

Osseo City Council AGENDA

WORK SESSION Monday, March 30, 2020 6:00 p.m., Council Chamber

MAYOR DUANE POPPE COUNCILMEMBERS: JULIANA HULTSTROM, HAROLD E. JOHNSON, MARK SCHULZ, LARRY STELMACH

- 1. Call to Order
- 2. Roll Call (quorum is 3)
- 3. Approval of Agenda (requires unanimous additions)
- 4. Discussion Items
 - A. 2020 Utility Bond
 - B. Update on City Financial Position Relating to COVID-19 Crisis
- 5. Adjournment



City of Osseo City Council Work Session Meeting Item

Agenda Item:	2020 Utility Bond
Meeting Date: Prepared by:	March 30, 2020 Riley Grams, City Administrator
Attachments:	Updated Tyler Technologies Finance Software Quote Lift Station Assessment and Cost Proposal Ehlers Memo and Bond Analysis

Background:

Last year, when the City Council and Staff were going through the recently approved utility rate study, the idea of including additional equipment, upgrades and software into the utility rates was explored. Staff put together some very preliminary numbers to include in the utility rate study, and the Council directed Staff to explore the addition of a rather large utility bond to help the City purchased new equipment, conduct various upgrades, and new software to assist the City with providing services to the community.

Since then, Staff has been busy putting together projected costs to determine the impact of adding a utility bond into the utility rates. The following is a list of projects, equipment, and software to help bring the City of Osseo utilities into the modern era.

Finance Software

The City's finance software system is a critical component to managing the City's financial system (including payroll, utility billing, reporting, accounts payable, auditing, etc). This software touches almost every aspect of operating a City. The current system (Banyon Data Systems) is an outdated system and finance staff is experiencing daily issues with the software causing work stoppages and many headaches. Many times, the system will up and crash, which then requires a re-boot taking up a lot of time.

Staff reached out to other local cities to inquire about which financial software system they used. Many of the larger cities used LOGIS, which is an all-encompassing system. However, it is extremely expensive (about three times more expensive than the software system Staff prefers). For example, the City of Maple Grove uses LOGIS and pays approximately \$200,000 annually for the system alone (not included the cost of the initial startup). Another popular system is Tyler Technologies. Tyler allows the user to build the entire system from scratch and it completely customizable based on the City's needs. City Accountant April Weller also has experience using Tyler while working for a previous municipality. After investigating all of the available options that Tyler offers, Staff determined the best modules that the City needs are:

Financial management (fund accounting)

Personnel management (employee payroll and reporting) Utility billing (allows for property owners to pay utility bills online through the City's portal system) Front desk cashiering and point-of-sale

Tyler content manager (Laserfiche) Community development platform (online building permits, code enforcement) Community notifications (late bill notices, utility shutdowns, etc)

The total cost of a new Tyler Technologies financial software system is approximately **\$130,000**. This includes all of the modules built to the City's specifications and the conversation of all of the City and property information into the new system. There will be an annual cost to maintain the system of approximately **\$23,000**. The system would require a one-year timeframe for the build out and installation.

Water Meter Replacement

The City is starting to have some software issues with our water meter reading devices, along with battery life of the meters starting to expire on the transmitting side of the meter. Staff is noticing the accuracy levels of the readings are dropping off as well, which is typical of a positive displacement (PD) water meter of its age. The last meter project was installed in 2003 and cost \$160,000.

There are 2 options for replacing the current system:

- AMR drive by system (This system is equal to our current meter system) \$205,000 - \$230,000
- AMI a fixed network system (This system is a higher end system that most, if not all, cities are moving to) \$275,000

A third-party project management consultant would then coordinate the installation of each new meter in each property within the City. The cost for installation is **\$78,000**.

Staff recommends the AMI fixed network system for the replacement project. This system would provide a lot of time saving in many ways for the meter reading staff. This will eliminate Public Works staff driving a route to read meters quarterly, and the weekly final reads. The AMI fixed network will allow water meters to be read any time, anywhere with the push of a button from City Hall. The new water meter system will be able to track and graph water usage. Finance Staff will be able to print a 40-day history, pinpointing hourly usage. This will also greatly reduce Staff time discussing water usage conflict with residents. The water meter replacement project will also improve accuracy in usage and billing. The total cost of the water meter replacement project is expected to be between **\$350,000 - \$375,000**.

Lift Station Improvements

No doubt the Council is aware of the importance of the City's lift stations and the sanitary sewer system. Unfortunately, it appears that the City installed the current lift stations approximately 60 years ago, and no further upgrades or major maintenance work has been done. At this point, they are in need of complete overhauling and rehabilitation. The lift station history and record keeping are very inconsistent. We know the equipment in the lift stations are original back to its install date and has not been improved. When BAR Engineering was onsite to perform the assessment on the lift stations, they mentioned the suppliers of the equipment in our facilities went out of business in the early 1990s. It is becoming too costly to find parts and to maintain and operate the current equipment. We have had many issues at the lift stations including water in the pump's oil reservoirs, pump failures, clogged pumps, and overheating equipment.

We are looking at a complete overhaul of the lift stations including pumps, plumbing, concrete basin repair, electrical updates, access panel replacements, fall protection installation, SCADA implementation, and building updates to code. The HVAC system is extremely outdated and will be brought up to code for the safety of our personnel. Proper ventilation and fresh air induction will improve air quality and slow down corrosion of the interior walls and electrical

components. A large cost aspect of this project will be the temporary conveyance of the lift stations. This will allow the concrete basins to be washed down and rehabilitated as needed. The life expectancy from this rehabilitation will be 40 years or more. Some minor maintenance and repairs to the equipment along the way to help extend the life expectancy will be necessary.

WSB has provided a complete assessment of the City's three main lift stations. That assessment is attached. The engineering opinion of the cost of the work needed to happen is:

- Main lift station (lift station no. 1) \$1,088,485
- Broadway Street E (lift station no. 2) \$246,260
- 6th Avenue NE (lift station no. 3) \$257,038

The total cost of rehabilitating the City's essential lift station sanitary system is: **\$1,591,783**. Please note that this still a moving target. I will be working with WSB to review these numbers to ensure that we are getting the best possible cost analysis for the work that is required.

SCADA/Lift Station Communication System

The communication to and from the lift stations is extremely outdated and should not be trusted to properly warn Public Works Department in the case of an emergency. SCADA (Supervisory Control and Data Acquisition) system would allow us to track day to day operations of the lift stations, including the pumps and water levels, along with alerting Public Works of any issues. SCADA would feature remote access, allowing the Public Works Department, and the on-call personnel to visualize the real time status of the lift stations. This is very important during emergency situations like power outages, pump failures, etc.

The cost for SCADA and lift station communication systems is:

- Main lift station (lift station no. 1) \$55,000
- Broadway Street E (lift station no. 2) \$40,000
- **6th Avenue NE (lift station no. 3)** \$40,000
- Water Pressure Monitoring Stations (all three lift stations) \$60,000
- Master Control Panel \$30,000
- Personal Computer and Related Equipment (monitor, printer, etc) \$10,000
- SCADA Software, including licensing, programming and startup \$35,000
- TOTAL <u>\$270,000</u>

Sanitary Sewer Slip Lining

Most of the sanitary sewer lines in the City are made of 3-foot sections of clay pipe. For the most part it is in good condition structurally, but we have noticed some failures at the joints recently. This is typical for clay sanitary sewer pipes of this age. This allows tree roots to penetrate the system and ultimately cause sewer backups up the line. The City Engineer recommends that the City consider slip lining the City's sanitary sewer. This procedure involves inserting a liner to the existing pipe, which renews the interior integrity of the surface and increase the structural capacity of the old pipeline. This trenchless method is very effective because it can be done any time without having to remove the old sewer pipe saving time and labor.

We are planning to do this in three phases: northeast, northwest, then southeast. We will clean one section and then camera/record it to determine where deficiencies. WSB will then analyze and recommend specific lining needs for that section. Not all the sanitary pipe will need lining.

Because we don't the extent of how much sewer slip lining is needed, we project a cost of **\$250,000** for each of the three sections of the City. Again, this is a projection and we won't know the full extend of lining needed until

everything is recorded and reviewed. We anticipate that this will need to happen over the course of the next three years, with the \$250,000 anticipated in each of those three years.

Sewer Jetter

The current jet/vac unit is starting to show its age and requires frequent maintenance, which is costly and time consuming. We are approaching milestones in hours of operation and age that could require major overhaul to the vacuum unit and water pump systems. These costs can be upward of half the current market value of the unit at this point. The idea is to use the money for the upcoming repair costs toward a replacement unit and try to maintain lowest cost of ownership.

The jet/vac is used in many applications, such as cleaning water system gate valves, vacuuming storm water catch basins, cleaning lift stations, root sawing and cleaning of the main sanitary sewer lines. We also depend on the jet/vac unit to relieve sewer backups. It's a piece of equipment that is critical to the success of the Department and to maintain high service levels to the City.

The new jet/vac truck will be upgraded slightly with larger water capacity, requiring less fill ups and down time, which will make the Public Works crews more efficient. This will allow staff to clean more sanitary sewer line in the same amount of time. The vacuum system will also be upgraded to a modern style fan, allowing us to pull debris from lower depths. In the past we have had to use a subcontractor to assist in this area. The City purchased the current unit used back in 2003 for a cost of \$147,000. If the City were to sell the current unit to recoup cost, we estimate that we would receive \$40,000 - \$75,000. A brand new jetter, which is what we propose we purchase, costs approximately \$450,000. If we sold our current unit and used that money to offset the cost of a new unit, we believe we need approximately **\$375,000**.

Street Sweeper

We are starting to experience excessive wear on the front conveyor belt system along with the guide shoes on the main broom. These wear points to the main conveyor belt and broom system needs to be rebuilt. This is typical of a machine in this age. The cost for this work is \$12,000 on the low end.

Public works uses the street sweeper for fall leaf clean up, spring street sweeping, event sweeping, and on an as needed basis throughout the city. Having a city owned street sweeper allows us more control over the street sweeping operations, giving our streets and storm water system a better overall appearance and function. The Elgin Pelican street sweeper is the best all-around sweeper for the city of Osseo, and I recommend we replace it with the same unit. This mechanical style sweeper avoids the use of a fan style vacuum. The vacuum units plug frequently with small sticks and debris during bulk sweeping operations, which is the primary use for our city. The new Elgin sweeper will have many upgrades, like a street side broom, making its sweeping footprint almost 3' wider. It will also have an increased debris compartment allowing staff to sweep further and haul more. The new sweeper will also have a centralized grease system that will cut weekly maintenance time by over 60 percent. The current unit has over 100 grease points, some under the machine and behind panels that must be removed to access. This will also help the new machines longevity due to proper maintenance procedures. The Elgin cab has also been upgraded to a positive displacement system, along with more driver visibility, seat improvements, and noise reduction. These features come standard and will greatly improve the operator's overall environment allowing them to sweep for longer periods with less fatigue.

The current sweeper was purchased used in 2004 for \$114,000. The value of the current unit is about \$10,000. We might be able to sell it, but we're not sure given its age and use. A new Elgin Pelican street sweeper cost is approximately **<u>\$240,000</u>**.

Utility Bond

Ehlers provided the attached memo outlining the utility bond process and the expected result to the utility rates.

Staff will continue to work on acquiring the best possible numbers for each piece of equipment or project. All of the numbers are either estimates or projections and may move a bit before coming back to the Council to call for the bond sale. That is anticipated to happen at the April 13 Council meeting.

For Monday's meeting, the point is to get Council comfortable with the pieces of equipment or projects necessary to continue providing the property owners of this City with the best services possible. While many of these numbers are high, it's a sobering reminder of just how important these items are for the overall success of the City. Additionally, if a City doesn't continue to do proper maintenance, the result is failure, which comes with a much larger price tag. The Council should pay attention to how this utility bond will affect the utility rates.

Recommendation/Action Requested:

Staff recommends the City Council discuss the item and direct Staff accordingly.

Next Step:

Council should provide direction to Staff on how to proceed. Staff will take the direction and update the bond analysis and come back to the Council at the April 13 meeting to call for the bond sale with updated numbers.



Keeping "the light" in Osseo

Evaluating Incode Software in these amazing & challenging times

Tyler Technologies Cody Gunstenson Account Executive



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Next Steps • Questions • Thank You!	





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Some suggestions for using the following screenshots

As we go through Osseo's presentation today, please feel free to use this document. We'll probably not touch all the pages and screenshots, which of course, to protect our significant investment, are all protected by copyright, but feel free to use this as your guide, your notebook. The fruit "thermometer," in honor of The Osseo Orchard next to each screen (example to the right) can be used to indicate how valuable this screen is to you. Think of the bottom elderberry fruit shrub as "nice feature, might use some;" and think of the top apple as "Wow, we'll use this a lot in Osseo." Simply put a check where your evaluation falls or color in the piece of fruit you prefer. This evaluation is unique to this document and not part of Tyler's software.

As we go through this demonstration today, if you have suggestions for us, in terms of making our software easier to use and/or more valuable to you, we'd love a copy of those notes. Most or our feature enhancements come from our customers...Thank you for this amazing opportunity and for your active participation in our adventure today.





Overview, Navigation, Dynamic Grids, General Reporting

Navigation



Search



Reporting



Roles Base Dashboards-Director



Mobile







Osseo, MN

Core Financials—Dashboard





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Purchasing

Review and Submit								:
Vendor * OD - Office Depot, Inc.		Ŧ	Vendor Business Address * Lance Randal 5678 90th	Street, Lubbock, T	x 794 7		Summary	
Regulation Number Auto Number			Issue Date 🛗 11/07/	/2018 -		Amount Shipping Sales Tax Total		\$250.00 \$0.00 \$0.00 \$250.00
Requested By * Sys Admin		9/50	Ship To * City Hall - Finance - Fina	ance Dept				
Department * City Attorney - City Attorney		•	V Auto Approve	Or	Hold			
Description * Paper								
Detailed Description					5.	/ 50		
Items					0/1	000		
Units Description	GL Account	Proj	ect Account	Amount	Sales Tax	Shipping	Total	
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Project Accounting





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Fiscal Year 2018	Î	E 100-1410-51100 • FICA Budget Available: -\$4,900.06				:
Fiscal Period All			Acting: 04,700.00			
	· ·	0%	25%	50%	75%	100%
Overbudget Only			ctivity Encumbrances	Reserves Pending	Budget Available	
Account Type	^	Original Budget	\$0.	00		
		Budget Adjustment	\$0.	00		
Revenue		Current Budget	\$0.0	00		
Liability		Activity	\$4,900.0	26		
		Encumbrance	<u>\$0.0</u>			
Expense	۲	Reserve	<u>\$0.</u> (Available Budget Used	
Equity		Budget Remaining	-\$4,900.0	16	Available Budget Used	
		Pending	\$0.0			
Asset		Budget Available	-\$4,900.0	06		
CLEAR	APPLY					
Account Status	~	E 100-1410-51110 • FICA Budget Available: -\$1,145.98				:
Report Group	~					
Ending Balance	~	0%	25%	50%	75%	100%

🐝 tyler



General Ledger (2 of 2)

E G	eneral Ledger Approvals (1)		
E J	ournal Entry Approvals (1)		
GLPKT07369 •	Connect 2017 Postings		
Created By	Total Transactions	Total Debits	Total Credits
Tyler Tech	1	\$20,912.36	\$20,912.36
			 Ø



Budget Preparation & Management

		E	Budget: DEPT • F	Fiscal: 2018			
		Account	2016 Budget	2016 Activity	2017 Budget	2017 Activity	2018 Budget
Include Adjustments		100-0000-85200 Police Equipment	\$92,000.00	\$89,596.00	\$0.00	\$44,885.75	\$51,000.00
Fund	~	100-0000-85500 Technical Equipment	\$39,200.00	\$37,566.50	\$0.00	\$16,579.45	\$30,000.00
Account Type	^	100-0000-85540 Computer	\$0.00	\$65,488.96	\$66,990.00	\$27,000.51	\$42,500.00
Expense	1304	100-0040-81050 Fire Response Equipment	\$0.00	\$23,808.87	\$44,454.97	\$40,215.10	\$44,456.00
Revenue		100-0040-84130 Administrtation Office Supplies	\$0.00	\$3,265.00	\$0.00	\$2,825.71	\$4,000.00
CLEAR	APPLY	100-0040-84140 Copier	\$0.00	\$3,256.00	\$0.00	\$2,000.00	\$4,000.00
Account Status	~	100-0040-84160 Copier	\$0.00	\$3,265.00	\$0.00	\$2,000.00	\$4,000.00
		100-0040-84260 Dump Truck 10 Ton	\$0.00	\$56,986.00	\$0.00	\$0.00	\$8,000.00
		100-0040-84720 Copier	\$0.00	\$152.00	\$0.00	\$250.00	\$500.00
		100-0040-84730	\$0.00	\$0.00	\$0.00	\$250.00	\$500.00 a



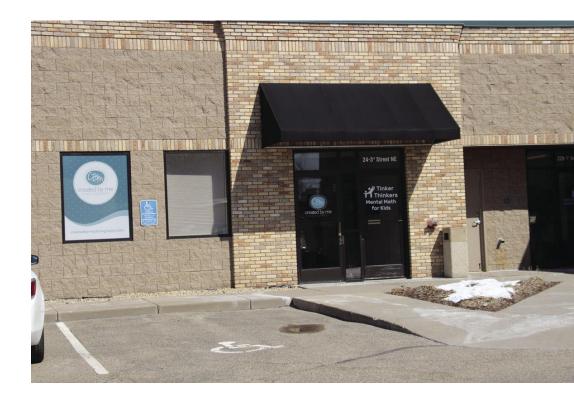
& Bank Reconciliation





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Journal Entry





Osseo, MN

Fixed Assets





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Miscellaneous Accounts Receivable



Personnel Management

Effective Date Management			
Effective Date Management Enter Effective Date			-
			Use a lot
New Effective Date	11/07/2018 -		ß
Effective Date to copy from	07/01/2014 🝷		-
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Employee Self Service/Time & Attendance (1 of 8)

Demo 06A ESS	Home My Information	History Time Entries	Leave Requests	Welcome chris!
My Information	Profile			
Profile	General Informa	ation		•
Addresses / Phones Contacts /	Name Status Department	Chris I Anthemum Active Admin - Administratior	1	
Dependents Direct Deposits	_{Email} Personal Inform	Chris.Anthemum@city	oftyler.com	
Benefits Open Enrollment Tax Information	Social Security # Birth Date Ethnicity Race	XXX-XX-1967 04/01/1972 Not Hispanic or Latino White		
Paycheck	Employment Inf	formation		
Calculator	Hire Date EEO Category Pay Cycle	03/06/2011 Officials and Administr Biweekly	ators	

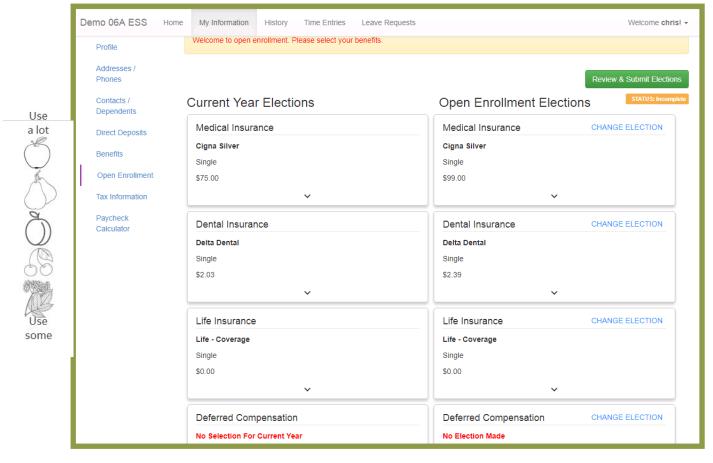


Employee Self Service/Time & Attendance (2 of 8)

Demo 06A ESS	Home My Information	History Time Entries	Leave Requests	Welcome chris! -	
My Information Profile	Contacts				Use
Addresses / Phones Contacts / Dependents Direct Deposits Benefits Open Enrollment Tax Information	5519 53rd Lubbock U.S.A. • Home: D Mobile:	(306) 222-3333 : (306) 777-6543 (307) 654-3210 Contact			a lot
Paycheck Calculator	5519 23rd Lubbock U.S.A. Birth Date Home:	ue Anthemum (Spouse) / I Street, IX 79413 : 01/01/1975 (111) 222-3333 : (987) 654-3210	Susie Cute Anthemum (Child) 💉 Birth Date: 11/23/2013	Tommy Joe Anthemum (Child) Birth Date: 03/21/2007	Use some



Employee Self Service/Time & Attendance (3 of 8)





Osseo, MN

Employee Self Service/Time & Attendance (4 of 8)

				/										
History Pay History Leave History	Pay Histo											•	Employee His	story Report
W-2 History	Payment Date	Pay Period		Туре	Payment #	Gros	ss Pay	Deduc	tions	Taxes	Net	Pay	Status	Document
	▲ <u>12/20/2018</u>	12/01/2018 - 12	2/14/2018	Regular	23155	5,2	290.34	6	36.88	1,266.46	3,38	7.00		
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		SALARY	City Planner	Salary	Regular	Pay 8	80.00	4,921.88	4,921.8	3				
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		LONGEVITY	City Planner		Longevity	/			11.5	1				
		Benefits												
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		ICMA TXBL A	MT			ICM/	А Таха	ble Benefi	it Amount		0.00		217.58	



Employee Self Service/Time & Attendance (5 of 8)

Demo 06A ESS	Home My Information	History Time Entries L	eave Requests					Welcome chris!
History	Leave Hi	story		11				
Pay History	Leave Code	Description	Balance Forward	Earned	Taken	Adjustment	Unposted	Available Balanc
Leave History	✓ Vacation-Reg	Vacation-Regular	46.81	161.70	216.00	40.00	0.00	32.5
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Employee Self Service/Time & Attendance (6 of 8)

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Leave Request Entry	Model Department Admin - Administration Employee Anthemum, Chris I Image: Im																							
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	2. S	De Mo 3 10 17 24	tu Tu 4 11	We 5 12 19	Th 6 13	Fr 7 14 21	1 8 15 22	6 13 20	Mo 7 14	Tu 1 18 15 22	We 1 2 9 16	Th 3 10 17 24	Fr 4 11 18	5 12 19	3 10	Mo 4 11 18	Tu 5 12	We 6 13 20	Th 7 14	Fr 1 8 15	Sa 2 9 16			
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Employee Self Service/Time & Attendance (7 of 8)

Entries uick Time Entry	Quick Time Entry	
Manage Time Entries	Compartment Admin - Administration Employee Anthemum, Chris I	â
Time Entry History	Apply Time Template Create Time Template Show Submitted Time/Leave	(
Time Templates	Pay Period Total: 40.00	
	Week: 01/06/2019 - 01/12/2019 Position: City Planner - City Planner	
	Activity Project Sun 1/6 Mon 1/7 Tue 1/8 Wed 1/9 Thu 1/10 Fri 1/11 Sat 1/12	(
	PM-Elm Street T232 0.00 8.00 0.00 0.00 0.00 0.00	(
	Salary ▼ Choose ▼ 0.00 8.00 8.00 8.00 0.00	d
	Daily Totals: 0.00 8.00 8.00 8.00 8.00 0.00	*
	Week Total: 40.00	6
	Week: 01/13/2019 - 01/19/2019 Position: City Planner - City Planner	S
	Activity Project Sun 1/13 Mon 1/14 Tue 1/15 Wed 1/16 Thu 1/17 Fri 1/18 Sat 1/19	
	• PM-EIm Street • 0.00 0.00 0.00 0.00 0.00 0.00	



Employee Self Service/Time & Attendance (8 of 8)

PAR Type		2 Detail		3 Review/Submit
Position Char	nge - ABELLI, KATHRYN L			
	Current Position *	✓ Position *	Ŧ	
	Position End Date	Title *	0 / 50	
	Position End Date is required.	Position Type *	*	
		Grade	Ŧ	
		Step	-	
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Co	mment			0 / 100
			0411051	BACK CONTINU
			CANCEL	BACK CO



Payroll Processing/HR Management





Osseo, MN

Utility Billing Account Maintenance/ Processing/Notify (1 of 7)

	Processing B UB Account My Desitioned Contact: J	IOSH HAMILTON ×		
Search Mens Common Common Accounts Payable Accounts Receivable Social Eark Reconciliation) Individual 🧿 Company	Conset for * Contact Set 1	
C Casherng Contact T Greice Disinage Im Field Assets G General Ledger	Prinary Malling Address * JOSH HAARLTON 1 BALLPARK WAY ARLINGTON, TX 76011-5110 USA = Employer Identification Number	/	Ernal Pices Number (555	2
Project Accounting Project Accounting Prothasing Sales Tax Utity Billing	E MANUSACIONA		Phone number is invalid	
	Total AB Accounts Receivable	> 6 of 18 Records > 0 of 5 Accounts	> \$706,312.82 > \$0.00	PAY NOW
	57 🖂 Sales Tax	> 5 of 9 Businesses	> \$705,610.28 • Note Actu	u balance may vary
	Utilities	> 1 of 4 Accounts	> \$702.54	
				CANCEL SAVE



Utility Billing, AMR Smart Meters (2 of 7)

The selection of smart meters in a municipality usually boils down to one assessment: cost vs. benefit.

This is indeed a critical issue. Of more importance however, is the vendor selected. Historically, a water utility, such as Osseo, will select a vendor to provide the metering technology and the communication network infrastructure. Selecting a forward-looking vendor is essential as Osseo weighs this cost/benefit equation. Lifetime costof-ownership, redundancy that can be created due to overlapping communication systems within a municipality or geographic region can add significantly to the overall investment in this desired technology.

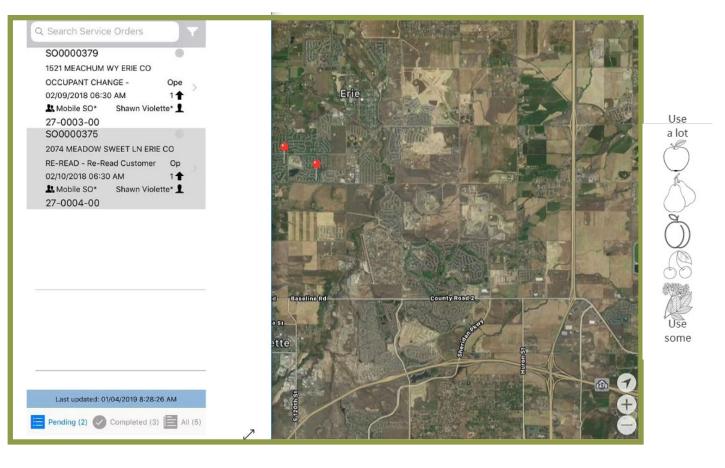
Once again Tyler has your back.

All AMR water meters system supply real time water flow data to ensure customers supervise water consumption and control their water costs. Tyler allows end users to access real time data

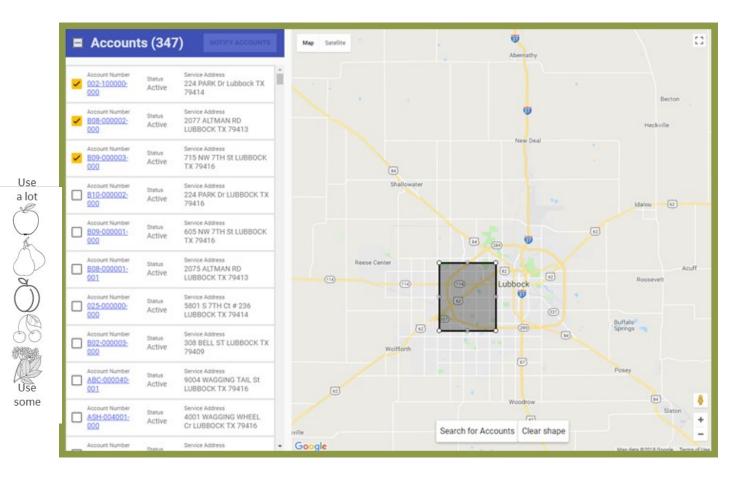
on their own device. At the same time Osseo has total access and can manage virtually all metering remotely via city computers and permission-granted employees. City monitoring can recognize very quickly when consumption goes out-of-norm, indicating a leak, a forgotten irrigation system, or a break in a vacant building. Yes, smart meters are a huge benefit, but only with the selection of a forwardlooking vendor. Let's discuss.



Utility Billing Mobile Service Orders (3 of 7)



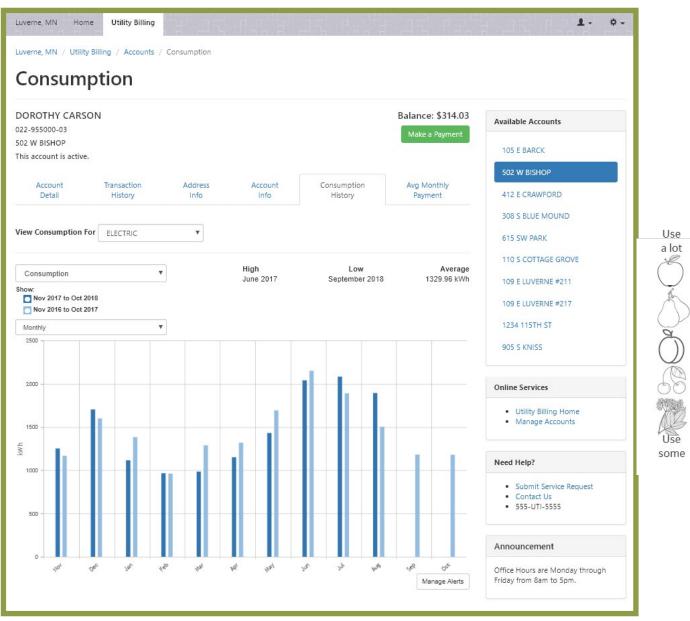
Utility Billing Mobile Service Orders (4 of 7)





Osseo, MN

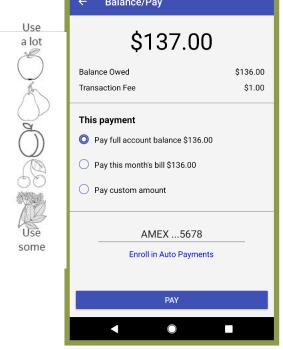
Utility Billing Cashiering (5 of 7)





Utility Billing Online Payments (6 of 7)

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S S	AMEX5678 Expires 02/2022	VISA1234 Expires 07/2023							
	Select Day								
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	← Balance/Pay								





Utility Billing Rental Property Management (7 of 7)





Empowering people who serve the public

Tyler Content Manager (1 of 2)

Tyler Content Manager[™] allows you to streamline the flow of digital information throughout your organization, and easily transform valuable paper forms and documents into electronic images.

Capture Content From Multiple Sources

With Tyler Content Manager's support of multiple file formats, your organization will be able to centralize all documents regardless of type in a single location that will remain accessible to all.

- Supports scanned images, word processing documents, spreadsheets, and more
- Stores electronically received images such as faxes, TIFF images, PDFs and electronic forms, and email
- Batch processing allows you to mass load images
- Works with Tyler Business Forms to streamline your billing process documentation

Ease of Use

Unlike many electronic filing systems that require you to understand a filing hierarchy, Tyler Content Manager features a simpler, intuitive, and powerful indexing and search system allowing you to quickly retrieve documents without having to understand arcane directory structures.

- Simple keyword searches produce the documents you want, while letting you view logically related documents
- Check images, purchase orders, and contracts link to the transaction or account for instant access
- Optical Character Recognition (OCR) allows a query on the full text of any scanner document



Tyler Content Manager (2 of 2)

Go Green

Reducing paper usage is not only good for the enviroMNent, but it is also good for your office workflow and bottom line.

- Spend less time on inefficient paperbased processes such as printing, filing, and retrieving paper documents
- Circulate digital documents quickly through approvals without lag time
- Spend less on paper, toner cartridges, and filing cabinets
- Regain square footage dedicated to file storage

Choose the Version That is Right

Whether you want to simply transition your financial records or to widen your efforts across your organization, we have an option for you.

- The standard edition provides electronic access to your financial records such as invoices, payroll, and more
- The enterprise edition captures your documentation across your organization and effectively moves you to a fully digital document collection

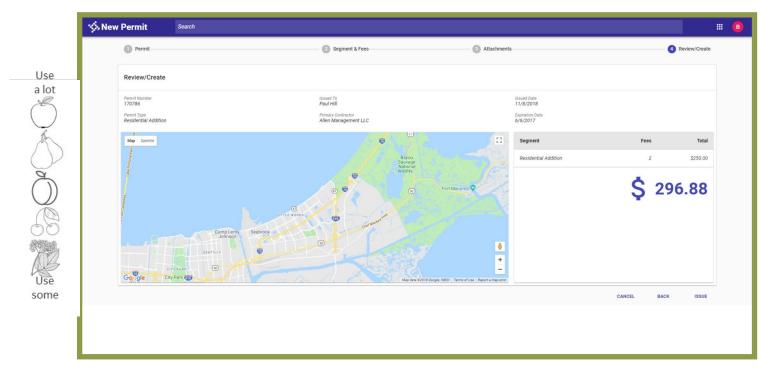


Permitting (1 of 2)





Permitting (2 of 2)





Who is Tyler— Background

yler Technologies Inc. is a major public sector software company based in Plano, Texas. We are the largest software company in the United States that is solely based on providing integrated software and technology services to the public sector — states, cities, counties, and school districts.

The preceding is what you found with a google search and at Wikipedia with a couple of minor changes to personalize it.

We're a lot more than that. We talk about our drive to transform state and local goverMNent to create safer, smarter, and more vibrant communities.

We imagine a world where all city, county, and regional goverMNent services are connected within a healthy digital infrastructure. Connecting data, processes, and people makes communities safer, smarter, and more responsive to the needs of residents.

And we perform all the miraculous stuff the preceding suggests through our truly incredible people. Our people are really what Tyler is all about.

WE work to ensure Small town U.S.A. thrives





Service & Support



Tyler Staff Devoted to Incode

- 15 Administration
- 45 Research & Development
- 49 Sales & Marketing
- 101 Network/Hardware
- 125 Implementation
- 143 Support/Development
- 478 Total



Tyler Technologies has more than 5,500 employees with 478 of those solely devoted to the Incode products and services. Employees within the Tyler family share a common enthusiasm for serving organizations, like Osseo, in the public sector.

Tyler's training and support staff for Incode products and services includes experienced developers, installers, consultants, industry professionals, and certified network technicians. Their commitment to excellence, quality training, and support is second-to-none.



Support



extensive online (within software, or Support portal) self-help



email (for less critical)



live chat



live phone support



amazing online training resource 24/7/365



Tyler Community 50K users



secure remote support tool



Osseo, MN



yler University (Tyler U) is the answer.

With over 1,000 online professionally produced and narrated videos, available 24/7/365, Tyler U probably has the answer to virtually any question an end user may have regarding Incode Software.

Tyler U offers locations like Osseo the perfect platform for bringing a newly hired employee up to speed on the City's software without having to invest hours and hours and weeks and potentially months of someone else's time as they walk a new hire through all the nuances of a financial software suite.

from our Interactive Content team, if needed or desired) a curriculum for the new hire and can track that new hires progress through the video learning.

Tyler U is also an exceptional tool when someone on staff has downtime and wants to touch up on their skill set or knowledge of Incode software.

And, Tyler U provides a quick reminder for those annual (end-of-year) processes that are perhaps touched only at the end of the year or the beginning of a budget cycle and so the knowledge of "how to do what and when" might need the cobwebs dusted off.

Too, Osseo is welcome to take a look at Tyler U. Please send and email to mark.brumley@tylertech.com and let Mark know you're working with Cody G. and ask him for a temporary set of credentials and a temporary login and Mark will be happy to provide you whatever access you need to Tyler U (Amber Marsh, amber.marsh@tylertech.com can also help with this).

Mark, too, (or Amber) are our Tyler U experts and can assist anyone with any question they might have about this dynamic and exciting platform.



Accolades & Awards



We're most proud of the many things that separate us from others in our space. Nationally and locally we are recognized for our expertise, our exceptional software offerings and our tremendous employees. (Click <u>here</u> for a more complete listing.)



GoverMNent Technology Magazine's "GovTech Top 100" list

Forbes'

- "America's Best Employers for Diversity" list
- "Best Employers for Women" list
- "Best Midsize Employers" list
- "Most Innovative Growth Companies" list
- "America's Best Small Companies" list



Barron's 400 Index ranking, a measure of the most promising companies in America



Dallas Business Journal list of "North Texas Fastest-Growing Public Companies"



"Best Places to Work in Maine" (10+ years)
Dallas Morning News' "Best in DFW: Top Workplaces"
Dayton Daily News' "Top Workplaces in the Dayton Metro Area"
Lubbock Avalanche-Journal's "Best of Lubbock" list
Detroit Free Press' "Top Workplaces"
Phoenix Business Journal's "Best Places to Work"
The Atlanta Journal-Constitution's "Top Workplaces"



Osseo, MN

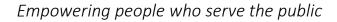
Our Direct Impact In Minnesota

•••

2.2

yler has 18 employees who call the great state of Minnesota home.

Take their yearly compensation, add a 30% benefits factor, include office supplies and equipment and put in a factor for all the volunteering these 18 employees perform year-in and year-out and the minimum yearly reinvestment Tyler makes into Minnesota is in the neighborhood of \$2,200,000—that's each year!









Outside of the impact our software has, and that is an immeasurable impact, we have over 15,000 customers nationwide. These customers enjoy the fruits of our labor and benefit from the \$82 million (\$10M for Incode alone) dollars we reinvest back into research and development.

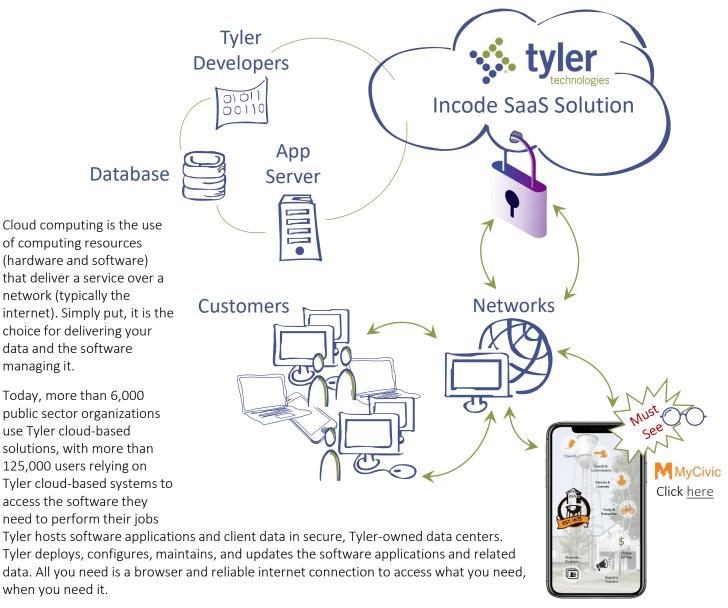


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SaaS—Software as a Service



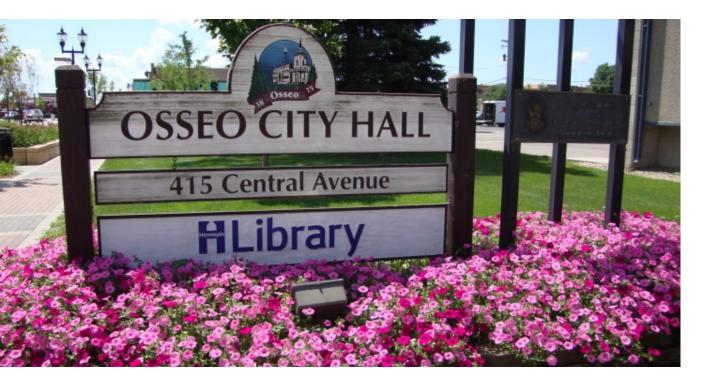
Osseo can move all their needs to our cloud with our software as a service solution. What does this do for you?

- Allow your employees to work from anywhere connected to the internet and on any device.
- Allow your citizens access to any information you want to share, allow them to pay bills online and to conduct virtually 100% of their business online.

continued on next page



- Strengthen your data security with multiple layers of protection, 24/7 network monitoring by IT professionals, and security validations regularly conducted by third parties.
- Protect records from disasters, such as floods and fires, since your data is stored in a data center offsite
- Reduce the cost of entry with subscription-based pricing
- Read on to learn more about the benefits of hosting your Eagle solution in the cloud.





Empowering people who serve the public





0

MyCivic The Game Changer

Tyler acquired MyCivic, a citizen engagement app several years ago. This app

provides immediate transparency to citizens, access to all the information Osseo feels

is appropriate including worldwide access to sites, businesses, places of interest within your city.

And, provides "at their fingertips, everyone access so perhaps there's a great family show at Yellow Tree Theater and a family in New Brighton is looking for something to do. They bring up the Osseo MyCivic app and in relatively short order are booking their seats to the show.



An example Osseo MyCivic App

How long would you imagine it would take from the time the contract is signed until we begin implementing MyCivic? If you guessed 5 working days you should probably buy a lottery ticket, but if you guessed 5 days, you'd be right and here's the kicker: we're going to work to cut that 5 days in half:





Where We're Headed, 12-24 Month Road Map⁺

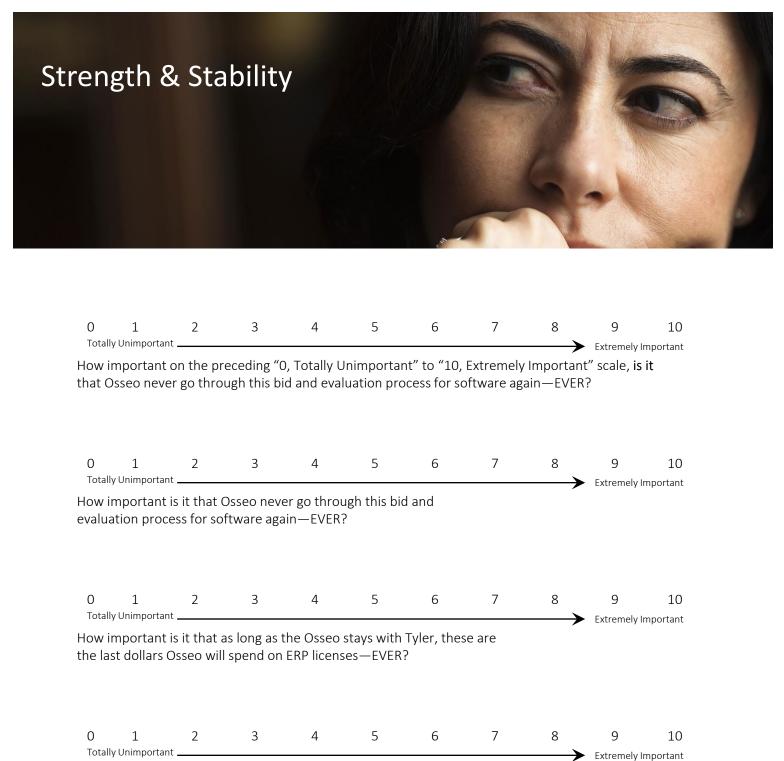
- Contracts/Bidding module
- Add bid submission capability to vendor self service
- Add employee through the web
- Re-hire wizard
- Mass rehire process
- Add additional form support to ESS (Equipment, Deductions, etc.)
- MyCivic Integrations
- FOIA Tracking
- Mobile work orders
- Work Orders—payroll integration
- Add ability to categorize JE Types
- Pooled Cash Configuration tool
- Positive Pay Creation Tool
- Executive dashboard

- Meeting Manager
- Code Enforcement UI Refresh
- Kiosks Functionality—add licenses, permits
- Mobile Code Enforcement
- Additional AMI Integrations for Smart Meters
- Pre-Paid Utilities support
- Add meter re-read option to MSO
- Time of Use (Electric)
- Online Payments UI Refresh
- IVR—Spanish Support
- Waste Management Module
- Applicant tracking
- Enhanced Spreadsheet Reporting
- Pay Via Text

†Note, the preceding list is a tentative plan and based on needs may change as the months progress



Empowering people who serve the public



How important is it that Osseo will have experts handling the majority of the heavy lifting during your implementation and you'll not have to worry "do they know what is going on"—EVER?





Functional Areas	Tyler
Citizen Engagement	No
Cloud/Hosting	No
Document Management System	No
Kiosk Payment System	No
Mobile Electronic Payments	No
Mobility	No
On-Demand Training	No
On-Line Invoicing	No
Smart Meter Portal, Integration Census	No
Time & Attendance	No





Some Strengths Impacting Our Stability

- Incode was the first ERP Acquisition by Tyler in 1998 What this means is Tyler Incode is that Incode, one of our flagship products is going nowhere but into the future with you. We aren't up for sale, won't be acquired and have supported our legacy products for generations—there's ever limited reason to do anything but enhance on success.
- 21 Years of continued focus and investment
- Flagship solution for Small to Medium Cities
- "Big Tyler" along with "Family Run" Incode We have the resources necessary to address virtually any concern and to help in almost any situation. At the same time the brother of the man who created Incode, Dusty Womble, is our President, Dane Womble. We have the resources of a good-sized company, but we have the heart of family—the mix is unstoppable.
- Total Customers served = 2,400+ Incode has over 2,400 customers of every conceivable size.
- Invest ~\$10M in R&D in Incode Annually
- Different approach to implementations
 We call our Implementations "White Glove." When you hear that term what do you think
 of? Your every need being anticipated? We'd like to suggest there is no work our customers
 have to do during Implementation, but that wouldn't be true as this is your site and we need
 you working hand-in-hand with us a business partners to ensure a smooth and successful
 implementation.
- In 2019 we processed bills for our customers that totaled over a billion dollars. That's not money that came to us; that's your money we processed through out software—we have the capacity handle Osseo's needs.



A Byte About Cody G



Cody has been with Tyler Technologies as an Account Executive since February 2018 and has been in local government sales since 2015.

He graduated from Texas A&M University in College Station, TX with a degree in Economics and a specialization in Policy Analysis. He knew from the outset of his professional career he wanted to be offering solutions to people and providing them answers to some fairly complex problems. He's never looked back.

He is and always has been one of Tyler's top performers and has a legion of satisfied customers and coworkers behind his professional success. He is readily accessible for any questions, to offer solutions or to simply pass the time of day.

> 214.578.5166 cody.gunstenson@tylertech.com



Next Steps • Q&A • Thank you!







Sales Quotation For City of Osseo PO Box 1180 Osseo , MN 55311-6180 Phone: +1 (763) 425-2624 Quoted By:Cody GunstensonQuote Expiration:5/11/2020Quote Name:City of Osseo - FIN/Personnel/UB/ICDQuote Number:2019-97408-2Quote Description:SaaS

Osseo , MN 55311-6180 Phone: +1 (763) 425-2624						
		30				
Tyler Software and Related Services - SaaS	Г		One Time Fees	;		
Description		Impl. Hours	Impl. Cost	Data Conversion	# Years	Annual Fee
Financial Management Suite		\mathbf{V}				
Core Financials		116	\$12,180	\$4,510		\$3,635
Purchasing		16	\$1,680	\$0		\$1,202
Project Accounting	1	12	\$1,260	\$0		\$991
Personnel Management Suite						
Personnel Management (Includes Position Budgeting)		88	\$9,240	\$3,840		\$1,957
Employee Self Service (Employee Portal)		8	\$840	\$0		\$0
ESS Time & Attendance (Number of FTE Employees) Customer Relationship Management Suite	EV.	24	\$2,520	\$0		\$1,163
Utility CIS System		120	\$12,600	\$7,680		\$2,795
Mobile Service Orders		8	\$840	\$0		\$140
Cashiering		28	\$2,940	\$0		\$839
EasyPay Online Payment Component		0	\$0	\$0		\$0
Tyler Content Manager	111					
Tyler Content Manager Standard Edition (TCM SE) Community Development	<i>y</i>	32	\$3,360	\$0		\$1,187
Incode Permitting and Code Enforcement		64	\$6,720	\$0		\$2,315
Permitting Online Component		0	\$0	\$0		\$1,047
Code Enforcement Online Component Tyler Hosted Applications		0	\$0	\$0		\$1,047
Utility Billing Online Component		0	\$0	\$0		\$432
Notifications for Utility Billing		0	\$0	\$0		\$0
IVR Solution for Utility Billing		0	\$0	\$0		\$0
Tyler U		0	\$0	\$0		\$1,566
Hosting User Fee		0	\$0	\$0		\$2,875
	Sub-Total:		\$54,180	\$16,030		\$23,191
	TOTAL:	516	\$54,180	\$16,030	5	\$23,191

CONFIDENTIAL

1 of 4

Description		Quantity	Unit Price	Extended Price	Maintenance
Mass Meter Swap - Water		900	\$2	\$1,800	\$0
Online Application -Set up fee		1	\$800	\$800	\$0
Project Management		1	\$5,000	\$5,000	\$0
	TOTAL:			\$7,600	\$0
Summary	One Time Fees	Recurring Fees			
Total Tyler SaaS	\$0	\$23,191			
Total Tyler Services	\$77,810	\$0			
Total Third Party Hardware, Software and Services	\$0	\$0			
Summary Total	\$77,810	\$23,191			
Estimated Travel Expenses	\$31,510	CV			
Detailed Breakdown of Conversions (Included in contract to	otal)				
Description		Hours	Unit Price Progr	ramming Fee	Extended Price
Financial Management Suite					
General Ledger Master				\$1,000	\$1,000
General Ledger History		4	\$105	\$500	\$920
Accounts Payable Master		4	\$105	\$1,250	\$1,670
Accounts Payable History		4	\$105	\$500	\$920
Personnel Management Suite					
Personnel Management -Payroll Master		4	\$105	\$2,000	\$2,420
Personnel Management -Payroll History		4	\$105	\$1,000	\$1,420
Customer Relationship Management Suite Utility Billing History	10	4	\$105	\$1,000	\$1,420
Utility Billing Master		12	\$105	\$5,000	\$6,260
	Total:			<i>40,000</i>	\$16,030
Optional Tyler Software and Related Services - SaaS		One Time Fees	;]	<i> </i>
Description	Impl. H	ours Impl. Cost	Data Conversior	n # Years	Annual Fee
Financial Management Suite	777				
Fixed Assets		12 \$1,260	\$0		\$582
Customer Relationship Management Suite					
Misc. Accounts Receivable		12 \$1,260	\$0		\$1,047
Work Orders		56 \$5,880	\$0		\$1,512
Smart Meter Portal (900)		0 \$0	\$0		\$2,700
Sub-Tota	nl:	\$8,400	\$0		\$5,841
TOTAL	_:	80 \$8,400	\$0	5	\$5,841

Other Services

Comments

- Core Financials includes general ledger, budget prep, bank recon, AP, Express, CellSense, a standard forms pkg, output director, positive pay, secure signatures (qty 2).
- Utility CIS System includes collections, tax lien process and import, utility payment import, a standard forms pkg., output director and one Utility handheld meter-reader interface.
- Cashiering supports credit/debit cards via ETS, includes PCI Compliant, a cash collection interface, a cashiering receipt import)
- Incode Utility Billing Online Component displays the current status (late, cut off etc), the action needed to avoid penalty, current balance, deposits on file (optional), last payment date, last payment amount, payment arrangements on file, last bill amount, last bill date, bill due date, contracts on file and status, transaction history (online payments). Payment packet is created to be imported to utility system. Address information includes legal description, precinct, school district, and services at address(subject to data availability). Includes consumption history by service (including graphs), request for service (optional), information change request (optional), security -SSL (secure socket layer). Note that the customer pays \$1.25 fee per transaction for payment on-line.
- Notification for Utility Billing (\$0.10 per call) includes Customer notification by phone (call late notices and general notifications). Call lists are automatically generated and the account is updated after the call. It includes a custom message for each call type and the call message can be in English or Spanish. It generates reports based on call results. Note: The Utility will be billed at the rate specified above for all the calls made. The Utility will be billed quarterly by Tyler Technologies for calls conducted.
- General Ledger conversions include Chart of Accounts additional fee for historical views.
- Accounts Payable conversions include Vendor Master Only additional fee for historical views.
- Personnel Management/Payroll conversions include employee master, deductions/taxes, retirement, current leave totals, current direct deposit additional fee for historical views.
- Utility Billing conversions include contacts/properties/accounts, service meter info meter inventory, transaction/consumption/read history, metered services, non-metered service. Additional fee for historical views.
- Incode IVR Solution for Utility Billing-The payment packet is created in centralized cash collections. The IVR system gives the customer an account balance, the customer makes the payment by phone, and the account manager is updated with the payment record. NOTE: There is a \$1.25 per transaction fee associated with the IVR that will be paid by client unless Tyler is instructed by the client to pass along to the user at time of payment.
- Permitting Online displays project status, projects for payment, and schedule/re-schedule inspections. It has security -SSL (Secure socket Layer), payment processing (credit card), and the payment packet is created to be imported to the Permitting System. Note that the customer pays \$1.25 fee per transaction for payment on-line.
- Code Enforcement Online creates code enforcement complaints online, allows viewing of complaints (open, closed), and has Security-SSL (Secure Socket Layer).
- EasyPay Online Payment Component allows clients to setup payment forms for misc. payments with a fixed, calculated or open payment amount. The payments are sent from the website to the cash collection/Cashiering application and then posted to the GL

Comments

application. NOTE: There is a \$1.25 per transaction fee associated with the EasyPay that will be paid by client unless Tyler is instructed by the client to pass along to the user at time of payment.

- Travel Expenses are billed as incurred based on our current Business Travel Policy.
- Hosting User Fee includes 5 users. Hosting includes Basic Network Services and Disaster Recovery Services.
- Smart Meter Portal give the ability to view AMI data in a chart form thru Billing online Payments. It provides citizen transparency to track and proactively manage consumption and citizens can opt in to receive consumption notifications and leak alerts. Note: Notifications are billed out quarterly as incurred at \$0.10 per call or text.



Memorandum

To:	Nick Waldbillig – City of Osseo, Public Works Director
From:	Ashley Hammerbeck – WSB & Associates, Project Manager Stuart Stephens – Barr Engineering, Electrical Engineer
Date:	December 16, 2019
Re:	2019 Lift Station Communications Improvements Assessment WSB Project No. 014956

The City of Osseo owns and operates a sewer collection and conveyance system consisting of three lift stations that ultimately discharge wastewater to MCES. The largest lift station is a wet well – dry well arrangement that is monitored by the City's existing SCADA system and is equipped with remote access. The two smaller submersible lift stations are not currently monitored by SCADA, but the City would like to assess the feasibility of upgrading them in a manner similar to the large lift station. This report is a summary of the notes from the October 2, 2019 site visit between WSB, Barr Engineering (electrical engineering), and Nick Waldbillig from the City of Osseo, and includes recommendations and cost estimates for communication and monitoring improvements.

Summary of Existing Infrastructure

Lift Station at 727 Broadway Street East (Submersible)

- Control panel by Ohio Electric Control, Inc. Installed December 2003.
- Mounted on a steel pole with an alarm light on top. Alarm horn on side of enclosure is not used.
- 240vac single phase, 100 amp service.
- Circuit breakers for Pump 1, Pump 2, and control power.
- Separate 100 amp fused manual transfer switch for main and standby power.
- Crouse-Hinds AR1042-S22 3-wire, 4 pole generator receptacle.
- Two 1.5hp pumps, 10.8 amps FLI with full voltage motor starters.
- Two Warrick intrinsically safe relays, one for float switches and one for motor overtemperature & seal fail monitoring.
- Four float switches for pumps off, lead pump start, lag pump start, and high-level alarm set points.
- Sensaphone alarm dialer with hard wired telephone connection for alarm monitoring.

Lift Station at 648 6th Avenue NE (Submersible)

• Not inspected during site visit, but confirmed to be same components as other submersible lift station.

Main Lift Station at 316 2nd Street NE (Wet Well – Dry Well)

- 208vac three phase, 200 amp service.
- There are two panelboards. One is 120/208vac three phase, 200 amps, the other is 120/208vac single phase, 50 amps. The large panel appears to provide power to the pumps, while the smaller panel appears to provide power for general circuits like lights, outlets, ventilation, etc.

- Branch circuit breakers in the large panel are 100A 3 pole, 100A 3 pole, 60A 2 pole, and three 20A 1 pole. Labeling is unclear, but it is assumed that the two 100 amp breakers are for the pumps, the 60 amp breaker supplies power to the smaller 50 amp panel, and the three 20 amp breakers are unused spares.
- The smaller panel is actually a three phase panel, but according to the labeling inside the front cover it is only wired for single phase. It has a 50 amp three pole main breaker, but apparently only two poles are connected. It has eight 20 amp single pole branch circuit breakers for the various general power circuits such as lights, outlets, etc.
- At one time there was a permanent generator inside the building, but it has since been removed. There is still an Onan automatic transfer switch mounted on the wall that is apparently used in manual mode to switch between utility power and the portable generator receptacle on the building exterior. There is also a manual transfer switch mounted on the wall above the pump soft starters, which appears to switch power in and out for Pump 2 only.
- The generator receptacle on the building exterior is a Crouse-Hinds AR101042-S22, 3 wire, 4 pole.
- The City should confirm the kW rating of the portable generator to verify that it is large enough to run both pumps at once.
- There are two 15hp submersible pumps. Exact full load amp rating for the pumps is not known, but based on standard charts they should be approximately 46 to 50 amps FLI each.
- The pumps are operated with Bentec electronic soft starters. There is a 5 kVar power factor correction capacitor for each soft starter.
- Instrumentation includes a flowmeter, a combustible gas monitor, a high-level float switch, and high and low-level temperature switches.
- There is an air mixer in the wet well that is connected with a pneumatic tube to a small air compressor in the main room of the building.
- A Grundfos control panel with a level transducer is used for controlling the pumps based on wetwell level as measured with a level transducer (submersible?).
- There is a Sensaphone Express II alarm dialer that calls out in the event of alarm conditions. There is a hard-wired telephone connection in the building, but the alarm dialer uses a 3G cellular system.
- There is an Omnisite panel in the main room that was used for remote monitoring of lift station run and alarm status, but it does not work anymore.
- There is an Intermatic mechanical timer for controlling the wetwell exhaust fan.
- There is a drywell vent exhaust fan that is controlled with a relay that is energized when the light is turned on.
- The main lift station pumps wastewater to MCES which operates their own flowmeter for monitoring influent from the City.

Other Site Notes

- The City buys water from the City of Maple Grove there are no wells or water tower. Water is supplied at two different locations. The City would like to add three pressure zone monitoring stations.
- The City is looking at adding SCADA in 2020. The City has talked to Quality Control and Integration, but are open to other systems integrators. QC2I showed them their 1500CT controller and left a brochure. QC2I said they are moving from radio to cellular communications.

Recommendations

Submersible Lift Stations (727 Broadway Street East and 648 6th Avenue NE)

- Replace existing control panels with new control panels. Both panels will be the same.
- Control panels will have freestanding stainless steel enclosures, with alarm lights on top, utility meters on the back, and generator receptacles on the side. The existing generator receptacles may be reused.
- 240vac single phase, 100 amp main breakers, mechanically interlocked with 100 amp standby circuit breakers. In the event of a power failure, City personnel will disable the main breaker, enable the standby breaker, and connect the lift station to the City's portable generator.
- Branch circuit breakers for Pump 1, Pump 2, control power, and miscellaneous (convenience receptacle, panel heater, etc.)
- If replacement pumps are available with single phase motors, full voltage motor starters will be used. If the replacement pumps are only available with three phase motors, small variable frequency drives (VFDs) will be used.
- Install submersible level transducers for monitoring wet well depth, along with high and low-level float switches for backup control.
- Install small programmable logic controllers (PLCs) with front panel mounted operator interface terminals (OITs) to control the pumps based on wet well level. Pump start and stop set point values and high and low-level alarm set point values will be configurable from the OIT, which will also display wet well level, pump run and alarm status, and other alarm information such as pump failure alarms, wetwell high and low-level alarms, and power failure alarms.
- If the PLCs or submersible level transducers fail, hard wired relay circuitry along with the high and low-level float switches will continue to operate the pumps.
- It is assumed 900 MHz spread spectrum radios can be used for communication from each lift station control panel to a master control panel and radio located at the Public Works Building. Lift station wetwell level, pump run status, and alarm status will be monitored at the master control panel. Pump start and stop set points and alarm set points will be configurable from the master control panel.

Main Lift Station (316 2nd Street NE)

- The existing control panels and motor controls inside the building will be replaced with new equipment.
- A new service entrance rated 120/208vac three phase, 200 amp manual transfer switch will be installed. It will be fused at 200 amps on the service side and 100 amps on the generator side. The existing generator receptacle on the exterior of the building may be reused.
- The existing 200 amp three phase panelboard may be reused. The existing 50 amp panelboard will be removed and its branch circuits will be relocated to the 200 amp panel.
- New electronic soft starters with integral bypass contactors will be installed for each submersible pump, along with new power factor correction capacitors. The new soft starters and power factor correction capacitors may be integral to new control panel, or installed in a separate enclosure. Either configuration will work, but price and ease of installation for both should be considered during the design process before a final decision is made.
- A new submersible level transducer for monitoring wet well depth will be installed, with high and low-level float switches for backup control.
- The combustible gas detector will be replaced.
- It is assumed the existing flowmeter can be reused, along with the high and low temperature switches.

- It is assumed the air powered wet well aerator and compressor will be reused.
- Furnish and install a new control panel containing a small PLC and a front panel mounted OIT that will control the pumps based on wet well level. Pump start and stop set point values and high and low-level alarm set point values will be configurable from the OIT, which will also display wet well level, pump run and alarm status, and other alarm information (pump failure, high and low-level alarms, and power failure alarms.) The control panel will also operate the wetwell exhaust fan.
- If the PLCs or submersible level transducer fail, hard wired relay circuitry along with the high and low-level float switches will continue to operate the pumps.
- It is assumed a 900 MHz spread spectrum radio can be used for communication from the lift station control panel to a master control panel and radio located at the public works building. Lift station wetwell level, pump run status, and alarm status will be monitored at the master control panel. Pump start and stop set points and alarm set points will be configurable from the master control panel.

Water System Pressure Monitoring Stations

- Add monitoring stations for three separate water system pressure zones.
- Assume each location will have a pressure transducer installed in a manhole, along with a small above grade control panel that will monitor the pressure transducer output and transmit the value to the public works building office.
- Each control panel will include a small PLC and front panel digital display for reading the pressure value locally, along with a spread spectrum 900 MHz radio that will transmit the pressure value to the public works building office. There will be high and low-pressure alarm value set points, configurable at the Public Works Building office.
- If necessary, electric heat may be included to prevent freezing at the pressure transducer. This may be a small space heater, or electric heat tracing on the pipe as required. Heating requirements will be determined by the civil engineer. Power can be provided for a sump pump if necessary.
- Electrical service at the pressure zone monitoring stations will be 120/240vac single phase.

Master Control Panel and SCADA

- A master control panel will be installed at the Public Works Building office. The master control panel will include a small PLC and front panel mounted OIT, along with a 900 MHz radio that will allow for monitoring information from the three lift stations and three pressure monitoring stations, as well as allowing for configuration of pump start and stop set points and alarm set points.
- 120vac power for the control panel will be sourced from the building's existing panelboard. It is assumed a spare circuit will be available.
- A personal computer equipped with supervisory control and data acquisition (SCADA) software will be installed. It will be connected to the master control panel via an Ethernet connection.
- The PC will serve as the primary interface for monitoring and controlling the lift stations and pressure monitoring stations, with the OIT on the master control panel serving as a secondary method of monitoring and control in the event of a computer failure.
- In addition to displaying run and alarm status information, and providing a way to configure start and stop set points and alarm set points, the PC and the SCADA software will also allow for data collection and recording, trend charts, graphing capabilities, and report generation. It will also include alarming software that will call out or send text messages in the event of any alarm condition. This software will be configurable to provide distinct messages for each alarm condition.

• The SCADA software will be accessible via the Internet, to allow city personnel to view the system from remotely located computers, tablets, and smart phones. If desired, the level of remote control can be configured so that selected changes or adjustments can only be made locally. Remote access will be password protected.

Cost Estimates

Estimated Construction Cost

These are preliminary installed costs, including control panels, motor starting equipment, instrumentation, cable and conduit, labor, etc. These costs should be used only for budgetary purposes.

Lift Station, 727 Broadway Street East	\$40,000
Lift Station, 648 6th Avenue NE	\$40,000
Main Lift Station, 316 2 nd Street NE	\$55,000
Water System Pressure Monitoring Stations (Three locations, at \$20,000/ea)	\$60,000
Master Control Panel	\$30,000
Personal Computer and Related Equipment (monitor, printer, etc.)	\$10,000
SCADA Software, including licensing, programming and startup	\$35,000
Total	\$270,000

Estimated Engineering Fees

These are preliminary fees for electrical and control design, bidding, and construction administration services. The actual fees may vary from this estimate and should be used only for budgetary purposes, a formal fee proposal can be provided if desired.

Design	\$18,500
Bidding	\$1,500
Construction Administration	\$8,000
Total	\$28,000





LIFT STATION CONDITION ASSESSMENT REPORT

OSSEO | MINNESOTA

MARCH 2020

Prepared for: City of Osseo 415 Central Avenue Osseo, MN 55369

WSB PROJECT NO. 015532-000



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed professional engineer under the laws of the State of Minnesota.

Dagt Johnon

Greg F. Johnson, PE

Date: March 20, 2020

Lic. No. 26430

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SCOPE

The City of Osseo owns and operates a sanitary collection and conveyance system consisting of three sanitary lift stations that ultimately discharge flow to the Metropolitan Council. The subject of this report is a condition assessment each lift station to estimate the capital improvements required to maintain their level of service and extend the useable life of the existing infrastructure. This report will help the City prioritize, plan, and budget for future improvements and consider lift station capacity relative to existing flow conditions and future development.

The findings summarized in this report are based on site inspections conducted on February 20, 2020, conversations with City maintenance staff, and available GIS data. Existing pump curve information was solicited from various pump manufacturer's representatives based on their available records. As-built data for the original construction of the lift stations or for subsequent improvements were not available. Site inspections of the submersible lift stations included at-grade observations of the wet wells. Inspection of the main lift station included visual observations and special assessments of the structural and mechanical components by licensed engineers. Wet well sumps were not visible due to active flow.

The electrical and controls components of the lift stations were not assessed under this scope of work, as that was previously assessed in a separate memo provided to the City on December 16, 2019. The 2019 Lift Station Communications Improvements Assessment is included as Appendix 1 and the costs summarized in that memo are referenced in this report for overall improvements estimating.

BACKGROUND

The City of Osseo's existing sanitary sewer system collects and conveys wastewater to the Metropolitan Council Environmental Services (MCES) Interceptor 4-OS-457 and subsequently Meter M223, which discharges into MCES Interceptor 7015-D. The conveyance system is comprised of three lift stations; the main Lift Station 1 is a wet well-dry well station that discharges to the MCES interceptor, while Lift Stations 2 and 3 are smaller submersible stations that convey local flow within the City's system. All stations were constructed in 1960 and have had various improvements such as pump and motor replacements over the years as needed. Limited information was available pertaining to the specific improvements and maintenance records at each station since their original construction.

Lift Station	Address	Year of Original Design/Construction		
1	316 2 nd Street NE	1960		
2	727 Broadway Street E	1960		
3	648 6 th Avenue NE	1960		

Table 1 Lift Station Inventory

The main operational concerns with the lift stations have been related to power outages and lack of SCADA communication and alarming which have caused wet well surcharging and short response times for City staff. These issues are discussed in detail in Appendix 1. Common issues related to rags and fats, oils, and grease (FOG) build-up have been noted at Lift Stations #3, which requires more regular maintenance. There has been one instance of pump failure due to wear and tear at Lift Station #1 which has resulted in the installation of a temporary pump until the lift station is fully rehabilitated. All three lift stations are equipped with a portable generator receptacle that is compatible with the City's portable generators for emergency use. The City may want to explore the option of installing a permanent natural gas generator at Lift Station #1, but that is not included in the cost estimating at this time.



CONDITION ASSESSEMENT & RECOMMENDAITONS

Lift Station #1

Located at 316 2nd Street NE in a residential neighborhood, Lift Station #1 is a wet well-dry well lift station. The lift station was constructed in 1960 and appears to be mainly original. The overall building is one level with dimensions of approximately 23' x 13'. The station has been modified on several occasions with respect to its electrical and standby power systems, and pumps and motors. Due to its complexity relative to the other stations, its assessment and recommendations are broken into multiple disciplines.

Process Assessment

- A. Pumps & Controls:
 - Existing Conditions: Since its last update, the station has been serviced by two 20-hp Flygt model 3152.181-5583, CT434 Impeller dry-pit submersible pumps. The design operating point is not known. The pump motors are operated with Bentec electronic soft motor starters. The pumps are controlled by a Grundfos level transducer with a high-level float switch.
 - 2. <u>Deficiencies</u>: One of the Flygt pumps has since been replaced on an interim basis due to failure. The replacement pump is a KSB model KRTF150-401/326XNG-D dry-pit submersible.
 - 3. <u>Recommendations:</u> It is recommended that both pumps be replaced to a uniform pump selection. The design point (gpm/TDH) should be determined based on a hydraulic analysis of the forcemain and future flow conditions should be considered before selecting the new pumps. Based on the 2040 Comprehensive Plan, it is possible that Lift Station #1 will see more flow in the future, therefore any new pumps should allow for impeller replacements if higher flows become a reality prior to the end life of the new pumps. The level transducer and backup floats should also be replaced.
- B. <u>Piping & Valves</u>:
 - Existing Conditions: The suction pipe openings from the wet well are 8" diameter and are reduce to 6" with a plug valve ahead of the dry-pit submersible pumps. After the pumps, the pipe diameter increased back to 8" and is followed by a check valve. The two discharge pipes combine in the dry well and exit the lift station through a single 8" forcemain. On the combined piping header, there is a 6" line that connects back to the wet well. This piping was not original to the lift station but may have been added as a temporary bypass connection to be used during pump replacement.
 - 2. <u>Deficiencies</u>: The piping and valves are in satisfactory condition but are showing some corrosion in areas that were not coated. The 8" pipe is assumed to be original to the station, so it may have reduced capacity or internal corrosion that is not visible.
 - 3. <u>Recommendations:</u> Depending on the new pump selection, it may be necessary to modify the piping arrangement and/or the suction and discharge piping diameters. Given the small amount of piping within the dry well, it is recommended that it be fully replaced, assuming the entire station is on temporary bypass. This may also allow for the installation of a new flowmeter.
- C. Other Equipment:
 - Existing Conditions, Deficiencies: The dry well is equipped with a single sump pump that discharges back to the wet well. The sump has not been cleaned and it is unclear if the pump is functional. The wet well is equipped with a mixer that turns on with the pumps to discourage sediment and debris build up. The mixer was not physically observed during the inspection.
 - 2. <u>Recommendations:</u> The sump pump should be replaced, and the sump should be cleaned so as to avoid clogging. It may be recommended to also replace the wet well mixer given its location in a corrosive environment and likely its age.



Structural Assessment

The structural assessment for Lift Station #1 was completed by Sandman Structural Engineers. Below is a summary of their assessment, the complete report can be found in Appendix 4 including photo references and cost estimates for improvements.

- A. Well Well Systems:
 - Existing Conditions: The Dry Well pit is approximately 9'-0" X 12'-10" X 28'-6" deep with concrete shaft walls and steel channel supports. There are two pipelines running from the wet well side into this shaft. They're supported on concrete piers. The Wet Well pit is approximately 6'-0" X 12-10" X 20'-5" deep to the concrete platform. The shaft walls are concrete, the platform is also concrete and has a metal grate access point. There is a main sanitary sewer line coming into the shaft and some other piping as well located in the shaft.
 - 2. <u>Deficiencies:</u> Pipe support piers show signs of wear at edges. A minor amount of corrosion is present on the steel channels inside the dry well side shaft. Some steel elements in the wet well show large amounts of corrosion.
 - 3. <u>Recommendation</u>: Repair worn corners of the pipe support piers. Steel should have the corrosion removed and have an applicable epoxy coating system used in recoating the steel.
- B. Ground Floor:
 - 1. <u>Existing Conditions</u>: The floor consists of slab on grade This slab appears to be generally in good condition.
 - 2. <u>Deficiencies:</u> There is a left-over housekeeping pad from a piece of equipment that is no longer installed at the site.
 - 3. <u>Recommendations</u>: Remove the existing housekeeping pad and patch the slab on grade as needed to facilitate the maintenance of equipment present on site.
- C. Exterior/Interior Wall System:
 - 1. <u>Existing Conditions</u>: The wall system consists of tile block on the interior and a brick veneer exterior. Generally, the walls are in good condition with some joints opening and a few cracked CMU tiles.
 - 2. <u>Deficiencies:</u> A few exterior joints are cracked and open. A few interior joints are cracked and open. One exterior brick at the wet well door jamb is broken out. There are a few locations of cracked and breaking out interior CMU tiles. The exterior man door for the wet well side is corroded and door jamb block is starting to crack.
 - 3. <u>Recommendations:</u> Repair grout and seal exterior brick veneer. Replace the one brick that has broken out. Repair CMU wall joints in other locations as needed. Repair/Replace broken CMU tiles. Replace/Repair exterior wet well door.
- D. <u>Roof Systems:</u>
 - 1. <u>Existing Conditions</u>: The roof systems consist of a hip and gable wood truss system, plywood sheeting for the decking, felt, and asphalt shingles.
 - 2. <u>Deficiencies</u>: The asphalt shingles are starting to show signs of curling; however, it was hard to observe the overall condition of the shingles due to snow cover. Some of the fascia and soffit wood are deteriorating. A new opening, per owner request, in the roof system to allow access for pump removal would help facilitate maintenance of the pumps.
 - 3. <u>Recommendations</u>: Assess roof in the spring when clear of snow. Potentially replace roofing system with new shingles, felt, and new plywood decking in areas due to discovered soft spots. Replace damaged soffit and facia boards, coordinate requirements for venting with the roofing contractor. Frame in a new operable skylight in the roofing system for crane access.



HVAC Assessment

The HVAC assessment for Lift Station #1 was completed by KFI Engineers.

- A. Dry Well:
 - 1. <u>Existing Conditions, Deficiencies:</u> A single, manually operated exhaust fan provides ventilation for the dry well. Outside ventilation air is provided through leaks in the wall damper that allowed cooling air into the space when a generator was housed on the main level. The dry well currently operates at a negative pressure in relation to the adjacent wet well when the exhaust fan is operating and promotes odor migration into the dry well from the wet well.
 - 2. <u>Recommendations:</u> We propose installing a new indirect fired makeup air unit and new exhaust fans that would pressurize the space relative to the wet well and minimize migration of wet well odors. The makeup air unit would provide a code required 6 air changes per hour of outside air when occupied and 25% of that volume when unoccupied. Two (2) exhaust fans sized at 75% and 25% of outside air volume would mechanically remove the ventilation air but maintain the space with a slight pressure relative to the wet well. The proposed ventilation air volume would allow the dry well space to remain electrically unrated.
- B. <u>Wet Well:</u>
 - Existing Conditions/Deficiencies: The exhaust fan in the wet well is not functioning at this time. The on/off switch is in the on position and the fan does not operate. Outside ventilation air is provided through a ceiling opening in the roof. The wet well ventilation air is exhausted through a wall louvered outlet.
 - 2. <u>Recommendations:</u> We propose installing a new direct fired makeup air unit and new exhaust fan that would be balanced to negatively pressurize the space relative to the dry well and minimize migration of wet well odors. The makeup air unit would provide a code required 12 air changes per hour of outside air when occupied and ½ of that volume when unoccupied. The new exhaust fan would be sized to exhaust 12 air changes per hour and will have a VFD to reduce air flow when the space is unoccupied.

The magnitude and cost of temporary bypass for this location will vary depending on the scope of work the City chooses to include in the rehabilitation of Lift Station #1. Full bypass to the discharge manhole of the forcemain would require a significant length of temporary piping and disruption to residential access and traffic. It's possible that the City may realize some cost savings and operational flexibility by constructing a forcemain access structure that can accommodate a quick-connect fitting for use during construction and in the future during maintenance operations and pump replacement. This should be considered during preliminary design and addressed in the bidding documents to allow for contractor flexibility and cost savings opportunities.

The location and nature of this lift station relative to neighboring properties will make construction and future operational practices of significant importance. In the recent past there have been neighbor complaints about odor from the lift station and the facility is not generally seen as an asset to community. Considerations for site access, odor control, and noise control should be made for construction activities and long-term operations. An odor control system for the wet well exhaust fan, a paved access driveway, new sidewalk, and privacy fencing around the new makeup air unit are some features that could improve the perception of this facility to the community. Furthermore, if a permanent standby generator is added to this facility, a sound-attenuating enclosure should be included to mitigate noise concerns. A small allowance for these items is included in the cost estimates but require further discussion during preliminary design.



Lift Station #2

Located at 727 Broadway Street E in a residential neighborhood near the Public Works Facility, Lift Station #2 is a duplex submersible lift station originally constructed in 1960. The station is served by two 2.8-hp Barnes pumps. The design point is not known. The pump motors are operated with full-voltage motor starters. The pumps are controlled with a Warrick intrinsically safe relay and four float switches. The electrical service is 240vac, single phase, 100 amps. The panel is equipped with a manual transfer switch for main and standby power.

The structural components of the lift station are in good condition with minimal deterioration of the wet well, valve vault, and top slab concrete. The wet well hatch is in poor condition and is not equipped with a safety grate for fall protection and should be replaced. The wet well does not have a dedicated vent which may be the cause of the excessive corrosion to the hatch box; however, installing a vent may result in odor complaints from the neighboring residents.

The pump guiderails are in satisfactory condition but show some surface corrosion. The piping and valves appear to have been replaced since the original construction and show significant corrosion. The wet well piping should be considered for complete replacement and the new piping should be coated with a corrosion resistant system. The valves in the valve vault should be replaced along with the pipe fittings which are in poor condition. No issues of standing water were observed in the valve vault, but it may be desirable to add a drain line from the valve vault to the wet well to drain any water that may enter seasonally.



The lift station can be accessed by City staff from the road

for routine inspection and maintenance. However, it may be desirable to add an access pad for maintenance vehicles and for easier snow removal and access during the winter months. There is no site protection in terms of bollards, but given its proximity to an intersection, it would be advisable to add two bollards to protect the future control panel. It is recommended that all bollards be painted in safety yellow to improve visibility.



City staff did not note any specific operational or maintenance issues with this lift station.

Lift Station #3

Located at 648 6th Avenue NE in a residential area adjacent to an apartment complex, Lift Station #3 is a duplex submersible lift station originally constructed in 1960. The station is served by two 3-hp Pumpex pumps. The design point is not known. The pump motors are operated with full-voltage motor starters. The pumps are controlled with a Warrick intrinsically safe relay and four float switches. The electrical service is 240vac, single phase, 100 amps. The panel is equipped with a manual transfer switch for main and standby power.

The structural components of the lift station are in poor condition with significant deterioration of the wet well, valve vault, and top slab concrete. The wet well should be coated with a corrosion resistant system and the top slab should be replaced. The wet well hatch is in poor condition and is not equipped with a safety grate for fall protection and should be replaced.



The pump guiderails are in poor condition and should be replaced. The wet well and valve vault piping appear to be from the original construction and show significant corrosion. The valves in the valve vault should be replaced along with the pipe fittings which are in poor condition. No issues of standing water were observed in the valve vault, but it may be desirable to add a drain line from the valve vault to the wet well to drain any water that may enter seasonally.

The lift station is located in a grassed area adjacent to an apartment building parking lot which allows for easy maintenance access. There is no site protection in terms of bollards, but given its proximity to the parking lot entrance, it may be advisable to add one or more bollards to protect the future control panel. It is recommended that all bollards be painted in safety yellow to improve visibility. There are also signs of vandalism at this location,



so extra care should be taken to secure the lift station access hatches and controls for safety. Site lighting and/or cameras could also be considered if vandalism becomes a more significant concern.

City staff has noted significant operational and maintenance issues related to FOG and rags at this location, which is likely due to the multi-unit housing complexes in the immediate vicinity. The replacement pumps should be equipped with a mixing valve to allow for the breakup of FOG during each pumping cycle. The City may also want to consider using Bio-Blocks or some other chemical additive that would prevent FOG build-up in this lift station.

CAPITAL IMPROVEMENT PLAN

The capital improvement plan to rehabilitate and upgrade the City's lift stations is evenly dictated on operational and maintenance issues and immediate infrastructure deficiencies. However, Lift Station #1 is of a higher priority given that it conveys a more significant volume of the City's flow. Lift Station #1 also has more reliability and safety concerns that drive its risk of failure to a critical point. Lift Stations #2 and #3 are of a lesser priority due to the relatively small amount of flow they convey and the nature of the necessary upgrades. If the pumps in either submersible station failed, it would be of less consequence and require fewer immediate resources to restore service.

Detailed opinions of cost for each lift station are included in Appendix 2 and summarized in Table 2 below.

Lift Station Pump Replacement Considerations

Given the current condition and recent pump failures, it is assumed that all pumps are reaching the end of their useful life and should be considered for replacement. Furthermore, pump manufacturers are offering a number of new features for submersible lift station applications that can help mitigate issues with rags and FOG. Replacing the existing submersible pumps with chopper pumps and/or mixing valves will help the City reduce their operation and maintenance costs and improve the reliability of the conveyance system.

Since no as-built information is available for the City's lift stations, it becomes difficult to do a proper hydraulic analysis to size replacement pumps. Measures can be taken to estimate the current discharge pressure and flow, but without developing a proper system curve it is not possible to size a pump that will accommodate both current flows and future flows. This is of more significance at Lift Station #1 since growth is anticipated according to the 2040 Comprehensive Plan. Before purchasing and installing replacement pumps, a thorough hydraulic analysis should be completed for each station.

Electrical & Controls Improvements Considerations

The 2019 Lift Station Communications Improvements Assessment report included in Appendix 1 thoroughly describes the proposed improvements and costs for the existing lift stations as well as the City water system pressure monitors to be integrated into a single SCADA system. Given the necessary improvements and the critical nature of Lift Station #1, the improvements for the master control panel, monitoring equipment, and SCADA software were included in the capital cost estimate for Lift Station #1 with the assumption that the other lift stations and the water system pressure sensors can be integrated as other improvements can be funded under separate projects. Final design of the control panel and SCADA system will consider the future incorporation of the City's entire system and will allow for improved monitoring and response time to operation and maintenance issues by City staff.

Capital Improvements Budgetary Summary

Table 2 summarizes the total capital improvements budget estimate to rehabilitate the subject lift stations. The "Lift Station Rehabilitation Estimate (Total)" represents the complete cost estimate including the individual components, engineering, legal, administration, and construction. Detailed cost opinions for each station are included in Appendix 2.



Lift	Lift Station Rehabilitation	Individual Component Estimates				
Station	Estimate (Total)	Replacement Pumps	Electrical & Controls Improvements	Structural & HVAC Improvements		
1	\$931,675	\$108,000	\$130,000	\$183,300		
2	\$217,177	\$30,000	\$40,000			
3	\$226,682	\$35,000	\$40,000			

Table 2 Lift Station Rehabilitation Opinions of Cost



APPENDIX 1 -

2019 LIFT STATION CONTROLS IMPROVEMENTS ASSESSMENT



Memorandum

To:	Nick Waldbillig – City of Osseo, Public Works Director
From:	Ashley Hammerbeck – WSB & Associates, Project Manager Stuart Stephens – Barr Engineering, Electrical Engineer
Date:	December 16, 2019
Re:	2019 Lift Station Communications Improvements Assessment WSB Project No. 014956

The City of Osseo owns and operates a sewer collection and conveyance system consisting of three lift stations that ultimately discharge wastewater to MCES. The largest lift station is a wet well – dry well arrangement that is monitored by the City's existing SCADA system and is equipped with remote access. The two smaller submersible lift stations are not currently monitored by SCADA, but the City would like to assess the feasibility of upgrading them in a manner similar to the large lift station. This report is a summary of the notes from the October 2, 2019 site visit between WSB, Barr Engineering (electrical engineering), and Nick Waldbillig from the City of Osseo, and includes recommendations and cost estimates for communication and monitoring improvements.

Summary of Existing Infrastructure

Lift Station at 727 Broadway Street East (Submersible)

- Control panel by Ohio Electric Control, Inc. Installed December 2003.
- Mounted on a steel pole with an alarm light on top. Alarm horn on side of enclosure is not used.
- 240vac single phase, 100 amp service.
- Circuit breakers for Pump 1, Pump 2, and control power.
- Separate 100 amp fused manual transfer switch for main and standby power.
- Crouse-Hinds AR1042-S22 3-wire, 4 pole generator receptacle.
- Two 1.5hp pumps, 10.8 amps FLI with full voltage motor starters.
- Two Warrick intrinsically safe relays, one for float switches and one for motor overtemperature & seal fail monitoring.
- Four float switches for pumps off, lead pump start, lag pump start, and high-level alarm set points.
- Sensaphone alarm dialer with hard wired telephone connection for alarm monitoring.

Lift Station at 648 6th Avenue NE (Submersible)

• Not inspected during site visit, but confirmed to be same components as other submersible lift station.

Main Lift Station at 316 2nd Street NE (Wet Well – Dry Well)

- 208vac three phase, 200 amp service.
- There are two panelboards. One is 120/208vac three phase, 200 amps, the other is 120/208vac single phase, 50 amps. The large panel appears to provide power to the pumps, while the smaller panel appears to provide power for general circuits like lights, outlets, ventilation, etc.

- Branch circuit breakers in the large panel are 100A 3 pole, 100A 3 pole, 60A 2 pole, and three 20A 1 pole. Labeling is unclear, but it is assumed that the two 100 amp breakers are for the pumps, the 60 amp breaker supplies power to the smaller 50 amp panel, and the three 20 amp breakers are unused spares.
- The smaller panel is actually a three phase panel, but according to the labeling inside the front cover it is only wired for single phase. It has a 50 amp three pole main breaker, but apparently only two poles are connected. It has eight 20 amp single pole branch circuit breakers for the various general power circuits such as lights, outlets, etc.
- At one time there was a permanent generator inside the building, but it has since been removed. There is still an Onan automatic transfer switch mounted on the wall that is apparently used in manual mode to switch between utility power and the portable generator receptacle on the building exterior. There is also a manual transfer switch mounted on the wall above the pump soft starters, which appears to switch power in and out for Pump 2 only.
- The generator receptacle on the building exterior is a Crouse-Hinds AR101042-S22, 3 wire, 4 pole.
- The City should confirm the kW rating of the portable generator to verify that it is large enough to run both pumps at once.
- There are two 15hp submersible pumps. Exact full load amp rating for the pumps is not known, but based on standard charts they should be approximately 46 to 50 amps FLI each.
- The pumps are operated with Bentec electronic soft starters. There is a 5 kVar power factor correction capacitor for each soft starter.
- Instrumentation includes a flowmeter, a combustible gas monitor, a high-level float switch, and high and low-level temperature switches.
- There is an air mixer in the wet well that is connected with a pneumatic tube to a small air compressor in the main room of the building.
- A Grundfos control panel with a level transducer is used for controlling the pumps based on wetwell level as measured with a level transducer (submersible?).
- There is a Sensaphone Express II alarm dialer that calls out in the event of alarm conditions. There is a hard-wired telephone connection in the building, but the alarm dialer uses a 3G cellular system.
- There is an Omnisite panel in the main room that was used for remote monitoring of lift station run and alarm status, but it does not work anymore.
- There is an Intermatic mechanical timer for controlling the wetwell exhaust fan.
- There is a drywell vent exhaust fan that is controlled with a relay that is energized when the light is turned on.
- The main lift station pumps wastewater to MCES which operates their own flowmeter for monitoring influent from the City.

Other Site Notes

- The City buys water from the City of Maple Grove there are no wells or water tower. Water is supplied at two different locations. The City would like to add three pressure zone monitoring stations.
- The City is looking at adding SCADA in 2020. The City has talked to Quality Control and Integration, but are open to other systems integrators. QC2I showed them their 1500CT controller and left a brochure. QC2I said they are moving from radio to cellular communications.

Recommendations

Submersible Lift Stations (727 Broadway Street East and 648 6th Avenue NE)

- Replace existing control panels with new control panels. Both panels will be the same.
- Control panels will have freestanding stainless steel enclosures, with alarm lights on top, utility meters on the back, and generator receptacles on the side. The existing generator receptacles may be reused.
- 240vac single phase, 100 amp main breakers, mechanically interlocked with 100 amp standby circuit breakers. In the event of a power failure, City personnel will disable the main breaker, enable the standby breaker, and connect the lift station to the City's portable generator.
- Branch circuit breakers for Pump 1, Pump 2, control power, and miscellaneous (convenience receptacle, panel heater, etc.)
- If replacement pumps are available with single phase motors, full voltage motor starters will be used. If the replacement pumps are only available with three phase motors, small variable frequency drives (VFDs) will be used.
- Install submersible level transducers for monitoring wet well depth, along with high and low-level float switches for backup control.
- Install small programmable logic controllers (PLCs) with front panel mounted operator interface terminals (OITs) to control the pumps based on wet well level. Pump start and stop set point values and high and low-level alarm set point values will be configurable from the OIT, which will also display wet well level, pump run and alarm status, and other alarm information such as pump failure alarms, wetwell high and low-level alarms, and power failure alarms.
- If the PLCs or submersible level transducers fail, hard wired relay circuitry along with the high and low-level float switches will continue to operate the pumps.
- It is assumed 900 MHz spread spectrum radios can be used for communication from each lift station control panel to a master control panel and radio located at the Public Works Building. Lift station wetwell level, pump run status, and alarm status will be monitored at the master control panel. Pump start and stop set points and alarm set points will be configurable from the master control panel.

Main Lift Station (316 2nd Street NE)

- The existing control panels and motor controls inside the building will be replaced with new equipment.
- A new service entrance rated 120/208vac three phase, 200 amp manual transfer switch will be installed. It will be fused at 200 amps on the service side and 100 amps on the generator side. The existing generator receptacle on the exterior of the building may be reused.
- The existing 200 amp three phase panelboard may be reused. The existing 50 amp panelboard will be removed and its branch circuits will be relocated to the 200 amp panel.
- New electronic soft starters with integral bypass contactors will be installed for each submersible pump, along with new power factor correction capacitors. The new soft starters and power factor correction capacitors may be integral to new control panel, or installed in a separate enclosure. Either configuration will work, but price and ease of installation for both should be considered during the design process before a final decision is made.
- A new submersible level transducer for monitoring wet well depth will be installed, with high and low-level float switches for backup control.
- The combustible gas detector will be replaced.
- It is assumed the existing flowmeter can be reused, along with the high and low temperature switches.

- It is assumed the air powered wet well aerator and compressor will be reused.
- Furnish and install a new control panel containing a small PLC and a front panel mounted OIT that will control the pumps based on wet well level. Pump start and stop set point values and high and low-level alarm set point values will be configurable from the OIT, which will also display wet well level, pump run and alarm status, and other alarm information (pump failure, high and low-level alarms, and power failure alarms.) The control panel will also operate the wetwell exhaust fan.
- If the PLCs or submersible level transducer fail, hard wired relay circuitry along with the high and low-level float switches will continue to operate the pumps.
- It is assumed a 900 MHz spread spectrum radio can be used for communication from the lift station control panel to a master control panel and radio located at the public works building. Lift station wetwell level, pump run status, and alarm status will be monitored at the master control panel. Pump start and stop set points and alarm set points will be configurable from the master control panel.

Water System Pressure Monitoring Stations

- Add monitoring stations for three separate water system pressure zones.
- Assume each location will have a pressure transducer installed in a manhole, along with a small above grade control panel that will monitor the pressure transducer output and transmit the value to the public works building office.
- Each control panel will include a small PLC and front panel digital display for reading the pressure value locally, along with a spread spectrum 900 MHz radio that will transmit the pressure value to the public works building office. There will be high and low-pressure alarm value set points, configurable at the Public Works Building office.
- If necessary, electric heat may be included to prevent freezing at the pressure transducer. This may be a small space heater, or electric heat tracing on the pipe as required. Heating requirements will be determined by the civil engineer. Power can be provided for a sump pump if necessary.
- Electrical service at the pressure zone monitoring stations will be 120/240vac single phase.

Master Control Panel and SCADA

- A master control panel will be installed at the Public Works Building office. The master control panel will include a small PLC and front panel mounted OIT, along with a 900 MHz radio that will allow for monitoring information from the three lift stations and three pressure monitoring stations, as well as allowing for configuration of pump start and stop set points and alarm set points.
- 120vac power for the control panel will be sourced from the building's existing panelboard. It is assumed a spare circuit will be available.
- A personal computer equipped with supervisory control and data acquisition (SCADA) software will be installed. It will be connected to the master control panel via an Ethernet connection.
- The PC will serve as the primary interface for monitoring and controlling the lift stations and pressure monitoring stations, with the OIT on the master control panel serving as a secondary method of monitoring and control in the event of a computer failure.
- In addition to displaying run and alarm status information, and providing a way to configure start and stop set points and alarm set points, the PC and the SCADA software will also allow for data collection and recording, trend charts, graphing capabilities, and report generation. It will also include alarming software that will call out or send text messages in the event of any alarm condition. This software will be configurable to provide distinct messages for each alarm condition.

• The SCADA software will be accessible via the Internet, to allow city personnel to view the system from remotely located computers, tablets, and smart phones. If desired, the level of remote control can be configured so that selected changes or adjustments can only be made locally. Remote access will be password protected.

Cost Estimates

Estimated Construction Cost

These are preliminary installed costs, including control panels, motor starting equipment, instrumentation, cable and conduit, labor, etc. These costs should be used only for budgetary purposes.

Lift Station, 727 Broadway Street East	\$40,000
Lift Station, 648 6th Avenue NE	\$40,000
Main Lift Station, 316 2 nd Street NE	\$55,000
Water System Pressure Monitoring Stations (Three locations, at \$20,000/ea)	\$60,000
Master Control Panel	\$30,000
Personal Computer and Related Equipment (monitor, printer, etc.)	\$10,000
SCADA Software, including licensing, programming and startup	\$35,000
Total	\$270,000

Estimated Engineering Fees

These are preliminary fees for electrical and control design, bidding, and construction administration services. The actual fees may vary from this estimate and should be used only for budgetary purposes, a formal fee proposal can be provided if desired.

Design	\$18,500
Bidding	\$1,500
Construction Administration	\$8,000
Total	\$28,000



APPENDIX 2 – DETAILED OPINIONS OF COST

Engineer's Opinion of Cost Lift Station #1 316 2nd Street NE

\$/UNIT	UNIT	QTY		TOTAL \$
			\$	86,802
\$ 50,000	LS	1	\$	50,000
\$ 2,500	LS	1	\$	2,500
\$ 3,000	LS	1	\$	3,000
\$ 12	SF	3240	\$	38,880
\$ 8,000	LS	1	\$	8,000
\$ 108,000	LS	1	\$	108,000
\$ 100	LF	95	\$	9,500
\$ 7,500	EA	4	\$	30,000
\$ 3,000	EA	1	\$	3,000
\$ 7,500	EA	1	\$	7,500
\$ 15,300	EA	1	\$	15,300
\$ 140,000	LS	1	\$	168,000
\$ 55,000	LS	1	\$	55,000
\$ 75,000	LS	1	\$	75,000
\$ 5,000	LS	1	\$	5,000
\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	 \$ 2,500 \$ 3,000 \$ 12 \$ 8,000 \$ 108,000 \$ 100 \$ 7,500 \$ 7,500 \$ 3,000 \$ 7,500 \$ 15,300 \$ 140,000 \$ 55,000 \$ 75,000 	\$ 50,000 LS \$ 2,500 LS \$ 3,000 LS \$ 12 SF \$ 8,000 LS \$ 108,000 LS \$ 108,000 LS \$ 108,000 LS \$ 108,000 LS \$ 100 LF \$ 7,500 EA \$ 3,000 EA \$ 3,000 EA \$ 15,300 EA \$ 15,300 EA \$ 15,300 LS \$ 55,000 LS \$ 75,000 LS	\$ 50,000 LS 1 \$ 2,500 LS 1 \$ 3,000 LS 1 \$ 12 SF 3240 \$ 8,000 LS 1 \$ 108,000 LS 1 \$ 108,000 LS 1 \$ 108,000 LS 1 \$ 108,000 EA 4 \$ 3,000 EA 4 \$ 3,000 EA 1 \$ 7,500 EA 1 \$ 15,300 EA 1 \$ 108 1 \$ 15,300 EA 1 \$ 15,300 EA 1 \$ 108 1 \$ 108 1 \$ 109 1 \$ 109 1 \$ 109 1 \$ 109 1 \$ 100 1	\$ 50,000 LS 1 \$ \$ 2,500 LS 1 \$ \$ 2,500 LS 1 \$ \$ 3,000 LS 1 \$ \$ 3,000 LS 1 \$ \$ 12 SF 3240 \$ \$ 108,000 LS 1 \$ \$ 108,000 LS 1 \$ \$ 100 LF 95 \$ \$ 7,500 EA 4 \$ \$ 3,000 EA 1 \$ \$ 7,500 EA 1 \$ \$ 7,500 EA 1 \$ \$ 15,300 EA 1 \$ \$ 140,000 LS 1 \$ \$ 55,000 LS 1 \$ \$ 75,000 LS 1 \$

Subtotal	\$ 665,482
Contingenecy (5%)	\$ 33,274
Bonds, Insurance, Permits (2%)	\$ 13,310
Contractor Profit (8%)	\$ 53,239
Construction Subtotal	\$ 765,304
Engineering, Legal, Admin, CRS (25%)	\$ 166,371
Total	\$ 931,675

Engineer's Opinion of Cost Lift Station #2 727 Broadway Street E

ITEM DESCRIPTION		\$/UNIT	UNIT	QTY	TOTAL \$
General Conditions, Mobilization (15%)					\$ 19,706
Temporary Conveyance	\$	15,000	LS	1	\$ 15,000
Replace Pipe Supports	\$	1,000	LS	1	\$ 1,000
Clean Sumps	\$	1,600	LS	1	\$ 1,600
New Hatch	\$	7,900	EA	1	\$ 7,900
New Top Slab	\$	8,500	EA	1	\$ 8,500
Recoat Wet Well	\$	12	SF	377	\$ 4,524
Coating Surface Prep	\$	4,800	LS	1	\$ 4,800
New Pumps & Guiderails	\$	30,000	LS	1	\$ 30,000
Replace WW & VV Piping	\$	50	LF	56	\$ 2,800
New Process Valves	\$	2,500	EA	4	\$ 10,000
New Duckbill Check	\$	750	EA	1	\$ 750
Electrical & Control Improvements	\$	40,000	LS	1	\$ 40,000
New Bollards	\$	1,500	EA	2	\$ 3,000
Misc Site Work	\$	1,500	LS	1	\$ 1,500
	-	-			

Subtotal	\$ 151,080
Contingnecy (5%)	\$ 7,554
Bonds, Insurance, Permits (2%)	\$ 3,022
Contractor Profit (8%)	\$ 12,086
Construction Subtotal	\$ 173,742
Engineering, Legal, Admin, CRS (25%)	\$ 43,435
Total	\$ 217,177

Engineer's Opinion of Cost Lift Station #3 648 6th Avenue NE

ITEM DESCRIPTION	\$/UNIT	UNIT	QTY	TOTAL \$
General Conditions, Mobilization (15%)				\$ 20,568
Temporary Conveyance \$	15,000	LS	1	\$ 15,000
Replace Pipe Supports\$	1,000	LS	1	\$ 1,000
Clean Sumps \$	1,600	LS	1	\$ 1,600
Replace Hatch \$	7,900	EA	1	\$ 7,900
New Top Slab \$	8,500	EA	1	\$ 8,500
Replace Vent \$	750	EA	1	\$ 750
Recoat Wet Well \$	12	SF	377	\$ 4,524
Coating Surface Prep \$	4,800	LS	1	\$ 4,800
New Pumps & Guiderails \$	35,000	LS	1	\$ 35,000
Replace WW & VV Piping \$	50	LF	56	\$ 2,800
New Process Valves \$	2,500	EA	4	\$ 10,000
New Duckbill Check \$	750	EA	1	\$ 750
Electrical & Control Improvements \$	40,000	LS	1	\$ 40,000
New Bollards \$	1,500	EA	2	\$ 3,000
Misc Site Work \$	1,500	LS	1	\$ 1,500

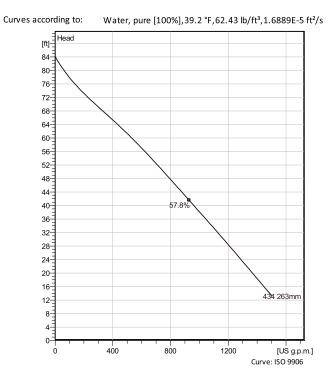
Subtotal	\$ 157,692
Contingency (5%)	\$ 7,885
Bonds, Insurance, Permits (2%)	\$ 3,154
Contractor Profit (8%)	\$ 12,615
Construction Subtotal	\$ 181,346
Engineering, Legal, Admin, CRS (25%)	\$ 45,336
Total	\$ 226,682



APPENDIX 3 – EXISTING PUMP CURVES



Technical specification



Configuration

Motor number C3152.181 25-15-4AA-D 20hp Impeller diameter 263 mm Installation type T - Vertical Permanent, Dry

Discharge diameter 5 7/8 inch

Pump information Materials Impeller diameter Impeller 263 mm Grey cast iron Discharge diameter 5 7/8 inch Inlet diameter 150 mm Maximum operating speed 1750 rpm Number of blades 1 Throughlet diameter 3 11/16 inch

 Project
 Created by
 Last update

 Block
 Created on
 2/25/2020

Technical specification

Motor - General

Motor number C3152.181 25-15-4AA-D 20hp	Phases 3~	Rated speed 1750 rpm	Rated power 20 hp
Approval	Number of poles	Rated current	Stator variant
No	4	59 A	27
Frequency	Rated voltage	Insulation class	Type of Duty
60 Hz	200 V	H	S1

Motor - Technical

Power factor - 1/1 Load 0.84

Power factor - 3/4 Load 0.80

Power factor - 1/2 Load 0.70 Motor efficiency - 1/1 Load 86.5 % Motor efficiency - 3/4 Load 87.5 %

Motor efficiency - 1/2 Load

86.0 %

Total moment of inertia 5.32 lb ft²

Starting current, direct starting 345 A

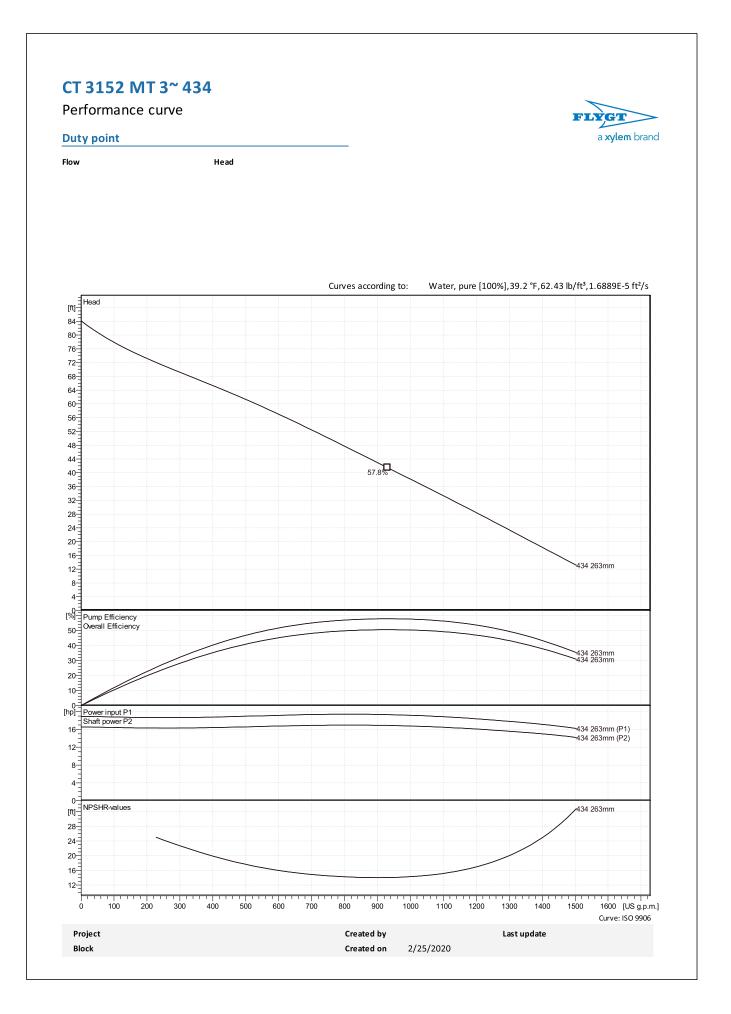
Starting current, star-delta 115 A

ProjectCreated byLast updateBlockCreated on2/25/2020



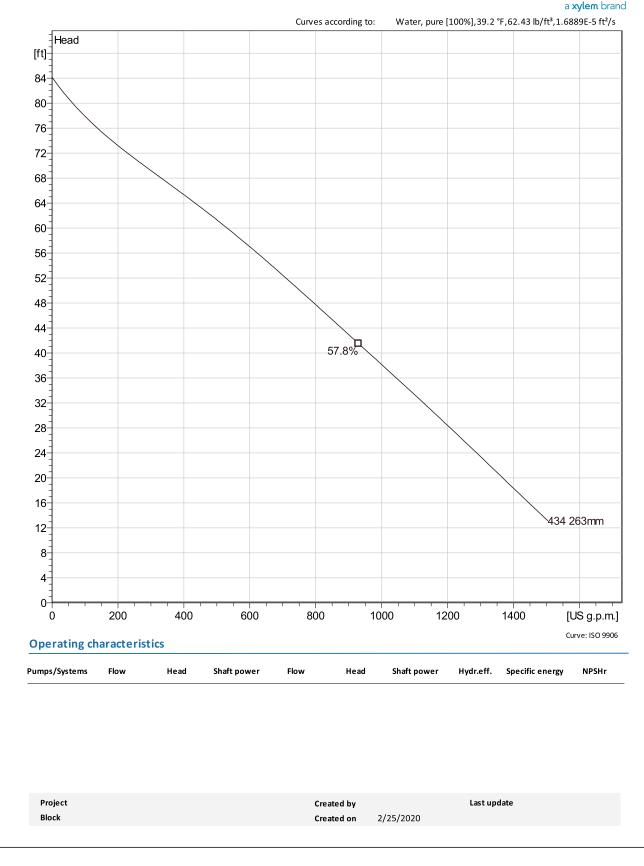
Starts per hour max.

30



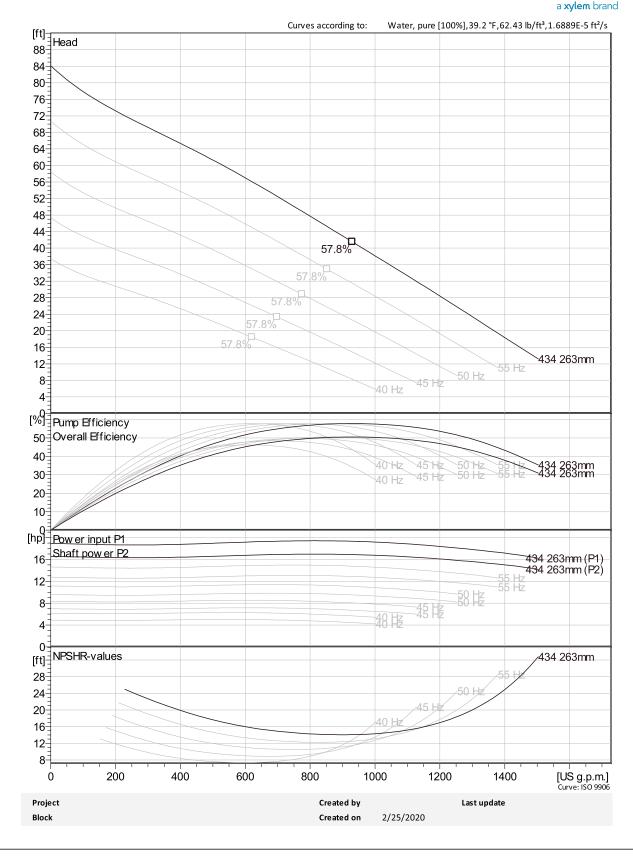


Duty Analysis





VFD Curve



VFD Analysis

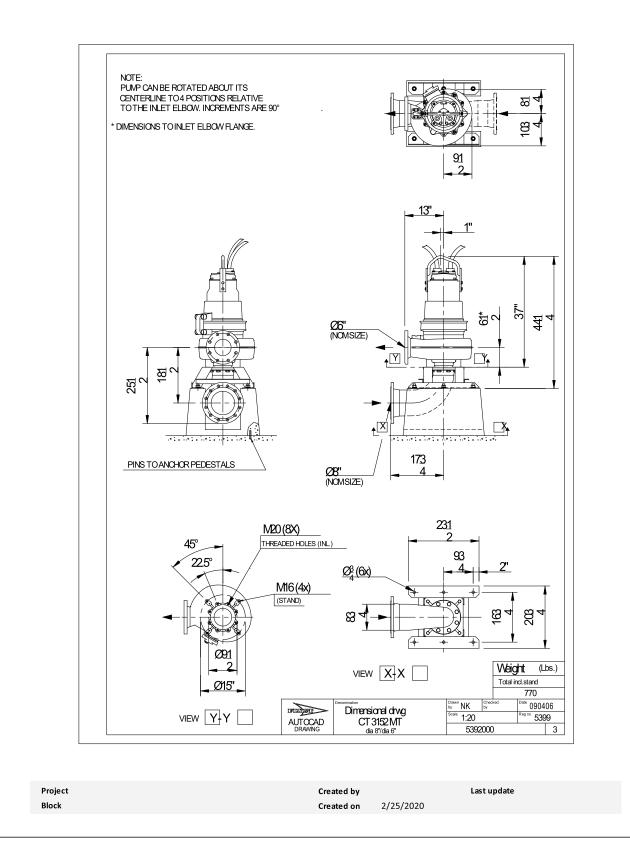


a **xylem** brand

Water, pure [100%],39.2 °F,62.43 lb/ft³,1.6889E-5 ft²/s [ft] ∃Head Curves according to: 88-84-80-76-72-68-64-60-56-52-48-44-57.8% 40-36-57.8% 32-57.8% 28-24-20-57.8% 16-434 263mm 12-55 Hz 50 Hz 8-45 Hz 40 Hz 4-0-200 0 400 600 800 1000 1200 1400 [US g.p.m.] Curve: ISO 9906 **Operating Characteristics** Specific Energy Pumps/Syste Frequency s Flow Shaft power NPSHr Head Flow Head Shaft power Hydr.eff. Project Created by Last update Block 2/25/2020 Created on

Dimensional Drawing





Company: Electric Pump, Inc. Name: Steven Forsythe Date: 03/04/2020

BARNES

3 in

Pump:				
Size:	4SE28*4L	Dimensions:	Suction:	
Туре:	Non-Clog 4"-1D		Discharge:	4 in
Synch Speed:	1800 rpm			
Dia:	6 in			
Curve:	V84606			

Search Criteria:

Flow:	 Near Miss:		
Head:	 Static Head:	0 ft	

Fluid:

Name:	Water		
SG:	1	Vapor Pressure:	0.256 psi a
Density:	62.4 lb/ft ³	Atm Pressure:	14.7 psi a
Viscosity:	1.1 cP		
Temperature:	60 °F		

Pump Limits:

Temperature:104 °FSphere Size:Wkg Pressure:---

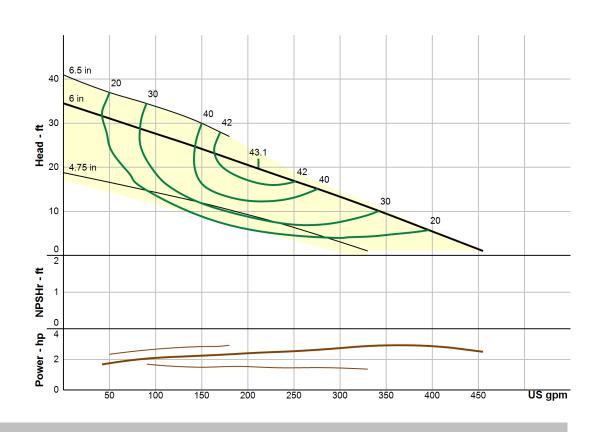
Motor:

Motor is integral to the pump except in 4A, 4B, and 5B catalog sections.

Pump Selection Warnings:

None

Duty	Point
Flow:	211 US gpm
Head:	19.7 ft
Eff:	43%
Power:	2.44 hp
NPSHr:	
Speed:	1750 rpm
Desig	n Curve
Shutoff Head:	34.5 ft
Shutoff dP:	15 psi
Min Flow:	US gpm
BEP: 43.1% @) 211 US gpm
NOL Power:	
2.91 hp (@ 342 US gpm
Max C	Curve
Max Power:	
2.92 hp (@ 180 US gpm



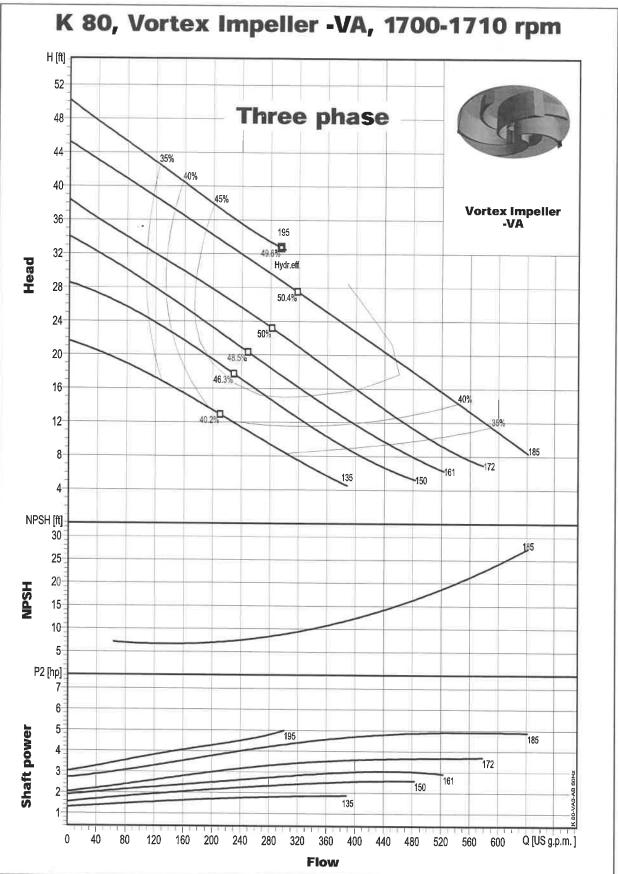
Temp. 104°F (40°C) Continous.

Performance Evaluation:

Flow	Speed	Head	Efficiency	Power	NPSHr
US gpm	rpm	ft	%	hp	
437	1750	2.45	9	2.61	
364	1750	8.33	26	2.89	
291	1750	13.9	38	2.69	
218	1750	19.2	43	2.46	
146	1750	24.5	40	2.23	

Performance curves

P



10



APPENDIX 4 – LIFT STATION #1 STRUCTURAL ASSESSMENT REPORT



STRUCTURAL FACILITY REPORT

Osseo Primary Lift Station 316 Second Street Northeast Osseo, Minnesota 55369

Prepared For: WSB & Associates, Inc.

Prepared By:

James Lundequam, Structural Designer Sandman Structural Engineers 10900 Noble Avenue North Champlin, Minnesota 55316

EXISTING STRUCTURAL SYSTEMS

I. Osseo's Primary Lift Station was built in 1960 and appears to be mainly original. The overall building is one level approximately 22'-10" x 12'-10" with a wet well pit on one side and a dry well pit on the East side.

A. Well Pit Systems:

1. <u>Existing Conditions</u>: The Dry Well pit is approximately 9'-0" X 12'-10" X 28'-6" deep with concrete shaft walls and steel channel supports. There are two pipelines running from the wet well side into this shaft. They're supported on concrete piers.

The Wet Well pit is approximately 6'-0" X 12-10" X 20'-5" deep to the concrete platform. The shaft walls are concrete, the platform is also concrete and has a metal grate access point. There is a main sanitary sewer line coming into the shaft and some other piping as well located in the shaft.

- <u>Deficiencies</u>: Pipe support piers show signs of wear at edges. (see PHOTO 1) A minor amount of corrosion is present on the steel channels inside the dry well side shaft. Some steel elements in the wet well show large amounts of corrosion. (see PHOTOS 2 -3)
- 3. <u>Recommendation</u>: Repair worn corners of the pipe support piers. (S-I.1) Steel should have the corrosion removed and have an applicable epoxy coating system used in recoating the steel. (S-I.2)

B. Ground Floor:

- 1. <u>Existing Conditions</u>: The floor consists of slab on grade This slab appears to be generally in good condition. (see PHOTO 4)
- 2. <u>Deficiencies</u>: There is a left-over housekeeping pad from a piece of equipment that is no longer installed at the site.
- 3. <u>Recommendations:</u> Remove the existing housekeeping pad and patch the slab on grade as needed to facilitate the maintenance of equipment present on site. (S-I.3)

C. Exterior/Interior Wall System:

- 1. <u>Existing Conditions</u>: The wall system consists of tile block on the interior and a brick veneer exterior. Generally, the walls are in good condition with some joints opening and a few cracked CMU tiles/
- 2. <u>Deficiencies</u>: A few exterior joints are cracked and open. A few interior joints are cracked and open. One exterior brick at the wet well door jamb is broken out. There are a few locations of cracked and breaking out interior CMU tiles. (see PHOTO 5-9) The exterior man door for the wet well side is corroded and door jamb block is starting to crack. (see PHOTO 9-10)

3. <u>Recommendations:</u> Repair grout and seal exterior brick veneer. (S-I.4) Replace the one brick that has broken out. (S-I.6) Repair CMU wall joints in other locations as needed. (S-I.5) Repair/Replace broken CMU tiles. (S-I.7) Replace/Repair exterior wet well door. (S-I.8)

D. <u>Roof Systems:</u>

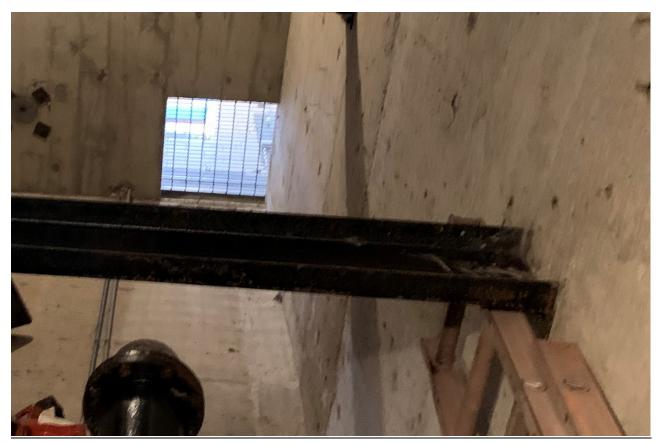
- 1. <u>Existing Conditions</u>: The roof systems consist of a hip and gable wood truss system, plywood sheeting for the decking, felt, and asphalt shingles.
- 2. <u>Deficiencies</u>: The asphalt shingles are starting to show signs of curling; however, it was hard to observe the overall condition of the shingles due to snow cover. (see PHOTO 12) Some of the fascia and soffit wood are deteriorating. (see PHOTO 13) A new opening, per owner request, in the roof system to allow access for pump removal would help facilitate maintenance of the pumps. (see PHOTO 14 for current opening)
- 3. <u>Recommendations</u>: Assess roof in the spring when clear of snow. Potentially replace roofing system with new shingles, felt, and new plywood decking in areas due to discovered soft spots. (S-I.9) Replace damaged soffit and facia boards, coordinate requirements for venting with the roofing contractor. (S-I.10) Frame in a new operable skylight in the roofing system for crane access. (S-I.11)

STRUCTURAL UPGRADE SUMMARY

	PROPOSED UPGRADES		UNITS OF		COST OF
ITEM		QUANTITY	MEASURE	COST/UNIT	UPGRADE
S-I.1	Chip out and repair cracked and spalled concrete at pipe supports.	2	Each	\$ 300.00	\$ 600.00
S-I.2	Remove corrosion, epoxy paint steel in wells.	32	Feet	\$ 37.50	\$ 1,200.00
S-I.3	Chip out housekeeping pad and repair slab on grade as required.	1	Each	\$ 1,200.00	\$ 1,200.00
S-I.4	Repair brick veneer wall joints.	20	Feet	\$ 21.00	\$ 420.00
S-I.5	Repair CMU tile wall joints.	20	Feet	\$ 21.00	\$ 420.00
S-I.6	Replace/Repair damaged brick veneer.	1	Each	\$ 60.00	\$ 60.00
S-I.7	Replace/Repair damaged CMU tile.	30	Square Feet	\$ 33.33	\$ 1,000.00
S-I.8	Repair/Replace exterior man door for wet well.	1	Each	\$ 2,500.00	\$ 2,500.00
S-I.9	Repair/Replace roofing system.	320	Square Feet	\$ 10.00	\$ 3,200.00
S-I.10	Repair/Replace soffit and facia boards/	20	Linear Feet	\$ 10.00	\$ 200.00
S-I.11	New larger opening for crane.	1	Each	\$ 4,500.00	\$ 4,500.00
	TOTAL:				\$ 15,300.00

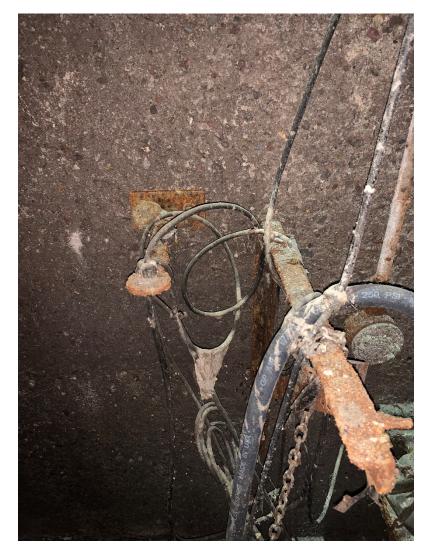


<u>PHOTO 1</u>



<u>PHOTO 2</u>

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<u> PHOTO 3</u>



<u>PHOTO 4</u>



<u>PHOTO 5</u>



<u>PHOTO 6</u>



PHOTO 7



<u> PHOTO 8</u>



<u> PHOTO 9</u>



<u>PHOTO 10</u>



<u>PHOTO 11</u>



<u>PHOTO 12</u>



<u>PHOTO 13</u>



<u>PHOTO 14</u>



Memo

То:	Osseo City Council
From:	Rebecca Kurtz, Jessica Cook and Chris Mickelson, Ehlers
Cc:	Riley Grams, City Administrator
Date:	March 20, 2020
Subject:	Utility Improvements in 2020 Bond Issue

Last fall the City completed a utility rate study that forecasted water, sewer, and storm water rates for the next ten years. One of the goals of the rate study was to ensure that the City could fund needed equipment and capital improvements while maintaining adequate cash balances in each of its utility funds.

Since the rate study was completed, staff and consulting engineers have been refining price estimates and/or receiving bids for the equipment and improvements planned for 2020. For some of the planned work, prices are coming in substantially higher than was anticipated last fall. The charts below compare the capital costs from last fall to current estimates.

Projects	Rate Study 2019	Estimated 2020	Difference
WATER SYSTEM MAINTENANCE	30,000	30,000	0
WATER METERS	365,000	375,000	10,000
ONE TON DUMPTRUCK	13,000	13,000	0
COMPRESSOR	3,672	3,672	0
JETTER	90,000	125,000	35,000
SCADA	75,000	100,000	25,000
PW BUILDING UPGRADE`	19,900	16,600	-3,300
UB SOFTWARE	31,250	65,000	33,750
STREET PROJECTS	50,000	95,431	45,431
TOTAL	677,822	823,703	145,881

Water System

Sewer System

Projects	Rate Study 2019	Estimated 2020	Difference
SEWER SYSTEM MAINTENANCE	15,000	15,000	0
ONE TON DUMPTRUCK	13,000	13,000	0
COMPRESSOR	3,672	3,672	0
JETTER	90,000	125,000	35,000
SCADA	75,000	200,000	125,000
SANITARY PIPE REHAB	250,000	250,000	0
LIFT STATION UPGRADE*	250,000	1,600,000	1,350,000
PW BUILDING UPGRADE	20,100	16,800	-3,300
UB SOFTWARE	31,250	65,000	33,750
STREET PROJECTS	25,000	13,613	-11,387
TOTAL	773,022	2,302,085	1,529,063

*WSB is refining the Lift Station project to try to achieve a lower price, which is not reflected in these projections.

Storm Water System

Projects	Rate Study 2019	Estimated 2020	Difference
ONE TON DUMPTRUCK	13,000	13,000	0
COMPRESSOR	3,672	3,672	0
STREET SWEEPER	225,000	230,000	5,000
JETTER	90,000	125,000	35,000
STORM PIPE REHAB	50,000	50,000	0
STREET PROJECTS	75,000	62,055	-12,945
PUBLIC WORKS BLDG UPGRADE	0	4,200	4,200
STORM MAINTENANCE	10,000	10,000	0
TOTAL	466,672	497,927	31,255

The estimated increases are anticipated to be a worst-case scenario. The lift station project -which is the largest capital expense for the sanitary sewer – has a preliminary project cost of \$1.6 million. Further review by WSB is showing the cost may be able to be decreased. WSB is continuing to review the project to determine if it can be completed at a lower cost but note that the cost has not been finalized and is likely to change.

The impacts calculated below assume a cost of \$1.6 million for the lift station project. If the project can be completed with a lower cost, the impacts will be reduced. Staff will continue to work with WSB to refine this number with the goal of having a firm cost when the City calls for the bond sale on April 13.

Rate Impacts

The cost of capital items can have a significant impact on utility rates. Therefore, we have updated the rate study with the revised cost estimates. The prior and current rate recommendations for water and sewer are in the following chart.

Proposed Water and Sewer Rate Increases

	Annual Rate Increases 2021 - 2029			
Utility	2019 Rate Revised Study Recommendation			
Water	4.50%	4.75%		
Sanitary Sewer	1.50%	4.00%		

The revised water rates are shown in Appendix A, and a comparison of the revised sewer rates with prior projections is shown below.

Proposed Sewer Rates as Compared to Rate Study

		Proposed Sewer Rates						
		2020	2021	2022	2023	2024		
Destant	% Increase	1.50%	4.00%	4.00%	4.00%	4.00%		
Revised Rates	Usage Rate	\$9.72	\$10.11	\$10.51	\$10.93	\$11.37		
Nales	Base Rate	\$50.50	\$52.52	\$54.62	\$56.81	\$59.08		
2019	% Increase	1.50%	1.50%	1.50%	1.50%	1.50%		
Rate	Usage Rate	\$9.72	\$9.87	\$10.01	\$10.16	\$10.32		
Study	Base Rate	\$50.50	\$51.26	\$52.03	\$52.81	\$53.60		

Storm water rates will also need to increase faster than initially projected to accommodate the increased cost of the jetter.

Quarterly Storm Water Rates

	2020	2021	2022	2023	2024
2019 Rate Study	\$ 35.69	\$ 37.65	\$ 39.72	\$ 41.91	\$ 44.21
Revised Rates	\$ 35.69	\$ 38.10	\$ 40.67	\$ 43.42	\$ 46.35

Beyond 2024, storm water rates will need to continue increasing at an annual rate of 6.75% instead of the 5% anticipated in the 2019 rate study.

Sample utility bills with the revised water, sewer, and storm water rates are attached as Appendix B.

Options

We understand that the revised utility rates represent larger increases than the Council had anticipated. We moderated the increases to the greatest extent possible by extending the term of the proposed 2020 bond issue. For example, the debt associated with the lift station was extended from 15 to 20 years, with a positive impact on the utility rates.

We also evaluated the option of delaying projects but found there was no financial benefit to postponing equipment purchases or improvements. In fact, assuming expenses continue to increase 4% per year, delaying the projects causes a greater increase in utility rates than what is shown above. Eliminating some of the capital improvements could allow the City to reduce utility rates below the levels projected in this memo but may reduce or endanger the level of essential utility services the City provides.

Proposed 2020 Bond Issue

In 2020 the City is intending to finance a street project, the utility improvements, and the equipment detailed above. Ehlers proposes to finance all improvements in one bond issue to reduce costs and achieve a competitive interest rate. In general, larger bond issues attract more bidders. As with past bond issues, we will provide the allocation from each funding source for the debt service. In addition, while the bond issue will have a 20-year term to accommodate the needs of the sewer fund, the equipment portion will have a 10-year term and the street project will have a 15-year term to tie to the assessment revenue. The water and storm funds are able to continue to operate and maintain their cash balances with 10- and 15-year debt, so the shorter term will save on interest expense.

After the discussion on March 30, Ehlers will work with staff to incorporate any revisions resulting from the Council's discussion. We are proposing that the Council review the proposed bond issue and call for the sale of the bonds on April 13. The bond sale is scheduled for May 11 with funds available in early June.

Appendix A Proposed Water Rates - 2020 Revisions City of Osseo

		Quarterly Water Rates			
	Current	Proposed Rates			
	2020	2021	2022	2023	2024
Flat Rates					
Minimum (includes 8,000 gallons for single family residential users) 3/4 1 1.5 2 3 4	20.00 20.00 20.00 30.00 40.00 100.00 400.00	20.95 20.95 20.95 31.43 41.90 104.75 419.00	21.95 21.95 21.95 32.92 43.89 109.73 438.90	22.99 22.99 22.99 34.48 45.98 114.94 459.75	24.08 24.08 24.08 36.12 48.16 120.40 481.59
6	400.00	419.00	438.90	459.75	481.59
All Users Residential Tier 1 (8,000 to 16,000 gallons) Tier 2 (16,000-24,000 gallons) Tier 3 (over 24,000 gallons) Multi Family all Usage	4.00 5.00 6.25 4.25	4.19 5.24 6.55 4.45	4.39 5.49 6.86 4.66	4.60 5.75 7.18 4.88	4.82 6.02 7.52 5.12
Commercial Tier 1 (to 50,000 gallons) Tier 2 (50,000-100,000 gallons) Tier 3 (100,000-125,000 gallons) Tier 4 (over 125,000)	4.00 4.60 5.29 6.08	4.19 4.82 5.54 6.37	4.39 5.05 5.80 6.68	4.60 5.29 6.08 6.99	4.82 5.54 6.37 7.32
Irrigation All usage Bulk Water Sales All usage	6.25 6.25	6.55 6.55	6.86 6.86	7.18 7.18	7.52 7.52

Appendix B Sample Residential Utility Bill City of Osseo

	In	npact Ana	lysis on F	Rate Paye	rs
	Proposed Bills, Usage and Fixed Fee				
	2020	2021	2022	2023	2024
	2020	2021	2022	2023	2024
Single Family Residential Property					
(Low User)					
Water (7,500 gallons)	\$40.00	\$41.90	\$43.89	\$45.98	\$48.16
Sewer (5,500 gallons)	\$51.26	\$53.31	\$55.44	\$57.66	\$59.96
Storm Sewer	\$35.69	\$38.10	\$40.67	\$43.42	\$46.35
Total Quarterly Utility Bill	\$126.95	\$133.31	\$140.00	\$147.05	\$154.47
\$ Increase/(Decrease)	\$6.61	\$6.36	\$6.69	\$7.05	\$7.42
Single Femily Residential Presents					
Single Family Residential Property (Median User)					
Water (15,000 gallons)	\$68.00	\$71.23	\$74.61	\$78.16	\$81.87
Sewer (10,000 gallons)	\$51.26	\$53.31	\$55.44	\$57.66	\$59.96
Storm Sewer	\$35.69	\$38.10	\$40.67	\$43.42	\$46.35
Total Quarterly Utility Bill	\$154.95	\$162.64	\$170.73	\$179.23	\$188.18
\$ Increase/(Decrease)	\$11.26	\$7.69	\$8.09	\$8.51	\$8.95
Single Family Residential Property					
(High User)					
Water (37,500 gallons)	\$196.38	\$205.70	\$215.47	\$225.71	\$236.43
Sewer (25,500 gallons)	\$154.85	\$161.04	\$167.48	\$174.18	\$181.15
Storm Sewer	\$35.69	\$38.10	\$40.67	\$43.42	\$46.35
Total Quarterly Utility Bill	\$386.91	\$404.84	\$423.63	\$443.31	\$463.93
\$ Increase/(Decrease)	\$33.46	\$17.93	\$18.78	\$19.68	\$20.62
Commercial Property (Low User)					
Water (6,000 gallons)	\$44.00	\$46.09	\$48.28	\$50.57	\$52.97
Sewer (6,000 gallons)	\$44.00 \$51.26	\$40.09 \$53.31	\$40.20 \$55.44	\$50.57 \$57.66	\$52.97 \$59.96
Storm Sewer=3 REU	\$107.07			\$130.25	
		\$114.30 \$213.70	\$122.01 \$225.72	\$130.25	\$139.04 \$251.08
Total Quarterly Utility Bill \$ Increase/(Decrease)	\$202.33 \$14.33	\$213.70 \$11.37	\$225.73 \$12.04	\$238.48 \$12.75	\$251.98 \$13.50
\$ increase/(Decrease)	\$14.33	\$11.37	\$12.04	\$12.75	\$13.50
Industrial User					
Water (343,500 gallons)	\$1,912.14	\$2,002.97	\$2,098.11	\$2,197.77	\$2,302.17
Sewer (343,500 gallons)	\$3,440.16	\$3,577.77	\$3,720.88	\$3,869.71	\$4,024.50
Storm Sewer=13 REU	\$463.98	\$495.30	\$528.73	\$564.42	\$602.52
Total Quarterly Utility Bill	\$5,816.28	\$6,076.03	\$6,347.72	\$6,631.90	\$6,929.18
\$ Increase/(Decrease)	\$107.35	\$259.75	\$271.68	\$284.18	\$297.28



City of Osseo City Council Work Session Meeting Item

Agenda Item:	Update on City Financial Position Relating to COVID-19 Crisis
Meeting Date: Prepared by:	March 30, 2020 Riley Grams, City Administrator
Attachments:	None

Background:

Councilmembers Johnson and Hultstrom have requested that this item be added to the March 30 work session meeting. They are particularly interested in the City's financial position as it relates to some upcoming bond projects (including the 2020 utility bond project and the 2020 street project). Additionally, they are concerned about lowered property tax receivables from Hennepin County in the second half of 2020, and the first half of 2021 as a direct result of the COVID-19 crisis.

On Monday night, Councilmembers Johnson and Hultstrom will lead the discussion on these topics.

Recommendation/Action Requested:

Staff recommends the City Council discuss the item and direct Staff accordingly.