



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
Board Room, 2nd Floor City Hall, Wausau, WI 54403 at 1:30 p.m. on
Tuesday, January 6, 2015.

AGENDA

1. Roll Call
2. Approve Minutes of December 2, 2014 meeting
3. Staff Report on Utility Operations
 - Lead Exceedance
 - Application for Funds Through Safe Water Drinking Act
 - Calls Received Regarding Lead Exceedance Brochure
 - Sanitary Survey on Water System
 - December Main Breaks
 - Installation of Gateway Connectors
 - Testing of Badger Meters
 - Paper Regarding Cooperative Project of Water Main Lining Chosen Paper of the Year
 - Permit Discharge Limits for December
 - Approval from WDNR to Haul Sludge on Frozen Farm Fields
 - Sewer Backups on Friday, December 12
 - Intern for Spring Semester
4. Discussion and possible action regarding quotes obtained to repair the sewer lateral at 608 Prospect Avenue.
5. Discussion and possible action regarding special assessments from 2001 for 1805, 1807, and 1809 Merrill Avenue (Natarus) (This item was tabled from the December 2, 2014 meeting.)
6. Amend Section 13.62.040 Control of prohibited wastes, to allow the ability to authorize SIU's to take a single grab sample.
7. Discussion and possible action on replacement of the Cleveland Avenue Lift Station.
8. Discussion and possible action regarding participation in Rib Mountain Metropolitan Sewerage District facility planning.
9. Review DNR Sanitary Survey.
10. Authorize Water Quality Survey.
11. Authorize Water Hydraulic Model of Water System.
12. Discussion and possible action on First Lease Amendment of New Cingular Wireless PSC, LLC (American Cellular Corporation), to allow for expansion of premises and construction of generator.
13. Review and approve 2015 operating and capital budgets.
 - a. Approve solicitation of bids for wastewater plant digester heating and mixing system and secondary digester mixing system upgrades.
 - b. Approve solicitation of bids for wastewater plant MCC1 and Plant Wiring upgrades.
14. Discussion and possible action regarding acquisition of McGovern properties at 330 Adrian Street and 336 Adrian Street.
15. **CLOSED SESSION** pursuant to 19.85(1)(e) of the Wisconsin Statutes for deliberating or negotiating the purchase of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session.
 - Discussion and possible action regarding acquisition of McGovern properties at 330 Adrian Street and 336 Adrian Street.
16. **RECONVENE** into open session to take action on closed session item, if necessary.
Adjourn

Signed by: /s/ James E. Tipple
Presiding Officer or Designee

ATTN: Newsroom
Daily Herald

Faxed by: Lori Wunsch

Date: 12/23/2014

Time: 2:00 p.m.

THIS NOTICE POSTED AT CITY HALL

Date: 12/23/2014 Time: 2:00 p.m.

By: Patti L. Sorenson



Minutes of December 2, 2014

A meeting of the Wausau Water Works Commission was called to order at 1:30 p.m. in City Hall on December 2, 2014. In compliance with Wisconsin Statutes, this meeting was posted and receipted for by the Wausau Daily Herald on November 25, 2014.

1) Roll Call

Members present: President Tipple, Commissioners Gehin, Otto, Rebman, Winters.

Others present: Anne Jacobson, Maryanne Groat, Allen Wesolowski, Dick Boers, Dave Erickson, Deb Geier, Ric Mohelnitzky, Bill Duncanson, Valerie Swanborg, Ken Ligman, Becher Hoppe Associates; Tonia Speener, Clark Dietz; Don Swailes, AECOM

2) Approve Minutes of the November 4, 2014 meeting

Motion by Mr. Gehin to approve the minutes of the November 4, 2014 meeting. Seconded by Mr. Winters. Motion carried unanimously.

3) Staff Report on Utility Operations

- Boers stated on November 14th the DNR conducted the sanitary inspection, which is required every three years. The inspection includes all the facilities, pumping stations and wells. The DNR also inspected the cross connection and private well records, and monthly reports. Staff needs to get caught up on cross connections. Mayor Tipple questioned if there is a deadline for completion of cross connections. Boers indicated it depends upon how big they are and industrial facilities should be done every year. When meter changes are completed at residences staff will inspect and write a report.
- Boers stated there were ten pressure relief valves on the system because the Elm Street reservoir is a 2.5 million gallon reservoir. The reservoir was drained and inspected. The tank does not have a permanent ladder and one will have to be installed. The 72nd Avenue reservoir was filled today and will be sampled tomorrow. If the samples come back safe it will be put back online on Friday. The Brown Street tower will have to be repainted inside. The Wausau Avenue tower had paint blisters that need to be touched up. Mayor Tipple questioned if the Brown Street tower was still drained or if it will have to be drained again for painting. Boers replied it will be drained again and painted when weather permits.
- Staff has not had a conference meeting with the DNR yet regarding the lead exceedance. A public notice has been completed and brochures have been sent. At the conference meeting, staff will find out exactly what needs to be done. However, according to the letter received, the City will have to replace 7% of the lead connections in the City, along with completing 120 samples next year. Staff had a hard time obtaining 30 samples this year so getting 120 next year will be difficult. Sixty samples are to be taken between January and June and the same sixty again

between July and December. Mayor Tipple suggested noting this in the January newsletter. Geier stated the samples need to come from a pre-approved list provided by the DNR. Boers indicated half the residences have to have lead services and half lead solder.

- Geier stated the contractor was here the week of November 17th for installing the Gateway equipment. The installation went a lot slower than initially thought it would due to the cold and snowy weather. Three of the installations were completed and the contractor is back this week to finish.
- Three employees took the DNR Water Certification exams. Two passed the Distribution exam and one passed the Distribution and Groundwater exams.
- The tax roll transfer was completed on November 18th, with a total of \$691,911 transferred. This is up about \$10,000 from last year. An additional \$756 was transferred to the Town of Stettin tax rolls. This was down slightly.
- Staff is still working with the PSC on reviewing the rate application. The PSC has asked for final direction on how we want to go so they can proceed with the rate portion. Initially a two-tier increase was proposed but Geier feels it will go back to a one-tier and then we will have to go back to the PSC if additional increases are necessary. The increase is in the 20% range, which is a typical water rate increase. That sounds high, but it does not typically end up being traumatic. For a family of four the increase would be about \$7 to \$8 a quarter.
- The Wastewater Plant is on track to meet the permit limits for the month of November. Not all of the test results are back yet, but Erickson does not foresee a problem.
- A quote was received from Best 1 Plumbing for the repair of the sewer lateral at 608 Prospect. It was an estimate and not a bid so if the project does not go as planned, the cost would be on a time and material basis. Mayor Tipple questioned when the work would be done if the Commission proceeds with this. Erickson replied in spring as the sidewalk would have to be removed, which is not included in the estimate. He is reluctant to go onto private property to complete the work and feels this should be discussed further. This will be placed on a future agenda for discussion.
- Ahern Construction is working on Clarifier #3. They have had some setbacks and the weather has not helped, but they are now making progress.
- Approval was received from the DNR to haul sludge on frozen farm fields. Erickson does not believe we have done this before. He was at a meeting this morning and learned that other communities have done the same this year. Staff is hauling today and if we can continue to haul most of the week we should be good for storing the sludge over the winter.

Motion by Mr. Rebman to approve the staff report as presented and place on file.

Seconded by Mr. Otto. Motion carried unanimously.

4) Discussion and possible action regarding special assessments from 2001 for 1805, 1807, and 1809 Merrill Avenue (Natarus)

Mr. Otto and Mr. Rebman requested permission to abstain from this matter as Mr. Natarus is a friend and it presents a conflict of interest. Mr. Otto and Mr. Rebman excused themselves from the room.

Wesolowski explained that sewer and water was extended in 2001. Staff researched what the assessments were and the amounts were included in the meeting packet. 1805 Merrill Avenue was not assessed a lateral charge as one was not installed. The total assessment for the three lots was \$57,888.80.

Timothy Natarus stated he owns 1805, 1807, and 1809 Merrill Avenue. His objective is to get the properties in shape to be sold. The properties were zoned IB when the area was annexed. It came to his attention not too long ago that facilities were not installed at 1805 but yet he was assessed for it. He is trying to clean up the property and just had the Fire Department use the old farm house for training. The house at 1809 was also demolished. 1805 is the lower property and he tried to get some fill for it when the DOT installed the cul-de-sac. He feels he should get the assessment back which could be used to clean up and improve the property. The rain water runoff from the cul-de-sac causes a mess on the property.

Wesolowski stated that 1805 and 1807 sit below the roadway. When a house was located on 1807 there was a grinder pump which pumped the sewage up to the lift station. Natarus indicated that the pump burnt out after three years. He was told it would cost \$3,500 to repair it or \$6,500 to replace it. Mayor Tipple asked if Natarus requested the installation of sewer and water. Natarus responded the City installed it when the property was annexed. Natarus paid about \$75,000 in taxes and assessments for these properties. At that time the land had more potential as it was before the highway interchange project.

Mr. Winters is uncertain to what the Commission can do in terms of development and is tempted to refer this to the Economic Development Committee. Mr. Gehin indicated the City went through the normal process of public hearings through Council regarding assessing the property. He indicated the assessment was based upon area and not frontage. Wesolowski believes that Natarus's initial thoughts were that 1805 is not served with sewer and water because there is not a lateral, utilities would have to be pumped up to the main, and water would have to be extended to 1805. Mr. Gehin believes the lift station was placed where it is because the City did not know what was going to happen with the interchange. Additionally, he thought the intent was that the parcels would be combined and developed as one. Natarus stated the property would be worth more sold as 3.7 acres then it would be sold individually.

Jacobson questioned if Natarus is seeking a reimbursement or forgiveness of the \$57,888.80 assessment. Natarus stated the assessment is already paid and the reimbursement would only be for the 1805 property. According to his records the amount assessed on his taxes was \$23,052.27. Jacobson believes that since the Council levied the assessment to begin with, the Council would have to approve a reimbursement. Discussion followed on how the assessment was arrived at. Mr. Winters stated investing in this property to help it turnover it is not a Water Commission issue. Natarus noted that the utilities were installed when Merrill Avenue still had access to Highway U. Jacobson has not researched this issue to determine who has the authority to approve a reimbursement. She believes since the Council is the body that levies assessments, the Council should be the body to authorize a reimbursement. Groat stated if a refund is approved; the funds would come from the Utility. Mr. Winters is not sure the funds would come from the Utility if Economic Development does agree to help develop the property. In that case, Groat indicated the funds would come from the general fund. Mr. Winters questioned if the property is located within TIF 6.

Mr. Winters moved to refer this item to the Economic Development Committee. Mayor Tipple referred back to the City Attorney before the motion was entertained. He questioned if Jacobson would be willing to research the issue and provide a recommendation at the next meeting. Jacobson agreed. The committee agreed by consensus to bring this item back in January. Mayor Tipple noted that the property is not located in the TIF district.

5) Discussion and possible action on First Amendment to Water Tower Lease Agreement between Wausau Water Works and New Cingular Wireless PCS, LLC

Jacobson stated this was on the September 29 and November 4 agendas. Boers came to Jacobson with a legal request on October 6 and she did not realize at that time that the agreement was acted upon on September 29. Jacobson did not realize that they do not send contracts until they think the City has approved an agreement. Once they have an agreement fully negotiated orally,

they send a contract for signatures. She received contracts in the mail requesting their return in three days. In the meantime, other contracts came to Boers and Geier submitted another legal request for an amendment. Jacobson contacted the attorney regarding Boers initial legal request. There were two amendments, one which came from Illinois and one from California. The attorney was unaware that another one of their divisions had also drafted an amendment for the same thing. The attorney suggested acting on Agenda Item 5 and pulling Agenda Item 6 because the Illinois division had gotten ahead of themselves. The intention was to get the First Amendment approved first and then come back with an agreement for the generator. She clarified that at the previous meetings, the Commission only looked at the terms and cost while there are other provisions in the contract that she wanted to be sure the members were aware of. The attorney also indicated that paragraph 6 of the contract could be crossed out, which references the expansion of the premises. They never mention the word generator in this version.

Jacobson explained that the initial contract was for a term of five years and two successive five year renewal terms. This contract is at the end of the first renewal term. The City was to be notified six months in advance for renewal or amendment. She does not believe the City received the six month notice as the first email Boers received was on August 29. Therefore, technically the City could say there was not enough notice. Also, rather than \$28,000 per year beginning January 1, it was reduced to \$21,000 to increase 5% every five years. That would make the amount of the contract \$26,000 in January of 2045, the last term of the contract. Additionally, they have added the ability to terminate the contract with a 30 day notice without reason. Discussion followed on the contract language.

Mr. Winters suggested sending a letter indicating the proper notice was not received and the City chooses to stay with the original contract, but remains open to negotiating. Mr. Gehin stated he was originally in support of the contract because he feels in the future they will not need the towers located there. Jacobson clarified that the new contract would begin January 1, 2015 with 5 years guaranteed and the annual rent of \$21,000 for 5 years. After 5 years the contract could be terminated with a 30 day notice.

Mr. Winters moved to send a letter indicating a six month notice was not received and therefore choose to hold to the original contract but remain open to negotiating. Seconded by Mr. Otto. Motion carried 4-1 with Mayor Tipple the dissenting vote.

6) Discussion and possible action on AT&T Generator Agreement

This item was pulled from the agenda at the recommendation of the City Attorney.

7) Discussion and possible action regarding participation in Rib Mountain Metropolitan Sewerage District facility planning

Erickson stated the proposal was to have Strand complete a facility planning report for the Rib Mountain Metropolitan Sewerage District and for an additional cost the City of Wausau Utility could be included to consider expansions that in the future would accommodate Wausau's wastewater. It would be a good sized investment but not much compared to the cost to build a plant. Mayor Tipple stated the Utility's commitment would be \$38,000 to the contract of \$99,500 for a total of \$137,500 for the facility planning study by Strand.

Mr. Gehin indicated the City may still have to complete that kind of study at the treatment plant because we are not transferring our assets to them at this point. Mr. Otto stated there has been a lot of money invested in the wastewater plant in the last several years. He questioned what would have to happen to seriously consider merging with Rib Mountain. Mayor Tipple stated that Mosinee was faced with bringing their treatment plant to standards based upon DNR requirements. They looked at that dollar amount versus merging with the Rib Mountain Sanitation District. In the long term, it made more sense to them to get to a modern new facility. Erickson feels we are looking at the next 20-year cycle and 20 years from now the improvements done today will need to be fixed again or merge with Rib Mountain. Mr. Gehin agreed and is

confident that a study will be required from the DNR to show how the plant will comply with the new phosphorus requirements. Mr. Winters stated we could communicate with Rib Mountain that it would be nice to complete this study together; however, it will not count towards our regulatory purposes and we will have to complete another study on our own.

Mr. Rebman moved to table action regarding participation in Rib Mountain Metropolitan Sewerage District facility planning. Seconded by Mr. Gehin. Motion carried unanimously 5-0.

8) Discussion and possible action regarding McGivern property

Erickson explained that McGivern Masonry owns two properties just north of the wastewater plant. The wastewater plant could use the properties for storage of vehicles, material, manhole covers, manhole rims, concrete pipe, etc. It would be nice to have the area for storage so material does not get buried in snow and also for possible future expansion in the event they do not merge with Rib Mountain. Public Works and the Park Department could also make use of the property. At this point he has not been inside the buildings, but feels it would make sense to explore it. Mohelnitzky stated back when McGivern purchased the property he felt the City had lost an opportunity to acquire a property close to DPW. DPW also has storage needs with electrical poles, storm sewer pipe, etc. There are items stored outside that should be storage inside. When he was on the Riveredge Commission, he tried to get McGivern to tie into the river edge trail. He feels it would be a missed opportunity if purchasing the property was not explored.

Duncanson provided a handout showing the current assessments of the properties and an estimate for a 25' wide easement. He also provided a map that reflects the Riveredge Master Plan Trail, which identified the river edge trail going south from Thomas Street along the river edge down to the end of Adolph Street. There is a permanent easement from Kolbe and Kolbe, which is from Thomas Street to the McGivern property. Also, DPW has done grading work on the outside of their fence, along the river. The trail bed has been graded in anticipation of obtaining an easement through the McGivern property. McGivern was approached in the past and the area for the easement was not an area that he was using. However, he decided against the easement so he would have potential river access and maintain the value of the property. Duncanson feels the river frontage is not high value with the surrounding existing uses. The Park and Recreation Committee has reviewed the concept and believes it is worth pursuing at a minimum for obtaining a permanent easement. If the City does decide to acquire the property, Parks would participate in acquisition using parkland dedication funds.

Groat feels that staff is eager about this as it meets long term objectives for the City, whether it be for the Utility, DPW or the Park Department. The City has completed the CIP planning for 2015, which did not include land acquisition. She questioned if there would be an opportunity for the Sewer Utility to purchase the property with a contribution from parkland dedication funds. Then once it is decided who will benefit from the asset, whether it be the Utility, DPW or a combination, there could be cost sharing interjected into the process whereby the City would pay the Utility for its share of that use.

Mayor Tipple questioned if there have been any conversations with the land owner. Erickson checked with the owner this morning to make sure it was still available. Duncanson stated the owner held an auction on all of his properties and there were two bids on the property, which the owner let expire. Mr. Gehin questioned if there was any indication of how much the owner would like for the properties. Duncanson did not have the authority to negotiate, so numbers were not discussed. Mr. Gehin questioned if the owner filed bankruptcy or if a foreclosure was involved. Mohelnitzky believes that the owner is downsizing as the building industry is down.

Mr. Winters moved to authorize the Utility to take the lead in expressing our interest in these properties and consult with the Park Department and Public Works Department in the process. Seconded by Mr. Gehin.

Mayor Tipple questioned if there is contamination on the properties. Erickson was told by the owner that when he purchased the property there was some environmental work completed. An underground tank was cleaned out according to DNR regulations. Erickson would recommend that an environmental review be completed. An offer could be made upon completing a more thorough investigation.

There being a motion and a second, motion to authorize the Utility to take the lead in expressing interest in these properties and consult with the Park Department and Public Works Department in the process carried unanimously 5-0.

Mr. Winters added that when property comes for sale next to your facility it is always prudent to inquire about them.

9) Review and approve 2015 operating and capital budgets

Geier stated the operating budget is part of the City's budget package even though the Utility is independent of the property tax rolls. The capital items strictly stay with the Utility and are not a part of the CIP budget for the City. However, most are done in coordination with street projects. The other items included are every year items that need to be taken care of, such as well rehabs and truck replacements. A large expense (\$3 million) is the lead service replacement, which has gone up tremendously. This amount is based upon Engineering's projections and what we are anticipating the EPA will require. Wesolowski stated the laterals are expensive because street, sidewalk, curb and gutter are removed for the replacement, which then will also have to be replaced. Mr. Winters questioned if \$3 million of laterals would be replaced in one year. Mr. Gehin indicated if it is by DNR order, the City does not have a choice. Boers stated the lateral replacement is noted in a letter sent to him by the DNR, but a conference meeting will be held in the future where Boers is going to present a different proposal. However, according to Falkowski of the DNR, New Lisbon was also required to replace 7% and the DNR did not change the requirement after meeting with officials. New Lisbon also asked to be credited for the replacements done in 2014, which was denied. Boers noted that if the City can get into compliance the first year, the ruling is done.

Mr. Otto stated there is \$650,000 for a future well. He thought the existing wells were producing. Boers indicated the future well is proposed for 2017. Mr. Gehin questioned the \$150,000 for a 14" replacement on Highway 51 and \$200,000 for Randolph Street. Geier explained that some of the numbers were updated by Marquardt while doing the initial rate study. Wesolowski stated that Randolph Street was talked about in the budget, but has been delayed until at least 2016. He is unsure if the Higgenbotham development on Northwestern will happen. Mr. Winters stated Higgenbotham's plan was not approved because the neighborhood was unhappy with the concentration of multi-units and traffic flow. Mr. Winters questioned if this needed to be approved today as it seems the numbers should be revisited. Groat indicated that borrowing of funds would depend upon which utility it is and what the funding source could possibly be. Typically the Sewer Utility has enough cash on hand that could be used for a number of the items. Otherwise there is a choice to go to revenue bonds for the utility, piggyback onto the general obligation debt or go to the Clean Water Fund. Geier indicated that some of the items are being reviewed as part of the rate study. Groat stated that she typically has a planning meeting with the Utility when they are done with their capital budget to strategize for financing. Discussion followed on the number of changes needed to the spreadsheet that was provided. Staff will update the information and bring this item back in January.

Mr. Gehin questioned if there are enough streets without curb and gutter where lead services can be replaced. Wesolowski has not looked into that yet but noted that typically where the lead services are replaced, the watermain would probably need to be replaced. Also, the sewer laterals may be in the way and could be damaged. Staff will have to try to pick streets where the sewer is not in the way, conditions are sandy, and no curb and gutter.

10) Discussion and possible action on recommendation from the Board of Public Works for the purchase of water meters

Mayor Tipple explained an addendum was posted for this item and the next item based upon a meeting that was held this morning. The reason for the quick action was explained on the addendum. Jacobson stated the addendum was done close to the two hours provided by statute. The bids were opened by the Board of Public Works and it was felt that it would be impractical to wait to bring these items to the January Commission meeting for several reasons. Geier stated there are no 1" water meters in stock and there is a customer in need of one. A RFP was sent to Neptune, Badger, Itron Meters and Sensus. Responses were received from Neptune and Badger. Badger's proposal was considerably less than Neptune. However, in reviewing the information provided by Badger, she is unsure if they meet the specifications of the RFP. At a minimum, it is required to have basic intermediate leak detection. In the materials submitted by Badger, she could not find any information stating leak detection is available. Another requirement was a lifetime warranty. Neptune does provide a lifetime warranty on their case, while Badger provides a 25 year warranty. While this is still a good warranty, we do have some meters in service that are 40 years old that can be returned to Neptune if there are problems. Additionally, the meters are required to be 100% compatible and backwards compatible with Neptune 900, which is the radio reading box currently in service. The intent is not to replace those as they work with the current meter reading system. Badger could only speculate that they would work. Geier was originally concerned that plastic meters may have been quoted because of the price. However, both vendors did quote brass meters. Additional parts would have to be stocked if Badger meters are purchased. There is also a concern if Badger meters will line up the same as Neptune meters.

Groat mentioned that when the City did the new procurement policy they recognized that there would be times when one vendor was the right choice. The procurement policy has a section for sole source purchasing which specifically states a sole source purchase is for when an alternate product or manufacturer would not be compatible with the current products resulting in additional operating or maintenance costs, and standardization of a specific product or manufacturer will result in more efficient and economical operation. The auditor happened to be at the Finance meeting where the sole source purchase of meters was considered. Groat and Jacobson met with him regarding updating the procurement policy regarding legal services and he mentioned his concerns regarding this. The auditor feels that sole sourcing has a place in the procurement policy and this was the appropriate time for a sole source. If meters are interchanged, the City could have thousands of one brand and thousands of another. The need to inventory parts for each one would grow. Inventory holding costs and issues of managing inventory would snowball. Groat reached out to other Finance Directors in the State and found a number of communities that exclude utility meters from the procurement policy. Additionally, other communities, such as Wauwatosa and Waukesha, specifically sole source the meters. The auditor will be at a future finance meeting to talk about the need for sole sourcing.

Geier stated that Badger submitted a cost of \$58 for a 5/8 meter and Neptune's cost is \$117. Winters stated that is a big difference and he does not completely follow the argument of inventory. If the City would have 90% Neptune meters and 10% Badger, you would stock accordingly. He does not feel there would be a massive increase in inventory. He questioned if a letter could be drafted asking if the specifications can be met since it could not be disinterred in the proposal. Geier stated before purchasing from Badger she would like to put one in service to test it. Gehin does not recommend going with Badger meters, but does not have a problem with testing one. However, in the meantime meters are needed. Winters questioned how long of a test period would be needed for the meter. Geier indicated it would take a few months by the time the meter is received, installed, and tested. Winters is sensing an attitude of staff wanting to go with Neptune and will justify it anyway they can. He would like to see an attitude of can we make Badger work as it is half the cost. Gehin stated Green Bay has done a mix of meters and they are not happy. He

questioned if Badger was undercutting their cost to get in the City. He suggested talking with other communities that have Badger meters and ask their cost for meters.

Winters stated we have done a bid process and for the time being we cannot confirm that Badger does not meet specifications. Gehin does not have a problem with testing the meter and noted that it was a proposal and the low bid does not have to be accepted. Groat explained it was a bid, but the procurement policy does not require the low bid be accepted. Jacobson added the policy indicates in general the contract shall be awarded to the lowest price responsible bid taking certain factors into consideration. Gehin believes bid and quote carry different legal connotations. Groat stated there are different requirements in the procurement policy when the purchase is over \$25,000 and a quote is less formal. Winters indicated it may be interesting to have two different types of meters because in the future the vendors can bid against each other. He added the process of bidding has opened up an avenue to potentially save a considerable amount of money.

Mr. Winters moved to direct staff to order enough meters to conduct business for the next three months. Seconded by Mr. Gehin. Motion carried 4-1 with Winters the dissenting vote.

11) Discussion and possible action on recommendation from the Board of Public Works for the purchase of a 2014 or 2015 model 4 wheel drive pickup truck for Wausau Water Works

Boers stated the proposal received is for a 2015 model. Last month he brought three quotes to the Commission. Ford was the lowest at \$24,170. Since it was under \$25,000 it did not have to go to the Board of Public Works and the Commission approved the purchase. Boers called the dealership with the purchase order and received a call back indicating the government discount has been discontinued and the cost increased \$3,000. Without the discount, Ford would no longer be the lowest quote. The purchase was then advertised for bid and only one bid was received. The bid was from Kocourek Ford in the amount of \$23,982. The Board of Public Works referred the purchase to the Commission for consideration. Jacobson noted that the price may go up if we waited until the January Commission meeting for approval.

Mr. Gehin moved to approve the purchase of a 2015 model 4 wheel drive pickup truck from Kocourek Ford in the amount of \$23,982. Seconded by Rebman. Motion carried unanimously 5-0.

12) Adjourn

There being no further business to discuss, motion was made by Mr. Rebman to adjourn the meeting. Seconded by Mr. Gehin. Motion carried unanimously.



December 22, 2014

MEMORANDUM

TO: President Tipple
Commissioner Gehin
Commissioner Otto
Commissioner Rebman
Commissioner Winters

FROM: Dave Erickson, Wastewater Superintendent
Dick Boers, Water Superintendent
Deb Geier, Utility Resource Manager

SUBJECT: Staff Report – December 2014

DRINKING WATER DIVISION

1. Staff met with DNR representatives during an enforcement conference on Friday, December 19 in regard to the lead exceedance. Wausau had the “big guns” on our team, which included Lawrie Kobza, Attorney from Boardman Law; Steve Schultz from Clark Dietz, Don Swailes from AECOM (former DNR Water Chief) and Ken Ligman from Becher Hoppe to help argue our case. We were able to plead our case in regard to the one severely elevated sample that had been taken that was sampled incorrectly by the homeowner. Code requires these samples to be taken from either a kitchen or bathroom faucet where you normally drink. The homeowners took it from a basement sink that is never used. The DNR agreed to take this to the EPA to discuss the possibility of having the sample invalidated. During the very lengthy meeting, we offered to take two rounds of testing of 60 homes in 2015, perform a water quality survey to address recent changes in chlorination and assess the recommended dosage of sodium silicate and/or blended phosphorus to provide optimal corrosion control; hire a consultant to prepare a hydraulic water model of the distribution system for uni-directional flushing, and perform such flushing. Basically, we offered everything we could with the exception of the lateral replacement. The DNR is standing somewhat firm on the lateral replacement, however, they offered a couple of options that could minimize the number of replacements. 1) Perform lateral tests to see what the lead concentration is in the laterals. If the laterals tests came back below the action level, the DNR would accept the test results rather than replacement. This will be very labor intensive as it would require staff to meet with homeowners to take the sample after the water has sat for 6 hours or more. Our current plan is to sample about 20 homes to see if this option would be feasible. 2) Develop a plan over a number of years stating the percentage of laterals that would be replaced. For instance we could do 21% over 3 years. While we may not be able to do the full 7% in the first year, it would give us an opportunity to spread that into the 2nd year by doing 3% in 2015 and 11% in 2016, for instance. 3) The DNR would credit us for the homeowner’s

portion of the lateral footage if we could get the homeowner to replace their section at the same time. For instance, Wausau's average lateral length is 22 feet. If we were to replace our side and the homeowner's lateral was 44 feet and they replaced theirs, we would get credit for 66 feet of replacement. This last option required optimizing our corrosion control measures and adopting an ordinance requiring the building owner to replace their portion of the lead service line when the city does their side. An item to note is that property owners who refuse to replace their portion of the lateral will actually be increasing their overall exposure to lead, due to the disturbance of the line and the mixture of metals. One thing that we were all in agreement with was the need to perform a water quality survey, as there have been changes in our overall water treatment process that could be affecting our corrosion control. Prior to the meeting, staff spent a great deal of time reviewing the lateral materials in the system and was able to scrub the number of lead laterals from our original number of 7572 down to 6056 which would reduce the replacements to 424 rather than 533. This equates to about a \$600,000 savings. No definite decisions were made during the enforcement conference as the DNR will be going back to the EPA for the final ruling and then a consent agreement will be developed between the DNR and the utility. Unfortunately, the clock is still ticking during this time, and will still require some of these actions to be completed prior to the end of the compliance period which is September 30, 2015. A copy of the draft consent ordinance is enclosed. Although it not set in stone yet, it should give you an idea of the expectations of the final document.

2. There are funds available through the Safe Drinking Water Act available as loans through the DNR. Applications for these funds need to be submitted by December 31, 2014. In recent years, since there has not been a lot of activity with this program, there has been some loan forgiveness. This is something that we will be putting in an application for. We would need to provide plans by June 1 if we wished to proceed with this option. Filing an application would not require us to accept the loans if other resources proved to be more economical.
3. We've received a significant number of calls from homeowners and renters after the distribution of the brochure as part of the public education portion of the lead exceedance. That will hopefully help our case with whatever actions will be required in the future.
4. The DNR recently completed the Sanitary Survey on the water system. A copy is attached and will be reviewed at the meeting. There are a number of issues that will need to be brought into compliance during 2015. The biggest struggle is the lack of staff to complete. With the severe winter we had this past year and the number of main and service breaks that we've needed to respond to over the year, many of our maintenance duties have not been completed. Other issues require clerical staff to assist, which we have none. We are looking at options of interns and/or senior aides to assist with these duties.
5. With the cold, then warm, then cold weather we've been experiencing recently, crews have been busy with repairing breaks again. We've had about 8 breaks in as many days. The frost has already gone down about 2 feet which is causing the ground to shift. One of the more interesting breaks was on McClellan Street where the water main actually went under a tunnel connecting BMO Bank and the building housing RMM Solutions (old Tuchscherer building). We were lucky that the break occurred just before the pipe went under the tunnel, although due to the bury depth, it turned into a challenging all-day project. We've also been responding to service lateral issues, broken pipes in unheated homes, and hydrant issues.
6. Omni Contracting completed their work on the installation of the Gateway collectors, and the City's Electrical Department graciously completed the electrical hookups at all but one

location, which was completed by utility staff. Deb will be working with Sprint to get the cellular piece in place and the system will be tested, with staff to be trained in early January. As readings for both quarterly bills and special reads for finals and high usage checks will be able to be performed from our utility office for a good share of the city that should help reduce the number of house calls, especially where the meters with leak detection capabilities are in place. This will allow the meter staff to complete other duties that have also fallen behind.

7. We have received three meters from Badger that we will be testing to see if they meet the specifications required under the recent bid. We will be bench testing, as well as installing the meters in 3 locations to ensure that they will read with our radio boxes, and provide the leak detection capabilities that were required in the specs.
8. We were recently notified that a paper submitted by Short Elliot Hendrickson on the cooperative project of water main lining that was performed a couple of years ago was chosen as “Paper of the Year” out of 160 submissions and will be recognized by the North American Society for Trenchless Technology (NASTT) at the 2015 NASTT No-Dig show in Denver, CO on March 16. As you may recall, this was a cooperative project with Appleton, Marshfield, Wauwatosa and Wausau.

WASTEWATER DIVISION

1. The Wastewater Plant is on track to meet permit limits for December.
2. WDNR granted us permission to spread sludge on frozen farm fields. We hauled 70 loads during the week of December 1st so we are in a much better position to be able to store the remaining sludge through the winter.
3. A total of 7 homes on the southeast side reported sewer backups on Friday, December 12th. The backups were related to the cleaning of the City of Schofield lift station. The contractor for the project met with the affected property owners to resolve their problems. One of the homes had a finished basement and more substantial damage than the other.
4. We have had difficulty finding an intern for the spring semester. We need to have someone at the wastewater plant most mornings and students tend to have conflicts with their class schedules when we most need them. One student, a sophomore, is interested but has limited availability during the semester. Jake Charron is our current intern and he has offered to help us out until he gets a full time job offer.

**BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES**

In the Matter of the Implementation of)
The Lead Service Line Replacement Program) FID No.: 73701023
For the Public Water Supply Located in the) Casetrack ID# 2014-WCEE-093
City of Wausau, Marathon County, Wisconsin)

FINDINGS OF FACT, CONCLUSIONS OF LAW AND CONSENT ORDER

FINDINGS OF FACT

1. The City of Wausau operates a "community water system" as defined in s. NR 809.04(5), Wis. Adm. Code, which supplies water for human consumption to residents of the City of Wausau located in Marathon County, Wisconsin.
2. The Wausau water system is a "public water system," as defined in s. NR 809.04(67), Wis. Adm. Code, having at least 15 service connections or regularly serving at least 25 individuals daily at least 60 days per year.
3. In the interest of protecting public health and safety, the federal Safe Drinking Water Act (SDWA) and s. NR 809.541, Wis. Adm. Code, require community water systems such as Wausau to submit drinking water compliance samples for various chemical parameters, including lead, as required in the annual monitoring schedule.
4. Per s. NR 809.54(3), Wis. Adm. Code, the lead action level is exceeded if the concentration of lead in more than 10% of tap water samples collected during any monitoring period is greater than 0.015 mg/L, which means if the "90th percentile" lead level is greater than 0.015 mg/L.
5. In 1992, Wausau collected its lead and copper compliance samples that resulted in lead action level exceedances at 0.0345 mg/l which exceeded the lead action level at the 90th percentile.
6. Wausau submitted a desk top evaluation in 1993 and determined that feeding sodium silicates was the optimum method for controlling corrosion at Wausau. Sodium silicates have been added after the high lift pumps at the water treatment plant ever since at a rate of around 25 ppm.
7. In 2006, Wausau collected its lead samples that showed Wausau nearly exceeded the lead action level at the 90th percentile. The department recommended the City review their corrosion control strategy to insure corrosion control was optimized. In 2007, Wausau hired Process Research Solutions, LLC to study the water chemistry as it relates to lead concentrations.
8. The City increased chloramination levels as recommended in the Process Research report, but did not implement a unidirectional flushing program or did not continue to monitor for nitrification processes as also recommended in the report.

9. As of September 2014, based on the results of all lead samples collected at valid sample locations, the City has a lead exceedance of 0.016 mg/L at the 90th percentile.
10. In a Notice of Noncompliance letter dated October 24, 2014, the Department sent written notification to Wausau that results for lead exceeded the action level at the 90th percentile and Wausau must take actions to implement optimization of treatment, and begin a lead service line replacement program per s. NR 809.545(1), Wis. Adm. Code.
11. In a Notice of Violation letter dated December 10, 2014, the Department alleged that Wausau failed to maintain optimal corrosion control treatment as required in its drinking water supply.
12. An enforcement conference between the Department and City representatives was held on December 19, 2014. The purpose of the conference was to discuss a lead service line replacement program.
13. The City of Wausau has completed material evaluations, record searches, and site inspections, and indicates that they have XXXX lead service lines in the distribution system.

CONCLUSIONS OF LAW

1. The Department has the authority under s. 281.17(8), Stats., to establish and administer a Safe Drinking Water Program, including issuance of rules. Such rules are contained in Chapter NR 809, Wis. Adm. Code.
2. Community water systems are required to comply with the action level for lead listed in s. NR 809.54(3), Wis. Adm. Code, and initiate a lead service line replacement program in accordance with s. NR 809.545, Wis. Adm. Code, if the action level is exceeded after installing optimal corrosion control measures.
3. Section 281.98(1), Stats. establishes that any person who violates an order from the Department may be required to forfeit not less than \$10 nor more than \$5,000 for each violation. Each day of continued violation is a separate offense.
4. This Order is reasonable and necessary to accomplish the purposes set forth in ch. 281, Stats., and is enforceable under ss. 299.95 and 299.97, Stats.

CONSENT ORDER

The Department of Natural Resources orders and the City of Wausau agrees to:

1. By DATE notify the Department of their decision to pursue either Option A or Option B.
2. Meet the following schedule of actions under either Option A or Option B as outlined below:

Option A - The City of Wausau shall replace at least XX (7% of the initial number) lead service lines in its distribution system each year in accordance with s. NR 809.545(2), Wis. Adm. Code., The first year of lead service line replacement is from October 1, 2014 to September 30, 2015.

- a. Because of the long-term nature of the lead service line replacement program, the Department will allow more lead service lines to be replaced in one year and fewer lead service lines to be replaced in the following years, provided that there is an average of XX lead service line replacements in any five-year period. Wausau also understands that many more than XXX service lines may need to be exposed in order to find and replace XXX lead service lines.
- b. In accordance with s. NR 809.545(4), Wis. Adm. Code, the City of Wausau must offer to replace the building owner's portion of the lead service line at the building owner's cost. If the building owner refuses to replace their portion, the City of Wausau must notify the building owner 45 days in advance of the lead service line disturbance that lead levels may temporarily increase and must provide guidance on measures to take to reduce lead exposure. The City of Wausau must also offer to take a sample for lead at each partially replaced service line, representative of the water in that service line, within 72 hours of the service line replacement if the building owner agrees, and provide results to the building owner within 3 days of receiving the results.

Option B - The City of Wausau shall replace an equivalent linear footage of lead service lines as described in the equivalent linear foot option described below. **The City must remove the public and private portions, so that no portion of a lead service line is left in place.**

- a. Optimize corrosion control measures as recommended in the Process Research Report.
- b. Adopt an ordinance requiring the building owner to replace the building owner's portion of the lead service line whenever the utility replaces the portion of the lead service line under the public water systems control. (ordinance example provided)
- c. Determine the average length of a typical utility owned lead service line portion.
- d. Multiply the total number of lead services by 0.07 and then by the average length to get an annual linear foot total that needs to be removed.
- e. The linear footage of every building owner's portion removed can then be subtracted from the annual total required.

Example:

If a typical street has 10 feet of lead service to the curb stop on the north side of the street and 32 feet of lead service to the curb stop on the south side of the street. The average utility owned service would be calculated as 22 feet. Therefore, assuming the City of Wausau currently has 7,573 lead service lines:

7,573 times 0.07 equals 530 utility portions times 22 feet equals 11,660 feet

Each year the utility must replace at least 11,660 feet of lead service lines.

If a LSL is 120 feet from the main to the meter, replacing the entire line would result in:

11,660 feet minus 120 feet equals 11,540 feet remaining to be removed.

3. Wausau must continue to optimize corrosion control of the drinking water through changes in chemical addition and/or changes with the treatment of the water. Plans and specifications for any waterworks improvements or modifications must be prepared by a professional engineer registered in the State of Wisconsin and approved by this Department prior to installation or construction.
4. The lead service line replacement program shall continue until all lead service lines are replaced or until two consecutive lead sampling compliance rounds demonstrate that the lead action level can be met. If the lead action level is again exceeded in future sampling, the lead service line replacement program shall recommence.
5. The City of Wausau shall submit an annual report outlining the number of lead service lines that were replaced in the previous year, and the lead concentration and location of each lead service line sampled in the previous year. Sampling data must include the sampling method used and the date the samples were taken. The annual report shall be submitted by December 31st of each year to Glenn Falkowski at DNR, 5301 Rib Mountain Drive, Wausau, WI 54401.
6. The City of Wausau shall continue its public education program for lead in accordance with s. NR 809.546, Wis. Adm. Code until at least one compliance round of sampling conducted in accordance with s. NR 809.547, Wis. Adm. Code demonstrates the City is again in compliance with the lead action level.
7. The Department may impose penalties for failing to comply with the terms of this Order, pursuant to s. 281.98 (1), Wis. Stats.
8. This Consent Order may be amended in writing upon mutual agreement of both parties.

WAIVER AND STIPULATION

The City of Wausau stipulates to the issuance of this Consent Order and hereby waives further notice and statutory rights to demand a hearing before the Department of Natural Resources regarding the foregoing Findings of Fact, Conclusions of Law and Consent Order under s. 281.19(8), Stats., or under any other provision of law and waives its rights to challenge this Consent Order in circuit court under ss. 227.52 and 227.53, Wis. Stats., or any other provision of law. The City of Wausau further stipulates and agrees that the Consent Order is effective and enforceable after being signed by the parties and may be enforced in accordance with ss. 299.95 and 299.97, Stats.

The undersigned certify that they are authorized to execute such Consent Order, Waiver, and Stipulation.

STATE OF WISCONSIN
 DEPARTMENT OF NATURAL RESOURCES,
 For the Secretary

By: _____
 Steven L. Sisbach, Section Chief

Date: _____

Environmental Enforcement & Emergency Management
Bureau of Law Enforcement

CITY OF WAUSAU
MARATHON COUNTY, WISCONSIN

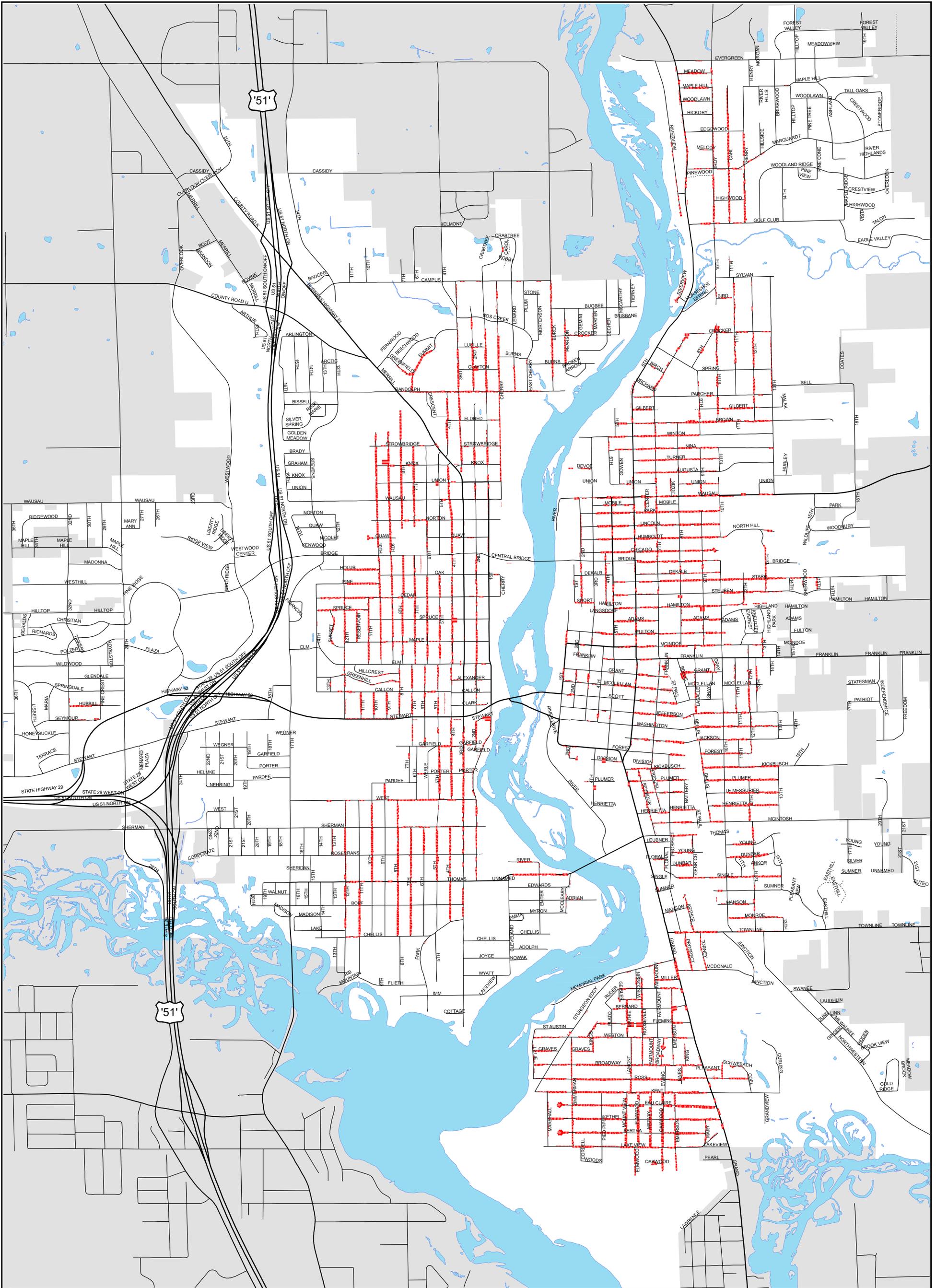
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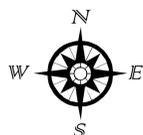
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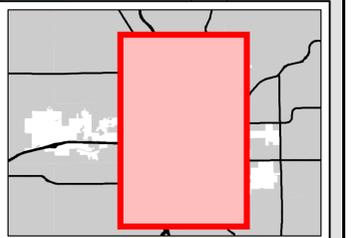
NOTES:
 1. DUPLICATION OF THIS MAP IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF THE CITY OF WAUSAU ENGINEERING DEPT.
 2. THIS MAP WAS COMPILED AND DEVELOPED BY THE CITY OF WAUSAU AND MARATHON COUNTY GIS, THE CITY AND COUNTY. ASSUME NO RESPONSIBILITY FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.
 3. MAP FEATURES DEVELOPED FROM APRIL 2010 AERIAL PHOTOGRAPHY.

CITY OF WAUSAU

Lead Water Service Laterals



Map created December 18, 2014





~

December 2, 2014

Toni Rayala
Wausau City Clerk
407 Grant St
Wausau, WI 54403

PWS ID#: 73701023
Wausau Waterworks-MC
Wausau, WI
Marathon County

Subject: 2014 Sanitary Survey Report on the Wausau Water Utility

Dear Ms. Rayala:

The purpose of a sanitary survey is to evaluate the water system's source, facilities, equipment, operation, maintenance, and management as they relate to providing safe drinking water. The sanitary survey is also an opportunity to update the Department's records, provide technical assistance, and identify potential risks that may adversely affect drinking water quality.

On 11/13/2014, I conducted a sanitary survey of your water system, Wausau Waterworks. During the sanitary survey Richard (Dick) Boers and Deb Geier were present for various portions of the inspection. At the completion of the survey, Dick was briefed on the preliminary findings. This report outlines the final findings, discusses problems that need to be addressed, and timelines for corrective action where appropriate.

A plan for corrective action, including a work schedule must be completed by 01/16/2015. Please provide a letter by 01/16/2015 indicating that you agree to the timelines listed below or with justification for adjusting these timelines. Depending on the type of corrective action you employ, you may need to obtain prior approval and submit additional plans to the Department.

Please make this report available to the City Council or Water Commission members so that the deficiencies and recommendations can be fully discussed. I would also be available to attend a Water Commission or City Council meeting to discuss this report at our mutual convenience.

Significant Deficiencies

During the course of the sanitary survey, 0 significant deficiencies were identified. Significant deficiencies represent an immediate health risk to consumers and indicate noncompliance with one or more Wisconsin Administrative Codes. As such, the deficiencies listed below should be corrected as soon as possible.

Significant Deficiency	Compliance Due Date	Code Citation
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None

Deficiencies

During the course of the sanitary survey, 6 deficiencies were identified. Deficiencies indicate noncompliance with one or more Wisconsin Administrative Codes and/or are problems in the drinking water system that have the potential to cause serious health risks or represent long-term health risks to consumers. Corrective action should be completed for these deficiencies as soon as possible. If there were any significant deficiencies identified above, those should be given highest priority.

Deficiency	Compliance Due Date	Code Citation
1. The lead action level was exceeded during the last compliance round triggering Lead Service Line Replacement.	09/30/2015	809.545(1)
2. Aeration towers and media need to be properly disinfected after the media is cleaned and replaced.	12/31/2015	810.09(4)
3. The non-residential cross connection inspections are falling behind schedule.	12/31/2015	810.15(1)
4. The Private well permitting program is falling behind schedule.	12/31/2015	810.16
5. The valve exercise program is again falling behind schedule.	12/31/2015	810.13(2)
6. Source water meters need to be tested and calibrated every two years.	03/01/2015	810.26(3)

Discussion and Schedule for Correction of Deficiencies:

- The action level for lead is set at 15 ug/l at the 90th percentile. The City of Wausau exceeded the action level in the latest round of compliance samples completed in September of 2014. Since the City had exceeded the action level back in 1992 and had optimized their corrosion control with sodium silicate addition, this second action level violation requires the City to begin a Lead Service Line Replacement (LSLR) program. The LSLR program requires a community to begin replacing their lead service lines at a rate of 7% per year. Wausau is on record as having over 7000 lead service lines, which will equate to over 500 lead service lines required to be replaced annually. The LSLR program must continue until all lead service lines are replaced or until the City can successfully complete two consecutive compliance rounds for lead under the action level at the 90th percentile. Due to the long term nature of the LSLR program the City will be asked to enter into a formal Consent Agreement with the department which will outline milestones for the entire program. **The first set of LSL replacements must be completed by September 30, 2015 in accordance with s. NR 809.545(1) Wis. Adm. Code.**
- The Utility takes one of the packed tower aerators out of service each year for cleaning of the media. The media consists of polypropylene intalox saddles which are removed from the aerator and power washed with fire hoses before being placed back into the aerator. **Prior to placing the aerator back into service, the Utility must properly disinfect the media and aerator unit and collect at least one bacteriologically safe sample in accordance with s. NR 810.09(4) Wis. Adm. Code.**
- The City is required to cause a cross connection survey to be done on all non-residential services at least every two years. The City completed their last complete round of cross connection surveys in 2012 and they were again due to be completed in 2014. Deb Geier stated that the City was behind in the cross connection surveys and the City does not have the documentation indicating that the necessary surveys have been completed. Deb stated that the Water Utility has taken this program back from the Inspections department and that she

will be following through with letters to all the non-residential services that have not completed their cross connection surveys. Any deficiencies noted on the survey reports need to be corrected on a timely basis, the summary report submitted in February of 2014 indicated a significant number of customers remained in non-compliance well after the survey was completed. **The cross connection program shall be brought back into compliance in accordance with s. NR 810.15(1) Wis. Adm. Code by December 31, 2015.**

- Deb also indicated that a number of private well permits have expired and there has been a general lack of follow through on getting private well permits renewed. All private wells located on properties connected to the municipal water system must either have a valid well permit or the well must be properly filled and sealed. Deb stated that she has a plan to contact each expired well permit owner with a letter requesting them to have their well permit renewed or have their well filled and sealed. The City does have a penalty section in their private well ordinance. This penalty section should be used as an incentive to have these private well owners comply with the ordinance. It is not fair to those customers that do comply with the ordinance to allow some well owners to keep their wells without valid permits. **All private wells located on properties connected to the municipal water system shall have a valid permit or be properly filled and sealed in accordance with s. NR 810.16 Wis. Adm. Code by December 31, 2015.**
- Water distribution valves are required to be exercised at least once every 5 years. The valve exercising schedule for the Wausau Water Utility does not meet code requirements. A valve exercising program assures that all the main valves can be readily located, the operating nut is accessible, the valves are operating properly and are fully open. Valves are often needed in an emergency situation and a valve that is not operating properly can elevate a routine problem into a large inconvenience for many customers. Whenever a portion of the distribution system must be depressurized, the mains are subject to an increased potential for contamination. The larger the area affected, the higher the chances of impacting public health. This was brought to the attention of the Utility in the 2011 sanitary survey report. Bob Thompson then divided the distribution system into 5 sections, with the intention of exercising the valves in one of the 5 sections each year. In 2012 the utility made good progress by exercising 1,140 valves, but in 2013 that number dropped down to 747 valves. Dick said that the number of valves was again reduced in 2014 because the crews were working on repairs from the cold spring and did not have the time to exercise the necessary number of valves. **The Utility needs to get back on the valve exercising program to insure all valves are exercised on a routine basis so that all distribution valves are exercised in a 5-year interval in accordance with s. NR 810.13(2) Wis. Adm. Code; a minimum of 1200 valves shall be exercised by December 31, 2015. If the Utility can justify a larger frequency than the five year interval, then an alternate schedule will need to be proposed and approved by this department.**
- Source water meters are required to be calibrated every two years. According to the tags on the source water meters, they were last calibrated in 2011 and are overdue. **All source water meters need to be calibrated every two years in accordance with s. NR 810.26(3) Wis. Adm. Code. The source water meters shall be calibrated by March 1, 2015.**

Recommendations

During the course of the sanitary survey, 5 recommendations were identified. Recommendations are suggestions the utility should consider to improve the services provided or indicate actions necessary to avoid future deficiencies.

Recommendation
1. On any confirmed total coliform positive distribution sample, the utility will need to complete a Level 1 Assessment or go directly to Boil Water.
2. The City should provide 4-log virus inactivation at the treatment plant due to occasional coliform positive samples at Well 11 and due to the existing clearwell being located below the water table elevation.
3. The utility should determine if the industrial park tower is currently necessary for efficient operation of the water utility.
4. The City should practice using their emergency operations plan on a routine basis.
5. Reservoir Inspection reports will need to be submitted to this department when completed.

Discussion of Recommendations:

- The City depends on chloramines to provide a level of disinfection throughout the distribution system. The City switched to chloramines rather than free chlorine disinfection as a means of reducing the production of disinfection byproducts and to get a longer lasting disinfection potential out to the system extremities. Chloramines take longer to inactivate biological agents and are therefore not as effective for providing disinfection in an emergency situation where rapid inactivation rates are required. Because of this, the City of Wausau would issue a Boil Water Notice as their immediate response to a confirmed total coliform positive incident in the distribution system. With the Revised Total Coliform Rule (RTCR) set to be implemented in 2016, an interim option for responding to a confirmed total coliform positive sample has been established. The interim option is to perform a Level 1 Assessment in lieu of issuing emergency disinfection or a Boil Order. The City has access to the Level 1 Assessment forms and is encouraged to become familiar with the forms and the assessment process. I strongly suggest the City of Wausau perform a Level 1 Assessment on their entire facility as a means of practicing the use of the forms and procedures so that in an emergency situation utility staff are comfortable using this new process. A Boil Water Notice would still be issued in the case of a confirmed E-Coli positive sample.
- The City should pursue adding 4-log inactivation of viruses to their treatment process. Recent studies have shown that virus contamination may be more prevalent in drinking water systems than was originally thought. The Wausau water system has several vulnerabilities that make potential viral contamination a concern. Wausau's wells are located in a relatively shallow sand and gravel aquifer in which viruses can readily move. In addition, Well 11 has demonstrated a history of occasional total coliform positive samples. The treatment plant clearwell is also located at an elevation that is below the normal water table elevation, which would not be allowed by today's standards due to the potential for groundwater intrusion directly into the finished water. Given these factors, the City should move forward with their plans to provide 4-log inactivation of viruses in their water treatment plant upgrade.
- The industrial park tower was added to the distribution system at a time when there were significant water users located within the west industrial park area. The City should conduct a water study to determine if this volume of storage is still necessary to support the current

industrial park users. Too much storage can cause water age issues and contribute to water quality complaints. The industrial park area has shown to be the area most susceptible to total coliform positive samples. Another alternative would be to install a mixer unit in the reservoir to prevent stratification, reducing water age, increasing disinfectant distribution and reducing biofilm formation potential.

- The Emergency Operations Plan (EOP) was recently updated in October of 2014, but has not been practiced since 2007. All communities are required to maintain an EOP to prepare for, respond to, mitigate and recover from all types of emergency situations, both natural and manmade. It is important to keep the EOP updated and staff trained in all aspects of the plan. The entire EOP should be practiced as a table top or situational exercise to insure all aspects of the plan are tested. Many local fire and police departments are experienced in running practice scenarios, which could be easily adapted to involve the water utility and other municipal staff and decision makers. This should be done at least every other year to insure everyone is familiar with the workings of the Emergency Operations Plan. All the various parties involved should then get together to discuss what worked well, what did not work, and how the overall plan could be improved to handle the next emergency encountered. What measures can be taken ahead of time to save valuable time during the crisis period? How can communications be improved? What additional training would benefit various staff members? An emergency response plan needs to be a dynamic model constantly improving over time.
- All of the reservoirs were inspected in 2014, many within the past two months. When the reports are completed, copies of form 3300-248 as well as all report materials shall be submitted to this department for each reservoir inspected in accordance with s. NR 810.14(4) Wis. Adm. Code.

Non-Conforming Features

Nonconforming features are items that existed in a water system before a code change became effective. The following are not deficiencies, but do not conform to current standards for community systems. Correction of these features is not required until a health risk is identified, the feature causes problems with the operation of the water system or the feature is located within a reviewable project.

1. The existing treatment plant clearwell is constructed below the water table elevation and does not have proper overflows or vents. (NR811.63 and 811.64)
2. Secondary containment of chemicals and fully enclosed chemical containers are not provided for all the chemicals at the treatment plant. (NR 811.39 and 811.40)
3. All wells are to be equipped with pump to waste fittings. (NR 811.37) The utility can discharge the wells to waste via the meter calibration ports, but these are not designed specifically for this task.
4. The minimum size for water main is now 6 inches in diameter, any water mains of smaller diameter should be replaced whenever practicable. (NR 811.70)

System Summary

Wausau is located in Marathon County, at the intersections of Interstate 39, State Hwy. 51 and State Hwy. 29. The water supply is owned by the City and includes the following: 6 active wells, chemical addition equipment for the addition of chlorine, fluoride, and silicates, a lime softening plant, clearwell, 5 elevated reservoirs, and a distribution system. The original waterworks began operation in 1885. A

filtration plant for iron removal was constructed in 1927 and was replaced with a lime softening plant in 1963. A solids separation/water recycle facility was added in 1975-76. Air stripping facilities for volatile organics removal were constructed in 1984 to treat water from Wells 3, 4 and 6. A second river crossing and Well 10 were added in 1988 to provide additional transmission capacity and routing options from the West Side Wellfield to the plant. Well 11 was added in 2001 and seldom used Well's 4 and 8 were properly filled and sealed shortly thereafter. Auxiliary power is available at Well's 3, 6, 7 and 11, the entire water treatment plant operation is supported by auxiliary power and all booster stations also have auxiliary power available.

All 6 wells are routed through the lime softening plant to remove elevated levels of iron and manganese. Clarion 415 is injected below the aerators prior to the clarifier. Hydrated lime and a mixture of Clarion 700, water and silicate are added at the clarifier mixing zone. Fluoride is added after the clarifier, just prior to the filters. Disinfection is accomplished with chloramines by combining sodium hypochlorite and ammonia in the clearwell. Chloramines help to reduce trihalomethane formation, which are a byproduct of chlorine and naturally occurring organic compounds. Silicates are added at the high lift discharge to reduce the natural corrosive tendencies of the groundwater found in this area. The utility determined that corrosion control was also improved by maintaining a stable disinfection level throughout the distribution system; this is aided by more frequent flushing of low flow areas.

A second clarifier unit was added in 2000 along with bulk chemical storage. The utility made the switch from gas chlorine to chloramine disinfection at the same time. The second clarifier allows the utility to take a clarifier unit out of service for maintenance and repair without interruption of the treatment process. The second clarifier unit did not add to the overall production capacity of the treatment plant; that would require another bank of filters and an additional clearwell.

In 2009 and 2010 the City added a booster station to serve the Village of Brokaw and two additional booster stations to improve system pressure as the system continues to expand east and west. The City now has 6 separate pressure zones, not including the Village of Brokaw. A seventh pressure zone, to be served by the West Hill booster, has not yet been developed and this booster station remains off line.

The City is looking to add a second clearwell and bank of filters to increase the production capacity of the water treatment plant in their 5-year plan. Discussions with the department regarding this project resulted in changes to the plan to provide 4-log inactivation of viruses and an elevated clearwell to meet current code requirements. Final plans and specifications for this project have not been submitted for approval at this time.

Groundwater contamination discovered in the early 80's resulted in Wells 3 and 6 being routed through packed tower aerators located at the water treatment plant. The ongoing groundwater cleanup still controls how the City of Wausau operates their well system. Well 6 is required to operate 24/7 during the week to essentially serve as an extraction well. Based on demand, the utility operates Well 6 with Well 10 one week, and alternates with Well 11 the next week. The other wells: 3, 7 and 9 are run on the weekends. Entry Point 200 consists of Wells 6, 10 and 11 and Entry Point 300 includes Wells 3, 7 and 9.

A water system summary, based on the information available in our data system, is attached. Please review this information for accuracy. If there are changes that need to be made, contact me at (715) 359-5284.

Water Quality Monitoring and Reporting

The utility has a very good overall monitoring and reporting record. Bacteriological samples have been submitted on a timely basis and all Safe Drinking Water Act samples have been submitted as required. The monthly reports are completed and submitted on a timely basis. Updated sampling site plans for Bacteriological sampling, Disinfection Byproducts sampling and Lead and Copper sampling are on file with the department as required.

The most recent compliance monitoring for lead and copper resulted in an action level violation for lead. Since the City had violated the lead action level in the past (1992) and had optimized their corrosion control program since that time, the new action level violation resulted in the requirement to proceed with a Lead Service Line Replacement (LSLR) program. A Notice of Noncompliance (NON) was sent to the City on October 24, 2014 outlining the public education requirements and discussed the need for a Consent Order to outline milestones required for the LSLR program. An enforcement conference date has yet to be scheduled.

All other monitoring samples were well within acceptable parameters. The operator stated that the utility receives very few water quality complaints from residents.

Required Reports, Records, and Utility Programs

The cross-connection program implementation is again falling behind. The operators perform cross-connection inspections at the residential services during meter testing or repair and an inspection form is used to document each inspection. The utility is registered with the Public Service Commission for their 20-year meter replacement program and the residential cross connection interval is correlated with the meter replacement interval. The City sends a letter to all non-residential customers requesting a cross connection survey be completed with documentation submitted to the Utility. The non-residential inspections are the ones that are falling behind schedule. Nearly all of the non-residential services were surveyed in 2012 and were again due in 2014. Dick and Deb said that due to recent staff turnover, the program was not given the time or attention needed. Water Utility staff have taken the program back from the Inspections staff and will be following through with letters to all non-residential services that have fallen behind schedule. As a reminder, non-residential services are to be surveyed for cross connections every two years, unless they contain only plumbing that is comparable to a residential service. Non-residential services with plumbing comparable to a residential service can be surveyed on the same 20-year schedule as a residential service. Any deviation from this 2-year or 20-year interval must be approved by this department.

The local well regulation program is also falling behind with a number of expired permits. The Utility is in the process of determining how many permits are currently expired and will be contacting these well owners with a deadline for compliance. Private wells located on properties connected to the municipal water system must either have a valid permit or be properly filled and sealed in accordance with s. NR 810.16 Wis. Adm. Code.

As additional wells are discovered during routine cross connection inspections, those well owners need to apply for well permits or have their wells filled and sealed. It should be noted that wells can no longer be abandoned by the home owner and must be abandoned by a licensed well driller, pump installer, or a certified waterworks operator within their community. In addition, a licensed well driller or pump installer must inspect any private well system before a new permit can be issued and re-inspect the well every 10 years thereafter.

The City has a comprehensive well head protection plan for all of the wells, which includes an ordinance.

The valve and hydrant maintenance programs had improved with the City divided into 5 sections. Each section was then to have the valves exercised each year to comply with the requirements of NR 810.13. A valve exercising machine was purchased for this purpose. Again operators indicated that staff turnover and the heavy work load from last winter resulted in a reduced number of valves being exercised. Roughly 40% of the valves have been exercised in the past 3 years. Inventory and locational records are becoming established for the valves and hydrants, as required; the valve exercising machine geo-locates each valve position. It should be noted that hydrant lead valves also need to be exercised and should be done on a 5 to 7 year rotation.

The utility should strongly consider adopting a Unidirectional Flushing program to help clean the water main system rather than just exercising the hydrants once each year. Unidirectional Flushing is being promoted in the water industry to improve the overall process of removing debris from a water system through flushing. The concept involves maintaining a flow velocity of at least 5 feet per second through the section of water main being flushed. Experiments have shown that a velocity of 5 feet per second is capable of cleaning most debris and deposits from a water main system. To maintain an adequate velocity through the pipe network, sections of the main must be valved off to insure flow is moving through a single section of pipe. If a hydrant is being fed from two directions, even though the velocity may be 5 feet per second at the hydrant, the flow in the mains from each direction will only be 2.5 feet per second. When performed correctly, a unidirectional flushing program will provide a much better pipe scour using less water than a traditional flushing program. There are a number of training sessions being offered throughout the state on setting up and running a unidirectional flushing program. The utility should look into utilizing a unidirectional flushing program. This program also compliments the valve exercising program, as valves need to be operated to control the flow route.

The added benefit is to remove iron and manganese scales from the distribution piping, which may contain adsorbed lead. This was one of the recommendations to reduce Wausau's lead concentrations outlined in the corrosion study performed by Process Research.

The distribution reservoirs, clearwell and backwash reservoirs were all recently inspected in 2014. The clearwell and backwash reservoirs were allowed to be dive inspected again this cycle, since the City intends to make major changes to the water treatment plant reservoirs in the near future. Following the renovations, it will be much more efficient to isolate reservoirs for complete draindown inspections. All distribution reservoirs were completely drained and inspected with the exception of the industrial park tower. This reservoir was drained to within 1 foot of the bottom, but could not be drained completely without disrupting service to a large number of customers. A new hydrant will be installed at a lower elevation on the discharge line to allow this structure to be completely drained while isolated from the

distribution system. The industrial park tower should be evaluated to determine if this reservoir is still needed to operate efficiently. Since several large water users have moved out of the park, this reservoir may be contributing to the overall water age and occasional total coliform positive results in this area.

Certified Operator

Richard (Dick) Boers is listed as your designated "Operator in Charge" for the water system at Wausau. Dick is certified in the Groundwater (G), Distribution (D), Lime Soda Ash Treatment (L) and Specialized Treatment (V) subclasses. Harold Ferge and Scott Boers are also certified in the G, D, L and V subclasses. There are a number of other operators with various certifications either working in the plant or on the distribution crew. Operators are required to accumulate a minimum of 18 continuing education credits every three years to maintain their certifications. The City is aware that Dick will be retiring soon, and they should be training someone now to take over the water superintendent duties. The water utility has lost a tremendous amount of institutional knowledge through retirement in the past several years, and the City should take advantage of the training opportunity while Dick is still available.

Water System Security

It is recommended that a daily security check be performed on the entire drinking water system to insure doors are locked, windows are secured and nothing has been tampered with. All water supply facilities are equipped with intrusion alarms linked to the SCADA system. Many of the reservoirs are also equipped with chain link fenced enclosures to provide additional security. The utility should continue to enhance the security of all of their water supply facilities whenever possible.

The Emergency Operations Plan (EOP) was recently updated in October of 2014, however the plan has not been practiced in any capacity since the table top exercise in 2007. It is important to keep the EOP updated and staff trained in all aspects of the plan.

Capacity Development Evaluation

This sanitary survey serves as an evaluation of the capabilities of your water system. This system has been determined to have adequate technical and financial capacity to provide safe drinking water, but the managerial capacity has recently become an issue. The ability to plan for, achieve, and maintain compliance with applicable drinking water standards has diminished as evidenced in the recent lead action level violation and the poor implementation of the cross connection and local well regulation programs.

The City of Wausau has recently had a large staff turnover, losing the Utility Director, Human Resources Director and several retirements from the water department. With the impending retirement of Dick Boers, Water Superintendent, the City is set to lose a significant amount of institutional knowledge from the water utility operations. The Utility needs to get back on track with implementing the numerous programs that contribute to the overall operations of the water system. As s. NR 810.03 Wis. Adm. Code states, "The water supplier shall be responsible for ensuring that the public water system is operated and maintained to provide an adequate quantity of safe drinking water to those consumers served by the supplier. This responsibility includes maintaining or contracting for an adequate number of trained staff to perform all duties necessary, performing maintenance and replacement of equipment when necessary to keep the facilities in good operating condition, and providing adequate laboratory testing equipment to control and monitor treatment processes and chemical addition programs.

The next sanitary survey of your system is scheduled to take place in 2017. The designated operator in charge will be contacted prior to the survey to schedule a date that is convenient.

Please respond within 45 days of receipt of this letter (by 01/16/2015) with notification that all deficiencies have been corrected, or with a plan for correcting the deficiencies identified above by their respective deadlines.

I would like to thank Dick Boers and Deb Geier for their time and cooperation during the sanitary survey. If there are any questions concerning this report, please feel free to contact me at (715) 359-5284. I would also offer to attend a Water Commission or City Council meeting to discuss this report at our mutual convenience.

Sincerely,



Glenn Falkowski, P.E.
Environmental Engineer
Department of Natural Resources

cc: Bureau of Drinking Water/Groundwater – DG/5
Mike Blodgett, Eau Claire
Wausau File
Dick Boers, Wausau

Water System Summary Information

System ID: 73701023

System Name: WAUSAU WATERWORKS

County: Marathon

Type: Municipal Community

Basin: Wisconsin River (upper)

Population: 38426

Service Connections: 15643

Owner: WAUSAU CITY CLERK, TONI RAYALA

407 Grant St

Wausau, WI 54403

(715) 261-6530 Fax: (715) 261-4133 waterworks@ci.wausau.wi.us

Date Security VA Complete: 06/24/2004

Date ERP Complete: 12/22/2004

Date ERP Last Exercised/Updated: 02/24/2011

Emergency Phone: (715) 261-6530

Emergency Fax: (715) 261-4133

Emergency E-mail:

Certified Operators

Name	Lic. #	Expires	Phone/Fax/E-mail	Address 1	Address 2	City, State, Zip
BRANDON BALL	36472	11/01/2017	(715) 581-9545 ballbrandon23@yahoo.com	3917 E WAUSAU AVE		WAUSAU, WI 54403
RICHARD BOERS	05378	07/01/2015	(715) 261-7286 rgboers@mail.ci.wausau.wi.us	1315 SHERMAN ST		WAUSAU, WI 54401
SCOTT BOERS	35065	11/01/2016	(715) 581-0603 Scott.Boers@ci.wausau.wi.us	4014 HENRY ST		WAUSAU, WI 54403
JOHN DUPUIS	35434	05/01/2015	(715) 571-9776	2038 RONALD ST		MOSINEE, WI 54455
DAVID ERICKSON	34268	05/01/2017	(715) 261-6941 dave.erickson@ci.wausau.wi.us	407 GRANT ST		WAUSAU, WI 54403
HAROLD FERGE	35132	11/01/2016	(715) 261-7265	918 BROADWAY AVE		WAUSAU, WI 54403
DEBRA GEIER	36470	11/01/2017	(715) 261-7262 deb.geier@ci.wausau.wi.us	7346 S MOUNTAIN RD		WAUSAU, WI 54401
SHANNON LANE	35075	11/01/2016	(715) 573-4892	N5404 COUNTY ROAD K		IRMA, WI 54442
TIMOTHY MESALK	33015	11/01/2017	(715) 261-7288 mesalks@charter.net	1005 N 25TH ST		WAUSAU, WI 54403

Affiliations

Name	Affiliation	Start Date	End Date	Primary?	Phone
RICHARD BOERS	SAMPLER	01/01/1960		Y	715-261-7286
WAUSAU CITY CLERK, TONI RAYALA	PLAN_CON	06/28/2006		Y	715-261-6530
WAUSAU CITY CLERK, TONI RAYALA	OWNER	01/01/1960		Y	715-261-6530
VACANT	MANAGER	01/11/2010		Y	715-261-6530
VACANT	EMERGENCY	01/11/2010		Y	715-261-6530
GLENN FALKOWSKI	DNR REP	10/09/2006		Y	715-359-5284

ID/Location	Type	Vol. (gal)	Firm Pumping Capacity (gpm)	Height to Overflow (ft.)	Overflow Elev. (sea-level, ft.)	Aux. Power?	Mfg.	Model
1801 NORTH RIVER DRIVE	GROUND STORAGE	1000000	2400			Yes	Dive Inspection, Liquid Engineering	
ELM AND 12TH AVENUE	STANDPIPE	2500000	500	16	1373	No	Complete Draindown, Lane Tank	
WEST WAUSAU AND 28TH AVE	STANDPIPE	300000	110	21	1510	Yes	Complete Draindown, Lane Tank	
WEST WAUSAU AVENUE	ELEVATED TANK	250000		118	1606	No	Complete Draindown, Lane Tank	
13TH AND BROWN	ELEVATED TANK	500000		152.5	1510	No	Complete Draindown, Lane Tank	
INDUSTRIAL PARK WEST	STANDPIPE	1000000			1373	No	Partial Draindown, Lane Tank	

Booster Stations

ID/Location	Type	Firm Pumping Capacity (gpm)	Aux. Power?
BROWN STREET	ABOVE GROUND	800	Yes
WEST WAUSAU AVENUE	ABOVE GROUND	110	Yes
28TH STREET	ABOVE GROUND	500	Yes
MONROE STREET (BACK UP ONLY)	ABOVE GROUND		No
18TH STREET BOOSTER	ABOVE GROUND	300	Yes
ELM AND 12TH (BACK UP ONLY)	ABOVE GROUND	250	No
N. 20th Avenue	ABOVE GROUND	500	Yes
17th Street	ABOVE GROUND	500	No
West Hill	ABOVE GROUND	500	Yes

System Interconnects

ID/Location	Type	Capacity (gpm)	Metered?	Chemical Injection Capable?
Schofield (emergency only)	BURIED		No	No
Rib Mountain (emergency only)	BURIED		Yes	No
BROKAW	BURIED	500	Yes	Yes

Treatment Summary Data

Source ID	Type	Description	Begin	End	Objective(s)	Pump Model	Cap.	Stroke %	Speed %	Sol. Tank Cap.	Dil. Ratio	Comments
3	145	Aeration, Packed Tower	01/01/1984		Organics Removal							
6	145	Aeration, Packed	01/01/1984		Organics Removal							

Source ID	Type	Description	Begin	End	Objective(s)	Pump Model	Cap.	Stroke %	Speed %	Sol. Tank Cap.	Dil. Ratio	Comments
		Tower										
7	000	0	01/01/1960		No Treatment at Source							
9	000	0	01/01/1960		No Treatment at Source							
10	000	0	06/09/1988		No Treatment at Source							
11	000	0	07/27/2006		No Treatment at Source							
200	147	Aeration, Slat Tray	01/01/1963		Iron Removal							
200	200	Chloramines	01/01/1963		Disinfection	PULSA FEEDER SODIUM HYPOCHLORITE FLOW PACED	238	32	20	6000	0	
200	360	Flocculation	01/01/1963		Inorganics Removal							
200	380	Fluoridation	01/01/1963		Other	Acrison dry feeder feeding pounds per day	70					
200	500	Lime - Soda Ash Addition	01/01/1963		Inorganics Removal	LIME SLAKER						
200	600	Rapid Mix	01/01/1963		Inorganics Removal							
300	147	Aeration, Slat Tray	01/01/1999		Iron Removal							
300	200	Chloramines	01/01/1963		Disinfection	LMI B911 95 SB AMMONIA	38	50	20	275	0	
300	240	Coagulation	01/01/1963		Inorganics Removal							
300	345	Filtration, Rapid Sand	01/01/1963		Inorganics Removal							
300	360	Flocculation	01/01/1963		Inorganics Removal							
300	380	Fluoridation	01/01/1963		Other							
300	449	Inhibitor, Silicate	01/01/1963		Corrosion Control	PULSAFEEDER FLOW PACED	180	90		250		
300	500	Lime - Soda Ash Addition	01/01/1963		Inorganics Removal							
300	600	Rapid Mix	01/01/1963		Inorganics Removal							

System Evaluation Summary

Inspector/Reviewer	Date	Report Date	Type	Agency	Response Due	Response Recd
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Inspector/Reviewer	Date	Report Date	Type	Agency	Response Due	Response Recd
FALKOWSKI, GLENN	11/13/2014	12/02/2014	SURVEY	DNR	01/16/2015	
FALKOWSKI, GLENN	12/19/2013	01/06/2014	ANNUAL	DNR		
FALKOWSKI, GLENN	12/13/2012	12/18/2012	ANNUAL	DNR		
FALKOWSKI, GLENN	11/30/2011	12/14/2011	SURVEY	DNR	01/30/2012	01/31/2012
FALKOWSKI, GLENN	11/16/2010	12/13/2010	ANNUAL	DNR		
FALKOWSKI, GLENN	12/17/2009	01/05/2010	ANNUAL	DNR		
FALKOWSKI, GLENN	10/20/2008	11/20/2008	SURVEY	DNR	01/12/2009	12/01/2008
FALKOWSKI, GLENN	11/14/2007	12/26/2007	ANNUAL	DNR		
FALKOWSKI, GLENN	11/09/2006	12/13/2006	ANNUAL	DNR		
FALKOWSKI, GLENN	11/15/2005	12/23/2005	ANNUAL	DNR		
FALKOWSKI, GLENN	11/09/2004	12/21/2004	ANNUAL	DNR		
FALKOWSKI, GLENN	11/06/2003	01/20/2004	SURVEY	DNR	03/10/2004	02/19/2004
FALKOWSKI, GLENN	12/09/2002	12/26/2002	ANNUAL	DNR		
FALKOWSKI, GLENN	12/05/2001	12/26/2001	ANNUAL	DNR		
FALKOWSKI, GLENN	11/01/2000	12/15/2000	ANNUAL	DNR		
FALKOWSKI, GLENN	12/09/1999	01/20/2000	ANNUAL	DNR		
FALKOWSKI, GLENN	01/12/1999	09/02/1999	SURVEY	DNR		
FALKOWSKI, GLENN	12/17/1997	04/13/1998	ANNUAL	DNR		
FALKOWSKI, GLENN	03/19/1997	04/22/1997	ANNUAL	DNR		
FALKOWSKI, GLENN	04/22/1996	05/30/1996	ANNUAL	DNR		
FALKOWSKI, GLENN	12/02/1993	01/31/1994	SURVEY	DNR		
	03/25/1992		ANNUAL	DNR		
	02/28/1992		ANNUAL	HSS		
FALKOWSKI, GLENN	12/13/1988	02/21/1989	ANNUAL	DNR		
FALKOWSKI, GLENN	12/01/1987		ANNUAL	DNR		
DOBBINS, WILLIAM	12/10/1986	03/09/1987	SURVEY	DNR		
KELLY, EUGENE	06/04/1981	09/28/1981	SURVEY	DNR		
BROBST, ROBERT	11/06/1980	11/13/1980	ANNUAL	DNR		

Bacteriological Sampling History

Year	Distribution Safe	Distribution Unsafe	Confirmed Unsafe	Missed Samples	Raw Safe	Raw Unsafe	Fecal Positive?
2014	435			0	26	3	N
2013	482	2		0	28	1	N
2012	488			0	28		N
2011	485			0	24		N
2010	486			0	28	1	N
2009	488			0	28	1	N
2008	514			0	34	4	N

Chemical Sampling History

Year	Sample Group	Source ID	Samples Taken	Missed Samples	MCL Violations
2014	FLUORIDE		11	0	0
2014	PBCU_RULE	200	2	0	0
2014	VOC	300	4	0	0
2014	PBCU_RULE	300	2	0	0
2014	SOC	200	1	0	0
2014	PBCU		34	0	0
2014	PBCU_RULE		20	0	0
2014	VOC	200	4	0	0

Year	Sample Group	Source ID	Samples Taken	Missed Samples	MCL Violations
2014	PBCU	200	1	0	0
2014	RAD	300	1	0	0
2014	IOC	200	1	0	0
2014	IOC	300	1	0	0
2014	PBCU	300	1	0	0
2014	DBP		2	0	0
2014	RAD	200	1	0	0
2013	FLUORIDE		12	0	0
2013	VOC	300	4	0	0
2013	NITRATE	200	1	0	0
2013	SOC	200	1	0	0
2013	VOC	200	4	0	0
2013	NITRATE	300	1	0	0
2013	DBP		2	0	0
2012	FLUORIDE		12	0	0
2012	VOC	300	4	0	0
2012	NITRATE	200	1	0	0
2012	SOC	200	1	0	0
2012	VOC	200	4	0	0
2012	NITRATE	300	1	0	0
2012	DBP		2	0	0
2011	FLUORIDE		12	0	0
2011	VOC	300	4	0	0
2011	SOC	200	1	0	0
2011	PBCU		50	0	0
2011	VOC	200	4	0	0
2011	IOC	200	1	0	0
2011	IOC	300	1	0	0
2011	DBP		2	0	0
2011	SOC	300	1	0	0
2010	FLUORIDE		12	0	0
2010	VOC	300	4	0	0
2010	NITRATE	200	1	0	0
2010	SOC	200	1	0	0
2010	VOC	200	4	0	0
2010	NITRATE	300	1	0	0
2010	DBP		4	0	0
2009	TTHM		2	0	0
2009	FLUORIDE		12	0	0
2009	VOC	300	4	0	0
2009	HAA5		2	0	0
2009	NITRATE	200	1	0	0
2009	SOC	200	1	0	0
2009	VOC	200	4	0	0
2009	RAD	300	1	0	0
2009	NITRATE	300	1	0	0
2009	RAD	200	1	0	0
2008	TTHM		2	0	0
2008	FLUORIDE		12	0	0
2008	HAA5		2	0	0
2008	VOC	300	4	0	0

Year	Sample Group	Source ID	Samples Taken	Missed Samples	MCL Violations
2008	SOC	200	1	0	0
2008	PBCU		30	0	0
2008	VOC	200	3	0	0
2008	IOC	300	2	0	0
2008	IOC	200	1	0	0
2008	SOC	300	1	0	0

Sample Group	Last Sampled
BACTI	2014
FLUORIDE	2014
IOC	2014
RAD	2014
HAA5	2009
PBCU_RULE	2014
PBCU	2014
NITRATE	2013
VOC	2014
SOC	2014
TTHM	2009
DBP	2014

MCL Violations

Source ID	Contaminant	Concentration	MCL	Units	Viol. Start	Viol. End	Continuing Operation?
None							

Definitions

MCL = Maximum Contaminant Limit (as set by the Environmental Protection Agency (EPA))

BACTI = Bacteriological Sample

IOC = Sample for Inorganic Compounds

NITRATE = Nitrate Sample

PBCU = Lead and Copper Sample

RAD = Sample for Radioactivity

SOC = Sample for Synthetic Organic Compounds

VOC = Sample for Volatile Organic Compounds

FLUORIDE = Fluoride from Fluoridation

TTHM = Total Trihalomethane Sample



North American Society for Trenchless Technology (NASTT)
NASTT's 2014 No-Dig Show



Orlando, Florida
April 14, 2014

Paper MM-T3-01

The Three C's of Water Main Rehabilitation: Cooperative Agreements, Cured-in-Place Pipe Lining, and Competitive Bidding

Dave Wasserburger, Water Superintendent, Marshfield Utilities, City of Marshfield, Wis.; Brad Marquardt, Public Works and Utilities Director, [Wausau Water Works](#), City of Wausau, Wis.; Mark Kilheffer, Project Engineer, Public Works, City of Appleton, Wis.; James Wojcehowicz, Water Superintendent, [Wauwatosa Water Utility](#), City of Wauwatosa, Wis.; Paul Pasko, PE, Short Elliott Hendrickson Inc.

ABSTRACT

Though structural Cured-in-Place-Pipe (CIPP) lining for water main rehabilitation has been widespread throughout Canada, only recently is it gaining steam in the United States. Unfortunately, forward-looking municipalities in the upper Midwest looking to implement CIPP technology to rehabilitate their aging water infrastructure encounter a major obstacle: there are few nearby qualified contractors available to do the work.

This paper uses as a case study the experience of several northern Wisconsin Utilities who entered into a Cooperative Project Agreement (CPA) to attract qualified contractors and leverage bargaining power for CIPP work. The CPA established a single commission with the power to manage funds, enter into contracts, and hire employees. More importantly, the CPA increased the volume of lining work and allowed the Utilities to receive more competitive bids from distant, qualified contractors.

This paper demonstrates the benefits of such a CPA agreement, as well as the overall advantages of using CIPP to innovatively address aging water infrastructure problems. Namely, by inserting a new pipe into the existing pipe without trench excavation - then by reinstating water services from inside the pipe using robotic drills, it mitigates political fallout, reduces damage to roadways and pavement, has a small carbon footprint, and minimizes disturbances to boulevards and landscaping. The CIPP method, used in conjunction with a CPA, has saved the Utilities more than forty percent compared to the open-cut method. By joining together and implementing the three C's of water main rehab — cooperative agreements, competitive bidding, and cured-in-place pipe lining — these Utilities were able to affordably address critical water main issues for their customers.

Introduction

In the past decade water main breaks and related problems have increased significantly as municipal infrastructure approaches its usable expiration date. Northern municipalities looking to address aged water mains are beginning to regard CIPP as a viable solution to expensive and disruptive traditional dig-and-replace methods. However, today only about four companies in North America offer CIPP products, and only a handful of contractors are qualified for the installation of these systems. For this reason, it can be difficult for Northern Utilities to attract competitive bids from qualified out-of-state contractors for a single small project. Such was the case for the Marshfield Utilities, serving the City of Marshfield, Wisconsin, where a cooperative project agreement (CPA) among cities compelled contractors to compete for work, and thus brought CIPP to communities that otherwise may not have been able to afford it individually.

Marshfield's Problem

Marshfield Utilities had a problem. 1,280 feet of 6-inch cast iron water main under Palmetto Avenue had broken 14 times since 1988, including four breaks between 2008 and 2012. Because Marshfield Utilities must reimburse the City of Marshfield for the cost of pavement repairs incurred during water main repairs, it wanted to repair its pipe with minimal pavement disruption. Especially since Palmetto Avenue is concrete (*Image 1*).



Image 1 – Palmetto Avenue where it is intersected by Wallonnie Drive. The pipe varies in location from under the curb to near the middle of the lane in the foreground. Excavation would disturb much pavement.

Traditional dig-and-replace methods would disturb too much pavement. While the pipe bursting and directional drilling methods disturb less pavement initially, service pipe reinstatement would still require dig and replace methods. In addition to pavement concerns, the service pipe reinstatement would interfere with storm sewer pipe crossings as well as a City mill and overlay project occurring on intersecting streets, which had to be completed before the start of an upcoming county fair. This is critical to the project because both Palmetto Avenue and its intersecting streets provide necessary overflow parking for the nearby fair grounds.

After considering these options and weighing them against the needs of residents, taxpayers, and the community, Marshfield Utilities decided the best way to repair its water main was through CIPP structural water main lining. Unfortunately, while the contractor Michels Corporation was nearby in Brownsville, Wisconsin, the next two closest contractors were in Chesterfield, Missouri (Insituform) and Taylor, Michigan (Fer-Pal Construction). Marshfield Utilities was concerned the lack of nearby contractors – and therefore lack of competition – would affect its bid unit prices (*Figure 2*).

The Collective Power of a CPA

To address these concerns, Marshfield Utilities hired engineering firm Short Elliott Hendrickson Inc. (SEH®) to help develop a Cooperative Project Agreement (CPA). A CPA, also called a joint powers agreement, establishes a single commission with the power to manage funds, enter into contracts, and hire employees. Not limited to the State of Wisconsin, every state in the country has an allowance to enter into similar agreements. With a CPA, Marshfield Utilities would be able to combine its project with similar CIPP water main lining projects in two nearby cities: Wausau and Appleton, Wisconsin.



Figure 2 – For Marshfield, Wausau, and Appleton Wis., the nearest qualified lining contractors operated out of Brownsville, Wis. and Chesterfield, Mo., and Taylor, Mich.

Wausau's Problem

Wausau Water Works (WW) in Wausau, Wis., was experiencing similar water main-related issues. Specifically, 1,020 feet of 6-inch cast iron water main beneath Sunset Drive, and 680 feet of 14-inch cast iron pipe in a side yard easement serving it, had broken eight times since 1980. Traditional dig-and-replace methods would disturb significant amounts of the side yard easement and also damage the recently reconstructed Sunset Drive pavement and its adjacent concrete curb (Figure 3).

Importantly, the Wausau WW did not know how the pipe was laid into the bed rock; especially in the easement. If the trench cut into the rock was narrow and needed widening during dig-and-replace method operations, the resulting vibrations from rock excavations would likely impact nearby homes. Furthermore, pipe bursting and directional drilling methods were not feasible due to shallow bedrock. Wausau WW decided the best way to repair the water main was to use CIPP structural water main lining.

CPA Facilitates Competitive Bidding

By developing the CPA with SEH, the individual CIPP projects for Marshfield Utilities, Wausau WW, and Appleton DPW were merged into single set of bidding documents. The Cities were able to increase the total volume of lining work and were able to attract bids from three qualified contractors. Fer-Pal Construction won the contract and completed the work in the CPA for an overall cost of \$0.9 million (compared to \$1.26 million using dig-and-replace methods) yielding a total savings of almost 40% (Figure 5).

However, even with the overall savings, the Appleton DPW project was not cost effective due to the likelihood that a sacrificial liner may need to be installed before the installation of the actual liner. Appleton DPW chose not to award a contract for the work in their community and withdrew from the CPA. This is a key aspect of the CPA — there is an allowance for any party to withdraw at any time up to, and including, award of contract.

		Appleton	Wausau	Marshfield
Pipe Data	Diameter - Inches	12	14	6
	Length - Feet	280	680	1,020
	No. of Services	1	0	19
Bid Lining Only Cost - per LF (1) (3)	Low	\$430	\$147	\$111
Bid Construction Cost - per LF (2) (3)	Low	\$625	\$258	\$203

- (1) Cost to only furnish and install the liner and re-establish water service connections
- (2) Cost includes traffic control, excavation, installation and removal of temporary water main network pipes, pipe cleaning, furnish and install the liner, reestablish water service connections, and restoration.
- (3) All costs rounded to the nearest \$1

Figure 5 – Summary of bids for Appleton DPW, Wausau WW, and Marshfield Utilities.

CPA Speeds Up Permitting

During CPA and bid document preparation, the WiDNR was developing CIPP design review and construction testing permitting requirements for CIPP. The WiDNR worked closely with the Utilities, their consultant, and the CIPP contractor community to develop its CIPP permitting requirements. Once these permitting requirements were defined, the CPA allowed the Utilities to accelerate the permitting process with WiDNR for CIPP. While three separate permits were submitted, one for each Utility, WiDNR reviewed them simultaneously using one set of bidding documents.

Last-Minute City

While Fer-Pal was installing CIPP for Marshfield Utilities and Wausau WW, another Utility — the Wauwatosa Water Utility (WU) serving Wauwatosa, Wis. — had an emergency of its own. Wauwatosa WU’s emergency involved 1,285 linear feet of backyard 12-inch cast iron water main installed in 1919 along a developed 20-foot wide easement. The pipe shares the easement with a sanitary sewer pipe and overhead power, telephone, and cable TV lines. The pipe serves 53 properties and broke 4 times between May and September 2012. While only 19 of the properties were served directly by the pipe, the remaining 34 properties were connected to the pipe via a ‘loop’ (Figure 6).

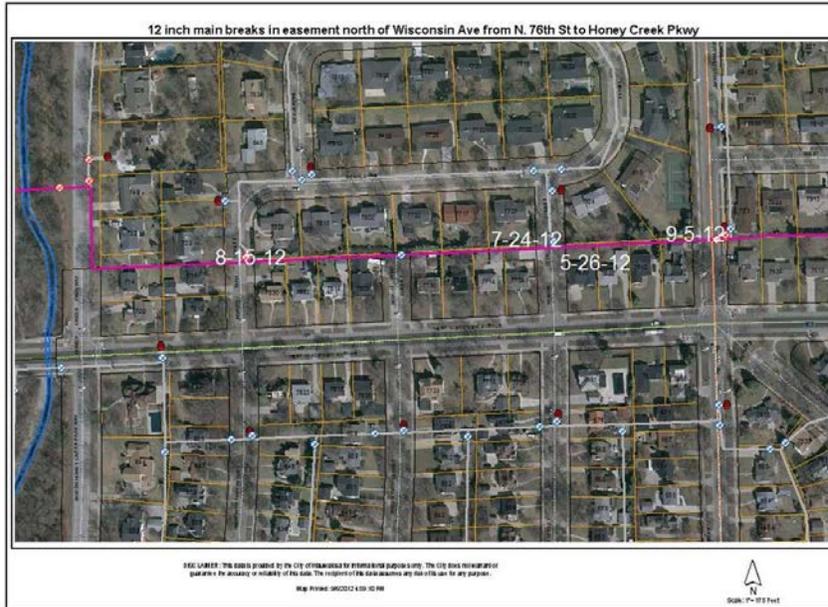


Figure 6 - 1,285 linear feet of backyard 12-inch pipe serving 53 properties and the location of its 4 breaks. Note the 'looped' pipe network north of the 4 breaks.

Wauwatosa WU needed a fast and affordable solution to rehabilitate the problematic pipe. Dig-and-replace method was not an option due to structures built in the easement, mature and valued neighborhood landscaping along the easement, and limited access to the easement. Pipe bursting and directional drilling methods were not feasible because after pipe installation, excavations would be needed in the easement to reinstate each of the 19 service pipes. Wauwatosa WU decided the best way to repair its water main was using CIPP structural water main lining.



Figure 7 - Excavation in Wauwatosa after the Sept. 15, 2012 pipe break. The pipe runs parallel to, and behind, the retaining wall. Note the limited access along this pipe easement and the presence of overhead private utilities.

Fortunately, due to a combination of Appleton DPW withdrawing from the CPA, and a long-standing relationship between Wauwatosa and Marshfield officials, Wauwatosa WU knew Fer-Pal was in Wisconsin

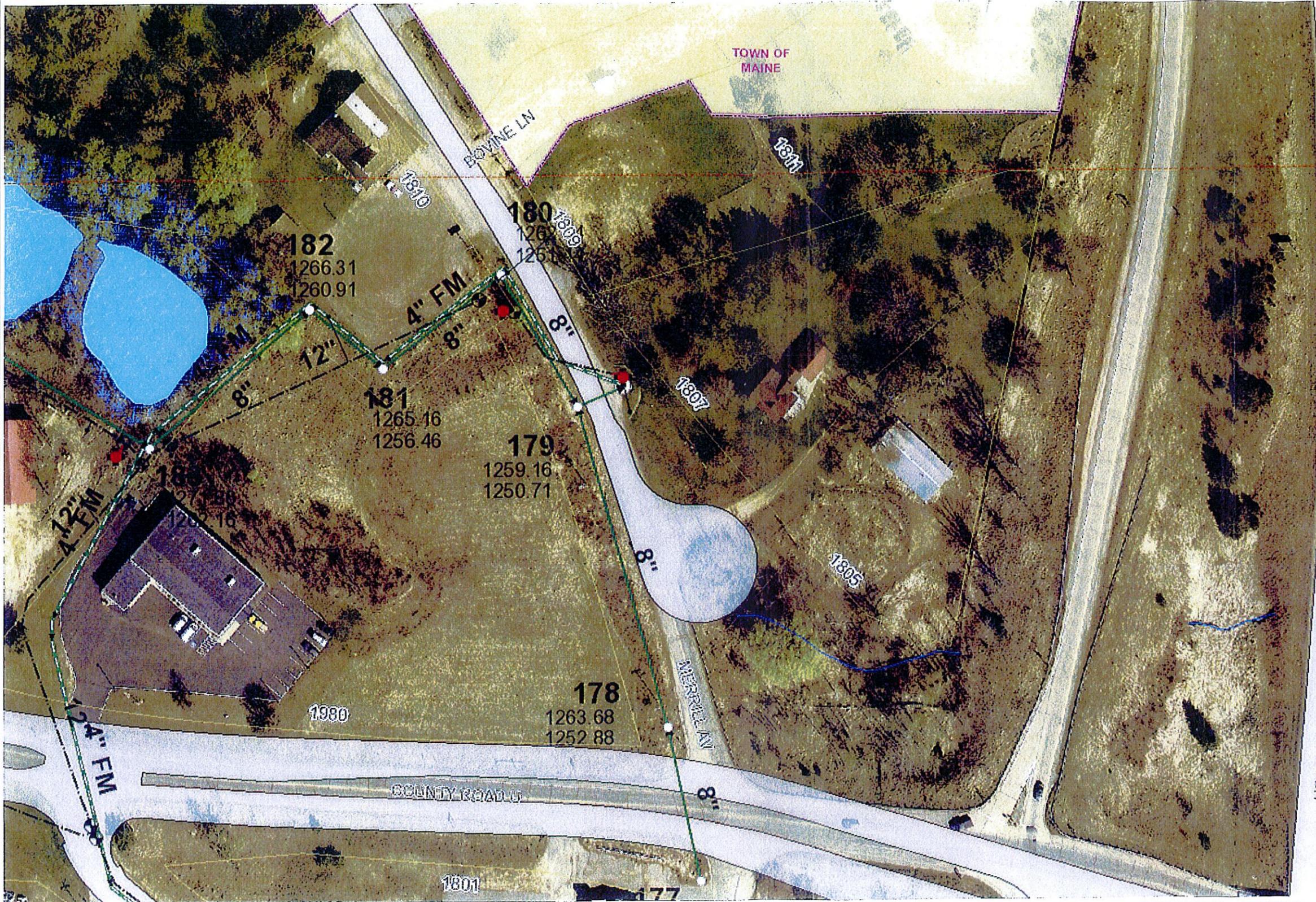
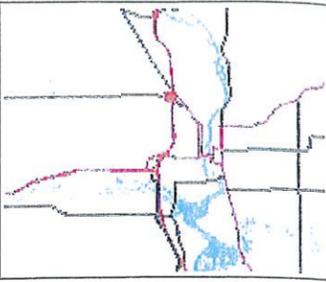
installing CIPP and that Appleton DPW had left the CPA. Wauwatosa had an opportunity to take advantage of the contractor's presence to complete their emergency repair.

Officials from Wauwatosa WU traveled to Marshfield to review the CIPP procedure and meet SEH and Fer-Pal Construction. Wauwatosa WU asked SEH to quickly prepare a Request for Quote document, which Fer-Pal responded to using prices very similar to those they provided to the Cities through the CPA. Wauwatosa WU accepted Fer-Pal's quote.

Because WiDNR now had previous experience using its new CIPP permitting requirements with the three other Utilities, Wauwatosa WU was able to fast track its permitting process with the WiDNR. As a result, the contractor was able to complete the rehabilitation work before leaving Wisconsin for winter. In the end, approximately 4,200 linear feet of water main was reinstated in three Wisconsin communities – all at significant cost savings to the Utilities and their customers.

Summary

Northern communities facing water main plights must do so in a way that is not only expeditious and economical, but also has minimal impact on the community and taxpayer property. In many cases, structural cured-in-place piping for water mains has come to represent the best choice solution for such a problem. And when a single Northern municipality does not have enough CIPP work to offset the high cost of qualified, out-of-state contractors, the answer lies in joining with likeminded communities to aggregate individual needs through a CPA. By doing so, they are able to attract more competitive bids. This solution significantly reduces cost for municipalities and is advantageous to contractors.



- Legend**
- Parcels
 - Section Lines/Numbers
 - Break Leak
 - * Break
 - ◊ Leak
 - Fire Hydrant
 - Water Reservoir
 - Tank
 - Tower
 - Water Well
 - Water Valve
 - ⊙ Butterfly Valve
 - Curbstop Valve
 - ⊙ Gate Valve
 - * Gate Valve with Bypass
 - ⌘ Tapping Valve
 - Pressure Reducing Valve
 - Blowoff
 - ⊞ PRV
 - Launch
 - Back Flow Preventor
 - Raw Water Main
 - Hydrant Lead / Fire Line
 - Fireline
 - Hydrant Lead
 - Lateral
 - Water Main- Pressure System
 - Base Zone
 - East Side High Zone
 - East Side Zone
 - Special Zone
 - Upper West Side Zone
 - West Side Zone
 - Abandoned Water Main
 - Manhole
 - Gravity Main
 - Collector
 - Interceptor
 - Force Main
 - Liftstation
 - Abandoned
 - Railroad
 - Bridge
 - Overpass
 - Paved Road
 - Stream - River
 - Pond - Lake
 - Wausau Wetland



Map Created: 10/30/2014
 42.28 0 42.28 Feet
 User_Defined_Lambert_Conformal_Conic

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

1) 1809 Merrill

Sewer — \$8,719.43 (Includes Lateral)

Water — \$8,246.85

\$16,966.28

2) 1807 Merrill

Sewer — \$8,797.55 (Includes Lateral)

Water — \$8,602.25

\$17,399.80

3) 1805 Merrill Ave

Sewer — \$11,774.57 (No Lateral)

Water — \$11,748.15

\$23,522.72

Sum Total Δ = \$57,888.80

TIMOTHY R. NATARUS
4308 KRAMER LANE
WESTON, WISCONSIN 54476
(715) 573 6399

OCT 15 2014

October 13, 2014

Allen M. Wesolowski
Department of Public Works
Engineering Division
City of Wausau
407 Grant Street
Wausau, WI 54403-4783

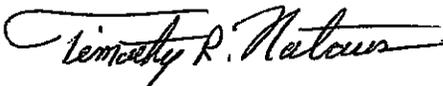
RE: 1805 MERRILL AVENUE
WAUSAU, WI 54401

Attorney John B. Wagman, after conferring with the city attorney, informed me that your department would be making the determination to resolve the problem with the sewer and water issue at the above referenced property. This issue has been bounced around to several departments and I feel that it's time that I am informed of its progress.

A second issue is the ditch line on N. Merrill Avenue. I've noticed that the right-of-way has been marked on my properties. What is the plan to resolve the constant water runoff issue? Also, per our conversation, you had mentioned you were going to contact the project engineer for the Highway 51/U project about the drainage and washout on the cul-de-sac that is part of their project.

I would appreciate it if you would contact me by letter or e-mail about the above referenced questions and concerns. My e-mail address is: timbk2@frontier.com.

Sincerely,



Timothy R. Natarus

TIMOTHY R. NATARUS
4308 KRAMER LANE
WESTON, WISCONSIN 54476
(715) 573 6399

OCT 30 2014

October 28, 2014

Allen M. Wesolowski
Department of Public Works
Engineering Division
City of Wausau
407 Grant Street
Wausau, WI 54403-4783

RE: 1805 MERRILL AVENUE
WAUSAU, WI 54401

This is just a note to follow-up on our brief meeting of this morning. Thank you for taking the time out of your busy day to discuss my problem with the above referenced property. I'm looking forward for the opportunity to meet with the Sewer and Water Commission at their next meeting.

Sincerely,



Timothy R. Natarus

ORDINANCE OF WAUSAU WATER WORKS COMMISSION

Amend Section 13.62.040 Control of prohibited wastes to allow the ability to authorize SIU's to take a single grab sample

Committee Action:

Ordinance Number:

Fiscal Impact: None

File Number: 11-0507

Date Introduced:

The Common Council of the City of Wausau do ordain as follows:

Add ()
Delete (——)

Section 1. That Section 13.62.040 Control of prohibited wastes, is hereby amended to read as follows:

13.62.040 Control of prohibited wastes. (a) Wastewater Discharge permits.

....

(2) Permit Application.

....

(F) A baseline report shall be submitted with the permit application by industrial users subject to categorical standards to provide data required for the application. The industrial user shall identify the pretreatment standards applicable to each regulated process, and shall:

....

(ii) A minimum of four grab samples must be used for pH, cyanide, total phenols, oil and grease, sulfide and volatile organics. For all other pollutants, twenty-four hour composite samples must be obtained through flow-proportional composite sampling techniques where feasible. The Wausau superintendent may waive flow-proportional composite sampling for any industrial discharger that demonstrates that flow-proportional sampling is infeasible. In such cases samples may be obtained through time-proportional composite sample techniques or through a minimum of ~~four~~ **one** grab samples where the discharger demonstrates that this will provide a representative sample of the effluent being discharged.

Section 2. All ordinances or parts of ordinances in conflict herewith are hereby repealed.

Section 3. This ordinance shall be in full force and effect on the day after its publication.

Adopted:
Approved:
Published:
Attest:

Approved:

James E. Tipple, Mayor

Attest:

Toni Rayala, Clerk



Strand Associates, Inc.®
910 West Wingra Drive
Madison, WI 53715
(P) 608-251-4843
(F) 608-251-8655

November 4, 2014

Mr. Ken Johnson
Manager/Superintendent
Rib Mountain Metropolitan Sewerage District
2001 Aster Road
Wausau, WI 54401

Re: Rib Mountain Metropolitan Sewerage District Facility Planning – Including Wausau Flows and Loads

Dear Ken,

As part of discussions related to our ongoing facility planning efforts with Rib Mountain Metropolitan Sewerage District (RMMSD), the idea of RMMSD partnering with the City of Wausau (Wausau) for wastewater treatment has been discussed. This idea has previously been studied by Virchow Krause & Company through Phase 1 and Phase 2 Consolidation Feasibility Studies completed in 2005 and 2006. RMMSD and Wausau convened a meeting on October 14, 2014, to initiate a conversation in light of RMMSD's current facility planning effort. As a result of that meeting, RMMSD requested that we propose a modified Scope of Services for our Agreement dated August 6, 2014, for RMMSD Facility Planning that would incorporate the alternative of treating the flow from Wausau's wastewater treatment plant (WWTP) at RMMSD's WWTP. Approaching this idea as part of the ongoing facility planning effort is significantly more efficient than a standalone effort.

We have made the following assumptions in preparing this Scope of Services:

- Our evaluation will consider two scenarios and will include a recommended plan for each scenario:
 - Facility planning for RMMSD's WWTP with the existing contributing community customers.
 - Facility planning for RMMSD's WWTP with the combined flow of RMMSD's existing contributing community customers and the City of Wausau's WWTP, assuming all of the flow from Wausau enters at the influent pumping station without any prior treatment.
- Technical memorandums will be reviewed with representatives from RMMSD and Wausau.
- The facility plan does not include an evaluation of how or by which means Wausau's flow will be transferred to RMMSD.
- The facility plan only includes facilities inside the RMMSD fence and RMMSD's existing interceptor.
- Wausau's expected population growth over the next 20 years will be based on the 2025 Wausau Urban Area Sewer Service Plan extrapolated to 2035 or on information provided by Wausau.

Mr. Ken Johnson
Rib Mountain Metropolitan Sewerage District
Page 2
November 4, 2014

Scope of Services

1. Prepare a request for information of data and documentation for RMMSD, including Wausau's additional flow volume and characteristics and submit to RMMSD and Wausau.
2. Review Wisconsin Department of Natural Resources (WDNR) and United States Environmental Protection Agency regulatory parameters related to the WWTP discharge and combined RMMSD and Wausau WWTP discharge, the proposed effluent limits, and potential for more stringent regulatory limits, including potential limits from the Wisconsin River total maximum daily load (TMDL) determination.
3. Prepare a preliminary list of alternatives to consider for RMMSD WWTP upgrades to meet the needs of RMMSD and a combined RMMSD and Wausau WWTP in accordance with the regulatory conditions and capacity needs.
4. Attend a kickoff meeting with RMMSD to review project scope, available information, project goals, funding options, schedule, management goals, operations goals, maintenance goals, unit process review, list of potential alternatives for WWTP upgrades, permitting, environmental issues, stakeholder involvement, and communication planning.
5. Attend two additional meetings with RMMSD and Wausau representatives to discuss the project scope, available information, project goals, schedule, list of potential alternatives for WWTP upgrades, permitting, environmental issues, stakeholder involvement, and communication planning.
6. Review existing RMMSD-provided interceptor sewer condition information. Summarize known deficiencies in the interceptor sewer based on interviews and previous work done by RMMSD. Review background information and data including the need for a comprehensive infiltration/inflow analysis, sewer system evaluation survey, flow monitoring, or other interceptor sewer activities. Advise RMMSD regarding the potential need for the additional information.
7. Solicit population data from RMMSD and Wausau and the appropriate planning agency. Evaluate existing wastewater flow and loading data and population projections by others to estimate current and future design wastewater flows and loadings. Contact the WDNR regarding potential future permit limits for both scenarios.
8. Prepare Facility Plan *Section 1–Introduction, Section 2–Existing Wastewater Conveyance Facilities, Section 3–Existing Wastewater Treatment Plant, Section 4–Waste Load and Flow Forecasts, and Section 5–Water Quality Standards and Discharge Permit Requirements*. These sections will include background information for RMMSD with a summary of the existing RMMSD interceptor sewer, RMMSD treatment facilities, RMMSD sewer service area, Wausau sewer service area, and facilities planning areas for each scenario. Sections 2 and 3 will include existing WWTP influent flow and loading data analyses as well as WWTP effluent data and performance evaluation of RMMSD's WWTP. Section 4 will include waste load and flow projections for each scenario, and Section 5 will discuss the anticipated water quality standards and discharge permit requirements singly and combined, including implications of the Wisconsin River TMDL.
9. Prepare and submit Technical Memorandum No. 1 to RMMSD and Wausau, which will summarize Sections 1 through 5.

Mr. Ken Johnson
Rib Mountain Metropolitan Sewerage District
Page 3
November 4, 2014

10. Meet with RMMSD and Wausau for Working Session No. 1 to discuss and obtain input on Sections 1 through 5.
11. Conduct bench testing to assess the applicability of Biological Phosphorus Removal (BPR) to RMMSD's primary effluent wastewater and RMMSD's primary effluent wastewater mixed with Wausau WWTPs aged primary effluent wastewater. Bench testing will take place in RMMSD's laboratory using glassware, apparatus, solutions, and BPR plant-mixed liquor provided by our firm. Sample bottles, analytical supplies, and analytical testing will be provided by RMMSD. Orthophosphate and biochemical oxygen demand testing will be required at a minimum. Depending on the initial results, chemical oxygen demand and nitrate-nitrogen testing may also be recommended using RMMSD's laboratory or other laboratory. Laboratory fees will be paid by RMMSD or Wausau. It is anticipated the bench testing will be completed in a single trip to RMMSD's WWTP site. Primary effluent wastewater samples will be collected by RMMSD and Wausau.
12. Prepare Facility Plan *Section 6—Evaluation of Existing Facilities*. Perform technical evaluations of RMMSD's existing WWTP facilities, including plant hydraulics; unit processes; operations and maintenance, including discussions with WWTP staff; and mechanical and electrical systems. An assessment of the Wausau WWTP is not included in the scope of services.
13. Prepare Facility Plan *Section 7—Identification and Evaluation of Treatment Alternatives*. Identify and perform a cost-benefit analysis of alternative wastewater treatment schemes for both scenarios. This analysis will consider capital costs as well as the present-worth of long-term operation, maintenance, and replacement (OM&R) costs for each alternative. Nonmonetary issues such as reliability, flexibility, constructability, ease of operation, and environmental soundness will also be evaluated. Alternatives and recommendations will be included for preliminary treatment, potential interceptor improvements, nutrient removal, tertiary treatment, and biosolids handling.
14. Prepare and submit Technical Memorandum No. 2 to RMMSD and Wausau, which will summarize Sections 6 and 7.
15. Meet with RMMSD and Wausau for Working Session No. 2 to discuss and obtain input on Sections 6 and 7.
16. Prepare Facility Plan *Section 8—Selection of Recommended Alternatives*. Prepare a plan for wastewater treatment for both scenarios, including preliminary site layout, preliminary design criteria, and recommendations on staging of construction. Prepare opinion of probable construction cost, OM&R costs, and preliminary schedule of implementation. It is expected there will be two recommended plans: one for RMMSD alone and one for a combined RMMSD/Wausau WWTP. Develop financial information, preliminary cost allocations, and preliminary user charges for the recommended plans. The combined option's user charge system would only include cost of treatment for Wausau's customer base. This will include a review and summary of potential funding sources such as low-interest loans and grants.
17. Prepare Facility Plan *Section 9—Resources Impact Summary*. Prepare an environmental assessment of recommended alternatives. Request information, if necessary, from the appropriate entities, including the WDNR, local municipalities and planning agencies, and environmental groups.

Mr. Ken Johnson
Rib Mountain Metropolitan Sewerage District
Page 4
November 4, 2014

18. Prepare and submit Technical Memorandum No. 3 to RMMSD and Wausau, which will summarize Sections 8 and 9.
19. Meet with RMMSD and Wausau for Working Session No. 3 to discuss and obtain input on Sections 8 and 9.
20. Prepare up to 12 copies of a preliminary draft Facility Plan. Submit to RMMSD, WDNR, and Wausau for review and input.
21. Present the results of the preliminary draft Facility Plan to RMMSD and Wausau (one meeting).
22. Assist RMMSD in preparing for and conducting a public hearing to present findings and recommendations of the Facility Plan. RMMSD will be responsible for any advertising and publishing requirements and for compiling the record of the hearing. The public hearing documentation will then be submitted to the WDNR for final approval.
23. Incorporate RMMSD, WDNR, and Wausau comments, as appropriate, into the Facility Plan and complete the final version of the plan, including *Section 10–Public Participation*, which will include the documentation from the public hearing.
24. Provide up to nine copies of the final Facility Plan to RMMSD and submit three copies to WDNR for approval.

Project Schedule

We are available to start this work immediately upon approval and estimate that the project will take approximately 1 year to complete.

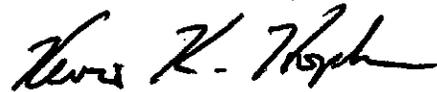
Project Fee

Our August 6, 2014, Facility Planning Agreement with RMMSD includes a limiting fee of \$99,500. We estimate that the facility planning effort to include the City of Wausau, as described above, can be completed for an additional \$38,000, for a total fee not to exceed \$137,500. Work will be billed on a time an expense basis.

We look forward to helping RMMSD and the City of Wausau with this important project. Our firm has worked at RMMSD since its original construction in 1985. We look forward to discussing this proposal at the RMMSD Commission Meeting on November 11. If RMMSD and the City of Wausau would like to move forward with this plan, we will be available immediately to develop an amendment to our existing agreement. If there are any questions, please call.

Sincerely,

STRAND ASSOCIATES, INC.®



Kevin K. Hopkins, P.E.
Senior Associate



Rachel M. Lee, P.E.



December 2, 2014

Toni Rayala
Wausau City Clerk
407 Grant St
Wausau, WI 54403

PWS ID#: 73701023
Wausau Waterworks-MC
Wausau, WI
Marathon County

Subject: 2014 Sanitary Survey Report on the Wausau Water Utility

Dear Ms. Rayala:

The purpose of a sanitary survey is to evaluate the water system's source, facilities, equipment, operation, maintenance, and management as they relate to providing safe drinking water. The sanitary survey is also an opportunity to update the Department's records, provide technical assistance, and identify potential risks that may adversely affect drinking water quality.

On 11/13/2014, I conducted a sanitary survey of your water system, Wausau Waterworks. During the sanitary survey Richard (Dick) Boers and Deb Geier were present for various portions of the inspection. At the completion of the survey, Dick was briefed on the preliminary findings. This report outlines the final findings, discusses problems that need to be addressed, and timelines for corrective action where appropriate.

A plan for corrective action, including a work schedule must be completed by 01/16/2015. Please provide a letter by 01/16/2015 indicating that you agree to the timelines listed below or with justification for adjusting these timelines. Depending on the type of corrective action you employ, you may need to obtain prior approval and submit additional plans to the Department.

Please make this report available to the City Council or Water Commission members so that the deficiencies and recommendations can be fully discussed. I would also be available to attend a Water Commission or City Council meeting to discuss this report at our mutual convenience.

Significant Deficiencies

During the course of the sanitary survey, 0 significant deficiencies were identified. Significant deficiencies represent an immediate health risk to consumers and indicate noncompliance with one or more Wisconsin Administrative Codes. As such, the deficiencies listed below should be corrected as soon as possible.

Significant Deficiency	Compliance Due Date	Code Citation
------------------------	---------------------	---------------

None

Deficiencies

During the course of the sanitary survey, 6 deficiencies were identified. Deficiencies indicate noncompliance with one or more Wisconsin Administrative Codes and/or are problems in the drinking water system that have the potential to cause serious health risks or represent long-term health risks to consumers. Corrective action should be completed for these deficiencies as soon as possible. If there were any significant deficiencies identified above, those should be given highest priority.

Deficiency	Compliance Due Date	Code Citation
1. The lead action level was exceeded during the last compliance round triggering Lead Service Line Replacement.	09/30/2015	809.545(1)
2. Aeration towers and media need to be properly disinfected after the media is cleaned and replaced.	12/31/2015	810.09(4)
3. The non-residential cross connection inspections are falling behind schedule.	12/31/2015	810.15(1)
4. The Private well permitting program is falling behind schedule.	12/31/2015	810.16
5. The valve exercise program is again falling behind schedule.	12/31/2015	810.13(2)
6. Source water meters need to be tested and calibrated every two years.	03/01/2015	810.26(3)

Discussion and Schedule for Correction of Deficiencies:

- The action level for lead is set at 15 ug/l at the 90th percentile. The City of Wausau exceeded the action level in the latest round of compliance samples completed in September of 2014. Since the City had exceeded the action level back in 1992 and had optimized their corrosion control with sodium silicate addition, this second action level violation requires the City to begin a Lead Service Line Replacement (LSLR) program. The LSLR program requires a community to begin replacing their lead service lines at a rate of 7% per year. Wausau is on record as having over 7000 lead service lines, which will equate to over 500 lead service lines required to be replaced annually. The LSLR program must continue until all lead service lines are replaced or until the City can successfully complete two consecutive compliance rounds for lead under the action level at the 90th percentile. Due to the long term nature of the LSLR program the City will be asked to enter into a formal Consent Agreement with the department which will outline milestones for the entire program. **The first set of LSL replacements must be completed by September 30, 2015 in accordance with s. NR 809.545(1) Wis. Adm. Code.**
- The Utility takes one of the packed tower aerators out of service each year for cleaning of the media. The media consists of polypropylene intalox saddles which are removed from the aerator and power washed with fire hoses before being placed back into the aerator. **Prior to placing the aerator back into service, the Utility must properly disinfect the media and aerator unit and collect at least one bacteriologically safe sample in accordance with s. NR 810.09(4) Wis. Adm. Code.**
- The City is required to cause a cross connection survey to be done on all non-residential services at least every two years. The City completed their last complete round of cross connection surveys in 2012 and they were again due to be completed in 2014. Deb Geier stated that the City was behind in the cross connection surveys and the City does not have the documentation indicating that the necessary surveys have been completed. Deb stated that the Water Utility has taken this program back from the Inspections department and that she

will be following through with letters to all the non-residential services that have not completed their cross connection surveys. Any deficiencies noted on the survey reports need to be corrected on a timely basis, the summary report submitted in February of 2014 indicated a significant number of customers remained in non-compliance well after the survey was completed. **The cross connection program shall be brought back into compliance in accordance with s. NR 810.15(1) Wis. Adm. Code by December 31, 2015.**

- Deb also indicated that a number of private well permits have expired and there has been a general lack of follow through on getting private well permits renewed. All private wells located on properties connected to the municipal water system must either have a valid well permit or the well must be properly filled and sealed. Deb stated that she has a plan to contact each expired well permit owner with a letter requesting them to have their well permit renewed or have their well filled and sealed. The City does have a penalty section in their private well ordinance. This penalty section should be used as an incentive to have these private well owners comply with the ordinance. It is not fair to those customers that do comply with the ordinance to allow some well owners to keep their wells without valid permits. **All private wells located on properties connected to the municipal water system shall have a valid permit or be properly filled and sealed in accordance with s. NR 810.16 Wis. Adm. Code by December 31, 2015.**
- Water distribution valves are required to be exercised at least once every 5 years. The valve exercising schedule for the Wausau Water Utility does not meet code requirements. A valve exercising program assures that all the main valves can be readily located, the operating nut is accessible, the valves are operating properly and are fully open. Valves are often needed in an emergency situation and a valve that is not operating properly can elevate a routine problem into a large inconvenience for many customers. Whenever a portion of the distribution system must be depressurized, the mains are subject to an increased potential for contamination. The larger the area affected, the higher the chances of impacting public health. This was brought to the attention of the Utility in the 2011 sanitary survey report. Bob Thompson then divided the distribution system into 5 sections, with the intention of exercising the valves in one of the 5 sections each year. In 2012 the utility made good progress by exercising 1,140 valves, but in 2013 that number dropped down to 747 valves. Dick said that the number of valves was again reduced in 2014 because the crews were working on repairs from the cold spring and did not have the time to exercise the necessary number of valves. **The Utility needs to get back on the valve exercising program to insure all valves are exercised on a routine basis so that all distribution valves are exercised in a 5-year interval in accordance with s. NR 810.13(2) Wis. Adm. Code; a minimum of 1200 valves shall be exercised by December 31, 2015. If the Utility can justify a larger frequency than the five year interval, then an alternate schedule will need to be proposed and approved by this department.**
- Source water meters are required to be calibrated every two years. According to the tags on the source water meters, they were last calibrated in 2011 and are overdue. **All source water meters need to be calibrated every two years in accordance with s. NR 810.26(3) Wis. Adm. Code. The source water meters shall be calibrated by March 1, 2015.**

Recommendations

During the course of the sanitary survey, 5 recommendations were identified. Recommendations are suggestions the utility should consider to improve the services provided or indicate actions necessary to avoid future deficiencies.

Recommendation
1. On any confirmed total coliform positive distribution sample, the utility will need to complete a Level 1 Assessment or go directly to Boil Water.
2. The City should provide 4-log virus inactivation at the treatment plant due to occasional coliform positive samples at Well 11 and due to the existing clearwell being located below the water table elevation.
3. The utility should determine if the industrial park tower is currently necessary for efficient operation of the water utility.
4. The City should practice using their emergency operations plan on a routine basis.
5. Reservoir Inspection reports will need to be submitted to this department when completed.

Discussion of Recommendations:

- The City depends on chloramines to provide a level of disinfection throughout the distribution system. The City switched to chloramines rather than free chlorine disinfection as a means of reducing the production of disinfection byproducts and to get a longer lasting disinfection potential out to the system extremities. Chloramines take longer to inactivate biological agents and are therefore not as effective for providing disinfection in an emergency situation where rapid inactivation rates are required. Because of this, the City of Wausau would issue a Boil Water Notice as their immediate response to a confirmed total coliform positive incident in the distribution system. With the Revised Total Coliform Rule (RTCR) set to be implemented in 2016, an interim option for responding to a confirmed total coliform positive sample has been established. The interim option is to perform a Level 1 Assessment in lieu of issuing emergency disinfection or a Boil Order. The City has access to the Level 1 Assessment forms and is encouraged to become familiar with the forms and the assessment process. I strongly suggest the City of Wausau perform a Level 1 Assessment on their entire facility as a means of practicing the use of the forms and procedures so that in an emergency situation utility staff are comfortable using this new process. A Boil Water Notice would still be issued in the case of a confirmed E-Coli positive sample.
- The City should pursue adding 4-log inactivation of viruses to their treatment process. Recent studies have shown that virus contamination may be more prevalent in drinking water systems than was originally thought. The Wausau water system has several vulnerabilities that make potential viral contamination a concern. Wausau's wells are located in a relatively shallow sand and gravel aquifer in which viruses can readily move. In addition, Well 11 has demonstrated a history of occasional total coliform positive samples. The treatment plant clearwell is also located at an elevation that is below the normal water table elevation, which would not be allowed by today's standards due to the potential for groundwater intrusion directly into the finished water. Given these factors, the City should move forward with their plans to provide 4-log inactivation of viruses in their water treatment plant upgrade.
- The industrial park tower was added to the distribution system at a time when there were significant water users located within the west industrial park area. The City should conduct a water study to determine if this volume of storage is still necessary to support the current

industrial park users. Too much storage can cause water age issues and contribute to water quality complaints. The industrial park area has shown to be the area most susceptible to total coliform positive samples. Another alternative would be to install a mixer unit in the reservoir to prevent stratification, reducing water age, increasing disinfectant distribution and reducing biofilm formation potential.

- The Emergency Operations Plan (EOP) was recently updated in October of 2014, but has not been practiced since 2007. All communities are required to maintain an EOP to prepare for, respond to, mitigate and recover from all types of emergency situations, both natural and manmade. It is important to keep the EOP updated and staff trained in all aspects of the plan. The entire EOP should be practiced as a table top or situational exercise to insure all aspects of the plan are tested. Many local fire and police departments are experienced in running practice scenarios, which could be easily adapted to involve the water utility and other municipal staff and decision makers. This should be done at least every other year to insure everyone is familiar with the workings of the Emergency Operations Plan. All the various parties involved should then get together to discuss what worked well, what did not work, and how the overall plan could be improved to handle the next emergency encountered. What measures can be taken ahead of time to save valuable time during the crisis period? How can communications be improved? What additional training would benefit various staff members? An emergency response plan needs to be a dynamic model constantly improving over time.
- All of the reservoirs were inspected in 2014, many within the past two months. When the reports are completed, copies of form 3300-248 as well as all report materials shall be submitted to this department for each reservoir inspected in accordance with s. NR 810.14(4) Wis. Adm. Code.

Non-Conforming Features

Nonconforming features are items that existed in a water system before a code change became effective. The following are not deficiencies, but do not conform to current standards for community systems. Correction of these features is not required until a health risk is identified, the feature causes problems with the operation of the water system or the feature is located within a reviewable project.

1. The existing treatment plant clearwell is constructed below the water table elevation and does not have proper overflows or vents. (NR811.63 and 811.64)
2. Secondary containment of chemicals and fully enclosed chemical containers are not provided for all the chemicals at the treatment plant. (NR 811.39 and 811.40)
3. All wells are to be equipped with pump to waste fittings. (NR 811.37) The utility can discharge the wells to waste via the meter calibration ports, but these are not designed specifically for this task.
4. The minimum size for water main is now 6 inches in diameter, any water mains of smaller diameter should be replaced whenever practicable. (NR 811.70)

System Summary

Wausau is located in Marathon County, at the intersections of Interstate 39, State Hwy. 51 and State Hwy. 29. The water supply is owned by the City and includes the following: 6 active wells, chemical addition equipment for the addition of chlorine, fluoride, and silicates, a lime softening plant, clearwell, 5 elevated reservoirs, and a distribution system. The original waterworks began operation in 1885. A

filtration plant for iron removal was constructed in 1927 and was replaced with a lime softening plant in 1963. A solids separation/water recycle facility was added in 1975-76. Air stripping facilities for volatile organics removal were constructed in 1984 to treat water from Wells 3, 4 and 6. A second river crossing and Well 10 were added in 1988 to provide additional transmission capacity and routing options from the West Side Wellfield to the plant. Well 11 was added in 2001 and seldom used Well's 4 and 8 were properly filled and sealed shortly thereafter. Auxiliary power is available at Well's 3, 6, 7 and 11, the entire water treatment plant operation is supported by auxiliary power and all booster stations also have auxiliary power available.

All 6 wells are routed through the lime softening plant to remove elevated levels of iron and manganese. Clarion 415 is injected below the aerators prior to the clarifier. Hydrated lime and a mixture of Clarion 700, water and silicate are added at the clarifier mixing zone. Fluoride is added after the clarifier, just prior to the filters. Disinfection is accomplished with chloramines by combining sodium hypochlorite and ammonia in the clearwell. Chloramines help to reduce trihalomethane formation, which are a byproduct of chlorine and naturally occurring organic compounds. Silicates are added at the high lift discharge to reduce the natural corrosive tendencies of the groundwater found in this area. The utility determined that corrosion control was also improved by maintaining a stable disinfection level throughout the distribution system; this is aided by more frequent flushing of low flow areas.

A second clarifier unit was added in 2000 along with bulk chemical storage. The utility made the switch from gas chlorine to chloramine disinfection at the same time. The second clarifier allows the utility to take a clarifier unit out of service for maintenance and repair without interruption of the treatment process. The second clarifier unit did not add to the overall production capacity of the treatment plant; that would require another bank of filters and an additional clearwell.

In 2009 and 2010 the City added a booster station to serve the Village of Brokaw and two additional booster stations to improve system pressure as the system continues to expand east and west. The City now has 6 separate pressure zones, not including the Village of Brokaw. A seventh pressure zone, to be served by the West Hill booster, has not yet been developed and this booster station remains off line.

The City is looking to add a second clearwell and bank of filters to increase the production capacity of the water treatment plant in their 5-year plan. Discussions with the department regarding this project resulted in changes to the plan to provide 4-log inactivation of viruses and an elevated clearwell to meet current code requirements. Final plans and specifications for this project have not been submitted for approval at this time.

Groundwater contamination discovered in the early 80's resulted in Wells 3 and 6 being routed through packed tower aerators located at the water treatment plant. The ongoing groundwater cleanup still controls how the City of Wausau operates their well system. Well 6 is required to operate 24/7 during the week to essentially serve as an extraction well. Based on demand, the utility operates Well 6 with Well 10 one week, and alternates with Well 11 the next week. The other wells: 3, 7 and 9 are run on the weekends. Entry Point 200 consists of Wells 6, 10 and 11 and Entry Point 300 includes Wells 3, 7 and 9.

A water system summary, based on the information available in our data system, is attached. Please review this information for accuracy. If there are changes that need to be made, contact me at (715) 359-5284.

Water Quality Monitoring and Reporting

The utility has a very good overall monitoring and reporting record. Bacteriological samples have been submitted on a timely basis and all Safe Drinking Water Act samples have been submitted as required. The monthly reports are completed and submitted on a timely basis. Updated sampling site plans for Bacteriological sampling, Disinfection Byproducts sampling and Lead and Copper sampling are on file with the department as required.

The most recent compliance monitoring for lead and copper resulted in an action level violation for lead. Since the City had violated the lead action level in the past (1992) and had optimized their corrosion control program since that time, the new action level violation resulted in the requirement to proceed with a Lead Service Line Replacement (LSLR) program. A Notice of Noncompliance (NON) was sent to the City on October 24, 2014 outlining the public education requirements and discussed the need for a Consent Order to outline milestones required for the LSLR program. An enforcement conference date has yet to be scheduled.

All other monitoring samples were well within acceptable parameters. The operator stated that the utility receives very few water quality complaints from residents.

Required Reports, Records, and Utility Programs

The cross-connection program implementation is again falling behind. The operators perform cross-connection inspections at the residential services during meter testing or repair and an inspection form is used to document each inspection. The utility is registered with the Public Service Commission for their 20-year meter replacement program and the residential cross connection interval is correlated with the meter replacement interval. The City sends a letter to all non-residential customers requesting a cross connection survey be completed with documentation submitted to the Utility. The non-residential inspections are the ones that are falling behind schedule. Nearly all of the non-residential services were surveyed in 2012 and were again due in 2014. Dick and Deb said that due to recent staff turnover, the program was not given the time or attention needed. Water Utility staff have taken the program back from the Inspections staff and will be following through with letters to all non-residential services that have fallen behind schedule. As a reminder, non-residential services are to be surveyed for cross connections every two years, unless they contain only plumbing that is comparable to a residential service. Non-residential services with plumbing comparable to a residential service can be surveyed on the same 20-year schedule as a residential service. Any deviation from this 2-year or 20-year interval must be approved by this department.

The local well regulation program is also falling behind with a number of expired permits. The Utility is in the process of determining how many permits are currently expired and will be contacting these well owners with a deadline for compliance. Private wells located on properties connected to the municipal water system must either have a valid permit or be properly filled and sealed in accordance with s. NR 810.16 Wis. Adm. Code.

As additional wells are discovered during routine cross connection inspections, those well owners need to apply for well permits or have their wells filled and sealed. It should be noted that wells can no longer be abandoned by the home owner and must be abandoned by a licensed well driller, pump installer, or a certified waterworks operator within their community. In addition, a licensed well driller or pump installer must inspect any private well system before a new permit can be issued and re-inspect the well every 10 years thereafter.

The City has a comprehensive well head protection plan for all of the wells, which includes an ordinance.

The valve and hydrant maintenance programs had improved with the City divided into 5 sections. Each section was then to have the valves exercised each year to comply with the requirements of NR 810.13. A valve exercising machine was purchased for this purpose. Again operators indicated that staff turnover and the heavy work load from last winter resulted in a reduced number of valves being exercised. Roughly 40% of the valves have been exercised in the past 3 years. Inventory and locational records are becoming established for the valves and hydrants, as required; the valve exercising machine geo-locates each valve position. It should be noted that hydrant lead valves also need to be exercised and should be done on a 5 to 7 year rotation.

The utility should strongly consider adopting a Unidirectional Flushing program to help clean the water main system rather than just exercising the hydrants once each year. Unidirectional Flushing is being promoted in the water industry to improve the overall process of removing debris from a water system through flushing. The concept involves maintaining a flow velocity of at least 5 feet per second through the section of water main being flushed. Experiments have shown that a velocity of 5 feet per second is capable of cleaning most debris and deposits from a water main system. To maintain an adequate velocity through the pipe network, sections of the main must be valved off to insure flow is moving through a single section of pipe. If a hydrant is being fed from two directions, even though the velocity may be 5 feet per second at the hydrant, the flow in the mains from each direction will only be 2.5 feet per second. When performed correctly, a unidirectional flushing program will provide a much better pipe scour using less water than a traditional flushing program. There are a number of training sessions being offered throughout the state on setting up and running a unidirectional flushing program. The utility should look into utilizing a unidirectional flushing program. This program also compliments the valve exercising program, as valves need to be operated to control the flow route.

The added benefit is to remove iron and manganese scales from the distribution piping, which may contain adsorbed lead. This was one of the recommendations to reduce Wausau's lead concentrations outlined in the corrosion study performed by Process Research.

The distribution reservoirs, clearwell and backwash reservoirs were all recently inspected in 2014. The clearwell and backwash reservoirs were allowed to be dive inspected again this cycle, since the City intends to make major changes to the water treatment plant reservoirs in the near future. Following the renovations, it will be much more efficient to isolate reservoirs for complete draindown inspections. All distribution reservoirs were completely drained and inspected with the exception of the industrial park tower. This reservoir was drained to within 1 foot of the bottom, but could not be drained completely without disrupting service to a large number of customers. A new hydrant will be installed at a lower elevation on the discharge line to allow this structure to be completely drained while isolated from the

distribution system. The industrial park tower should be evaluated to determine if this reservoir is still needed to operate efficiently. Since several large water users have moved out of the park, this reservoir may be contributing to the overall water age and occasional total coliform positive results in this area.

Certified Operator

Richard (Dick) Boers is listed as your designated "Operator in Charge" for the water system at Wausau. Dick is certified in the Groundwater (G), Distribution (D), Lime Soda Ash Treatment (L) and Specialized Treatment (V) subclasses. Harold Ferge and Scott Boers are also certified in the G, D, L and V subclasses. There are a number of other operators with various certifications either working in the plant or on the distribution crew. Operators are required to accumulate a minimum of 18 continuing education credits every three years to maintain their certifications. The City is aware that Dick will be retiring soon, and they should be training someone now to take over the water superintendent duties. The water utility has lost a tremendous amount of institutional knowledge through retirement in the past several years, and the City should take advantage of the training opportunity while Dick is still available.

Water System Security

It is recommended that a daily security check be performed on the entire drinking water system to insure doors are locked, windows are secured and nothing has been tampered with. All water supply facilities are equipped with intrusion alarms linked to the SCADA system. Many of the reservoirs are also equipped with chain link fenced enclosures to provide additional security. The utility should continue to enhance the security of all of their water supply facilities whenever possible.

The Emergency Operations Plan (EOP) was recently updated in October of 2014, however the plan has not been practiced in any capacity since the table top exercise in 2007. It is important to keep the EOP updated and staff trained in all aspects of the plan.

Capacity Development Evaluation

This sanitary survey serves as an evaluation of the capabilities of your water system. This system has been determined to have adequate technical and financial capacity to provide safe drinking water, but the managerial capacity has recently become an issue. The ability to plan for, achieve, and maintain compliance with applicable drinking water standards has diminished as evidenced in the recent lead action level violation and the poor implementation of the cross connection and local well regulation programs.

The City of Wausau has recently had a large staff turnover, losing the Utility Director, Human Resources Director and several retirements from the water department. With the impending retirement of Dick Boers, Water Superintendent, the City is set to lose a significant amount of institutional knowledge from the water utility operations. The Utility needs to get back on track with implementing the numerous programs that contribute to the overall operations of the water system. As s. NR 810.03 Wis. Adm. Code states, "The water supplier shall be responsible for ensuring that the public water system is operated and maintained to provide an adequate quantity of safe drinking water to those consumers served by the supplier. This responsibility includes maintaining or contracting for an adequate number of trained staff to perform all duties necessary, performing maintenance and replacement of equipment when necessary to keep the facilities in good operating condition, and providing adequate laboratory testing equipment to control and monitor treatment processes and chemical addition programs.

The next sanitary survey of your system is scheduled to take place in 2017. The designated operator in charge will be contacted prior to the survey to schedule a date that is convenient.

Please respond within 45 days of receipt of this letter (by 01/16/2015) with notification that all deficiencies have been corrected, or with a plan for correcting the deficiencies identified above by their respective deadlines.

I would like to thank Dick Boers and Deb Geier for their time and cooperation during the sanitary survey. If there are any questions concerning this report, please feel free to contact me at (715) 359-5284. I would also offer to attend a Water Commission or City Council meeting to discuss this report at our mutual convenience.

Sincerely,



Glenn Falkowski, P.E.
Environmental Engineer
Department of Natural Resources

cc: Bureau of Drinking Water/Groundwater – DG/5
Mike Blodgett, Eau Claire
Wausau File
Dick Boers, Wausau

Water System Summary Information

System ID: 73701023

System Name: WAUSAU WATERWORKS

County: Marathon

Type: Municipal Community

Basin: Wisconsin River (upper)

Population: 38426

Service Connections: 15643

Owner: WAUSAU CITY CLERK, TONI RAYALA

407 Grant St

Wausau, WI 54403

(715) 261-6530 Fax: (715) 261-4133 waterworks@ci.wausau.wi.us

Date Security VA Complete: 06/24/2004

Date ERP Complete: 12/22/2004

Date ERP Last Exercised/Updated: 02/24/2011

Emergency Phone: (715) 261-6530

Emergency Fax: (715) 261-4133

Emergency E-mail:

Certified Operators

Name	Lic. #	Expires	Phone/Fax/E-mail	Address 1	Address 2	City, State, Zip
BRANDON BALL	36472	11/01/2017	(715) 581-9545 ballbrandon23@yahoo.com	3917 E WAUSAU AVE		WAUSAU, WI 54403
RICHARD BOERS	05378	07/01/2015	(715) 261-7286 rgboers@mail.ci.wausau.wi.us	1315 SHERMAN ST		WAUSAU, WI 54401
SCOTT BOERS	35065	11/01/2016	(715) 581-0603 Scott.Boers@ci.wausau.wi.us	4014 HENRY ST		WAUSAU, WI 54403
JOHN DUPUIS	35434	05/01/2015	(715) 571-9776	2038 RONALD ST		MOSINEE, WI 54455
DAVID ERICKSON	34268	05/01/2017	(715) 261-6941 dave.erickson@ci.wausau.wi.us	407 GRANT ST		WAUSAU, WI 54403
HAROLD FERGE	35132	11/01/2016	(715) 261-7265	918 BROADWAY AVE		WAUSAU, WI 54403
DEBRA GEIER	36470	11/01/2017	(715) 261-7262 deb.geier@ci.wausau.wi.us	7346 S MOUNTAIN RD		WAUSAU, WI 54401
SHANNON LANE	35075	11/01/2016	(715) 573-4892	N5404 COUNTY ROAD K		IRMA, WI 54442
TIMOTHY MESALK	33015	11/01/2017	(715) 261-7288 mesalks@charter.net	1005 N 25TH ST		WAUSAU, WI 54403

Affiliations

Name	Affiliation	Start Date	End Date	Primary?	Phone
RICHARD BOERS	SAMPLER	01/01/1960		Y	715-261-7286
WAUSAU CITY CLERK, TONI RAYALA	PLAN_CON	06/28/2006		Y	715-261-6530
WAUSAU CITY CLERK, TONI RAYALA	OWNER	01/01/1960		Y	715-261-6530
VACANT	MANAGER	01/11/2010		Y	715-261-6530
VACANT	EMERGENCY	01/11/2010		Y	715-261-6530
GLENN FALKOWSKI	DNR REP	10/09/2006		Y	715-359-5284

ID/Location	Type	Vol. (gal)	Firm Pumping Capacity (gpm)	Height to Overflow (ft.)	Overflow Elev. (sea-level, ft.)	Aux. Power?	Mfg.	Model
1801 NORTH RIVER DRIVE	GROUND STORAGE	1000000	2400			Yes	Dive Inspection, Liquid Engineering	
ELM AND 12TH AVENUE	STANDPIPE	2500000	500	16	1373	No	Complete Draindown, Lane Tank	
WEST WAUSAU AND 28TH AVE	STANDPIPE	300000	110	21	1510	Yes	Complete Draindown, Lane Tank	
WEST WAUSAU AVENUE	ELEVATED TANK	250000		118	1606	No	Complete Draindown, Lane Tank	
13TH AND BROWN	ELEVATED TANK	500000		152.5	1510	No	Complete Draindown, Lane Tank	
INDUSTRIAL PARK WEST	STANDPIPE	1000000			1373	No	Partial Draindown, Lane Tank	

Booster Stations

ID/Location	Type	Firm Pumping Capacity (gpm)	Aux. Power?
BROWN STREET	ABOVE GROUND	800	Yes
WEST WAUSAU AVENUE	ABOVE GROUND	110	Yes
28TH STREET	ABOVE GROUND	500	Yes
MONROE STREET (BACK UP ONLY)	ABOVE GROUND		No
18TH STREET BOOSTER	ABOVE GROUND	300	Yes
ELM AND 12TH (BACK UP ONLY)	ABOVE GROUND	250	No
N. 20th Avenue	ABOVE GROUND	500	Yes
17th Street	ABOVE GROUND	500	No
West Hill	ABOVE GROUND	500	Yes

System Interconnects

ID/Location	Type	Capacity (gpm)	Metered?	Chemical Injection Capable?
Schofield (emergency only)	BURIED		No	No
Rib Mountain (emergency only)	BURIED		Yes	No
BROKAW	BURIED	500	Yes	Yes

Treatment Summary Data

Source ID	Type	Description	Begin	End	Objective(s)	Pump Model	Cap.	Stroke %	Speed %	Sol. Tank Cap.	Dil. Ratio	Comments
3	145	Aeration, Packed Tower	01/01/1984		Organics Removal							
6	145	Aeration, Packed	01/01/1984		Organics Removal							

Source ID	Type	Description	Begin	End	Objective(s)	Pump Model	Cap.	Stroke %	Speed %	Sol. Tank Cap.	Dil. Ratio	Comments
		Tower										
7	000	0	01/01/1960		No Treatment at Source							
9	000	0	01/01/1960		No Treatment at Source							
10	000	0	06/09/1988		No Treatment at Source							
11	000	0	07/27/2006		No Treatment at Source							
200	147	Aeration, Slat Tray	01/01/1963		Iron Removal							
200	200	Chloramines	01/01/1963		Disinfection	PULSA FEEDER SODIUM HYPOCHLORITE FLOW PACED	238	32	20	6000	0	
200	360	Flocculation	01/01/1963		Inorganics Removal							
200	380	Fluoridation	01/01/1963		Other	Acrison dry feeder feeding pounds per day	70					
200	500	Lime - Soda Ash Addition	01/01/1963		Inorganics Removal	LIME SLAKER						
200	600	Rapid Mix	01/01/1963		Inorganics Removal							
300	147	Aeration, Slat Tray	01/01/1999		Iron Removal							
300	200	Chloramines	01/01/1963		Disinfection	LMI B911 95 SB AMMONIA	38	50	20	275	0	
300	240	Coagulation	01/01/1963		Inorganics Removal							
300	345	Filtration, Rapid Sand	01/01/1963		Inorganics Removal							
300	360	Flocculation	01/01/1963		Inorganics Removal							
300	380	Fluoridation	01/01/1963		Other							
300	449	Inhibitor, Silicate	01/01/1963		Corrosion Control	PULSAFEEDER FLOW PACED	180	90		250		
300	500	Lime - Soda Ash Addition	01/01/1963		Inorganics Removal							
300	600	Rapid Mix	01/01/1963		Inorganics Removal							

System Evaluation Summary

Inspector/Reviewer	Date	Report Date	Type	Agency	Response Due	Response Recd
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Inspector/Reviewer	Date	Report Date	Type	Agency	Response Due	Response Recd
FALKOWSKI, GLENN	11/13/2014	12/02/2014	SURVEY	DNR	01/16/2015	
FALKOWSKI, GLENN	12/19/2013	01/06/2014	ANNUAL	DNR		
FALKOWSKI, GLENN	12/13/2012	12/18/2012	ANNUAL	DNR		
FALKOWSKI, GLENN	11/30/2011	12/14/2011	SURVEY	DNR	01/30/2012	01/31/2012
FALKOWSKI, GLENN	11/16/2010	12/13/2010	ANNUAL	DNR		
FALKOWSKI, GLENN	12/17/2009	01/05/2010	ANNUAL	DNR		
FALKOWSKI, GLENN	10/20/2008	11/20/2008	SURVEY	DNR	01/12/2009	12/01/2008
FALKOWSKI, GLENN	11/14/2007	12/26/2007	ANNUAL	DNR		
FALKOWSKI, GLENN	11/09/2006	12/13/2006	ANNUAL	DNR		
FALKOWSKI, GLENN	11/15/2005	12/23/2005	ANNUAL	DNR		
FALKOWSKI, GLENN	11/09/2004	12/21/2004	ANNUAL	DNR		
FALKOWSKI, GLENN	11/06/2003	01/20/2004	SURVEY	DNR	03/10/2004	02/19/2004
FALKOWSKI, GLENN	12/09/2002	12/26/2002	ANNUAL	DNR		
FALKOWSKI, GLENN	12/05/2001	12/26/2001	ANNUAL	DNR		
FALKOWSKI, GLENN	11/01/2000	12/15/2000	ANNUAL	DNR		
FALKOWSKI, GLENN	12/09/1999	01/20/2000	ANNUAL	DNR		
FALKOWSKI, GLENN	01/12/1999	09/02/1999	SURVEY	DNR		
FALKOWSKI, GLENN	12/17/1997	04/13/1998	ANNUAL	DNR		
FALKOWSKI, GLENN	03/19/1997	04/22/1997	ANNUAL	DNR		
FALKOWSKI, GLENN	04/22/1996	05/30/1996	ANNUAL	DNR		
FALKOWSKI, GLENN	12/02/1993	01/31/1994	SURVEY	DNR		
	03/25/1992		ANNUAL	DNR		
	02/28/1992		ANNUAL	HSS		
FALKOWSKI, GLENN	12/13/1988	02/21/1989	ANNUAL	DNR		
FALKOWSKI, GLENN	12/01/1987		ANNUAL	DNR		
DOBBINS, WILLIAM	12/10/1986	03/09/1987	SURVEY	DNR		
KELLY, EUGENE	06/04/1981	09/28/1981	SURVEY	DNR		
BROBST, ROBERT	11/06/1980	11/13/1980	ANNUAL	DNR		

Bacteriological Sampling History

Year	Distribution Safe	Distribution Unsafe	Confirmed Unsafe	Missed Samples	Raw Safe	Raw Unsafe	Fecal Positive?
2014	435			0	26	3	N
2013	482	2		0	28	1	N
2012	488			0	28		N
2011	485			0	24		N
2010	486			0	28	1	N
2009	488			0	28	1	N
2008	514			0	34	4	N

Chemical Sampling History

Year	Sample Group	Source ID	Samples Taken	Missed Samples	MCL Violations
2014	FLUORIDE		11	0	0
2014	PBCU_RULE	200	2	0	0
2014	VOC	300	4	0	0
2014	PBCU_RULE	300	2	0	0
2014	SOC	200	1	0	0
2014	PBCU		34	0	0
2014	PBCU_RULE		20	0	0
2014	VOC	200	4	0	0

Year	Sample Group	Source ID	Samples Taken	Missed Samples	MCL Violations
2014	PBCU	200	1	0	0
2014	RAD	300	1	0	0
2014	IOC	200	1	0	0
2014	IOC	300	1	0	0
2014	PBCU	300	1	0	0
2014	DBP		2	0	0
2014	RAD	200	1	0	0
2013	FLUORIDE		12	0	0
2013	VOC	300	4	0	0
2013	NITRATE	200	1	0	0
2013	SOC	200	1	0	0
2013	VOC	200	4	0	0
2013	NITRATE	300	1	0	0
2013	DBP		2	0	0
2012	FLUORIDE		12	0	0
2012	VOC	300	4	0	0
2012	NITRATE	200	1	0	0
2012	SOC	200	1	0	0
2012	VOC	200	4	0	0
2012	NITRATE	300	1	0	0
2012	DBP		2	0	0
2011	FLUORIDE		12	0	0
2011	VOC	300	4	0	0
2011	SOC	200	1	0	0
2011	PBCU		50	0	0
2011	VOC	200	4	0	0
2011	IOC	200	1	0	0
2011	IOC	300	1	0	0
2011	DBP		2	0	0
2011	SOC	300	1	0	0
2010	FLUORIDE		12	0	0
2010	VOC	300	4	0	0
2010	NITRATE	200	1	0	0
2010	SOC	200	1	0	0
2010	VOC	200	4	0	0
2010	NITRATE	300	1	0	0
2010	DBP		4	0	0
2009	TTHM		2	0	0
2009	FLUORIDE		12	0	0
2009	VOC	300	4	0	0
2009	HAA5		2	0	0
2009	NITRATE	200	1	0	0
2009	SOC	200	1	0	0
2009	VOC	200	4	0	0
2009	RAD	300	1	0	0
2009	NITRATE	300	1	0	0
2009	RAD	200	1	0	0
2008	TTHM		2	0	0
2008	FLUORIDE		12	0	0
2008	HAA5		2	0	0
2008	VOC	300	4	0	0

Year	Sample Group	Source ID	Samples Taken	Missed Samples	MCL Violations
2008	SOC	200	1	0	0
2008	PBCU		30	0	0
2008	VOC	200	3	0	0
2008	IOC	300	2	0	0
2008	IOC	200	1	0	0
2008	SOC	300	1	0	0

Sample Group	Last Sampled
BACTI	2014
FLUORIDE	2014
IOC	2014
RAD	2014
HAA5	2009
PBCU_RULE	2014
PBCU	2014
NITRATE	2013
VOC	2014
SOC	2014
TTHM	2009
DBP	2014

MCL Violations

Source ID	Contaminant	Concentration	MCL	Units	Viol. Start	Viol. End	Continuing Operation?
None							

Definitions

MCL = Maximum Contaminant Limit (as set by the Environmental Protection Agency (EPA))

BACTI = Bacteriological Sample

IOC = Sample for Inorganic Compounds

NITRATE = Nitrate Sample

PBCU = Lead and Copper Sample

RAD = Sample for Radioactivity

SOC = Sample for Synthetic Organic Compounds

VOC = Sample for Volatile Organic Compounds

FLUORIDE = Fluoride from Fluoridation

TTHM = Total Trihalomethane Sample

Market: IL/WI
Cell Site Number: IL5204
Cell Site Name: Wausau Water
Fixed Asset Number: 10124163

FIRST AMENDMENT TO WATER TOWER LEASE AGREEMENT

FIRST AMENDMENT TO WATER TOWER LEASE AGREEMENT ("First Amendment"), dated as of the latter of the signature dates below, is by and between Wausau Water Works, a sewer and water utility organized under the laws of the state of Wisconsin having a mailing address of 407 Grant Street Wausau WI 54403 (hereinafter referred to as "**Lessor**") and New Cingular Wireless PCS, LLC, a Delaware limited liability company, successor in interest to American Cellular Corporation, a Delaware corporation, having a mailing address of 575 Morosgo Drive NE, Atlanta, GA 30324 (hereinafter referred to as "**Lessee**").

WHEREAS, Lessor and Lessee entered into a Water Tower lease Agreement dated January 1, 2005, whereby Lessor leased to Lessee certain Leased Premises, therein described, that are a portion of the Property located at 2700 West Wausau Avenue, Wausau, WI 54403 ("**Agreement**"); and

WHEREAS, Lessor and Lessee desire to amend the Agreement to increase the size of the Premises: and

WHEREAS, Lessor and Lessee desire to adjust the rent in conjunction with the modifications to the Agreement contained herein; and

WHEREAS, Lessor and Lessee, in their mutual interest, wish to amend the Agreement as set forth below accordingly.

NOW THEREFORE, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Lessor and Lessee agree as follows:

1. Lease of Premises. Lessor agrees to increase the size of the Premises leased to Lessee to accommodate Licensee's needs. Upon the execution of this Amendment, Lessor leases to Lessee the Premises as more completely described on attached Exhibit A-1. Lessee's execution of this Amendment will signify Lessor's approval of Exhibit A-1. Exhibit 1-A hereby supplements Exhibit A to the Agreement.
2. Rent. Commencing on the first day of the month following the date that Lessee commences construction of the modifications set forth in this Amendment, Rent shall be increased by _____ No/100 Dollars (\$____.00) per month, subject to further adjustments as provided in the Agreement. Upon Lessee's vacation of additional space, Rent will revert to the original rate, subject to adjustments as provided in the Agreement, upon thirty (30) days' prior written notice to Lessor.

Market: IL/WI
Cell Site Number: IL5204
Cell Site Name: Wausau Water
Fixed Asset Number: 10124163

3. Notices. Section 11 of the Agreement is hereby deleted in its entirety and replaced with the following:

Notices. All notices, requests, demands and communications hereunder will be given by first class certified or registered mail, return receipt requested, or by a nationally recognized overnight courier, postage prepaid, to be effective when properly sent and received, refused or returned undelivered. Notices will be addressed to the parties as follows.

If to Lessee:

New Cingular Wireless PCS, LLC
Attn: Network Real Estate Administration
Re: Cell Site # WI5204; Cell Site Name: WAUSAU WATER
Fixed Asset #10124163
575 Morosgo Drive,
Atlanta, GA 30324

With a copy to:

New Cingular Wireless PCS, LLC
Attn: AT&T Legal Department
Re: Cell Site # WI5204; Cell Site Name: WAUSAU WATER
Fixed Asset #10124163
208 S. Akard Street
Dallas, TX 75202-4206

A copy sent to the Legal Department is an administrative step which alone does not constitute legal notice.

If to Lessor: Wausau Water Works
 407 Grant Street
 Wausau WI 54403

Either party hereto may change the place for the giving of notice to it by thirty (30) days prior written notice to the other as provided herein.

4. **Emergency 911 Service.** In the future, without the payment of additional rent and at a location mutually acceptable to Lessor and Lessee, Lessor agrees that Lessee may add, modify and/or replace equipment in order to be in compliance with any current or future federal, state or local mandated application, including but not limited to emergency 911 communication services.

5. **Memorandum of Lease.** Either party will, at any time upon fifteen (15) days prior written notice from the other, execute, acknowledge and deliver to the other a recordable Memorandum

Market: IL/WI
Cell Site Number: IL5204
Cell Site Name: Wausau Water
Fixed Asset Number: 10124163

of Lease substantially in the form of the Attachment 1. Either party may record this memorandum at any time, in its absolute discretion.

6. Other Terms and Conditions Remain. In the event of any inconsistencies between the Agreement and this First Amendment, the terms of this First Amendment shall control. Except as expressly set forth in this First Amendment, the Agreement otherwise is unmodified and remains in full force and effect. Each reference in the Agreement to itself shall be deemed also to refer to this First Amendment.

7. Capitalized Terms. All capitalized terms used but not defined herein shall have the same meanings as defined in the Agreement.

IN WITNESS WHEREOF, the parties have caused their properly authorized representatives to execute and seal this First Amendment on the dates set forth below.

“LESSOR”

Wausau Water Works

By: _____
Name: _____
Title: _____
Date: _____

“LESSEE”

New Cingular Wireless PCS, LLC,
a Delaware limited liability company

By: AT&T Mobility Corporation

Its: Manager

By: _____
Name: _____
Title: _____
Date: _____

Market: IL/WI
Cell Site Number: IL5204
Cell Site Name: Wausau Water
Fixed Asset Number: 10124163

Exhibit A-1

Notes:

1. THIS EXHIBIT MAY BE REPLACED BY A LAND SURVEY AND/OR CONSTRUCTION DRAWINGS OF THE PREMISES ONCE RECEIVED BY LESSOR.
2. ANY SETBACK OF THE PREMISES FROM THE PROPERTY'S BOUNDARIES SHALL BE THE DISTANCE REQUIRED BY THE APPLICABLE GOVERNMENTAL AUTHORITIES.
3. WIDTH OF ACCESS ROAD SHALL BE THE WIDTH REQUIRED BY THE APPLICABLE GOVERNMENTAL AUTHORITIES, INCLUDING POLICE AND FIRE DEPARTMENTS.

Market: IL/WI
Cell Site Number: IL5204
Cell Site Name: Wausau Water
Fixed Asset Number: 10124163

ATTACHMENT 1

MEMORANDUM OF LEASE

Prepared by:

James Hebert
General Dynamics Wireless Services
1325 Wiley Road, Suite 136
Schaumburg, IL 60173
(847) 598-4609 direct

Return to:

James Hebert
General Dynamics Wireless Services
1325 Wiley Road, Suite 136
Schaumburg, IL 60173
(847) 598-4609 direct

Re: Re: Cell Site # WI5204; Cell Site Name: WAUSAU WATER
Fixed Asset #10124163
State: Wisconsin
County: _____

MEMORANDUM OF LEASE

This Memorandum of First Amendment to Water Tower lease Agreement is entered into on this ____ day of _____, 2014, by and between Wausau Water Works, a sewer and water utility organized under the laws of the state of Wisconsin having a mailing address of 407 Grant Street Wausau WI 54403 (hereinafter referred to as "Lessor") and New Cingular Wireless PCS, LLC, a Delaware limited liability company, successor in interest to American Cellular Corporation, a Delaware corporation, having a mailing address of 575 Morosgo Drive NE, Atlanta, GA 30324 (hereinafter referred to as "Lessee").

1. Lessor and Lessee entered into a certain Water Tower lease Agreement ("**Agreement**") on the 1st day of January, 2005, for the purpose of installing, operating and maintaining a communications facility and other improvements. All of the foregoing is set forth in the Agreement.
2. The portion of the land being amended and leased to Lessee and associated easements are described in **Exhibit A-1** annexed hereto.
3. This Memorandum of Lease is not intended to amend or modify, and shall not be deemed or construed as amending or modifying, any of the terms, conditions or provisions of the

Market: IL/WI
Cell Site Number: IL5204
Cell Site Name: Wausau Water
Fixed Asset Number: 10124163

Agreement, all of which are hereby ratified and affirmed. In the event of a conflict between the provisions of this Memorandum of Lease and the provisions of the Agreement, the provisions of the Agreement shall control. The Agreement shall be binding upon and inure to the benefit of the parties and their respective heirs, successors, and assigns, subject to the provisions of the Agreement.

IN WITNESS WHEREOF, the parties have executed this Memorandum of Lease as of the day and year first above written.

"LESSOR"

Wausau Water Works

By: _____
Print Name: _____
Its: _____
Date: _____, 2014

"LESSEE"

New Cingular Wireless PCS, LLC,
a Delaware limited liability company

By: AT&T Mobility Corporation
Its: Manager

By: _____
Print Name: _____
Its: _____
Date: _____, 2014

Market: IL/WI
Cell Site Number: IL5204
Cell Site Name: Wausau Water
Fixed Asset Number: 10124163

LESSEE ACKNOWLEDGMENT

STATE OF ILLINOIS)

) ss:

COUNTY OF COOK)

On the ____ day of _____, 2014, before me personally appeared Constance A. Lamberes, and acknowledged under oath that he is the Sr. Real Estate & Construction Manager of AT&T Mobility Corporation, the Manager of New Cingular Wireless PCS, LLC, the Lessee named in the attached instrument, and as such was authorized to execute this instrument on behalf of the Lessee.

Notary Public

Print Name: _____

My Commission Expires: _____

LESSOR ACKNOWLEDGMENT

STATE OF _____)

) ss:

COUNTY OF _____)

I CERTIFY that on _____, 2014, _____ [name of representative] personally came before me and acknowledged under oath that he or she:

(a) is the _____ [title] of _____ [name of corporation], the corporation named in the attached instrument,

(b) was authorized to execute this instrument on behalf of the corporation and

(c) executed the instrument as the act of the corporation.

Notary Public

Print Name: _____

My Commission Expires: _____

Market: IL/WI
Cell Site Number: IL5204
Cell Site Name: Wausau Water
Fixed Asset Number: 10124163

EXHIBIT A-1

DESCRIPTION OF PREMISES

Page _____ of _____

to the Memorandum of Lease dated _____, 2014, by and between Wausau Water Works, as Lessor, and New Cingular Wireless PCS, LLC, a Delaware limited liability company, as Lessee.

The Property is legally described as follows:

PROPOSED GENERATOR LEASE AREA DESCRIPTION:

A PART OF LOT (2) OSM # 11950, VOL. 51, PAGE 15, DOC. # 1241389, LOCATED IN THE SW 1/4 OF THE SW 1/4, SECTION 22, T29N, R07E, CITY OF WAUSAU, MARATHON COUNTY, WISCONSIN, DESCRIBED AS FOLLOWS:

COMMENCING AT A FOUND 1/2" IRON PIPE AT THE NORTHEAST CORNER OF SAID LOT 2 OF CERTIFIED SURVEY MAP NO. 11950; THENCE S 14° 2' 17"W, 27.20 FEET TO THE POINT OF BEGINNING; 150° 00' 00"W, 9.55 FEET, MORE OR LESS, TO THE EAST LINE OF THE EXISTING AT&T LEASE AREA; THENCE S05° 00' 16"E, 17.42 FEET, MORE OR LESS, ALONG THE EAST LINE OF THE EXISTING AT&T LEASE AREA TO THE SOUTHEAST CORNER OF THE EXISTING AT&T LEASE AREA; THENCE N07° 05' 45"E, 5.94 FEET; THENCE N00° 00' 00"E, 19.86 FEET TO THE POINT OF BEGINNING. SAID PARCEL CONTAINING 1613 SQUARE FEET, MORE OR LESS, AND IS SUBJECT TO ANY AND ALL EASEMENTS OR AGREEMENTS, RECORDED OR UNRECORDED.

GENERAC GENERATOR INSTALL

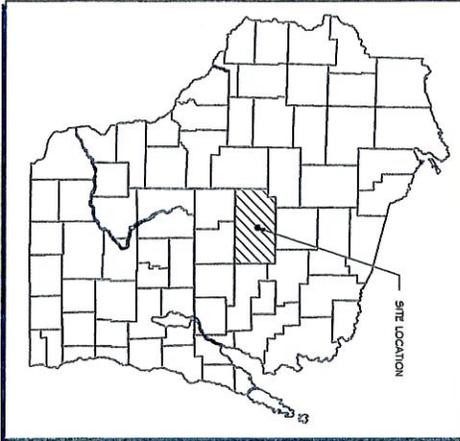


SITE NAME: WAUSAU WATER
 SITE NUMBER: W15204
 FA LOCATION CODE: 101241G3
 CONSTRUCTION DRAWINGS

VICINITY MAP



GENERAL LOCATION



SCOPE OF WORK

THIS PROPOSAL IS FOR THE ADDITION OF A NEW GENERATOR ON A CONCRETE PAD TO AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY CONSISTING OF AN EQUIPMENT SHELTER (OR CABINET) AND TOWER.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN
DIGGERS HOTLINE 811 OR 1-900-242-9511
 WISCONSIN STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU DCAVATE.

SHEET INDEX

- GENERAL**
- T-1 TITLE SHEET
 - NOTES
 - N-1 GENERAL NOTES
 - SITE
 - A-1 SITE PLAN & EQUIPMENT LAYOUT
 - F-1 FOUNDATION DETAILS
 - ELECTRICAL & GROUNDING
 - E-1 WIRING DETAILS
 - E-2 PANEL AND PAPER TATION DETAILS
 - E-3 ATS, CONDUIT & GROUND ROD DETAILS
 - E-4 GENERAC GENERATOR SPECIFICATIONS
 - E-5 GENERAC ATS SPECIFICATIONS

APPROVALS

CLIENT CONSTRUCTION MGR.	DATE
GENERAL DYNAMICS	DATE
CONSTRUCTION MGR.	DATE
PROPERTY OWNER	DATE
SITE ACQUISITION	DATE
CONTRACTOR	DATE
CONTRACTOR	DATE
CONTRACTOR	DATE

APPLICABLE BUILDING CODE & STANDARDS

- ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITION OF THE FOLLOWING CODES AS ADOPTED BY THE GOVERNING LOCAL AUTHORITIES. NOTHING IN THESE PLANS ARE TO BE CONSIDERED TO PRESENT WORK NOT CONFORMING TO THESE CODES.
1. INTERNATIONAL BUILDING CODE 2009
 2. NATIONAL ELECTRIC CODE (NEC)
 3. AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
 4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION
 5. TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL TOWER AND AIRFRAME SUPPORTING STRUCTURES
 6. TIA 607, COMMERCIAL BUILDING EQUIPMENT AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

PROJECT INFORMATION

CONSTRUCTION MANAGER:
 MARC MORRE
 CONSTRUCTION MANAGER, WISCONSIN/ILLINOIS
 GENERAL DYNAMICS WIRELESS SERVICES
 1325 WILLY ROAD, SUITE 136
 SCARLETT, IL 60173
 TEL: (630) 443-1100
 FAX: (630) 443-1999
 BML: jmorre@ramaker.com

ENGINEER:
 RAMAKER & ASSOCIATES, INC.
 1130 DALLAS STREET
 SAUK CITY, WI 53585
 TEL: (608) 643-4100
 FAX: (608) 643-1999
 BML: jramaker@ramaker.com

SITE DATA:
 TOWER OWNER: WAUSAU WATER WORKS
 ADDRESS:
 2700 WEST WAUSAU AVENUE
 WAUSAU, WI 54403
 COUNTY: MARATHON

CONTRACTOR:
 L.A.T.: 44-5724457N
 L.D.N.G.: 05-8695627W
 GROUND ELEVATION: 1494 FT AMSL

DO NOT SCALE DRAWINGS.
 CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING CONDITIONS & CONDITIONS ON THE JOB SITE & VERIFY THE ACCURACY OF THE INFORMATION IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

GENERAL DYNAMICS
 Information Technology, Inc.
 GENERAL DYNAMICS
 12908 SHELBYVILLE ROAD, SUITE 230
 LOUISVILLE, KY 40243



PROJECT TITLE:
WAUSAU WATER
 WA15204
 FA ID# 101241G3
 2700 WEST WAUSAU AVENUE
 WAUSAU, WI 54403

SHEET TITLE:
TITLE SHEET

SCALE: NONE

DATE: 10/29/2014

PROJECT NUMBER: 26675

REVISION: 1-1

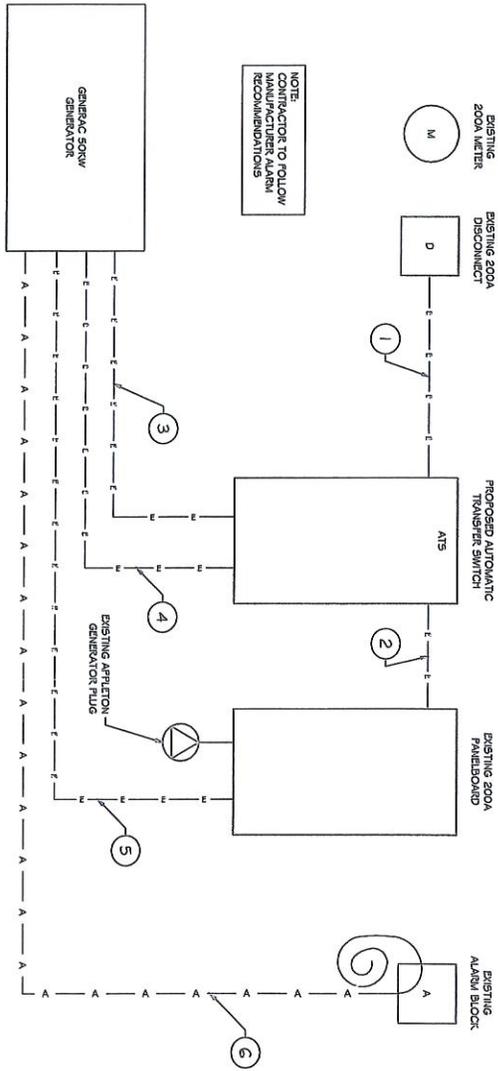
RAMAKER & ASSOCIATES, INC.
 1120 Dallas Street, Sauk City, WI 53585
 Phone: 608-643-4100 Fax: 608-643-1999
 www.ramaker.com



DIAGRAM CIRCUIT SCHEDULE

NO.	FROM	TO	WIRES	GROUND	CONDUIT SIZE	FUNCTION
1	NORMAL POWER SOURCE	AUTOMATIC TRANSFER SWITCH	(3) 3/0	(1) #4	2"	NORMAL POWER FEEDER TO ATS (CUT BACK EXISTING)
2	AUTOMATIC TRANSFER SWITCH	LOAD CENTER	(3) 3/0	(1) #4	2"	POWER FEEDER FROM ATS TO PANEL
3	GENERATOR	AUTOMATIC TRANSFER SWITCH	(3) 3/0	(1) #4	2"	EMERGENCY POWER FEEDER TO ATS
4	AUTOMATIC TRANSFER SWITCH	GENERATOR	(2) #10	(1) #10	1"	START CIRCUIT
5	LOAD CENTER (DISTRIBUTION CENTER)	GENERATOR	(2) #12 (2) #12	(1) #12 (1) #12	1"	CIRCUIT FOR GENERATOR BLOCK HEATER & BATTERY HEATER
6	ALARM BLOCK	GENERATOR	1/2 PAIR 24 AWG	NA	1"	ALARM CABLES (1) 1/2 PAIR 24 AWG RUN THRU INTERIOR OF SHEDDER & INTO ALARM BOX. PROVIDE 24" OF BLACK CABLE. FINAL PUNCH DOWN IS BY AIB TECH. LABEL ALL WIRES

CIRCUIT DETAIL
 SCALE: NTS



NOTE:
 CONTRACTOR TO FOLLOW
 MANUFACTURER ALARM
 RECOMMENDATIONS

PROPOSED WIRING DIAGRAM
 SCALE: NTS

ALARM WIRE IDENTIFICATION CHART

NAME	DESCRIPTION
CR	CRITICAL FAILURE
FL	FUEL LOW/OVERFILL
GR	GENERATOR RUNNING
LP	LOW FUEL
MAF	MAJOR FAULT
MP	MINOR FAULT (PRE-ALARMS)

NOTE:
 CONTRACTOR TO LABEL WITH A TOUCH OR
 SHIMMER LABELS ONLY.
 ABSOLUTELY NO HANDWRITTEN LABELS.

ALARM WIRING IDENTIFICATION CHART
 SCALE: NTS

GENERAL DYNAMICS
 Information Technology, Inc.
 12005 SHELBYVILLE ROAD, SUITE 230
 LOUISVILLE, KY 40243

MICHAEL L. PINSKE
 PROFESSIONAL ENGINEER
 MIDDLETON, WI

RAMAKER & ASSOCIATES, INC.
 1120 Dallas Street, Spauldine, WI, 53593
 Phone: 608-643-4100 Fax: 608-643-7393
 www.Ramaker.com

PROJECT: 26675
 DRAWN: E-1

SCALE: NONE

WIRING DETAILS

PROJECT INFORMATION:
 2700 WEST WAUSAU AVENUE
 WAUSAU, WI 54403

DATE: 10/29/2014

DATE: 04/09/2014

CONSTRUCTION DIVISION

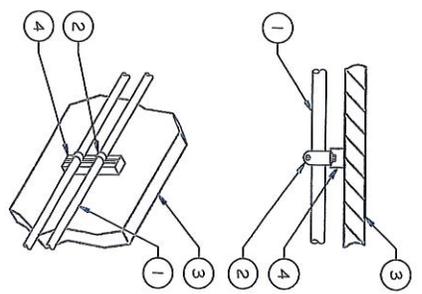
WAUSAU WATER
 W15204
 FA ID# 10124163

- 1 CONDUIT (TYP)
- 2 BUTTERFLY CLAMP AS REQUIRED
- 3 EXISTING WALL/CILING
- 4 VERTICAL UNISTRUT FLOOR T-SERIES LENGTH BASED ON NUMBER OF CONDUIT TO BE MOUNTED

WALL CONSTRUCTION TYPE	USE
HOLLOW	3/8" DIA. TOGGLE BOLT
HOLLOW, AT STUD	3/8" DIA. LAG SCREW
CONCRETE BLOCK (HOLLOW)	3/8" DIA. NUT HV-20 WITH SCREEN, MINIMUM EMBEDMENT 2-1/2"
CONCRETE (SOLID)	3/8" DIA. NUT HV-150 WITH SCREEN, MINIMUM EMBEDMENT 2-1/2"

NOTE: USE GALVANIZED OR STAINLESS STEEL HARDWARE FOR WALLS WITH PENETRATIONS OR STAINLESS STEEL UNITS @ 9'-0" O.C. LENGTH OF RUN

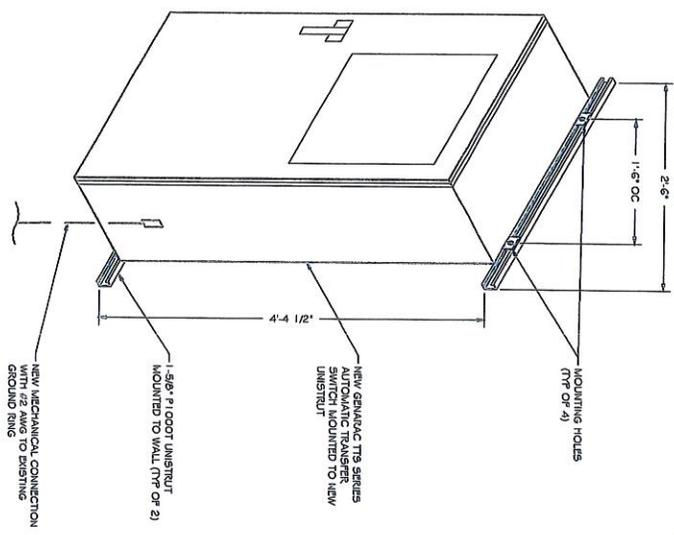
CONDUIT WALL MOUNT
 SCALE: NTS



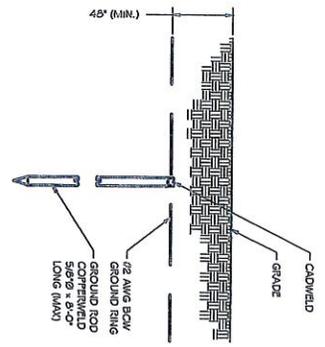
WALL CONSTRUCTION TYPE	USE
HOLLOW	3/8" DIA. TOGGLE BOLT
HOLLOW, AT STUD	3/8" DIA. LAG SCREW
CONCRETE BLOCK (HOLLOW)	7/16" DIA. NUT HV-20 WITH SCREEN, MINIMUM EMBEDMENT 2-1/2"
CONCRETE (SOLID)	7/16" DIA. NUT HV-150 WITH SCREEN, MINIMUM EMBEDMENT 2-1/2"

NOTE:
 1. USE GALVANIZED OR STAINLESS STEEL HARDWARE FOR WALL
 2. SC SHALL USE NON-SLICKING CHANNELS TO WEATHER SEAL ALL PENETRATIONS INTO OR THROUGH SHEET WALL

INTERSECT ATS MOUNTING DETAIL
 SCALE: NTS

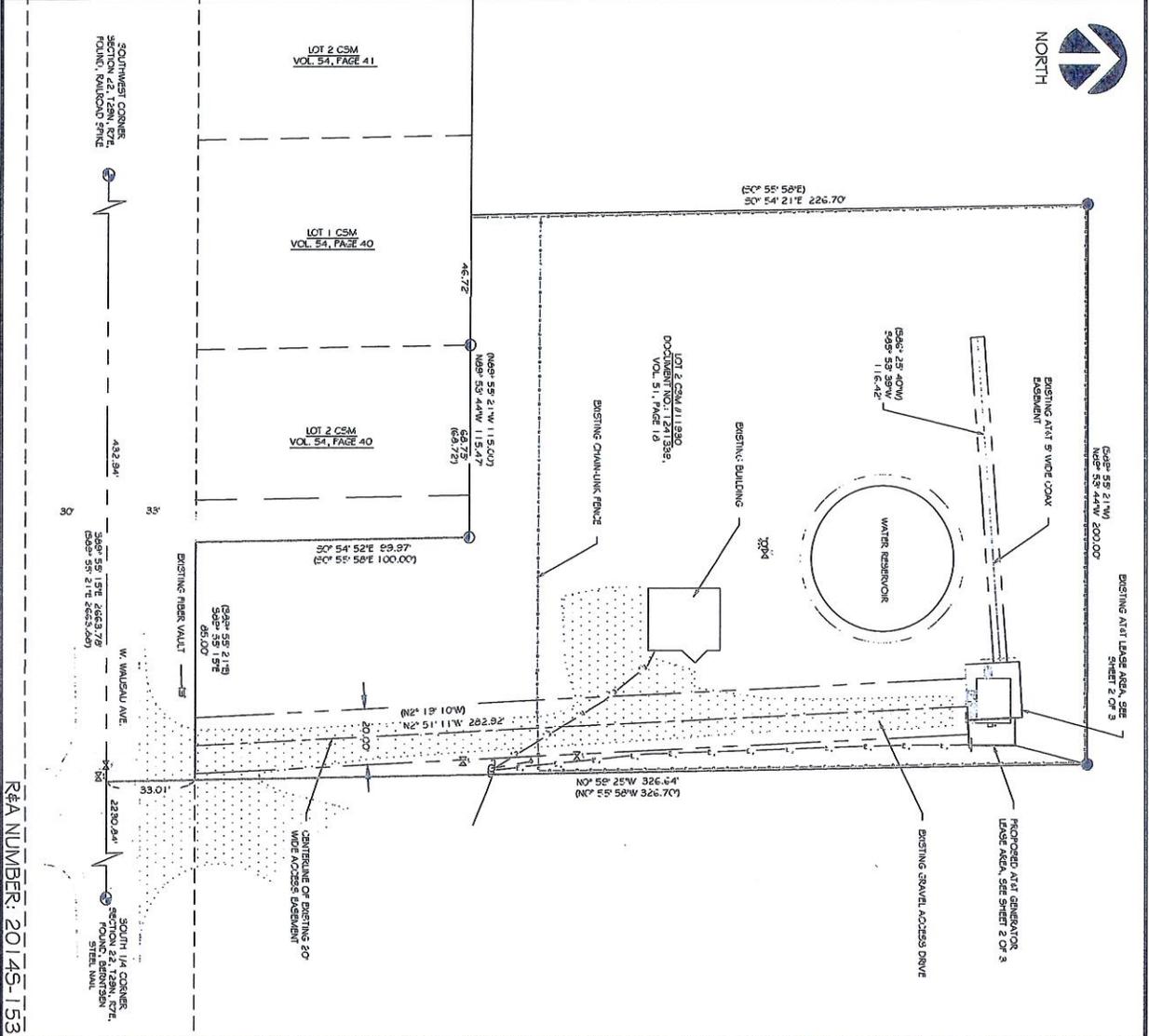


GROUND ROD DETAIL
 SCALE: NTS



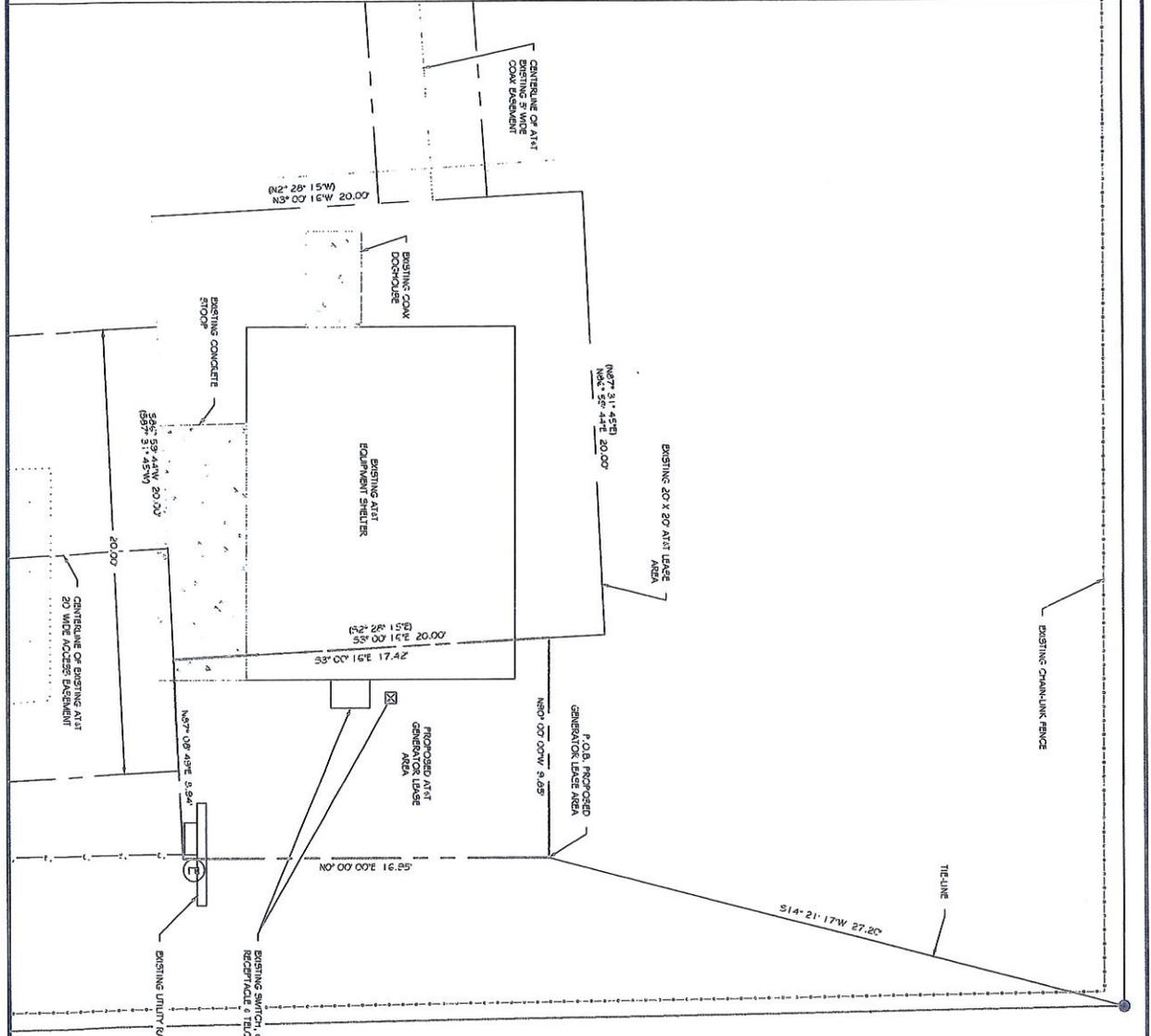
NOTE:
 1. GROUND RODS MAY BE:
 - COPPER CLAD STEEL
 - SOLID COPPER
 2. GROUND RODS SHALL HAVE A MINIMUM LENGTH OF 48" WITHIN THE LENGTH OF ROD
 3. SEE RESISTIVITY REPORT FOR VERIFICATION AS REQUIRED
 4. A LARGER CONDUCTOR SHALL BE REQUIRED IN AREAS HIGHLY PROXIMATE TO HIGH ACIDIC SOIL WITHIN CLOSE PROXIMITY TO ORDER OR WHEN SOIL IS AT ALL PREVENT GALVANIC CORROSION OF TOWER (SEE A5817A-DK-222-10)

GENERAL DYNAMICS Information Technology, Inc. 12808 SHELBYVILLE ROAD, SUITE 2200 LOUISVILLE, KY 40243	1120 Dallas Street, Sault City, WI 53083 Phone: 608-643-4100 Fax: 608-643-7399 www.Ramaker.com
	PROJECT: W15204 PROJECT TITLE: WAUSAU WATER FA ID#: 101241G3 PROJECT LOCATION: 2700 WEST WAUSAU AVENUE, WAUSAU, WI 54905 SHEET TITLE: ATS, CONDUIT & GROUND ROD DETAILS SCALE: NONE DATE: 10/29/2014 DRAWN BY: JAK CHECKED BY: JAK



<p>1120 Dallas Street, Sauk City, WI 53583 Phone: 608-643-1100 Fax: 608-643-7993 www.Ramaker.com</p>	
<p>GENERAL DYNAMICS Information Technology, Inc. GENERAL DYNAMICS 12805 SHELBYVILLE ROAD, SUITE 230 LOUISVILLE, KY 40243</p>	
<p>PROJECT: 26675</p>	<p>DATE: 08/06/2014</p>
<p>1 I hereby certify that this Survey Document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Surveyor in the State of Wisconsin.</p>	
<p>TOMAS A. TORO-SANTOS 1033-K WISCONSIN SURVEYOR</p>	
<p>Project No. 1033-K Licensed Number 30347 Issue Date 08/09/14</p>	
<p>DATE: 08/06/2014</p>	
<p>PROJECT: W5204 FAID#: 10124163</p>	
<p>SITE NAME: WAUSAU WATER</p>	
<p>ADDRESS: 2709 WEST WAUSAU AVENUE WAUSAU, WI 53090 WAUSAU COUNTY</p>	
<p>SITE TYPE: LIIDOR</p>	
<p>SHEET TITLE: SITE SURVEY - OVERALL SITE</p>	
<p>SCALE: 1" = 40' 1" = 20' 1" = 10'</p>	
<p>SHEET NUMBER: 1 OF 3</p>	

LEGEND	
	UNDERGROUND TELEPHONE
	UNDERGROUND ELECTRIC
	OVERHEAD ELECTRIC
	FIBER OPTIC CABLE
	WATER
	SANITARY SEWER
	STORM SEWER
	CURB AND GUTTER
	CENTERLINE
	ASPHALTIC PAVEMENT
	CONCRETE
	GRAVEL
	FENCE CHAINLINK
	FENCE WOODCRIB
	PROPERTY LINE
	EXISTING EASEMENT
	EXISTING LEASE AREA
	PROPOSED LEASE AREA
	SECTION CORNER FOUND
	1/2" IRON PIPE FOUND
	1/2" IRON PIPE FOUND
	POINT OF BEGINNING
	RECORDED AS
	HYDRANT
	WATER VALVE
	TELEPHONE PEDESTAL
	ELECTRIC METER
	UTILITY POLE
	GUY WIRE ANCHOR
	ELECTRIC PANEL/TRANSFORMER



DIRECTION
 NORTH

R#A NUMBER:
20145-153

1120 Dallas Street, Sank City, WI 53593
 Phone: 608-643-1700 Fax: 608-643-7990
 www.Ramaker.com

GENERAL DYNAMICS
 Information Technology, Inc.
 12905 SHELBYVILLE ROAD, SUITE 280
 LOUISVILLE, KY 40248

PROJECT: 26675

DATE: 08/08/14

1. I hereby certify that this Survey Document was prepared and the related Survey Work was performed by me, or under my direct personal supervision, and that I am a duly Licensed Land Surveyor in the State of Wisconsin.

Tomas A. Toro-Santos, No. 3014-B
 License Number: 3014-B Date: 08/08/14
 Final Date: 08/08/2014

SITE ID: W/5204
 FA ID#: 10124163

SITE NAME: WAUSAU WATER

ADDRESS: 2700 WEST WAUSAU AVENUE
 WAUSAU, WI 54989
 MARSHWICH COUNTY

SITE TYPE: INDOOR

SHEET TITLE: SITE SURVEY - LEASE AREA DETAIL

SCALE: 1" = 20'

2 OF 3

PARENT PARCEL DESCRIPTION (PER FIRST AMERICAN TITLE INSURANCE COMPANY TITLE COMMITMENT NO. 14-0339):

LOT TWO (2) OF CERTIFIED SURVEY MAP NO. 11930, DATED JUNE 7, 2001 AND RECORDED JULY 16, 2001 IN VOLUME 51 OF CERTIFIED SURVEYS, PAGE 18, AS DOCUMENT NO. 1241339; BEING A PART OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER (SW 1/4 SW 1/4) OF SECTION TWENTY-TWO (22), TOWNSHIP TWENTY-NINE (29) NORTH, RANGE SEVEN (7) EAST, IN THE CITY OF WAUSAU, MARATHON COUNTY, WISCONSIN.

EXISTING AT&T 20' x 20' LEASE PARCEL DESCRIPTION (PER LEASE AGREEMENT):

A PART OF LOT (1) CSM #11573, VOL. 49, PAGES 55 & 56, DOC. #1219391, LOCATED IN THE SW 1/4 OF THE SW 1/4, SECTION 22, T29N, R07E, CITY OF WAUSAU, MARATHON COUNTY, WISCONSIN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SW CORNER OF SAID SECTION 22; THENCE N00°05'42"W, ALONG THE WEST LINE OF THE SW 1/4 OF SAID SECTION 22, 36.63 FEET; THENCE S89°23'14"E, 332.80 FEET TO THE SW CORNER OF CSM #11573; THENCE S89°23'14"E, 87.70 FEET; THENCE N02°19'10"W, 282.92 FEET TO THE POINT OF BEGINNING; THENCE S8731'45"W, 15.00 FEET; THENCE N02°28'15"W, 20.00 FEET; THENCE N8731'45"E, 20.00 FEET; THENCE S02°28'15"E, 20.00 FEET; THENCE S87°31'45"W, 5.00 FEET TO THE POINT OF BEGINNING. PARCEL CONTAINS 400.00 SQ. FEET MORE OR LESS. PARCEL IS SUBJECT TO ANY AND ALL EASEMENTS AND RESTRICTIONS OF RECORD.

EXISTING AT&T 20' UTILITY/ACCESS EASEMENT DESCRIPTION (PER LEASE AGREEMENT):

A PART OF LOT (1) CSM #11573, VOL. 49, PAGES 55 & 56, DOC. #1219391, LOCATED IN THE SW 1/4 OF THE SW 1/4, SECTION 22, T29N, R07E, CITY OF WAUSAU, MARATHON COUNTY, WISCONSIN, WHOSE CENTERLINE IS DESCRIBED AS FOLLOWS:

COMMENCING AT THE SW CORNER OF SAID SECTION 22; THENCE N00°05'42"W, ALONG THE WEST LINE OF THE SW 1/4 OF SAID SECTION 22, 36.63 FEET TO A POINT IN THE NORTH LINE OF WEST WAUSAU AVENUE; THENCE S89°23'14"E, 332.80 FEET TO THE SW CORNER OF CSM #11573; THENCE S89°23'14"E, 87.70 FEET TO THE POINT OF BEGINNING; THENCE N02°19'10"W, 282.92 FEET TO THE POINT OF TERMINATION. PARCEL IS SUBJECT TO ANY AND ALL EASEMENTS AND RESTRICTIONS OF RECORD.

EXISTING AT&T 5' COAX EASEMENT DESCRIPTION (PER LEASE AGREEMENT):

A PART OF LOT (2) CSM #11930, VOL. 51, PAGE 18, DOC. #1241339, LOCATED IN THE SW 1/4 OF THE SW 1/4, SECTION 22, T29N, R07E, CITY OF WAUSAU, MARATHON COUNTY, WISCONSIN, WHOSE CENTERLINE IS DESCRIBED AS FOLLOWS:

COMMENCING AT THE SW CORNER OF SAID SECTION 22; THENCE N00°05'42"W, ALONG THE WEST LINE OF THE SW 1/4 OF SAID SECTION 22, 36.63 FEET; THENCE S89°23'14"E, 332.80 FEET TO THE SW CORNER OF CSM #11573; THENCE S89°23'14"E, 87.70 FEET; THENCE N02°19'10"W, 282.92 FEET; THENCE S87°31'45"W, 15.00 FEET; THENCE N02°28'15"W, 13.00 FEET TO THE POINT OF BEGINNING; THENCE S86°25'40"W, 116.42 FEET TO THE POINT OF TERMINATION. PARCEL IS SUBJECT TO ANY AND ALL EASEMENTS AND RESTRICTIONS OF RECORD.

PROPOSED GENERATOR LEASE AREA DESCRIPTION:

A PART OF LOT (2) CSM #11930, VOL. 51, PAGE18, DOC. #1241339, LOCATED IN THE SW 1/4 OF THE SW 1/4, SECTION 22, T29N, R07E, CITY OF WAUSAU, MARATHON COUNTY, WISCONSIN, DESCRIBED AS FOLLOWS:

COMMENCING AT A FOUND 1 1/2" IRON PIPE AT THE NORTHEAST CORNER OF SAID LOT 2 OF CERTIFIED SURVEY MAP NO. 11930; THENCE S14° 21' 17"W, 27.20 FEET TO THE POINT OF BEGINNING; N90° 00' 00"W, 9.85 FEET, MORE OR LESS, TO THE EAST LINE OF THE EXISTING AT&T LEASE AREA; THENCE S03° 00' 16"E, 17.42 FEET, MORE OR LESS, ALONG THE EAST LINE OF THE EXISTING AT&T LEASE AREA TO THE SOUTHEAST CORNER OF THE EXISTING AT&T LEASE AREA; THENCE N87° 08' 49"E, 8.94 FEET; THENCE N00° 00' 00"E, 16.95 FEET TO THE POINT OF BEGINNING. SAID PARCEL CONTAINING 161.3 SQUARE FEET, MORE OR LESS, AND IS SUBJECT TO ANY AND ALL EASEMENTS OR AGREEMENTS, RECORDED OR UNRECORDED.

WAUSAU WATER WORKS - DRINKING WATER DIVISION-2015-2019 BUDGET PLAN

TIME LINE FOR COMPLETION

updated 12/22/14

PLANNED CAPITAL IMPROVEMENTS

IMPROVEMENTS/PROJECTS	PROJECTED COST	FUND SOURCE	2014	2015	2016	2017	2018	2019
TRANSPORTATION EQUIPMENT - VEHICLES								
DUMP TRUCK	25,000.00	GENERAL OPERATING FUND	35,000.00	35,000.00	35,000.00	35,000.00	35,000.00	35,000.00
JOB BOX	100,000.00	GENERAL OPERATING FUND		100,000.00				100,000.00
	10,000.00	GENERAL OPERATING FUND	10,000.00					
TOOLS, SHOP AND GARAGE								
BACKHOE REPLACEMENT	125,000.00	GENERAL OPERATING FUND					125,000.00	
BACKHOE REPLACEMENT W/HYDROHAMMER	250,000.00	GENERAL OPERATING FUND			250,000.00			
HURCO (ADDITIONAL AND REPLACEMENT)	65,000.00	GENERAL OPERATING FUND			65,000.00			65,000.00
CORRELATOR	30,000.00	GENERAL OPERATING FUND		30,000.00				
METERS								
METER REPLACEMENT (ON-GOING)	100,000.00	GENERAL OPERATING FUND	75,000.00	80,000.00	85,000.00	90,000.00	95,000.00	100,000.00
TREATMENT PLANT								
PADDLES & CHAINS - SS PLANT	5,000.00	GENERAL OPERATING FUND	5,000.00		5,000.00		5,000.00	
PUMPING/TREATMENT PLANT								
PUMPING/FILTRATION/CLEAR WELL	9,000,000.00	BORROWED FUNDS						9,000,000.00
TOWERS/RESERVOIRS/BOOSTER STATIONS								
MONROE BOOSTER STATION RECONSTRUCTION	225,000.00	GENERAL OPERATING FUND			225,000.00			
20TH AVE BOOSTER UPGRADE (BROKAW)	25,000.00	GENERAL OPERATING FUND		25,000.00				
BUILDINGS AND STRUCTURES								
RESERVOIRS								
RESERVOIR RESURFACING	25,000.00 /yr	GENERAL OPERATING FUND		25,000.00	25,000.00	25,000.00		
WELLS								
REHAB WELL	30,000.00 /yr	GENERAL OPERATING FUND	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00
LAND	100,000.00	GENERAL OPERATING FUND		100,000.00				
FUTURE WELL	650,000.00	BORROWED FUNDS				650,000.00		
OFFICE FURNITURE AND EQUIPMENT								
FURNITURE - MTR SHOP	2,500.00	GENERAL OPERATING FUND	2,500.00	2,500.00				
PLANT COMPUTERS	100,000.00	GENERAL OPERATING FUND			100,000.00			
COMPUTER EQUIPMENT	7,500.00 /yr	GENERAL OPERATING FUND	7,500.00	10,000.00	7,500.00	7,500.00	7,500.00	7,500.00
CUSTOMER BILLING SYSTEM UPGRADE	306,000.00	GENERAL OPERATING FUND			150,000.00			
GATEWAY METER READING UPGRADE	125,000.00	GENERAL OPERATING FUND	50,000.00			75,000.00		
DISTRIBUTION/SUPPLY MAINS								
NORMAL WATERMAIN EXTENSION	By Year	GEN OPER/SPEC ASSESSMENT	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00
STEWART AVE LOOPING-12"-60/68 AVE	150,000.00	GENERAL OPERATING FUND			150,000.00			
LOOPING MAIN 10"- FRANKLIN ST TO HAMILTON ST	50,000.00	GENERAL OPERATING FUND			50,000.00			
LOOPING MAIN STETTIN DRIVE, 48TH AVE TO 52ND AVE	85,000.00	GENERAL OPERATING FUND				85,000.00		
17TH AVE/BRIDGE ST WATERMAIN REPLACEMENT	35,000.00	GENERAL OPERATING FUND		35,000.00				
14" REPLACEMENT, HWY 51,	150,000.00	GENERAL OPERATING FUND			150,000.00			
2ND AVE (STEWART TO ELM)	35,000.00	GENERAL OPERATING FUND		35,000.00				
RIVER DRIVE	80,000.00	GENERAL OPERATING FUND		80,000.00				
NORTHWESTERN AVE (HIGGENBOTHAM)	130,000.00	GENERAL OPERATING FUND		130,000.00				
7TH ST (SPRING TO CROCKER)	35,000.00	GENERAL OPERATING FUND		35,000.00				
CROCKER STREET (7TH TO 13TH)	120,000.00	GENERAL OPERATING FUND		120,000.00				
SCOTT STREET (BELLIS TO 10TH ST)	46,000.00	GENERAL OPERATING FUND	46,000.00					
MCCLELLAN ST (BELLIS TO GREY PL)	20,000.00	GENERAL OPERATING FUND	20,000.00					
RANDOLPH ST (CHERRY TO CRESCENT)	200,000.00	GENERAL OPERATING FUND				200,000.00		
ELDRED (CHERRY TO 3RD)	150,000.00	GENERAL OPERATING FUND				150,000.00		
CALLON STREET (12TH TO 6TH)	150,000.00	GENERAL OPERATING FUND			150,000.00			
KENT STREET (GRAND AVE TO ZIMMERMAN)	150,000.00	GENERAL OPERATING FUND			150,000.00			

IMPROVEMENTS/PROJECTS	PROJECTED COST	FUND SOURCE	2014	2015	2016	2017	2018	2019
BLEEDER UPGRADES	10,000.00 /yr	GENERAL OPERATING FUND		10,000.00	10,000.00	10,000.00	10,000.00	10,000.00
STREET RECONSTRUCTION	300,000.00 /yr	GENERAL OPERATING FUND					300,000.00	300,000.00
N 11TH ST (MCCLELLAN TO FRANKLIN)	35,000.00	GENERAL OPERATING FUND		35,000.00				
GRANT STREET (BELLIS TO 10TH ST)	80,000.00	GENERAL OPERATING FUND		80,000.00				
8TH STREET (HAMILTON TO BRIDGE) LATERALS	50,000.00 est	GENERAL OPERATING FUND			50,000.00			
WASHINGTON ST (RR TO 13TH ST)	80,000.00	GENERAL OPERATING FUND			80,000.00			
2ND STREET (BRIDGE TO E WAUSAU)	50,000.00	GENERAL OPERATING FUND			50,000.00			
TOWNLINE (GRAND TO CITY LIMITS)	80,000.00	GENERAL OPERATING FUND					80,000.00	
1ST AVE (THOMAS TO STEWART)	80,000.00	GENERAL OPERATING FUND					80,000.00	
PLAZA DRIVE WATERMAIN LINING	350,000.00	GENERAL OPERATING FUND		350,000.00				
ELM ST (14TH-17TH AVE) 17TH AVE (ELM-STEWART) LINING	540,000.00	GENERAL OPERATING FUND			540,000.00			
17TH AVE (ELM NORTH ACROSS HWY 51) LINING	295,000.00	GENERAL OPERATING FUND				295,000.00		
SERVICES								
BRASS & COPPER	40,000.00 est	GENERAL OPERATING FUND	20,000.00	40,000.00	50,000.00	40,000.00	40,000.00	40,000.00
LEAD SERVICE REPLACEMENT	varies est	GENERAL OPERATING FUND	30,000.00	40,000.00	2,500,000.00	2,500,000.00	2,500,000.00	2,500,000.00
TOTAL PLANNED CAPITAL EXPENDITURES			831,000.00	1,927,500.00	5,407,500.00	4,692,500.00	3,807,500.00	12,687,500.00

WAUSAU WATER WORKS - WASTEWATER DIVISION			TIME LINE FOR COMPLETION					
2014-2019 BUDGET PLAN								
PLANNED CAPITAL IMPROVEMENTS								
IMPROVEMENTS/PROJECTS	PROJECTED COST	FUND SOURCE	2014	2015	2016	2017	2018	2019
TREATMENT PLANT								
Clarifier Painting/Restoration	70,000.00	General Operating Fund		35,000.00		35,000.00		
Repair of Digester Covers/Insulation	100,000.00	General Operating Fund/Borrowed		100,000.00				
Digester Cover Replacement	2,000,000.00	Borrowed funds		2,000,000.00				
Rehab Digester Mixing/Heating System	1,100,000.00	Borrowed Funds		1,100,000.00				
Digester Gas Storage & Pressure Relief	500,000.00	Borrowed Funds		500,000.00				
Secondary Digester Mixing System	500,000.00	Borrowed funds		500,000.00				
Repair/Replace Poly Mixing Systems	50,000.00	Replacement Fund			50,000.00			
Clarifier Rehab *	1,070,000.00	Borrowed funds	470,000.00		300,000.00		300,000.00	
Rehab 2 Filter Presses/1 Belt Thickener	220,000.00	Borrowed funds				220,000.00		
Sludge Dewatering System **	1,700,000.00	Borrowed funds					1,700,000.00	
Blacktopping	100,000.00	General Operating Fund			100,000.00			
Sand Filter Sand & Rehab	210,000.00	General Operating Fund		210,000.00				
Aeration Tanks Auto Actuator Valve	100,000.00	Replacement Fund			100,000.00			
Aeration Tanks - Gut Pre-Mix Lines	80,000.00	Replacement Fund				80,000.00		
Bypass Valve Reconstruction	100,000.00	Replacement Fund				100,000.00		
Main Building Heating/Air Conditioning	35,000.00	General Operating Fund	22,000.00	13,000.00				
Blower House Standby Generator	300,000.00	Borrowed funds					300,000.00	
Clarifier Discharge Pipe Painting	50,000.00	General Operating Fund				50,000.00		
Pipe Identification/Painting	25,000.00	General Operating Fund			25,000.00			
Roofs/Grit Building Dome	500,000.00	Borrowed funds		250,000.00		250,000.00		
MCC1 & Plant Wiring Upgrades	150,000.00	General Operating Fund/Borrowed		150,000.00				
Lift Station Control Panel Upgrades	30,000.00	per year General Operating Fund		30,000.00	30,000.00	30,000.00		
WWTP Wetwell	75,000.00	General Operating Fund			75,000.00			
WWTP Door Replacements	25,000.00	General Operating Fund		7,000.00	7,000.00	7,000.00	4,000.00	
WWTP Ladder Upgrades	15,000.00	General Operating Fund			15,000.00			
RAS Pump Replacement	150,000.00	Replacement Fund		150,000.00		150,000.00		
Pull Behind Spreader	40,000.00	General Operating Fund			40,000.00			
Trailer Mounted Sewer Cleaner	35,000.00	General Operating Fund			80,000.00			
Tuck Pointing - 2nd Floor Press Room	100,000.00	General Operating Fund					100,000.00	
Washwater Discharge Lines & P Monitor	100,000.00	General Operating Fund			100,000.00			
Backup Generator Upgrades	150,000.00	General Operating Fund			50,000.00		100,000.00	
Lift Station Forcemain Cleaning	200,000.00	General Operating Fund				100,000.00		100,000.00
LIFT STATIONS								
Townline Lift Station	180,000.00	General Operating Fund				180,000.00		
Industrial Park (3rd pump and bar screen)	310,000.00	General Operating/Borrowed		60,000.00	250,000.00			
72nd Avenue	200,000.00	General Operating/Borrowed		40,000.00	160,000.00			
Crocker St.	200,000.00	General Operating/Borrowed			200,000.00			
Cleveland Avenue	250,000.00	General Operating/Borrowed	50,000.00	200,000.00				
Northwestern(Panel & Check Valves)	85,000.00				85,000.00			
TOTAL PLANNED CAPITAL EXPENDITURES			542,000.00	5,345,000.00	1,667,000.00	1,202,000.00	2,504,000.00	
* Primary 1 and 2, Final 3 rehab one in 2014, next in 2015, last in 2017								
** Sludge Dewatering System is dependent on new DNR regulations for phosphorus which may force the utility to Class A sludge production								

ROUTINE ADDITIONS	PROJECTED COST	FUND SOURCE	2014	2015	2016	2017	2018	2019	
OFFICE EQUIPMENT									
Plant Computers/Software	12,000.00	Replacement Fund		12,000.00					
Customer Billing System Upgrade	150,000.00	General Operating Fund			150,000.00				
Gateway Meter Reading Upgrade	125,000.00	General Operating Fund	50,000.00			75,000.00			
TRANSPORTATION EQUIPMENT									
Trucks	Ongoing	General Operating Fund		40,000.00	35,000.00	35,000.00			
Sludge Truck Boxes	40,000.00		40,000.00						
SEWERS									
Normal Sewer Extensions	Ongoing	General Op/Special Assess	500,000.00	250,000.00	250,000.00	250,000.00	250,000.00	250,000.00	
Emergency Repairs	Ongoing	General Operating Fund		250,000.00	250,000.00	250,000.00	250,000.00	250,000.00	
Slipline Sewers (Cured in Place)	Ongoing	Borrowed Funds/General Op	300,000.00	325,000.00	350,000.00	375,000.00	400,000.00		
Townline Lift Station Forcemain	170,000.00	General Operating Fund			170,000.00				
2nd Avenue (Stewart to Elm)	25,000.00	General Operating Fund		25,000.00					
Northwestern Avenue (Higgenbotham)	160,000.00	General Operating Fund/Borrowed		160,000.00					
7th Street (Spring to Crocker)	30,000.00	General Operating Fund		30,000.00					
Crocker Street (7th to 13th)	80,000.00	General Operating Fund		80,000.00					
Scott Street (Bellis to 10th Street)	40,000.00	General Operating Fund	40,000.00						
McClellan Street (Bellis to Gray Pl)	40,000.00	General Operating Fund	40,000.00						
N. 11th St (McClellan to Franklin)	25,000.00	General Operating Fund		25,000.00					
Grant St (Bellis to N 10th St)	40,000.00	General Operating Fund		40,000.00					
8th Street (Hamilton to Bridge)	40,000.00	General Operating Fund			40,000.00				
Callon Street (6th-12th Ave)	30,000.00	General Operating Fund			30,000.00				
Washington St (RR-13th Street)	80,000.00	General Operating Fund			80,000.00				
Kent Street (Grand-Zimmerman)	50,000.00	General Operating Fund			50,000.00				
2nd St. (Bridge-E Wausau)	20,000.00	General Operating Fund			20,000.00				
3rd Ave (Eldred-Randolph)	15,000.00	General Operating Fund				15,000.00			
Eldred (Cherry-3rd Ave)	10,000.00	General Operating Fund				10,000.00			
Randolph (Crescent Dr-Cherry)	25,000.00	General Operating Fund				25,000.00			
Ethel (Grand Ave-Zimmerman)	50,000.00	General Operating Fund				50,000.00			
Cedar St. (7th Ave-12th Ave)	75,000.00	General Operating Fund					75,000.00		
Henrietta St (Bellis-13th St)	30,000.00	General Operating Fund					30,000.00		
Bertha St (Mary-Zimmerman)	20,000.00	General Operating Fund					20,000.00		
McClellan and 1st Street	50,000.00	General Operating Fund		50,000.00					
	TOTAL ROUTINE EXPENDITURES		970,000.00	1,287,000.00	1,275,000.00	1,010,000.00	1,025,000.00		
	TOTAL CAPITAL EXPENDITURES		1,512,000.00	6,632,000.00	2,942,000.00	2,212,000.00	3,529,000.00		
Updated 12/23/14									

McGivern

E. Parcel 336 E. Adrian	1.16 ac	
Developable land (flat)		37541 ft ²
25' R.O.W. =	5550 ft ²	
Assessment Land. 2007		\$58,400
Imp. 2007		<u>\$47,200</u>
		\$105,600
Fair Mkt Value 2013		\$97,300

W. Parcel 330 E. Adrian	0.75 ac	
Developable		30,750 ft ²
Assessment Land 2007		\$57,400
Imp 2007		<u>\$50,900</u>
		\$108,300
Fair Mkt Value		\$99,800

5500 ft² = 15% of developable land

Land only \$58,400 X 15%	=	\$8,760
Total \$97,300 X 15%	=	\$14,595



Land Information Mapping System

HALSEY
 BERN
 MAINE
 TEXASHEWITT
 HOLLON
 STELLA
 EASTON
 FULL
 WELLS
 CASSE
 BEA
 WINGE
 BRIGHT
 HEIMAT
 REIN
 DAY
 WISIN
 FBEVENT
 SPENCER
 BERDEN
 KWANZEN

Legend

- Land Hooks
- Section Lines/Numbers
- Right Of Ways
- Municipalities
- 2010 Orthos Wausau
- Red: Band_1
- Green: Band_2
- Blue: Band_3



Notes

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231.78 0 231.78 Feet



User_Defined_Lambert_Conformal_Conic



Land Information Mapping System

- HALSEY
- BERN
- HOLTON
- HULL
- BRIGHTON
- SPENCER
- WISCONSIN
- STETSON
- WICK
- WENDEL
- WILSON
- WYOMING
- FRANZEN

Legend

- Parcel Annotations
- Owner Last Names
- Parcels
- Land Hooks
- Section Lines/Numbers
- Right Of Ways
- Municipalities
- County-wide 2ft Contours (2012)
- Index
- Intermediate
- 2010 Orthos Wausau
- Red: Band_1
- Green: Band_2
- Blue: Band_3



Notes

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28.97 0 28.97 Feet



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