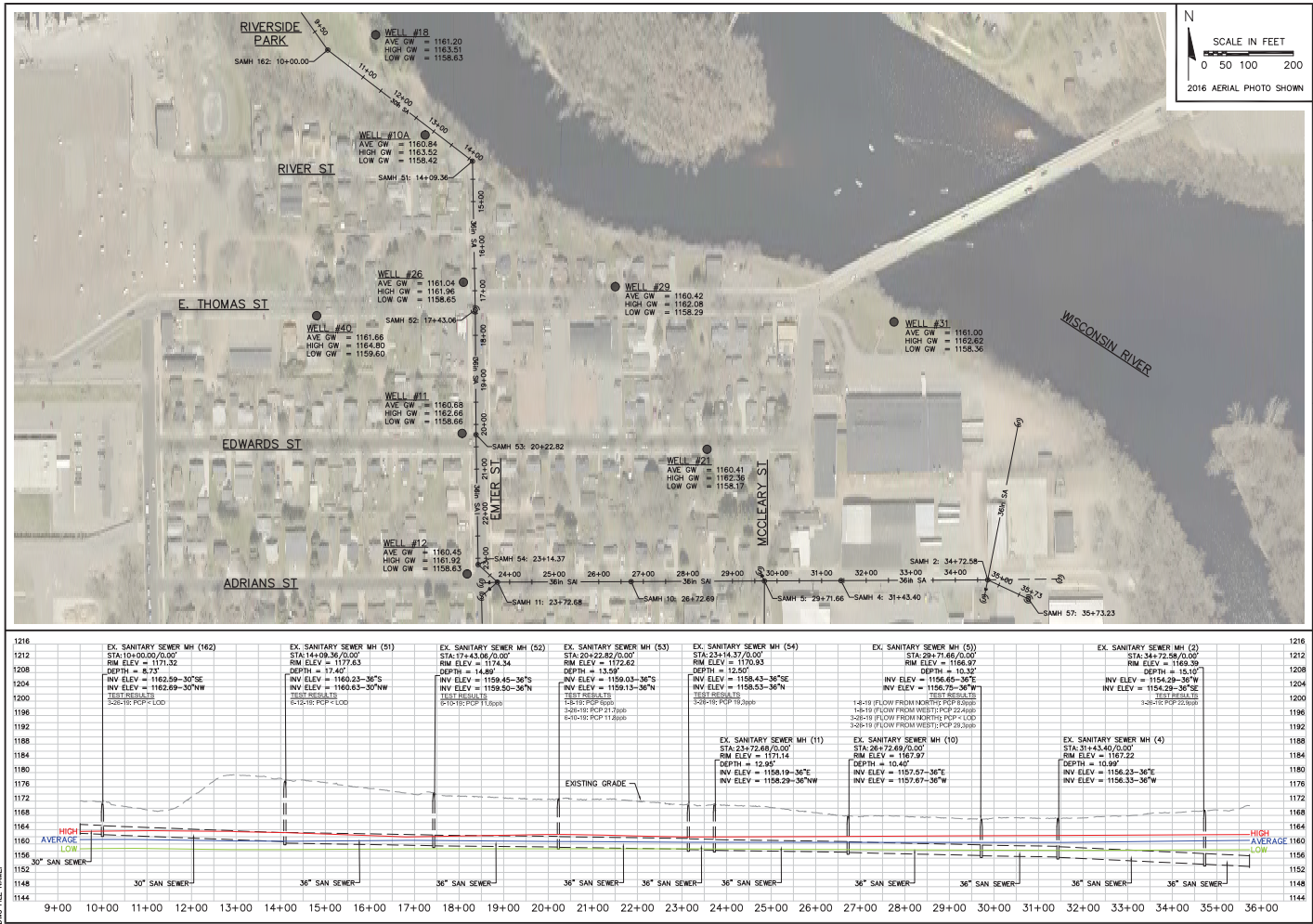
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THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

Appendix G – Groundwater Elevation in Study Area

C:\Engineering\DWG\PROJECTS\19-08-29\19-08-29-01\19-08-29-01.dwg, 8/22/2019 8:57:53 AM, City of Wausau - Engineering Department, Plotted by: J.D. VanDoren



CITY OF WAUSAU Engineering Department For design engineer: J.D. VAN DOREN For design engineer: J.D. VAN DOREN For design engineer: J.D. VAN DOREN For design engineer: J.D. VAN DOREN	
DESIGNED BY: J.D. VAN DOREN	APPROVED BY: J.D. VAN DOREN
DATE: 07/29/2019	DATE: 07/29/2019
ISSUED FOR: PRELIMINARY	ISSUED FOR: PRELIMINARY
REVIEW/REVISION: 1	REVIEW/REVISION: 1
REC. SET. ENG.	REC. SET. ENG.
OFFICE USE	OFFICE USE
GROUNDWATER ELEVATIONS RIVERSIDE PARK TO WWP INTERCEPTOR SEWER PLAN AND PROFILE	
SHEET NO. 1	OF 1 SHEETS
FILE NUMBER	19-08-29

Clark Dietz, Inc.
500 North 3rd Street, Suite 703
Wausau, WI 54403

p 715.845.1333

clarkdietz.com

Clark>Dietz

Engineering Quality of Life™

Eric Lindman

From: Charles.Ahrens@ghd.com
Sent: Monday, January 13, 2020 4:27 PM
To: Eric Lindman; Kevin Fabel; Stephen M. Opatik
Subject: Call with EPA regarding CW-3

Gentlemen,

I had a call this morning with EPA (Sheri Bianchin) and DNR (Matt Thompson) regarding the proposed changes to CW-3 treatment. They appreciated the letter and believed that it may be possible to make the revisions to the remedy under the provisions of the existing Consent Order, meaning that there appears to be language in the existing CO that allows for modifications to the remedy. Sheri will require a report that provides data and documentation that backs up some of the data that were summarized in the letter, but she asked that we hold off on that until she's had a chance to take the proposal to her managers, lawyers, and technical folks. Our next call is scheduled for February 3 and she should be able to provide more direction at that time.

Sheri is currently focused on the 5-Year Review Report that she is preparing to submit within the next few weeks. So I don't expect to hear back from her until February. I asked her when she would be ready to have a call with the City and she didn't want to commit to anything until she had talked with her managers, etc. She requested that we contact the DNR's WPDES division to find out what will be required to get a discharge permit. Matt Thompson recommended that I talk to Woody Myers in DNR's Eau Claire office. With your approval I will contact Mr. Myers and provide any background information he may request.

I'll update you when I have more information. Feel free to contact me if you have any questions.

Chuck

Charles Ahrens, PG (MN, WI)
Geologist

GHD

Proudly employee owned

T: +1 651 639 0913 | D: +1 612 524 6834 | E: charles.ahrens@ghd.com
1801 Old Highway 8 NW, Suite 114, St. Paul, Minnesota 55112 USA | www.ghd.com

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Eric Lindman

From: Charles.Ahrens@ghd.com
Sent: Tuesday, February 11, 2020 11:14 AM
To: Eric Lindman; Kevin Fabel; Stephen M. Opatik
Subject: CW-3 Update

I had my monthly call with EPA (Sheri Bianchin) and DNR (Matt Thompson) last week. Sheri has had a preliminary review of the letter with her supervisor. She said she needs to talk with the attorney next. She wasn't sure whether it will require an ESD or a ROD amendment. It is much quicker to do an ESD, so I'm pushing for that. Matt said that he has no issue with the change.

With regard to potential discharge to the Wisconsin River, I talked to Woody Myers of the DNR WPDES permitting section and sent some CW-3 chemical data to him for preliminary review. He responded in an email stating "It looks like these levels will not be a problem." So that is good news.

Next step – EPA has to decide between an ESD or ROD amendment. Then I think EPA will send us a letter to outline the process and request additional documentation and data. My next call with EPA will be on March 2.

Please contact me if you have any questions.

Chuck

Charles Ahrens, PG (MN, WI)
Geologist

GHD

Proudly employee owned

T: +1 651 639 0913 | D: +1 612 524 6834 | E: charles.ahrens@ghd.com
1801 Old Highway 8 NW, Suite 114, St. Paul, Minnesota 55112 USA | www.ghd.com

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PUBLIC NOTICE

Two separate Public Information Meetings (PIM) will be held to present an update of the Wastewater Treatment Facility (WWTF) and the Drinking Water Treatment Facility (DWTF) projects. The date and location of the meetings are as follows:

Date/Time: Wednesday, February 26, 2020 starting at 5:30pm

Location: North Central Technical College (NTC)

1000 West Campus Drive - Room E101-E102

Wausau, WI 54401

and

Date/Time: Wednesday, March 18, 2020 starting at 5pm

Location: City Hall – Council Chambers

407 Grant St

Wausau, WI 54403

The Wausau Waterworks Commission and City Council approved the DWTF and WWTF projects in the spring of 2019. The DWTF is currently out for bid and the WWTF will begin advertising for bid early March 2020. Designs for both projects are completed and will be available at the meetings for public review.

City staff and the engineer consultants will provide a short presentation for each project and will be available to answer questions related to the proposed facility plans and projects.

A public presentation related to the proposed utility capital borrowing, debt issuance and proposed rate increases was provided to the Wausau Waterworks Commission in November 2019, the presentation may be viewed here: <http://www.ci.wausau.wi.us/Departments/WausauWaterWorks/Billing.aspx>

Previous public presentations related to these projects may be found on our website at the following location: <https://www.ci.wausau.wi.us/Departments/WausauWaterWorks/UtilityProjects.aspx>

Wausau Waterworks will continue to keep residents informed of the upcoming projects. Please contact me at 715-261-6740 with any questions related to the proposed projects.

Public Information Meeting

Wastewater Treatment Facility
Drinking Water Treatment Facility

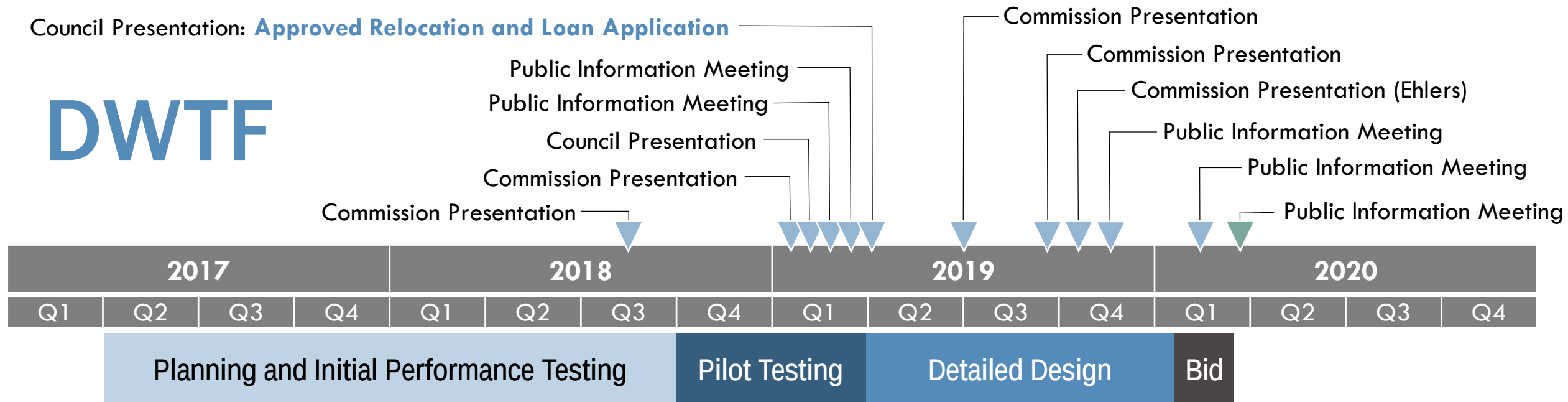


5:30 PM, Wednesday, February 26, 2020
North Central Technical College (NTC)
1000 West Campus Drive
Wausau, WI

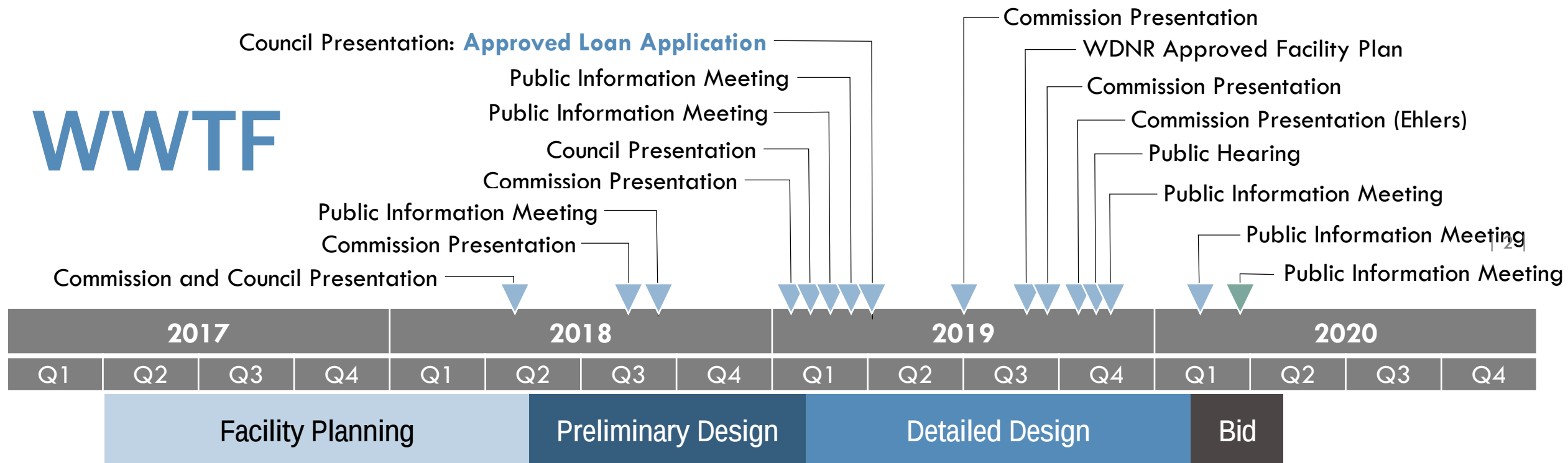
5:00 PM, Wednesday, March 18, 2020
City Hall
407 Grant Street
Wausau, WI

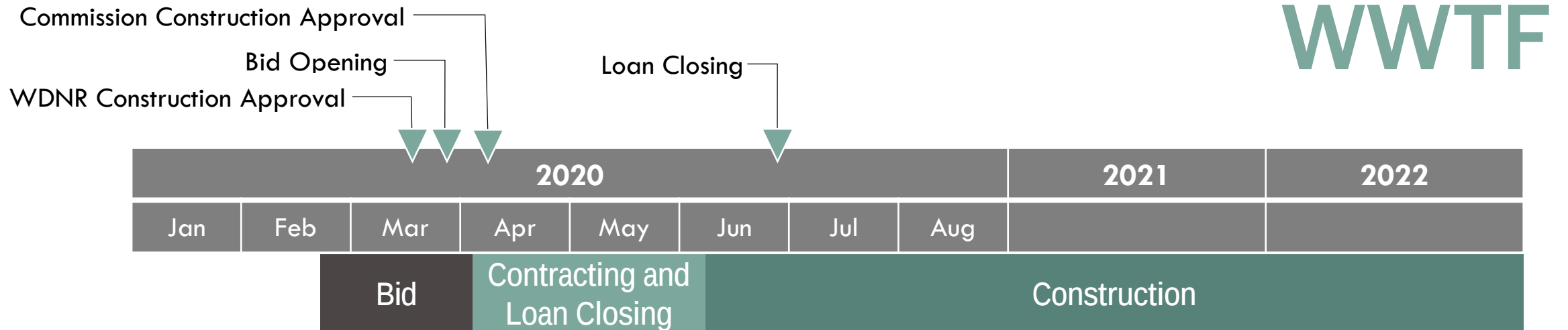
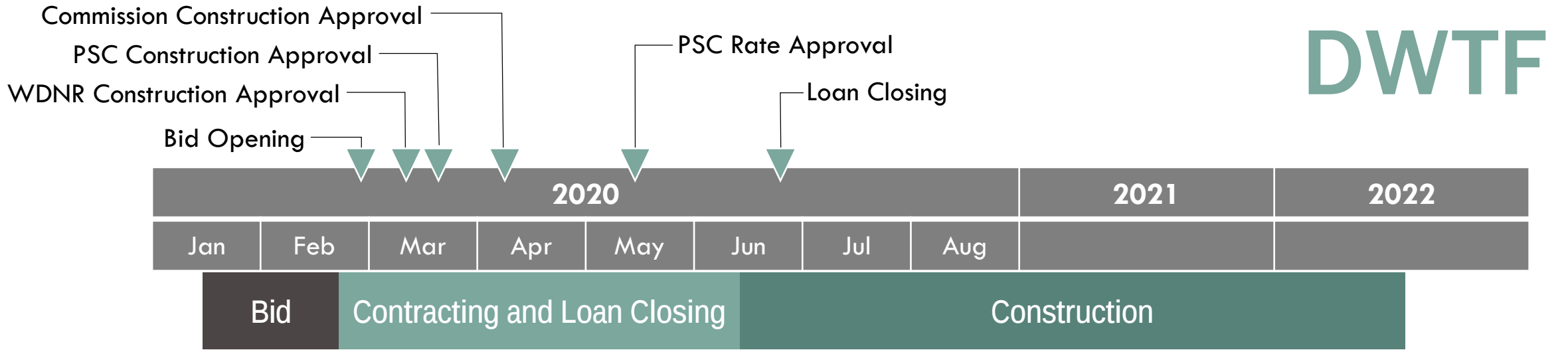
Council Presentation: **Approved Relocation and Loan Application**

DWTF



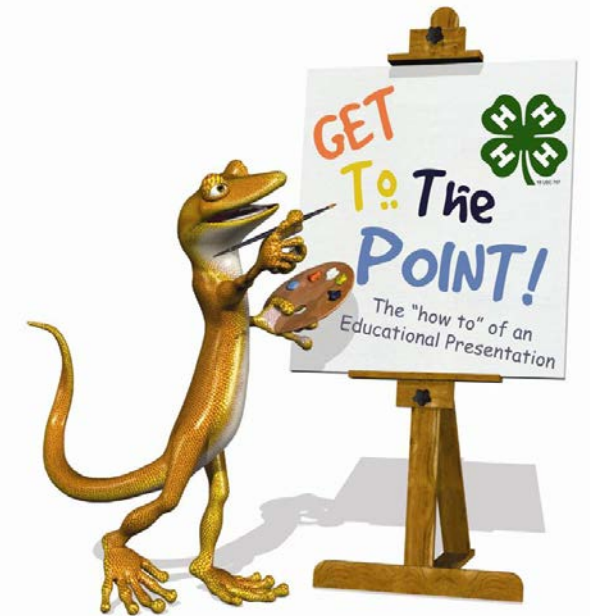
WWTF





Public Engagement History

- 05-01-2018 – WWTF Presentation; Wausau Waterworks Commission
- 05-01-2018 – WWTF Presentation; City Council Committee of Whole (C-O-W)
- 09-04-2018 – WWTF Presentation; Wausau Waterworks Commission
- 08-07-2028 – DWTF Presentation; Wausau Waterworks Commission
- 10-17-2018 – Sewer Rate Increase; PIM
- 01-08-2019 – WWTF & DWTF Presentation; Wausau Waterworks Commission
- 01-23-2019 – WWTF & DWTF Presentation; City Council C-O-W
- 02-18-2019 – WWTF & DWTF Presentation PIM at NTC
- 03-06-2019 – WWTF & DWTF Presentation PIM at NTC
- 03-26-2019 – City Council Approves relocation of DWTF**
- 03-26-2019 – City Council Approves application to DNR for SDWL & CWFL**
- 06-25-2019 – WWTF & DWTF Presentation; Wausau Waterworks Commission
- 10-01-2019 – WWTF & DWTF Presentation; Wausau Waterworks Commission - alternative energy options
- 11-05-2019 – WWTF & DWTF Presentation by Ehler's on debt issuance; Wausau Waterworks Commission
- 11-20-2019 – WWTF & DWTF Presentation PIM; City Hall
- 02-26-2020 – WWTF & DWTF Presentation PIM; NTC**
- PROPOSED** March 18, 2020 – WWTF & DWTF Presentation PIM; City Hall



Both Projects at Once?

- New WDNR regulations – Both Water and Sewer
- Funding availability – Future availability; higher priority projects
- Financing rate at all time low – 1.65%
- Capital budget increase over 100% in 5yrs; trend to continue
- Wausau's rates have been historically low – no upgrades
- Capital Planning & Facility Planning



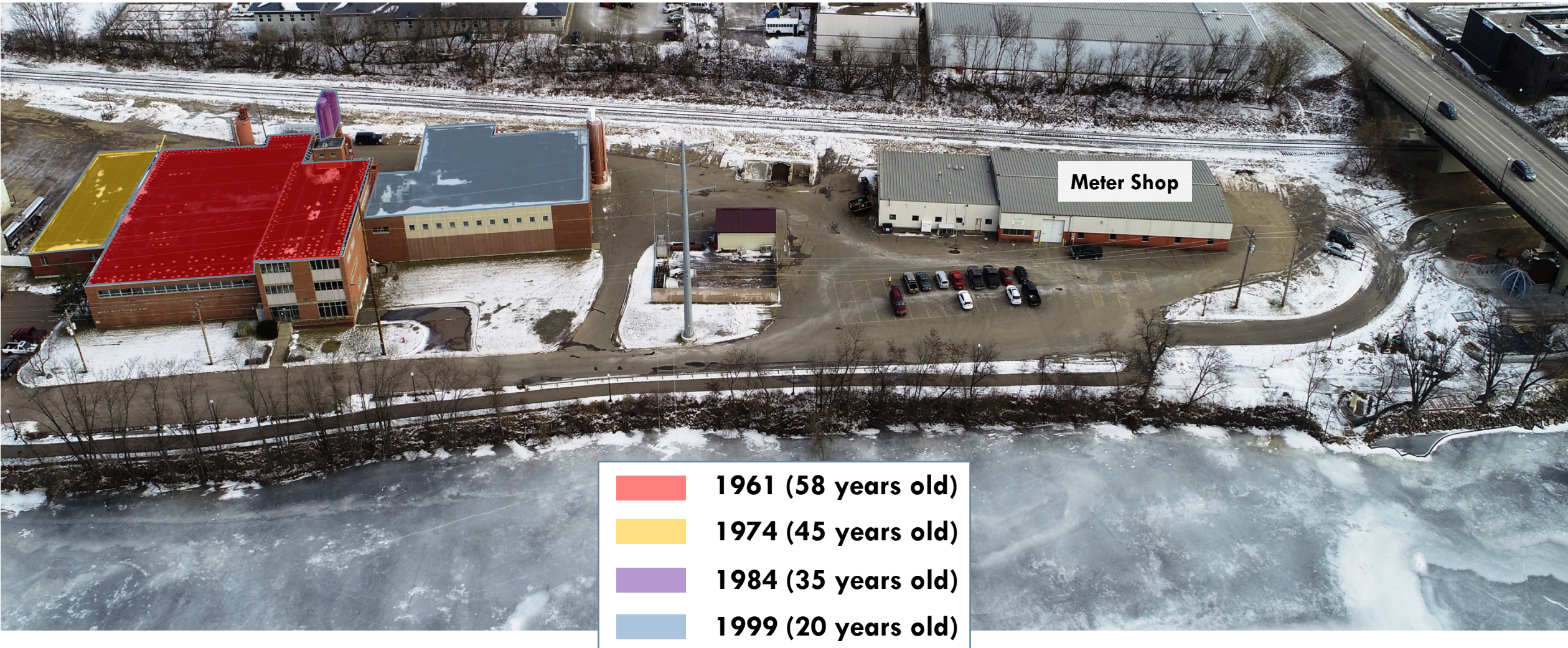
Drinking Water Treatment Facility (DWTF)



DWTF Planning History

- 2016 Initial budget for facility planning
- 2017 WDNR mandated clearwell replacement (Dec. 31, 2022)
- 2017 Utility issued RFP for DWTF Facility Plan
- 2018 Utility hired Becher Hoppe/Donohue for DWTF Facility Plan
- 2018-2019 Utility conducted an 18-month pilot study to determine best treatment process and corrosion control
- 2018-2019 Facility Plan alternatives – Relocate DWTF best option
- 2019 Design Report & Draft Plans submitted to WDNR
- 2019 Submitted Construction Authorization (CA) & Rate Case to PSC
- 2020 Becher Hoppe/Donohue/Clark Dietz – design, plans & bid project

Current DWTF North Side of Bridge Street



DWTF - WDNR Highlights

1. Regulations: WDNR Requires Action

- Clearwell non-compliant – Below Groundwater
- SS Plant and solids recovery – hydraulic deficiencies
- Water Source – Under Surface Water Influence (GWUDI)
- Located in 500-year floodplain

2. Water Quality: Iron, Manganese, and Natural Organics

3. Operational Issues: 1961 Filter bed, SCADA, SS Plant

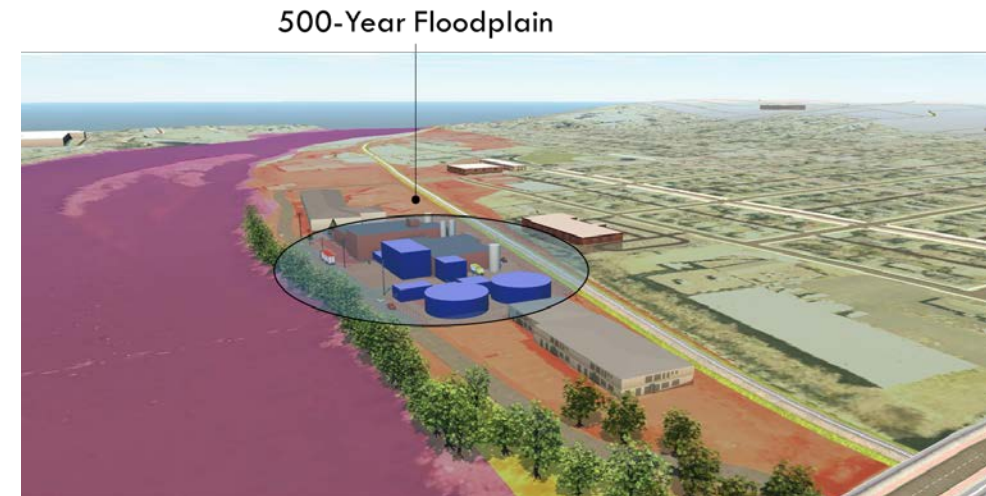
Facility Upgrades vs Relocation

1. Upgrade Existing Facility: ~\$31,000,000

- Large Investment; Short Lived
- In 500-Year Floodplain; high risk - No space to meet future regulations

2. New Facility: \$41,000,000

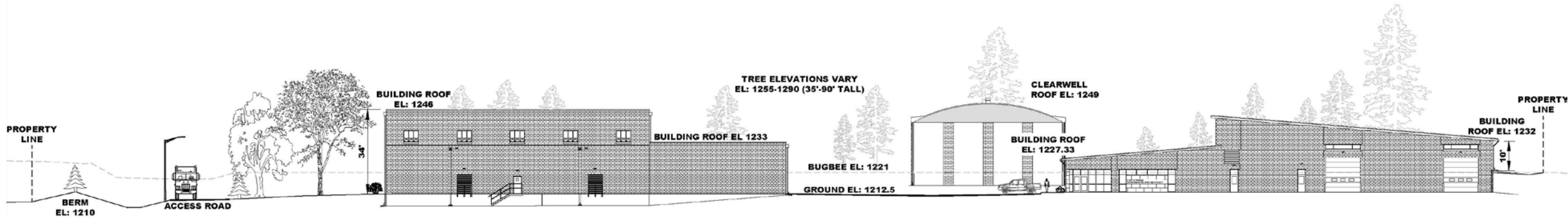
- 60+ year life of the facility
- Near 5 of 6 wells – Remove CW3
- Outside floodplain
- Meet WDNR requirements; now & future
- Maintain operation during construction
- Enhance corrosion control
- Ensure enhanced disinfection for GWUDI classification in near future



The New Drinking Water Treatment Facility



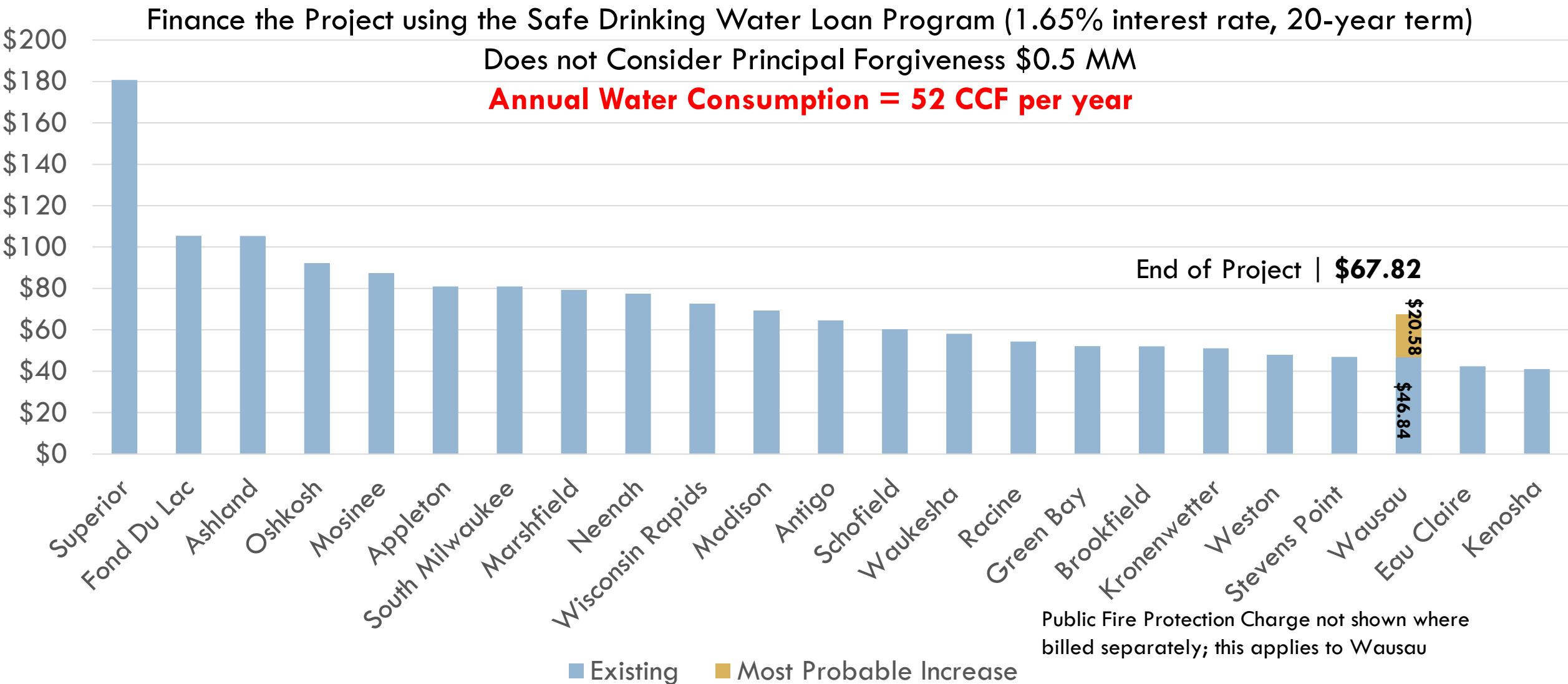
The New Drinking Water Treatment Facility



The New Drinking Water Treatment Facility



The Most Probable Residential Quarterly Cost to Finance the \$41MM Project



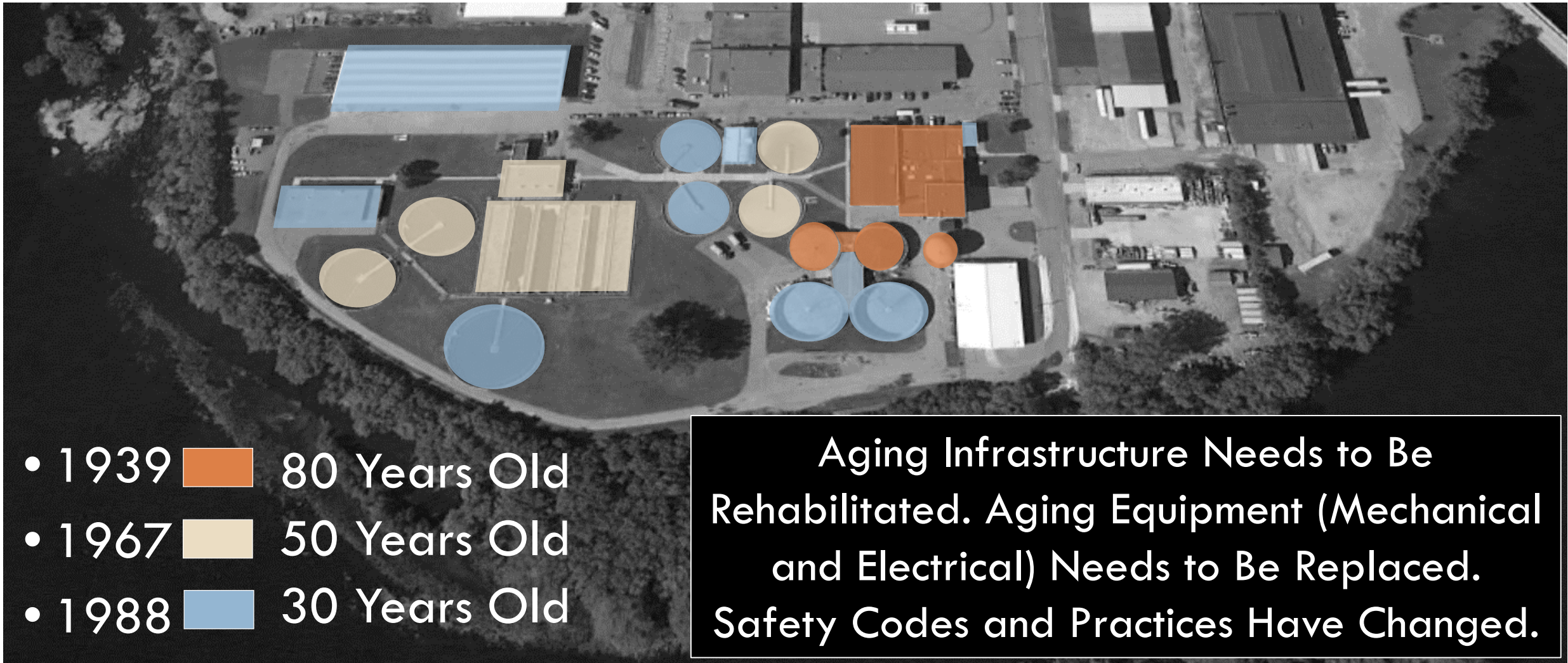
The Wastewater Treatment Facility (WWTF)



WWTF Planning History

- 2016 Initial budget for facility planning
- 2017 WDNR projected TMDL & low level phosphorous limit
- 2017 Utility issued RFP for WWTF Facility Plan
- 2018 Utility hired Donohue for WWTF Facility Plan
- 2018-2019 Facility Plan presented alternatives for WWTF improvement
- 2019 Facility plan was completed and submitted to WDNR
- 2019 Utility submitted Facility Plan to WDNR for approval
- 2019-2020 Utility hired Ehler's to prepare rate case
- 2020 Donohue/Becher Hoppe completed design plans & bid project

The Existing Facility is Old



WDNR Compliance

1. WPDES Permit

- Low level phosphorous
- Move to Class A biosolid
Class B restrictive & costly
- Future regulation
PFAS, land application testing

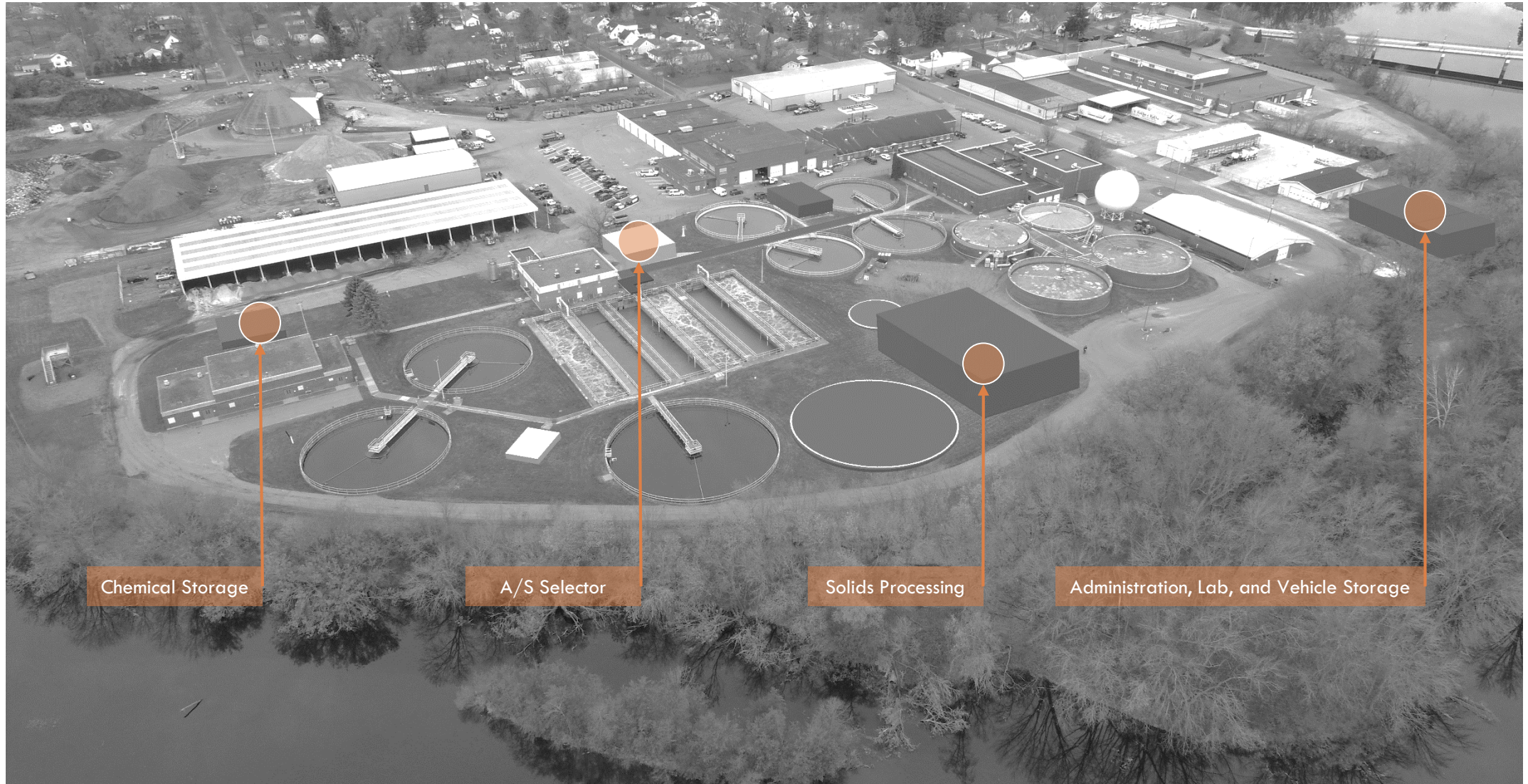
2. Capacity: Process issues

- UV disinfection
- Filtration
- Sludge thickening – no redundancy

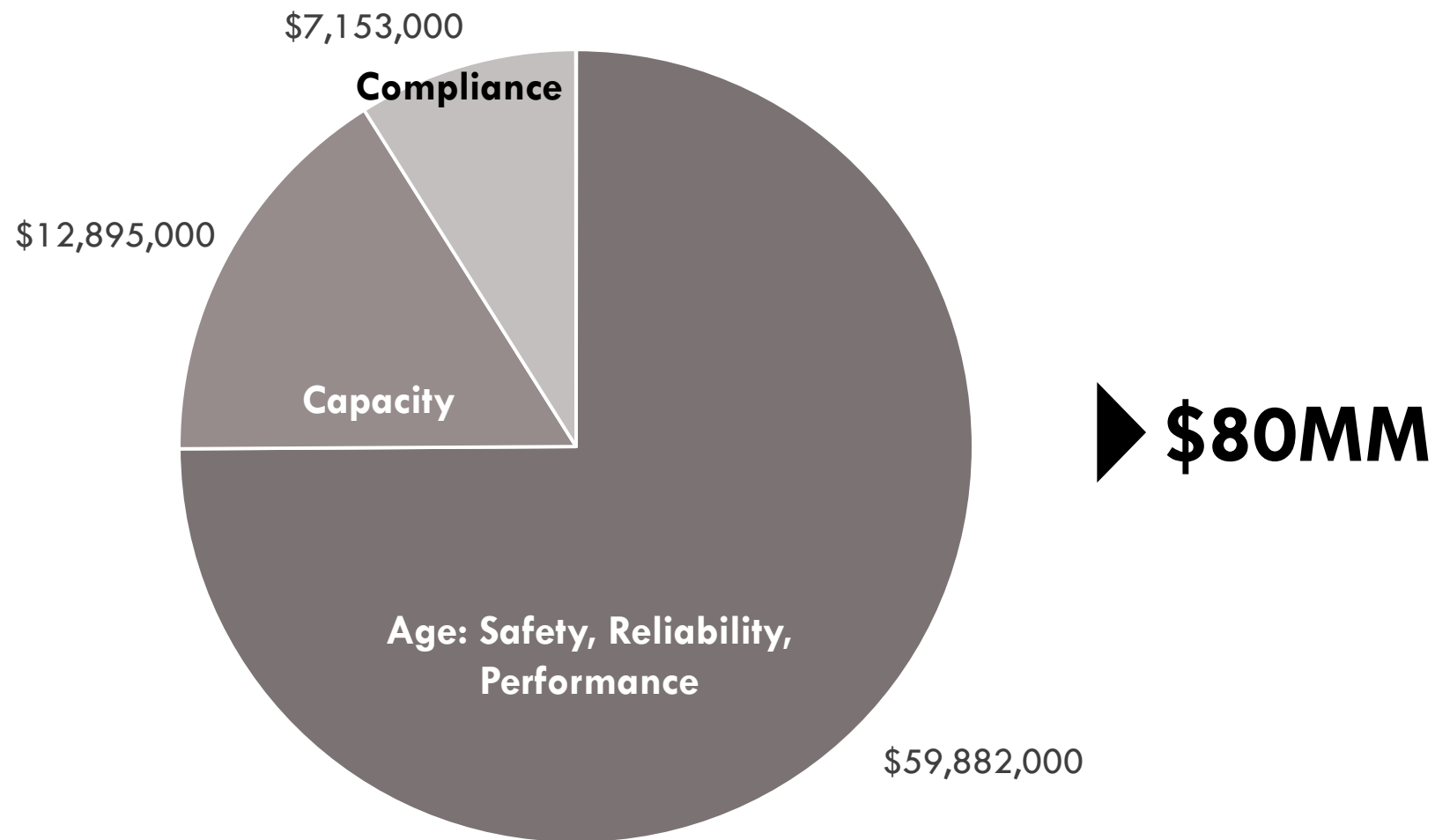
3. Age: Safety, Reliability, and Performance



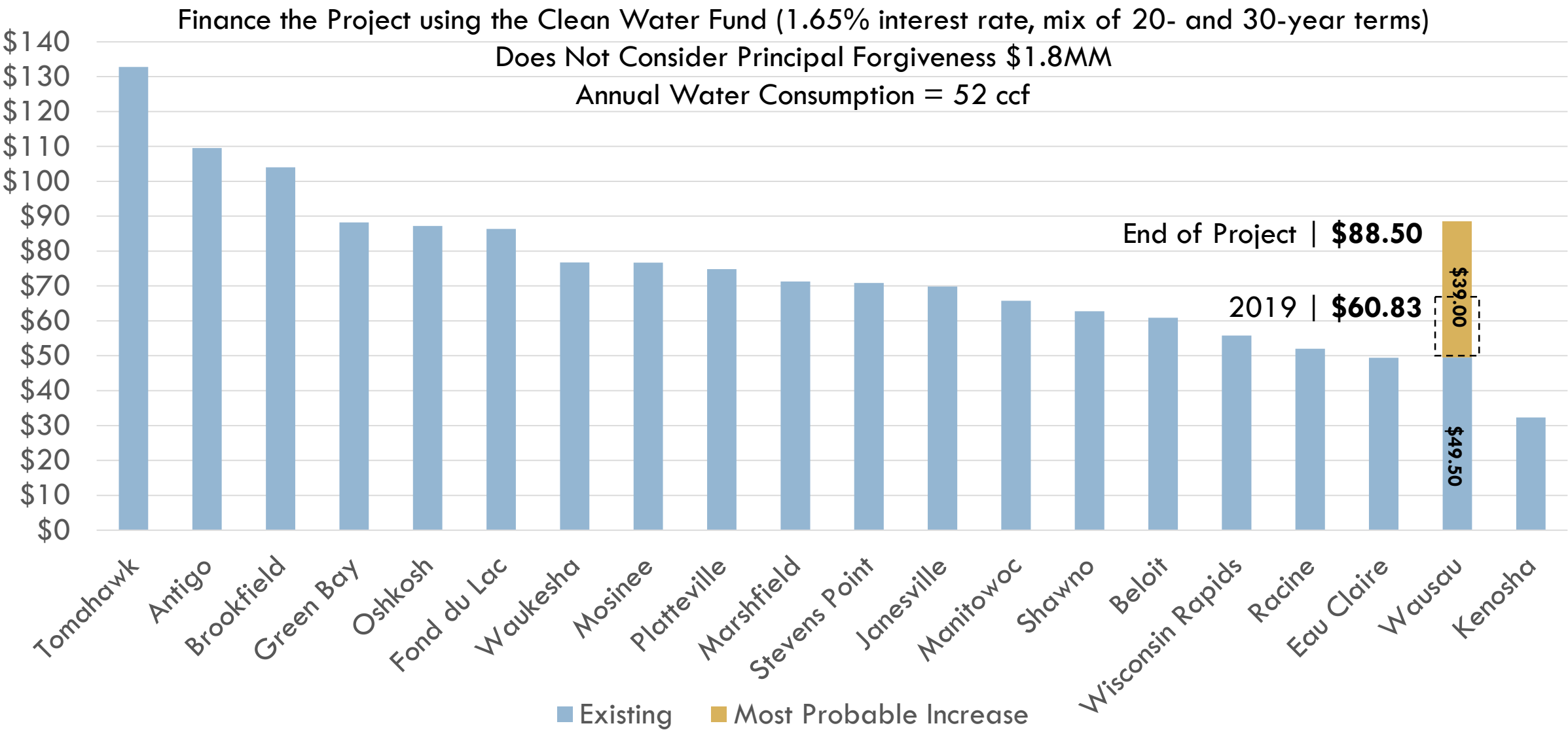
Maximize use of All Existing Structures



The Project Cost



The Most Probable Residential Quarterly Cost to Finance the \$80MM Project



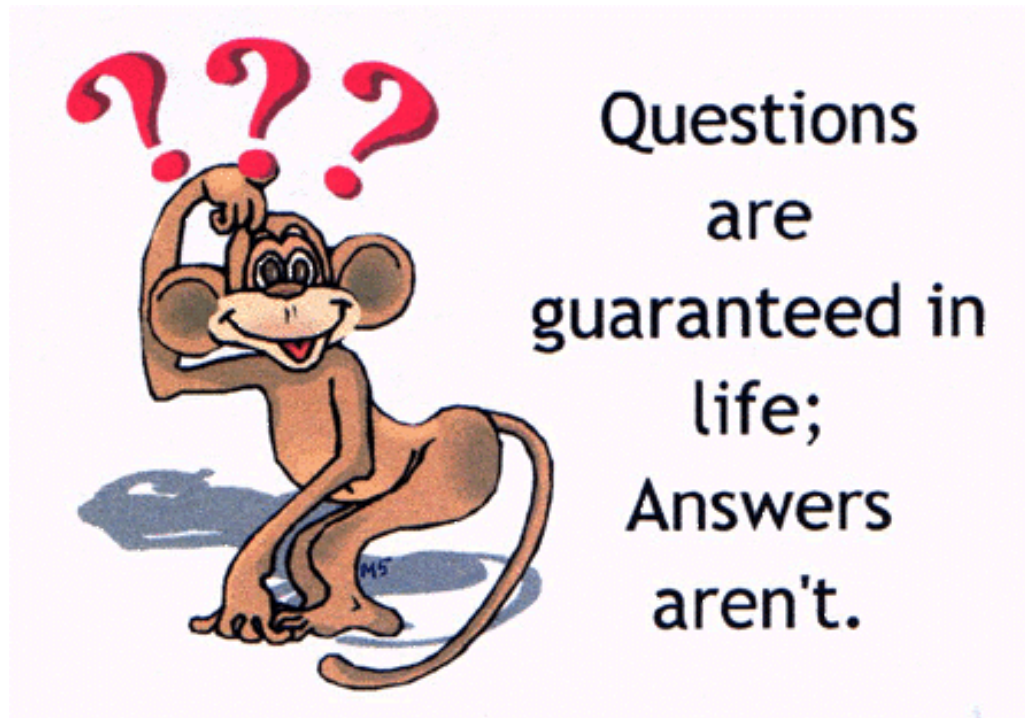
Billing History: Lindman, Family of 5, 3/4" Meter									
Utility Charges	Rate/ccf	Jan-Mar '19 Qty ccf	Qtr Charge	Apr-Jun '19 Qty ccf	Qtr Charge	Jul-Sep '19 Qty ccf	Qtr Charge	Oct-Dec '19 Qty ccf	Qtr Charge
Water Service									
Water - Qtrly Fee		Fixed	17.07	Fixed	17.07	Fixed	17.07	Fixed	17.07
Water - Vol Chrg	2.29	29	66.41	34	77.86	38	87.02	31	70.99
Water Service Subtotal			83.48		94.93		104.09		88.06
Sewer Service									
Sewer - Qtrly Fee		Fixed	20.40	Fixed	-	Fixed	-	Fixed	-
Sewer - Vol Chrg	3.11	29	90.19	34	105.74	38	118.18	31	96.41
Sewer Service Subtotal			110.59		105.74		118.18		96.41
Public Fire Service									
Public Fire		Fixed	10.47	Fixed	10.47	Fixed	10.47	Fixed	10.47
Total Quarterly Bill			\$204.54		\$211.14		\$232.74		\$194.94
Average QUARTERLY Usage & Cost				33	\$226.14				
Average MONTHLY Usage & Cost				11	\$75.38				

Billing Proposed: Lindman, Family of 5, 3/4" Meter; Water increase of 42% and Sewer increase of 79%									
Utility Charges	Rate/ccf	Jan-Mar '19 Qty ccf	Qtr Charge	Apr-Jun '19 Qty ccf	Qtr Charge	Jul-Sep '19 Qty ccf	Qtr Charge	Oct-Dec '19 Qty ccf	Qtr Charge
Water Service									
Water - Qtrly Fee		Fixed	24.24	Fixed	24.24	Fixed	24.24	Fixed	24.24
Water - Vol Chrg	3.25	29	94.30	34	110.56	38	123.57	31	100.81
Water Service Subtotal			118.54		134.80		147.81		125.05
Sewer Service									
Sewer - Qtrly Fee		Fixed	36.52	Fixed	36.52	Fixed	36.52	Fixed	36.52
Sewer - Vol Chrg	5.60	29	162.34	34	190.33	38	212.72	31	173.54
Sewer Service Subtotal			198.86		226.85		249.24		210.05
Public Fire Service									
Public Fire		Fixed	14.87	Fixed	14.87	Fixed	14.87	Fixed	14.87
Total Quarterly Bill			\$332.27		\$376.52		\$411.92		\$349.97
Average QUARTERLY Usage & Cost				33	\$367.67				
Average MONTHLY Usage & Cost				11	\$122.56				

Affordability & Cost Effective

- No doubt big projects with BIG \$\$\$'s
- Significantly important – Providing safe clean water and treating wastewater; vital for future growth and sustainability
- Cost effective and affordable – Absolutely
- Wausau will be providing safe, high-quality drinking water to a typical home for less than \$1 /day
- Wausau will be collecting wastewater, treating it, and sending safe clean water back to the environment for a typical home for less than \$1 /day

Thank You



Wausau Water Works Commission

April 7, 2020

Agenda Item
Discussion and Possible Action Reclassifying Senior Sewer Maintainer to Collection System Supervisor.
Background
The Director of Public Works has been updating the Utility's organizational chart. Among the recommended organizational changes is reclassifying the Senior Sewer Maintainer position into a Wastewater Collection Supervisor position. This reclassification would reflect the increased supervisory responsibilities of the position. Rather than serve as a lead worker, this position would perform tasks that require operational decision making such as determining and prioritizing work assignments, establishing work and project priorities, supervising sewer maintenance crews and evaluating employee performance.
Fiscal Impact
None. The position would be advertised at \$47,264-\$56,717, which is slightly less than the budgeted amount.
Staff Recommendation
Based on a review of the new job description, including an impartial review from Gallagher and Associates, this position would be reclassified into Salary Grade 17 (\$47,264-\$66,170).
Staff contact: Eric Lindman (715-261-6745) and Toni Vanderboom (715-261-6634)



JOB DESCRIPTION

Collection System Supervisor

Job Title:	Collection System Supervisor	Reports To:	Wastewater Superintendent
Department:	Public Works & Utilities	FLSA Status:	Exempt
Division:	Wastewater Operations	EEO Code:	8-Service-Maintenance
Salary Grade:	17	Occupational Code:	3236
Employee Group:	General Employee	Training Category:	D-Staff
Created:		Last Revision:	September 2019

This description is not an announcement of a position opening. To view current openings please visit www.ci.wausau.wi.us. The following statements are intended to describe, in broad terms, the general functions and responsibility levels characteristic of positions assigned to this classification. They should not be viewed as an exhaustive list of the specific duties and prerequisites applicable to individual positions that have been so classified.

Purpose of the Position

The Sewer Collection System Supervisor manages/schedules all work on the sewer collection system and supervises the sewer maintenance crew.

Essential Duties and Responsibilities

1. Manages and directs work assignments for crews of up to 6 people.
2. Determines and prioritizes work assignments. Assign tasks and review completed work.
3. Supervise the sewer maintenance crew and review work performance. Evaluates employee performance, imposes discipline, and recommends personnel actions according to City policies and procedures.
4. Respond to emergency call-in as necessary; manage and direct work of the maintenance crew in emergency situations.
5. Authorize work during emergency situations as required to mitigate damage and violations.
6. Review and approve employee time sheets and approve vacation or absence requests.
7. Prepare short and long term work plans. Establish work and project priorities, schedule and coordinate repairs/projects.
8. Track maintenance costs and expenses using job costing; authorize expenditures within approved budget.
9. Prepare specifications and bidding documents for contracted services on an annual basis.
10. Review collection system design plans by private contractors/developers and ensure policies and ordinances are followed. Comment and request plan changes as required.
11. Administer construction/work contracts approved by the Wausau Waterworks Commission and recommend payments and change orders under contracts for approval.
12. Prepares estimates for the annual capital budget and assists in preparing the sewer annual budget.
13. Coordinate equipment and personnel responding to other departments.
14. Participates in hiring personnel.
15. Responsible for training personnel.
16. Respond to public complaints, service requests and inquiries regarding wastewater projects.

17. Monitors material inventory. Maintain inventory of pipe/fittings for emergency repairs.
18. Determine equipment replacement needs and prepare RFP's for replacement of equipment.
19. Purchase supplies, parts and equipment. Schedule/coordinate repairs of equipment.
20. **Make edits/map corrections in GIS/geo database** related to the sewer collection system. Plot/log point repairs, pipe patches and rehab work completed to GIS/geo database.
21. Work with GIS Specialist to create specific layers/tables within GIS/geo database to track various tasks and information.
22. **Maintain inventory in Pipe Tech Software** of sewer televising and inspection. Transfer and log inspections, trouble shoot, update and maintain support.
23. **Assess pipe condition**, prepare/review reports, videos, maps, and prepare work schedules for pipe repair/replacement.
24. Work with engineering in planning, assessing/evaluating and make recommendations on street rehab/ construction projects.

Additional Duties and Responsibilities

1. Contact Diggers Hotline for excavating projects
2. Write S.O.P's/outlines for equipment operation and job task procedures
3. Participate in staff/employee and public meetings
4. Research and schedule demo's of specialized tools and equipment
5. Locate sewer lines for contractors and utility companies
6. Direct/manage tapping of sewer laterals and coordinate work schedule with outside contractors
7. Assist in the repair or replacement of broken sewer lines and manholes
8. Operate all sewer cleaning and inspection equipment
9. Properly maintain safety equipment and schedule training as required for crew members
10. Maintain and repair gas detectors and ensure a safe work environment
11. Perform/schedule maintenance and repairs of equipment, TV system, Jet-vac truck, Rodder etc.
12. Assist with the maintenance of Lift Stations and Waste Water Treatment Plant
13. Drive heavy equipment such as Jet-Vac truck, Tanker, sludge spreaders, loader etc.

Education and Experience Requirements

High school diploma or equivalent with four to six years of experience.

Necessary requirement: Possession of a valid Wisconsin Commercial Driver's license (CDL).

Employees currently employed as a Collection System Supervisor shall have passed and be certified in the sanitary sewage collection system subclass (WAC NR114) by December 31, 2019. Newly hired operators must complete the certification within 18 months of hire.

Knowledge, Skills and Abilities

- Detailed knowledge of wastewater treatment operations and processes. Ability to adjust plant operations to optimize effluent quality, energy efficiency, and maintenance requirements.
- Working knowledge of mechanical equipment such as vehicles, engines, and pumps. Ability to diagnose and repair equipment.
- Ability to analyze and categorize data and information in order to determine the relationship of the data with reference to established criteria/standards. Ability to compare, count, differentiate, measure,

and/or sort data, as well as assemble, copy, record, and transcribe data and information. Ability to classify, compute, and tabulate data.

- Ability to counsel, mediate, and provide first line supervision. Ability to persuade, convince, and train others. Ability to advise and provide interpretation regarding the application of policies, procedures and standards to specific situations.
- Ability to utilize a wide variety of descriptive data and information, such as time cards, complaints, work requests, permits, blueprints, spreadsheets, work sheets, lists, purchase orders, maps, accident/incident forms, and general operating manuals.
- Ability to communicate effectively with City staff and personnel, residents, inspectors, vendor representatives and utility company personnel.
- Ability to add and subtract, multiply and divide, and calculate percentages, fractions, and decimals.
- Ability to use functional reasoning in performing influence functions such as supervising, managing, leading, teaching, directing, and controlling.
- Ability to exercise the judgement, decisiveness and creativity required in situations involving the evaluation of information against sensory and/or judgmental criteria.
- Ability to operate equipment and machinery requiring complex and rapid adjustments, such as motor vehicle, calculator, two-way radio, computer keyboard/terminal, copier, and fax machine.
- Ability to coordinate eyes, hands, feet and limbs in performing skilled movements such as construction equipment operation.
- Ability to exert mildly heavy physical effort in moderate to heavy work, typically involving some combination of climbing and balancing, stooping, kneeling,, crouching, crawling, lifting, carrying, pushing, and pulling.
- Ability to recognize and identify degrees of similarities or differences between characteristics of colors, forms, sounds, and odors associated with job-related objects, materials, and tasks.
- Computer proficiency to use programs such as Word, Excel, and SCADA interface. Knowledge of PLC programming.

Physical and Working Environment

Moderate exposure to environmental conditions that impact physical comfort such as poor ventilation and temperature extremes. May require specialized clothing or use of common personal protective equipment. Damage to clothing possible. Frequent travel.

Close mental and visual attention is continuously required. Moderate physical demands typically found in trades work with moderate exposure to workplace hazards. Requires regular lifting, bending, twisting, turning, and use of power equipment.

Acknowledgement

All requirements of the described position are subject to change over time. The employee may be required to perform other duties as requested by the City.

Signature of Department Director: _____ Date: _____

I acknowledge that this job description is neither an employment contract nor a legal document. I have received, read, and understand the expectations for the successful performance of this job.

Printed Name: _____ Signature: _____ Date: _____

The City of Wausau is an Equal Opportunity Employer. In compliance with the American with Disabilities Act, the City will provide reasonable accommodations to qualified individuals and encourages both prospective and current employees to discuss potential accommodations with the employer.

Wausau Water Works Commission

March 3, 2020

Agenda Item
Discussion & possible action on bottling water for 2020 and continuing donations for non-profit special events
Background
Wausau Water Works has been bottling and donating water to special and non-profit events for several years now. The last batch was bottled in 2018, and we are nearing the end of supply, for that production run. We are starting to receive requests for donations and won't have enough water to supply all the requests without bottling more.
Fiscal Impact
Less than \$ 3000.00 for an 18 to 24 month supply, or about \$ 1500.00 a year
Staff Recommendation
Bottle water again this year and ask that commissioners contemplate how they would like to see this program in the future.
Staff contact: Scott Boers 715-261-7286

Wausau Water Works Commission

March 3, 2020

Agenda Item
Approve payment to Haas and Sons Inc. for work done on the water main, on the East Side of the Thomas St. Bridge.
Background
It was anticipated that during the water main shut down for the phase 2 Thomas St. Construction Project that pipe hangers and fasteners would be replaced on the water main under the East Side of the bridge. It was intended that utility staff would complete the work since this was originally outside of the scope of the reconstruction project. Once the 14" main was taken out of service and pressure relieved, joints on the portion of main due for repair were leaking. This required us to have that portion of pipe replaced by the contractor. The additional work and cost was going to be incorporated into the street reconstruction project, but was never added.
Fiscal Impact
\$ 18,500.00
Staff Recommendation
Approve payment
Staff contact: Scott Boers, 715-261-7286