

**CITY OF STORM LAKE
REGULAR COUNCIL MEETING, CITY HALL
COUNCIL CHAMBERS
MARCH 2, 2020
5:00 PM**



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

AGENDA

- A. Pledge of Allegiance
- B. **Consideration of Changes in Agenda and Setting the Agenda**
- C. **Disclosure by City Council Members**
- 1. Hear the Public
- 2. Consent Agenda
 - A. **Approve Consent Agenda**
 - B. **Buy Local Information**
 - C. **SLPD Code Enforcement Summary**
 - D. **Acknowledge the prior month's Board and Commission Minutes.**
- E. **Approval of Permanent Easement for the 4th & Barton Storm Water Improvements Project with Methodist Manor**
- F. **SLPD City Code Enforcement Summary**
- 3. **Resolution No. 53-R-2019-2020 Approving Single Family Attached, Single Family Detached Dwelling, and Commercial New Construction Incentive**
- 4. **Motion to Approve A Quit Claim Deed - Brash LLC**
- 5. **Motion To Approve A 3-Year Customer Support Agreement On Emergency Backup Generators For The Wastewater Treatment Plant.**
- 6. **Motion To Approve A 3-Year Customer Support Agreement For Emergency Backup Generators For The Water Treatment Department.**
- 7. **Resolution No. 54-R-2019-2020 for Amendment No. 1 to the Contract with Bainbridge Construction for the 4th & Oates Storm Water Project**
- 8. **Public Hearing for Submission of an Application for a Community Development Block Grant - Memorial Lift Station**
- 9. **Resolution No. 55-R-2019-2020 Committing Matching Funds for a Community Development Block Grant - Memorial Lift Station**
- 10. **Resolution No. 56-R-2019-2020 Authorizing Submission for Community Development Block Grant Application - Memorial Lift Station**
- 11.

Motion Setting Public Hearing on Community and Housing Needs Assessment

12. **Resolution No. 57-R-2019-202 Authorizing Execution Of A Termination Agreement By And Between The City Of Storm Lake And FB Storm Lake I, LLC Terminating The Agreement For Private Development By And Between The City Of Storm Lake And FB Storm Lake I, LLC**
13. **Ordinance No. 05-O-2019-2020 for the Division of Revenues under Iowa Code Section 403.19 for South School Urban Renewal Plan**
14. **Resolution No. R-2019-2020 Authorizing Execution Of A Termination Agreement By And Between The City Of Storm Lake And FB Storm Lake I, LLC Terminating The Agreement For Private Development By And Between The City Of Storm Lake And FB Storm Lake I, LLC**
15. **Motion Setting Public Hearing on Fiscal Year 2020-2021 Budget**
16. **Motion to Approve the FY2021 FAST Act Application for Oneida Street Reconstruction Phase 2 Project**
17. **City Council Requested Items**
18. **Adjourn**

Meeting Protocol

If you wish to speak today, please:

1. To speak on an agenda item please approach the podium when that agenda item is called and upon recognition by the Mayor identify yourself by stating your name and address.
2. If your issue is not a topic on the agenda please approach the podium under the "Hear the Public" agenda item and upon recognition by the Mayor identify yourself by stating your name and address.
3. Please keep your remarks to three (3) minutes or less.
4. If you require accommodation for this meeting including but not limited to translation services, hearing assistance, or accessibility please contact the City Clerk at least four (4) hours prior to the start of the meeting.

**If you have concerns about any of the items on the consent agenda, they may be separated from the consent agenda and voted on individually.*

***Ordinances may be read at three consecutive meetings or readings may be waived and ordinances may be passed at only one or two meetings.*



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Staff Summary

3/2/2020

Agenda Item # B.



City of Storm Lake
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REPORT TO: Honorable Mayor and City Council

FROM:

SUBJECT: Consideration of Changes in Agenda and Setting the Agenda

BACKGROUND:

FISCAL IMPACT:

RECOMMENDATION:

Staff Summary

3/2/2020

Agenda Item # C.



City of Storm Lake
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REPORT TO: Honorable Mayor and City Council

FROM:

SUBJECT: Disclosure by City Council Members

BACKGROUND:

FISCAL IMPACT:

RECOMMENDATION:

Staff Summary

3/2/2020

Agenda Item # A.



City of Storm Lake
PO Box 1086
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REPORT TO: Honorable Mayor and City Council

FROM: Mayra Martinez, City Clerk

SUBJECT: **Approve Consent Agenda**

BACKGROUND: The Consent Agenda Includes:

- List of bills for approval
- King's Pointe and Sunrise Pointe disbursements for approval
- Approve the February 17, 2020 City Council Minutes
- Approve Renewal Liquor License for Storm Lake Honda, King's Pointe and Sunrise Golf Course and a New Liquor License for Laisla Restaurant 2
- Acknowledge Board and Commission Minutes
- Approval of Permanent Easement for the 4th and Barton Storm Water Improvement Project with Methodist Manor
- Approve the Code Enforcement Summary (see staff summary)

FISCAL IMPACT: The City will pay the following expenditures:

- List of Bills - - \$461,997.82
- King's Pointe & Sunrise Pointe Golf Course Bills - \$186,704.32
- Liquor License Renewal - \$2572.50

RECOMMENDATION: Approve Consent Agenda

ATTACHMENTS:

Description	Type
☐ List of Bills	List of Bills
☐ Minutes - February 17, 2020	Minutes
☐ King's Pointe and Golf Course - List of Bills	List of Bills
☐ Storm Lake Honda Liquor Application 2020	Application
☐ Storm Lake Honda Liquor Report 2020	Backup Material
☐ King's Pointe Liquor Application 2020	Application
☐ King's Pointe Liquor Report 2020	Backup Material

☐	Sunrise Pointe Golf Course Liquor Application 2020	Application
☐	Sunrise Pointe Golf Course Liquor Report 2020	Backup Material
☐	Laisla Restaurant 2 Liquor Application 2020	Application



Storm Lake, IA

My Buy Local_v1

Payment Date Range: 02/20/2020 - 03/04/2020

Vendor Name	Buy Local Info	Payable Description	Total Payments
BVC			
Buena Vista County Treasurer	BVC	Property Taxes	102,400.00
Control Systems Specialists, LLC	BVC	New Pump Motor for Circulation Pump	1,393.41
Buena Vista County EMS Association	BVC	FY2020 eDispatch Services	450.66
Control Systems Specialists, LLC	BVC	Boiler Controller Inspection	197.00
Buena Vista County Recorder	BVC	January 2020 Recordings	59.00
Buena Vista County Solid Waste	BVC	Recycling	46.28
	BVC Total:	104,546.35	
Contract/Agreement			
United Community Health Center	Contract/Agreement	Reimbursement #7 of CDBG	40,490.00
I & S Group, Inc	Contract/Agreement	Design Services	24,650.00
John Healy	Contract/Agreement	Pay Request #9- 10th & Ontario (Retainage)	17,040.27
Bolton & Menk, Inc	Contract/Agreement	Design Services through 1/31/2020	14,100.00
I & S Group, Inc	Contract/Agreement	General Engineering Services	4,280.29
Local Government Professionals Services, ll	Contract/Agreement	Site File Search Services	110.00
	Contract/Agreement Total:	100,670.56	
Local			
MidAmerican Energy Company	Local	Electric Services	50,533.55
Storm Lake Industrial Corporation	Local	3rd Qtr FY2020 Hotel/Motel Tax Disbursement	13,025.80
Bomgaars Supply, Inc	Local	Supplies	2,600.72
Larson Oil & Distributing Co, Inc	Local	Propane	1,218.75
JNB Acquisition Corporation	Local	Toner	908.81
Edwards Storm Lake	Local	Wheel Alignment	723.43
Larson Oil & Distributing Co, Inc	Local	Propane	595.00
Vetter Equipment	Local	Hyd Hose Repairs	583.53
Philip E Havens	Local	1st Quarter 2020 Council Meetings	500.00
Larson Oil & Distributing Co, Inc	Local	Propane	499.80
Arnold Motor Supply, LLP	Local	Supplies	457.75
Larson Oil & Distributing Co, Inc	Local	Propane	753.39
Fastenal Company	Local	Supplies	319.35
WalMart #01-1526	Local	Supplies	307.17
Larson Oil & Distributing Co, Inc	Local	Oil	299.45
Storm Lake Industrial Corporation	Local	Storm Lake Bucks	290.00
JNB Acquisition Corporation	Local	Copier Maintenance Agreement	248.02
Vetter Equipment	Local	Harness	218.45
Qwest Corporation	Local	Phone Service	206.20
Rust Publishing NWIA, LLC	Local	January 2020 Publications	165.42
Garbage Hauling Service Inc	Local	1st Quarter 2020 Garbage Service	161.25
JNB Acquisition Corporation	Local	Copier Maintenance Agreement	152.39
King's Pointe Resort	Local	Legislative Breakfast Services	132.60
North Lake Truck Repair	Local	Switch	123.52
Hy-Vee, Inc	Local	Supplies	118.55
Larson Oil & Distributing Co, Inc	Local	Tank Rental	100.00
O'Reilly Automotive Inc	Local	Lights	86.60
Storm Lake Hearing Aid Service, Inc	Local	Hearing Screening	84.00
Vetter Equipment	Local	Chainsaw Supplies	82.24
Wiese Plumbing & Heating, Inc	Local	Service Call- Mittlestadt	65.00
Michael P. Reinert	Local	Tube	151.45
Fastenal Company	Local	Gloves	48.11
Reding's Gravel & Excavating Co., Inc	Local	Sand	46.13
Stanton Electric, Inc	Local	Fuses	44.00
Storm Lake Hydraulics Co, Inc	Local	Pipe	37.62
North Lake Truck Repair	Local	Fittings & Hose	35.36
Michael P. Reinert	Local	Collars & Supplies	57.00

My Buy Local_v1

Payment Date Range: 02/20/2020 - 03/04/2020

Vendor Name	Buy Local Info	Payable Description	Total Payments
Graffix Inc	Local	Plaque	25.00
Michael P. Reinert	Local	Tubing	17.10
Michael Rust	Local	Chap Repairs	16.00
Storm Lake Hydraulics Co, Inc	Local	Seals	6.34
		Local Total:	76,044.85
Non-Local			
Midwest Military Equipment	Non-Local	2004 M936 6x6 Wrecker	32,068.00
H-O-H Water Technology, Inc	Non-Local	Polymer	7,573.18
Electric Pump Inc	Non-Local	Bargloff LS Pump Repairs	6,053.56
Mississippi Lime Company	Non-Local	Lime	5,530.70
Malloy Electric & Bearing Supply	Non-Local	Blower Motor Repairs	2,737.30
Central Iowa Distributing, Inc	Non-Local	Cleaning Supplies	1,997.35
Sta-Mel Enterprises, Inc	Non-Local	Deicing Salt	5,770.66
Hallett Materials	Non-Local	Sand	1,729.90
Qualified Presort Service, LLC	Non-Local	Printing Services	1,567.49
Tyler Technologies, Inc	Non-Local	Maintenance License- Time & Attendance	1,543.50
Foundation Analytical Laboratory, Inc	Non-Local	Testing Services	1,489.95
Praxair Inc	Non-Local	Carbon Dioxide	1,414.52
Hallett Materials	Non-Local	Sand	1,266.20
Karl Chevrolet, Inc	Non-Local	Services	1,189.60
Iowa Association of Municipal Utilities	Non-Local	FY2020 Membship	992.00
R & R Products, Inc	Non-Local	Mower Supplies	987.53
Rice Signs LLC	Non-Local	Signs	796.24
Hach Company	Non-Local	Bench Repairs	710.00
Foundation Analytical Laboratory, Inc	Non-Local	Testing Services	550.50
Davis Equipment Corporation	Non-Local	Bushings & Supplies	536.84
Dale Vitito	Non-Local	Case	517.99
Qualified Presort Service, LLC	Non-Local	Printing Services	498.67
Iowa Association of Municipal Utilities	Non-Local	3/25/2020 Pumps Workshop- Registration	460.00
Pattlen Enterprises, Inc	Non-Local	Mower Supplies	413.95
Utility Supply of America, Inc	Non-Local	Testing Supplies	386.59
Road Machinery & Supply Co	Non-Local	Water Pump & Supplies	376.25
RJ Thomas Manufacturing Compnay, Inc	Non-Local	Pet Waste Station Bags	357.00
Mitchell Nasers	Non-Local	Lime Hauling Services	354.75
Central Iowa Distributing, Inc	Non-Local	Cleaning Supplies	317.50
Steffen Truck Equipment	Non-Local	Deflector Kit	233.05
Qualified Presort Service, LLC	Non-Local	Printing Services	215.82
Heiman Inc	Non-Local	Oxygen Sensor	202.15
Cintas First Aid & Safety	Non-Local	First Aid Supplies	193.11
International Association of Chiefs of Police	Non-Local	FY2020 Membership- Cole	190.00
Iowa Association of Municipal Utilities	Non-Local	Water Workshop- Pedersen	160.00
International Code Council	Non-Local	FY2020 Membership	135.00
Iowa Municipal Finance Officers Associatio	Non-Local	Conference Registration	125.00
Tyler Business Forms	Non-Local	1095 Forms	102.57
Dale Vitito	Non-Local	Uniform- Escolona	94.89
Central Iowa Distributing, Inc	Non-Local	Cleaning Supplies	85.00
Iowa Lakes Regional Water	Non-Local	January 2020 Water Service	71.60
Northwest Iowa YES Center	Non-Local	Transporation Services	54.00
Cintas First Aid & Safety	Non-Local	First Aid Supplies	50.21
Region 21 USPCA	Non-Local	FY2020 Membership- Ozzy	50.00
Ace Sign Displays	Non-Local	Picnic Table Plaque	48.00
Workamper News, Inc	Non-Local	Advertising	41.00
Secretary of State	Non-Local	2020 Notary Renewal	30.00
Electric Pump Inc	Non-Local	Supplies	27.85
Iowa Fire Chiefs Association	Non-Local	FY2020 Membership- Jones	25.00
Pattlen Enterprises, Inc	Non-Local	Mower Supplies	23.60
Hach Company	Non-Local	Testing Supplies Returned	-129.10
		Non-Local Total:	82,216.47
Payroll/Refunds			
Friends of the Library	Payroll/Refunds	January 2020 Credit Card Receipts	1,000.00

My Buy Local_v1**Vendor Name**

Custodian of Petty Cash- Jean Cashman

Buy Local Info

Payroll/Refunds

Payable Description

Postage

Payroll/Refunds Total: 1,064.85**Grand Total:** 364,543.08**Payment Date Range: 02/20/2020 - 03/04/2020****Total Payments**

64.85

**REGULAR COUNCIL MEETING, CITY OF STORM LAKE, IOWA, CITY HALL,
FEBRUARY 17, 2020 5:00 P.M.**

Present: Mayor Pro-Tem Jose Ibarra. Council Members Tyson Rice, Dan Smith, and Kevin McKinney. Absent: Council Member Maria Ramos and Mayor Michael Porsch.

Staff present: City Manager Keri Navratil, Assistant City Manager David Derragon, City Attorney Phil Havens, Police Chief Chris Cole, Fire Chief Mike Jones, Water Quality Code Compliance Director Scott Olesen, Library Director Elizabeth Huff, Public Services Supervisor Scott Bonebrake, King's Pointe Manager Mark Clossey, Finance Director Brian Oakleaf, Staff Accountant Tyler Gibbins and City Clerk Mayra Martinez.

Mayor Pro-Tem Ibarra called the meeting to order at 5:00 pm.

Pledge of Allegiance

Agenda - Moved by Council Member Smith to approve setting the agenda as presented. Seconded by Council Member Rice. Vote: All ayes with Council Member Ramos absent. Motion carried.

Disclosure by City Council Members

Hear the Public – None at this time.

Consent Agenda – Moved by Council Member Smith to approve the consent agenda which includes list of bills check #'s 74807 through 74875, EFT's 921 through 952, DFT's 623 through 635, 637, 638, 640 through 652 and 653, King's Pointe and Sunrise Pointe disbursements, February 3, 2020 City Council Minutes, Renewal liquor license for The Boathouse, appoint Tina to the Mayor's Committee on Parks, Trails, and Urban Forest, and the Code Enforcement summary. Seconded by Council Member McKinney. Vote: All ayes with Council Member Ramos absent. Motion carried.

Sunrise Golf Course – Moved by Council Member Smith to adopt Resolution No. 48-R-2019-2020 to approve Sunrise Pointe Golf Course Reciprocal Policy. Seconded by Council Member McKinney. Roll call vote: All ayes with Council Member Ramos absent. Motion carried.

RESOLUTION NO. 48-R-2019-2020

**RESOLUTION APPROVING THE SUNRISE GOLF GOURSE RECIPROCAL POLICY AND
WAIVING GREEN FEES FOR THE RECIPROCAL MEMBERS.**

WHEREAS, the City of Storm Lake owns the Sunrise Golf Course; and

WHEREAS, the City of Storm Lake desires to increase the number of rounds of golf played annually at the course; and

WHEREAS, the City of Storm Lake welcomes the opportunity to showcase the golf course to players from other courses in the Midwest Iowa; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF STORM LAKE, IOWA:

To approve waiving fees for golfers from participating courses visiting Sunrise Pointe Golf Course covered in the Sunrise Golf Course Reciprocal Policy.

PASSED AND APPROVED this 17th day of February, 2020.

Jose Ibarra, Mayor Pro-Tem

ATTEST:

Mayra A. Martinez, City Clerk

Hazard Mitigation Grant Program - Moved by Council Member Rice to adopt Resolution No. 49-R-2019-2020 authorizing local match for Hazard Mitigation Grant Program. Seconded by Council Member McKinney. Roll call vote: All ayes with Council Member Ramos absent. Motion carried.

LOCAL MATCH RESOLUTION # 49-R-2019-2020
FOR THE
HAZARD MITIGATION GRANT PROGRAM

WHEREAS, City of Storm Lake (hereinafter called "the Subgrantee"), County of (jurisdiction)

Buena Vista, has made application through the Iowa Homeland Security and Emergency Management

Division (HSEMD) to the Federal Emergency Management Agency (FEMA) for funding from the Hazard Mitigation Grant Program, in the amount of \$24,500 for the total project cost,

And

WHEREAS, the Subgrantee recognizes the fact that this grant is based on a cost share basis with the federal share not exceeding 75%, state share not exceeding 10%, and the local share being a **minimum** of 15% of the total project cost. The **minimum** 15% local share can be either cash or in-kind match.

And

THEREFORE, the Subgrantee agrees to provide and make available up to \$4,000.00 (Four-thousand dollars) of local monies to be used to meet the **minimum** 15% match requirement for this mitigation grant application.

The resolution was passed and approved this _____ day of _____, 20____.

Signatures of Council or Board Members:

Council or Board Member

Council or Board Member

Council or Board Member

Council or Board Member

Council or Board Member

Council or Board Member

Council or Board Member

Council or Board Member

Council or Board Member

Council or Board Member

I submit this form for inclusion with the HMGP Project Application.

Print Name of Authorized Representative

Authorized Representative's Signature and Date

4th and Barton Storm Water Improvement Project - Moved by Council Member McKinney to adopt Resolution No. 50-R-2019-2020 to Award the bid for the 4th & Barton Storm Sewer Improvements Project. Seconded by Council Member Smith. Roll call vote: All ayes with Council Member Ramos absent. Motion carried.

RESOLUTION NO. 50-R-2019-2020

RESOLUTION TO AWARD THE BID FOR THE 4TH & BARTON STORM WATER IMPROVEMENTS PROJECT

WHEREAS, the plans, specifications, form of contract, estimate of cost, and award bid were filed with the CITY for the construction of certain public improvements described in general as the 4th & Barton Storm Water Improvements Project; and

WHEREAS, notice of hearing on plans, specifications, form of contract and estimate of cost for said public improvements was published as required by law:

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF STORM LAKE, IOWA;

Section 1. That the following bid for the construction of certain public improvements described in general as the 4th & Barton Storm Water Project, is hereby accepted, the same being the lowest responsible bid received for said work, as follows:

Contractor: Healy Excavating
Amount of bid: \$591,582.60
Portion of bid: All

Section 2. That the Mayor and Clerk are hereby directed to execute contract with the contractor for the construction of said public improvements, said contract to be binding on the City, contingent to obtaining all the required concurrences and consents.

PASSED AND APPROVED this 17th day of February 2020.

Jose Ibarra, Mayor Pro-Tem

ATTEST:

Mayra A. Martinez, City Clerk

Memorial Lift Station CDBG - Moved by Council Member Smith to setting March 2, 2020, at 5:00 pm at the City Council Chamber for a public hearing for submission of an application for a Community Development Block Grant - Memorial Lift Station. Seconded by Council Member McKinney. Vote: All ayes with Council Member Ramos absent. Motion carried.

FEMA Lake Bank Restoration Project - Mayor Pro-tem Ibarra opened the public hearing for the FEMA Lake Bank Restoration Project Plans, Specifications and Form of Contract stating this was the time and place for any comments. Hearing no comments Mayor Pro-tem Ibarra closed the public hearing.

Moved by Council Member Rice to adopt Resolution No. 51-R-2019-2020 Awarding the Bid for the FEMA Lake Bank Restoration Project Plans, Specifications and Form of Contract. Seconded by Council Member McKinney. Roll call vote: All ayes with Council Member Ramos absent. Motion carried.

RESOLUTION NO. 51-R-2019-2020

RESOLUTION ADOPTING PLANS, SPECIFICATIONS, FORM OF CONTRACT, ESTIMATE OF COST, BID AND AWARD CONTRACT FOR THE FEMA LAKE BANK RESTORATION PROJECT

WHEREAS, the plans, specifications, form of contract, estimate of cost, and award bid were filed with the CITY for the construction of certain public improvements described in general as the FEMA Lake Bank Restoration Project; and

WHEREAS, notice of hearing on plans, specifications, form of contract and estimate of cost for said public improvements was published as required by law:

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF STORM LAKE, IOWA;

Section 1. That the said plans, specifications, form of contract, estimate of cost, and award of bid are hereby approved as the plans, specifications, form of contract, estimate of cost and award bid for said public improvements, as described in the preamble of this Resolution.

Section 2. That the following bid for the construction of certain public improvements described in general as the FEMA Lake Bank Restoration Project, is hereby accepted, the same being the lowest responsible bid received for said work, as follows:

Contractor: Redig's - Storm Lake, IA
Amount of bid: \$75,606.50
Portion of bid: All

Section 3. That the Mayor and Clerk are hereby directed to execute contract with the contractor for the construction of said public improvements, said contract to be binding on the City, contingent to obtaining all the required concurrences and consents.

PASSED AND APPROVED this 17th day of February 2020.

Jose Ibarra, Mayor Pro-Tem

ATTEST:

Mayra A. Martinez, City Clerk

CIP 2021-2025 – Mayor Pro-Tem Ibarra opened the public Hearing for Fiscal Year 2021-2025 Proposed Capital Improvement Plan stating this was the time and place for comments. Dales Philips commented that he believes that the campground is needs some upkeep and suggested to remove the old shower/bathrooms to add additional camping sites. City Manager Navratil informed the public that there are plans in doing some updates to the campground. Hearing no additional comments. Mayor Pro-tem Ibarra closed the public hearing.

Moved by Council Member McKinney to adopt Resolution No. 52-R-2019-2020 approving Fiscal Year 2021-2025 Proposed Capital Improvement Plan. Seconded by Council Member Smith. Roll call vote: All ayes with Council Member Ramos absent. Motion carried.

RESOLUTION NO. 52-R-2019-2020

RESOLUTION ADOPTING THE CITY OF STORM LAKE 5-YEAR CAPITAL IMPROVEMENTS PLAN

WHEREAS, the City of Storm Lake has a need to develop a 5-Year Capital Improvements Plan that will assist city staff and the City Council in the development of long term capital funding priorities; and

WHEREAS, each department of the City of Storm Lake has submitted and prioritized potential projects for the next five fiscal years; and

WHEREAS, the City Manager and City Council have reviewed and prioritized those projects based on potential funding sources in each fund; and

WHEREAS, the proposed 5-Year Capital Improvements Plan has been reviewed and commented on by the City Council during their Budget Workshop in February 3, 2020.

NOW, THEREFORE BE IT HEREBY RESOLVED, that the Storm Lake City Council formally approves the City's FY 2021-2025 5-Year Capital Improvement Plan as a planning document for the entire city organization.

PASSED AND APPROVED this 17th day of February, 2020.

Jose Ibarra, Mayor Pro-Tem

ATTEST:

Mayra A. Martinez, City Clerk

Recess at 5:25 pm

Reconvene at 5:33 pm

Budget Work Session – Council and staff reviewed King's Pointe and General Fund Operations and Maintenance budget.

KP Budget - No comments received from the public; John Mullen with the Storm Lake Radio commented that King's Pointe is one of the best facilities on which to put money into improvements. Special Levies and Revenues – No Public Comments

RUT – Michelle Smith asked why the road crew is down three people; Two currently authorized positions open and, if funded in the upcoming budget, an additional new position. Recruiting is underway.

Band – Andriette Wickstrom commented that the 2 pm concerts at the bandshell in the park are appreciated by the people.

Marina – There will be an update regarding the Marina through a work session on April 20th \$10,000 for a new dock - add \$10,000 increase to \$20,000. with couple of benches and bumpers added to the FY 2021 proposed budget.

Adjourn - Moved by Council Member McKinney to adjourn at 7:00 pm. Seconded by Council Member Rice. Vote: All ayes with Council Member Ramos absent. Motion carried.

Michael Porsch, Mayor

ATTEST:

Mayra A. Martinez, City Clerk

King's Pointe Resort

Claims Publication

From 2/13/2020 to 2/27/2020

Vendor	Number	Amount
1000bulbs.com	Supplies	\$370.94
360 Custom Designs, LLC	Services	\$416.00
Alliant Energy	Utilities	\$1,017.72
American Soc of Comps, Authors and Publish	Services	\$435.49
American Travel Solutions	Services	\$11.90
Bev Spot	Services	\$348.00
Bottling Group, LLC	Beverages	\$2,892.03
Buena Vista Regional Medical Center	Services	\$46.00
CenterPoint Energy Services, Inc	Utilities	\$11,479.93
Cintas Corporation	Supplies	\$3,102.45
Color-ize	Supplies	\$437.21
COUNSEL	Services	\$150.05
CoxJohnson Corporation	Services	\$750.00
CTS Systems, Inc.	Supplies	\$34.51
Doll Distributing	Beverages	\$970.90
ECOLAB	Supplies	\$2,565.50
Expedia, Inc.	Services	\$2,621.92
Feld Fire	Supplies	\$90.00
Ferguson Enterprises Enterprises	Supplies	\$121.31
Fox World Travel	Services	\$12.51
Frigitec Inc.	Supplies	\$484.04
G & A Corp	Services	\$2,892.03
G & R Controls, Inc.	Services	\$135.00
Garbage Hauling Service, Inc.	Utilities	\$483.24
Genesis Development	Services	\$240.00
Grainger	Services	\$392.16
HyVee	Food/Bev	\$1,512.01
Iowa Dept of Revenue	Taxes	\$5,000.00
Johnson Brothers	Beverages	\$994.10
Joyce M. Smith dba Joyce's Greenhouse	Services	\$600.00
Julius Cleaners	Services	\$98.05
KAYL/KKIA	Advertising	\$1,837.00
KTIV Television Inc.	Advertising	\$2,807.00
M3 Accounting + Analytics	Services	\$704.21
Mangold Environmental Testing, Inc.	Services	\$195.00
Mark Clossey	Reimbursement	\$200.73
Martin Brothers	Food	\$7,857.62
Mediacom	Utilities	\$472.90
Melanders	Supplies	\$275.00
Michael P. Reinert dba Olsen Welding & Machine	Services	\$45.00
MidAmerican Energy	Utilities	\$12,587.26
Midwestern Mechanical of Iowa, Inc.	Services	\$17,143.58
Office Elements	Supplies	\$201.66
Personnel Concepts	Services	\$216.40
Pilot Tribune	Advertising	\$33.60
Pitney Bowes	Postage	\$320.89
Rebnord Technologies, Inc.	Services	\$2,717.53

Rex Rimmer	Reimbursement	\$180.00
Shift 4	Services	\$117.35
Steven A. Beeck dba Steve's Window Service	Services	\$319.25
Storm Lake Ace Hardware	Supplies	\$50.70
Storm Lake Rotary Club	Membership	\$125.00
Storm Lake Times	Advertising	\$470.20
STR, Inc.	Supplies	\$1,550.00
Sysco Iowa, Inc.	Food	\$4,427.04
Verizon Wireless	Utilities	\$167.32
Weigand Omega Management Payroll 2/19/2020	Payroll	\$62,362.01
Weigand-Omega Management Fee 2/14/2020	Services	\$28,144.71
Wells Fargo Financial Leasing, Inc.	Services	\$470.36
		\$186,704.32

Applicant License Application ()

Name of Applicant: <u>STORM LAKE CYCLES, INC.</u>		
Name of Business (DBA): <u>STORM LAKE HONDA</u>		
Address of Premises: <u>3040 EXPANSION BLVD.</u>		
City <u>Storm Lake</u>	County: <u>Buena Vista</u>	Zip: <u>50588</u>
Business <u>(712) 732-2460</u>		
Mailing <u>3040 EXPANSION BLVD.</u>		
City <u>Storm Lake</u>	State <u>IA</u>	Zip: <u>50588</u>

Contact Person

Name <u>ASHLYN MORSE</u>	
Phone: <u>(712) 732-2460</u>	Email <u>ASHLYN@STORMLAKEHONDA.COM</u>

Classification Class B Beer (BB) (Includes Wine Coolers)

Term:5 days

Effective Date: 03/09/2020

Expiration Date: 01/01/1900

Privileges:

Class B Beer (BB) (Includes Wine Coolers)

Status of Business

BusinessType: <u>Privately Held Corporation</u>	
Corporate ID Number: <u>XXXXXXXXXX</u>	Federal Employer ID <u>XXXXXXXXXX</u>

Ownership

LARRY SCHULTZ

First Name: <u>LARRY</u>	Last Name: <u>SCHULTZ</u>
City: <u>STORM LAKE</u>	State: <u>Iowa</u> Zip: <u>50588</u>
Position: <u>PRESIDENT</u>	
% of Ownership: <u>100.00%</u>	U.S. Citizen: <u>Yes</u>

Insurance Company Information

Insurance Company: <u>Illinois Union Insurance Company</u>	
Policy Effective Date:	Policy Expiration
Bond Effective	Dram Cancel Date:
Outdoor Service Effective	Outdoor Service Expiration
Temp Transfer Effective	Temp Transfer Expiration Date:

M E M O R A N D U M

TO: MAYRA MARTINEZ

FROM: CHRIS COLE

DATE: February 18, 2020

REFERENCE: LIQUOR LICENSE
STORM LAKE HONDA
3040 EXPANSION BLVD

Discussion: Per your request I have accessed the department computer for calls of interest to the aforementioned establishment. The calls are as follows:

2-15-2019 to
02-15-2020

INCIDENTS

Business Assist	29
Business Security	91
Citizen Assist	1
Keys locked in Car	1
Motorist Assist	2
Open Window/Door	3
Station Assignment	2
Vehicle Stop	2

ARRESTS none

Recommendation: Approval of liquor license.

Applicant License Application (LB0002003)

Name of Applicant: <u>City of Storm Lake</u>		
Name of Business (DBA): <u>King's Pointe Waterpark Resort</u>		
Address of Premises: <u>1520 E. Lakeshore Drive</u>		
City <u>Storm Lake</u>	County: <u>Buena Vista</u>	Zip: <u>50588</u>
Business	<u>(712) 213-4500</u>	
Mailing	<u>PO Box 1086</u>	
City <u>Storm Lake</u>	State <u>IA</u>	Zip: <u>50588</u>

Contact Person

Name	<u>Keri Navratil</u>		
Phone:	<u>(712) 732-8000</u>	Email	<u>cityhall@stormlake.org</u>

Classification Class B Liquor License (LB) (Hotel/Motel)

Term:12 months

Effective Date: 04/01/2020

Expiration Date: 03/31/2021

Privileges:

Catering Privilege

Class B Liquor License (LB) (Hotel/Motel)

Outdoor Service

Sunday Sales

Status of Business

BusinessType:	<u>Municipality</u>		
Corporate ID Number:	<u>XXXXXXXXXX</u>	Federal Employer ID	<u>XXXXXXXXXX</u>

Ownership

Jon Kruse

First Name: Jon **Last Name:** Kruse

City: Storm Lake **State:** Iowa **Zip:** 50588

Position: Mayor

% of Ownership: 0.00% **U.S. Citizen:** Yes

Insurance Company Information

Insurance Company: <u>Scottsdale Insurance Company</u>	
Policy Effective Date:	Policy Expiration
Bond Effective	Dram Cancel Date:
Outdoor Service Effective	Outdoor Service Expiration

Temp Transfer Effective

Temp Transfer Expiration Date:

M E M O R A N D U M

TO: MAYRA MARTINEZ

FROM: CHRIS COLE

DATE: January 24, 2020

REFERENCE: LIQUOR LICENSE RENEWAL
KING'S POINTE
1520 E LAKESHORE DR

Discussion: Per your request I have accessed the department computer for calls of interest to the aforementioned establishment. The calls are as follows:

	3-11-2018 to 1-20-2019	1-21-2019 to 1-21-2020
INCIDENTS		
911 Hang Up Call	8	5
Abandoned Vehicle	1	1
Accident	2	3
Ambulance Assist	10	6
Animal Complaint	0	2
Assault	1	0
Bike Patrol	1	5
Business Assist	3	1
Business Security	145	157
Burglar Alarm	3	0
Child Abuse - Physical	1	0
Citizen Assist	2	2
City/County Department Assist	1	1
Criminal Mischief	0	2
Disturbance	2	1
Domestic	1	0
Drug Investigation	2	1
Extra Security	0	1
Fight	2	0
Fire Department Assist	1	6
Found Property	1	2
General Information	0	2
Harassment	0	1
Hit and Run	0	2
Intoxicated Driver	2	0

Intoxicated Pedestrian	2	1
Juvenile Problem	0	1
Keys Locked In Car	5	4
Law Department Assist	0	2
Lost Child	1	0
Lost Property	1	0
Meeting	7	6
Missing Person Juvenile	1	0
Motorist Assist	1	1
Open Window/Door	1	0
PR/Talk/Presentation	24	41
Radar Trailer	2	0
Station Assignment	8	8
Street Beat	3	2
Suspicious Activity	1	0
Suspicious Person	2	0
Suspicious Vehicle	0	1
Theft	3	4
Traffic Control	2	0
Training	1	8
Vehicle Stop	21	26
Warrant Service	2	0
Welfare Check	0	1

ARRESTS

Assault	1	0
Disorderly Conduct	5	1
Drug Trafficking	0	1
Fail to Appear	0	1
Possess Alcohol as Minor	1	0
Possession of Controlled Substance	0	2
Possession of Drug Paraphernalia	0	1
Possession of Marijuana	0	1
Public Intoxication	3	1

Recommendation: Approval of liquor license

Applicant License Application (LC0030489)

Name of Applicant: <u>City of Storm Lake</u>		
Name of Business (DBA): <u>Sunrise Pointe Golf Course</u>		
Address of Premises: <u>1528 Lakeshore Dr</u>		
City <u>Storm Lake</u>	County: <u>Buena Vista</u>	Zip: <u>50588</u>
Business	<u>(712) 213-4500</u>	
Mailing	<u>PO Box 1086</u>	
City <u>Storm Lake</u>	State <u>IA</u>	Zip: <u>50588</u>

Contact Person

Name <u>Keri Navratil</u>	
Phone: <u>(712) 732-8000</u>	Email <u>cityhall@stormlake.org</u>

Classification Class C Liquor License (LC) (Commercial)

Term:12 months

Effective Date: 04/01/2020

Expiration Date: 03/31/2021

Privileges:

Class C Liquor License (LC) (Commercial)

Outdoor Service

Sunday Sales

Status of Business

BusinessType: <u>Municipality</u>	
Corporate ID Number: <u>XXXXXXXXXX</u>	Federal Employer ID <u>XXXXXXXXXX</u>

Ownership

Keri Navratil

First Name: <u>Keri</u>	Last Name: <u>Navratil</u>	
City: <u>Storm Lake</u>	State: <u>Iowa</u>	Zip: <u>50588</u>
Position: <u>City Manager</u>		
% of Ownership: <u>0.00%</u>	U.S. Citizen: <u>Yes</u>	

Michael Porsch

First Name: <u>Michael</u>	Last Name: <u>Porsch</u>	
City: <u>Storm Lake</u>	State: <u>Iowa</u>	Zip: <u>50588</u>
Position: <u>Mayor</u>		
% of Ownership: <u>0.00%</u>	U.S. Citizen: <u>Yes</u>	

Insurance Company Information

Insurance Company: <u>Scottsdale Insurance Company</u>

Insurance Company: Scottsdale Insurance Company

Policy Effective Date:

Policy Expiration

Bond Effective

Dram Cancel Date:

Outdoor Service Effective

Outdoor Service Expiration

Temp Transfer Effective

Temp Transfer Expiration Date:

M E M O R A N D U M

TO: MAYRA MARTINEZ

FROM: CHRIS COLE

DATE: January 24, 2020

REFERENCE: LIQUOR LICENSE RENEWAL
SUNRISE POINTE GOLF COURSE
1528 E LAKESHORE DR

Discussion: Per your request I have accessed the department computer for calls of interest to the aforementioned establishment. The calls are as follows:

	3-11-2018 to 1-20-2019	1-21-2019 to 1-21-2019
INCIDENTS		
911 Hang up call	2	2
Accident	1	0
Ambulance Call	1	0
Bar Check	3	2
Burglar Alarm	16	14
Business Security	48	24
Citizen Assist	1	0
City/Co Dept Assist	1	1
Found Property	0	1
General Information	1	0
Meeting	2	0
Motorist Assist	1	0
Open Window/Door	5	2
Pedestrian Stop	1	0
PR/Talk/Presentation	2	7
Scam	0	1
Station Assignment	1	0
Street Beat	3	0
Vandalism	0	1
Vehicle Stop	13	11
ARRESTS	none	none

Recommendation: Approval of liquor license.

Applicant License Application ()

Name of Applicant: <u>Lalsla Restaurant 2, Inc.</u>		
Name of Business (DBA): <u>Lalsla Restaurant 2</u>		
Address of Premises: <u>723 Lake Avenue North</u>		
City <u>Storm Lake</u>	County: <u>Buena Vista</u>	Zip: <u>50588</u>
Business <u>(712) 213-1050</u>		
Mailing <u>723 Lake Avenue North</u>		
City <u>Storm Lake</u>	State <u>IA</u>	Zip: <u>50588</u>

Contact Person

Name <u>Edgar DeLuna</u>	
Phone: <u>(712) 259-8654</u>	Email <u>edgar.deluna11@gmail.com</u>

Classification Class C Liquor License (LC) (Commercial)

Term:12 months

Effective Date: 03/10/2020

Expiration Date: 01/01/1900

Privileges:

Class C Liquor License (LC) (Commercial)

Status of Business

BusinessType: <u>Privately Held Corporation</u>	
Corporate ID Number: <u>XXXXXXXXXX</u>	Federal Employer ID <u>XXXXXXXXXX</u>

Ownership

Brian Martinez

First Name: <u>Brian</u>	Last Name: <u>Martinez</u>	
City: <u>South Sioux City</u>	State: <u>Nebraska</u>	Zip: <u>68776</u>
Position: <u>Sole Shareholder, Director</u>		
% of Ownership: <u>100.00%</u>	U.S. Citizen: <u>Yes</u>	

Insurance Company Information

Insurance Company: <u>Auto Owners Insurance Company</u>	
Policy Effective Date:	Policy Expiration
Bond Effective	Dram Cancel Date:
Outdoor Service Effective	Outdoor Service Expiration
Temp Transfer Effective	Temp Transfer Expiration Date:

Staff Summary

3/2/2020

Agenda Item # B.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Mayra Martinez, City Clerk

SUBJECT: **Buy Local Information**

BACKGROUND: Early in 2011 during a Study Session discussion Council asked staff to look at putting together some analysis information regarding the amount of purchases made locally. We have pulled that information together and a provided a summary of purchases identified in the current list of bills to be approved that are purchased locally (within the City of Storm Lake), within Buena Vista County, and outside of Buena Vista County are presented here for Council's review. This information is presented for for both the City and King's Pointe's bills.

As the reader reviews the information they should note the following key notes:

- Costs associated with any major capital project (those bid under the State of Iowa Bid Law) are excluded from the calculation
- Costs associated with travel is excluded from the calculation and %
- Costs associated with payroll is excluded from the calculation and %
- In some cases there is only one vendor or an item is only available from vendors outside of the City limits and/or Buena Vista County – we have not identified these
- Some departments have fairly minor budgets and a major purchase can skew the % and or amount for a given review period (For Example: the Airport may have normally \$4,000 - \$6,000 in expenses until they purchase Jet Fuel or Av Gas which can be \$10,000 + and as a vendor who is not local this can skew the information for that review period)
- Local has been determined to be has an office front in the

area and based on where the office front is located for local vs. BV County (For Example: Wal-Mart is considered local since they have a store in Storm Lake even though their headquarters is not located here)

As with all analytical data it is possible to interpret the numbers in a variety of ways and as we move forward we would be happy to provide further detail and or revise the way in which we show the data. Likewise if you have any questions or concerns please don't hesitate to contact city staff.

FISCAL IMPACT:

Breakout	Calculated Expenses
Buena Vista County	\$ 104,546.35
Contract/Agreement	\$ 100,670.56
Local	\$ 76,044.85
Non- Local	\$ 82,216.47
Payroll/Refunds/Pyrl Tax & Ins	\$ 98,519.59
Total Expenses	\$ 461,997.82
Supporting Documents Attached	

RECOMMENDATION: Review Buy Local Information

Staff Summary

3/2/2020

Agenda Item # C.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Chris Cole, Assistant Police Chief

SUBJECT: **SLPD Code Enforcement Summary**

BACKGROUND: 01-30-2020 to 02-12-2020
Total Contacts 51
CCE 4
Junk Vehicle 2
Trash Accumulation 1
Snow Removal 44
Citations 0

FISCAL IMPACT: None

RECOMMENDATION: No Action Necessary

Staff Summary

3/2/2020

Agenda Item # D.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM:

SUBJECT: **Acknowledge the prior month's Board and Commission Minutes.**

BACKGROUND: Minutes to approve are as follows:
Airport Commission Minutes
Library Board Minutes

FISCAL IMPACT: None

RECOMMENDATION: Acknowledge Minutes

ATTACHMENTS:

Description	Type
□ Airport Commission February 2020 Minutes	Minutes
□ Library Board February 2020 Minutes	Minutes

**Storm Lake Airport Commission
Regular Meeting
Airport Terminal
Monday, February 10, 2020 4:00 PM**

Present: Commission Members Bob Ansorge, Dan Richardson, Maxine Lampe. Absent: Commissioners Sara Huddleston and Doug White. Others Present: Jim Bartholomew, John Bartholomew and Tyler Gibbins.

Chairman Bob Ansorge called the meeting to order at 4:08 pm.

Hear the Public – No comments.

Minutes – Moved by Commissioner Lampe to approve the January 13, 2020 Airport Commission Minutes. Seconded by Commissioner Richardson. Vote: All ayes with Commissioners Huddleston and White absent. Motion carried.

Financial Report – Moved by Commissioner Richardson to approve the financial reports for January 2020. Seconded by Commissioner Lampe. Vote: All ayes with Commissioners Huddleston and White absent. Motion carried.

Fuel Report – Moved by Commissioner Lampe to approve the January Fuel Report. Seconded by Commissioner Ricahrdson. Vote: All ayes with Commissioners Huddleston and White absent. Motion carried.

Airport Manager's Monthly Report – Purchased a new router from Wal-Mart and called Evertek to repair the internet that was down. Cleaned snow, shoveled sidewalks around the terminal building and plowed the runways, taxiway and ramp on 1/09/20, 1/13/20, 1/14/20, moved snow 01/18/20 through 1/22/20, 1/26/20, 1/27/20 and 1/31/20. Cleaned the office and painted, plowed snow away from 17-35/13-31 and ramp on 1/23/20. R& R Electric repaired the security lights and finished with the lights outside so that all the lights are now working 100 %. No readings were taken for the fuel load on January 22, 2020; meter readings were taken on February 6, 2020 at 10:30 am. Received calls from some hangar renters complaining about the snow.

Courtesy Car Usage: None

Fuel Meter Reading: Jet A 467,307 – 100 LL 113,844.4

Administration Report – Staff contues to work on the budget for Fiscal Year 2021. The State will be contracting with a vendor to paint airport runways and taxiways around the state. Staff has requested from the Iowa DOT to be considered for this program.

The deadline for FY2021 State grant applications will be April 30, 2020. At this time, there are no projects that qualify for state funding for the airport.

Adjourn – Moved by Commissioner Richardson to adjourn the meeting at 4:30 pm. Seconded by Commissioner Lampe. Vote: All ayes with Commissioners Huddleston and White absent. Motion carried

Mayra Martinez, City Clerk



Library Board Meeting, City of Storm Lake, Library Meeting Room, February 10, 2020, 4:00 p.m.

Present: Board President Mary Kay Hudspeth, Candy Clough, Jim Eliason, Sue Lyngaas, Patrick Mullaney and Barb Wells. Also present, Elizabeth Huff, Library Director and Wendy Ewalt, Friends' Treasurer.

Board President Hudspeth called the meeting to order at 4:00 p.m.

Disclosure by Library Board Members – none.

Friends' Chair Selection – Wendy Ewalt, Friends of the Library Treasurer presented a chair to the Trustees. Four chair samples were voted on by the Library Patrons. It was the Lumina chair that the Friends Board approved at their February 5, 2020 meeting. Designer opinions are regarding the wide range of fabrics are currently being sought after. Another Lumina chair sample with padding has been requested from a showroom.

Minutes – Moved by Board Member Lyngaas to approve January Minutes. Seconded by Board Member Wells. Vote all ayes. Motion carried.

Director's Report – Director explained the period of Family Leave she had to take during the last week of January and appreciated everyone's support. The Digital Bar Chart has a new category of Wifi monthly usage. Board President Hudspeth reported on the Velma Gilbert Estate sold shares which netted \$8265.00. Iowa PBS library program for Molly of Denali will be delayed one week. A Summer Intern post was given to BVU Career and Placement services. Additional Student Library Accounts have been delayed due to the new Apollo interface.

Bills – Moved by Board Member Eliason to approve February Bills. Seconded by Board Member Lyngaas. Vote all ayes. Motion carried.

Friends' Funds from Credit Card Transactions – Moved by Board Member Eliason to approve the Friends' Fund of \$1000.00 for credit card transactions. Seconded by Board Member Mullaney. Vote all ayes. Motion carried.

Questions before Adjournment – Board Member Eliason pointed out that the Ledgers were missed during the Director's Report. He asked about the Supply Line Item which had \$600 remaining. The Director explained that it was always an under budgeted line item. He asked about the Fee's Missing Page. The Director explained if a page was missing in a book, it may be replaced by a photocopy or the entire book may be replaced. Board Member Clough felt the Missing Page Fee was too low which upon general opinion will be raised at the next meeting.

Adjourn – Moved by Board Member Mullaney to adjourn meeting at 4:57 p.m. Seconded by Board Member Lyngaas. Vote all ayes. Motion carried.

Elizabeth Huff, Library Director.

Please note the above is an unapproved draft of minutes and will be approved by the Board of Trustees on March 9, 2020.

Staff Summary

3/2/2020

Agenda Item # E.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: David Derragon, Assistant City Manager

SUBJECT: **Approval of Permanent Easement for the 4th & Barton Storm Water Improvements Project with Methodist Manor**

BACKGROUND: Eight NRDC-HUD funded projects were originally approved. The 4th & Barton Storm Sewer Improvements Project is one of the projects. This project will include storm sewer, streets, permeable pavers and water main improvements. ISG is the engineer for the project.

The Public Hearing was held February 3, 2020. Bid opening was on February 13, 2020. Three bids were received for the project and the bid was awarded to Healy Excavating in the amount of \$591,582.60.

This is a permanent easement for location of storm water improvements associated with the project.

FISCAL IMPACT: The project is funded 75% by federal HUD money and 25% local match.

RECOMMENDATION: Staff recommends that Council approve the permanent easement for the independently determined appraisal value for the 4th & Barton Storm Water Improvement Project as identified and included in the attachment.

ATTACHMENTS:

Description	Type
□ Easement	Backup Material

Return To: Havens and Havens, P.O. Box 426, Storm Lake, IA 50588

Preparer: Philip E. Havens, Havens and Havens, P.O. Box 426, Storm Lake, IA 50588

EASEMENT AGREEMENT

This Agreement is made and entered into this _____ day of _____, 2020, by and between Methodist Manor Retirement Community, an Iowa non-profit corporation, being herein referred to as Grantor, and the City of Storm Lake, Iowa, a municipal corporation, herein referred to as Grantee.

SECTION I.

PERMANENT EASEMENT

In consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Grantor hereby grants, sells and conveys to Grantee, its successors and assigns a permanent public utility easement in, over, under, across, and through the following described real estate in Buena Vista County, Iowa, to-wit:

The West fifteen feet (W. 15') of Lots Eleven (11), Twelve (12), Thirteen (13), and Fourteen (14), all in Thomas' Second Subdivision of Outlot One (1), of Thomas Lake View Addition to the City of Storm Lake, Buena Vista County, Iowa,

(the "Easement Area") together with the right to enter upon the Easement Area owned by Grantor and to survey, patrol, construct, install, erect, inspect, repair, operate and maintain any and all public utility improvements and all appurtenances thereto, over, under, across, through and upon

the Easement Area, and the right to use and operate the improvements as it deems necessary, including the right to remove any such installations and appurtenances at any time the Grantee deems it appropriate. This grant of easement rights includes all public utilities, including but not limited to water lines, sanitary and storm sewer lines, sub-drain and footing drain collectors, gas, electric, and telephone lines, electronic communication lines and any other form of utility whatsoever, whether owned by the Grantee or one or more public or private utility entities to which the Grantee has granted or may in the future grant the right to share all or a portion of the Easement Area.

The Easement granted by Grantor to Grantee may be assigned, conveyed or leased by the Grantee, in whole or in part, to any other public or private entity for one or more of the purposes set forth in this Section I, without notice or additional compensation to Grantor.

SECTION II.

TERM

The rights granted herein constitute a perpetual, irrevocable covenant running with the land for the benefit of the Grantee, its successors and assigns, and may not be revoked or rescinded by Grantor, its successors or assigns, for any reason.

SECTION III.

ADDITIONAL RIGHTS OF GRANTEE

Grantee shall have the right of ingress and egress to and from Easement Area for any and all purposes necessary or convenient to the exercise by Grantee of the rights granted herein.

SECTION IV.

RIGHTS OF GRANTOR

Grantor reserves the right to use and enjoy the Easement Area to the fullest possible extent without unreasonable interference with the exercise by Grantee of the rights granted herein. In this regard, neither Grantor nor Grantee shall have the right to locate any building or any surface installation on the Easement Area or to fence the whole or any part thereof. If Grantor constructs or places such improvements in violation of this easement agreement, Grantee shall not be responsible for any damages resulting thereto from the construction, reconstruction, maintenance, operation or repair of the utilities located within the Easement Area. Grantee shall have the right to clear and remove any obstructions from the Easement Area. Grantor further agrees that it will not change the grade, elevation or contour of any part of the easement right-of-way without the prior written approval of the Grantee.

SECTION V.

TREATMENT AND RESTORATION OF SURFACE

After construction or future maintenance, Grantee shall restore the Easement Area to substantially the same condition as prior to entry, which shall include the restoration of lawns by sodding or seeding; replacement or repair of the damaged portion of concrete or asphalt driveways removed for grading or access purposes; and replacement of fences or other structures and surface materials removed or damaged by Grantee.

SECTION VI.

LIABILITY RELATED TO USE OF EASEMENT

Grantor hereby releases Grantee from liability and relinquishes any claim for damages to the Grantor's above-described property arising out of the Grantee's use of the easement granted herein, except such damages as may be caused by the negligent acts or omissions of the Grantee, its agents, contractors, and employees and except for damages arising from Grantee's breach of the provisions of Section V of this agreement. Grantee will indemnify and hold harmless Grantor from and against all liability, loss and expense occasioned by the negligence of the Grantee, its agents, contractors, and employees in the construction of public improvements pursuant to this Easement.

SECTION VII.

WARRANTY OF TITLE

Grantor covenants that it is the owner of the Easement Area and has the right, title and capacity to grant said premises.

SECTION VIII.

EFFECT OF AGREEMENT

This Agreement shall be binding upon the heirs, legal representatives, successors or assigns of the parties hereto.

IN WITNESS WHEREOF, the parties have executed this Agreement in Storm Lake, Iowa, on the day and year first above written.

GRANTEE:

CITY OF STORM LAKE, IOWA

By: _____

Michael Porsch, Mayor

ATTEST:

Mayra A. Martinez, City Clerk

GRANTOR:

METHODIST MANOR RETIREMENT
COMMUNITY

By: _____

Nicholas Landgraf, Chief Executive
Officer and Administrator

STATE OF IOWA, COUNTY OF BUENA VISTA

This record was acknowledged before me on _____, 2020, by Michael
Porsch and Mayra A. Martinez, as Mayor and City Clerk of the City of Storm Lake, Iowa.

Notary Public for the State of Iowa

STATE OF IOWA, COUNTY OF BUENA VISTA

This record was acknowledged before me on _____, 2020, by Nicholas
Landgraf, as Chief Executive Officer and Administrator of Methodist Manor Retirement
Community.

Notary Public for the State of Iowa

Staff Summary

3/2/2020

Agenda Item # F.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Chris Cole, Assistant Police Chief

SUBJECT: **SLPD City Code Enforcement Summary**

BACKGROUND: 02-13 to 02-26
Total Contacts 8
Sidewalk not cleared 3
Junk Vehicles 4
Accumulation of trash 1
Citations 1

FISCAL IMPACT: None

RECOMMENDATION: None

Staff Summary

3/2/2020

Agenda Item # 3.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Scott Olesen, Building Official

SUBJECT: **Resolution No. 53-R-2019-2020 Approving Single Family Attached, Single Family Detached Dwelling, and Commercial New Construction Incentive**

BACKGROUND: March 2, 2020- December 31, 2020 the City will only charge \$1.00 building permit fees for new construction of single family attached and single family detached dwellings. Incentives will be considered on an individual basis. Any person, organization, joint venture, partnership, association, or corporation desiring that the City consider providing this new construction incentive shall have construction completed by December 31, 2020. The homes shall be built and ready for habitation no later than December 31, 2020, and comply with the approved building codes of the City of Storm Lake and State of Iowa. If the home is not ready for habitation by December 31, 2020, the City shall require the applicant to pay the building permit fee as set forth in the most recent Council approved Resolution Setting Fines and Fees, and the City shall not issue a Certificate of Occupancy until the entire building permit fee has been paid.

For commercial permits, the City follows the adopted International Building Code, and requires three permits for commercial construction; electrical, plumbing/mechanical, and building permits. Fees for these permits roughly calculate to be around 3.3% of the construction cost. City Staff is proposing that City Council consider a new fee resolution that would reduce the commercial building permit fee to 1.65% of the construction cost for projects over \$ 10M as an economic development incentive.

Staff would propose that the commercial permit incentive would follow the same timeline for renewal as the residential permit incentive.

FISCAL IMPACT: Unknown

RECOMMENDATION: Approve Resolution No. 53-R-2019-2020 Approving Single Family Attached, Single Family Detached Dwelling, and Commercial New Construction Incentive

ATTACHMENTS:

Description		Type
☐	Resolution No. 53-R-2019-2020	Resolution
☐	Application	Application

RESOLUTION NO. 53-R-2019-2020

RESOLUTION SETTING FINES AND FEES

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF STORM LAKE, IOWA that the following schedule of fees are approved and effective as of the date of this resolution.

<u>Administration</u>	<u>Fee</u>	<u>Code Section</u>
Administrative Fee	\$30.00	
City Code Subscription (yearly)	\$50.00	
Garbage Truck Permits (per business)	\$100.00	3-1-5
Insufficient Check Fee	\$30.00	
New Friends List	\$10.00	
Peddlers Transient Merchant Permit (1 Day)	\$25.00	4-3-6
Investigation Fee	\$25.00	4-3-4
Peddlers Transient Merchant Permit (1 Week)	\$75.00	4-3-6
Investigation Fee	\$25.00	4-3-4
Transient Merchant Permit (28 days)	\$150.00	
Investigation Fee	\$25.00	
Solicitors Permit (per person)	\$2.00	4-3-6
Solicitors Permit (principal) (1 day)	\$25.00	4-3-6
Investigation Fee (per organization)	\$25.00	4-3-4
Investigation Fee (per Individual soliciting)	\$5.00	
Solicitors Permit (principal) (1 week)	\$75.00	4-3-6
Investigation Fee	\$25.00	4-3-4
Investigation Fee (per Individual soliciting)	\$5.00	
Solicitors Permit (principal) (28 days)	\$150.00	
Investigation fee (per organization)	\$25.00	
Investigation Fee (per Individual soliciting)	\$5.00	
Taxi Permit (Business)	\$100.00	4-5-3
Taxi Permit (per vehicle)	\$10.00	4-5-3
Cancel Permit Fee	\$25.00	
Freedom of Information Requests (FOIA Request)		
Single Sided Copy 8.5x11	\$.30/page	
Duplex copy 8.5x11	\$.40/page	
Single Sided Legal	\$.35/page	
Duplex Legal copy	\$.45/page	
Single Sided Ledger (11x17)	\$.70/page	
Single Sided Ledger with Color Print	\$.90/page	
Duplex Ledger (11x17)	\$.80/page	
Duplex Ledger with Color Print	\$1.00/page	
Large Format Prints (one side only and in color)	\$8.00/page	
CD Cost (for requests that ask for the files digitally on a CD)	\$10.00	
Research Hourly Rate – per hour/per person	\$25.00	
Mailing Costs – 3 pages	\$1.00	
Mailing Costs – 50 pages	\$5.00	
Mailing Costs – 100 pages	\$10.00	
Special City Council Meeting	\$250.00	
Downtown Parking Space Rental Fees (specific lots)		
Per quarter (paid quarterly)	\$75.00	
Per six months (paid bi-annually)	\$112.50	
Annually (paid annually)	\$150.00	

Airport Hangar Rent (monthly fees)

Hangar A	\$75.00
12 Month Lease Discount Rate	\$65.00
Hangar B	\$75.00
12 Month Lease Discount Rate	\$65.00
Hangar C (VT)	\$400.00
Hangar D	\$92.00
12 Month Lease Discount Rate	\$80.00
Hangar E	\$110.00
12 Month Lease Discount Rate	\$95.00
Hangar F	\$156.00
12 Month Lease Discount Rate	\$135.00
FBO Stall	\$173.00
12 Month Lease Discount Rate	\$150.00
Daily Inside Storage/per night	\$30.00

Building Official

Central Business District Bench & Flower Pot Permit	\$25.00	
Driveway Cut Inspection & Marking Only	\$30.00	
Driveway Cut < 18'	\$80.00	
Driveway Cut 24'	\$95.00	
Driveway Cut 34'	\$120.00	
ROW Temp Closure Permit	\$25.00	
Building Moving Permit (Per Bldg)	\$100.00	5-1-1
Demolition Permit	\$50.00	
Pool Inspection	\$20.00	8-8-11
Re-inspection Fee (after 1 per inspection)	\$35.00	
No Show Fee (per event)	\$50.00	
Rental Registration Fee – Yearly (July 1st – June 30th)		
Base Registration Fee (Structure and 1 unit)	\$15.00	5-8-9
Additional unit in excess of 1 (per unit)	\$7.00	5-8-9
Base Registration Fee (Structure and 1 unit) (proof of training)	\$10.00	5-8-9
Additional unit in excess of 1 (per unit) (proof of training)	\$5.00	5-8-9
Late Registration Fee	\$50.00	5-8-9
Property Maintenance Ordinance Appeal	\$150.00	Zoning Ord.
Variance Request	\$150.00	Zoning Ord.
Zoning Request	\$200.00	Zoning Ord.
Conditional Use	\$300.00	Zoning Ord.
Sub-Division Application Fee	\$300.00	
Sidewalk Repair Permit Fee	\$0	
New Construction Incentive		
Single Family Attached and Single Family Detached Dwelling	\$1.00	
(only valid from March 2, 2020 to Decemeber 31, 2020 with Council approval)		

Building & Sign Permit Fees

Building & Sign Permit <\$1,200	\$22.02	5-2-2
Building & Sign Permit \$1,200-2,000		5-2-2

\$22.02 + \$2.88 for each additional \$100.00 over \$1,200		
Building & Sign Permit \$2,001-25,000		5-2-2
\$45.06+ \$9.16 for each additional \$1,000.00 over \$2,000		
Building & Sign Permit \$25,001-50,000		5-2-2
\$255.74 + \$6.22 for each additional \$1,000.00 over \$25,000		
Building & Sign Permit \$50,001-100,000		5-2-2
\$411.24+ \$4.15 for each additional \$1,000.00 over \$50,000		
Building & Sign Permit \$100,001 or more		5-2-2
\$618.74+ \$3.61 for each additional \$1,000.00 over \$100,000		
Portable Sign Permit (14 days)	\$30.00	Zoning Ord.

Electrical Fees

For New Residences		5-4-9
Single Dwelling	\$38.00	
Duplex Dwelling	\$56.75	
Triplex Dwelling	\$75.50	
4-Plex Dwelling	\$113.00	
Multi Units Between 5 and 12	\$156.75	
Over 12 Units	\$156.75 plus \$38.00each over 12	
For New Commercial or Industrial Buildings		
First \$5,000.00 at \$8.00 per/\$1,000.00 of cost		
Second \$5,000.00 at \$6.75 per /\$1,000.00 of cost		
Third \$5,000.00 at \$5.50 per/\$1,000.00 of cost		
Fourth \$5,000.00 at \$4.25 per/\$1,000.00 of cost		
Fifth \$5,000.00 at \$3.00 per/\$1,000.00 of cost		
All over \$25,000.00 at \$1.50 per/\$1,000.00 of cost		
For Rewiring, Repairs or Alterations on Residence, Commercial and Industrial Buildings		
\$100.00 to \$150.00 electric contract	\$6.75	
\$151.00 to \$200.00 electric contract	\$8.00	
\$201.00 to \$250.00 electric contract	\$9.25	
\$251.00 to \$300.00 electric contract	\$10.50	
\$301.00 to \$350.00 electric contract	\$11.75	
\$351.00 to \$400.00 electric contract	\$13.00	
\$401.00 to \$450.00 electric contract	\$14.25	
\$451.00 to \$500.00 electric contract	\$15.50	
\$501.00 to \$1,000.00 electric contract	\$23.00	
\$1,001.00 to \$2,000.00 electric contract	\$28.00	
All over \$2,001.00	\$28.00 plus \$1.50per \$100.00	

Plumbing Fees

For New Residences		5-3-10
Single Dwelling	\$38.00	
Duplex Dwelling	\$56.75	
Triplex Dwelling	\$75.50	
4-Plex Dwelling	\$113.00	
Multi Units Between 5 and 12	\$156.75	
Over 12 Units	\$156.75 plus \$38.00 each over 12	
For New Commercial or Industrial Buildings		

First \$5,000.00 at \$8.00 per/\$1,000.00 of cost
 Second \$5,000.00 at \$6.75 per /\$1,000.00 of cost
 Third \$5,000.00 at \$5.50 per/\$1,000.00 of cost
 Fourth \$5,000.00 at \$4.25 per/\$1,000.00 of cost
 Fifth \$5,000.00 at \$3.00 per/\$1,000.00 of cost
 All over \$25,000.00 at \$1.75 per/\$1,000.00 of cost
 For Repairs or Alterations on Residence, Commercial and Industrial Buildings
 \$100.00 to \$150.00 plumbing contract \$6.75
 \$151.00 to \$200.00 plumbing contract \$8.00
 \$201.00 to \$250.00 plumbing contract \$9.25
 \$251.00 to \$300.00 plumbing contract \$10.50
 \$301.00 to \$350.00 plumbing contract \$11.75
 \$351.00 to \$400.00 plumbing contract \$13.00
 \$401.00 to \$450.00 plumbing contract \$14.25
 \$451.00 to \$500.00 plumbing contract \$15.50
 \$501.00 to \$1,000.00 plumbing contract \$23.00
 \$1,001.00 to \$2,000.00 plumbing contract \$28.00
 All over \$2,001.00 \$28.00 plus \$1.50 per \$100.00

Campground

Class A Site (Lake View, Patio, Water, Sewer, Electric, Cable TV, Fire Pit)	\$27.00
Class B Site (Patio, Water, Sewer, Electric, Cable TV, Fire Pit)	\$26.00
Class C Site (Lake View, Patio, Water, Sewer, Electric, Fire Pit)	\$26.00
Class D Site (Patio, Water, Sewer, Electric, Fire Pit)	\$23.00
Class E Site (Water, Sewer, Electric)	\$22.00
Class F Site (Electric)	\$18.00
Glass G Site (Tent)	\$12.00
Long Term Stay Rate Limited to Long Term Stay slots which include Water, Sewer, Electric Minimum 30 day stay paid in advance – 10% off	
Extra Vehicle Parking (if space available)	\$5.00
Non-Campers Dump Station (per event)	\$5.00
Non-Camper Shower (per shower)	\$5.00

Fire Department

False Alarm Fee (after 1)	\$150.00	4-7-16
Liquor License Inspection Fee	\$50.00	
Fireworks Display (Mortar sizes from 1-3 inches)	\$150.00	
Fireworks Display (Mortar size larger than 3 inches)	\$250.00	
Emergency Response and/or Cleanup of Material (per hour)		
Large Fire Apparatus	\$150.00	
Fire Commander Vehicle	\$75.00	

Golf Course

Single Season Pass	\$275.00	
Family Season Pass - Family: Two or more persons (one of whom is the householder) related by birth, marriage, or adoption, living together and sharing common living, sleeping, cooking, and eating facilities within and individual housing unit as defined by the Storm Lake Zoning Code.)	\$550.00	
College Season Pass	\$149.00	
Junior Season Pass (12 and Under)	\$50.00	
Electric Cart Storage	\$275.00	
Gas Cart Storage	\$225.00	
Locker Rent/yr	\$20.00	
Golf Club Rental	\$10.00	
Trail Fee (per day)	\$10.00	
Pull Cart Rental	\$3.00	
Trail Fee (year)	\$150.00	
Discount Tickets – per 9 holes (sold in advance with minimum quantity of 50)	\$10.00	
Weekday 9 Holes	\$15.00	
Weekday 18 Holes	\$20.00	
Weekend 9 Holes	\$20.00	
Weekend 18 Holes	\$25.00	
Cart Rental 9 Holes	\$10.00	
Cart Rental 18 Holes	\$20.00	
Yearly Cart Rental	\$325.00	
Hall Rental – Off Season Rate	\$300.00	
Hall Rental – Peak Season Rate (Memorial Day to Labor Day)	\$400.00	
Bar Set-Up Fee	\$100.00	
Hall Rental - Friday Setup Fee	\$100.00	
(Valid only after 5:00pm Friday with following Sat. rental)		
Hall Rental (weekday 4hrs or less)	\$100.00	
Group Golf Rates	As Set by the Following Table	

# Rounds Per Event	9 Holes	18 Holes
0-25	Regular Rates	Regular Rates
26-50	\$12.00 / Round	\$15.00 / Round
51-99	\$9.00 / Round	\$10.00 / Round
100+	\$8.00 / Round	\$9.00 / Round

Police

Administrative Fee	\$30.00	
Alarm Business Permit Application	\$75.00	4-7-6

Alarm Business Permit Renewal	\$75.00	4-7-9
False Alarm Equip Malfunction (after 3)	\$75.00	4-7-16
False Alarm	\$75.00	4-7-16
Building Escorts (per car)	\$75.00	5-1-3
Cat License – Not Neutered/Spayed (per year)	\$20.00	8-4-2
Neutered/Spayed (per year)	\$10.00	
Dog License – Not Neutered/Spayed (per year)	\$20.00	8-3-2
Neutered/Spayed (per year)	\$10.00	
Fingerprinting	\$10.00	
Impound/Storage Fee (per day)	\$30.00	8-6-5
Impound Storage Fee – felony related (per day)	\$50.00	
Parking Fine	\$15.00	9-11-4
Police Escort Fee – per hour, per unit	\$75.00	5-1-3
Emergency Response and/or Cleanup of Material (per hour)		
Police Vehicle (per vehicle)	\$75.00	

King's Pointe Outdoor Aquatic Center

Family Season Pass	\$275.00	
(up to 5 family members can be included on Pass, Children 4 and under need not be on pass, as they are free.)		
Up to 4 additions of children 5-12 years old @\$55 each		
Single Season Pass (children and adults)	\$150.00	
Adult BV Resident Daily Pass (Age 12+)	\$8.00	
Child BV Resident Daily Pass (Age 5-11)	\$5.00	
Children (Age 5-11) Standard Pricing	\$12.00	
Adults (Age 12+) Standard Pricing	\$15.00	
4 and under	free	
Twilight Pricing (after 3:00)		
Age 12+	\$7.50	
Age 5-11	\$6.00	
Age 0-4	free	
Land Lovers	\$5.00	
Swim Lessons	\$40.00	

Roadway Maintenance

Concrete Breaking (per sq ft)	\$2.50	
Concrete Sawing (per ft)	\$3.75	
Street Cuts (per sq yard of concrete)	\$37.00	

Sewer

Sewer Svc Permit & Connection Fee	\$150.00	3-2-4
Private Wastewater System Permit	\$50.00	3-2-3

Shelter House

Rental Fee - Mon. – Thurs., per side	\$55.00	
Rental Fee - Fri., Sat., & Sun., per side	\$80.00	
Damage Deposit – per side	\$100.00	

AWAYSIS Pavilions – per time slot (3 times available)	\$25.00
Frank Starr Park Open Shelter – per time slot (2 times available)	\$50.00
Campground Open Shelter – per time slot (2 time slots available)	\$50.00
AWAYSIS Great Lawn – per day	\$200.00
Band Shell – per day	\$25.00

Water

Door Tag Fee	\$20.00	3-5-3
Meter Testing Fee (within 2%)	\$50.00	3-4-20
Shut Off – 8 AM to 3 PM	\$50.00	3-4-19 & 3-5-3
Shut Off – After 3 PM	\$75.00	3-4-19 & 3-5-3
Water Svc Permit & Connect Fee	\$150.00	3-4-5
Water Tapping Fee (per inch)	\$65.00	3-4-5
Outside City Limits Hook-up Fee	\$1,500.00	3-4-6
Combined Utility Deposit	\$160.00	
Bulk Water Sales Access Card	\$10.00	

PASSED AND APPROVED this 20th day of January, 2020.

Michael Porsch, Mayor

ATTEST:

Mayra A. Martinez, City Clerk

SINGLE FAMILY ATTACHED AND SINGLE-FAMILY DETACHED DWELLING NEW CONSTRUCTION INCENTIVE

PURPOSE:

The City is committed to the promotion of high-quality housing development in all parts of the City and to improving the quality of life for its citizens. In order to help meet these goals, the City will consider providing a \$1.00 building permit fee incentive, as described below, for the construction of a new single family attached or single-family detached home within the City. However, nothing in this policy shall obligate the City to provide any incentive to any applicant; and all such decisions and actions shall be at the sole discretion of the City and based on the quality of the proposed housing and the satisfaction of the application requirements set forth below.

NEW CONSTRUCTION BUILDING PERMIT RULES

March 2, 2020 through December 31, 2020, the City will only charge \$1.00 building permit fees for new construction of single family attached and single-family detached dwellings. Incentives will be considered on an individual basis. Any person, organization, joint venture, partnership, association, or corporation desiring that the City consider providing this new construction incentive shall have construction completed by December 31, 2020. The homes shall be built and ready for habitation no later than December 31, 2020 and comply with the approved building codes of the City of Storm Lake and State of Iowa. If the home is not ready for habitation by December 31, 2020, the City shall require the applicant to pay the building permit fee as set forth in the most recent Council approved Resolution Setting Fines and Fees, and the City shall not issue a Certificate of Occupancy until the entire building permit fee has been paid.

APPLICATION PROCEDURE

Any person, organization, joint venture, partnership, association, or corporation applying to the City for this new construction incentive shall submit a written application to the Building Official containing or accompanied by, at a minimum, the following: **(A)** the applicant's name, name of business entity, principal place of business, mailing address, telephone number, fax number, e-mail address, website address and contact information of an officer or employee of the applicant who is responsible for completing the application; **(B)** a complete legal description of the property along with a plat showing the precise location of the project; **(C)** a brief description of the proposed construction, including but not limited to the project's estimated cost of construction, fixtures, landscaping, site improvements, and a dimensioned floor plan; **(D)** such other information as is required or requested by the City; and **(E)** a SINGLE FAMILY ATTACHED AND SINGLE FAMILY DETACHED DWELLING NEW CONSTRUCTION INCENTIVE AGREEMENT, as set forth below, signed and dated by the Applicant. The completed application, including the signed agreement, shall be placed on the agenda for City Council consideration. If the application and agreement are approved, the agreement will be signed by the City.

Address: _____

**SINGLE FAMILY ATTACHED AND SINGLE-FAMILY DETACHED DWELLING NEW
CONSTRUCTION INCENTIVE AGREEMENT**

March 2, 2020 through December 31, 2020, the City will only charge \$1.00 building permit fees for new construction of single family attached and single-family detached dwellings. Incentives will be considered on an individual basis. Any person, organization, joint venture, partnership, association, or corporation desiring that the City consider providing this new construction incentive shall have construction completed by December 31, 2020. The homes shall be built and ready for habitation no later than December 31, 2020 and comply with the approved building codes of the City of Storm Lake and State of Iowa. If the home is not ready for habitation by December 31, 2020, the City shall require the applicant to pay the building permit fee as set forth in the most recent Council approved Resolution Setting Fines and Fees, and the City shall not issue a Certificate of Occupancy until the entire building permit fee has been paid. If so required, the Applicant agrees to pay the building permit fee as set forth in the most recent Council-approved Resolution Setting Fines and Fees before the Certificate of Occupancy is issued by the City.

Print entity name above, if applicant is an entity

Contact information of an officer or employee of the
applicant who is responsible for completing the
application

Signature of individual Applicant or of person
authorized to sign For Entity Applicant

Name of Business Entity

CITY OF STORM LAKE, IOWA

Principal Place of Business

By:

Michael Porsch, Mayor

Mailing Address

Date

Telephone Number

Fax number

ATTEST:

E-mail address

City Clerk

Website Address

Date

Staff Summary

3/2/2020

Agenda Item # 4.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Scott Olesen, Building Official

SUBJECT: **Motion to Approve A Quit Claim Deed - Brash LLC**

BACKGROUND: Brash LLC owns property which is located in Emerald Park and is in the process of developing a single lot for sale at the north end of Emerald Drive. During the process of developing a plat of survey, the Surveyor discovered an issue with the existing plat.

The property in question had been previously platted as a subdivision two separate times. The previous subdivision was purchased by the Iowa Department of Natural Resources which subsequently sold the property at a later date to another developer. The property was then re-subdivided and at this time the lot descriptions were made along Emerald Drive but had an erroneous east boundary based on an incorrect western edge of Emerald Drive.

Essentially, the right of way for Emerald Drive was incorrectly made wider than what it actually is under the second subdivision. The Quit Claim Deed is in reality reverting land back to the adjacent owner that the City never owned in the first place and this action would correct this.

Phil Havens has reviewed this request and will be available to provide any further information.

The proposed plat of survey and supporting documents for the previous platting are attached.

FISCAL IMPACT: Attorneys fees estimated at \$200.00

RECOMMENDATION: Approve the Quit Claim Deed for the City property adjacent to Brash LLC's property on Emerald Drive.

ATTACHMENTS:

Description		Type
	Quit Claim Deed	Contract
	Old Plat - 1	Map
	Old Plat - 2	Map
	Proposed Area Plat	Map
	Final Plat of Survey	Map

Return To: Nick J. Brown, 604 Lake Avenue, Storm Lake, IA 50588

Preparer: Nick J. Brown, 604 Lake Avenue, Storm Lake, IA 50588, (712) 213-0311

Tax Statement Address: Brash LLC, 510 Lakeshore Drive, Lakeside, Iowa 50588

QUIT CLAIM DEED

For the consideration of \$1.00 Dollar(s) and other valuable consideration the City of Storm Lake, Iowa, a municipality does hereby Quit Claim to Brash, LLC, all their right, title, interest, estate, claim and demand in the following described real estate in Buena Vista County, Iowa:

A TRACT OF LAND LOCATED IN PART OF VACATED BLOCK SEVEN (7) IN THE PLAT OF WHITNEY PIERCE BEACH IN GOVERNMENT LOT THREE (3) IN THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER (SW $\frac{1}{4}$ SE $\frac{1}{4}$) OF SECTION 5, TOWNSHIP 90 NORTH, RANGE 37 WEST OF THE 5TH P.M., BUENA VISTA COUNTY, IOWA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

Commencing at the Northeast (NE) corner of Lot One (1), Buck's Addition, thence North 07° 18' 36" West, along the northern extension of the East line of said Lot One (1), 25.15 feet to the Point of Beginning. Thence continuing North 07° 18' 36" West, along said extended East line, 25.16 feet; Thence North 88° 46' 25" East, 15.72 feet to the West line of the Lakeshore Drive as shown on the original plat of said Whitney-Pierce Beach Addition; Thence South 07° 24' 19" East, along said West line, 25.23 feet; Thence South 89° 00' 22" West, 15.77 feet to the Point of Beginning.

Tract contains 394.47 square feet and is subject to all easements of record.

This deed is exempt according to Iowa Code 428A.2(21).-No consideration

Words and phrases herein, including acknowledgment hereof, shall be construed as in the singular or plural number, and as masculine or feminine gender, according to the context.

Dated: January _____, 2020.

CITY OF STORM LAKE, IOWA

Attest:

Michael Porsch, Mayor

Mayra Martinez, City Clerk

STATE OF IOWA, COUNTY OF BUENA VISTA

On this ____ day of _____, 2019, before me a Notary Public in and for said State, personally appeared Michael Porsch and Mayra Martinez, to me personally known, who being duly sworn, did say that they are the Mayor and City Clerk, respectively, of the City of Storm Lake, Iowa, a Municipality created and existing under the laws of the State of Iowa, and that the seal affixed to the foregoing instrument is the seal of said Municipality, and that said instrument was signed and sealed on behalf of said Municipality by authority and resolution of its City Council, and said Mayor and City Clerk acknowledged said instrument to be the free act and deed of said Municipality by it voluntarily executed.

Signature of Notary Public

50 FT.

ACH

50 FT.

LITTLE LAKE

STATE GAME PRES

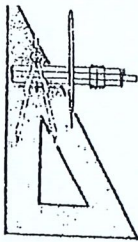
INLET BRIDGE

LAKE-SHORE DRIVE

ELM ST.

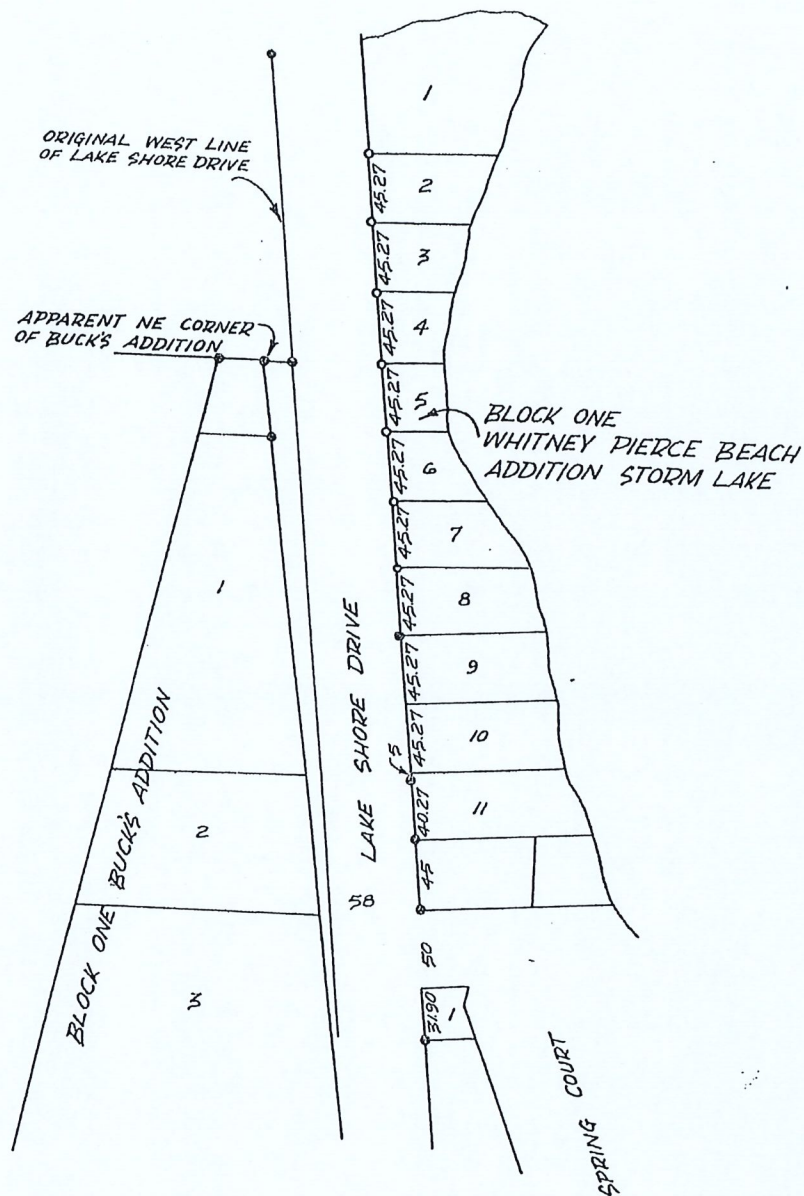
HIGH WATER LINE

1-6



OTTU ENGINEERING CO., P. C.
SAC CITY, IOWA - STORM LAKE, IOWA

PLAT OF SURVEY SC-74-245



ESTABLISH THE FRONT LOT CORNERS OF
LOTS 2, 3, 4, 5, 6, 7, AND 8, BLOCK 1,
WHITNEY-PIERCE BEACH ADDITION, STORM
LAKE, IOWA.



DATE OCT. 1974

SCALE 1" = 100'

CORNERS FOUND ① IRON BAR

CORNERS SET ○ 5/8" X 24" IRON BAR

I hereby certify that the above plat
and description were made from a
survey by a party under my direc-
tion and are just and true.

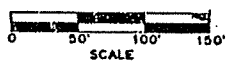
Charles A. Tapley
LAND SURVEYOR

IOWA REG. NO. 5688

Charles A. Tapley

1. CHMENT TO
KPORATE WARRANTY
ED: ROTH
ARTMENTS, INC.
608 SENECA,
AND DRAHOTA,
..

Commencing at the southwest (SW) corner of the southeast quarter (SE1) of said section 5, thence on an assumed bearing of north, along the west line of said southeast quarter (SE1), 33.00 feet; thence south 89°40'34" east, 98.02 feet to the point of beginning, said point being on the easterly right of way line of Iowa Highway No. 110; thence northeasterly, along the arc of a 3077.8 feet radius curve, concave easterly with a central angle of 25°30' and whose short chords bear north 12°46'20" east, 201.62 feet; thence north 15°44'37" east, 143.23 feet; thence north 18°34'44" east, 138.90 feet; thence north 21°58'18" east, 178.13 feet; thence north 25°52'50" east, 156.6 feet and here ending the circular curve; thence north 24°45'47" east, 53.20 feet to the highwater line of Storm Lake; thence along the highwater line of Storm Lake, north 62°21'15" east, 21.22 feet; thence north 69°12'38" east, 11.61 feet; thence south 82°19'23" east, 24.06 feet; thence north 68°16'26" east, 35.35 feet to the west line of Lake Shore Drive as platted with Whitney-Pierce Beach Addition in February, 1928; thence south 05°12'25" east, along the west line of said Lake Shore Drive, 217.89 feet; thence north 89°46'40" west, 44.0 feet; thence south 12°26'03" west, 51.20 feet to the northwest corner of block 1 of Buck's Addition; thence south 12°53'35" west, along the west line of block 1 of Buck's Addition, 593.67 feet to the north line of North Emerald Drive; thence north 89°40'34" west, along the north line of North Emerald Drive, 203.58 feet to the point of beginning.



- ▲ = SECTION CORNER FOUND
- = IRON BAR FOUND
- = IRON BAR FOUND AND REPLACED WITH IRON BAR WITH SURVEY CAP NO. 5688
- ◆ = IRON BAR SET WITH SURVEY CAP NO. 5688

DESCRIPTION

A PART OF GOVERNMENT LOT 3 IN THE SW 1/4 OF THE SE 1/4 OF SECTION 5, AND A PART OF THE VACATED PORTION OF WHITNEY-PIERCE BEACH SUBDIVISION OF PART OF GOVERNMENT LOT 3 IN SECTION 5, T-40-N R-27-W OF THE 3TH P.M. JERUSA VISTA COUNTY, IOWA, AND SAID MORE FULLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST (SW) CORNER OF THE SOUTHEAST QUARTER (SE 1/4) OF SAID SECTION 5, THENCE ON AN ASSUMED BEARING OF NORTH, ALONG THE WEST LINE OF SAID SOUTHEAST QUARTER (SE 1/4), 33.00 FEET; THENCE SOUTH 89°40'34" EAST, 98.02 FEET TO THE POINT OF BEGINNING, SAID POINT BEING ON THE EASTERLY RIGHT OF WAY LINE OF IOWA HIGHWAY NO. 110. THENCE NORTHEASTERLY, ALONG THE ARC OF A 3077.8 FEET RADIUS CURVE, CONCAVE EASTERLY WITH A CENTRAL ANGLE OF 25°30' AND WHOSE SHORT CHORDS BEAR NORTH 12°46'20" EAST, 201.62 FEET; THENCE NORTH 15°44'37" EAST, 143.23 FEET; THENCE NORTH 18°34'44" EAST, 138.90 FEET; THENCE NORTH 21°58'18" EAST, 178.13 FEET; THENCE NORTH 25°52'50" EAST, 156.6 FEET AND HERE ENDING THE CIRCULAR CURVE; THENCE NORTH 24°45'47" EAST, 53.20 FEET TO THE HIGHWATER LINE OF STORM LAKE; THENCE ALONG THE HIGHWATER LINE OF STORM LAKE, NORTH 62°21'15" EAST, 21.22 FEET; THENCE NORTH 69°12'38" EAST, 11.61 FEET; THENCE SOUTH 82°19'23" EAST, 24.06 FEET; THENCE NORTH 68°16'26" EAST, 35.35 FEET TO THE WEST LINE OF LAKE SHORE DRIVE AS PLATTED WITH WHITNEY-PIERCE BEACH ADDITION IN FEBRUARY, 1928; THENCE SOUTH 05°12'25" EAST, 217.89 FEET; THENCE NORTH 89°46'40" WEST, 44.0 FEET; THENCE SOUTH 12°26'03" WEST, 51.20 FEET TO THE NORTHWEST CORNER OF BLOCK 1 OF BUCK'S ADDITION; THENCE SOUTH 12°53'35" WEST, ALONG THE WEST LINE OF BLOCK 1 OF BUCK'S ADDITION, 593.67 FEET TO THE NORTH LINE OF NORTH EMERALD DRIVE; THENCE NORTH 89°40'34" WEST, ALONG THE NORTH LINE OF NORTH EMERALD DRIVE, 203.58 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED PARCEL CONTAINS 3.48 ACRES, MORE OR LESS, AND IS SUBJECT TO ALL EASEMENTS OF RECORD.

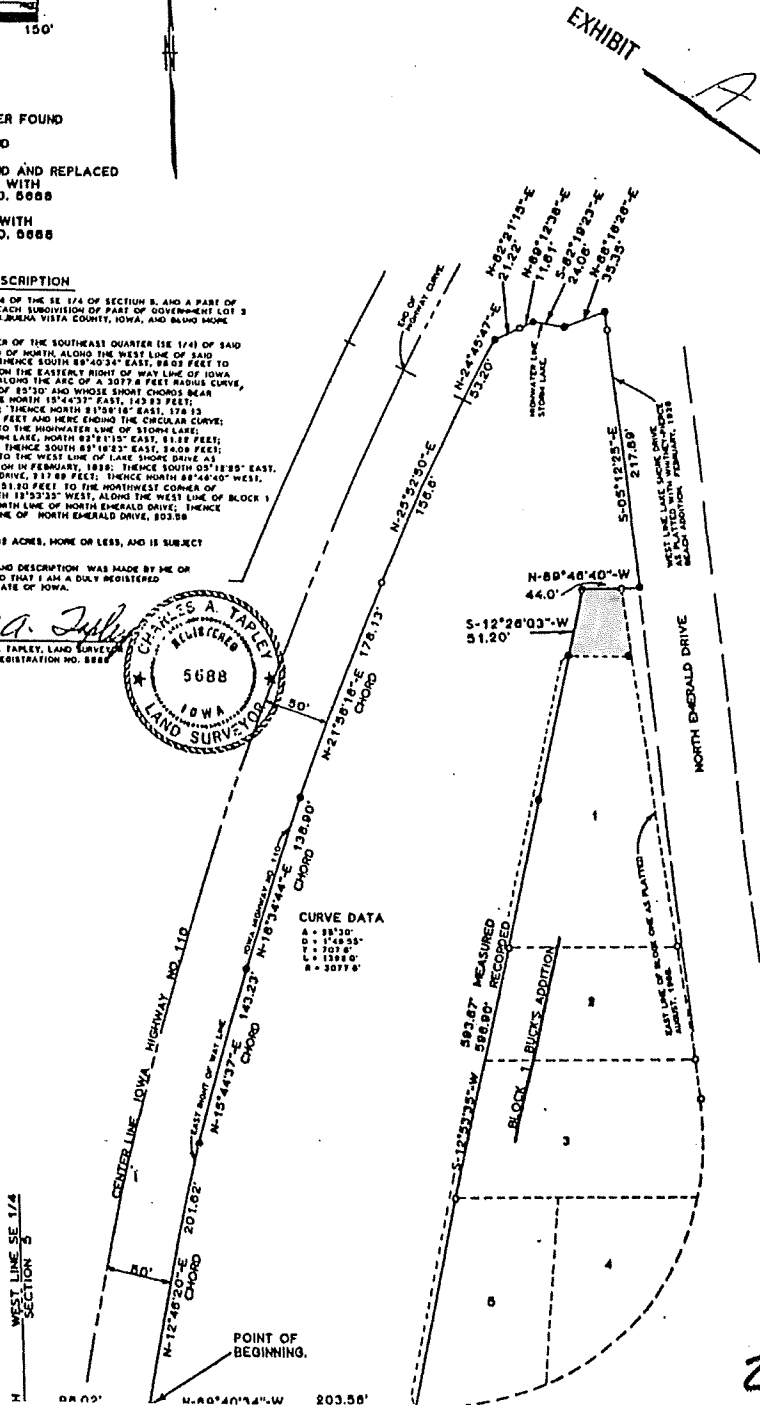
I HEREBY CERTIFY THAT THIS SURVEY, PLAT AND DESCRIPTION WAS MADE BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF IOWA.

DECEMBER 18, 1933 *Charles A. Tapley*
CHARLES A. TAPLEY, LAND SURVEYOR
IOWA REGISTRATION NO. 5688



RECORDED:
MISCELLANEOUS BOOK 28
PAGE 913

CURVE DATA
A = 25°30'
R = 3077.8'
L = 1398.0'
S = 3077.8'



EXHIBIT

OWNER:

608 SENECA, INC.
DRAHOTA, INC.
BOOK 58 PAGE 761

ACQUISITION PLAT

FOR PUMP STATION
FOR THE CITY OF STORM LAKE, IOWA

PARCEL ID:

14-05-453-001

DATE OF SURVEY:

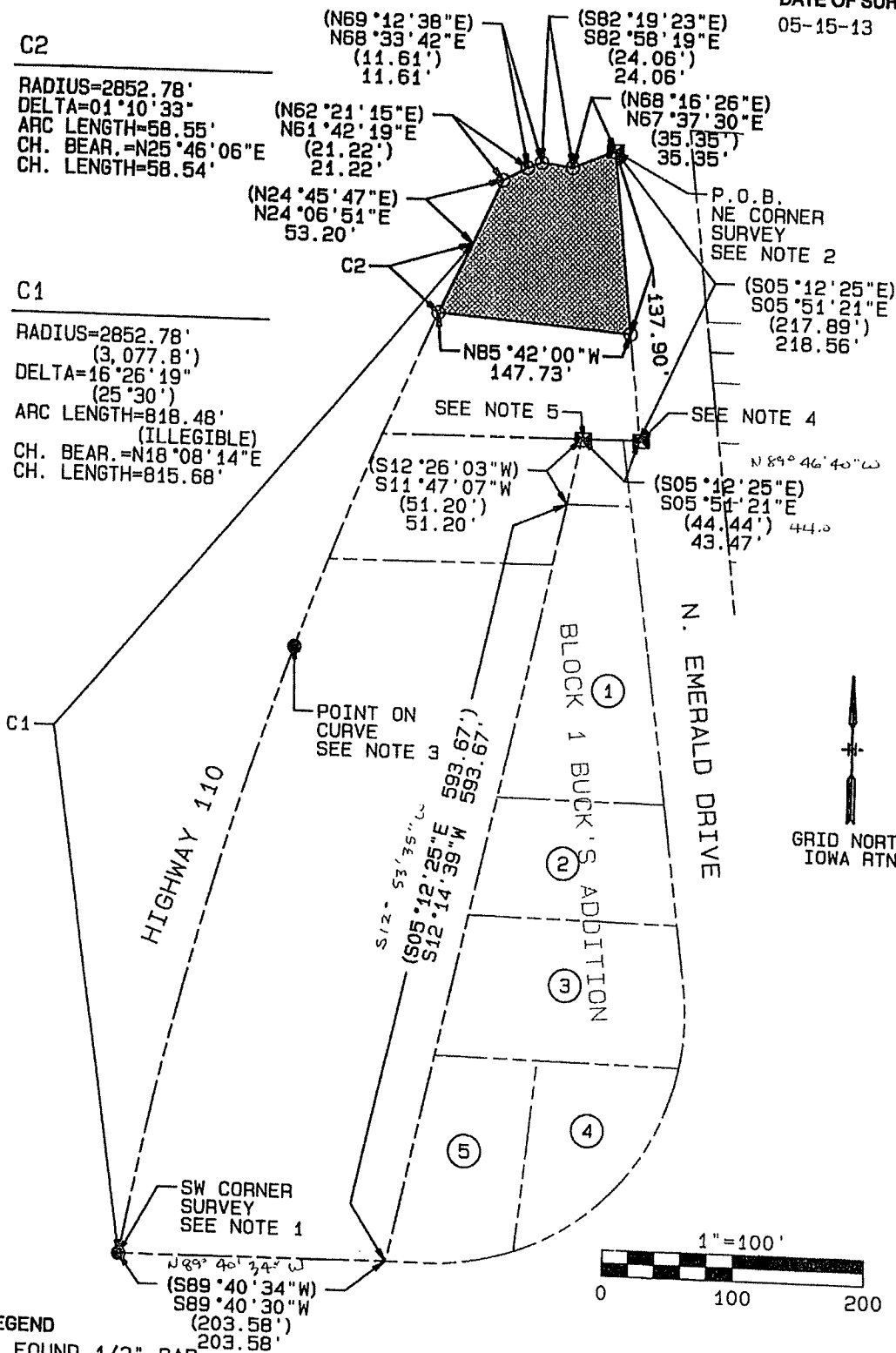
05-15-13

C2

RADIUS=2852.78'
DELTA=01°10'33"
ARC LENGTH=58.55'
CH. BEAR.=N25°46'06"E
CH. LENGTH=58.54'

C1

RADIUS=2852.78'
(3,077.8')
DELTA=16°26'19"
(25°30')
ARC LENGTH=818.48'
(ILLEGIBLE)
CH. BEAR.=N18°08'14"E
CH. LENGTH=815.68'



LEGEND

- ☒ FOUND 1/2" BAR (100.00') PLATTED OR RECORDED
- FOUND 1/2" BAR 100.00' MEASURED
- SET 3/4" I.P. W/RED CAP# 21644
- ACQUISITION AREA 13.816 SQUARE FEET OR 0.32 ACRES

SCALE 1"=100'

DRAWN TJP

CHECKED LEV

APPROVED DWS

DATE 06-26-13

A.C.



VEENSTRA & KIMM, INC.

3000 Westown Parkway • West Des Moines, Iowa 50266-1320
515-225-8000 • 515-225-7848 (FAX) • 800-241-8000 (WATS)

ACQUISITION PLAT FOR A PUMP
STATION SITE IN GOV. LOT 3
SW 1/4 SE 1/4 OF SEC. 5-90-37

DWG. NO.

ACQ-18

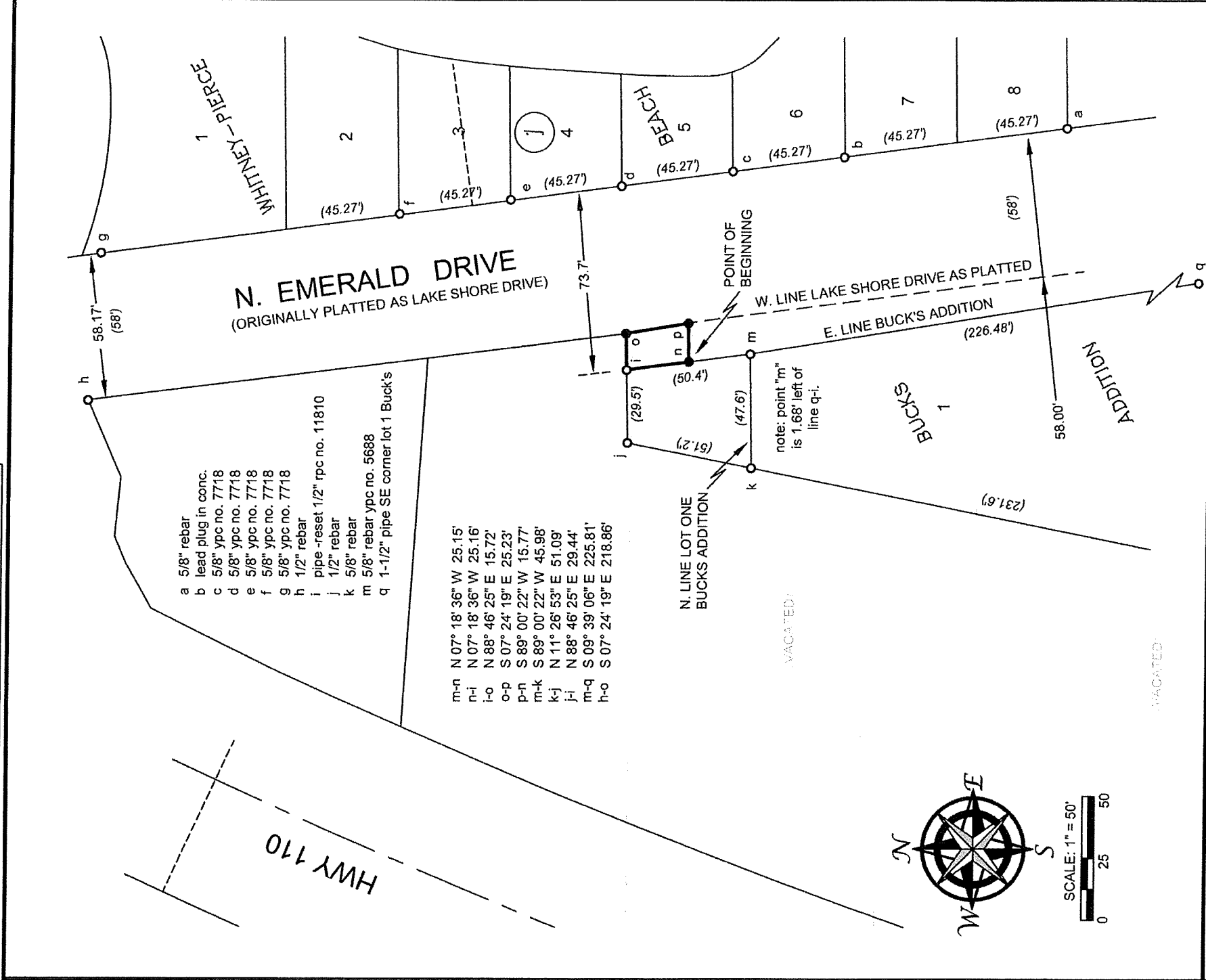
2 OF 2

PROJECT 35639

PLOTTED: Mar 11, 2019 12:35:42 Mon

2

INDEX LEGEND	
PLAT OF SURVEY LOT	
CITY: STORM LAKE	
COUNTY: BUENA VISTA	
SUBDIVISION/ADDITION NAME: WHITNEY PIERCE BEACH	
LOT: 6 (VACATED)	
BLOCK: 7 (VACATED)	
PROPRIETOR: BRASH, LLC	
SURVEY PREPARED FOR: STEVE BRASHEARS	
SURVEY PREPARED BY: J. SCOTT SHEVEL IOWA PLS NO. 11810	
COMPANY NAME: ISG	
ADDRESS: 1725 N. LAKE AVE. STORM LAKE, IA. 50588	
PHONE: 712-732-7745	





Architecture
Land Surveying
Environmental
Planning
www.isg-ia.com

I+S GROUP
PN: 18-21750
Drawn: JSS
Sheet 1 OF 2
Surveyed by: JSS
Surveyed: 2-18-20
Revised:
Drawing Name:

I hereby certify that this land surveying document was prepared by me and the related survey work was performed by me or under my direct personal supervision and that I am a duly licensed Land Surveyor under the laws of the State of Iowa.



J. Scott Shevel
License Number 11810
My license renewal date is December 31, 2021
Pages covered by this seal 2

Date: 2/19/20

DESCRIPTION

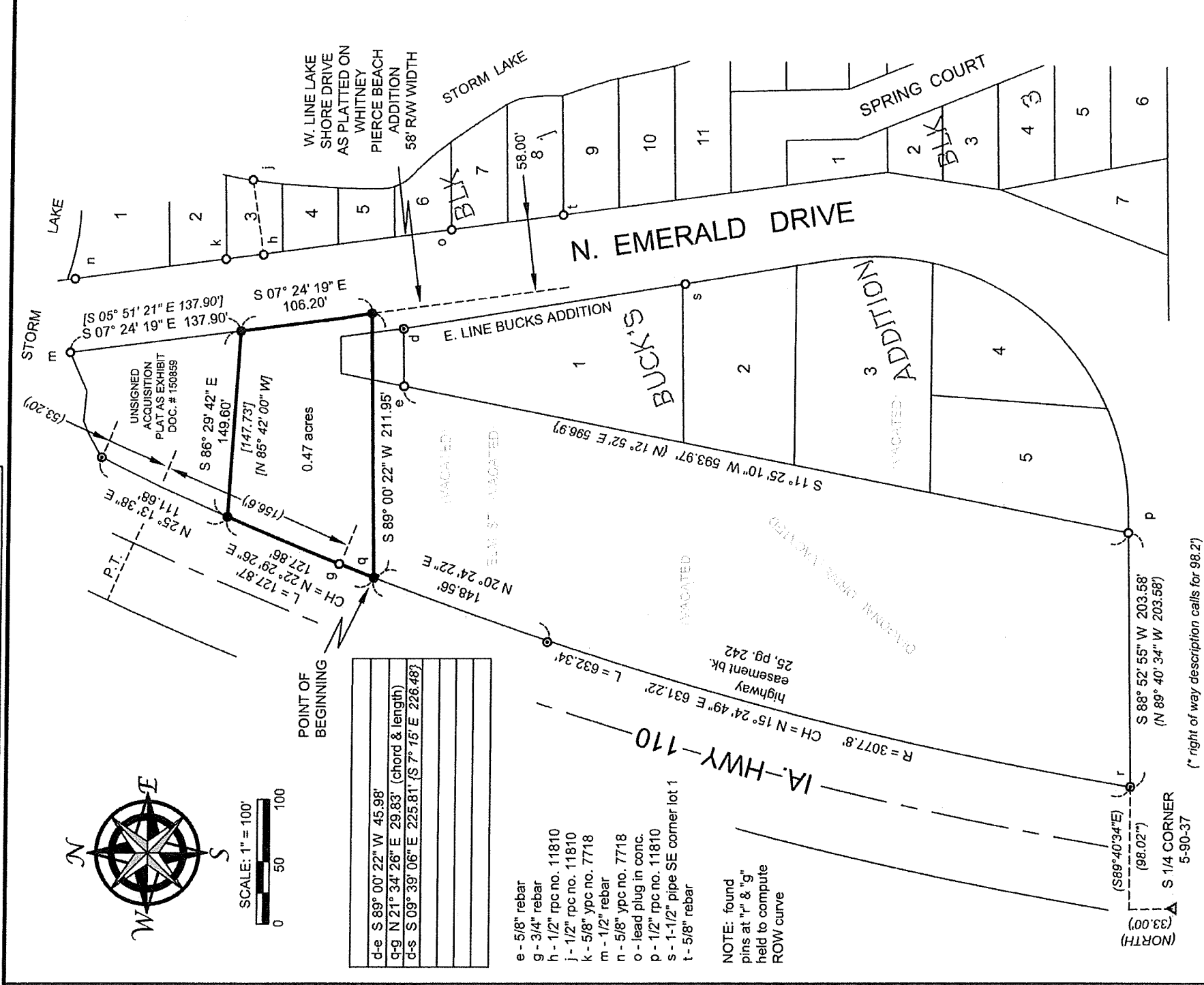
A TRACT OF LAND LOCATED IN PART OF VACATED BLOCK SEVEN (7) IN THE PLAT OF WHITNEY PIERCE BEACH IN GOVERNMENT LOT THREE (3) IN THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER (SW ¼ SE ¼) OF SECTION 5, TOWNSHIP 90 NORTH, RANGE 37 WEST OF THE 5TH P.M., BUENA VISTA COUNTY, IOWA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

Commencing at the Northeast (NE) corner of Lot One (1), Buck's Addition, thence North 07° 18' 36" West, along the northern extension of the East line of said Lot One (1), 25.15 feet to the Point of Beginning. Thence continuing North 07° 18' 36" West, along said extended East line, 25.16 feet; Thence North 88° 46' 25" East, 15.72 feet to the West line of the Lakeshore Drive as shown on the original plat of said Whitney-Pierce Beach Addition; Thence South 07° 24' 19" East, along said West line, 25.23 feet; Thence South 89° 00' 22" West, 15.77 feet to the Point of Beginning.

Tract contains 394.47 square feet and is subject to all easements of record.

ISG	Architecture Engineering Land Surveying Environmental Planning
	www.isg-ia.com
I+S GROUP	
PN: 18-21750	
Drawn: JSS	
Sheet 2 OF 2	
Surveyed by: JSS	
Surveyed: 2/18/20	
Revised:	
Drawing Name:	

INDEX LEGEND	
PLAT OF SURVEY	
CITY: STORM LAKE	
COUNTY: BUENA VISTA	
SUBDIVISION/ADDITION NAME:	
LOT:	
BLOCK:	
PROPRIETOR: BRASH, LLC	
SURVEY PREPARED FOR: STEVE BRASHEARS	
SURVEY PREPARED BY: J. SCOTT SHEVEL IOWA PLS NO. 11810	
COMPANY NAME: ISG	
ADDRESS: 1725 N. LAKE AVE. STORM LAKE, IA. 50588	
PHONE: 712-732-7745	



I hereby certify that this land surveying document was prepared by me and the related survey work was performed by me or under my direct personal supervision and that I am a duly licensed Land Surveyor under the laws of the State of Iowa.

ISG GROUP

PN: 18-21750
Drawn: JSS
Sheet 1 OF 2
Surveyed by: JSS
Surveyed: 2/10/20
Revised:
Drawing Name:

Date: 2/19/20
J. Scott Shevel
License Number 11810
My License renewal date is December 31, 2021
Pages covered by this seal 2

LEGEND OF SYMBOLS/ABBREVIATIONS

- CORNERS FOUND (monuments as described)
- CORNERS FOUND (5/8" rebar w/ypc no. 5688)
- CORNERS SET (1/2" rebar w/rpc no. 11810)
- ▲ SECTION CORNER FOUND
- 100.00' MEASURED
- (100.00') RECORDED AS (plat of survey Misc. Bk. 28, pg. 913)
- (100.00') RECORDED AS (plat of Buck's Addition Bk. 44, pg. 497)
- (100.00') RECORDED AS (acquisition plat as exhibit Doc. # 150859)
- rpc RED PLASTIC CAP
- ypc YELLOW PLASTIC CAP

DESCRIPTION

A TRACT OF LAND LOCATED IN THE VACATED PORTIONS OF THE PLAT OF WHITNEY PIERCE BEACH IN GOVERNMENT LOT THREE (3) IN THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER (SW ¼ SE ¼) OF SECTION 5, TOWNSHIP 90 NORTH, RANGE 37 WEST OF THE 5TH P.M., BUENA VISTA COUNTY, IOWA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

Commencing at an iron pin found to monument the intersection of the North line of Emerald Drive and the East line of Iowa Highway No. 110; Thence along said East line on the arc of a 3077.80 foot radius curve, concave easterly, 632.34 feet, said curve having a chord which bears North 15° 24' 49" East, for 631.22 feet to the Point of Beginning; Thence continuing along said East line on the arc of a 3077.80 foot radius curve concave easterly, 127.87 feet, said curve having a chord which bears North 22° 29' 26" East, for 127.86 feet to the South line of tract owned by the City of Storm Lake; Thence South 86° 29' 42" East, along said South line, 149.60 feet to the West line of Lake Shore Drive as shown on the original plat of Whitney-Pierce Beach; Thence South 07° 24' 19" East, along said West line, 106.20 feet; Thence South 89° 00' 22" West, 211.95 feet to the Point of Beginning.

Tract contains 0.47 acres and is subject to all easements of record.



Architecture
Engineering
Land Surveying
Environmental
Planning
www.isg-pp.com

I+S GROUP

PN: 18-21750
Drawn: JSS
Sheet 2 OF 2
Surveyed by: JSS
Surveyed: 2/10/20
Revised:
Drawing Name:

Staff Summary

3/2/2020

Agenda Item # 5.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Scott Olesen, Building Official

SUBJECT: **Motion To Approve A 3-Year Customer Support Agreement On Emergency Backup Generators For The Wastewater Treatment Plant.**

BACKGROUND: The City has 14 generators that are installed at wastewater lift stations throughout the city. The generators are necessary to run the lift stations to prevent sewage backups into homes and businesses during power outages. Generator operations could be jeopardized if regular maintenance is not performed and this type of maintenance is very complex requiring work on diesel engines, elevated voltage equipment, and automatic transfer switches that all must work in unison or the lift pumps will not work during a loss of power.

FISCAL IMPACT: Total cost of \$39,118 Annually for a three year period.

RECOMMENDATION: Approve customer service agreement

ATTACHMENTS:

Description	Type
□ Ziegler Contract - Wastewater Plant	Contract



1500 ZIEGLER DRIVE NW
ALTOONA, IA 50009
WWW.ZIEGLERCAT.COM/POWER

10/22/2019

Mark Streed
City of Storm Lake Wastewater
P.O. Box 1086
Storm Lake, IA 50588

Dear Mark,

Enclosed is a 3-Year Customer Support Agreement (CSA) for your facility's 14, emergency back up generator sets.

The monthly or annual price will not increase during the agreement period. If this agreement is acceptable, please sign, date, run a copy for your file and return the original to me in the enclosed self-addressed envelope.

Please call me with any questions you may have. We appreciate your business. Thank you Mark and have a great day!

Sincerely yours,

A handwritten signature in blue ink, appearing to read "Shane Johnson".

Shane Johnson
Customer Support Representative

CUSTOMER SUPPORT AGREEMENT

Date: 10/22/2019



Proposal No. SHJ0518

1500 ZIEGLER DRIVE NW
DES MOINES, IA 50009
515-957-3800 800-342-7002

To:

Mark Streed
City of Storm Lake Wastewater
P.O. Box 1086
Storm Lake, IA 50588

Re:

3-Year Customer Support Agreement (CSA) for
MODEL: See Last Page
SERIAL: See Last Page

WE PROPOSE TO FURNISH IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS, TERMS AND CONDITIONS

This proposal is for a 3-Year Customer Support Agreement (CSA) on your facility's 14 emergency back-up power generators. This agreement covers preventative maintenance on your generator as described on subsequent pages of this proposal for the prescribed term as indicated below.

AGREEMENT START DATE: January 1, 2020

AGREEMENT END DATE: December 31, 2022

INVOICE FREQUENCY: Annually

INVOICE AMOUNT: \$39,118

IMPORTANT NOTES

- o CUSTOMER SUPPORT AGREEMENT PRICING WILL NOT INCREASE DURING THE TERM OF THIS AGREEMENT.
- o PRICE INCLUDES PARTS, LABOR, TRAVEL AND DISPOSAL OF ALL FLUIDS PER E.P.A. STANDARDS.
- o **TRAINED** AND **CERTIFIED** ENGINE/GENERATOR **TECHNICIANS** WILL PERFORM ALL SERVICES.

TERMS AND CONDITIONS

- o Agreement pricing is based upon a run time between 0 and 250 per year (standby applications).
- o Invoices will be sent the first day of each invoicing period (i.e. monthly or annually).
- o This is a preventative maintenance agreement and any repairs classified outside of standard preventative maintenance will result in additional costs to the customer.
- o Either party may cancel this agreement with a (60) sixty day written notice.
- o Early cancellation of this agreement can result in a cancellation fee. Actual fee will be calculated based upon any services that have been rendered to customer but not yet paid for.
- o This proposal is valid for (60) sixty days.
- o Prices assume all services to be performed during normal business hours (7:30am – 4:00pm, M-F) unless otherwise specified.
- o Pricing does not include local an/or state taxes. Taxes will be applied to your invoice where applicable.

ACCEPTED BY:

Please Sign Name: _____

Please Print Name: _____

Date: _____

Respectfully submitted,
ZIEGLER POWER SYSTEMS

By: 

Shane Johnson, Customer Support Representative
Ziegler Power Systems

Watchguard Level 1 (64-Point Inspection)

Service performed in: July 2020, 2021 and 2022

Includes the inspection of the following systems:

- Cooling
- Lube Oil
- Air Intake
- Fuel
- Exhaust (inside building only)
- Starting
- Engine
- Generator
- Transfer Switch
- Coolant and Oil Analysis
- Provide written report

Watchguard Level 2 (67-Point Inspection w/ Oil and Filter Change)

Service performed in: January 2020, 2021 and 2022

Includes the following:

- Level 1 Inspection
- Change engine oil
- Change engine oil filter (s)
- Change fuel filter (s)
- Inspect air filter (s)
- Disposal of old fluids per EPA standards
- Provide written report

Watchguard Level 3 (Cooling System Service)

Service performed in: July 2020

Includes the following:

- Drain and refill cooling system, add coolant additives
- Replace cooling system hoses and engine thermostats
- Disposal of old fluids per EPA standards
- Provide written report

Watchguard Level 5 (Load Bank testing)

Service performed in: July 2020

Includes the following:

- Engine load bank test (2-hours)
- Provide written report

Watchguard Level 9 (Battery Replacement Program)

Service performed in: July 2020

Includes the following services

- Complete electrical system check
- Battery charger adjustment
- Test engine starter amperage
- Removal and disposal of old, lead acid, batteries per EPA standards
- Installation of new, low-antimony batteries specifically designed for standby applications
- Provide written report

Date: 10/22/2019

Proposal No. SHJ0518

Customer Requirements

It is the customer's responsibility to....

- Perform weekly and monthly inspections of the engine/generator.
- Maintain written or computerized records of the weekly and monthly inspections.
- Contact Ziegler Power Systems with any problems or concerns noted during the weekly and monthly inspections.

Ziegler Power Systems Exclusion of Responsibility:

Ziegler Inc. is not responsible for...

- Providing a portable generator during repairs
- Fuel consumed by generator set during operation
- Building wiring
- System modifications
- Acts of nature, terrorism or war
- Uses of generator beyond rated capacity
- Main fuel tank or piping problems
- Emissions permitting
- Regulation changes
- State and local taxes
- Customer abuse/neglect

	Make	Model	Serial #	Equipment #
1	Cummins	DQCB-1339509	J130582179	WWTP
2	Cummins	DSHAD-1404348	D140672664	WP Lift
3	Cummins	DGGD-5761253	D060913479	Golf Course
4	Cummins	DFEG-1404540	E140683039	Field of Dreams
5	Cummins	DSFAB-1404349	D140673404	Inlet
6	Cummins	DFEG-1404539	E140678741	Casino
7	Cummins	DFEG-1404540	E140683040	C65
8	Cummins	DSKCA-1404358	D140671921	Emerald Park
9	Cat	3406	75Z01566	Scout Park
10	Cummins	DQCB-1339508	J130581499	Memorial
11	Onan	100DGDB	B920450465	Portable #128
12	Onan	20DGAB	B920446365	Portable #129
13	Onan	Portable	NA	Portable #130
14	Onan	Portable	NA	Portable 50kw
15	Onan	20DGAB	B920446366	City Shop

Staff Summary

3/2/2020

Agenda Item # 6.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Scott Olesen, Building Official

SUBJECT: **Motion To Approve A 3-Year Customer Support Agreement For Emergency Backup Generators For The Water Treatment Department.**

BACKGROUND: The City Water Treatment Department has three generators that are installed at the Water Treatment Plant and at two well sites. The generators are used to provide power that can operate the entire Water Treatment facility and provide power for three wells simultaneously during a power outage situation. If the generators would fail, this would either cause a partial or total shutdown in the ability for the City to produce water. The ability for the generators to operate when needed could be jeopardized if routine maintenance is not provided. We are required by the Iowa DNR as a part of our water permit to have a thorough routine maintenance program as well. These are large generators and are very complex requiring the ability to work on diesel engines, elevated voltage equipment, and automatic transfer systems to work in unison or the generators will fail to operate correctly when they are needed in an emergency.

FISCAL IMPACT: Total cost of 11,140.61 Annually for a three year period.

RECOMMENDATION: Approve customer service agreement.

ATTACHMENTS:

Description	Type
Contract	Contract

10/22/2019

1500 ZIEGLER DRIVE NW
ALTOONA, IA 50009
WWW.ZIEGLERCAT.COM/POWER

To:
Shane Stewart
CITY OF STORM LAKE
PO BOX 1086
STORM LAKE, IA 50588-1086

Dear Shane,

Enclosed is a 3 year Customer Support Agreement (CSA) for the following Engines :

Model(s): 3306 | 3406 | 3412 |

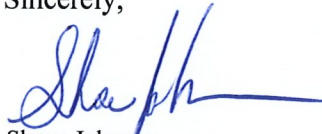
Serial Number(s): 8DR01413 | 9DR04851 | 081Z11029 |

The payment price will not increase during the agreement period. If this agreement is acceptable, please sign, date, run copy for your file and return to me in the enclosed self-addressed envelope, fax to (515) 957-3879, or email to Shane.Johnson@zieglercat.com.

Please call me at 515-957-3903 with any questions you may have.

We appreciate your business and thank you.

Sincerely,



Shane Johnson

Customer Support Representative

CUSTOMER SUPPORT AGREEMENT

Date: 10/22/2019



Proposal No. 4522

1500 Ziegler Drive NW
Altoona, IA 50009
515-957-3800 / 800-342-7002

To:
Shane Stewart
CITY OF STORM LAKE
PO BOX 1086
STORM LAKE, IA 50588-1086

Re:
3 year Customer Support Agreement (CSA) for
MODEL: 3306 | 3406 | 3412 |
SERIAL: 8DR01413 | 9DR04851 | 081Z11029 |

WE PROPOSE TO FURNISH IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS, TERMS AND CONDITIONS

Enclosed is a 3 year Customer Support Agreement (CSA) for the following Engines :

Model(s): 3306 | 3406 | 3412 |

Serial Number(s): 8DR01413 | 9DR04851 | 081Z11029 |

AGREEMENT START DATE: 1/1/2020

AGREEMENT END DATE: 12/31/2022

INVOICE FREQUENCY: ☐ Annually

INVOICE AMOUNT: \$11,140.61

IMPORTANT NOTES

- CUSTOMER SUPPORT AGREEMENT PRICING WILL NOT INCREASE DURING THE TERM OF THIS AGREEMENT.
- PRICE INCLUDES PARTS, LABOR, TRAVEL AND DISPOSAL OF ALL FLUIDS PER E.P.A. STANDARDS.
- TRAINED AND CERTIFIED ENGINE/GENERATOR TECHNICIANS WILL PERFORM ALL SERVICES.

TERMS AND CONDITIONS

- Agreement pricing is based upon generator run time between 0 and 250 hours per year (standby applications).
- Invoices will be sent on the first day of each invoicing period (i.e. monthly, quarterly, semi-annually or annually).
- This is a preventative maintenance agreement; repairs classified outside standard preventative maintenance will result in additional costs to the customer.
- Either party may cancel this agreement with a (60) sixty day written notice.
- Early cancellation of this agreement will require payment for any services provided but not yet paid for.
- This proposal is valid for (60) sixty days.
- Prices assume all services to be performed during normal business hours (7:30am - 4:00pm, M-F) unless otherwise specified.
- Pricing does not include local and/or state taxes. Taxes will be applied to invoices where applicable.

ACCEPTED BY:

Please Sign Name: _____

Please Print Name: _____

Date: _____

Respectfully submitted,
Ziegler Power Systems


By: Shane Johnson

Customer Support Representative

Level Definitions

Watchguard Level 1 (64 Point Inspection)

Includes inspection of the following systems:

- Cooling
- Lube Oil
- Air Intake
- Fuel
- Exhaust (inside building only)
- Starting
- Engine
- Generator
- Transfer Switch
- Coolant and Oil Analysis
- Provide written report

MODEL: 3306 | SERIAL: 8DR01413

Level 1

Jan/2020 , Jan/2021 , Jan/2022

MODEL: 3406 | SERIAL: 9DR04851

Level 1

Jan/2020 , Jan/2021 , Jan/2022

MODEL: 3412 | SERIAL: 081Z11029

Level 1

Jan/2020 , Jan/2021 , Jan/2022

WatchGuard Level 2 (67-Point Inspection with Oil and Filter Change)

Includes the following:

- Level 1 Inspection
- Change engine oil
- Change engine oil filter(s)
- Change engine fuel filter(s)
- Inspect air filter(s)
- Disposal of old fluids per EPA standards
- Provide written report

MODEL: 3306 | SERIAL: 8DR01413

Level 2

Jul/2020 , Jul/2021 , Jul/2022

MODEL: 3406 | SERIAL: 9DR04851

Level 2

Jul/2020 , Jul/2021 , Jul/2022

MODEL: 3412 | SERIAL: 081Z11029

Level 2

Jul/2020 , Jul/2021 , Jul/2022

WatchGuard Level 3 (Cooling System Service)

Includes the following:

- Drain and refill cooling system, add coolant additives
- Replace cooling systems hoses
- Replace engine thermostats (where applicable)
- Disposal of old fluids per EPA standards
- Provide written report

MODEL: 3306 | SERIAL: 8DR01413

Level 3

Jul/2020

MODEL: 3406 | SERIAL: 9DR04851

Level 3

Jul/2020

MODEL: 3412 | SERIAL: 081Z11029

Level 3

Jul/2020

WatchGuard Level 5 (Load Bank Testing)

Includes the following:

- Engine load bank test (2 - hours)
- Provide written report

MODEL: 3306 | SERIAL: 8DR01413

Level 5

Jul/2020

MODEL: 3406 | SERIAL: 9DR04851

Level 5

Jul/2020

MODEL: 3412 | SERIAL: 081Z11029

Level 5

Jul/2020

Watchguard Level 9 (Battery Replacement Program)

Includes the following services

- Complete electrical system check
- Battery charger adjustment
- Test engine starter amperage
- Removal and disposal of old lead acid batteries per EPA standards
- Installation of new, low antimony batteries specifically designed for standby applications
- Provide written report

MODEL: 3306 | SERIAL: 8DR01413

Level 9

Jul/2020

MODEL: 3406 | SERIAL: 9DR04851

Level 9

Jul/2020

MODEL: 3412 | SERIAL: 081Z11029

Level 9

Jul/2020

Customer Requirements

It is the customer's responsibility to...

- Perform weekly and monthly inspections of the engine/generator
- Maintain written or computerized records of the weekly and monthly inspections.
- Contact Ziegler Power Systems with any problems or concerns noted during the weekly and monthly inspections.

Ziegler Power Systems Exclusion of Responsibility:

Ziegler Inc. is not responsible for...

- Providing a portable generator during repairs
- Fuel consumed by generator set during operation
- Building wiring
- System modifications
- Acts of nature, terrorism or war
- Uses of generator beyond rated capacity
- Main fuel tank or piping problems
- Emissions permitting
- Regulation changes
- State and local taxes
- Customer abuse/neglect

Staff Summary

3/2/2020

Agenda Item # 7.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Keri Navratil, City Manager

SUBJECT: **Resolution No. 54-R-2019-2020 for Amendment No. 1 to the Contract with Bainbridge Construction for the 4th & Oates Storm Water Project**

BACKGROUND: This area of the community has experienced extreme flooding for quite some time as the community developed adding substantial impervious area to the watershed. Of the 250 acres that drains to Radio Park, 144 acres drain to this location, mostly via sub-surface storm sewer pipes.

The contract was awarded to Bainbridge Construction on September 16, 2020 in the amount of \$684,980.15. This amendment to the contract is housekeeping in nature and adds Federal language required to be in the contract.

FISCAL IMPACT: The project is funded 75% by federal HUD money and 25% local match.

RECOMMENDATION: Approve Resolution No. 54-R-2019-2020 approving Amendment No. 1 to the contract with Bainbridge Construction for the 4th & Oates Storm Water Project

ATTACHMENTS:

Description	Type
☐ Contract Amendment	Contract
☐ Resolution No. 54-R-2019-2020	Resolution

Contract Amendment:

- I. This amendment (the "Amendment") is made by City of Storm Lake (the "Owner") and Bainbridge Construction, LLC, (the "Contractor") parties to the Agreement 4th & Oates Storm Water Improvements dated September 16, 2019.
- II. The Agreement is amended as follows: This Amendment includes language for the Community Development Block Grant (CDBG) Requirements and Federal Labor Standards Provisions to the body of the Contract as outlined in Attachment 1 of this amendment.
- III. Except as set forth in this Amendment, the Agreement is unaffected and shall continue in full force and effect in accordance with its terms. If there is conflict between this Amendment and the agreement or any earlier amendment, the terms of this amendment will prevail.

OWNER:

City of Storm Lake

By:

Mike Porsch

Title:

Mayor

CONTRACTOR:

Bainbridge Construction, LLC

By:

Troy Bainbridge

Title:

President

Attest:

Mayra Martinez

Title:

Clerk

Attest:

Colleen Bainbridge

Title:

Secretary

Date: March 3, 2020

ATTACHMENT NO. 1

A. Executive Orders 11246 and 11375.

The Contractor will comply with all provisions of Executive Orders 11246 and 11375. During the performance of this Contract, the Contractor agrees as follows:

- 1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
- 2) The Contractor will, in all solicitations or advertisement for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- 3) The Contractor will send to each labor union or representative of workers with which they have a collective bargaining agreement or other Contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the Contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- 4) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant order of the Secretary of Labor.
- 5) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to their books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- 6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any such rules, regulations or orders, this Contract may be canceled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further government Contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- 7) The Contractor will include the provision of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance; provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

B. Title VI of the Civil Rights Act of 1964 and Iowa Civil Right Act of 1965.

This act provides that no person shall be excluded from participation, denied benefits, or subjected to discrimination on the basis of race, color, or national origin under any program or activity receiving federal financial assistance. Iowa Civil Right Act mirrors the Federal Civil Rights Act.

C. Federal Executive Order 11063, as amended by Executive Order 12259 Equal Opportunity Housing

D. Section 109 of Title I of the Housing and Community Development Act.

This act provides that no person shall be excluded from participation, including employment, denied program benefits, or subjected to discrimination on the basis of race, color, physical or mental disabilities, national origin, sex, handicap, religion or religious affiliation, or age under any program or activity funded in whole or in part under Title I of this act.

E. Section 3 of the Housing and Urban Development Act of 1965 (as amended).

A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.

C. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

D. The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.

E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 135.

F. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

G. With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

F. The Americans with Disabilities Act (P.L. 101-336, 42 U.S.C. 12101-12213).

This act guarantees equal opportunity for individuals with disabilities in public accommodations, employment, transportation, state and local government services and telecommunications.

G. Access to and Maintenance of Records. The Contractor must maintain all required records for five years after final payments are made and all other pending matters are closed. At any time during normal business hours and as frequently as is

deemed necessary, the Contractor shall make available and furnish all information and reports required, and will permit access to books, records, and accounts by the Owner, Department of Housing and Urban Development, the Secretary of Labor, the Iowa Economic Development Authority or their authorized representatives, for purposes of investigation to ascertain compliance.

H. Termination. The Owner and/or the Contractor shall have the right to terminate this Contract at any time by giving at least ten (10) days notice in writing. The notice shall specify the effective date of such termination. Upon cancellation, the Owner will be responsible only for those costs incurred by the Contractor to the date of termination. In the event of termination, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs and reports prepared by the Contractor under this Contract shall, at the option of the City, become its property and the Contractor shall be entitled to receive just and equitable compensation for any work satisfactorily completed hereunder.

I. Awarding Agency Reporting Requirements. The Contractor must provide information as necessary and as requested by the Iowa Economic Development Authority for the purpose of fulfilling all reporting requirements related to the CDBG program.

J. Energy Efficiency. Mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issued in compliance with the Energy Policy and Conservation Act.
Pub. L 94-163, 89 Stat. 871

K. All Contracts in Excess of \$100,000.

In addition to the preceding provisions, Contracts in excess of \$100,000 shall require compliance with the following laws and regulations:

- Section 306 of the Clean Air Acts [42 U.S.C. 1857 (h)].
- Section 508 of the Clean Water Act [33 U.S.C. 1368].
- Executive Order 11738.
- EPA Regulations - 40 CFR, Part 15.

In accordance with the Clean Air and Water Act, the Contractor agrees as follows:

- 1) The Contractor will certify that any facility to be utilized in the performance of any nonexempt contract or subcontract is not listed on the List of Violating Facilities issued by the Environmental Protection Agency pursuant to 40 CFR 15.20.
- 2) The Contractor agrees to comply with all the requirements of Section 114 of the Clean Air Act, as amended, (42 U.S.C. 1857c-8) and Section 308 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1318) relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.
- 3) The Contractor agrees that as a condition for the award of a Contract, prompt notice will be given of any notification received from the Director, Office of Federal Activities, Environmental Protection Agency, indicating that a facility utilized or to be utilized for the Contract is under consideration to be listed on the Environmental Protection Agency List of Violating Facilities.
- 4) The Contractor agrees that it will include or cause to be included the criteria and requirements in Paragraphs (1) through (4) of this section in every nonexempt subcontract and require every subcontractor to take such action as the Government may direct as a means of enforcing such provisions.

L. All Contracts in Excess of \$2,000.

In addition to the preceding provisions, all construction contracts in excess of \$2,000 must include the Federal Labor Standards Provisions:

- Davis-Bacon and Related Acts
- Contract Work Hours and Safety Standard Act
- Copeland Anti-kickback Act

End of Section

RESOLUTION NO. 54-R-2019-2020

**RESOLUTION APPROVING AMENDMENT NO. 1 TO THE 4TH AND OATES
STORMWATER PROJECT**

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF STORM LAKE, IOWA;

WHEREAS, the City of Storm Lake entered into a contract with Bainbridge Construction, LLC of Kingsley, Iowa for construction of the 4th and Oates Stormwater Project on September 16, 2019, and

WHEREAS, the City and contractor desire to amend the contract to include federal language clauses required by the City's funding source;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF STORM LAKE, IOWA:

SECTION 1. The City Council hereby finds the language of Amendment No. 1 is sufficient to meet the needs of the funding agency.

SECTION 2. The Mayor is authorized to sign Amendment No. 1 to the 4th and Oates Stormwater Project.

PASSED AND APPROVED this 2nd day of March 2020.

Michael Porsch, Mayor

ATTEST:

Mayra A. Martinez, City Clerk

Staff Summary

3/2/2020

Agenda Item # 8.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Keri Navratil, City Manager

SUBJECT: **Public Hearing for Submission of an Application for a Community Development Block Grant - Memorial Lift Station**

BACKGROUND: The grant application will request funding assistance for improvements to the City's sanitary sewer system, specifically improvements to Memorial Lift Station.

Memorial Lift station was originally built in 1983 and is an integral part of the wastewater system as 70% of wastewater flows through this lift station. The City intends to apply for a Community Development Block Grant (CDBG) to add redundancy to the system to ensure that that we do not bypass into the lake or to cause 70% of the community to not have access to the wastewater system.

FISCAL IMPACT: If awarded, the City of Storm Lake would be eligible to receive \$600,000 in Community Development Block Grant funds.

RECOMMENDATION: Open Hearing
Hear Comments
Close Hearing

ATTACHMENTS:

Description	Type
Public Hearing Notice	Backup Material
Facility Plan	Backup Material

PUBLIC HEARING NOTICE

The City of Storm Lake, Iowa, is hereby serving as Public Notice that on March 16, 2020, at 5:00 p.m., the City Council will hold a public hearing in the Council Chambers at City Hall, 620 Erie Street, Storm Lake, Iowa, to consider a Community Development and Housing Needs Assessment. The assessment will outline projects that the City has identified as community and housing needs over the next few years.

This meeting will be held to give residents information concerning the proposed assessment. Citizens are encouraged to attend and express their preferences about the proposed activities. Anyone having questions about this project or requiring special accommodations at the upcoming hearing may contact the City Manager at 712-732-8000.

Mayra Martinez
City Clerk
City of Storm Lake, Iowa



Dec 31, 2019

City of Storm Lake
Keri Navratil, City Manager
620 Erie St, PO Box 1086
Storm Lake, IA 50588

RE: Memorial Lift Station Improvements
City of Storm Lake
DNR Project No. S2019-0384A
CWSRF No. CS1920XXXXX (pending)

Subject: Facility Plan Approval

Dear Keri:

The Iowa Department of Natural Resources has reviewed the Facility Plan and all subsequent correspondence for the above-referenced project and is in agreement with the project as currently proposed. The Facility Plan is officially approved. When ready, please submit Plans and Specifications to the Department for review. Plans and Specifications shall be prepared in accordance with the approved Facility Plan. The following is a brief summary of the approved Facility Plan.

A new isolation valve on the force main discharge line, replacing pump #1 and #2 with the same capacity as the existing pumps, replacing the sump pump in the existing wet well, temporary bypass pumping, valves replacement, sluice gate installation in the wet well, other miscellaneous maintenance work.

The existing pumping capacity of Memorial lift station will not be changed.

ELIGIBILITY

The City has opted to utilize State Revolving Loan Funds (SRF) for financing the proposed project. Therefore, an environmental review (ER) is necessary to assess the environmental impacts of the project in accordance with procedures in 40 CFR Part 6 and is required for all loan recipients. A decision will be made by the department to determine if the project qualifies for a categorical exclusion (CX) or if a finding of no significant impact (FNSI) is required. The facility plan is approved conditionally based strictly on the technical review of the proposed project. Any significant project change resulting from the environmental review may require an amendment to the facility plan or a revised facility plan to retain eligibility for SRF funding. Construction of the project prior to the environmental review completion could jeopardize your SRF funding. Please contact DNR Environmental Review Staff for questions about the ER status.

Our approval does not eliminate the need for the city to comply with all federal, state and local regulations. This department must be notified of any change in your proposal and approve the change prior to incorporation in plans and specifications. Our approval of the Facility Plan is not an endorsement for funding. Additional coordination and documentation may be necessary before a loan agreement can be offered.

Please feel free to contact me at 515-725-8421 or email emy.liu@dnr.iowa.gov if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Emy Wenxin Liu".

(Emy) Wenxin Liu, PhD, PE
Project Manager
Wastewater Engineering Section

Encl.

c: ISG (508 E. Locust, Des Moines, IA 50309) (w/FP)
DNR FO 3 (Spencer, Iowa)
DNR Sewage File 6-11-78-0-01
SRF File CS1920xxxxxx (pending) (w/FP)

FACILITY PLAN MEMORIAL LIFT STATION

CITY OF STORM LAKE, IOWA
JUNE 2019



REPORT FOR:
City of Storm Lake
620 Erie Street
Storm Lake, IA 50588
712.732.8000

FROM:
Jason Kenyon, P.E.
ISG
508 E. Locust Street
Des Moines, IA 50309
515.243.9143
Jason.kenyon@is-grp.com

ISG

Facility Plan

Memorial Lift Station, Storm Lake, Iowa

Ownership of Document

This document, and the ideas and designs incorporated herein, as an instrument of professional service, is the property of ISG, and is not to be used, in whole or in part, for any other project without the written authorization of ISG.

Project No. 19-22797

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa. <u>Jason C. Kenyon</u> <u>7-19-2019</u> Jason C. Kenyon Date License Number: 25053 My License Renewal Date is 12/31/2019 Sections covered by this seal: <u>Entire Bound Report</u>
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Executive Summary

The City of Storm Lake's Memorial Lift Station was constructed in 1983 to convey wastewater from the previous wastewater treatment plant site to the new wastewater treatment plant approximately 2.5 miles southeast. Memorial Lift station was originally designed to convey all wastewater from the City. New lift stations on the west side of Storm Lake have diverted some flow away from Memorial Lift Station, but Memorial Lift Station still handles the majority of the City's Wastewater. Minor improvements have been made to the lift station since its original construction, but many of the most critical components are original and have been in operation for 35 years. Improvements are necessary in order for this critical lift station to continue to operate reliably. Improvements identified in this facility plan include replacement of failing equipment, rehabilitation of the existing structure, modifications to comply with code requirements, and improvements for future operation and maintenance.

Minor improvements at the site, including removing vegetation, rerouting downspouts, and filling animal burrows are recommended to help maintain access and prevent future degradation to the structure. Filling the animal burrows under the transformer pad is critical due to the potential for animals to damage the electrical service conductors and interrupt power to the lift station. The total estimated cost for the recommended site improvements is \$1,800.

In order to make the recommended improvements inside memorial lift station, a new isolation valve will need to be installed on the force main discharge and the flow bypass pumped around the lift station. Work will need to occur during dry weather periods to reduce bypass pumping costs during construction. The estimated cost for installing the isolation valve and temporary bypass pumping is \$150,000.

Process improvements at Memorial Lift Station include replacement of valves that are in poor condition and failing, recoating the existing piping, and modifying the wet well configuration to reduce stagnant wastewater and solids deposition that contributes to hazardous and corrosive gases. The estimated cost for the process improvements is \$327,000.

The existing pumps at Memorial Lift Station include two 60 horsepower duty pumps and three 300 horsepower peak flow pumps. All five pumps are the original pumps that were installed when the lift station was built in 1983. One of the smaller pumps is inoperable and the other small pump runs continuously. The three peak flow pumps only run during heavy rain events when there is significant infiltration and inflow in the collection system. Replacement of the two 60 horsepower pumps is recommended as these pumps handle the majority of the flow at the lift station. Replacement of the larger pumps was also evaluated, but the existing pumps are still in good condition due to their low run time. The estimated cost of replacing the two 60 horsepower pumps is \$180,000.

Structurally, Memorial Lift Station is in serviceable condition. However, repairs are required to make the structure weather tight, replace protective coatings, and patch minor degradation of the concrete

structure. Filling and abandoning the unused grit chamber will help reduce stagnant wastewater as well. The estimated cost of the structural rehabilitation is \$260,000.

There are several HVAC components at Memorial Lift station that have failed or do not meet current code requirements. Replacing the failed ventilation components is critical for protecting operations staff from hazardous conditions. Additionally, the increased ventilation will protect electrical systems and metal components from corrosive gases. The estimated cost of the HVAC improvements is \$177,000.

The location of the existing water service lines at Memorial Lift Station create a significant risk to the electrical system. Rerouting water and drain lines away from electrical components is necessary to prevent catastrophic damage to the motor control center in the event of a pipe break. The water circulation pumps for the boiler heating system are also failing and should be replaced with newer variable speed pumps that will provide greater reliability and efficiency. The estimated cost of the plumbing repairs and improvements is \$74,000.

The existing motor control center at Memorial Lift Station are in poor shape due to age and exposure to water and corrosive gases. Some components of the electrical system do not meet current electrical codes. Replacement of these components is crucial for providing reliable power to the pumps. Additionally, replacing the existing florescent and high pressure sodium lights with LED lights can provide some energy savings and provide longer bulb life, reducing operator time required to maintain the lighting system. The estimated cost of the electrical improvements is \$318,500. The additional estimated cost for replacing and adding LED lighting is \$36,000.

The Controls system at Memorial Lift Station is in poor condition and replacement components for the existing system are no longer manufactured. Complete replacement of the controls system is required to ensure continued operation. Additionally, the new control system will provide better monitoring and remote operation of the lift station. New systems to monitor ventilation and hazardous gases are also necessary to protect operations staff. The estimated cost for the controls improvements is \$225,000.

The total estimated project cost, including contingency and non-construction costs, is \$2,275,000. The City of Storm Lake intends to apply for a Community Development Block Grant (CDBG) for \$600,000 and use a State Revolving Fund (SRF) loan for the remaining balance of \$1,675,000.

Due to the need for bypass pumping during construction, the proposed work must be done during a dry weather period. The preliminary project schedule includes bidding the project in spring 2020 to allow for equipment procurement lead time over summer 2020 and installation during bypass pumping in fall 2020.

Introduction

BACKGROUND

The City of Storm Lake's Memorial Lift Station was originally constructed in 1983 at the site of the City's previous wastewater treatment plant. The lift station was designed to convey all of the City's wastewater to the new wastewater treatment plant approximately 2.5 miles southeast. After construction of the lift station, force main, and new wastewater treatment facility, the old wastewater treatment facility was demolished. Minor improvements have been made to Memorial Lift Station since its original construction. An activated carbon odor control system and a diesel backup generator were installed in 2008. The mechanical bar screen and grit removal equipment were removed and a new grinder was installed in 2016. Most of the existing equipment is original to the lift station construction and has been in service for 35 years.

SCOPE OF WORK

Due to the age, condition, and criticality of Memorial Lift Station, the City of Storm Lake retained ISG to evaluate the condition of the lift station and prepare this facility plan. ISG evaluated the condition of the site, process equipment, structure, HVAC, plumbing, electrical, and controls systems to identify deficiencies that are currently or could in the future impact the operation of Memorial Lift Station. ISG then prepared an evaluation of proposed improvements to address those deficiencies and ensure Memorial Lift Station continues to operate reliably.

Existing Conditions and Deficiencies.

SITE

The City still owns the entire eight acre site of the previous wastewater treatment plant, which has since been demolished, and uses the open areas around the lift station for material and equipment storage. An eight foot fence with barbed wire follows the perimeter of the below-grade lift station structure and secures the above-grade entrances to the lift station. The parcels surrounding the lift station site are light industrial sites and the municipal cemetery. The Chicago Central and Pacific Railway line borders the site to the north. The nearest residential structure is approximately 1,300 feet east of the lift station.



Figure 1: Memorial Lift Station Site and Location

Around the exterior of the lift station, animals have burrowed holes at several locations below stoops and the transformer pad. These holes should be filled and measures taken to prevent future unwanted excavations. Vegetation has grown up around the building slab as well, hindering maintenance access. The roof gutter downspouts are not connected to a sufficient outlet and several of them discharge directly to the ground immediately next to the lift station. This likely contributes to water accumulation and seepage into the lift station. For proper drainage, the downspouts should be directed further away from the building exterior.



Figure 2: Animal Burrows, downspouts, and vegetation around lift station exterior

A summary of the site deficiencies identified is provided below:

- Animal burrows are present in several locations around the building exterior.
- Vegetation has grown up in several locations around the building exterior.
- The downspouts discharge directly adjacent to the lift station.

PROCESS

Flows

The original design flow rates for Memorial Lift Station are listed in Table 1 below. In 2014, additional lift stations were constructed around the western perimeter of Storm Lake which diverted a significant portion of the City's wastewater away from Memorial Lift Station.

Table 1: Memorial Lift Station Design Flow Rates

Flow Condition	Flow, MGD
Average Dry Weather	1.80
Average Wet Weather	3.34
Maximum Wet Weather	6.20
Peak Hourly Wet Weather	15.80

Influent flow at the lift station is measured by a parshall flume with a totalizing flow meter. The totalizer reading is periodically recorded in a log book at the lift station. Therefore, hourly flow data is not available for this lift station. The Flow rate data recorded between June 2015 and August 2016 is summarized in Figure 3 below. The peak average daily flow observed during this period was approximately 7.72 MGD, and the majority of the average daily flows were below 3 MGD. With the limited data available, it appears that flow rates are within the original design capacity for the Lift Station. Therefore, the existing design capacity is considered adequate and proposed improvements will maintain the existing capacity.

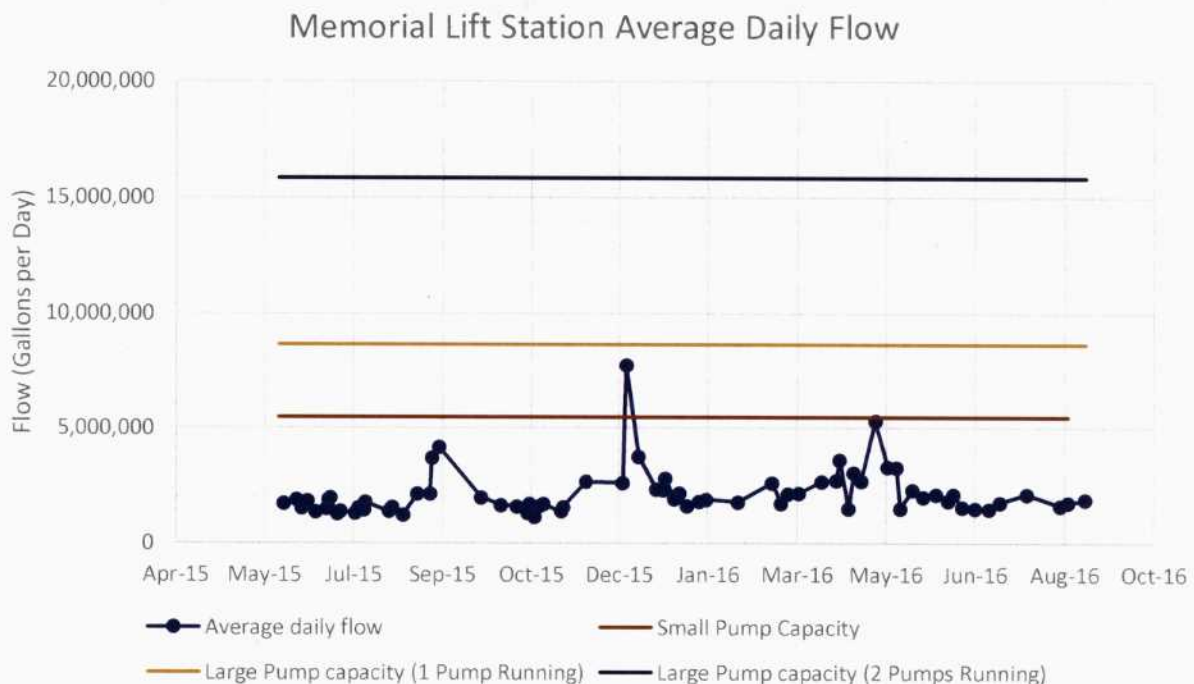


Figure 3: Recorded Flow May 2015-Aug 2016

Pumps

Memorial Lift station includes two 60 horsepower pumps (one duty, one standby) for average daily flows, and three 300 horsepower pumps (two duty, one standby) for peak flows during significant precipitation events. The Design Points of the pumps are listed in Table 2 below. A plug valve on the discharge piping of one of the smaller pumps (Pump #1) has failed in the closed position, rendering the pump inoperable. A variable frequency drive has been installed on the other small pump (Pump #2).

Table 2: Pump Design Points

Pump	Flow, GPM (MGD)	Head, ft.	Motor horsepower	Notes
Pump #1	3,750 (5.4)	42	60	Inoperable due to failed valve.
Pump #2	3,750 (5.4)	42	60	Operates on a VFD
Pump #3	5,500 (7.92)	140	300	Pumps 3, 4, and 5 operate as one or two pumps in service, with one pump on standby.
Pump #4	5,500 (7.92)	140	300	
Pump #5	5,500 (7.92)	140	300	

The seal on Pump #2 was recently replaced with a new mechanical seal as well. While not required, the manufacturer recommends that seal water be supplied to the new seal. The seals on the three larger pumps (Pumps #3, #4, and #5) have recently been replaced with new mechanical seals that do not require seal water. The seal water system is old and degraded. Additionally, the seal water pumps and suction tanks are located in the electrical room, creating a hazard to the electrical equipment.



Figure 4: Seal Water System

Solids Handling

When the Memorial Lift Station was originally constructed, it included a mechanical bar screen and aerated grit removal. The screening and grit removal equipment were removed in 2011 and replaced with an in-channel grinder to grind solids which would then be pumped to the new headworks facilities at the wastewater treatment plant and removed there. The grinder is in good condition.

The grit chamber is now isolated from the flow path by stop plates installed in the inlet channel; however, during high flow events water backs up over the grit chamber discharge weir and fills the chamber, resulting in stagnant wastewater which is a significant source of hydrogen sulfide and odors. The hydrogen sulfide gases produced by the stagnant wastewater contribute to corrosion and worker health and safety issues.

Odor Control

An activated carbon odor control system was installed at Memorial Lift station in 2007 to capture gases generated in the screening chamber. Shortly after installation, the carbon media was exhausted and replacement of the media was deemed cost prohibitive. In order to help reduce odors, Hydrogen peroxide is now fed into the sewer upstream of the lift station from a building located approximately 100 feet to the west of the current lift station facility.

Wet Well

A figure of the wet well layout is included in Appendix A. The wet well is separated into two zones, with the suction piping for the smaller pumps in one zone (The Average Flow Wet Well) and the suction piping for the larger pumps in the other zone (the Peak Flow Wet Well). The two zones are connected by a 4 ft wide by 2 ft tall overflow opening and a lower 36" circular opening with a sluice gate. Flow enters the average flow wet well through three 18" circular openings at the base of the wall between the influent channel and the wet well. As incoming flows increase above the capacity of the smaller pumps, the water elevation rises and overflows into the Peak flow wet well, where the large pumps are activated to handle peak flows. Once the large pumps stop, a sump pump should dewater the peak flow wet well. However, this sump pump does not appear to be functioning, leaving stagnant water in the peak flow wet well. Replacing the sump pump requires an operator to enter the wet well as there is no access to the sump pump from above the wet well.

While not shown on the original plans, a pipe has been installed from the influent channel to the peak flow wet well. Based on the elevation of this pipe, it is assumed that it serves to bypass flow directly to the peak flow wet well during high flow events when the 18" openings into the average flow wet well are unable to hydraulically pass the influent flows.

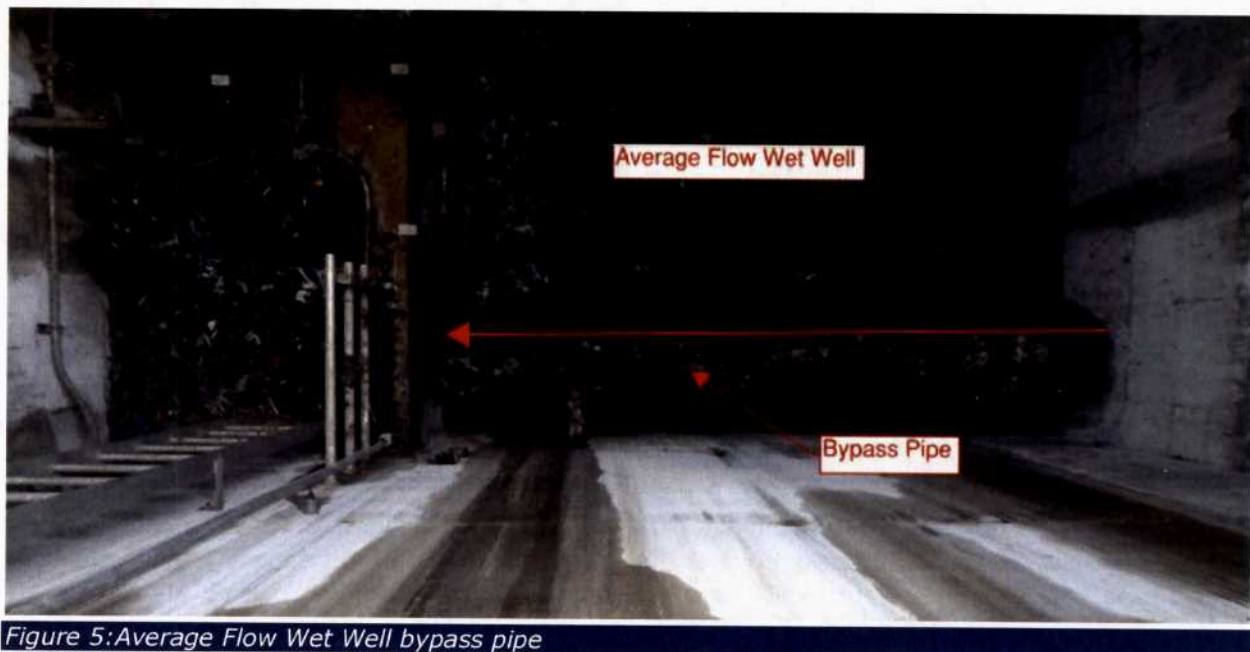


Figure 5: Average Flow Wet Well bypass pipe

Due to the large volume, solids are likely settling out in the wet well during low flow periods. This issue is exacerbated by limited accessibility for vacuum truck suction hoses to get into the wet well to remove solids and floating debris.

Suction/Discharge Piping

As shown in Figure 5 below, the existing piping in the drywell has some deterioration and corrosion. A non-destructive evaluation was performed on the piping in June 2019 to determine the condition of the pipe. The evaluation determined the pipe was still in good condition. A copy of the evaluation report dated June 4, 2019 is provided in Appendix B. The pipe supports are also rusting. The base plates of the pipe supports are frequently in contact with water on the floor of the pump room.

The plug valve on the discharge side of Pump #1 has failed in the closed position. A few of the check valves have broken lever arms as well. Replacing the pump isolation plug valves is currently not possible because there is no way to isolate the Lift Station piping from the rest of the downstream force main.



Figure 6: Pump Discharge Piping

A summary of the process deficiencies identified is provided below:

- Valve failure has made Pump #1 inoperable.
- The seal water supply system is old and degraded. Its location is a hazard to the electrical equipment.
- The grit chamber is unused and stagnant.
- The large wet well volume contributes to solids deposition.
- The sump pump in the wet well has failed and is difficult to access for maintenance.
- There is limited access for cleaning equipment into the wet well.
- The long residence time and solids deposition contribute to hydrogen sulfide gas production.
- The odor control media has been depleted and is no longer used.
- There is no way to isolate the average daily flow wet well for cleaning.
- The process piping and supports are corroded and need recoating.
- The suction and discharge valves are old and failing.
- There is no way to isolate the process piping for valve replacement.

STRUCTURE

The existing lift station consists of a below-grade cast in place concrete structure divided into several chambers. The top slab of the structure is at grade with several hatches for access and removal of equipment from the below-grade chambers. The above-grade structure consists of an older "corduroy brick" building with separate entrances to the stairwells into the electrical room and headworks room. A newer CMU building that houses the emergency generator and boiler is adjacent to the entrance building.

While the overall structure appears to be in serviceable condition, water infiltration has caused serious corrosion of metals and overall building degradation. Many surface coatings including paints, waterproofing, and insulation are visibly degraded and have exceeded their service lives. Due to such extensive water damage, it is recommended that all existing surface coatings should be removed and replacement coatings applied. The following sections discuss further recommendations for necessary repairs.

Exterior

The exterior fascia of the building is composed of corduroy brick that displays cracking and mortar deterioration. To prevent further damage, the cracks should be caulked. Additionally, tuck pointing is required at locations of mortar deterioration. An overhead door into the Generator room has significant corrosion and should be recoated or replaced.

A removable section of concrete slab is located in the roof of the headworks chamber for access to the grinder. Seepage around the slab has caused deterioration to the insulation on the interior ceiling of the lift station. Currently, a tarp has been placed over the slab in order to reduce seepage. Another access hatch is located on the East side of the lift station above the electrical room. A waterproofing membrane was previously installed on the slab surrounding the hatch. That membrane was damaged and currently sits in bundles on top of the slab, creating areas of water retention. Inside the electrical room, there are signs of water leakage through the existing access hatch.



The main access into the wet well is through hinged fiberglass panels. The steel support beams for the fiberglass panels show signs of corrosion. Additionally, one of the access openings is located immediately outside the door to the generator room, a significant safety concern.



Figure 8: Wet Well Access Panels

Upper Level

Multiple areas of the building show signs of roof leakage, causing damage to insulation, harboring mold growth, and rusting the metal roof deck. The roof shingles have likely exceeded their service life and require replacement.

Minor cracks are visible in the interior CMU walls in the above-grade entrance to the headworks chamber. This cracking needs to be sealed.

Electrical Room

The ceiling insulation in the electrical room exhibits signs of moisture retention and molding. The existing insulation should be removed and replaced. The hatch above the electrical room is not sealed, causing leakage. The hatch should be replaced to prevent further water damage.



Figure 9: Electrical Room Ceiling

Pump Room

An overhead crane is located in the pump room for removal and reinstallation of equipment. The posted rating of the crane is two (2) tons, or 4,000 pounds. Equipment weights were not verified but the crane capacity is assumed to be adequate. The support beams for the crane show signs of spalling paint.



Figure 10: Existing Overhead Crane

The existing pipe penetration seals between the drywell and wetwell are significantly corroded. These seals are critical for keeping wastewater and sewer gasses from entering the drywell.



Figure 11: Drywell Pipe Penetration Seals

The concrete slab that composes the ceiling of the pump room contains cracking. These cracks may exacerbate moisture conditions and should be repaired. The floor slab in the pump room shows significant deterioration due to standing water.



Figure 12: Pump Room Ceiling Cracking and Floor Slab

Headworks Chamber

There is an existing elevator that was used to remove the screening dumpster when the mechanical bar screen was in service. The elevator has stopped functioning and without the screening system it has limited usefulness. Adjacent to the elevator is a metal spiral staircase. The tight curvature of the spiral staircase makes it difficult for materials to be carried into the headworks chamber. City Operators have indicated a preference for both the elevator and spiral staircase to be replaced with a straight staircase with an intermediate landing, similar to the stairway into the pump room.



Figure 13: Elevator and Spiral Staircase

The ceiling insulation in the Headworks Chamber exhibits signs of moisture retention and molding. The existing insulation should be removed and replaced.

The existing grating above the open channels does not cover the entire opening at several locations. This presents a safety hazard. All grating should be replaced with solid panels that cover the entirety of the openings. The solid panels will also help to direct gases to an HVAC/hood area.

The concrete channel walls are pitted and spalled, likely due to hydrogen sulfide gases. Continued erosion of the walls could affect the function of the channel. The walls need to be repaired.



Figure 14: Headworks Chamber Ceiling and Channel concrete spalling

A summary of the structural deficiencies Identified is provided below:

- There is minor exterior and interior cracking in the above-grade masonry buildings.
- The exterior hatches in the top slab leak.
- The access hatch into the wet well is located directly in front of generator room door.
- There are interior signs of roof leakage.
- There is significant moisture damage to the interior ceiling insulation.
- The pipe penetration seals between the wet well and dry well are significantly degraded.
- Interior paints and coating systems have degraded.
- The elevator is non-functional and the spiral stairway hinders maintenance access.
- Gaps in the headworks channel grating are a safety hazard.
- There is concrete spalling and deterioration in the headworks channel.

HVAC

The Drywell, headworks chamber, and generator room are all separately heated and ventilated. The drywell is ventilated by an exterior exhaust fan and heated by an electric furnace. The headworks chamber is ventilated by a large air handling unit that includes an activated carbon scrubber for odor control as previously discussed. The headworks chamber is heated by a gas-fired boiler supplemented with an electric unit heaters. The generator room is heated by an electric unit heater but has no active ventilation.

Exterior

The ductwork wrapping on all exterior ductwork is peeling off and in some locations barely attached to the duct. The dampers and actuators associated with the odor control system are rusted through and unusable. The make-up air unit is missing a handle on the shut off panel.

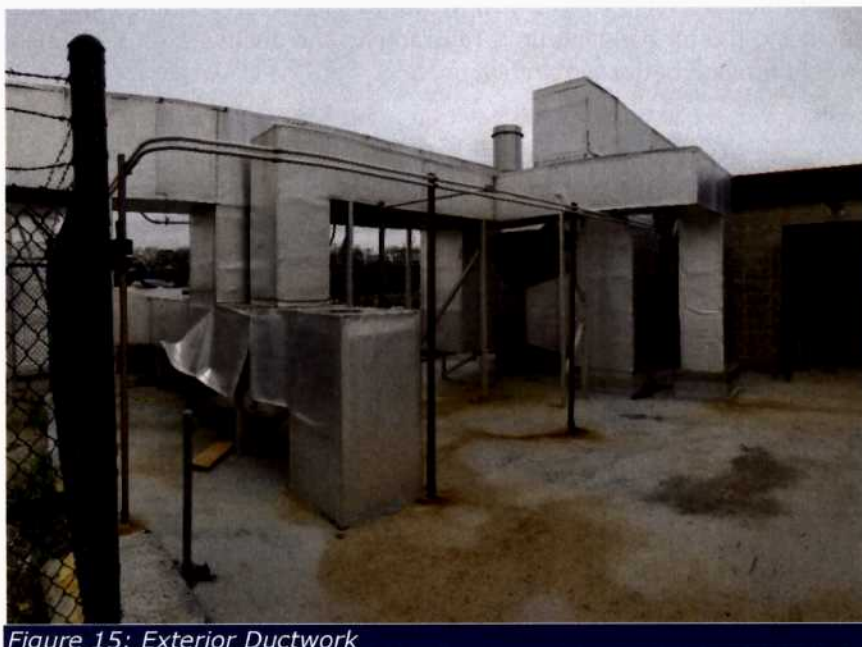


Figure 15: Exterior Ductwork

Emergency Generator Room

The electric heater hanging in the corner of the room is not working. City Staff have indicated that the electrical breaker for the heater trips very frequently. The condition of the heater itself seems to be OK. The seal around the generator exhaust pipe where it penetrates the building wall is visibly broken and should be resealed to prevent rainwater from leaking into the building. There is no active ventilation in the space, however the interior space does not appear to show any significant degradation. There is likely some passive air movement occurring through the large intake and exhaust louvers.

While the boiler appears to be in good working condition, the current location of the boiler in the generator room conflicts with NFPA 110, Standards for Emergency and Standby Power Systems. The code does not allow for other equipment that is not directly related to the generator function to be located in the generator room. To comply with code the boiler will need to be relocated or the space separated into 2 adjacent spaces. Functionally, the large amount of air required by the generator likely starves the gas-fired boiler of oxygen when the generator operates. This could lead to significant issues during a winter power outage.

There is an exhaust duct running through the room that is pulling air from the Electrical Room and Lower Pump Room. The duct will have to be separated from the generator room to comply with NFPA 820 requirements.

Electrical Room and Pump Room

There is currently no dehumidification in the space, and the walls are showing signs of damage from moisture. The exhaust fan that serves this space is currently non-functional. Additionally, there is no air intake louver, limiting the supply of fresh air to the space. Per NFPA 820, if the space is not ventilated with outside air, the space is classified as Class 1, Division 2, Group D, and the electrical equipment would require additional explosion protection. Providing a minimum of six (6) air changes per hour is required to declassify the space. Without the exhaust fan, the air-handling unit is only recirculating air, and the diffusers are mounted high and throwing air horizontally. In the lower pump room, the single exhaust grille is located high up, right below ceiling height. It may not be effectively exhausting the air from the bottom of the room. Replacing the air handling unit, rearranging the ductwork, and installing new downward facing diffusers would provide better air circulation.

Headworks Chamber

The headworks chamber is ventilated by the large air handling unit located outside the lift station. The exhaust duct and hood over are in poor condition. The supply duct appears to be in good condition but could be cleaned, both inside and outside. The explosion proof heaters appear to be out of order. There are no dehumidification measures in the space. Dehumidifiers could help reduce moisture damage to the interior surfaces and insulation.

Per NFPA 820, spaces like the headworks chamber with open wastewater channels are classified as Class 1, Division 1; unless ventilation is provided at 12 air changes per hour. If adequate ventilation is provided, the classification is reduced to Class 1, Division 2, and the requirements for explosion protection are reduced. Based on the documentation provided by the City on the existing air handling unit, adequate ventilation is being provided to reduce the classification in the headworks chamber.



Figure 16: Headworks Chamber Exhaust Hood and Duct

Wet Well

The wet well is actively ventilated by the exhaust fan of the air handling unit used for the headworks chamber. An intake hood is located in the top slab of the wet well and an exhaust duct passes through the wall into the headworks chamber. Based on the information provided by the City, the ventilation in this space does not appear to be adequate to reduce the classification. Therefore, the space is considered a Class 1, Division 1 space.

A summary of the HVAC deficiencies identified is provided below:

- The duct wrap on exterior ducts is degraded.
- The dampers and actuators on the exterior ductwork are rusted and non-functioning.
- The heater in the generator room is not functional due to an electrical issue.
- The seal on the generator exhaust pipe has cracked.
- The boiler located in the generator room violates NFPA 110.
- The exhaust vent passing through the generator room from the electrical room violates NFPA 820.
- There is no dehumidification to reduce moisture damage in several spaces.
- The exhaust fan for the electrical room and pump room has failed.
- There is no intake louver for the electrical room or pump room.
- The ductwork configuration in the pump room is inadequate for proper air circulation.
- The exhaust duct in the headworks chamber is in poor condition.

PLUMBING

Plumbing at Memorial Lift Station consists of a water service line that enters the electrical room from the north. The water line serves a toilet, sink, a small water heater, and the pump seal water system, all located in the electrical room. The water line also serves two hose bibs in the headworks chamber and the pump room, as well as the boiler for heating the headworks chamber.

Boiler Water System

The pumps that circulate water for the boiler show significant corrosion. They are operating at constant circulation volume without a VFD. The connected water pipes are leaking. The air separator does not appear to have a blowdown.

The boiler drain is crowded and needs to be relocated outside of the generator room. The drain pipe passes through the floor slab into the electrical room below and is routed above electrical equipment, creating a potential hazard.



Figure 17: Boiler Circulation Pumps and Drain

Restroom Facilities

There are cold water lines running above the MCC to the restroom facilities, creating a significant potential hazard to the electrical equipment. The toilet, sink, and water heater are in poor shape and could be replaced or removed. The sanitary pipes from the toilet and sink are routed along the ceiling of the pump room below and through the wall into the wet well. The sewer pipes and check valves are in poor condition. City staff have indicated that the restroom facilities are rarely used.

Floor Drains and Sump Pump

The sump pump and associated piping located in the pump room are in poor condition. There is significant standing water in the pump room and the floor drain piping is likely obstructed.

A summary of the plumbing deficiencies identified is provided below:

- The boiler pumps are in poor condition.
- The boiler system should not be located in the same room as the generator.
- The duct from the electrical room should not be routed through the generator room.
- The water piping to restroom is routed above electrical equipment.
- The floor drains and sump pump in the lower pump room are in poor condition.

ELECTRICAL

General

There are several electrical conduits and associated supports throughout the lift station that are severely corroded. Many of these conduits are unused and should be removed. There are several penetrations through the structure for unused conduits that should be sealed after the conduit is removed to prevent leakage. The conduits that are to remain in service should be replaced or recoated, and stainless steel supports provided.

Electrical Service

The building is served by a 3 phase, 480/277 volt 4-wire electrical service. The utility transformer is located outside the building on the north east corner. Unfused service conductors are installed underground from the utility transformer and extend overhead in the electrical room before entering the service disconnect located in the center of the electrical room. The service conductors should be fused to meet current electrical code. The main breaker installed is rated for 1,200 amps. Based on actual energy usage from MidAmerican Energy the service has experienced up to 83% utilization. The service is at or near maximum capacity. Peak demand records were obtained MidAmerican from May of 2014 through April of 2019. Average demand was 156 KW, and the highest recorded usage was 618 KW in June of 2017.

Backup Generator

The facility's electrical service is backed up by a stationary diesel generator. The generator is installed inside the building in the generator room. A 480-volt panelboard serving the equipment in the generator room is located in the adjacent stairway/entrance into the electrical room. The panelboard appears to be in good condition. The generator is rated for 750 KW, has a 1200 amp breaker, and is manufactured by Cummins. The generator's rated capacity appears to be adequate for the highest recorded energy use from the Utility Power. The generator appears to be in good condition, and according to staff is in working order.

Electrical Motor Control Center/Gear

The main service enters a 1200 amp Westinghouse breaker in a motor control center (MCC) in the electrical room. Capacitors are installed above the MCC for power factor correction. There is an MCC mounted transfer switch which appears to be out of service. An ASCO brand transfer switch has been installed outside the MCC and is now in service. There is an existing 1200 amp main breaker installed in the MCC for the generator. The generator breaker is likely not required, and may or may not be in

service. An Allen Bradley 2100 series MCC is installed for motor control and 120/208 volt power distribution.

Considerable corrosion was noted on the MCC and related electrical equipment. None of the MCC sections are installed on housekeeping pads, and corrosion is present at the base of several MCC sections. Foul odor was observed in the electrical room due to the lack of outside air ventilation. City staff indicated a variable speed drive had previously been installed in the MCC to serve pump #5, but had since failed. The VFD was subsequently replaced with a soft starter.

The electrical room has likely been exposed to corrosive gases such as hydrogen sulfide. Corrosive gas exposure is likely responsible for the premature VFD failure and corrosion of soft metals in the MCC. Copper and aluminum are soft metals commonly used as conductors and used within circuit boards. Exposure to corrosive gasses has likely shortened the life of electrical components in the electrical room. Additionally, water lines, water tanks, and water pumps are located in the electrical room, creating a significant potential risk to the electrical equipment.



Figure 18: Existing Motor Control Center

Lighting

The dry well area utilizes florescent lighting. Several of the lights are out of service.

The original lighting in the Headworks chamber utilized high pressure sodium lights, and appear to be explosion proof. Two of the lights are not functioning. Two other lights in the Headworks chamber have been upgraded, and appear to be LED.

Florescent lighting is used in the generator room. One of three florescent lighting fixtures is not functioning.

No emergency lighting fixtures were observed in any areas. Emergency lighting with battery backup is essential for lighting egress paths in the event of a power failure.

There is only one exterior light fixture observed on the south side of the building. The fixture appears to be in poor condition and it is unknown if the fixture operational. Overall, the site and building exterior is not well lit. Additional exterior lighting could benefit both security and maintenance at the lift station.



Figure 19: Headworks Chamber Original Lighting (left) and new LED lighting (right)

Electrical Equipment/Fixtures

An electric hoist is located in the pump room for equipment removal. The hoist is powered by a 480 volt open bus bar running across the ceiling. The open bus bar is very close to the stair handrail, and can be reached from the stairwell. This is a significant electric shock hazard and a barrier should be installed to prevent accidental contact with the bus bar. The bus bar disconnect is also in poor condition.

The sump pump disconnect, control panel, and floats in the lower pump room are in poor condition.



Figure 20: Electric Hoist Bus Bar near stair handrail

Explosion Protection

Headworks Chamber

The headworks chamber is a Class 1, Division 2 rated space. Two significant deficiencies were noted that do not meet electrical code requirements for explosion protection in the space. The conduit to the Parshall Flume level sensor is not explosion proof, and is not properly supported. Additionally, a main junction box is located on the East wall of the headworks chamber. The junction box is an explosion hazard and should be removed. The conduits and circuits currently utilizing the junction box should be removed and re-installed directly to sources.

Wet Well

The Wet Well is a Class 1, Division 1 rated space. A PVC conduit is installed through the top of the wet well and runs back to the pump station control panel. The conduit is required to be explosion proof since it penetrates the wet well which is a hazardous space. There are also various unused conduits and conductors visible inside the wet well, penetrating the wet well top slab, and penetrating the north wall of the wet well into the electrical and pump rooms. Unused conduits should be removed, penetrations properly sealed, and conduits that are to remain must be explosion proof.

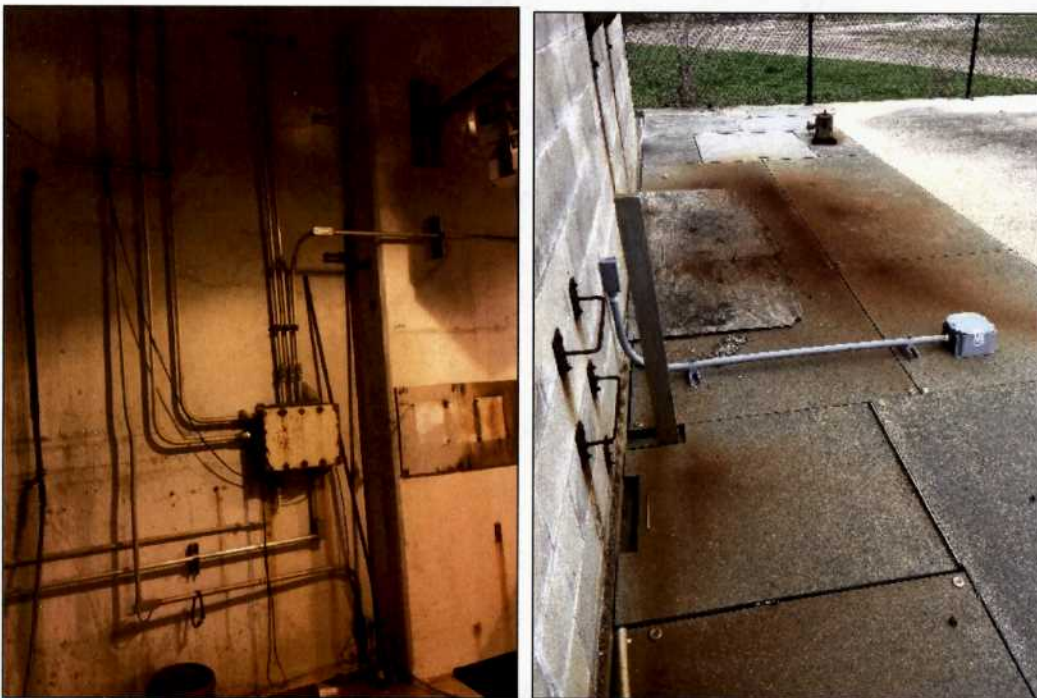


Figure 21: Main junction box in Headworks Chamber and Conduit Penetration into Wet Well

A summary of the electrical deficiencies identified is provided below:

- Several conduits and associated supports throughout the lift station are corroded and in need of replacement or recoating
- Many unused or failed electrical components remain and should be removed
- The service conductors are not protected by fuses
- The existing motor control center show signs of significant corrosion due to moisture and corrosive gas exposure.
- Several light fixtures are out of service
- There is limited exterior lighting.
- Electric shock hazard from the open bus bar powering the electric hoist.
- The sump pump disconnect is in poor condition.
- Several conduits in classified spaces are not explosion proof.

CONTROLS

Life Safety and Environmental Monitoring

Currently, there is very limited environmental monitoring at the Lift Station. It appears that a Fire Alarm System was installed in portions of the existing building, but is no longer in operation. There is currently no ventilation monitoring in the headworks chamber or drywell. Ventilation monitoring is critical in order to alert operators if a failure has occurred in the ventilation system that could create hazardous work conditions or allow the buildup of explosive gases. Additionally there are no permanent gas monitors installed in these spaces. Operators must currently enter the space and lower a gas monitor into the lower areas on a rope to test the air quality. Permanently installed gas monitoring can alert operators of hazardous conditions prior to them entering the space.

Supervisory Control And Data Acquisition

The existing pump control panel PLC is monitored by the water reclamation facilities Supervisory Control And Data Acquisition (SCADA) system over Ethernet. The city owns and maintains a fiber backbone that provides a connection between the lift station and the water reclamation facility. The fiber enters the electrical room and is converted to Category 5 Ethernet cable to make connection to the control system.

While the fiber connection has been installed to the lift station, there is limited data monitoring and control available from outside the lift station and few external alarms are generated to alert operators of critical conditions in the lift station. This is especially important since the facility is not staffed 24x7.

Pump Control System

The main control panel for controlling and monitoring the pump station is located in the electrical room. An Allen Bradley SLC500 Programmable Logic Controller (PLC) system is installed. SLC500 systems are nearing end of life status from the manufacturer. Some components within this family have been discontinued. Therefore, future maintenance of the control system will be difficult. Additionally, there does not appear to be any documentation of the control system at the lift station, making it very difficult to troubleshoot any problems.

A drain line is installed through the floor above the control panel, and water has infiltrated the control panel in the past causing damage. Overall the main control panel, components, and wiring are in poor condition and have reached end of life.



Figure 22: Pump Control System Panel

Grinder Controls

The grinder control panel is located in the electrical room. The system appears to be in good working order. There are signs that the operator interface was replaced with a smaller sized screen. There is currently no alarm to the SCADA system for grinder failure. A level sensor has been installed upstream of the grinder to alarm operators after debris buildup on the stopped grinder has caused the upstream water level to rise.

Instrumentation

Flow Measurement

Flow entering the lift station is measured by a parshall flume in the headworks chamber. The parshall flume level sensor is in poor condition. There is no data logging function in the flow totalizer, so flows can only be read by an operator at the lift station.

Level Measurement

A MultiTrobe level controller is utilized for monitoring the water level in the wet well, and is panel mounted in the control panel. This device has been discontinued by the manufacturer. The backup floats are not readily accessible in the wet well and should be replaced in a new location that is accessible without entering the wet well.

A summary of the controls deficiencies identified is provided below:

- There is no ventilation monitoring or hazardous gas monitoring in any of the spaces.
- There is only limited external monitoring and control through the SCADA system.
- The control panel is in poor condition and components have been discontinued by the manufacturer.
- There is no alarm for grinder failure.
- The flow measurement system has limited functionality
- The wet well level sensors have been discontinued and are difficult to access safely.

Improvement Options

Several improvement alternatives are proposed in order to address the deficiencies noted above. Improvements were categorized into three priority levels based on the following descriptions:

High Priority: Improvements are considered necessary for continued, reliable operation of Memorial Lift Station, code requirements, and addressing health & safety concerns.

Medium Priority: Improvements may not be necessary, but may improve performance, reliability, or efficiency of Memorial Lift Station

Low Priority: Improvements with limited benefit or low benefit to cost ratio.

SITE IMPROVEMENTS

Filling in the animal burrows around the lift station is considered a high priority due to the presence of animal burrows under the transformer pad. Animals may damage the service conductors and interrupt power to the lift station.

Removing the vegetation around the lift station and extending the downspouts are minor tasks that could be completed by City staff or incorporated into the overall improvements project and performed by a contractor.

A summary of the Proposed Site Improvements, including priority and estimated cost is provided in Table 3 below:

Table 3: Proposed Site Improvements

Description	Site Improvements		
	Priority	Recommended?	Estimated Cost
Fill in Animal Burrows	High	Yes	\$800
Remove vegetation around structure	Medium	Yes	\$500
Extend downspouts away from building	Medium	Yes	\$500
Total Recommended Improvements			\$1,800

PROCESS IMPROVEMENTS

Isolation Valve and Bypass Pumping Connection

Priority: High

Cost: \$150,000

In order to service the existing valves and wet well, an isolation valve on the common force main discharge and bypass pumping will be required. With the short lay length between the discharge tee of Pump #5 and the wall of the drywell, the valve and bypass connection will need to be located outside the lift station in a new valve vault. Two hot taps would be installed on the 24-inch force main. One tap will be used to insert an inflatable line stop and the other would be used as a discharge connection for bypass pumps. This would allow a new 24-inch plug valve to be cut into the force main for future isolation for bypass pumping. A new concrete valve vault structure would be built around the force main for future access. The estimated cost of installing the 24-inch isolation valve and bypass pumping for six weeks for construction of other improvements is approximately \$150,000.

For bypass pumping, it is anticipated that the work would be performed during a dry weather period (late fall or winter) and the flowrates would be at or below the capacity of the smaller pumps. Due to the very high peak flows that can occur at Memorial Lift Station during heavy precipitation events, attempting to perform this work in the spring or early summer is not recommended.

Pump Improvements

Several alternatives were evaluated for pump improvements. Because of the limited flow data available, the alternatives maintain the existing lift station capacity.

The use of new submersible pumps to replace the existing dry-pit pumps was also evaluated. However, submersible pumps were determined to be infeasible due to the configuration and layout of the existing wet well. The submersible pumps would need to be installed in the same location as the existing pump suction piping. This would place the access hatches for pump removal directly in front of the doors into the lift station. This location would also be very difficult to access with a lift to remove the pumps and place on a truck for service.

Submersible pumps installed in the existing grit chamber were also evaluated. However, this would leave the average flow wet well stagnant, resulting in the same issues with solids deposition and production of hazardous and corrosive gases. Therefore, maintaining the existing dry-pit pump configuration was deemed to be the simplest, most cost effective alternative for Memorial Lift Station.

Several alternatives were evaluated for the dry-pit configuration as described below. For the Smaller pumps, Alternative 1C, Replace both pumps #1 and #2 is the recommended alternative. Alternative 2, Replace Pumps #3, #4, and #5, is not recommended.

1A: Refurbish Pump #1

Priority: High

Cost: \$45,000

Pump #1 has not been operated in a significant time period and the condition is unknown. However, the pump could be refurbished with new bearings, seals, and impeller. The scope of refurbishment would be similar to the work that was recently done on Pump #2. The estimated cost for pump refurbishment is \$45,000. With this alternative, the seal water service would still be recommended. Additionally, the original pump motor would be used. A new VFD would be provided for the older motor with the MCC improvements. Because of the age, unknown condition, and criticality of Pump #1, this alternative is

not recommended. Even after refurbishment, the remaining life of pump #1 is likely limited. Additionally, the older pump is less efficient than a newer pump would be.

1B: Replace Pump #1

Priority: High

Cost: \$90,000

Given the age and cost of refurbishing Pump #1, full replacement of the pump may be more desirable. The replacement pump would be sized for the same design conditions as the existing pump to provide redundancy to pump #2. A new pump would run more efficiently, would not require seal water, and would include a VFD rated motor. Additionally, a dry-pit submersible pump would be less susceptible to degradation from moisture in the wet well. The estimated cost of replacing Pump #1 is \$90,000.

1C: Replace both Pumps #1 & #2

Priority: High

Cost: \$180,000

With pump #1 out of service, pump #2 has run almost continuously for several years. While Pump #2 was recently refurbished, it may be desirable to replace pump #2 as well. The remaining life of pumps #1 and #2 is likely limited due to their age and condition. Replacing both pumps #1 and #2 would provide the most robust upgrade for handling the average daily flow rates that the lift station experiences the vast majority of the time. Additionally, replacing both pumps would allow for the seal water system to be completely eliminated. The Estimated cost of replacing both pumps #1 and #2 is \$180,000. This option is the recommended alternative for the small pumps as it will provide the greatest reliability for the Lift Station.

2: Replace Pumps #3, #4, and #5

Priority: Low

Cost: \$630,000

Given the age of the existing large pumps, full replacement may be desirable. New pumps would be more efficient and could have slightly smaller motors than the existing pumps. (280 HP vs 300 HP) The estimated cost for replacing the three large pumps is \$630,000. Given the very low run time of the large pumps, the higher efficiency would not result in a significant energy savings. Additionally, the existing pumps were recently refurbished and noted to be in good condition for their age, likely due to the very low run time. Therefore, due to the high cost and limited benefit, replacement of pumps #3, #4, and #5 is not recommended.

Other Process-Related Improvements were evaluated as described below.

Replace peak flow wet well sump pump

Priority: Medium

Cost: \$10,000

The sump pump in the existing peak flow wet well is inoperable and is in need of replacement. The sump pump functions to dewater the peak flow wet well after high flow events and reduce the stagnant water in the wet well. Additionally, the sump pump cannot be accessed until the wet well can be isolated and dewatered, and all of the solids buildup and debris can be removed. Replacement of the sump pump can be accomplished once the cleaning is completed. New pump rails and chain could also be provided to allow the pump to be retrieved without entering the wet well. The estimated cost of replacing the sump pump, including new pump rails, is \$10,000.

Install Wet Well Isolation Gates*Priority: Medium**Cost: \$51,000*

Currently there is no way to isolate the AWW wet well for cleaning operations as solids deposition in the wet well contributes to odors and hydrogen sulfide gas formation. Flow enters the wet well from the influent channel through the three 18-inch diameter openings in the wet well west wall. The addition of three (3) sluice gates to these openings will provide the necessary isolation of the wet well from the incoming flows. These sluice gates will be equipped with a stem and riser operated by a gear driven hand wheel mounted on top of the wet well. The estimated cost for the Sluice Gates is approximately \$51,000.

Replace Pump Header Valves*Priority: High**Cost: \$231,000*

The failed 14-inch plug valve on Pump #1 must be replaced in order for Pump #1 to be used. It is also recommended that the other suction and discharge valves be replaced to prevent pump isolation due to valve failure in the future. In total, this includes replacement of four (4) 14-inch Plug valves, two (2) 14-inch check valves, six (6) 16-inch plug valves, three (3) 16-inch check valves, and one (1) 6-inch surge relief valve. The estimated cost for replacing these valves is \$231,000.

Recoat Discharge Header Piping*Priority: High**Cost: \$20,000*

While the evaluation of the discharge piping indicated that it was still in good condition, recoating is still necessary to prevent additional surface degradation of the piping. Sandblasting and recoating the piping with an epoxy coating system will ensure it remains in good condition for years to come. The estimated cost for recoating the piping is approximately \$20,000.

Install Hatches for Better Vector Truck Access into Wet Well*Priority: Medium**Cost: \$15,000*

Currently, access to both wet wells is through steel covers in each wet well lid. These doors are located in front of the main lift station building access doors. The distance from the gate at the perimeter of the lift station to the cover makes it difficult for vector truck equipment to reach the interior of the wet well for cleaning. Installing new access hatches near the fence would make it easier for cleaning equipment to reach into the wet well. The estimated cost for the new hatches is \$15,000.

Inspect 24-inch Forcemain to WWTP*Priority: Low**Cost: \$380,000*

While the piping in the drywell is in good condition, there is approximately 2.5 miles of ductile iron force main from the lift station to the WWTP. Pure Technologies can provide several evaluation tools to determine the condition of the existing force main. A description of these evaluation tools is provided in Appendix C. The internal inspection probes evaluate the pipe from the inside as it is pushed along with the flow, keeping the system in service during the inspection. The estimated cost of this evaluation is approximately \$380,000. Given the good condition of the piping that was inspected and the high cost of the additional inspection, this alternative is considered a low priority.

Relocate Hydrogen Peroxide Feed Equipment

Priority: Low

Cost: \$ 40,000

Relocating the existing hydrogen peroxide solution storage and feed system equipment to the existing lift station facility would provide easier access to the equipment from the lift station as well as added security for the equipment. The equipment would be located where the existing activated carbon filter is currently located and a new steel building would be required to house the equipment. One benefit of relocating the equipment to the lift station is that the chemical feed rate could be automatically adjusted based on the measured incoming flow rate.

However, other proposed improvements will significantly reduce the stagnant water at the lift station and could significantly reduce or eliminate the need for the hydrogen peroxide feed system. Feeding the hydrogen peroxide directly at the lift station would also eliminate the reaction time that is currently provided in the sewer between the existing feed point and the lift station. Therefore, this alternative is considered low priority. It is recommended that the chemical feed rate be evaluated after the improvements are completed to determine if chemical addition is still required or can be reduced.

A summary of the Process Improvements, including priority and estimated cost is provided in Table 4 below:

Table 4: Proposed Process improvements

Process Improvements			
Description	Priority	Recommended?	Estimated Cost
Force Main Isolation Valve and Bypass Pumping	High	Yes	\$150,000
1A: Refurbish Pump #1	High	No	\$45,000
1B: Replace Pump #1	High	No	\$90,000
1C: Replace Pumps #1 & 2	High	Yes	\$180,000
2: Replace Pumps #3-5	Low	No	\$630,000
Replace Peak Flow Wet Well Sump Pump	Medium	Yes	\$10,000
Relocate Peroxide Feed Equipment	Low	No	\$40,000
Replace Valves	High	Yes	\$231,000
Blast & Recoat Piping	High	Yes	\$20,000
Wet well Isolation Sluice Gates	Medium	Yes	\$51,000
New Hatches for Vactor Truck Access	Medium	Yes	\$15,000
Force Main Evaluation	Low	No	\$380,000
Total Recommended Improvements			\$657,000

STRUCTURAL IMPROVEMENTS

Replace Exterior Hatches

Priority: High

Cost: \$30,000

Replacing the hatches above the headworks chamber and electrical room will help prevent water from leaking into the building and causing further damage.

Rehabilitate Above Grade Structure

Priority: High

Cost: \$25,000

Rehabilitation of the above-grade structure include roof replacement, replacement of damaged ceiling insulation and metal decking, as well as mortar repair and crack sealing in the masonry walls. This will ensure the structure remains weather tight.

Replace Pipe Penetration Seals

Priority: High

Cost: \$10,000

The seals on the pipe penetrations into the wet well should be replaced while the lift station is being bypassed during construction. The piping may need to be temporarily supported while the seals are removed.

Repair Pump Room Ceiling Cracking

Priority: Medium

Cost \$5,000

While the cracking is not a structural concern, it should be patched and sealed to prevent potential degradation of the reinforcing steel.

Demolish Elevator and Spiral Staircase and Build New Stairway.

Priority: Medium

Cost: \$20,000

Removing the non-functional elevator and the spiral staircase will create space for a new stairway to be installed and improve access. The new stairway is anticipated to be aluminum or FRP to reduce future corrosion.

Fill in Grit Chambers

Priority: High

Cost: \$50,000

The Stagnant Grit Chamber will be filled in with sand and capped with a concrete slab. The stop plates that currently isolate the grit chamber will be replaced with new concrete walls. The Concrete wall for the effluent weir will be raised to completely eliminate the grit chamber. The smaller chambers for the grit equipment will also be filled in and capped to remove fall hazards.

Patch Spalled Concrete in Headworks Channel

Priority: High

Cost: 10,000

With the lift station taken out of service and bypassed during construction, the concrete channel should be repaired with cementitious or epoxy grout to prevent additional spalling and degradation.

Replace Grating with Solid Panels

Priority: Medium

Cost \$5,000

Replacing the open grating with solid panels that completely cover the headworks channel will eliminate trip hazards and help manage odors and humidity in the headworks chamber. FRP panels will provide corrosion resistance.

Replace ceiling Insulation

Priority: High

Cost: \$40,000

The molding insulation in the headworks chamber and electrical room should be completely removed and replaced with a new closed-cell insulation. While the insulation is removed, the underside of the concrete slab should be inspected for cracking or other degradation. Additional sealing may be necessary to prevent moisture from penetrating the slab and causing future water damage.

Recoat Interior Surfaces

Priority: High

Cost: \$60,000

The interior surface coatings should be removed and replaced to protect the structure and ensure it remains in good condition.

A summary of the Structural Improvements, including priority and estimated cost is provided in Table 5 below:

Table 5: Proposed Structural Improvements

Structural Improvements			
Description	Priority	Recommended?	Estimated Cost
Replace Exterior Hatches	High	Yes	\$30,000
Rehab above-grade masonry structure	Medium	Yes	\$25,000
Replace Pipe Penetration Seals between wet well and dry well	High	Yes	\$10,000
Repair Ceiling Cracking in Pump room	Medium	Yes	\$10,000
Demo elevator and spiral staircase and install new staircase	Medium	Yes	\$20,000
Fill in Grit Chamber	High	Yes	\$50,000
Patch spalled concrete in Headworks Channel	High	Yes	\$10,000
Replace Grating in Headworks Chamber	Medium	Yes	\$5,000
Remove and replace Ceiling Insulation	High	Yes	\$40,000
Recoat interior walls, floors, and ceilings	High	Yes	\$60,000
Total Recommended Improvements			\$260,000

HVAC IMPROVEMENTS

Replace Wrap on Exterior Ducts

Priority: High

Cost: \$14,000

The duct wrap is important both for protecting the ductwork from corrosion and also for maintaining heat for the heat exchanger. Replacing the wrap on the portions of ductwork to remain is highly recommended.

Demolish Odor Control Scrubber and Associated Ductwork.

Priority: High

Cost: \$10,000

The Odor control system is unused and it is recommended that it be removed. The associated ductwork and bypass dampers that are currently non-functional should also be removed. With the modifications to the ductwork, the air handling unit and heat exchanger should be rebalanced to ensure proper performance.

Repair/Replace Electric Unit Heater in Generator Room

Priority: High

Cost: \$1,000

As the only source of heat in the generator room, the electric unit heater should be repaired or replaced.

Separate Boiler from Generator Room

Priority: High

Cost: \$20,000

In order to comply with NFPA 110, the Boiler system cannot be located in the generator room. It may be feasible to separate the generator room into two spaces to comply with code requirements. Alternatively, a small enclosure could be constructed outside to house the boiler system.

Replace Drywell Exhaust Fan

Priority: High

Cost: \$11,000

A new exhaust fan is required to keep the electrical room declassified and meet NFPA requirements.

Reroute Drywell Ductwork

Priority: High

Cost: \$68,000

The ductwork in the drywell needs to be rerouted to provide adequate circulation in both the pump room and electrical room. Additionally, the ductwork need to be rerouted so as not to pass through the generator room. The new ductwork will exit through the north wall of the lift station and the existing wall penetrations closed with new CMU.

Add Dehumidifiers to Drywell

Priority: High

Cost: \$10,000

Adding commercial grade dehumidification units to both the pump room and electrical room are recommended to help reduce future moisture damage inside the lift station.

Add Intake Louver to Drywell

Priority: High

Cost: \$7,000

An Intake Louver should be provided in the drywell space to ensure adequate fresh air is being supplied.

Replace Exhaust hood and Duct in Headworks Chamber

Priority: High

Cost: \$ 27,000

Clean Supply Duct in Headworks Chamber

Priority: Medium

Cost: \$4,000

Add Dehumidifier to Headworks Chamber

Priority: Medium

Cost \$5,000

If solid covers are provided over the headworks channel, a commercial grade dehumidifier could be adequate for reducing moisture in the headworks chamber. If the channel is left uncovered with open grating, there will likely be too much moisture for the dehumidifier to provide a benefit.

A summary of the HVAC Improvements, including priority and estimated cost is provided in Table 6 below:

Table 6: Proposed HVAC Improvements

HVAC Improvements			
Description	Priority	Recommended?	Estimated Cost
Replace Wrap on Exterior Ducts	High	Yes	\$14,000
Demo Odor Control Scrubber and Associated Ductwork	High	Yes	\$10,000
Repair Electric Unit Heater in Generator Room	High	Yes	\$1,000
Separate boiler from Generator room	High	Yes	\$20,000
Replace Drywell Exhaust Fan	High	Yes	\$11,000
Reroute Drywell Ductwork	High	Yes	\$68,000
Add Dehumidifiers to Drywell	High	Yes	\$10,000
Add Intake louver to Drywell	High	Yes	\$7,000
Replace Exhaust hood and Ductwork in Headworks Chamber	High	Yes	\$27,000
Clean supply Duct in Headworks Chamber	Medium	Yes	\$4,000
Add Dehumidifier to Headworks Chamber	Medium	Yes	\$5,000
Total Recommended Improvements			\$177,000

PLUMBING IMPROVEMENTS

Replace boiler circulation pumps and appurtenances

Priority: High

Cost: \$37,000

Regardless of the final location of the boiler system, the circulation pumps should be replaced due to their condition. New pumps with variable frequency drives will allow the boiler system to operate more efficiently and ensure reliable heating is provided to the headworks chamber.

Relocate Water Piping outside of Electrical Room

Priority: High

Cost \$11,000

The water line entering the lift station in the electrical room should be rerouted away from the electrical equipment. The piping could be relocated over the stairwell and routed directly to the pump room. If water is still necessary for the bathroom facilities, the water piping could be routed along the ceiling of the pump room and up through the floor penetration where the piping currently passes down from the electrical room into the pump room.

Replace Bathroom Fixtures

Priority: Low

Cost: \$7,000

If the bathroom facilities are to remain, the fixtures could be replaced with newer fixtures. Additionally, a curb could be installed around the bathroom area to contain water and prevent it from reaching electrical components.

Demolish Bathroom Fixtures

Priority: High

Cost: \$1,000

It is recommended that the bathroom fixtures be demolished to eliminate the water source in the electrical room.

Replace Pump room Sump Pump

Priority: High

Cost: \$11,000

Due to the poor condition of the existing sump pump, complete replacement is recommended to reduce standing water in the pump room.

Rehabilitate Pump Room Floor Drains

Priority: High

Cost: \$14,000

The floor drains in the pump room should be jetted to remove blockages and ensure there is not standing water in the room. The drain covers should be replaced as well.

A summary of the Plumbing Improvements, including priority and estimated cost is provided in Table 7 below:

Table 7: Proposed Plumbing Improvements

Plumbing Improvements			
Description	Priority	Recommended?	Estimated Cost
Replace boiler Circulation Pumps and Appurtenances	High	Yes	\$37,000
Relocate Water piping outside of electrical room	High	Yes	\$11,000
Replace Bathroom Fixtures	Low	No	\$7,000
Demolish Bathroom Fixtures	High	Yes	\$1,000
Replace Pump Room Sump Pump	High	Yes	\$11,000
Rehabilitate Pump Room floor Drains	High	Yes	\$14,000
Total Recommended Improvements			\$74,000

ELECTRICAL IMPROVEMENTS

Demolish unused conduits and electrical equipment

Priority: Medium

Cost: \$8,000

The unused conduits and electrical equipment should be removed for ease of construction and maintenance activities. Sealing the penetrations from unused conduits will help decrease water seepage and corrosive gases entering the electrical room from the headworks chamber and wet well.

Replace Electrical MCC/Gear

Priority: High

Cost: \$275,000

Due to the age and condition of the existing MCC, full replacement is recommended. This alternative includes VFD's for Pumps #1 and #2 and two-speed starters for Pumps #3, #4, and #5. A new housekeeping pad should be constructed prior to installation of the new MCC to protect them from any moisture present on the floors.

If the MCC is to be replaced, several ancillary improvements must also be made to bring the electrical service up to current code requirements. These improvements include replacing the electrical service entrance, replacing the main switchgear, and installing surge protection on the incoming power lines.

Lighting

Replace the explosion proof high pressure sodium light fixtures in the headworks chamber with LED type.

Priority: Medium

Cost: \$22,000

Replace existing interior and exterior light fixtures with LED type.

Priority: Medium

Cost: \$6,000

Install additional exterior LED light fixtures around the building for security and maintenance activities.

Priority: Medium

Cost: \$3,000

Install emergency lighting fixtures illuminating paths of egress inside and outside the building.

Priority: High

Cost: \$12,000

Install light pole on north side of building for additional security.

Priority: Medium

Cost: \$5,000

Guard Hoist Electrical Bus Bar

Priority: High

Cost: \$500

Adding an aluminum or non-metallic panel to shield the hoist electrical bus bar from accidental contact from the stairwell is an inexpensive but critical safety improvement.

Replace disconnects and conductors in Pump Room

Priority: High

Cost: \$15,000

Due to the age and condition of the disconnects located in the pump room, complete replacement is recommended. Existing disconnects to be replaced serve the hoist, sump pump. New disconnects should be installed for all five pumps as well. The copper wiring between the MCC and the electrical components is likely deteriorated as well and should be replaced when the disconnects are installed.

Replace Conduits in Headworks Chamber and in Wet Well with Explosion Proof Conduits

Priority: High

Cost: \$8,000

Demolish junction box and associated conduits that do not meet explosion proof installation. Install new conduits and conductors from headworks area to electrical room. Demolish and replace PVC conduit with rigid aluminum conduit, and install meeting Class I Division 1 requirements for hazardous locations.

A summary of the Electrical Improvements, including priority and estimated cost is provided in Table 8 below:

Table 8: Proposed Electrical Improvements

Electrical Improvements			
Description	Priority	Recommended?	Estimated Cost
Demo unused conduits and equipment	High	Yes	\$8,000
Replace MCC, Switchgear, and Service Conductors	High	Yes	\$275,000
Replace Explosion proof lighting in Headworks Chamber	Medium	Yes	\$22,000
Replace interior and exterior lights with LED lighting	Medium	Yes	\$6,000
Install additional exterior lighting on building	Medium	Yes	\$3,000
Install emergency egress lighting	High	Yes	\$12,000
Install new light pole near building	Medium	Yes	\$5,000
Guard hoist bus bar	High	Yes	\$500
Replace disconnects and conductors in pump room	High	Yes	\$15,000
Replace conduits in classified spaces with explosion proof conduits	High	Yes	\$8,000
Total Recommended Improvements			\$354,000

CONTROL IMPROVEMENTS

Replace Control and SCADA System

Priority: High

Cost: \$150,000

With the age and condition of the existing control panel, a completely new control system is recommended. The new control system would integrate the pump and grinder control, environmental monitoring, and flow measurement and allow for remote monitoring and control.

Install new ventilation monitoring and hazardous gas monitoring

Priority: High

Cost: \$25,000

Ventilation monitoring and hazardous gas detectors should be installed in both the headworks chamber and drywell. These systems are required by NFPA 820 and will alert operators of hazardous conditions prior to entering the lift station itself.

Replace Instrumentation

Priority: High

Cost: \$40,000

New level reading instrumentation in the lift station are necessary to accurately measure incoming flow and for controlling pump operation. If a new hatch is installed into the wet well, the backup floats could be relocated to be accessible from the hatch without entering the wet well. This instrumentation includes a new level sensor for the parshall flume, two new ultrasonic level sensors to monitor wet well levels, and new backup floats for the wet wells. These sensors would be connected to the new control panel for remote monitoring through SCADA.

Install additional environmental sensors

Priority: Medium

Cost: \$10,000

Installing Flood sensors in the headworks chamber and drywell can alert operators in the event of a pipe break, hydraulic backup or blockage, or other significant failure.

Temperature sensors in the headworks chamber and drywell can alert operators if there are extreme temperature conditions from a heating system failure prior to pipe freezing or electrical issues.

A summary of the Controls Improvements, including priority and estimated cost is provided in Table 4 below:

Table 9: Proposed Controls improvements

Control System Improvements			
Description	Priority	Recommended?	Estimated Cost
Replace Control and SCADA System	High	Yes	\$150,000
Ventilation and Hazardous Gas Monitoring	High	Yes	\$25,000
Replace Instrumentation	High	Yes	\$40,000
Install Flood and Temperature sensors	Medium	Yes	\$10,000
Total Recommended Improvements			\$225,000

Summary

SUMMARY

Memorial Lift Station requires several improvements to maintain reliable operation, meet current electrical and fire protection codes, and to protect worker health and safety. The recommended site improvements includes minor work around the perimeter of the lift station to address animals, vegetation, and drainage. Recommended process improvements include replacement of failed and failing equipment. Structural improvements include work to make the structure weather tight, reapply protective coatings, and patch minor concrete degradation. HVAC improvements include demolition of the unused odor control system, and improvements to ventilation in the drywell area to reduce hazardous gas buildup. Recommended plumbing improvements include replacement of the boiler circulation pumps and removal of the house water piping located above the electrical equipment. Recommended electrical improvements include complete replacement of the motor control center. Recommended Controls Improvements include complete replacement of the existing control system. A summary of the estimated costs is provided in Table 10 below.

Table 10: Summary of Estimated Costs for Recommended Improvements

Description	Estimated Cost
Site Improvements	\$1,800
Process Improvements	\$657,000
Structural Improvements	\$260,000
HVAC Improvements	\$177,000
Plumbing Improvements	\$74,000
Electrical Improvements	\$354,500
Controls Improvements	\$225,000
Subtotal	\$1,749,300
10% Contingency	\$175,000
Engineering, Legal, and Administrative Costs (Estimated 20%)	\$350,000
Total Estimated Project Cost	\$2,275,000

Financial Analysis

POTENTIAL FUNDING SOURCES

Community Development Block Grant

The Community Development Block Grant (CDBG) program is administered by the Iowa Economic Development Authority (IEDA) and allows municipalities to apply for grant funding on a competitive basis each year for water and wastewater improvements. The main criteria used in determining a community's grant eligibility revolves around the City's Low to Moderate Income (LMI) household percentage. To be eligible for funding, the community's LMI percentage needs to be greater than or equal to 51%. According to the IEDA's latest demographic information, the City of Storm Lake's LMI is 52%. Therefore, the City is eligible for a grant of up to \$600,000. The Grant requires a dollar-for-dollar local match, so in order to utilize the full \$600,000 the City would need to provide a minimum of \$600,000 in additional funding.

State Revolving Loan Fund, Clean Water Fund

The SRF is a revolving loan fund through the State of Iowa Finance Authority. Currently, the SRF interest rate is 1.75% for a 20-year loan. In some cases the loan term can be extended to 30 years if the project being funded has a lifespan greater than 30 years. Currently, 30-year rates are 2.75%. SRF loans have a 0.25% annual service fee, thus 2.00% and 3.00% should be expected for the 20-year and 30-year loan rates, respectively. This funding is subject to Federal Davis Bacon Prevailing Wages and has American Iron and Steel Requirements.

The SRF loan program also provides communities to apply for Disadvantaged Status. For clean water projects, the IDNR looks at the community's Median Household Income (MHI), number of rate payers, current and projected debt, along with additional criteria to determine eligibility. If determined eligible, the community can utilize the 30-year term at a discounted rate of 2.00%. The project is still subject to Federal Davis Bacon Prevailing Wages and American Iron and Steel Requirements.

The SRF loan program requires the City to enlist the services of a Municipal Advisor (MA) in order to be eligible for funding. The SRF will reimburse the City \$4,000 for the services of the MA. The MA's assistance is required through the program in an effort to ensure the City has the ability to repay the new debt service while maintaining a healthy wastewater fund balance. To meet the ability of the debt, an adjustment to sanitary sewer rates will be required to maintain a 1.10% debt coverage ratio. This means that the City needs to generate at least 10% more revenue than expenditures for the entire wastewater system on an annual basis.

State Revolving Loan Fund's Planning and Design Loan

SRF offers a Planning and Design (P&D) Loan that is a 0% interest loan for up to three years with no initiation or servicing fees. The P&D loan is intended to be utilized to pay for costs to produce reports such as this Facility Plan, legal/administration fees as necessary, and engineering design of the selected alternative. At the end of the three-year period (or before), the P&D loan can be rolled into a SRF Construction Loan.

SRF Sponsored Project Grant

SRF allows sewer utilities to finance water resource restoration sponsored projects in conjunction with a Clean Water Fund loan of \$1 million or more. On a Clean Water Fund loan with a sponsored project, the utility borrows money for both the wastewater improvements and the water resource improvements. However, SRF reduces the interest rate on the loan so that the debt service payment is the same as if only the wastewater improvements were funded. This effectively provides a grant for the water resources improvements. Total Sponsored Project funding is capped statewide and applications are selected on a competitive basis each fiscal year.

Sponsored Project funding is available up to the lowest of the following:

- 10% of the requested Clean Water Fund loan amount.
- 10% of the final amount of the Clean Water Fund Construction loan.
- The amount requested on the sponsored project application.

Therefore, the City of Storm Lake could be eligible for approximately \$172,000 for water resources restoration projects in conjunction with the anticipated SRF Clean Water Fund Loan for the Memorial Lift Station Improvements. In order to be eligible for a Sponsored Project Grant, the City would need to identify project(s) and apply by March 2020. The Sponsored Project application would need to be closely coordinated with the Clean Water Fund Loan in order to maintain eligibility.

FINANCING SCENARIOS

The City plans to apply for a Community Development Block Grant (CDBG) to fund a portion of the project. The City is eligible for up to \$600,000 from CDBG for this project. The remaining balance will be funded through a State Revolving Fund (SRF) Loan. It has not been determined if the City qualifies for disadvantaged community status at this time. Table 11 shows the estimated annual payments that the City would make based on each funding scenario. The financing evaluation does not incorporate the additional 10% revenue that the City must generate for its own wastewater fund as required by SRF.

Table 11: Financing Scenarios

Program	Rate Term	Grant	Loan	Estimated Annual Debt Service ¹	Total Principal + Interest Paid
SRF 20-Year	2.00% 20-Year	-	\$2,275,000	\$138,000	\$2,762,000
SRF 20-Year + CDBG	2.00% 20-Year	\$600,000	\$1,675,000	\$102,000	\$2,034,000
SRF 30-Year	3.00% 30-Year		\$2,275,000	\$115,000	\$3,453,000
SRF 30-Year + CDBG	3.00% 30-Year	\$600,000	\$1,675,000	\$85,000	\$2,542,000
SRF Disadvantaged ²	2.00% 30-Year		\$2,275,000	\$101,000	\$3,027,000
SRF Disadvantaged ² + CDBG	2.00% 30-Year	\$600,000	\$1,675,000	\$74,000	\$2,229,000

¹ Does not include 110% debt coverage ratio required by SRF.

² Disadvantaged community eligibility to be determined.

Final Considerations and Preliminary Schedule

Based on the evaluation described in this report, it is recommended that the City of Storm Lake proceed with the listed improvements to Memorial Lift Station. The Recommended Financing Scenario is a Community Development Block Grant for \$600,000 with an SRF loan for the remainder of the project cost. If desired, the City could evaluate if they qualify for disadvantaged community status and a longer loan term. The City can also apply for an SRF Sponsored Project grant to fund a water resources improvement project based on the wastewater loan. The preliminary project schedule is as follows:

July 2019	Submit Facility Plan to Iowa DNR
August 2019	Begin Final Design
September 3, 2019	SRF IUP Application Deadline
October 1, 2019	CDBG Application Deadline
December 17, 2019	SRF IUP Approval
December 2019	CDBG Grant Award
January 2020	Submit Final Plans & Specifications to Iowa DNR
March 2020	Issue Plans & Specifications for Bidding
April 2020	Award Contract
Summer 2020	Contractor Procures Equipment and Materials
October 2020	Begin Bypass Pumping and Lift Station Improvements
December 2020	Substantial Completion,
March 2021	Final Completion

APPENDIX A: Existing Lift Station Drawings



APPENDIX B: Pipe Non-Destructive Testing Report

June 4, 2019

Mr. Mark Streed
City of Storm Lake
P.O. Box 1086, 620 Erie Street
Storm Lake, IA

**Subject: 24-inch Ductile Iron Pipe Header, Memorial Lift Station
Ultra Thickness Testing Results Report Letter**

Dear Mr. Mark Streed:

This letter details the findings from the Ultra Thickness Testing (UTT) conducted by Jan X-Ray Services Inc. (JanX) under the direction of Pure Technologies U.S. Inc., a Xylem Brand (Pure Technologies) of the 24-Inch Ductile Iron Pipe (DIP) header at the Memorial Lift Station in Storm Lake, Iowa. The lift station is owned and operated by the City of Storm Lake, Iowa.

Background and Location

The lift station header piping was originally installed in 1983 and has been in continuous use since its construction. The exterior of the DIP piping has noticeable areas of corrosion and chipped paint (see **Figures 1 and 2**). Replacing this piping would require bypass pumping around the entire lift station, which would add significant cost. Therefore, the City of Storm Lake contracted Pure Technologies to collect thickness measurements of the header piping in order to verify the condition of the wall of the pipe, potentially allowing it to remain in place. UTT, an ultrasonic inspection technology, was chosen in order to externally verify the wall thickness of the header piping.

The ultrasonic inspection spanned approximately 36.5 feet of 24-inch DIP pipe and five (5) 24-inch DIP tees (see **Figure 3**). Due to lack of specifications, it was assumed that the 24-inch DIP pipe was Class 52 and the 24-inch DIP tees were Pressure Class 250. It is Pure Technologies understanding that no pressure gauges are installed on the header piping in order to collect direct pressure readings at operating conditions. However, it was determined that a pressure relief valve exists on the header which is set to open at 65 psi. Assuming the valve is in good operating condition, 65 psi would be the maximum operating pressure for the header. These assumptions are important when comparing the measured thicknesses to the design thickness. If the City of Storm Lake finds any additional details or specifications for the lift station header piping, Pure Technologies can compare the updated design thickness with the measured thickness for a more accurate analysis.



Figures 1 and 2: Exterior of the Lift Station Header Piping

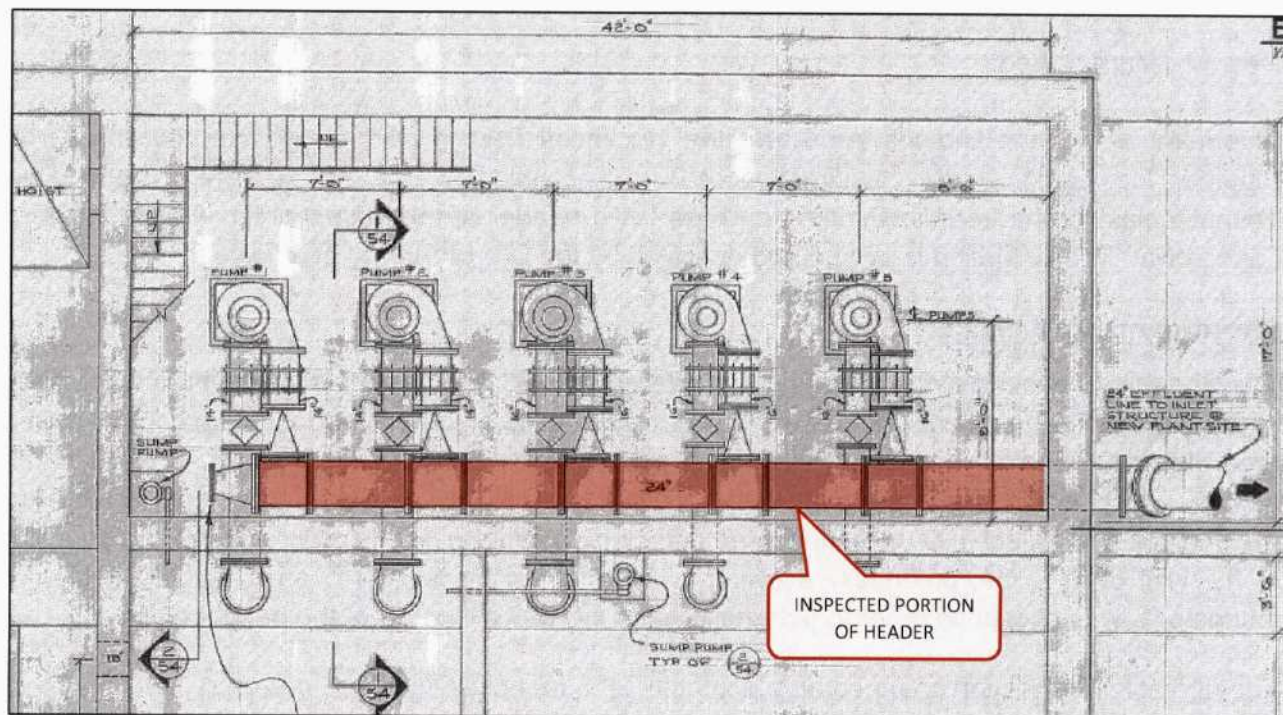


Figure 3: 24-inch DIP Lift Station Header

(Source: Sheet III-54, Prj. 60052S; "Pump Station Equipment and Piping Layout, Waste Treatment Facilities Storm Lake, Iowa"; Dated January 1983)

External Ultra Thickness Testing Results

The thickness measurements were taken using a model UM-1D ultrasonic thickness testing device. The transducer frequency was set to 5 MHz, with a single-element transducer sized at 0.250 inches. Thickness measurements were spaced evenly over the length of the pipes and tees, with nine (9) readings taken for each tee and twelve (12) readings taken for each pipe. A diagram of the measurement locations taken for tees and pipes is shown in **Figure 4**.

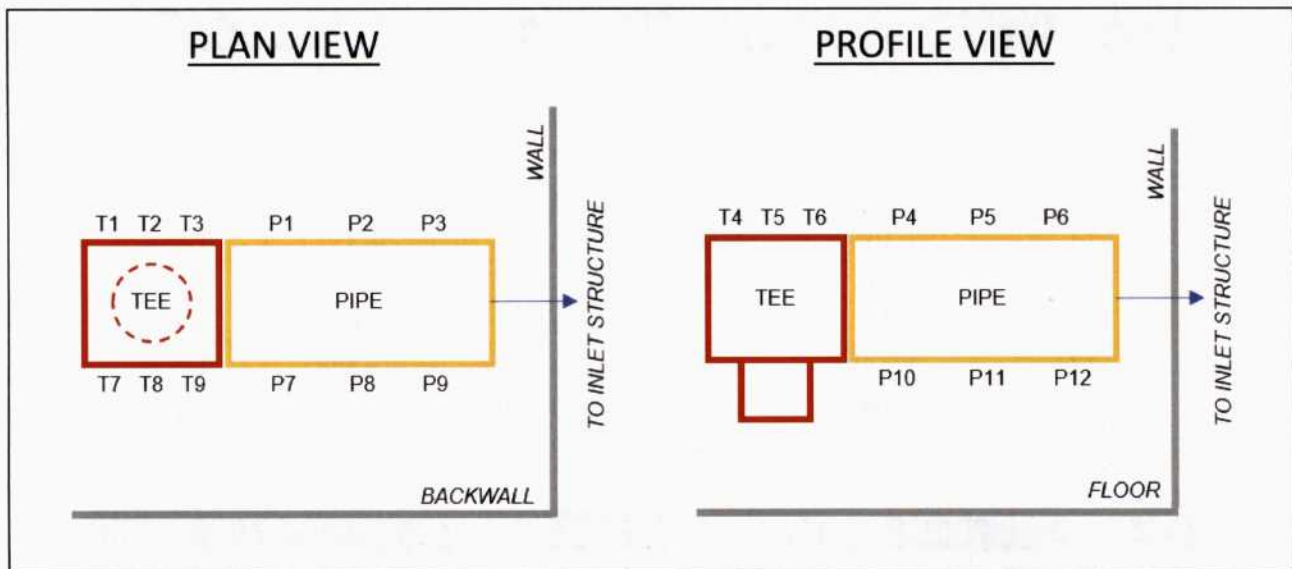


Figure 4: Diagram of Measurement Locations for Tees and Pipes

The tees and pipes were labeled one (1) through five (5), beginning at the sump pump and moving towards the inlet structure. A diagram of the labeled tees and pipes from the inspection is shown below in **Figure 5**. The results for the UTT thickness testing of the tees and the pipes are shown in **Tables 1 and 2**, respectively.

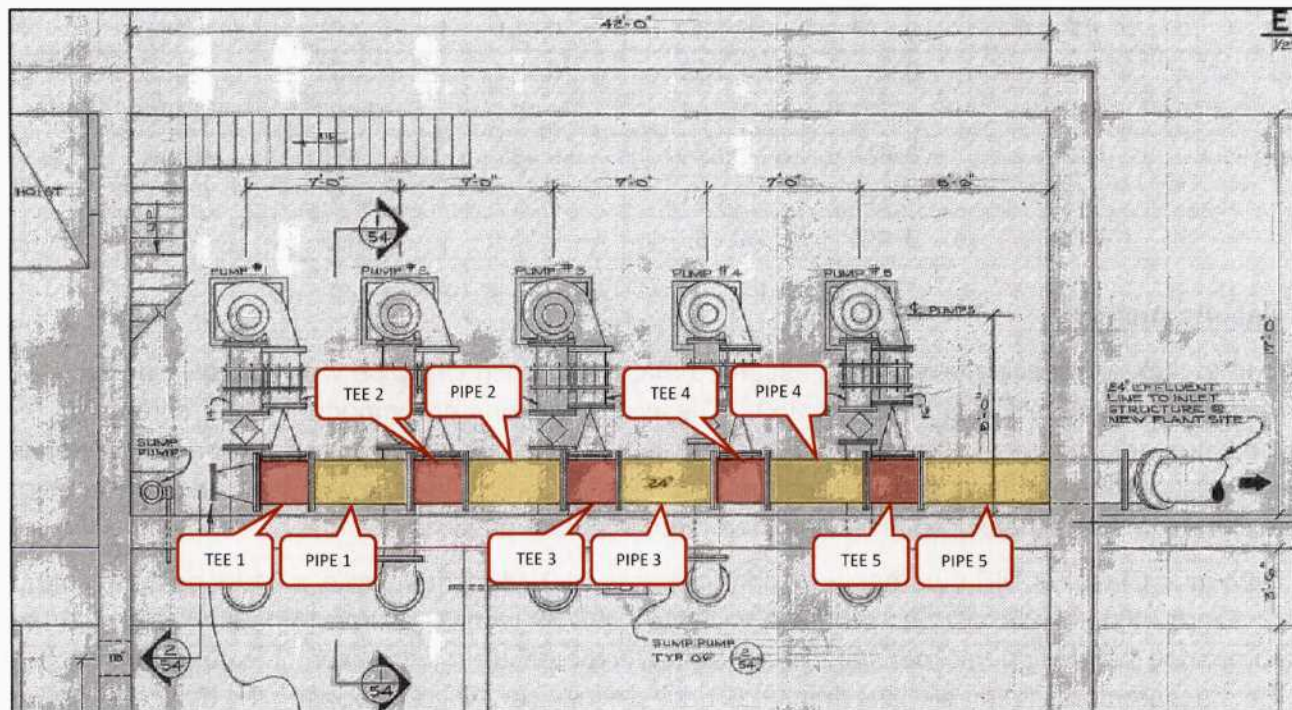


Figure 5: 24-inch DIP Lift Station Header (Labeled Tee & Pipe)

(Source: Sheet III-54, Prj. 60052S; "Pump Station Equipment and Piping Layout, Waste Treatment Facilities Storm Lake, Iowa"; Dated January 1983)

Table 1: Thickness Measurements for Tees (in inches)					
Measurement	Tee 1	Tee 2	Tee 3	Tee 4	Tee 5
T1	1.223	1.207	1.359	1.268	1.491
T2	1.241	1.268	1.294	1.306	1.469
T3	1.248	1.263	1.401	1.315	1.471
T4	1.301	1.321	1.338	1.331	1.454
T5	1.238	1.301	1.347	1.413	1.431
T6	1.287	1.331	1.353	1.442	1.299
T7	1.279	1.362	1.322	1.398	1.306
T8	1.296	1.371	1.359	1.365	1.322
T9	1.301	1.354	1.306	1.315	1.316

Table 2: Thickness Measurements for Pipes (in inches)					
Measurement	Pipe 1	Pipe 2	Pipe 3	Pipe 4	Pipe 5
P1	0.546	0.659	0.491	0.471	0.417
P2	0.554	0.651	0.479	0.454	0.421
P3	0.532	0.584	0.461	0.462	0.435
P4	0.559	0.631	0.468	0.471	0.421
P5	0.531	0.652	0.482	0.451	0.437
P6	0.601	0.591	0.499	0.449	0.435
P7	0.577	0.622	0.501	0.471	0.461
P8	0.587	0.668	0.477	0.465	0.458
P9	0.556	0.604	0.494	0.462	0.466
P10	0.577	0.684	0.481	0.458	0.417
P11	0.533	0.671	0.476	0.467	0.461
P12	0.482	0.665	0.473	0.471	0.509

Results Analysis

Due to lack of specifications, it was assumed that the 24-inch DIP pipe was Class 52 and the 24-inch DIP tees were Pressure Class 250. These assumptions are important when comparing the measured thicknesses to the design thickness. If the City of Storm Lake finds any additional details or specifications for the lift station header piping, Pure Technologies can compare the correct design thickness with the measured thickness for a more accurate analysis.

A 24-inch Class 52 DIP pipe has a design thickness of 0.44 inches, while a 24-inch DI Tee with a pressure rating of 250 psi has a design thickness of 0.89 inches (source: American Pipe). When comparing the design thickness of the tee to the field measurements taken, it is clear that none of the measurements taken are less than 0.89 inches. However, when comparing the design thickness of the pipe to the field measurements taken, it can be seen that "Pipe 5" (closest to the inlet structure wall) has multiple thicknesses less than 0.44 inches.

Seven (7) of the twelve (12) thickness measurements taken for "Pipe 5" are less than 0.44 inches. Out of those seven (7), the maximum wall loss percentage was roughly 5% which was located at

measurements "P1" and "P10" at 0.417 inches. A diagram indicating the measurements taken for "Pipe 5" is shown in **Figure 6**.

Though it is possible that wall loss may have occurred at this location, a wall thickness measurement of 0.417 inches (the minimum observed) for 24-inch DIP corresponds with a design pressure class of 300 pounds per square inch (psi)¹. This pressure class is defined as the rated water pressure of the pipe in psi. Therefore, if the City of Storm Lake is operating the header piping under 300 psi, it can be assumed that the header piping is in serviceable condition.

It is Pure Technologies understanding that no pressure gauges are installed on the header piping in order to collect direct pressure readings at operating conditions. However, it was determined that a pressure relief valve exists on the header which is set to open at 65 psi. Assuming the valve is in good operating condition, 65 psi would be the maximum operating pressure for the header.

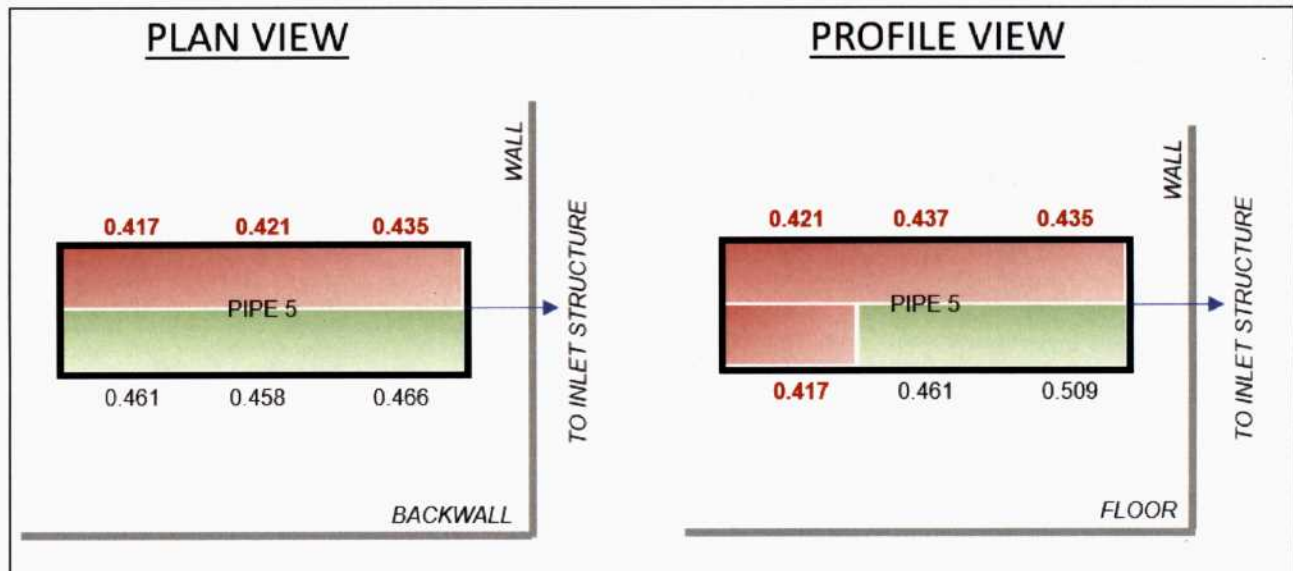


Figure 6: Thickness Measurements (in inches) of "Pipe 5"

Conclusion

Based on the findings from the JanX UTT external field testing, Pure Technologies concluded that only one (1) of the five (5) pipes tested were found to have wall thickness measurements less than the design thickness. The maximum wall loss percentage at this pipe was roughly 5% and was located at measurements "P1" and "P10" of "Pipe 5", at 0.417 inches. Though it is possible that wall loss may have occurred at this location, a wall thickness measurement of 0.417 inches (the minimum observed) for 24-inch DIP corresponds with a design pressure class of 300 pounds per square inch (psi)¹. This pressure class is defined as the rated water pressure of the pipe in psi. Therefore, if the City of Storm Lake is operating the header piping under 300 psi, it can be assumed that the header piping is in serviceable condition. Additionally, it was determined that under normal operating

¹ U.S. Pipe and Foundry Company. "Ductile Iron Pipe Design for Fire Protection, Water & Wastewater". Page P10. Table 2; Pressure Class. 2013 Edition.

conditions, the header piping experiences a maximum operating pressure of 65 psi. Therefore, under those operating conditions, it can be assumed that the header piping is in serviceable condition. Pure Technologies also concluded that none of the five (5) tees tested were found to have wall thickness measurements less than the design thickness. The JanX Field Log used to collect and document the data is included as an appendix to this letter.

If you have any questions or require additional information, please contact us.

Sincerely,

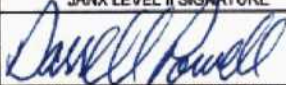
William Barloon

Bill Barloon, P.E.
Area General Manager, Xylem

cc: Steve Bruskiewicz, Business Development Manager, Xylem

Attachments

Appendix A: JanX Field Log

DATE: 5/20/2019		CLIENT: Pure Technologies US, Inc.																		
REPORT No: 1 of 1		JOB LOCALE- CITY, STATE: Storm Lake, IA																		
CLIENT PO No: #2019-052		JANX JOB No:																		
CLIENT W/O No:		JANX PROCEDURE No: UTT-1, Rev. 1																		
CLIENT JOB No:		ACCEPTANCE CRITERIA: Information only																		
ULTRASONIC THICKNESS TESTING TECHNIQUE																				
Instrument Mfg: <u>Landmark</u> Model: <u>UM-1D</u> Serial No: <u>5102212</u> Cal. Date: <u>1/15/2019</u>																				
Transducer Mfg: <u>Landmark</u> Transducer Frequency: <u>5</u> MHz Due Date: <u>1/15/2020</u>																				
Transducer Size: <u>.250"</u> Transducer Type: ☐ Dual Element ☒ Single Element ☐ Delay Line																				
☒ Contact ☐ Angle 0° to Surface ☒ Straight Beam ☒ Spot Thickness Readings Only ☒ Area Scan (see below)																				
Scan Description: <u>Thickness readings; looking for wall loss</u> Max. Scan Rate (in./sec.): <u>N/A</u> Scan Overlap %: <u>N/A</u>																				
Couplant Brand or Type: <u>Sonagel</u> Remarks:																				
PART DESCRIPTION																				
Material: <u>C/S</u> Thickness: <u>.500"</u>																				
Inspection Area Description: <u>24" x .500wt pipe</u>																				
Surface Condition: <u>Clean</u>																				
Surface Preparation: <u>Coating removed and brushed</u>																				
Temp. of Part and Cal. Block within ± 25°F of each other: ☒																				
Calibration Block No: <u>3972</u> Material: <u>C/S</u>																				
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th></th> <th style="text-align: center;">Step 1</th> <th style="text-align: center;">Step 2</th> <th></th> </tr> <tr> <td>Cal Block Actual Thickness:</td> <td style="text-align: center;">.250"</td> <td style="text-align: center;">1"</td> <td style="text-align: center;">Time</td> </tr> <tr> <td>Cal. Reading at Start:</td> <td style="text-align: center;">.250"</td> <td style="text-align: center;">.500"</td> <td style="text-align: center;">10:30AM</td> </tr> <tr> <td>Cal. Reading at End:</td> <td style="text-align: center;">.250"</td> <td style="text-align: center;">.500"</td> <td style="text-align: center;">2PM</td> </tr> </table>						Step 1	Step 2		Cal Block Actual Thickness:	.250"	1"	Time	Cal. Reading at Start:	.250"	.500"	10:30AM	Cal. Reading at End:	.250"	.500"	2PM
	Step 1	Step 2																		
Cal Block Actual Thickness:	.250"	1"	Time																	
Cal. Reading at Start:	.250"	.500"	10:30AM																	
Cal. Reading at End:	.250"	.500"	2PM																	
Gate Height: <u> </u> % ☒ Not Applicable																				
Gain: <u> </u> dB ☒ Not Applicable																				
THICKNESS READINGS																				
SKETCH / PICTURE / REMARKS - AS NEEDED																				
1	21	41	61	81																
2	22	42	62	82																
3	23	43	63	83																
4	24	44	64	84																
5	25	45	65	85																
6	26	46	66	86																
7	27	47	67	87																
8	28	48	68	88																
9	29	49	69	89																
10	30	50	70	90																
11	31	51	71	91																
12	32	52	72	92																
13	33	53	73	93																
14	34	54	74	94																
15	35	55	75	95																
16	36	56	76	96																
17	37	57	77	97																
18	38	58	78	98																
19	39	59	79	99																
20	40	60	80	100																
Drive to Storm Lake, IA.....																				
BILLING Pure Technologies US, Inc., Attn: William Barloon, 8920 State Route 108; Suite D, Columbia MD 21045																				
ADDRESS:																				
CLIENT SIGNATURE		JANX LEVEL II SIGNATURE		LEVEL II TECHNICIAN																
				Darrell Powell																
CLIENT REP NAME & PHONE NUMBER		TRAVEL MILES	TOTAL HOURS INCLUDING TRAVEL AND WORK	PER DIEM APPLICABLE																
Steve Bruskiewicz (262)305-5238		550	10	Yes																
		TOTAL ITEMS INSPECTED		0																
				Kenny Cox !																
FORM: CUSTOMER'S SIGNATURE CERTIFIES THAT TIME AND MILEAGE ARE CORRECT AND MATERIALS AND INTERPRETATION ARE ACCEPTED.				JANX (517) 531-8210																
				P.O. Box 190 Parma, MI 49269																

DATE: 5/21/2019		CLIENT: Pure Technologies US, Inc.		JANX									
REPORT No: 1 of 2		JOB LOCALE- CITY, STATE: Storm Lake, IA											
CLIENT PO No: #2019-052		JANX JOB No:											
CLIENT W/O No:		JANX PROCEDURE No: UTT-1, Rev. 1											
CLIENT JOB No:		ACCEPTANCE CRITERIA: Information only											
ULTRASONIC THICKNESS TESTING TECHNIQUE													
Instrument Mfg: <u>Landmark</u>		Model: <u>UM-1D</u>		Serial No: <u>5102212</u>									
Transducer Mfg: <u>Landmark</u>		Transducer Frequency: <u>5</u> MHz		Cal. Date: <u>1/15/2019</u>									
Transducer Size: <u>.250"</u>		Transducer Type: ☐ Dual Element ☒ Single Element		☐ Delay Line									
☒ Contact ☐ Angle 0° to Surface		☒ Straight Beam ☒ Spot Thickness Readings Only		☒ Area Scan (see below)									
Scan Description: <u>Thickness readings; looking for wall loss</u> Max. Scan Rate (in./sec.): <u>N/A</u> Scan Overlap %: <u>N/A</u>													
Couplant Brand or Type: <u>Sonagel</u> Remarks:													
PART DESCRIPTION			Calibration Block No: <u>3972</u> Material: <u>C/S</u>										
Material: <u>C/S</u> Thickness: <u>.500"</u>			Step 1 Step 2										
Inspection Area Description: <u>Looking for wall loss; thickness readings</u>			Cal Block Actual Thickness: <u>.250"</u> <u>1"</u> Time										
<u>24" x .500wt pipe</u>			Cal. Reading at Start: <u>.250"</u> <u>.500"</u> <u>10:30AM</u>										
Surface Condition: <u>Clean</u>			Cal. Reading at End: <u>.250"</u> <u>.500"</u> <u>2PM</u>										
Surface Preparation: <u>Coating removed and brushed</u>			Gate Height: <u> </u> % ☒ Not Applicable										
Temp. of Part and Cal. Block within ± 25°F of each other: ☒			Gain: <u> </u> dB ☒ Not Applicable										
THICKNESS READINGS			SKETCH / PICTURE / REMARKS - AS NEEDED										
1	Tee 1	21	Tee 2	41	Tee 3	61	Tee 4	81	Tee 5				
2	1.223	22	1.207	42	1.359	62	1.268	82	1.491				
3	1.241	23	1.268	43	1.294	63	1.306	83	1.469				
4	1.248	24	1.263	44	1.401	64	1.315	84	1.471				
5	1.301	25	1.321	45	1.338	65	1.331	85	1.454				
6	1.238	26	1.301	46	1.347	66	1.413	86	1.431				
7	1.287	27	1.331	47	1.353	67	1.442	87	1.299				
8	1.279	28	1.362	48	1.322	68	1.398	88	1.306				
9	1.296	29	1.371	49	1.359	69	1.365	89	1.322				
10	1.301	30	1.354	50	1.306	70	1.315	90	1.316				
11		31		51		71		91					
12		32		52		72		92					
13		33		53		73		93					
14		34		54		74		94					
15		35		55		75		95					
16		36		56		76		96					
17		37		57		77		97					
18		38		58		78		98					
19		39		59		79		99					
20		40		60		80		100					
BILLING Pure Technologies US, Inc., Attn: William Barloon, 8920 State Route 108; Suite D, Columbia MD 21045													
ADDRESS:													
CLIENT SIGNATURE		JANX LEVEL II SIGNATURE		LEVEL II TECHNICIAN		OTHER EMPLOYEES & LEVEL							
				Darrell Powell		Kenny Cox !							
CLIENT REP NAME & PHONE NUMBER		TRAVEL MILES		TOTAL HOURS INCLUDING TRAVEL AND WORK						PER DIEM APPLICABLE		TOTAL ITEMS INSPECTED	
Steve Bruskiewicz (262)305-5238		300		14						Yes		10	
Form: CUSTOMER'S SIGNATURE CERTIFIES THAT TIME AND MILEAGE ARE CORRECT AND MATERIALS AND INTERPRETATION ARE ACCEPTED. JANX (517) 531-8210 P.O. Box 190 Parma, MI 49269													

DATE: 5/21/2019		CLIENT: Pure Technologies US, Inc.							
REPORT No: 2 of 2		JOB LOCALE- CITY, STATE: Storm Lake, IA							
CLIENT PO No: #2019-052		JANX JOB No:							
CLIENT W/O No:		JANX PROCEDURE No: UTT-1, Rev. 1							
CLIENT JOB No:		ACCEPTANCE CRITERIA: Information only							
ULTRASONIC THICKNESS TESTING TECHNIQUE									
Instrument Mfg: <u>Landmark</u>		Model: <u>UM-1D</u> Serial No: <u>5102212</u>		Cal. Date: <u>1/15/2019</u>					
Transducer Mfg: <u>Landmark</u>		Transducer Frequency: <u>5</u> MHz		Due Date: <u>1/15/2020</u>					
Transducer Size: <u>.250"</u>		Transducer Type: ☐ Dual Element ☒ Single Element ☐ Delay Line							
☒ Contact ☐ Angle 0° to Surface ☒ Straight Beam ☒ Spot Thickness Readings Only ☒ Area Scan (see below)									
Scan Description: <u>Thickness readings; looking for wall loss</u>		Max. Scan Rate (in./sec.): <u>N/A</u>		Scan Overlap %: <u>N/A</u>					
Couplant Brand or Type: <u>Sonagel</u>		Remarks:							
PART DESCRIPTION									
Material: <u>C/S</u> Thickness: <u>.500"</u>									
Inspection Area Description: <u>Looking for wall loss; thickness readings</u>									
<u>24" x .500wt pipe</u>									
Surface Condition: <u>Clean</u>									
Surface Preparation: <u>Coating removed and brushed</u>									
Temp. of Part and Cal. Block within $\pm 25^{\circ}\text{F}$ of each other: ☒									
THICKNESS READINGS									
1	Pipe 1	21	Pipe 2	41	Pipe 3	61	Pipe 4	81	Pipe 5
2	0.546	22	0.659	42	0.491	62	0.471	82	0.417
3	0.554	23	0.651	43	0.479	63	0.454	83	0.421
4	0.532	24	0.584	44	0.461	64	0.462	84	0.435
5	0.559	25	0.631	45	0.468	65	0.471	85	0.421
6	0.531	26	0.652	46	0.482	66	0.451	86	0.437
7	0.601	27	0.591	47	0.499	67	0.449	87	0.435
8	0.577	28	0.622	48	0.501	68	0.471	88	0.461
9	0.587	29	0.668	49	0.477	69	0.465	89	0.458
10	0.556	30	0.604	50	0.494	70	0.462	90	0.466
11	0.577	31	0.684	51	0.481	71	0.458	91	0.417
12	0.533	32	0.671	52	0.476	72	0.467	92	0.461
13	0.482	33	0.665	53	0.473	73	0.471	93	0.509
14		34		54		74		94	
15		35		55		75		95	
16		36		56		76		96	
17		37		57		77		97	
18		38		58		78		98	
19		39		59		79		99	
20		40		60		80		100	
SKETCH / PICTURE / REMARKS - AS NEEDED									
Drive in and out of Storm Lake, IA..... (9) Readings per "TEE" (12) Readings per "PIPE" BACK WALL									
BILLING Pure Technologies US, Inc., Attn: William Barloon, 8920 State Route 108; Suite D, Columbia MD 21045 ADDRESS:									
CLIENT SIGNATURE		JANX LEVEL II SIGNATURE		LEVEL II TECHNICIAN	OTHER EMPLOYEES & LEVEL				
				Darrell Powell	Kenny Cox I				
CLIENT REP NAME & PHONE NUMBER		TRAVEL MILES	TOTAL HOURS INCLUDING TRAVEL AND WORK	PER DIEM APPLICABLE		TOTAL ITEMS INSPECTED			
Steve Bruskiwicz (262)305-5238		300	14	Yes		10			
Form: UTT Report 14-05		CUSTOMER'S SIGNATURE CERTIFIES THAT TIME AND MILEAGE ARE CORRECT AND MATERIALS AND INTERPRETATION ARE ACCEPTED.			JANX P.O. Box 190 (517) 531-8210 Parma, MI 49269				

DATE: 5/22/2019		CLIENT: Pure Technologies US, Inc.		
REPORT No: 1 of 1		JOB LOCALE- CITY, STATE: Storm Lake, IA		
CLIENT PO No: #2019-052		JANX JOB No:		
CLIENT W/O No:		JANX PROCEDURE No: UTT-1, Rev. 1		
CLIENT JOB No:		ACCEPTANCE CRITERIA: information only		
ULTRASONIC THICKNESS TESTING TECHNIQUE				
Instrument Mfg: <u>Landmark</u>		Model: <u>UM-1D</u>		Serial No: <u>5102212</u>
Transducer Mfg: <u>Landmark</u>		Transducer Frequency: <u>5</u> MHz		Cal. Date: <u>1/15/2019</u>
Transducer Size: <u>.250"</u>		Transducer Type: ☐ Dual Element ☒ Single Element		☐ Delay Line
☒ Contact ☐ Angle 0° to Surface ☒ Straight Beam		☒ Spot Thickness Readings Only		☒ Area Scan (see below)
Scan Description: <u>Thickness readings; looking for wall loss</u>		Max. Scan Rate (in./sec.): <u>N/A</u>		Scan Overlap %: <u>N/A</u>
Couplant Brand or Type: <u>Sonagel</u>		Remarks:		
PART DESCRIPTION				
Material: <u>C/S</u>		Thickness: <u>.500"</u>		
Inspection Area Description: <u>24" x .500wt pipe</u>				
Surface Condition: <u>Clean</u>				
Surface Preparation: <u>Coating removed and brushed</u>				
Temp. of Part and Cal. Block within ± 25°F of each other: ☒				
Calibration Block No: <u>3972</u>		Material: <u>C/S</u>		
		Step 1		Step 2
Cal Block Actual Thickness:		<u>.250"</u>	<u>1"</u>	Time
Cal. Reading at Start:		<u>.250"</u>	<u>.500"</u>	<u>10:30AM</u>
Cal. Reading at End:		<u>.250"</u>	<u>.500"</u>	<u>2PM</u>
Gate Height: _____ %		☒ Not Applicable		
Gain: _____ dB		☒ Not Applicable		
THICKNESS READINGS				
1	21	41	61	81
2	22	42	62	82
3	23	43	63	83
4	24	44	64	84
5	25	45	65	85
6	26	46	66	86
7	27	47	67	87
8	28	48	68	88
9	29	49	69	89
10	30	50	70	90
11	31	51	71	91
12	32	52	72	92
13	33	53	73	93
14	34	54	74	94
15	35	55	75	95
16	36	56	76	96
17	37	57	77	97
18	38	58	78	98
19	39	59	79	99
20	40	60	80	100
SKETCH / PICTURE / REMARKS - AS NEEDED				
Drive from Storm Lake, IA.....				
BILLING <u>Pure Technologies US, Inc., Attn: William Barloon, 8920 State Route 108; Suite D, Columbe MD 21045</u>				
ADDRESS:				
CLIENT SIGNATURE		JANX LEVEL II SIGNATURE		LEVEL II TECHNICIAN
				Darrell Powell
CLIENT REP NAME & PHONE NUMBER		TRAVEL MILES	TOTAL HOURS INCLUDING TRAVEL AND WORK	PER DIEM APPLICABLE
Steve Bruskiewicz (262)305-5238		550	10	TOTAL ITEMS INSPECTED
				0
		Kenny Cox 1		
Form UTT Report 14-06		CUSTOMER'S SIGNATURE CERTIFIES THAT TIME AND MILEAGE ARE CORRECT AND MATERIALS AND INTERPRETATION ARE ACCEPTED.		JANX (517) 531-8210 P.O. Box 190 Parma, MI 49269

APPENDIX C: Forcemain Evaluation Methods

Transient Pressure Monitoring

The occurrence of pressure transients within a pressure pipeline can have adverse effects on the integrity of a pipe section as they can cause damage such as fatigue stress or even a pipe failure depending on the magnitude of the transient and current condition of the pipe. Accumulated damage of this nature can eventually decrease the structural integrity of the pipe. Therefore, it is important to understand the frequency and magnitude of pressure transients in the 300 mm watermain to ensure that operational protocols can be implemented to maintain the pressures below the specified design. An understanding of the actual pressure in a line will also permit knowledgeable decisions regarding future modifications to the line or facilities that affect the performance of the pipeline.

Traditional pressure monitors collect data in intervals of seconds while transients may occur in fractions of seconds. Pure's transient pressure monitoring system addresses the sampling frequency issue by continuously monitoring pressure and while under normal operating conditions, only recording data every few minutes (based on user defined intervals). However, when a transient occurs in the pipeline, the device detects the transient and begins sampling at a high rate of up to 20 samples per second (20 hertz). This provides periodic pressure readings as well as data on transient events.

Pure requires the subject watermain to be in-service during the monitoring period. The transient pressure monitors require an existing 1/4-inch tap or larger for installation. Pure will install one monitor at location to be determined during the project planning, for thirty (30) days of monitoring. At the end of the data collection period, Pure will analyze the data and include the results in the final condition assessment report to client.



SmartBall[®] Technology

A free-swimming tool for long distance water and wastewater inspections

How SmartBall works?

The SmartBall[®] platform is a free-flowing tool for the assessment of pressurized water and wastewater pipelines 8 inches and larger. It can complete long assessments in a single deployment without disruption to regular pipeline service.

The tool is inserted into a live pipeline and travels with the product flow for up to 21 hours while collecting pipeline condition information. It requires only two access points for insertion and extraction, and is tracked throughout the inspection at predetermined fixed locations on the pipeline.

Applications

Owners of water and wastewater pipelines deal with a variety of infrastructure challenges; the SmartBall platform can collect a variety of pipeline condition information in a single deployment that helps owners manage their assets more effectively.

Leak Detection

The tool is equipped with a highly sensitive acoustic sensor that can detect pinhole-sized leaks on pressurized pipelines. The SmartBall platform has been able to identify leaks as small as 0.028 gal/min (0.11 liters) and has a typical location accuracy of within 6 feet (1.8 meters).

Gas Pocket Detection

The acoustic sensor is also able to identify the sound of trapped gas within pressurized mains. The presence of trapped gas can adversely affect pipeline flow or lead to degradation of the pipe wall in sewer force mains.

Inspection Benefits

- Easy to deploy through existing pipeline features
- No disruption to regular pipeline service
- Can complete long inspections in a single deployment
- Highly sensitive acoustic sensor that can locate very small leaks
- Can identify features relevant to the operation and mapping of the pipeline
- Indicates the position of leaks, and gas pockets relative to known points





PipeDiver[®] Condition Assessment

An innovative, free-swimming condition assessment tool that operates while a pipeline remains in service

PipeDiver Technology

The PipeDiver platform is ideal for critical large-diameter pipelines that cannot be removed from service due to lack of redundancy or operational constraints. It can be effectively deployed for long inspections on several types of pipe to determine baseline condition; on concrete pressure pipe, the tool can identify and locate broken wire wraps, which are the main indication that this type of pipe will eventually fail; for metallic pipes that utilize a steel cylinder as the main structural component, the tool can locate and detect areas of corrosion and cylinder defects.

When inserted into a live pipeline through a hot tap connection, an existing access or a submerged tank, the tool travels with the product flow and is able to navigate most butterfly valves and bends in the pipeline.

Inspection Benefits

- No disruption to regular pipeline service
- Long inspection distances can be covered in a single deployment
- Accurate results that pinpoint areas of distress help optimize repair planning
- Effective on a variety of pipe materials
- More cost-effective than methods that require shutdown and dewatering



Staff Summary

3/2/2020

Agenda Item # 9.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Keri Navratil, City Manager

SUBJECT: **Resolution No. 55-R-2019-2020 Committing Matching Funds for a Community Development Block Grant - Memorial Lift Station**

BACKGROUND: The grant application will request funding assistance for improvements to the City's sanitary sewer system, specifically improvements to Memorial Lift Station.

Memorial Lift station was originally built in 1983 and is an integral part of the wastewater system as 70% of wastewater flows through this lift station. The City intends to apply for a Community Development Block Grant (CDBG) to add redundancy to the system to ensure that that we do not bypass into the lake or to cause 70% of the community to not have access to the wastewater system.

FISCAL IMPACT: If awarded, the City of Storm Lake would be required to commit \$600,000 in match funds.

RECOMMENDATION: Approve Resolution No. 55-R-2019-2020 Committing Matching Funds for a Community Development Block Grant - Memorial Lift Station

ATTACHMENTS:

Description	Type
□ Resolution No. 55-R-2019-2020	Resolution
□ Facility Plan	Backup Material

RESOLUTION NO. 55-R-2019-2020

**A RESOLUTION COMMITTING MATCHING FUNDS
FOR A COMMUNITY DEVELOPMENT BLOCK GRANT APPLICATION**

WHEREAS, the City of Storm Lake is applying for an Iowa Community Development Block Grant under the Water/Sewer portion of the program for the Storm Lake Memorial Lift Station Project, and,

WHEREAS, the City has applied for and is listed on the State of Iowa Drinking Water State Revolving Loan Fund Intended Use Listing at a not to exceed amount of \$1,331,625; and,

WHEREAS, the City intends to utilize the State Revolving Loan Fund as the source for financing their share of the project;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF STORM LAKE:

SECTION 1. The City commits to the issuance of bonds, through the State Revolving Loan Program in an amount not to exceed \$1,331,625, for the purpose of funding the City's share of the Storm Lake Memorial Lift Station Project.

SECTION 2. The City commits to the issuance of bonds in a timely manner so as not to unduly delay the construction of the project.

PASSED AND APPROVED this 2nd day of March 2020.

Michael Porsch, Mayor

ATTEST:

Mayra Martinez, City Clerk



Dec 31, 2019

City of Storm Lake
Keri Navratil, City Manager
620 Erie St, PO Box 1086
Storm Lake, IA 50588

RE: Memorial Lift Station Improvements
City of Storm Lake
DNR Project No. S2019-0384A
CWSRF No. CS1920XXXXX (pending)

Subject: Facility Plan Approval

Dear Keri:

The Iowa Department of Natural Resources has reviewed the Facility Plan and all subsequent correspondence for the above-referenced project and is in agreement with the project as currently proposed. The Facility Plan is officially approved. When ready, please submit Plans and Specifications to the Department for review. Plans and Specifications shall be prepared in accordance with the approved Facility Plan. The following is a brief summary of the approved Facility Plan.

A new isolation valve on the force main discharge line, replacing pump #1 and #2 with the same capacity as the existing pumps, replacing the sump pump in the existing wet well, temporary bypass pumping, valves replacement, sluice gate installation in the wet well, other miscellaneous maintenance work.

The existing pumping capacity of Memorial lift station will not be changed.

ELIGIBILITY

The City has opted to utilize State Revolving Loan Funds (SRF) for financing the proposed project. Therefore, an environmental review (ER) is necessary to assess the environmental impacts of the project in accordance with procedures in 40 CFR Part 6 and is required for all loan recipients. A decision will be made by the department to determine if the project qualifies for a categorical exclusion (CX) or if a finding of no significant impact (FNSI) is required. The facility plan is approved conditionally based strictly on the technical review of the proposed project. Any significant project change resulting from the environmental review may require an amendment to the facility plan or a revised facility plan to retain eligibility for SRF funding. Construction of the project prior to the environmental review completion could jeopardize your SRF funding. Please contact DNR Environmental Review Staff for questions about the ER status.

Our approval does not eliminate the need for the city to comply with all federal, state and local regulations. This department must be notified of any change in your proposal and approve the change prior to incorporation in plans and specifications. Our approval of the Facility Plan is not an endorsement for funding. Additional coordination and documentation may be necessary before a loan agreement can be offered.

Please feel free to contact me at 515-725-8421 or email emy.liu@dnr.iowa.gov if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Emy Wenxin Liu".

(Emy) Wenxin Liu, PhD, PE
Project Manager
Wastewater Engineering Section

Encl.

c: ISG (508 E. Locust, Des Moines, IA 50309) (w/FP)
DNR FO 3 (Spencer, Iowa)
DNR Sewage File 6-11-78-0-01
SRF File CS1920xxxxxx (pending) (w/FP)

FACILITY PLAN MEMORIAL LIFT STATION

CITY OF STORM LAKE, IOWA
JUNE 2019



REPORT FOR:
City of Storm Lake
620 Erie Street
Storm Lake, IA 50588
712.732.8000

FROM:
Jason Kenyon, P.E.
ISG
508 E. Locust Street
Des Moines, IA 50309
515.243.9143
Jason.kenyon@is-grp.com

ISG

Facility Plan

Memorial Lift Station, Storm Lake, Iowa

Ownership of Document

This document, and the ideas and designs incorporated herein, as an instrument of professional service, is the property of ISG, and is not to be used, in whole or in part, for any other project without the written authorization of ISG.

Project No. 19-22797

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa. <u>Jason C. Kenyon</u> <u>7-19-2019</u> Jason C. Kenyon Date License Number: 25053 My License Renewal Date is 12/31/2019 Sections covered by this seal: <u>Entire Bound Report</u>
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Executive Summary

The City of Storm Lake's Memorial Lift Station was constructed in 1983 to convey wastewater from the previous wastewater treatment plant site to the new wastewater treatment plant approximately 2.5 miles southeast. Memorial Lift station was originally designed to convey all wastewater from the City. New lift stations on the west side of Storm Lake have diverted some flow away from Memorial Lift Station, but Memorial Lift Station still handles the majority of the City's Wastewater. Minor improvements have been made to the lift station since its original construction, but many of the most critical components are original and have been in operation for 35 years. Improvements are necessary in order for this critical lift station to continue to operate reliably. Improvements identified in this facility plan include replacement of failing equipment, rehabilitation of the existing structure, modifications to comply with code requirements, and improvements for future operation and maintenance.

Minor improvements at the site, including removing vegetation, rerouting downspouts, and filling animal burrows are recommended to help maintain access and prevent future degradation to the structure. Filling the animal burrows under the transformer pad is critical due to the potential for animals to damage the electrical service conductors and interrupt power to the lift station. The total estimated cost for the recommended site improvements is \$1,800.

In order to make the recommended improvements inside memorial lift station, a new isolation valve will need to be installed on the force main discharge and the flow bypass pumped around the lift station. Work will need to occur during dry weather periods to reduce bypass pumping costs during construction. The estimated cost for installing the isolation valve and temporary bypass pumping is \$150,000.

Process improvements at Memorial Lift Station include replacement of valves that are in poor condition and failing, recoating the existing piping, and modifying the wet well configuration to reduce stagnant wastewater and solids deposition that contributes to hazardous and corrosive gases. The estimated cost for the process improvements is \$327,000.

The existing pumps at Memorial Lift Station include two 60 horsepower duty pumps and three 300 horsepower peak flow pumps. All five pumps are the original pumps that were installed when the lift station was built in 1983. One of the smaller pumps is inoperable and the other small pump runs continuously. The three peak flow pumps only run during heavy rain events when there is significant infiltration and inflow in the collection system. Replacement of the two 60 horsepower pumps is recommended as these pumps handle the majority of the flow at the lift station. Replacement of the larger pumps was also evaluated, but the existing pumps are still in good condition due to their low run time. The estimated cost of replacing the two 60 horsepower pumps is \$180,000.

Structurally, Memorial Lift Station is in serviceable condition. However, repairs are required to make the structure weather tight, replace protective coatings, and patch minor degradation of the concrete

structure. Filling and abandoning the unused grit chamber will help reduce stagnant wastewater as well. The estimated cost of the structural rehabilitation is \$260,000.

There are several HVAC components at Memorial Lift station that have failed or do not meet current code requirements. Replacing the failed ventilation components is critical for protecting operations staff from hazardous conditions. Additionally, the increased ventilation will protect electrical systems and metal components from corrosive gases. The estimated cost of the HVAC improvements is \$177,000.

The location of the existing water service lines at Memorial Lift Station create a significant risk to the electrical system. Rerouting water and drain lines away from electrical components is necessary to prevent catastrophic damage to the motor control center in the event of a pipe break. The water circulation pumps for the boiler heating system are also failing and should be replaced with newer variable speed pumps that will provide greater reliability and efficiency. The estimated cost of the plumbing repairs and improvements is \$74,000.

The existing motor control center at Memorial Lift Station are in poor shape due to age and exposure to water and corrosive gases. Some components of the electrical system do not meet current electrical codes. Replacement of these components is crucial for providing reliable power to the pumps. Additionally, replacing the existing florescent and high pressure sodium lights with LED lights can provide some energy savings and provide longer bulb life, reducing operator time required to maintain the lighting system. The estimated cost of the electrical improvements is \$318,500. The additional estimated cost for replacing and adding LED lighting is \$36,000.

The Controls system at Memorial Lift Station is in poor condition and replacement components for the existing system are no longer manufactured. Complete replacement of the controls system is required to ensure continued operation. Additionally, the new control system will provide better monitoring and remote operation of the lift station. New systems to monitor ventilation and hazardous gases are also necessary to protect operations staff. The estimated cost for the controls improvements is \$225,000.

The total estimated project cost, including contingency and non-construction costs, is \$2,275,000. The City of Storm Lake intends to apply for a Community Development Block Grant (CDBG) for \$600,000 and use a State Revolving Fund (SRF) loan for the remaining balance of \$1,675,000.

Due to the need for bypass pumping during construction, the proposed work must be done during a dry weather period. The preliminary project schedule includes bidding the project in spring 2020 to allow for equipment procurement lead time over summer 2020 and installation during bypass pumping in fall 2020.

Introduction

BACKGROUND

The City of Storm Lake's Memorial Lift Station was originally constructed in 1983 at the site of the City's previous wastewater treatment plant. The lift station was designed to convey all of the City's wastewater to the new wastewater treatment plant approximately 2.5 miles southeast. After construction of the lift station, force main, and new wastewater treatment facility, the old wastewater treatment facility was demolished. Minor improvements have been made to Memorial Lift Station since its original construction. An activated carbon odor control system and a diesel backup generator were installed in 2008. The mechanical bar screen and grit removal equipment were removed and a new grinder was installed in 2016. Most of the existing equipment is original to the lift station construction and has been in service for 35 years.

SCOPE OF WORK

Due to the age, condition, and criticality of Memorial Lift Station, the City of Storm Lake retained ISG to evaluate the condition of the lift station and prepare this facility plan. ISG evaluated the condition of the site, process equipment, structure, HVAC, plumbing, electrical, and controls systems to identify deficiencies that are currently or could in the future impact the operation of Memorial Lift Station. ISG then prepared an evaluation of proposed improvements to address those deficiencies and ensure Memorial Lift Station continues to operate reliably.

Existing Conditions and Deficiencies.

SITE

The City still owns the entire eight acre site of the previous wastewater treatment plant, which has since been demolished, and uses the open areas around the lift station for material and equipment storage. An eight foot fence with barbed wire follows the perimeter of the below-grade lift station structure and secures the above-grade entrances to the lift station. The parcels surrounding the lift station site are light industrial sites and the municipal cemetery. The Chicago Central and Pacific Railway line borders the site to the north. The nearest residential structure is approximately 1,300 feet east of the lift station.



Figure 1: Memorial Lift Station Site and Location

Around the exterior of the lift station, animals have burrowed holes at several locations below stoops and the transformer pad. These holes should be filled and measures taken to prevent future unwanted excavations. Vegetation has grown up around the building slab as well, hindering maintenance access. The roof gutter downspouts are not connected to a sufficient outlet and several of them discharge directly to the ground immediately next to the lift station. This likely contributes to water accumulation and seepage into the lift station. For proper drainage, the downspouts should be directed further away from the building exterior.



Figure 2: Animal Burrows, downspouts, and vegetation around lift station exterior

A summary of the site deficiencies identified is provided below:

- Animal burrows are present in several locations around the building exterior.
- Vegetation has grown up in several locations around the building exterior.
- The downspouts discharge directly adjacent to the lift station.

PROCESS

Flows

The original design flow rates for Memorial Lift Station are listed in Table 1 below. In 2014, additional lift stations were constructed around the western perimeter of Storm Lake which diverted a significant portion of the City's wastewater away from Memorial Lift Station.

Table 1: Memorial Lift Station Design Flow Rates

Flow Condition	Flow, MGD
Average Dry Weather	1.80
Average Wet Weather	3.34
Maximum Wet Weather	6.20
Peak Hourly Wet Weather	15.80

Influent flow at the lift station is measured by a parshall flume with a totalizing flow meter. The totalizer reading is periodically recorded in a log book at the lift station. Therefore, hourly flow data is not available for this lift station. The Flow rate data recorded between June 2015 and August 2016 is summarized in Figure 3 below. The peak average daily flow observed during this period was approximately 7.72 MGD, and the majority of the average daily flows were below 3 MGD. With the limited data available, it appears that flow rates are within the original design capacity for the Lift Station. Therefore, the existing design capacity is considered adequate and proposed improvements will maintain the existing capacity.

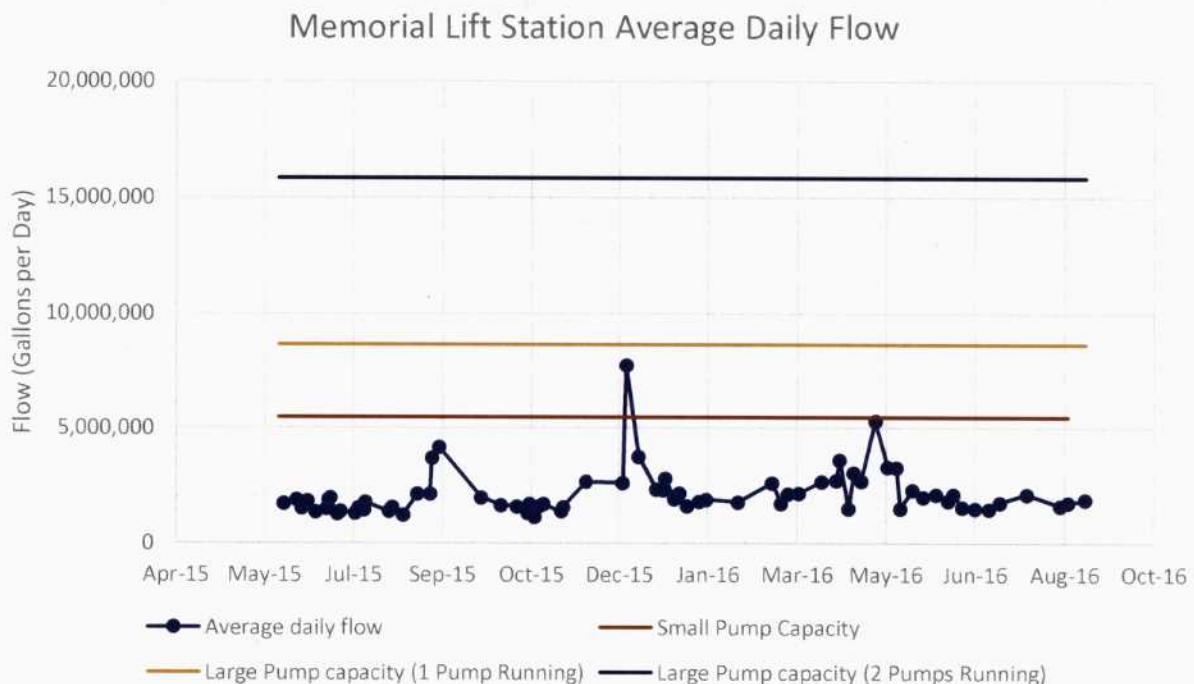


Figure 3: Recorded Flow May 2015-Aug 2016

Pumps

Memorial Lift station includes two 60 horsepower pumps (one duty, one standby) for average daily flows, and three 300 horsepower pumps (two duty, one standby) for peak flows during significant precipitation events. The Design Points of the pumps are listed in Table 2 below. A plug valve on the discharge piping of one of the smaller pumps (Pump #1) has failed in the closed position, rendering the pump inoperable. A variable frequency drive has been installed on the other small pump (Pump #2).

Table 2: Pump Design Points

Pump	Flow, GPM (MGD)	Head, ft.	Motor horsepower	Notes
Pump #1	3,750 (5.4)	42	60	Inoperable due to failed valve.
Pump #2	3,750 (5.4)	42	60	Operates on a VFD
Pump #3	5,500 (7.92)	140	300	Pumps 3, 4, and 5 operate as one or two pumps in service, with one pump on standby.
Pump #4	5,500 (7.92)	140	300	
Pump #5	5,500 (7.92)	140	300	

The seal on Pump #2 was recently replaced with a new mechanical seal as well. While not required, the manufacturer recommends that seal water be supplied to the new seal. The seals on the three larger pumps (Pumps #3, #4, and #5) have recently been replaced with new mechanical seals that do not require seal water. The seal water system is old and degraded. Additionally, the seal water pumps and suction tanks are located in the electrical room, creating a hazard to the electrical equipment.



Figure 4: Seal Water System

Solids Handling

When the Memorial Lift Station was originally constructed, it included a mechanical bar screen and aerated grit removal. The screening and grit removal equipment were removed in 2011 and replaced with an in-channel grinder to grind solids which would then be pumped to the new headworks facilities at the wastewater treatment plant and removed there. The grinder is in good condition.

The grit chamber is now isolated from the flow path by stop plates installed in the inlet channel; however, during high flow events water backs up over the grit chamber discharge weir and fills the chamber, resulting in stagnant wastewater which is a significant source of hydrogen sulfide and odors. The hydrogen sulfide gases produced by the stagnant wastewater contribute to corrosion and worker health and safety issues.

Odor Control

An activated carbon odor control system was installed at Memorial Lift station in 2007 to capture gases generated in the screening chamber. Shortly after installation, the carbon media was exhausted and replacement of the media was deemed cost prohibitive. In order to help reduce odors, Hydrogen peroxide is now fed into the sewer upstream of the lift station from a building located approximately 100 feet to the west of the current lift station facility.

Wet Well

A figure of the wet well layout is included in Appendix A. The wet well is separated into two zones, with the suction piping for the smaller pumps in one zone (The Average Flow Wet Well) and the suction piping for the larger pumps in the other zone (the Peak Flow Wet Well). The two zones are connected by a 4 ft wide by 2 ft tall overflow opening and a lower 36" circular opening with a sluice gate. Flow enters the average flow wet well through three 18" circular openings at the base of the wall between the influent channel and the wet well. As incoming flows increase above the capacity of the smaller pumps, the water elevation rises and overflows into the Peak flow wet well, where the large pumps are activated to handle peak flows. Once the large pumps stop, a sump pump should dewater the peak flow wet well. However, this sump pump does not appear to be functioning, leaving stagnant water in the peak flow wet well. Replacing the sump pump requires an operator to enter the wet well as there is no access to the sump pump from above the wet well.

While not shown on the original plans, a pipe has been installed from the influent channel to the peak flow wet well. Based on the elevation of this pipe, it is assumed that it serves to bypass flow directly to the peak flow wet well during high flow events when the 18" openings into the average flow wet well are unable to hydraulically pass the influent flows.

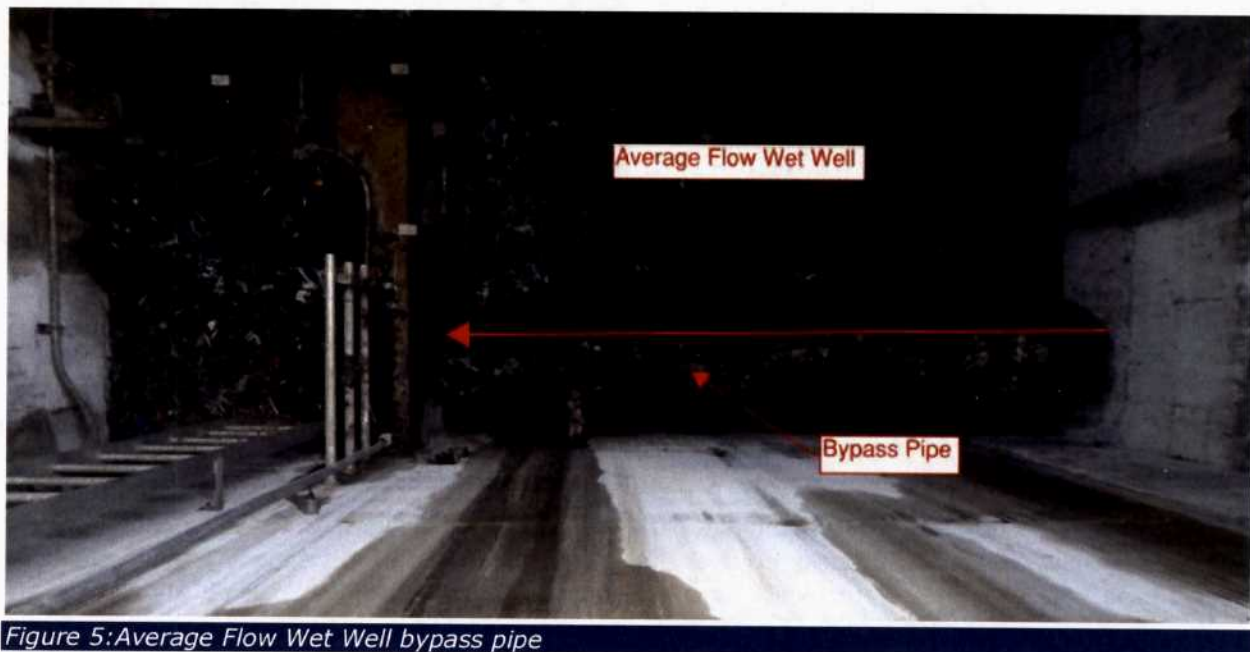


Figure 5: Average Flow Wet Well bypass pipe

Due to the large volume, solids are likely settling out in the wet well during low flow periods. This issue is exacerbated by limited accessibility for vacuum truck suction hoses to get into the wet well to remove solids and floating debris.

Suction/Discharge Piping

As shown in Figure 5 below, the existing piping in the drywell has some deterioration and corrosion. A non-destructive evaluation was performed on the piping in June 2019 to determine the condition of the pipe. The evaluation determined the pipe was still in good condition. A copy of the evaluation report dated June 4, 2019 is provided in Appendix B. The pipe supports are also rusting. The base plates of the pipe supports are frequently in contact with water on the floor of the pump room.

The plug valve on the discharge side of Pump #1 has failed in the closed position. A few of the check valves have broken lever arms as well. Replacing the pump isolation plug valves is currently not possible because there is no way to isolate the Lift Station piping from the rest of the downstream force main.



Figure 6: Pump Discharge Piping

A summary of the process deficiencies identified is provided below:

- Valve failure has made Pump #1 inoperable.
- The seal water supply system is old and degraded. Its location is a hazard to the electrical equipment.
- The grit chamber is unused and stagnant.
- The large wet well volume contributes to solids deposition.
- The sump pump in the wet well has failed and is difficult to access for maintenance.
- There is limited access for cleaning equipment into the wet well.
- The long residence time and solids deposition contribute to hydrogen sulfide gas production.
- The odor control media has been depleted and is no longer used.
- There is no way to isolate the average daily flow wet well for cleaning.
- The process piping and supports are corroded and need recoating.
- The suction and discharge valves are old and failing.
- There is no way to isolate the process piping for valve replacement.

STRUCTURE

The existing lift station consists of a below-grade cast in place concrete structure divided into several chambers. The top slab of the structure is at grade with several hatches for access and removal of equipment from the below-grade chambers. The above-grade structure consists of an older "corduroy brick" building with separate entrances to the stairwells into the electrical room and headworks room. A newer CMU building that houses the emergency generator and boiler is adjacent to the entrance building.

While the overall structure appears to be in serviceable condition, water infiltration has caused serious corrosion of metals and overall building degradation. Many surface coatings including paints, waterproofing, and insulation are visibly degraded and have exceeded their service lives. Due to such extensive water damage, it is recommended that all existing surface coatings should be removed and replacement coatings applied. The following sections discuss further recommendations for necessary repairs.

Exterior

The exterior fascia of the building is composed of corduroy brick that displays cracking and mortar deterioration. To prevent further damage, the cracks should be caulked. Additionally, tuck pointing is required at locations of mortar deterioration. An overhead door into the Generator room has significant corrosion and should be recoated or replaced.

A removable section of concrete slab is located in the roof of the headworks chamber for access to the grinder. Seepage around the slab has caused deterioration to the insulation on the interior ceiling of the lift station. Currently, a tarp has been placed over the slab in order to reduce seepage. Another access hatch is located on the East side of the lift station above the electrical room. A waterproofing membrane was previously installed on the slab surrounding the hatch. That membrane was damaged and currently sits in bundles on top of the slab, creating areas of water retention. Inside the electrical room, there are signs of water leakage through the existing access hatch.



Figure 7: Exterior Access Hatches

The main access into the wet well is through hinged fiberglass panels. The steel support beams for the fiberglass panels show signs of corrosion. Additionally, one of the access openings is located immediately outside the door to the generator room, a significant safety concern.



Figure 8: Wet Well Access Panels

Upper Level

Multiple areas of the building show signs of roof leakage, causing damage to insulation, harboring mold growth, and rusting the metal roof deck. The roof shingles have likely exceeded their service life and require replacement.

Minor cracks are visible in the interior CMU walls in the above-grade entrance to the headworks chamber. This cracking needs to be sealed.

Electrical Room

The ceiling insulation in the electrical room exhibits signs of moisture retention and molding. The existing insulation should be removed and replaced. The hatch above the electrical room is not sealed, causing leakage. The hatch should be replaced to prevent further water damage.



Figure 9: Electrical Room Ceiling

Pump Room

An overhead crane is located in the pump room for removal and reinstallation of equipment. The posted rating of the crane is two (2) tons, or 4,000 pounds. Equipment weights were not verified but the crane capacity is assumed to be adequate. The support beams for the crane show signs of spalling paint.



Figure 10: Existing Overhead Crane

The existing pipe penetration seals between the drywell and wetwell are significantly corroded. These seals are critical for keeping wastewater and sewer gasses from entering the drywell.



Figure 11: Drywell Pipe Penetration Seals

The concrete slab that composes the ceiling of the pump room contains cracking. These cracks may exacerbate moisture conditions and should be repaired. The floor slab in the pump room shows significant deterioration due to standing water.



Figure 12: Pump Room Ceiling Cracking and Floor Slab

Headworks Chamber

There is an existing elevator that was used to remove the screening dumpster when the mechanical bar screen was in service. The elevator has stopped functioning and without the screening system it has limited usefulness. Adjacent to the elevator is a metal spiral staircase. The tight curvature of the spiral staircase makes it difficult for materials to be carried into the headworks chamber. City Operators have indicated a preference for both the elevator and spiral staircase to be replaced with a straight staircase with an intermediate landing, similar to the stairway into the pump room.



Figure 13: Elevator and Spiral Staircase

The ceiling insulation in the Headworks Chamber exhibits signs of moisture retention and molding. The existing insulation should be removed and replaced.

The existing grating above the open channels does not cover the entire opening at several locations. This presents a safety hazard. All grating should be replaced with solid panels that cover the entirety of the openings. The solid panels will also help to direct gases to an HVAC/hood area.

The concrete channel walls are pitted and spalled, likely due to hydrogen sulfide gases. Continued erosion of the walls could affect the function of the channel. The walls need to be repaired.



Figure 14: Headworks Chamber Ceiling and Channel concrete spalling

A summary of the structural deficiencies Identified is provided below:

- There is minor exterior and interior cracking in the above-grade masonry buildings.
- The exterior hatches in the top slab leak.
- The access hatch into the wet well is located directly in front of generator room door.
- There are interior signs of roof leakage.
- There is significant moisture damage to the interior ceiling insulation.
- The pipe penetration seals between the wet well and dry well are significantly degraded.
- Interior paints and coating systems have degraded.
- The elevator is non-functional and the spiral stairway hinders maintenance access.
- Gaps in the headworks channel grating are a safety hazard.
- There is concrete spalling and deterioration in the headworks channel.

HVAC

The Drywell, headworks chamber, and generator room are all separately heated and ventilated. The drywell is ventilated by an exterior exhaust fan and heated by an electric furnace. The headworks chamber is ventilated by a large air handling unit that includes an activated carbon scrubber for odor control as previously discussed. The headworks chamber is heated by a gas-fired boiler supplemented with an electric unit heaters. The generator room is heated by an electric unit heater but has no active ventilation.

Exterior

The ductwork wrapping on all exterior ductwork is peeling off and in some locations barely attached to the duct. The dampers and actuators associated with the odor control system are rusted through and unusable. The make-up air unit is missing a handle on the shut off panel.

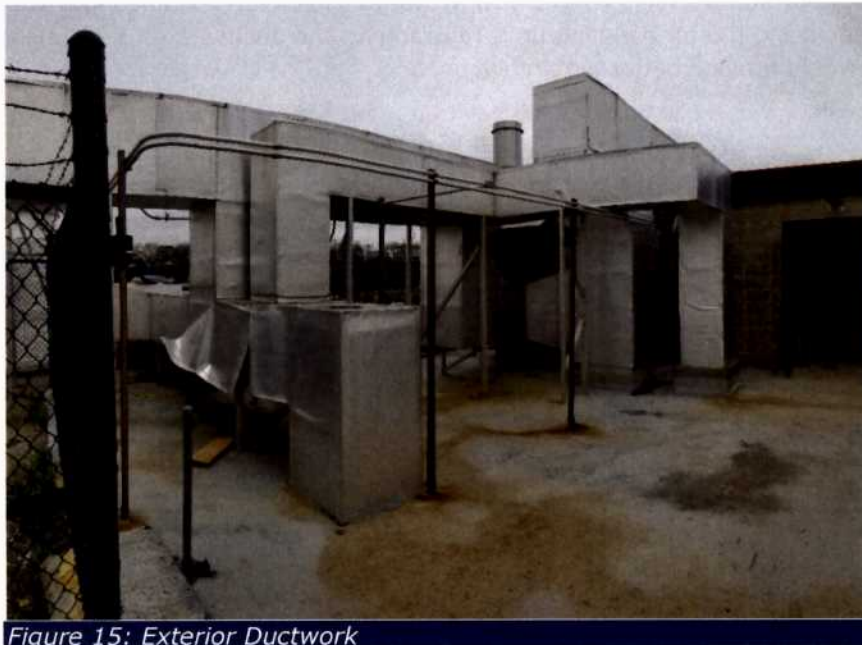


Figure 15: Exterior Ductwork

Emergency Generator Room

The electric heater hanging in the corner of the room is not working. City Staff have indicated that the electrical breaker for the heater trips very frequently. The condition of the heater itself seems to be OK. The seal around the generator exhaust pipe where it penetrates the building wall is visibly broken and should be resealed to prevent rainwater from leaking into the building. There is no active ventilation in the space, however the interior space does not appear to show any significant degradation. There is likely some passive air movement occurring through the large intake and exhaust louvers.

While the boiler appears to be in good working condition, the current location of the boiler in the generator room conflicts with NFPA 110, Standards for Emergency and Standby Power Systems. The code does not allow for other equipment that is not directly related to the generator function to be located in the generator room. To comply with code the boiler will need to be relocated or the space separated into 2 adjacent spaces. Functionally, the large amount of air required by the generator likely starves the gas-fired boiler of oxygen when the generator operates. This could lead to significant issues during a winter power outage.

There is an exhaust duct running through the room that is pulling air from the Electrical Room and Lower Pump Room. The duct will have to be separated from the generator room to comply with NFPA 820 requirements.

Electrical Room and Pump Room

There is currently no dehumidification in the space, and the walls are showing signs of damage from moisture. The exhaust fan that serves this space is currently non-functional. Additionally, there is no air intake louver, limiting the supply of fresh air to the space. Per NFPA 820, if the space is not ventilated with outside air, the space is classified as Class 1, Division 2, Group D, and the electrical equipment would require additional explosion protection. Providing a minimum of six (6) air changes per hour is required to declassify the space. Without the exhaust fan, the air-handling unit is only recirculating air, and the diffusers are mounted high and throwing air horizontally. In the lower pump room, the single exhaust grille is located high up, right below ceiling height. It may not be effectively exhausting the air from the bottom of the room. Replacing the air handling unit, rearranging the ductwork, and installing new downward facing diffusers would provide better air circulation.

Headworks Chamber

The headworks chamber is ventilated by the large air handling unit located outside the lift station. The exhaust duct and hood over are in poor condition. The supply duct appears to be in good condition but could be cleaned, both inside and outside. The explosion proof heaters appear to be out of order. There are no dehumidification measures in the space. Dehumidifiers could help reduce moisture damage to the interior surfaces and insulation.

Per NFPA 820, spaces like the headworks chamber with open wastewater channels are classified as Class 1, Division 1; unless ventilation is provided at 12 air changes per hour. If adequate ventilation is provided, the classification is reduced to Class 1, Division 2, and the requirements for explosion protection are reduced. Based on the documentation provided by the City on the existing air handling unit, adequate ventilation is being provided to reduce the classification in the headworks chamber.



Figure 16: Headworks Chamber Exhaust Hood and Duct

Wet Well

The wet well is actively ventilated by the exhaust fan of the air handling unit used for the headworks chamber. An intake hood is located in the top slab of the wet well and an exhaust duct passes through the wall into the headworks chamber. Based on the information provided by the City, the ventilation in this space does not appear to be adequate to reduce the classification. Therefore, the space is considered a Class 1, Division 1 space.

A summary of the HVAC deficiencies identified is provided below:

- The duct wrap on exterior ducts is degraded.
- The dampers and actuators on the exterior ductwork are rusted and non-functioning.
- The heater in the generator room is not functional due to an electrical issue.
- The seal on the generator exhaust pipe has cracked.
- The boiler located in the generator room violates NFPA 110.
- The exhaust vent passing through the generator room from the electrical room violates NFPA 820.
- There is no dehumidification to reduce moisture damage in several spaces.
- The exhaust fan for the electrical room and pump room has failed.
- There is no intake louver for the electrical room or pump room.
- The ductwork configuration in the pump room is inadequate for proper air circulation.
- The exhaust duct in the headworks chamber is in poor condition.

PLUMBING

Plumbing at Memorial Lift Station consists of a water service line that enters the electrical room from the north. The water line serves a toilet, sink, a small water heater, and the pump seal water system, all located in the electrical room. The water line also serves two hose bibs in the headworks chamber and the pump room, as well as the boiler for heating the headworks chamber.

Boiler Water System

The pumps that circulate water for the boiler show significant corrosion. They are operating at constant circulation volume without a VFD. The connected water pipes are leaking. The air separator does not appear to have a blowdown.

The boiler drain is crowded and needs to be relocated outside of the generator room. The drain pipe passes through the floor slab into the electrical room below and is routed above electrical equipment, creating a potential hazard.



Figure 17: Boiler Circulation Pumps and Drain

Restroom Facilities

There are cold water lines running above the MCC to the restroom facilities, creating a significant potential hazard to the electrical equipment. The toilet, sink, and water heater are in poor shape and could be replaced or removed. The sanitary pipes from the toilet and sink are routed along the ceiling of the pump room below and through the wall into the wet well. The sewer pipes and check valves are in poor condition. City staff have indicated that the restroom facilities are rarely used.

Floor Drains and Sump Pump

The sump pump and associated piping located in the pump room are in poor condition. There is significant standing water in the pump room and the floor drain piping is likely obstructed.

A summary of the plumbing deficiencies identified is provided below:

- The boiler pumps are in poor condition.
- The boiler system should not be located in the same room as the generator.
- The duct from the electrical room should not be routed through the generator room.
- The water piping to restroom is routed above electrical equipment.
- The floor drains and sump pump in the lower pump room are in poor condition.

ELECTRICAL

General

There are several electrical conduits and associated supports throughout the lift station that are severely corroded. Many of these conduits are unused and should be removed. There are several penetrations through the structure for unused conduits that should be sealed after the conduit is removed to prevent leakage. The conduits that are to remain in service should be replaced or recoated, and stainless steel supports provided.

Electrical Service

The building is served by a 3 phase, 480/277 volt 4-wire electrical service. The utility transformer is located outside the building on the north east corner. Unfused service conductors are installed underground from the utility transformer and extend overhead in the electrical room before entering the service disconnect located in the center of the electrical room. The service conductors should be fused to meet current electrical code. The main breaker installed is rated for 1,200 amps. Based on actual energy usage from MidAmerican Energy the service has experienced up to 83% utilization. The service is at or near maximum capacity. Peak demand records were obtained MidAmerican from May of 2014 through April of 2019. Average demand was 156 KW, and the highest recorded usage was 618 KW in June of 2017.

Backup Generator

The facility's electrical service is backed up by a stationary diesel generator. The generator is installed inside the building in the generator room. A 480-volt panelboard serving the equipment in the generator room is located in the adjacent stairway/entrance into the electrical room. The panelboard appears to be in good condition. The generator is rated for 750 KW, has a 1200 amp breaker, and is manufactured by Cummins. The generator's rated capacity appears to be adequate for the highest recorded energy use from the Utility Power. The generator appears to be in good condition, and according to staff is in working order.

Electrical Motor Control Center/Gear

The main service enters a 1200 amp Westinghouse breaker in a motor control center (MCC) in the electrical room. Capacitors are installed above the MCC for power factor correction. There is an MCC mounted transfer switch which appears to be out of service. An ASCO brand transfer switch has been installed outside the MCC and is now in service. There is an existing 1200 amp main breaker installed in the MCC for the generator. The generator breaker is likely not required, and may or may not be in

service. An Allen Bradley 2100 series MCC is installed for motor control and 120/208 volt power distribution.

Considerable corrosion was noted on the MCC and related electrical equipment. None of the MCC sections are installed on housekeeping pads, and corrosion is present at the base of several MCC sections. Foul odor was observed in the electrical room due to the lack of outside air ventilation. City staff indicated a variable speed drive had previously been installed in the MCC to serve pump #5, but had since failed. The VFD was subsequently replaced with a soft starter.

The electrical room has likely been exposed to corrosive gases such as hydrogen sulfide. Corrosive gas exposure is likely responsible for the premature VFD failure and corrosion of soft metals in the MCC. Copper and aluminum are soft metals commonly used as conductors and used within circuit boards. Exposure to corrosive gasses has likely shortened the life of electrical components in the electrical room. Additionally, water lines, water tanks, and water pumps are located in the electrical room, creating a significant potential risk to the electrical equipment.



Figure 18: Existing Motor Control Center

Lighting

The dry well area utilizes florescent lighting. Several of the lights are out of service.

The original lighting in the Headworks chamber utilized high pressure sodium lights, and appear to be explosion proof. Two of the lights are not functioning. Two other lights in the Headworks chamber have been upgraded, and appear to be LED.

Florescent lighting is used in the generator room. One of three florescent lighting fixtures is not functioning.

No emergency lighting fixtures were observed in any areas. Emergency lighting with battery backup is essential for lighting egress paths in the event of a power failure.

There is only one exterior light fixture observed on the south side of the building. The fixture appears to be in poor condition and it is unknown if the fixture operational. Overall, the site and building exterior is not well lit. Additional exterior lighting could benefit both security and maintenance at the lift station.



Figure 19: Headworks Chamber Original Lighting (left) and new LED lighting (right)

Electrical Equipment/Fixtures

An electric hoist is located in the pump room for equipment removal. The hoist is powered by a 480 volt open bus bar running across the ceiling. The open bus bar is very close to the stair handrail, and can be reached from the stairwell. This is a significant electric shock hazard and a barrier should be installed to prevent accidental contact with the bus bar. The bus bar disconnect is also in poor condition.

The sump pump disconnect, control panel, and floats in the lower pump room are in poor condition.



Figure 20: Electric Hoist Bus Bar near stair handrail

Explosion Protection

Headworks Chamber

The headworks chamber is a Class 1, Division 2 rated space. Two significant deficiencies were noted that do not meet electrical code requirements for explosion protection in the space. The conduit to the Parshall Flume level sensor is not explosion proof, and is not properly supported. Additionally, a main junction box is located on the East wall of the headworks chamber. The junction box is an explosion hazard and should be removed. The conduits and circuits currently utilizing the junction box should be removed and re-installed directly to sources.

Wet Well

The Wet Well is a Class 1, Division 1 rated space. A PVC conduit is installed through the top of the wet well and runs back to the pump station control panel. The conduit is required to be explosion proof since it penetrates the wet well which is a hazardous space. There are also various unused conduits and conductors visible inside the wet well, penetrating the wet well top slab, and penetrating the north wall of the wet well into the electrical and pump rooms. Unused conduits should be removed, penetrations properly sealed, and conduits that are to remain must be explosion proof.

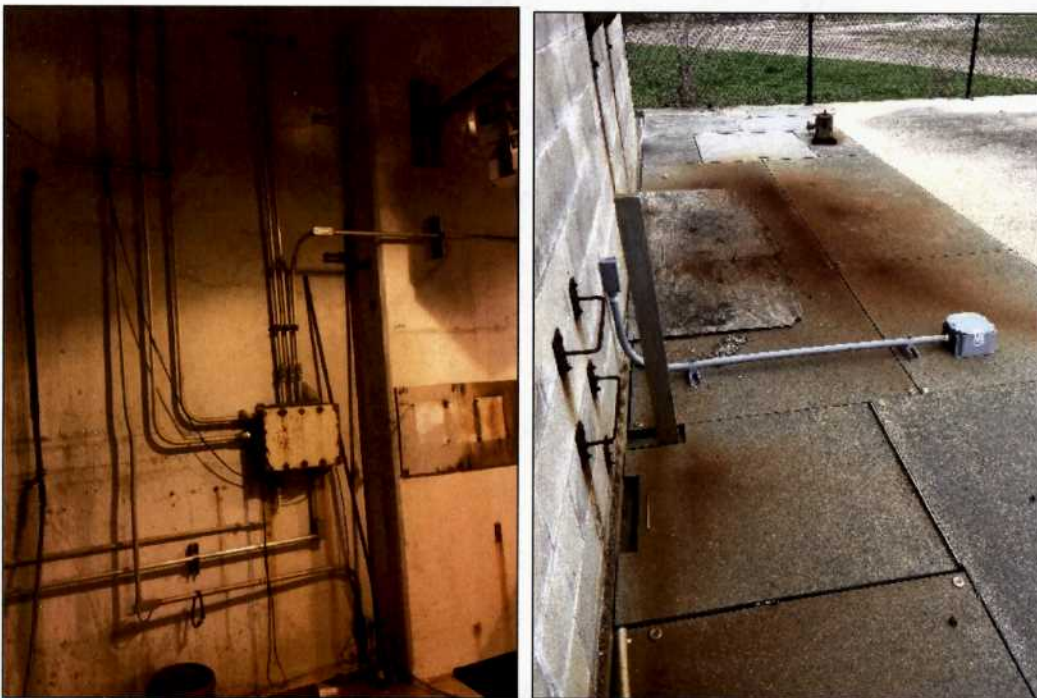


Figure 21: Main junction box in Headworks Chamber and Conduit Penetration into Wet Well

A summary of the electrical deficiencies identified is provided below:

- Several conduits and associated supports throughout the lift station are corroded and in need of replacement or recoating
- Many unused or failed electrical components remain and should be removed
- The service conductors are not protected by fuses
- The existing motor control center show signs of significant corrosion due to moisture and corrosive gas exposure.
- Several light fixtures are out of service
- There is limited exterior lighting.
- Electric shock hazard from the open bus bar powering the electric hoist.
- The sump pump disconnect is in poor condition.
- Several conduits in classified spaces are not explosion proof.

CONTROLS

Life Safety and Environmental Monitoring

Currently, there is very limited environmental monitoring at the Lift Station. It appears that a Fire Alarm System was installed in portions of the existing building, but is no longer in operation. There is currently no ventilation monitoring in the headworks chamber or drywell. Ventilation monitoring is critical in order to alert operators if a failure has occurred in the ventilation system that could create hazardous work conditions or allow the buildup of explosive gases. Additionally there are no permanent gas monitors installed in these spaces. Operators must currently enter the space and lower a gas monitor into the lower areas on a rope to test the air quality. Permanently installed gas monitoring can alert operators of hazardous conditions prior to them entering the space.

Supervisory Control And Data Acquisition

The existing pump control panel PLC is monitored by the water reclamation facilities Supervisory Control And Data Acquisition (SCADA) system over Ethernet. The city owns and maintains a fiber backbone that provides a connection between the lift station and the water reclamation facility. The fiber enters the electrical room and is converted to Category 5 Ethernet cable to make connection to the control system.

While the fiber connection has been installed to the lift station, there is limited data monitoring and control available from outside the lift station and few external alarms are generated to alert operators of critical conditions in the lift station. This is especially important since the facility is not staffed 24x7.

Pump Control System

The main control panel for controlling and monitoring the pump station is located in the electrical room. An Allen Bradley SLC500 Programmable Logic Controller (PLC) system is installed. SLC500 systems are nearing end of life status from the manufacturer. Some components within this family have been discontinued. Therefore, future maintenance of the control system will be difficult. Additionally, there does not appear to be any documentation of the control system at the lift station, making it very difficult to troubleshoot any problems.

A drain line is installed through the floor above the control panel, and water has infiltrated the control panel in the past causing damage. Overall the main control panel, components, and wiring are in poor condition and have reached end of life.



Figure 22: Pump Control System Panel

Grinder Controls

The grinder control panel is located in the electrical room. The system appears to be in good working order. There are signs that the operator interface was replaced with a smaller sized screen. There is currently no alarm to the SCADA system for grinder failure. A level sensor has been installed upstream of the grinder to alarm operators after debris buildup on the stopped grinder has caused the upstream water level to rise.

Instrumentation

Flow Measurement

Flow entering the lift station is measured by a parshall flume in the headworks chamber. The parshall flume level sensor is in poor condition. There is no data logging function in the flow totalizer, so flows can only be read by an operator at the lift station.

Level Measurement

A MultiTrobe level controller is utilized for monitoring the water level in the wet well, and is panel mounted in the control panel. This device has been discontinued by the manufacturer. The backup floats are not readily accessible in the wet well and should be replaced in a new location that is accessible without entering the wet well.

A summary of the controls deficiencies identified is provided below:

- There is no ventilation monitoring or hazardous gas monitoring in any of the spaces.
- There is only limited external monitoring and control through the SCADA system.
- The control panel is in poor condition and components have been discontinued by the manufacturer.
- There is no alarm for grinder failure.
- The flow measurement system has limited functionality
- The wet well level sensors have been discontinued and are difficult to access safely.

Improvement Options

Several improvement alternatives are proposed in order to address the deficiencies noted above. Improvements were categorized into three priority levels based on the following descriptions:

High Priority: Improvements are considered necessary for continued, reliable operation of Memorial Lift Station, code requirements, and addressing health & safety concerns.

Medium Priority: Improvements may not be necessary, but may improve performance, reliability, or efficiency of Memorial Lift Station

Low Priority: Improvements with limited benefit or low benefit to cost ratio.

SITE IMPROVEMENTS

Filling in the animal burrows around the lift station is considered a high priority due to the presence of animal burrows under the transformer pad. Animals may damage the service conductors and interrupt power to the lift station.

Removing the vegetation around the lift station and extending the downspouts are minor tasks that could be completed by City staff or incorporated into the overall improvements project and performed by a contractor.

A summary of the Proposed Site Improvements, including priority and estimated cost is provided in Table 3 below:

Table 3: Proposed Site Improvements

Description	Site Improvements		
	Priority	Recommended?	Estimated Cost
Fill in Animal Burrows	High	Yes	\$800
Remove vegetation around structure	Medium	Yes	\$500
Extend downspouts away from building	Medium	Yes	\$500
Total Recommended Improvements			\$1,800

PROCESS IMPROVEMENTS

Isolation Valve and Bypass Pumping Connection

Priority: High

Cost: \$150,000

In order to service the existing valves and wet well, an isolation valve on the common force main discharge and bypass pumping will be required. With the short lay length between the discharge tee of Pump #5 and the wall of the drywell, the valve and bypass connection will need to be located outside the lift station in a new valve vault. Two hot taps would be installed on the 24-inch force main. One tap will be used to insert an inflatable line stop and the other would be used as a discharge connection for bypass pumps. This would allow a new 24-inch plug valve to be cut into the force main for future isolation for bypass pumping. A new concrete valve vault structure would be built around the force main for future access. The estimated cost of installing the 24-inch isolation valve and bypass pumping for six weeks for construction of other improvements is approximately \$150,000.

For bypass pumping, it is anticipated that the work would be performed during a dry weather period (late fall or winter) and the flowrates would be at or below the capacity of the smaller pumps. Due to the very high peak flows that can occur at Memorial Lift Station during heavy precipitation events, attempting to perform this work in the spring or early summer is not recommended.

Pump Improvements

Several alternatives were evaluated for pump improvements. Because of the limited flow data available, the alternatives maintain the existing lift station capacity.

The use of new submersible pumps to replace the existing dry-pit pumps was also evaluated. However, submersible pumps were determined to be infeasible due to the configuration and layout of the existing wet well. The submersible pumps would need to be installed in the same location as the existing pump suction piping. This would place the access hatches for pump removal directly in front of the doors into the lift station. This location would also be very difficult to access with a lift to remove the pumps and place on a truck for service.

Submersible pumps installed in the existing grit chamber were also evaluated. However, this would leave the average flow wet well stagnant, resulting in the same issues with solids deposition and production of hazardous and corrosive gases. Therefore, maintaining the existing dry-pit pump configuration was deemed to be the simplest, most cost effective alternative for Memorial Lift Station.

Several alternatives were evaluated for the dry-pit configuration as described below. For the Smaller pumps, Alternative 1C, Replace both pumps #1 and #2 is the recommended alternative. Alternative 2, Replace Pumps #3, #4, and #5, is not recommended.

1A: Refurbish Pump #1

Priority: High

Cost: \$45,000

Pump #1 has not been operated in a significant time period and the condition is unknown. However, the pump could be refurbished with new bearings, seals, and impeller. The scope of refurbishment would be similar to the work that was recently done on Pump #2. The estimated cost for pump refurbishment is \$45,000. With this alternative, the seal water service would still be recommended. Additionally, the original pump motor would be used. A new VFD would be provided for the older motor with the MCC improvements. Because of the age, unknown condition, and criticality of Pump #1, this alternative is

not recommended. Even after refurbishment, the remaining life of pump #1 is likely limited. Additionally, the older pump is less efficient than a newer pump would be.

1B: Replace Pump #1

Priority: High

Cost: \$90,000

Given the age and cost of refurbishing Pump #1, full replacement of the pump may be more desirable. The replacement pump would be sized for the same design conditions as the existing pump to provide redundancy to pump #2. A new pump would run more efficiently, would not require seal water, and would include a VFD rated motor. Additionally, a dry-pit submersible pump would be less susceptible to degradation from moisture in the wet well. The estimated cost of replacing Pump #1 is \$90,000.

1C: Replace both Pumps #1 & #2

Priority: High

Cost: \$180,000

With pump #1 out of service, pump #2 has run almost continuously for several years. While Pump #2 was recently refurbished, it may be desirable to replace pump #2 as well. The remaining life of pumps #1 and #2 is likely limited due to their age and condition. Replacing both pumps #1 and #2 would provide the most robust upgrade for handling the average daily flow rates that the lift station experiences the vast majority of the time. Additionally, replacing both pumps would allow for the seal water system to be completely eliminated. The Estimated cost of replacing both pumps #1 and #2 is \$180,000. This option is the recommended alternative for the small pumps as it will provide the greatest reliability for the Lift Station.

2: Replace Pumps #3, #4, and #5

Priority: Low

Cost: \$630,000

Given the age of the existing large pumps, full replacement may be desirable. New pumps would be more efficient and could have slightly smaller motors than the existing pumps. (280 HP vs 300 HP) The estimated cost for replacing the three large pumps is \$630,000. Given the very low run time of the large pumps, the higher efficiency would not result in a significant energy savings. Additionally, the existing pumps were recently refurbished and noted to be in good condition for their age, likely due to the very low run time. Therefore, due to the high cost and limited benefit, replacement of pumps #3, #4, and #5 is not recommended.

Other Process-Related Improvements were evaluated as described below.

Replace peak flow wet well sump pump

Priority: Medium

Cost: \$10,000

The sump pump in the existing peak flow wet well is inoperable and is in need of replacement. The sump pump functions to dewater the peak flow wet well after high flow events and reduce the stagnant water in the wet well. Additionally, the sump pump cannot be accessed until the wet well can be isolated and dewatered, and all of the solids buildup and debris can be removed. Replacement of the sump pump can be accomplished once the cleaning is completed. New pump rails and chain could also be provided to allow the pump to be retrieved without entering the wet well. The estimated cost of replacing the sump pump, including new pump rails, is \$10,000.

Install Wet Well Isolation Gates*Priority: Medium**Cost: \$51,000*

Currently there is no way to isolate the AWW wet well for cleaning operations as solids deposition in the wet well contributes to odors and hydrogen sulfide gas formation. Flow enters the wet well from the influent channel through the three 18-inch diameter openings in the wet well west wall. The addition of three (3) sluice gates to these openings will provide the necessary isolation of the wet well from the incoming flows. These sluice gates will be equipped with a stem and riser operated by a gear driven hand wheel mounted on top of the wet well. The estimated cost for the Sluice Gates is approximately \$51,000.

Replace Pump Header Valves*Priority: High**Cost: \$231,000*

The failed 14-inch plug valve on Pump #1 must be replaced in order for Pump #1 to be used. It is also recommended that the other suction and discharge valves be replaced to prevent pump isolation due to valve failure in the future. In total, this includes replacement of four (4) 14-inch Plug valves, two (2) 14-inch check valves, six (6) 16-inch plug valves, three (3) 16-inch check valves, and one (1) 6-inch surge relief valve. The estimated cost for replacing these valves is \$231,000.

Recoat Discharge Header Piping*Priority: High**Cost: \$20,000*

While the evaluation of the discharge piping indicated that it was still in good condition, recoating is still necessary to prevent additional surface degradation of the piping. Sandblasting and recoating the piping with an epoxy coating system will ensure it remains in good condition for years to come. The estimated cost for recoating the piping is approximately \$20,000.

Install Hatches for Better Vector Truck Access into Wet Well*Priority: Medium**Cost: \$15,000*

Currently, access to both wet wells is through steel covers in each wet well lid. These doors are located in front of the main lift station building access doors. The distance from the gate at the perimeter of the lift station to the cover makes it difficult for vector truck equipment to reach the interior of the wet well for cleaning. Installing new access hatches near the fence would make it easier for cleaning equipment to reach into the wet well. The estimated cost for the new hatches is \$15,000.

Inspect 24-inch Forcemain to WWTP*Priority: Low**Cost: \$380,000*

While the piping in the drywell is in good condition, there is approximately 2.5 miles of ductile iron force main from the lift station to the WWTP. Pure Technologies can provide several evaluation tools to determine the condition of the existing force main. A description of these evaluation tools is provided in Appendix C. The internal inspection probes evaluate the pipe from the inside as it is pushed along with the flow, keeping the system in service during the inspection. The estimated cost of this evaluation is approximately \$380,000. Given the good condition of the piping that was inspected and the high cost of the additional inspection, this alternative is considered a low priority.

Relocate Hydrogen Peroxide Feed Equipment

Priority: Low

Cost: \$ 40,000

Relocating the existing hydrogen peroxide solution storage and feed system equipment to the existing lift station facility would provide easier access to the equipment from the lift station as well as added security for the equipment. The equipment would be located where the existing activated carbon filter is currently located and a new steel building would be required to house the equipment. One benefit of relocating the equipment to the lift station is that the chemical feed rate could be automatically adjusted based on the measured incoming flow rate.

However, other proposed improvements will significantly reduce the stagnant water at the lift station and could significantly reduce or eliminate the need for the hydrogen peroxide feed system. Feeding the hydrogen peroxide directly at the lift station would also eliminate the reaction time that is currently provided in the sewer between the existing feed point and the lift station. Therefore, this alternative is considered low priority. It is recommended that the chemical feed rate be evaluated after the improvements are completed to determine if chemical addition is still required or can be reduced.

A summary of the Process Improvements, including priority and estimated cost is provided in Table 4 below:

Table 4: Proposed Process improvements

Process Improvements			
Description	Priority	Recommended?	Estimated Cost
Force Main Isolation Valve and Bypass Pumping	High	Yes	\$150,000
1A: Refurbish Pump #1	High	No	\$45,000
1B: Replace Pump #1	High	No	\$90,000
1C: Replace Pumps #1 & 2	High	Yes	\$180,000
2: Replace Pumps #3-5	Low	No	\$630,000
Replace Peak Flow Wet Well Sump Pump	Medium	Yes	\$10,000
Relocate Peroxide Feed Equipment	Low	No	\$40,000
Replace Valves	High	Yes	\$231,000
Blast & Recoat Piping	High	Yes	\$20,000
Wet well Isolation Sluice Gates	Medium	Yes	\$51,000
New Hatches for Vactor Truck Access	Medium	Yes	\$15,000
Force Main Evaluation	Low	No	\$380,000
Total Recommended Improvements			\$657,000

STRUCTURAL IMPROVEMENTS

Replace Exterior Hatches

Priority: High

Cost: \$30,000

Replacing the hatches above the headworks chamber and electrical room will help prevent water from leaking into the building and causing further damage.

Rehabilitate Above Grade Structure

Priority: High

Cost: \$25,000

Rehabilitation of the above-grade structure include roof replacement, replacement of damaged ceiling insulation and metal decking, as well as mortar repair and crack sealing in the masonry walls. This will ensure the structure remains weather tight.

Replace Pipe Penetration Seals

Priority: High

Cost: \$10,000

The seals on the pipe penetrations into the wet well should be replaced while the lift station is being bypassed during construction. The piping may need to be temporarily supported while the seals are removed.

Repair Pump Room Ceiling Cracking

Priority: Medium

Cost \$5,000

While the cracking is not a structural concern, it should be patched and sealed to prevent potential degradation of the reinforcing steel.

Demolish Elevator and Spiral Staircase and Build New Stairway.

Priority: Medium

Cost: \$20,000

Removing the non-functional elevator and the spiral staircase will create space for a new stairway to be installed and improve access. The new stairway is anticipated to be aluminum or FRP to reduce future corrosion.

Fill in Grit Chambers

Priority: High

Cost: \$50,000

The Stagnant Grit Chamber will be filled in with sand and capped with a concrete slab. The stop plates that currently isolate the grit chamber will be replaced with new concrete walls. The Concrete wall for the effluent weir will be raised to completely eliminate the grit chamber. The smaller chambers for the grit equipment will also be filled in and capped to remove fall hazards.

Patch Spalled Concrete in Headworks Channel

Priority: High

Cost: 10,000

With the lift station taken out of service and bypassed during construction, the concrete channel should be repaired with cementitious or epoxy grout to prevent additional spalling and degradation.

Replace Grating with Solid Panels

Priority: Medium

Cost \$5,000

Replacing the open grating with solid panels that completely cover the headworks channel will eliminate trip hazards and help manage odors and humidity in the headworks chamber. FRP panels will provide corrosion resistance.

Replace ceiling Insulation

Priority: High

Cost: \$40,000

The molding insulation in the headworks chamber and electrical room should be completely removed and replaced with a new closed-cell insulation. While the insulation is removed, the underside of the concrete slab should be inspected for cracking or other degradation. Additional sealing may be necessary to prevent moisture from penetrating the slab and causing future water damage.

Recoat Interior Surfaces

Priority: High

Cost: \$60,000

The interior surface coatings should be removed and replaced to protect the structure and ensure it remains in good condition.

A summary of the Structural Improvements, including priority and estimated cost is provided in Table 5 below:

Table 5: Proposed Structural Improvements

Structural Improvements			
Description	Priority	Recommended?	Estimated Cost
Replace Exterior Hatches	High	Yes	\$30,000
Rehab above-grade masonry structure	Medium	Yes	\$25,000
Replace Pipe Penetration Seals between wet well and dry well	High	Yes	\$10,000
Repair Ceiling Cracking in Pump room	Medium	Yes	\$10,000
Demo elevator and spiral staircase and install new staircase	Medium	Yes	\$20,000
Fill in Grit Chamber	High	Yes	\$50,000
Patch spalled concrete in Headworks Channel	High	Yes	\$10,000
Replace Grating in Headworks Chamber	Medium	Yes	\$5,000
Remove and replace Ceiling Insulation	High	Yes	\$40,000
Recoat interior walls, floors, and ceilings	High	Yes	\$60,000
Total Recommended Improvements			\$260,000

HVAC IMPROVEMENTS

Replace Wrap on Exterior Ducts

Priority: High

Cost: \$14,000

The duct wrap is important both for protecting the ductwork from corrosion and also for maintaining heat for the heat exchanger. Replacing the wrap on the portions of ductwork to remain is highly recommended.

Demolish Odor Control Scrubber and Associated Ductwork.

Priority: High

Cost: \$10,000

The Odor control system is unused and it is recommended that it be removed. The associated ductwork and bypass dampers that are currently non-functional should also be removed. With the modifications to the ductwork, the air handling unit and heat exchanger should be rebalanced to ensure proper performance.

Repair/Replace Electric Unit Heater in Generator Room

Priority: High

Cost: \$1,000

As the only source of heat in the generator room, the electric unit heater should be repaired or replaced.

Separate Boiler from Generator Room

Priority: High

Cost: \$20,000

In order to comply with NFPA 110, the Boiler system cannot be located in the generator room. It may be feasible to separate the generator room into two spaces to comply with code requirements. Alternatively, a small enclosure could be constructed outside to house the boiler system.

Replace Drywell Exhaust Fan

Priority: High

Cost: \$11,000

A new exhaust fan is required to keep the electrical room declassified and meet NFPA requirements.

Reroute Drywell Ductwork

Priority: High

Cost: \$68,000

The ductwork in the drywell needs to be rerouted to provide adequate circulation in both the pump room and electrical room. Additionally, the ductwork need to be rerouted so as not to pass through the generator room. The new ductwork will exit through the north wall of the lift station and the existing wall penetrations closed with new CMU.

Add Dehumidifiers to Drywell

Priority: High

Cost: \$10,000

Adding commercial grade dehumidification units to both the pump room and electrical room are recommended to help reduce future moisture damage inside the lift station.

Add Intake Louver to Drywell

Priority: High

Cost: \$7,000

An Intake Louver should be provided in the drywell space to ensure adequate fresh air is being supplied.

Replace Exhaust hood and Duct in Headworks Chamber

Priority: High

Cost: \$ 27,000

Clean Supply Duct in Headworks Chamber

Priority: Medium

Cost: \$4,000

Add Dehumidifier to Headworks Chamber

Priority: Medium

Cost \$5,000

If solid covers are provided over the headworks channel, a commercial grade dehumidifier could be adequate for reducing moisture in the headworks chamber. If the channel is left uncovered with open grating, there will likely be too much moisture for the dehumidifier to provide a benefit.

A summary of the HVAC Improvements, including priority and estimated cost is provided in Table 6 below:

Table 6: Proposed HVAC Improvements

HVAC Improvements			
Description	Priority	Recommended?	Estimated Cost
Replace Wrap on Exterior Ducts	High	Yes	\$14,000
Demo Odor Control Scrubber and Associated Ductwork	High	Yes	\$10,000
Repair Electric Unit Heater in Generator Room	High	Yes	\$1,000
Separate boiler from Generator room	High	Yes	\$20,000
Replace Drywell Exhaust Fan	High	Yes	\$11,000
Reroute Drywell Ductwork	High	Yes	\$68,000
Add Dehumidifiers to Drywell	High	Yes	\$10,000
Add Intake louver to Drywell	High	Yes	\$7,000
Replace Exhaust hood and Ductwork in Headworks Chamber	High	Yes	\$27,000
Clean supply Duct in Headworks Chamber	Medium	Yes	\$4,000
Add Dehumidifier to Headworks Chamber	Medium	Yes	\$5,000
Total Recommended Improvements			\$177,000

PLUMBING IMPROVEMENTS

Replace boiler circulation pumps and appurtenances

Priority: High

Cost: \$37,000

Regardless of the final location of the boiler system, the circulation pumps should be replaced due to their condition. New pumps with variable frequency drives will allow the boiler system to operate more efficiently and ensure reliable heating is provided to the headworks chamber.

Relocate Water Piping outside of Electrical Room

Priority: High

Cost \$11,000

The water line entering the lift station in the electrical room should be rerouted away from the electrical equipment. The piping could be relocated over the stairwell and routed directly to the pump room. If water is still necessary for the bathroom facilities, the water piping could be routed along the ceiling of the pump room and up through the floor penetration where the piping currently passes down from the electrical room into the pump room.

Replace Bathroom Fixtures

Priority: Low

Cost: \$7,000

If the bathroom facilities are to remain, the fixtures could be replaced with newer fixtures. Additionally, a curb could be installed around the bathroom area to contain water and prevent it from reaching electrical components.

Demolish Bathroom Fixtures

Priority: High

Cost: \$1,000

It is recommended that the bathroom fixtures be demolished to eliminate the water source in the electrical room.

Replace Pump room Sump Pump

Priority: High

Cost: \$11,000

Due to the poor condition of the existing sump pump, complete replacement is recommended to reduce standing water in the pump room.

Rehabilitate Pump Room Floor Drains

Priority: High

Cost: \$14,000

The floor drains in the pump room should be jetted to remove blockages and ensure there is not standing water in the room. The drain covers should be replaced as well.

A summary of the Plumbing Improvements, including priority and estimated cost is provided in Table 7 below:

Table 7: Proposed Plumbing Improvements

Plumbing Improvements			
Description	Priority	Recommended?	Estimated Cost
Replace boiler Circulation Pumps and Appurtenances	High	Yes	\$37,000
Relocate Water piping outside of electrical room	High	Yes	\$11,000
Replace Bathroom Fixtures	Low	No	\$7,000
Demolish Bathroom Fixtures	High	Yes	\$1,000
Replace Pump Room Sump Pump	High	Yes	\$11,000
Rehabilitate Pump Room floor Drains	High	Yes	\$14,000
Total Recommended Improvements			\$74,000

ELECTRICAL IMPROVEMENTS

Demolish unused conduits and electrical equipment

Priority: Medium

Cost: \$8,000

The unused conduits and electrical equipment should be removed for ease of construction and maintenance activities. Sealing the penetrations from unused conduits will help decrease water seepage and corrosive gases entering the electrical room from the headworks chamber and wet well.

Replace Electrical MCC/Gear

Priority: High

Cost: \$275,000

Due to the age and condition of the existing MCC, full replacement is recommended. This alternative includes VFD's for Pumps #1 and #2 and two-speed starters for Pumps #3, #4, and #5. A new housekeeping pad should be constructed prior to installation of the new MCC to protect them from any moisture present on the floors.

If the MCC is to be replaced, several ancillary improvements must also be made to bring the electrical service up to current code requirements. These improvements include replacing the electrical service entrance, replacing the main switchgear, and installing surge protection on the incoming power lines.

Lighting

Replace the explosion proof high pressure sodium light fixtures in the headworks chamber with LED type.

Priority: Medium

Cost: \$22,000

Replace existing interior and exterior light fixtures with LED type.

Priority: Medium

Cost: \$6,000

Install additional exterior LED light fixtures around the building for security and maintenance activities.

Priority: Medium

Cost: \$3,000

Install emergency lighting fixtures illuminating paths of egress inside and outside the building.

Priority: High

Cost: \$12,000

Install light pole on north side of building for additional security.

Priority: Medium

Cost: \$5,000

Guard Hoist Electrical Bus Bar

Priority: High

Cost: \$500

Adding an aluminum or non-metallic panel to shield the hoist electrical bus bar from accidental contact from the stairwell is an inexpensive but critical safety improvement.

Replace disconnects and conductors in Pump Room

Priority: High

Cost: \$15,000

Due to the age and condition of the disconnects located in the pump room, complete replacement is recommended. Existing disconnects to be replaced serve the hoist, sump pump. New disconnects should be installed for all five pumps as well. The copper wiring between the MCC and the electrical components is likely deteriorated as well and should be replaced when the disconnects are installed.

Replace Conduits in Headworks Chamber and in Wet Well with Explosion Proof Conduits

Priority: High

Cost: \$8,000

Demolish junction box and associated conduits that do not meet explosion proof installation. Install new conduits and conductors from headworks area to electrical room. Demolish and replace PVC conduit with rigid aluminum conduit, and install meeting Class I Division 1 requirements for hazardous locations.

A summary of the Electrical Improvements, including priority and estimated cost is provided in Table 8 below:

Table 8: Proposed Electrical Improvements

Electrical Improvements			
Description	Priority	Recommended?	Estimated Cost
Demo unused conduits and equipment	High	Yes	\$8,000
Replace MCC, Switchgear, and Service Conductors	High	Yes	\$275,000
Replace Explosion proof lighting in Headworks Chamber	Medium	Yes	\$22,000
Replace interior and exterior lights with LED lighting	Medium	Yes	\$6,000
Install additional exterior lighting on building	Medium	Yes	\$3,000
Install emergency egress lighting	High	Yes	\$12,000
Install new light pole near building	Medium	Yes	\$5,000
Guard hoist bus bar	High	Yes	\$500
Replace disconnects and conductors in pump room	High	Yes	\$15,000
Replace conduits in classified spaces with explosion proof conduits	High	Yes	\$8,000
Total Recommended Improvements			\$354,000

CONTROL IMPROVEMENTS

Replace Control and SCADA System

Priority: High

Cost: \$150,000

With the age and condition of the existing control panel, a completely new control system is recommended. The new control system would integrate the pump and grinder control, environmental monitoring, and flow measurement and allow for remote monitoring and control.

Install new ventilation monitoring and hazardous gas monitoring

Priority: High

Cost: \$25,000

Ventilation monitoring and hazardous gas detectors should be installed in both the headworks chamber and drywell. These systems are required by NFPA 820 and will alert operators of hazardous conditions prior to entering the lift station itself.

Replace Instrumentation

Priority: High

Cost: \$40,000

New level reading instrumentation in the lift station are necessary to accurately measure incoming flow and for controlling pump operation. If a new hatch is installed into the wet well, the backup floats could be relocated to be accessible from the hatch without entering the wet well. This instrumentation includes a new level sensor for the parshall flume, two new ultrasonic level sensors to monitor wet well levels, and new backup floats for the wet wells. These sensors would be connected to the new control panel for remote monitoring through SCADA.

Install additional environmental sensors

Priority: Medium

Cost: \$10,000

Installing Flood sensors in the headworks chamber and drywell can alert operators in the event of a pipe break, hydraulic backup or blockage, or other significant failure.

Temperature sensors in the headworks chamber and drywell can alert operators if there are extreme temperature conditions from a heating system failure prior to pipe freezing or electrical issues.

A summary of the Controls Improvements, including priority and estimated cost is provided in Table 4 below:

Table 9: Proposed Controls improvements

Control System Improvements			
Description	Priority	Recommended?	Estimated Cost
Replace Control and SCADA System	High	Yes	\$150,000
Ventilation and Hazardous Gas Monitoring	High	Yes	\$25,000
Replace Instrumentation	High	Yes	\$40,000
Install Flood and Temperature sensors	Medium	Yes	\$10,000
Total Recommended Improvements			\$225,000

Summary

SUMMARY

Memorial Lift Station requires several improvements to maintain reliable operation, meet current electrical and fire protection codes, and to protect worker health and safety. The recommended site improvements includes minor work around the perimeter of the lift station to address animals, vegetation, and drainage. Recommended process improvements include replacement of failed and failing equipment. Structural improvements include work to make the structure weather tight, reapply protective coatings, and patch minor concrete degradation. HVAC improvements include demolition of the unused odor control system, and improvements to ventilation in the drywell area to reduce hazardous gas buildup. Recommended plumbing improvements include replacement of the boiler circulation pumps and removal of the house water piping located above the electrical equipment. Recommended electrical improvements include complete replacement of the motor control center. Recommended Controls Improvements include complete replacement of the existing control system. A summary of the estimated costs is provided in Table 10 below.

Table 10: Summary of Estimated Costs for Recommended Improvements

Description	Estimated Cost
Site Improvements	\$1,800
Process Improvements	\$657,000
Structural Improvements	\$260,000
HVAC Improvements	\$177,000
Plumbing Improvements	\$74,000
Electrical Improvements	\$354,500
Controls Improvements	\$225,000
Subtotal	\$1,749,300
10% Contingency	\$175,000
Engineering, Legal, and Administrative Costs (Estimated 20%)	\$350,000
Total Estimated Project Cost	\$2,275,000

Financial Analysis

POTENTIAL FUNDING SOURCES

Community Development Block Grant

The Community Development Block Grant (CDBG) program is administered by the Iowa Economic Development Authority (IEDA) and allows municipalities to apply for grant funding on a competitive basis each year for water and wastewater improvements. The main criteria used in determining a community's grant eligibility revolves around the City's Low to Moderate Income (LMI) household percentage. To be eligible for funding, the community's LMI percentage needs to be greater than or equal to 51%. According to the IEDA's latest demographic information, the City of Storm Lake's LMI is 52%. Therefore, the City is eligible for a grant of up to \$600,000. The Grant requires a dollar-for-dollar local match, so in order to utilize the full \$600,000 the City would need to provide a minimum of \$600,000 in additional funding.

State Revolving Loan Fund, Clean Water Fund

The SRF is a revolving loan fund through the State of Iowa Finance Authority. Currently, the SRF interest rate is 1.75% for a 20-year loan. In some cases the loan term can be extended to 30 years if the project being funded has a lifespan greater than 30 years. Currently, 30-year rates are 2.75%. SRF loans have a 0.25% annual service fee, thus 2.00% and 3.00% should be expected for the 20-year and 30-year loan rates, respectively. This funding is subject to Federal Davis Bacon Prevailing Wages and has American Iron and Steel Requirements.

The SRF loan program also provides communities to apply for Disadvantaged Status. For clean water projects, the IDNR looks at the community's Median Household Income (MHI), number of rate payers, current and projected debt, along with additional criteria to determine eligibility. If determined eligible, the community can utilize the 30-year term at a discounted rate of 2.00%. The project is still subject to Federal Davis Bacon Prevailing Wages and American Iron and Steel Requirements.

The SRF loan program requires the City to enlist the services of a Municipal Advisor (MA) in order to be eligible for funding. The SRF will reimburse the City \$4,000 for the services of the MA. The MA's assistance is required through the program in an effort to ensure the City has the ability to repay the new debt service while maintaining a healthy wastewater fund balance. To meet the ability of the debt, an adjustment to sanitary sewer rates will be required to maintain a 1.10% debt coverage ratio. This means that the City needs to generate at least 10% more revenue than expenditures for the entire wastewater system on an annual basis.

State Revolving Loan Fund's Planning and Design Loan

SRF offers a Planning and Design (P&D) Loan that is a 0% interest loan for up to three years with no initiation or servicing fees. The P&D loan is intended to be utilized to pay for costs to produce reports such as this Facility Plan, legal/administration fees as necessary, and engineering design of the selected alternative. At the end of the three-year period (or before), the P&D loan can be rolled into a SRF Construction Loan.

SRF Sponsored Project Grant

SRF allows sewer utilities to finance water resource restoration sponsored projects in conjunction with a Clean Water Fund loan of \$1 million or more. On a Clean Water Fund loan with a sponsored project, the utility borrows money for both the wastewater improvements and the water resource improvements. However, SRF reduces the interest rate on the loan so that the debt service payment is the same as if only the wastewater improvements were funded. This effectively provides a grant for the water resources improvements. Total Sponsored Project funding is capped statewide and applications are selected on a competitive basis each fiscal year.

Sponsored Project funding is available up to the lowest of the following:

- 10% of the requested Clean Water Fund loan amount.
- 10% of the final amount of the Clean Water Fund Construction loan.
- The amount requested on the sponsored project application.

Therefore, the City of Storm Lake could be eligible for approximately \$172,000 for water resources restoration projects in conjunction with the anticipated SRF Clean Water Fund Loan for the Memorial Lift Station Improvements. In order to be eligible for a Sponsored Project Grant, the City would need to identify project(s) and apply by March 2020. The Sponsored Project application would need to be closely coordinated with the Clean Water Fund Loan in order to maintain eligibility.

FINANCING SCENARIOS

The City plans to apply for a Community Development Block Grant (CDBG) to fund a portion of the project. The City is eligible for up to \$600,000 from CDBG for this project. The remaining balance will be funded through a State Revolving Fund (SRF) Loan. It has not been determined if the City qualifies for disadvantaged community status at this time. Table 11 shows the estimated annual payments that the City would make based on each funding scenario. The financing evaluation does not incorporate the additional 10% revenue that the City must generate for its own wastewater fund as required by SRF.

Table 11: Financing Scenarios

Program	Rate Term	Grant	Loan	Estimated Annual Debt Service ¹	Total Principal + Interest Paid
SRF 20-Year	2.00% 20-Year	-	\$2,275,000	\$138,000	\$2,762,000
SRF 20-Year + CDBG	2.00% 20-Year	\$600,000	\$1,675,000	\$102,000	\$2,034,000
SRF 30-Year	3.00% 30-Year		\$2,275,000	\$115,000	\$3,453,000
SRF 30-Year + CDBG	3.00% 30-Year	\$600,000	\$1,675,000	\$85,000	\$2,542,000
SRF Disadvantaged ²	2.00% 30-Year		\$2,275,000	\$101,000	\$3,027,000
SRF Disadvantaged ² + CDBG	2.00% 30-Year	\$600,000	\$1,675,000	\$74,000	\$2,229,000

1 Does not include 110% debt coverage ratio required by SRF.

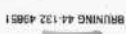
2 Disadvantaged community eligibility to be determined.

Final Considerations and Preliminary Schedule

Based on the evaluation described in this report, it is recommended that the City of Storm Lake proceed with the listed improvements to Memorial Lift Station. The Recommended Financing Scenario is a Community Development Block Grant for \$600,000 with an SRF loan for the remainder of the project cost. If desired, the City could evaluate if they qualify for disadvantaged community status and a longer loan term. The City can also apply for an SRF Sponsored Project grant to fund a water resources improvement project based on the wastewater loan. The preliminary project schedule is as follows:

July 2019	Submit Facility Plan to Iowa DNR
August 2019	Begin Final Design
September 3, 2019	SRF IUP Application Deadline
October 1, 2019	CDBG Application Deadline
December 17, 2019	SRF IUP Approval
December 2019	CDBG Grant Award
January 2020	Submit Final Plans & Specifications to Iowa DNR
March 2020	Issue Plans & Specifications for Bidding
April 2020	Award Contract
Summer 2020	Contractor Procures Equipment and Materials
October 2020	Begin Bypass Pumping and Lift Station Improvements
December 2020	Substantial Completion,
March 2021	Final Completion

APPENDIX A: Existing Lift Station Drawings



APPENDIX B: Pipe Non-Destructive Testing Report

June 4, 2019

Mr. Mark Streed
City of Storm Lake
P.O. Box 1086, 620 Erie Street
Storm Lake, IA

**Subject: 24-inch Ductile Iron Pipe Header, Memorial Lift Station
Ultra Thickness Testing Results Report Letter**

Dear Mr. Mark Streed:

This letter details the findings from the Ultra Thickness Testing (UTT) conducted by Jan X-Ray Services Inc. (JanX) under the direction of Pure Technologies U.S. Inc., a Xylem Brand (Pure Technologies) of the 24-Inch Ductile Iron Pipe (DIP) header at the Memorial Lift Station in Storm Lake, Iowa. The lift station is owned and operated by the City of Storm Lake, Iowa.

Background and Location

The lift station header piping was originally installed in 1983 and has been in continuous use since its construction. The exterior of the DIP piping has noticeable areas of corrosion and chipped paint (see **Figures 1 and 2**). Replacing this piping would require bypass pumping around the entire lift station, which would add significant cost. Therefore, the City of Storm Lake contracted Pure Technologies to collect thickness measurements of the header piping in order to verify the condition of the wall of the pipe, potentially allowing it to remain in place. UTT, an ultrasonic inspection technology, was chosen in order to externally verify the wall thickness of the header piping.

The ultrasonic inspection spanned approximately 36.5 feet of 24-inch DIP pipe and five (5) 24-inch DIP tees (see **Figure 3**). Due to lack of specifications, it was assumed that the 24-inch DIP pipe was Class 52 and the 24-inch DIP tees were Pressure Class 250. It is Pure Technologies understanding that no pressure gauges are installed on the header piping in order to collect direct pressure readings at operating conditions. However, it was determined that a pressure relief valve exists on the header which is set to open at 65 psi. Assuming the valve is in good operating condition, 65 psi would be the maximum operating pressure for the header. These assumptions are important when comparing the measured thicknesses to the design thickness. If the City of Storm Lake finds any additional details or specifications for the lift station header piping, Pure Technologies can compare the updated design thickness with the measured thickness for a more accurate analysis.



Figures 1 and 2: Exterior of the Lift Station Header Piping

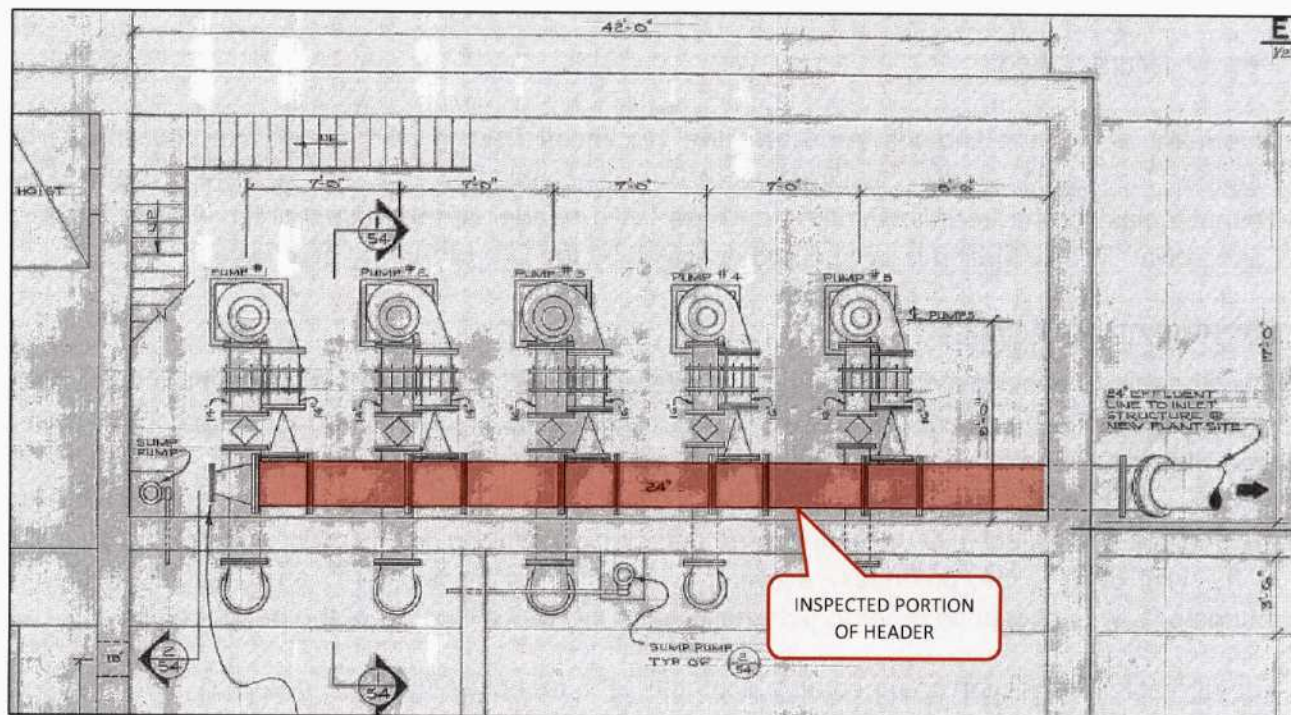


Figure 3: 24-inch DIP Lift Station Header

(Source: Sheet III-54, Prj. 60052S; "Pump Station Equipment and Piping Layout, Waste Treatment Facilities Storm Lake, Iowa"; Dated January 1983)

External Ultra Thickness Testing Results

The thickness measurements were taken using a model UM-1D ultrasonic thickness testing device. The transducer frequency was set to 5 MHz, with a single-element transducer sized at 0.250 inches. Thickness measurements were spaced evenly over the length of the pipes and tees, with nine (9) readings taken for each tee and twelve (12) readings taken for each pipe. A diagram of the measurement locations taken for tees and pipes is shown in **Figure 4**.

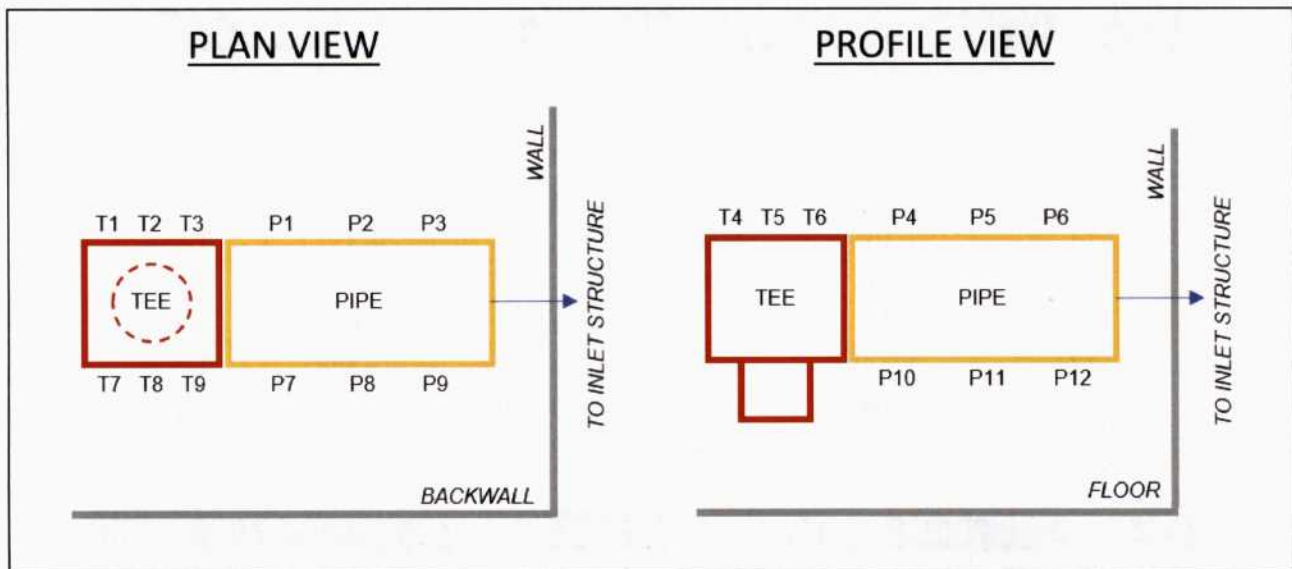


Figure 4: Diagram of Measurement Locations for Tees and Pipes

The tees and pipes were labeled one (1) through five (5), beginning at the sump pump and moving towards the inlet structure. A diagram of the labeled tees and pipes from the inspection is shown below in **Figure 5**. The results for the UTT thickness testing of the tees and the pipes are shown in **Tables 1 and 2**, respectively.

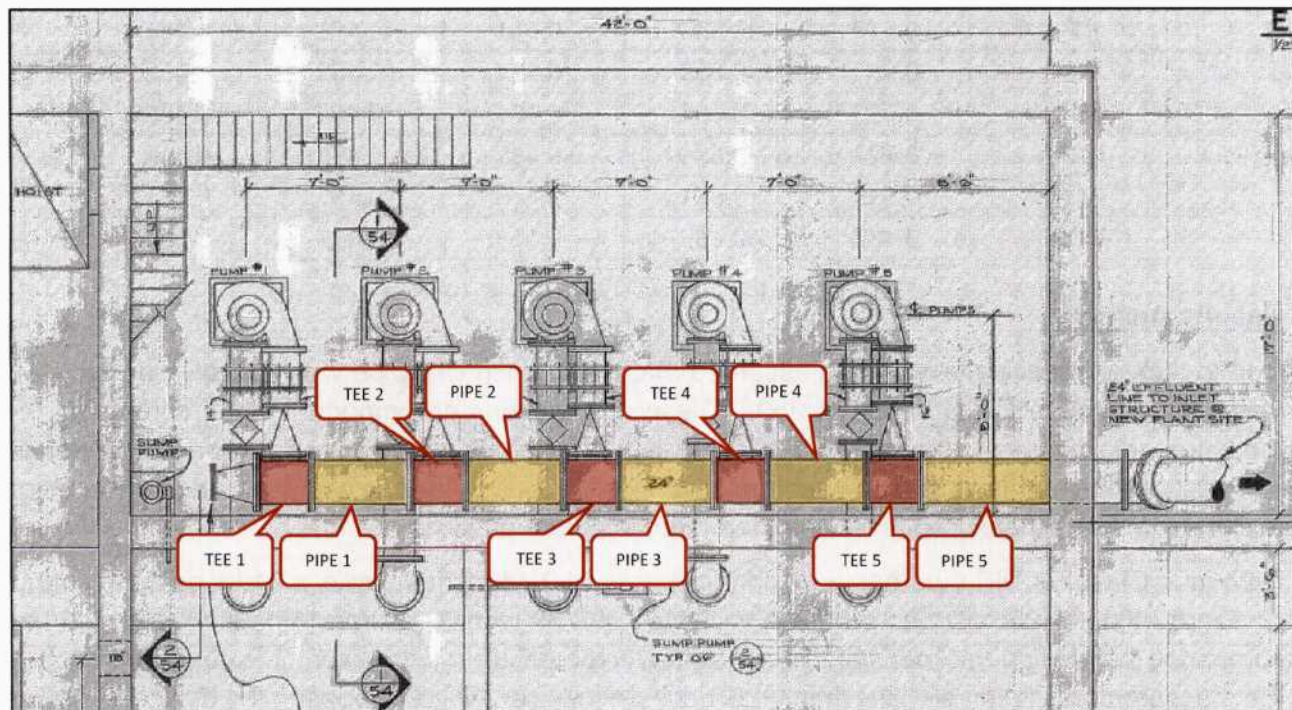


Figure 5: 24-inch DIP Lift Station Header (Labeled Tee & Pipe)

(Source: Sheet III-54, Prj. 60052S; "Pump Station Equipment and Piping Layout, Waste Treatment Facilities Storm Lake, Iowa"; Dated January 1983)

Table 1: Thickness Measurements for Tees (in inches)					
Measurement	Tee 1	Tee 2	Tee 3	Tee 4	Tee 5
T1	1.223	1.207	1.359	1.268	1.491
T2	1.241	1.268	1.294	1.306	1.469
T3	1.248	1.263	1.401	1.315	1.471
T4	1.301	1.321	1.338	1.331	1.454
T5	1.238	1.301	1.347	1.413	1.431
T6	1.287	1.331	1.353	1.442	1.299
T7	1.279	1.362	1.322	1.398	1.306
T8	1.296	1.371	1.359	1.365	1.322
T9	1.301	1.354	1.306	1.315	1.316

Table 2: Thickness Measurements for Pipes (in inches)					
Measurement	Pipe 1	Pipe 2	Pipe 3	Pipe 4	Pipe 5
P1	0.546	0.659	0.491	0.471	0.417
P2	0.554	0.651	0.479	0.454	0.421
P3	0.532	0.584	0.461	0.462	0.435
P4	0.559	0.631	0.468	0.471	0.421
P5	0.531	0.652	0.482	0.451	0.437
P6	0.601	0.591	0.499	0.449	0.435
P7	0.577	0.622	0.501	0.471	0.461
P8	0.587	0.668	0.477	0.465	0.458
P9	0.556	0.604	0.494	0.462	0.466
P10	0.577	0.684	0.481	0.458	0.417
P11	0.533	0.671	0.476	0.467	0.461
P12	0.482	0.665	0.473	0.471	0.509

Results Analysis

Due to lack of specifications, it was assumed that the 24-inch DIP pipe was Class 52 and the 24-inch DIP tees were Pressure Class 250. These assumptions are important when comparing the measured thicknesses to the design thickness. If the City of Storm Lake finds any additional details or specifications for the lift station header piping, Pure Technologies can compare the correct design thickness with the measured thickness for a more accurate analysis.

A 24-inch Class 52 DIP pipe has a design thickness of 0.44 inches, while a 24-inch DI Tee with a pressure rating of 250 psi has a design thickness of 0.89 inches (source: American Pipe). When comparing the design thickness of the tee to the field measurements taken, it is clear that none of the measurements taken are less than 0.89 inches. However, when comparing the design thickness of the pipe to the field measurements taken, it can be seen that "Pipe 5" (closest to the inlet structure wall) has multiple thicknesses less than 0.44 inches.

Seven (7) of the twelve (12) thickness measurements taken for "Pipe 5" are less than 0.44 inches. Out of those seven (7), the maximum wall loss percentage was roughly 5% which was located at

measurements "P1" and "P10" at 0.417 inches. A diagram indicating the measurements taken for "Pipe 5" is shown in **Figure 6**.

Though it is possible that wall loss may have occurred at this location, a wall thickness measurement of 0.417 inches (the minimum observed) for 24-inch DIP corresponds with a design pressure class of 300 pounds per square inch (psi)¹. This pressure class is defined as the rated water pressure of the pipe in psi. Therefore, if the City of Storm Lake is operating the header piping under 300 psi, it can be assumed that the header piping is in serviceable condition.

It is Pure Technologies understanding that no pressure gauges are installed on the header piping in order to collect direct pressure readings at operating conditions. However, it was determined that a pressure relief valve exists on the header which is set to open at 65 psi. Assuming the valve is in good operating condition, 65 psi would be the maximum operating pressure for the header.

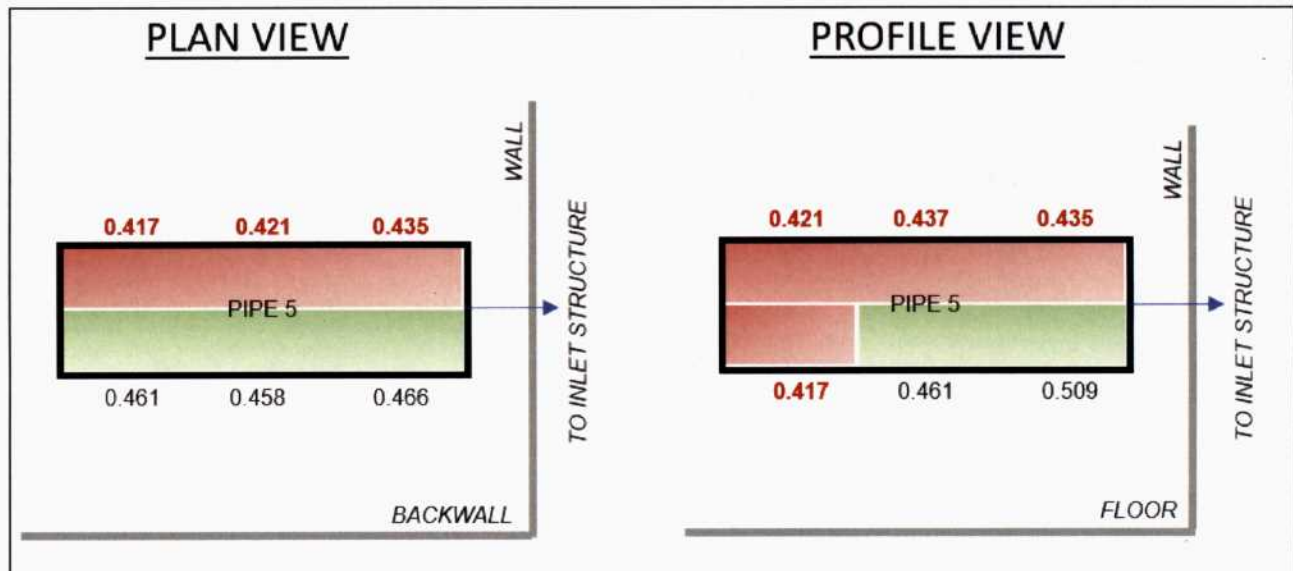


Figure 6: Thickness Measurements (in inches) of "Pipe 5"

Conclusion

Based on the findings from the JanX UTT external field testing, Pure Technologies concluded that only one (1) of the five (5) pipes tested were found to have wall thickness measurements less than the design thickness. The maximum wall loss percentage at this pipe was roughly 5% and was located at measurements "P1" and "P10" of "Pipe 5", at 0.417 inches. Though it is possible that wall loss may have occurred at this location, a wall thickness measurement of 0.417 inches (the minimum observed) for 24-inch DIP corresponds with a design pressure class of 300 pounds per square inch (psi)¹. This pressure class is defined as the rated water pressure of the pipe in psi. Therefore, if the City of Storm Lake is operating the header piping under 300 psi, it can be assumed that the header piping is in serviceable condition. Additionally, it was determined that under normal operating

¹ U.S. Pipe and Foundry Company. "Ductile Iron Pipe Design for Fire Protection, Water & Wastewater". Page P10. Table 2; Pressure Class. 2013 Edition.

conditions, the header piping experiences a maximum operating pressure of 65 psi. Therefore, under those operating conditions, it can be assumed that the header piping is in serviceable condition. Pure Technologies also concluded that none of the five (5) tees tested were found to have wall thickness measurements less than the design thickness. The JanX Field Log used to collect and document the data is included as an appendix to this letter.

If you have any questions or require additional information, please contact us.

Sincerely,

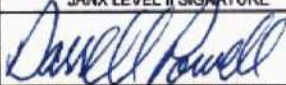
William Barloon

Bill Barloon, P.E.
Area General Manager, Xylem

cc: Steve Bruskiewicz, Business Development Manager, Xylem

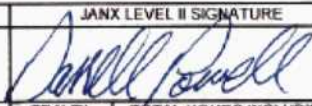
Attachments

Appendix A: JanX Field Log

DATE: 5/20/2019		CLIENT: Pure Technologies US, Inc.		
REPORT No: 1 of 1		JOB LOCALE- CITY, STATE: Storm Lake, IA		
CLIENT PO No: #2019-052		JANX JOB No:		
CLIENT W/O No:		JANX PROCEDURE No: UTT-1, Rev. 1		
CLIENT JOB No:		ACCEPTANCE CRITERIA: Information only		
ULTRASONIC THICKNESS TESTING TECHNIQUE				
Instrument Mfg: <u>Landmark</u> Model: <u>UM-1D</u> Serial No: <u>5102212</u> Cal. Date: <u>1/15/2019</u>				
Transducer Mfg: <u>Landmark</u> Transducer Frequency: <u>5</u> MHz Due Date: <u>1/15/2020</u>				
Transducer Size: <u>.250"</u> Transducer Type: ☐ Dual Element ☒ Single Element ☐ Delay Line				
☒ Contact ☐ Angle 0° to Surface ☒ Straight Beam ☒ Spot Thickness Readings Only ☒ Area Scan (see below)				
Scan Description: <u>Thickness readings; looking for wall loss</u> Max. Scan Rate (in./sec.): <u>N/A</u> Scan Overlap %: <u>N/A</u>				
Couplant Brand or Type: <u>Sonagel</u> Remarks:				
PART DESCRIPTION			Calibration Block No: <u>3972</u> Material: <u>C/S</u>	
Material: <u>C/S</u> Thickness: <u>.500"</u>			Step 1 Step 2	
Inspection Area Description: <u>24" x .500wt pipe</u>			Cal Block Actual Thickness: <u>.250"</u> <u>1"</u> Time	
Surface Condition: <u>Clean</u>			Cal. Reading at Start: <u>.250"</u> <u>.500"</u> <u>10:30AM</u>	
Surface Preparation: <u>Coating removed and brushed</u>			Cal. Reading at End: <u>.250"</u> <u>.500"</u> <u>2PM</u>	
Temp. of Part and Cal. Block within ± 25°F of each other: ☒			Gate Height: <u> </u> % ☒ Not Applicable	
			Gain: <u> </u> dB ☒ Not Applicable	
THICKNESS READINGS			SKETCH / PICTURE / REMARKS - AS NEEDED	
1	21	41	61	81
2	22	42	62	82
3	23	43	63	83
4	24	44	64	84
5	25	45	65	85
6	26	46	66	86
7	27	47	67	87
8	28	48	68	88
9	29	49	69	89
10	30	50	70	90
11	31	51	71	91
12	32	52	72	92
13	33	53	73	93
14	34	54	74	94
15	35	55	75	95
16	36	56	76	96
17	37	57	77	97
18	38	58	78	98
19	39	59	79	99
20	40	60	80	100
Drive to Storm Lake, IA.....				
BILLING Pure Technologies US, Inc., Attn: William Barloon, 8920 State Route 108; Suite D, Columbia MD 21045				
ADDRESS:				
CLIENT SIGNATURE		JANX LEVEL II SIGNATURE		LEVEL II TECHNICIAN
				Darrell Powell
CLIENT REP NAME & PHONE NUMBER		TRAVEL MILES	TOTAL HOURS INCLUDING TRAVEL AND WORK	PER DIEM APPLICABLE
Steve Bruskiewicz (262)305-5238		550	10	Yes
				TOTAL ITEMS INSPECTED
				0
Kenny Cox !				
Print: UTT Report 14-06		CUSTOMER'S SIGNATURE CERTIFIES THAT TIME AND MILEAGE ARE CORRECT AND MATERIALS AND INTERPRETATION ARE ACCEPTED.		JANX P.O. Box 190 (517) 531-8210 Parma, MI 49269

DATE: 5/21/2019		CLIENT: Pure Technologies US, Inc.							
REPORT No: 1 of 2		JOB LOCALE- CITY, STATE: Storm Lake, IA							
CLIENT PO No: #2019-052		JANX JOB No:							
CLIENT W/O No:		JANX PROCEDURE No: UTT-1, Rev. 1							
CLIENT JOB No:		ACCEPTANCE CRITERIA: Information only							
ULTRASONIC THICKNESS TESTING TECHNIQUE									
Instrument Mfg: <u>Landmark</u>		Model: <u>UM-1D</u>		Serial No: <u>5102212</u>					
Transducer Mfg: <u>Landmark</u>		Transducer Frequency: <u>5</u> MHz		Cal. Date: <u>1/15/2019</u>					
Transducer Size: <u>.250"</u>		Transducer Type: ☐ Dual Element ☒ Single Element ☐ Delay Line		Due Date: <u>1/15/2020</u>					
☒ Contact ☐ Angle 0° to Surface ☒ Straight Beam ☒ Spot Thickness Readings Only ☒ Area Scan (see below)									
Scan Description: <u>Thickness readings; looking for wall loss</u>		Max. Scan Rate (in./sec.): <u>N/A</u>		Scan Overlap %: <u>N/A</u>					
Couplant Brand or Type: <u>Sonagel</u>		Remarks:							
PART DESCRIPTION									
Material: <u>C/S</u>		Thickness: <u>.500"</u>							
Inspection Area Description: <u>Looking for wall loss; thickness readings</u>									
<u>24" x .500wt pipe</u>									
Surface Condition: <u>Clean</u>									
Surface Preparation: <u>Coating removed and brushed</u>									
Temp. of Part and Cal. Block within ± 25°F of each other: ☒									
Calibration Block No: <u>3972</u>		Material: <u>C/S</u>							
		Step 1		Step 2					
Cal Block Actual Thickness:		<u>.250"</u>		<u>1"</u>					
Cal. Reading at Start:		<u>.250"</u>		<u>.500"</u>					
Cal. Reading at End:		<u>.250"</u>		<u>.500"</u>					
Gate Height: <u> </u> %		☒ Not Applicable							
Gain: <u> </u> dB		☒ Not Applicable							
THICKNESS READINGS									
1	Tee 1	21	Tee 2	41	Tee 3	61	Tee 4	81	Tee 5
2	1.223	22	1.207	42	1.359	62	1.268	82	1.491
3	1.241	23	1.268	43	1.294	63	1.306	83	1.469
4	1.248	24	1.263	44	1.401	64	1.315	84	1.471
5	1.301	25	1.321	45	1.338	65	1.331	85	1.454
6	1.238	26	1.301	46	1.347	66	1.413	86	1.431
7	1.287	27	1.331	47	1.353	67	1.442	87	1.299
8	1.279	28	1.362	48	1.322	68	1.398	88	1.306
9	1.296	29	1.371	49	1.359	69	1.365	89	1.322
10	1.301	30	1.354	50	1.306	70	1.315	90	1.316
11		31		51		71		91	
12		32		52		72		92	
13		33		53		73		93	
14		34		54		74		94	
15		35		55		75		95	
16		36		56		76		96	
17		37		57		77		97	
18		38		58		78		98	
19		39		59		79		99	
20		40		60		80		100	
SKETCH / PICTURE / REMARKS - AS NEEDED									
Drive in and out of Storm Lake, IA.....									
BILLING Pure Technologies US, Inc., Attn: William Barloon, 8920 State Route 108; Suite D, Columbia MD 21045									
ADDRESS:									
CLIENT SIGNATURE		JANX LEVEL II SIGNATURE		LEVEL II TECHNICIAN					
				Darrell Powell					
CLIENT REP NAME & PHONE NUMBER		TRAVEL MILES	TOTAL HOURS INCLUDING TRAVEL AND WORK	PER DIEM APPLICABLE					
Steve Bruskiewicz (262)305-5238		300	14	Yes					
		TOTAL ITEMS INSPECTED		10					
		Kenny Cox !							
Form: EUTT Report 14-06		CUSTOMER'S SIGNATURE CERTIFIES THAT TIME AND MILEAGE ARE CORRECT AND MATERIALS AND INTERPRETATION ARE ACCEPTED.		JANX (517) 531-8210 P.O. Box 190 Parma, MI 49269					

DATE: 5/21/2019		CLIENT: Pure Technologies US, Inc.							
REPORT No: 2 of 2		JOB LOCALE- CITY, STATE: Storm Lake, IA							
CLIENT PO No: #2019-052		JANX JOB No:							
CLIENT W/O No:		JANX PROCEDURE No: UTT-1, Rev. 1							
CLIENT JOB No:		ACCEPTANCE CRITERIA: Information only							
ULTRASONIC THICKNESS TESTING TECHNIQUE									
Instrument Mfg: <u>Landmark</u>		Model: <u>UM-1D</u> Serial No: <u>5102212</u>		Cal. Date: <u>1/15/2019</u>					
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Scan Description: <u>Thickness readings; looking for wall loss</u>		Max. Scan Rate (in./sec.): <u>N/A</u>		Scan Overlap %: <u>N/A</u>					
Couplant Brand or Type: <u>Sonagel</u>		Remarks:							
PART DESCRIPTION									
Material: <u>C/S</u> Thickness: <u>.500"</u>									
Inspection Area Description: <u>Looking for wall loss; thickness readings</u>									
<u>24" x .500wt pipe</u>									
Surface Condition: <u>Clean</u>									
Surface Preparation: <u>Coating removed and brushed</u>									
Temp. of Part and Cal. Block within $\pm 25^{\circ}\text{F}$ of each other: ☒									
THICKNESS READINGS									
1	Pipe 1	21	Pipe 2	41	Pipe 3	61	Pipe 4	81	Pipe 5
2	0.546	22	0.659	42	0.491	62	0.471	82	0.417
3	0.554	23	0.651	43	0.479	63	0.454	83	0.421
4	0.532	24	0.584	44	0.461	64	0.462	84	0.435
5	0.559	25	0.631	45	0.468	65	0.471	85	0.421
6	0.531	26	0.652	46	0.482	66	0.451	86	0.437
7	0.601	27	0.591	47	0.499	67	0.449	87	0.435
8	0.577	28	0.622	48	0.501	68	0.471	88	0.461
9	0.587	29	0.668	49	0.477	69	0.465	89	0.458
10	0.556	30	0.604	50	0.494	70	0.462	90	0.466
11	0.577	31	0.684	51	0.481	71	0.458	91	0.417
12	0.533	32	0.671	52	0.476	72	0.467	92	0.461
13	0.482	33	0.665	53	0.473	73	0.471	93	0.509
14		34		54		74		94	
15		35		55		75		95	
16		36		56		76		96	
17		37		57		77		97	
18		38		58		78		98	
19		39		59		79		99	
20		40		60		80		100	
SKETCH / PICTURE / REMARKS - AS NEEDED									
Drive in and out of Storm Lake, IA..... (9) Readings per "TEE" (12) Readings per "PIPE" BACK WALL									
BILLING Pure Technologies US, Inc., Attn: William Barloon, 8920 State Route 108; Suite D, Columbia MD 21045 ADDRESS:									
CLIENT SIGNATURE		JANX LEVEL II SIGNATURE		LEVEL II TECHNICIAN	OTHER EMPLOYEES & LEVEL				
				Darrell Powell	Kenny Cox I				
CLIENT REP NAME & PHONE NUMBER		TRAVEL MILES	TOTAL HOURS INCLUDING TRAVEL AND WORK	PER DIEM APPLICABLE		TOTAL ITEMS INSPECTED			
Steve Bruskiewicz (262)305-5238		300	14	Yes		10			
Form: UTT Report 14-05		CUSTOMER'S SIGNATURE CERTIFIES THAT TIME AND MILEAGE ARE CORRECT AND MATERIALS AND INTERPRETATION ARE ACCEPTED.			JANX P.O. Box 190 (517) 531-8210 Parma, MI 49269				

DATE: 5/22/2019		CLIENT: Pure Technologies US, Inc.														
REPORT No: 1 of 1		JOB LOCALE- CITY, STATE: Storm Lake, IA														
CLIENT PO No: #2019-052		JANX JOB No:														
CLIENT W/O No:		JANX PROCEDURE No: UTT-1, Rev. 1														
CLIENT JOB No:		ACCEPTANCE CRITERIA: information only														
ULTRASONIC THICKNESS TESTING TECHNIQUE																
Instrument Mfg: <u>Landmark</u>		Model: <u>UM-1D</u> Serial No: <u>5102212</u>		Cal. Date: <u>1/15/2019</u>												
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Surface Condition: <u>Clean</u>																
Surface Preparation: <u>Coating removed and brushed</u>																
Temp. of Part and Cal. Block within ± 25°F of each other: ☒																
Calibration Block No: <u>3972</u>		Material: <u>C/S</u>														
		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width: 30%;">Step 1</th> <th style="width: 30%;">Step 2</th> <th style="width: 40%;">Time</th> </tr> <tr> <td>Cal Block Actual Thickness: <u>.250"</u></td> <td><u>1"</u></td> <td></td> </tr> <tr> <td>Cal. Reading at Start: <u>.250"</u></td> <td><u>.500"</u></td> <td><u>10:30AM</u></td> </tr> <tr> <td>Cal. Reading at End: <u>.250"</u></td> <td><u>.500"</u></td> <td><u>2PM</u></td> </tr> </table>			Step 1	Step 2	Time	Cal Block Actual Thickness: <u>.250"</u>	<u>1"</u>		Cal. Reading at Start: <u>.250"</u>	<u>.500"</u>	<u>10:30AM</u>	Cal. Reading at End: <u>.250"</u>	<u>.500"</u>	<u>2PM</u>
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Gain: <u> </u> dB		☒ Not Applicable														
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5	25	45	65	85												
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7	27	47	67	87												
8	28	48	68	88												
9	29	49	69	89												
10	30	50	70	90												
11	31	51	71	91												
12	32	52	72	92												
13	33	53	73	93												
14	34	54	74	94												
15	35	55	75	95												
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Drive from Storm Lake, IA.....																
BILLING ADDRESS: Pure Technologies US, Inc., Attn: William Barloon, 8920 State Route 108; Suite D, Columbe MD 21045																
CLIENT SIGNATURE		JANX LEVEL II SIGNATURE		LEVEL II TECHNICIAN												
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					OTHER EMPLOYEES & LEVEL											
CLIENT REP NAME & PHONE NUMBER		TRAVEL MILES	TOTAL HOURS INCLUDING TRAVEL AND WORK	PER DIEM APPLICABLE												
Steve Bruskiwicz (262)305-5238		550	10	0												
					TOTAL ITEMS INSPECTED											
				Kenny Cox 1												
Form UTT Report 14-06		CUSTOMER'S SIGNATURE CERTIFIES THAT TIME AND MILEAGE ARE CORRECT AND MATERIALS AND INTERPRETATION ARE ACCEPTED.		JANX (517) 531-8210 P.O. Box 190 Parma, MI 49269												

APPENDIX C: Forcemain Evaluation Methods

Transient Pressure Monitoring

The occurrence of pressure transients within a pressure pipeline can have adverse effects on the integrity of a pipe section as they can cause damage such as fatigue stress or even a pipe failure depending on the magnitude of the transient and current condition of the pipe. Accumulated damage of this nature can eventually decrease the structural integrity of the pipe. Therefore, it is important to understand the frequency and magnitude of pressure transients in the 300 mm watermain to ensure that operational protocols can be implemented to maintain the pressures below the specified design. An understanding of the actual pressure in a line will also permit knowledgeable decisions regarding future modifications to the line or facilities that affect the performance of the pipeline.

Traditional pressure monitors collect data in intervals of seconds while transients may occur in fractions of seconds. Pure's transient pressure monitoring system addresses the sampling frequency issue by continuously monitoring pressure and while under normal operating conditions, only recording data every few minutes (based on user defined intervals). However, when a transient occurs in the pipeline, the device detects the transient and begins sampling at a high rate of up to 20 samples per second (20 hertz). This provides periodic pressure readings as well as data on transient events.

Pure requires the subject watermain to be in-service during the monitoring period. The transient pressure monitors require an existing 1/4-inch tap or larger for installation. Pure will install one monitor at location to be determined during the project planning, for thirty (30) days of monitoring. At the end of the data collection period, Pure will analyze the data and include the results in the final condition assessment report to client.

SmartBall[®] Technology

A free-swimming tool for long distance water and wastewater inspections

How SmartBall works?

The SmartBall[®] platform is a free-flowing tool for the assessment of pressurized water and wastewater pipelines 8 inches and larger. It can complete long assessments in a single deployment without disruption to regular pipeline service.

The tool is inserted into a live pipeline and travels with the product flow for up to 21 hours while collecting pipeline condition information. It requires only two access points for insertion and extraction, and is tracked throughout the inspection at predetermined fixed locations on the pipeline.

Applications

Owners of water and wastewater pipelines deal with a variety of infrastructure challenges; the SmartBall platform can collect a variety of pipeline condition information in a single deployment that helps owners manage their assets more effectively.

Leak Detection

The tool is equipped with a highly sensitive acoustic sensor that can detect pinhole-sized leaks on pressurized pipelines. The SmartBall platform has been able to identify leaks as small as 0.028 gal/min (0.11 liters) and has a typical location accuracy of within 6 feet (1.8 meters).

Gas Pocket Detection

The acoustic sensor is also able to identify the sound of trapped gas within pressurized mains. The presence of trapped gas can adversely affect pipeline flow or lead to degradation of the pipe wall in sewer force mains.

Inspection Benefits

- Easy to deploy through existing pipeline features
- No disruption to regular pipeline service
- Can complete long inspections in a single deployment
- Highly sensitive acoustic sensor that can locate very small leaks
- Can identify features relevant to the operation and mapping of the pipeline
- Indicates the position of leaks, and gas pockets relative to known points





PipeDiver[®] Condition Assessment

An innovative, free-swimming condition assessment tool that operates while a pipeline remains in service

PipeDiver Technology

The PipeDiver platform is ideal for critical large-diameter pipelines that cannot be removed from service due to lack of redundancy or operational constraints. It can be effectively deployed for long inspections on several types of pipe to determine baseline condition; on concrete pressure pipe, the tool can identify and locate broken wire wraps, which are the main indication that this type of pipe will eventually fail; for metallic pipes that utilize a steel cylinder as the main structural component, the tool can locate and detect areas of corrosion and cylinder defects.

When inserted into a live pipeline through a hot tap connection, an existing access or a submerged tank, the tool travels with the product flow and is able to navigate most butterfly valves and bends in the pipeline.

Inspection Benefits

- No disruption to regular pipeline service
- Long inspection distances can be covered in a single deployment
- Accurate results that pinpoint areas of distress help optimize repair planning
- Effective on a variety of pipe materials
- More cost-effective than methods that require shutdown and dewatering



Staff Summary

3/2/2020

Agenda Item # 10.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Keri Navratil, City Manager

SUBJECT: **Resolution No. 56-R-2019-2020 Authorizing Submission for Community Development Block Grant Application - Memorial Lift Station**

BACKGROUND: The grant application will request funding assistance for improvements to the City's sanitary sewer system, specifically improvements to Memorial Lift Station.

Memorial Lift station was originally built in 1983 and is an integral part of the wastewater system as 70% of wastewater flows through this lift station. The City intends to apply for a Community Development Block Grant (CDBG) to add redundancy to the system to ensure that that we do not bypass into the lake or to cause 70% of the community to not have access to the wastewater system.

FISCAL IMPACT: If awarded, the City of Storm Lake would be required to commit \$600,000 in match funds.

RECOMMENDATION: Approve Resolution No. 56-R-2019-2020 Authorizing Submission for Community Development Block Grant Application - Memorial Lift Station

ATTACHMENTS:

Description	Type
□ Resolution No. 56-R-2019-2020	Resolution
□ Facility Plan	Backup Material

RESOLUTION NO. 56-R-2019-2020

**A RESOLUTION ENDORSING AN APPLICATION FOR
COMMUNITY DEVELOPMENT BLOCK GRANT FUNDS
FOLLOWING PUBLIC HEARING**

WHEREAS, the City of Storm Lake is eligible to apply for Iowa Community Development Block Grant funding under the Water/Sewer portion of the program, and;

WHEREAS, the City Council has held a public hearing as required for submission of a CDBG guidelines on March 2, 2020 to hear public comments on the submission of the grant application, and;

WHEREAS, the City has an immediate need to conduct a project to rehabilitate and develop redundancy elements at the Memorial Lift Station, and;

WHEREAS, the City Council has decided to submit an application to the CDBG program for the Memorial Lift Station Rehabilitation Project;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF STORM LAKE, IOWA:

SECTION 1. The City Council endorses the submission of an application for CDBG grant funds to the Iowa Economic Development Authority in the amount of \$600,000 for the Storm Lake Memorial Lift Station Rehabilitation Project.

SECTION 2. The City Council certifies that the provided public hearing announcements were made prior to consideration of the grant application, as per CDBG guidelines.

SECTION 3. The Mayor is authorized to sign all paperwork and forms necessary for the submittal of the grant application.

PASSED AND APPROVED this 2nd day of March 2020.

Michael Porsch, Mayor

ATTEST:

Mayra Martinez, City Clerk



Dec 31, 2019

City of Storm Lake
Keri Navratil, City Manager
620 Erie St, PO Box 1086
Storm Lake, IA 50588

RE: Memorial Lift Station Improvements
City of Storm Lake
DNR Project No. S2019-0384A
CWSRF No. CS1920XXXXX (pending)

Subject: Facility Plan Approval

Dear Keri:

The Iowa Department of Natural Resources has reviewed the Facility Plan and all subsequent correspondence for the above-referenced project and is in agreement with the project as currently proposed. The Facility Plan is officially approved. When ready, please submit Plans and Specifications to the Department for review. Plans and Specifications shall be prepared in accordance with the approved Facility Plan. The following is a brief summary of the approved Facility Plan.

A new isolation valve on the force main discharge line, replacing pump #1 and #2 with the same capacity as the existing pumps, replacing the sump pump in the existing wet well, temporary bypass pumping, valves replacement, sluice gate installation in the wet well, other miscellaneous maintenance work.

The existing pumping capacity of Memorial lift station will not be changed.

ELIGIBILITY

The City has opted to utilize State Revolving Loan Funds (SRF) for financing the proposed project. Therefore, an environmental review (ER) is necessary to assess the environmental impacts of the project in accordance with procedures in 40 CFR Part 6 and is required for all loan recipients. A decision will be made by the department to determine if the project qualifies for a categorical exclusion (CX) or if a finding of no significant impact (FNSI) is required. The facility plan is approved conditionally based strictly on the technical review of the proposed project. Any significant project change resulting from the environmental review may require an amendment to the facility plan or a revised facility plan to retain eligibility for SRF funding. Construction of the project prior to the environmental review completion could jeopardize your SRF funding. Please contact DNR Environmental Review Staff for questions about the ER status.

Our approval does not eliminate the need for the city to comply with all federal, state and local regulations. This department must be notified of any change in your proposal and approve the change prior to incorporation in plans and specifications. Our approval of the Facility Plan is not an endorsement for funding. Additional coordination and documentation may be necessary before a loan agreement can be offered.

Please feel free to contact me at 515-725-8421 or email emy.liu@dnr.iowa.gov if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Emy Wenxin Liu".

(Emy) Wenxin Liu, PhD, PE
Project Manager
Wastewater Engineering Section

Encl.

c: ISG (508 E. Locust, Des Moines, IA 50309) (w/FP)
DNR FO 3 (Spencer, Iowa)
DNR Sewage File 6-11-78-0-01
SRF File CS1920xxxxxx (pending) (w/FP)

FACILITY PLAN MEMORIAL LIFT STATION

CITY OF STORM LAKE, IOWA
JUNE 2019



REPORT FOR:
City of Storm Lake
620 Erie Street
Storm Lake, IA 50588
712.732.8000

FROM:
Jason Kenyon, P.E.
ISG
508 E. Locust Street
Des Moines, IA 50309
515.243.9143
Jason.kenyon@is-grp.com

ISG

Facility Plan

Memorial Lift Station, Storm Lake, Iowa

Ownership of Document

This document, and the ideas and designs incorporated herein, as an instrument of professional service, is the property of ISG, and is not to be used, in whole or in part, for any other project without the written authorization of ISG.

Project No. 19-22797

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa. <u>Jason C. Kenyon</u> <u>7-19-2019</u> Jason C. Kenyon Date License Number: 25053 My License Renewal Date is 12/31/2019 Sections covered by this seal: <u>Entire Bound Report</u>
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Executive Summary

The City of Storm Lake's Memorial Lift Station was constructed in 1983 to convey wastewater from the previous wastewater treatment plant site to the new wastewater treatment plant approximately 2.5 miles southeast. Memorial Lift station was originally designed to convey all wastewater from the City. New lift stations on the west side of Storm Lake have diverted some flow away from Memorial Lift Station, but Memorial Lift Station still handles the majority of the City's Wastewater. Minor improvements have been made to the lift station since its original construction, but many of the most critical components are original and have been in operation for 35 years. Improvements are necessary in order for this critical lift station to continue to operate reliably. Improvements identified in this facility plan include replacement of failing equipment, rehabilitation of the existing structure, modifications to comply with code requirements, and improvements for future operation and maintenance.

Minor improvements at the site, including removing vegetation, rerouting downspouts, and filling animal burrows are recommended to help maintain access and prevent future degradation to the structure. Filling the animal burrows under the transformer pad is critical due to the potential for animals to damage the electrical service conductors and interrupt power to the lift station. The total estimated cost for the recommended site improvements is \$1,800.

In order to make the recommended improvements inside memorial lift station, a new isolation valve will need to be installed on the force main discharge and the flow bypass pumped around the lift station. Work will need to occur during dry weather periods to reduce bypass pumping costs during construction. The estimated cost for installing the isolation valve and temporary bypass pumping is \$150,000.

Process improvements at Memorial Lift Station include replacement of valves that are in poor condition and failing, recoating the existing piping, and modifying the wet well configuration to reduce stagnant wastewater and solids deposition that contributes to hazardous and corrosive gases. The estimated cost for the process improvements is \$327,000.

The existing pumps at Memorial Lift Station include two 60 horsepower duty pumps and three 300 horsepower peak flow pumps. All five pumps are the original pumps that were installed when the lift station was built in 1983. One of the smaller pumps is inoperable and the other small pump runs continuously. The three peak flow pumps only run during heavy rain events when there is significant infiltration and inflow in the collection system. Replacement of the two 60 horsepower pumps is recommended as these pumps handle the majority of the flow at the lift station. Replacement of the larger pumps was also evaluated, but the existing pumps are still in good condition due to their low run time. The estimated cost of replacing the two 60 horsepower pumps is \$180,000.

Structurally, Memorial Lift Station is in serviceable condition. However, repairs are required to make the structure weather tight, replace protective coatings, and patch minor degradation of the concrete

structure. Filling and abandoning the unused grit chamber will help reduce stagnant wastewater as well. The estimated cost of the structural rehabilitation is \$260,000.

There are several HVAC components at Memorial Lift station that have failed or do not meet current code requirements. Replacing the failed ventilation components is critical for protecting operations staff from hazardous conditions. Additionally, the increased ventilation will protect electrical systems and metal components from corrosive gases. The estimated cost of the HVAC improvements is \$177,000.

The location of the existing water service lines at Memorial Lift Station create a significant risk to the electrical system. Rerouting water and drain lines away from electrical components is necessary to prevent catastrophic damage to the motor control center in the event of a pipe break. The water circulation pumps for the boiler heating system are also failing and should be replaced with newer variable speed pumps that will provide greater reliability and efficiency. The estimated cost of the plumbing repairs and improvements is \$74,000.

The existing motor control center at Memorial Lift Station are in poor shape due to age and exposure to water and corrosive gases. Some components of the electrical system do not meet current electrical codes. Replacement of these components is crucial for providing reliable power to the pumps. Additionally, replacing the existing florescent and high pressure sodium lights with LED lights can provide some energy savings and provide longer bulb life, reducing operator time required to maintain the lighting system. The estimated cost of the electrical improvements is \$318,500. The additional estimated cost for replacing and adding LED lighting is \$36,000.

The Controls system at Memorial Lift Station is in poor condition and replacement components for the existing system are no longer manufactured. Complete replacement of the controls system is required to ensure continued operation. Additionally, the new control system will provide better monitoring and remote operation of the lift station. New systems to monitor ventilation and hazardous gases are also necessary to protect operations staff. The estimated cost for the controls improvements is \$225,000.

The total estimated project cost, including contingency and non-construction costs, is \$2,275,000. The City of Storm Lake intends to apply for a Community Development Block Grant (CDBG) for \$600,000 and use a State Revolving Fund (SRF) loan for the remaining balance of \$1,675,000.

Due to the need for bypass pumping during construction, the proposed work must be done during a dry weather period. The preliminary project schedule includes bidding the project in spring 2020 to allow for equipment procurement lead time over summer 2020 and installation during bypass pumping in fall 2020.

Introduction

BACKGROUND

The City of Storm Lake's Memorial Lift Station was originally constructed in 1983 at the site of the City's previous wastewater treatment plant. The lift station was designed to convey all of the City's wastewater to the new wastewater treatment plant approximately 2.5 miles southeast. After construction of the lift station, force main, and new wastewater treatment facility, the old wastewater treatment facility was demolished. Minor improvements have been made to Memorial Lift Station since its original construction. An activated carbon odor control system and a diesel backup generator were installed in 2008. The mechanical bar screen and grit removal equipment were removed and a new grinder was installed in 2016. Most of the existing equipment is original to the lift station construction and has been in service for 35 years.

SCOPE OF WORK

Due to the age, condition, and criticality of Memorial Lift Station, the City of Storm Lake retained ISG to evaluate the condition of the lift station and prepare this facility plan. ISG evaluated the condition of the site, process equipment, structure, HVAC, plumbing, electrical, and controls systems to identify deficiencies that are currently or could in the future impact the operation of Memorial Lift Station. ISG then prepared an evaluation of proposed improvements to address those deficiencies and ensure Memorial Lift Station continues to operate reliably.

Existing Conditions and Deficiencies.

SITE

The City still owns the entire eight acre site of the previous wastewater treatment plant, which has since been demolished, and uses the open areas around the lift station for material and equipment storage. An eight foot fence with barbed wire follows the perimeter of the below-grade lift station structure and secures the above-grade entrances to the lift station. The parcels surrounding the lift station site are light industrial sites and the municipal cemetery. The Chicago Central and Pacific Railway line borders the site to the north. The nearest residential structure is approximately 1,300 feet east of the lift station.



Figure 1: Memorial Lift Station Site and Location

Around the exterior of the lift station, animals have burrowed holes at several locations below stoops and the transformer pad. These holes should be filled and measures taken to prevent future unwanted excavations. Vegetation has grown up around the building slab as well, hindering maintenance access. The roof gutter downspouts are not connected to a sufficient outlet and several of them discharge directly to the ground immediately next to the lift station. This likely contributes to water accumulation and seepage into the lift station. For proper drainage, the downspouts should be directed further away from the building exterior.



Figure 2: Animal Burrows, downspouts, and vegetation around lift station exterior

A summary of the site deficiencies identified is provided below:

- Animal burrows are present in several locations around the building exterior.
- Vegetation has grown up in several locations around the building exterior.
- The downspouts discharge directly adjacent to the lift station.

PROCESS

Flows

The original design flow rates for Memorial Lift Station are listed in Table 1 below. In 2014, additional lift stations were constructed around the western perimeter of Storm Lake which diverted a significant portion of the City's wastewater away from Memorial Lift Station.

Table 1: Memorial Lift Station Design Flow Rates

Flow Condition	Flow, MGD
Average Dry Weather	1.80
Average Wet Weather	3.34
Maximum Wet Weather	6.20
Peak Hourly Wet Weather	15.80

Influent flow at the lift station is measured by a parshall flume with a totalizing flow meter. The totalizer reading is periodically recorded in a log book at the lift station. Therefore, hourly flow data is not available for this lift station. The Flow rate data recorded between June 2015 and August 2016 is summarized in Figure 3 below. The peak average daily flow observed during this period was approximately 7.72 MGD, and the majority of the average daily flows were below 3 MGD. With the limited data available, it appears that flow rates are within the original design capacity for the Lift Station. Therefore, the existing design capacity is considered adequate and proposed improvements will maintain the existing capacity.

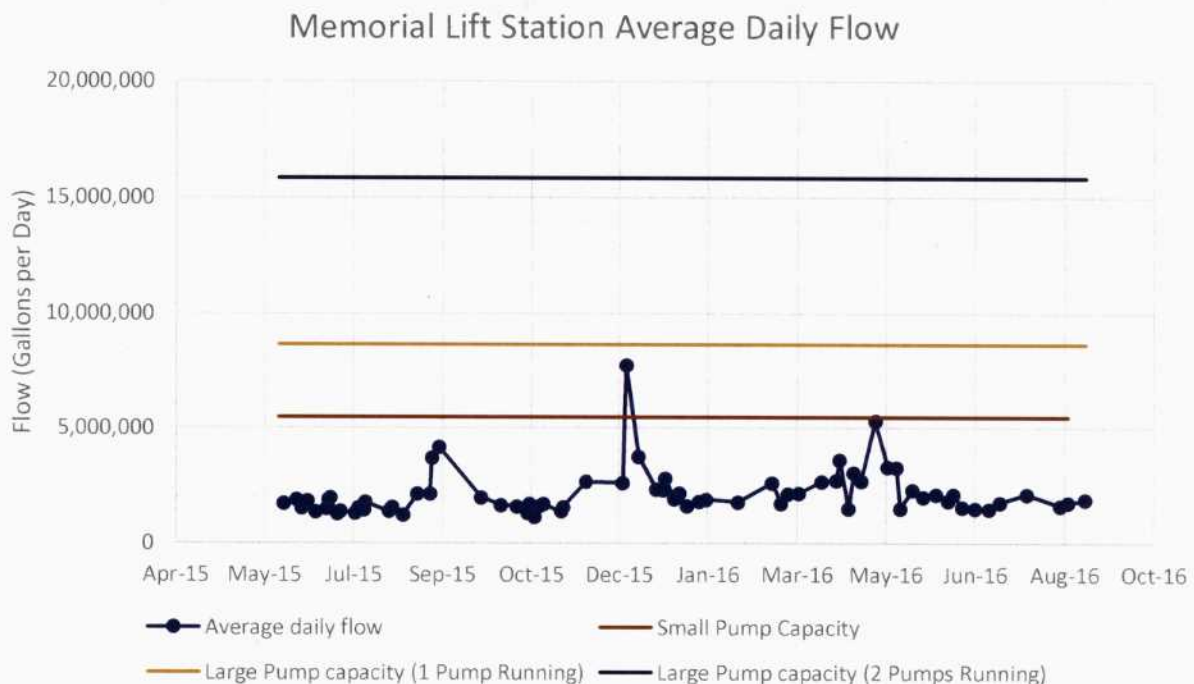


Figure 3: Recorded Flow May 2015-Aug 2016

Pumps

Memorial Lift station includes two 60 horsepower pumps (one duty, one standby) for average daily flows, and three 300 horsepower pumps (two duty, one standby) for peak flows during significant precipitation events. The Design Points of the pumps are listed in Table 2 below. A plug valve on the discharge piping of one of the smaller pumps (Pump #1) has failed in the closed position, rendering the pump inoperable. A variable frequency drive has been installed on the other small pump (Pump #2).

Table 2: Pump Design Points

Pump	Flow, GPM (MGD)	Head, ft.	Motor horsepower	Notes
Pump #1	3,750 (5.4)	42	60	Inoperable due to failed valve.
Pump #2	3,750 (5.4)	42	60	Operates on a VFD
Pump #3	5,500 (7.92)	140	300	Pumps 3, 4, and 5 operate as one or two pumps in service, with one pump on standby.
Pump #4	5,500 (7.92)	140	300	
Pump #5	5,500 (7.92)	140	300	

The seal on Pump #2 was recently replaced with a new mechanical seal as well. While not required, the manufacturer recommends that seal water be supplied to the new seal. The seals on the three larger pumps (Pumps #3, #4, and #5) have recently been replaced with new mechanical seals that do not require seal water. The seal water system is old and degraded. Additionally, the seal water pumps and suction tanks are located in the electrical room, creating a hazard to the electrical equipment.



Figure 4: Seal Water System

Solids Handling

When the Memorial Lift Station was originally constructed, it included a mechanical bar screen and aerated grit removal. The screening and grit removal equipment were removed in 2011 and replaced with an in-channel grinder to grind solids which would then be pumped to the new headworks facilities at the wastewater treatment plant and removed there. The grinder is in good condition.

The grit chamber is now isolated from the flow path by stop plates installed in the inlet channel; however, during high flow events water backs up over the grit chamber discharge weir and fills the chamber, resulting in stagnant wastewater which is a significant source of hydrogen sulfide and odors. The hydrogen sulfide gases produced by the stagnant wastewater contribute to corrosion and worker health and safety issues.

Odor Control

An activated carbon odor control system was installed at Memorial Lift station in 2007 to capture gases generated in the screening chamber. Shortly after installation, the carbon media was exhausted and replacement of the media was deemed cost prohibitive. In order to help reduce odors, Hydrogen peroxide is now fed into the sewer upstream of the lift station from a building located approximately 100 feet to the west of the current lift station facility.

Wet Well

A figure of the wet well layout is included in Appendix A. The wet well is separated into two zones, with the suction piping for the smaller pumps in one zone (The Average Flow Wet Well) and the suction piping for the larger pumps in the other zone (the Peak Flow Wet Well). The two zones are connected by a 4 ft wide by 2 ft tall overflow opening and a lower 36" circular opening with a sluice gate. Flow enters the average flow wet well through three 18" circular openings at the base of the wall between the influent channel and the wet well. As incoming flows increase above the capacity of the smaller pumps, the water elevation rises and overflows into the Peak flow wet well, where the large pumps are activated to handle peak flows. Once the large pumps stop, a sump pump should dewater the peak flow wet well. However, this sump pump does not appear to be functioning, leaving stagnant water in the peak flow wet well. Replacing the sump pump requires an operator to enter the wet well as there is no access to the sump pump from above the wet well.

While not shown on the original plans, a pipe has been installed from the influent channel to the peak flow wet well. Based on the elevation of this pipe, it is assumed that it serves to bypass flow directly to the peak flow wet well during high flow events when the 18" openings into the average flow wet well are unable to hydraulically pass the influent flows.

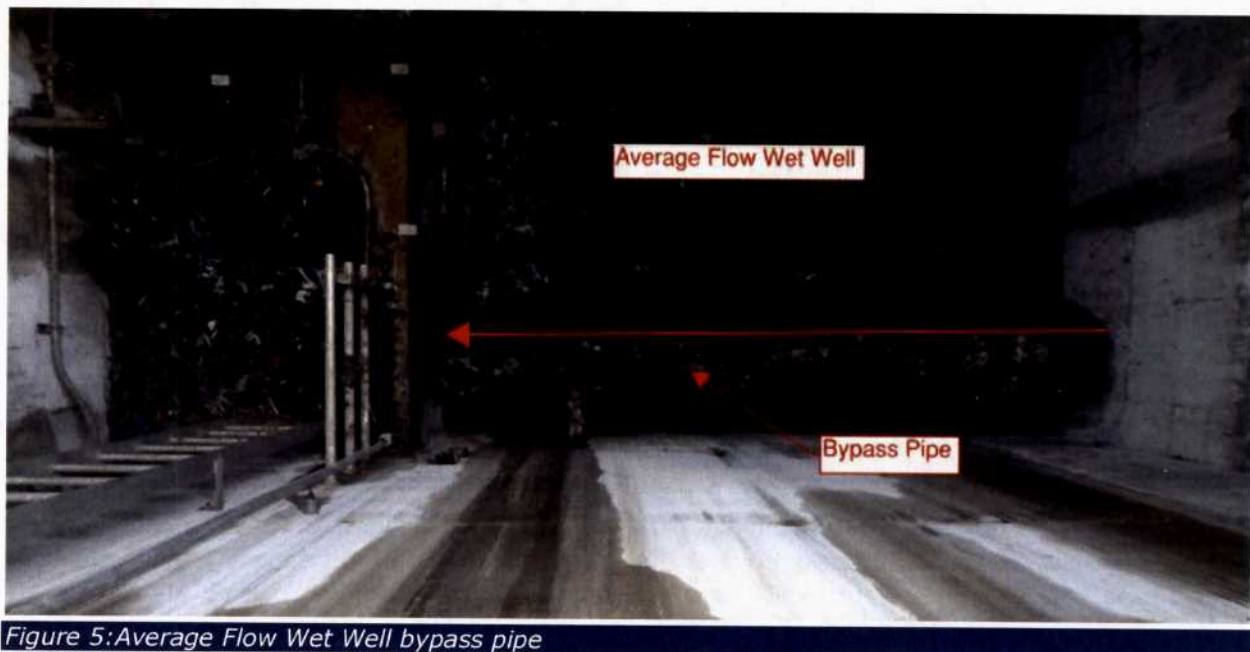


Figure 5: Average Flow Wet Well bypass pipe

Due to the large volume, solids are likely settling out in the wet well during low flow periods. This issue is exacerbated by limited accessibility for vacuum truck suction hoses to get into the wet well to remove solids and floating debris.

Suction/Discharge Piping

As shown in Figure 5 below, the existing piping in the drywell has some deterioration and corrosion. A non-destructive evaluation was performed on the piping in June 2019 to determine the condition of the pipe. The evaluation determined the pipe was still in good condition. A copy of the evaluation report dated June 4, 2019 is provided in Appendix B. The pipe supports are also rusting. The base plates of the pipe supports are frequently in contact with water on the floor of the pump room.

The plug valve on the discharge side of Pump #1 has failed in the closed position. A few of the check valves have broken lever arms as well. Replacing the pump isolation plug valves is currently not possible because there is no way to isolate the Lift Station piping from the rest of the downstream force main.



Figure 6: Pump Discharge Piping

A summary of the process deficiencies identified is provided below:

- Valve failure has made Pump #1 inoperable.
- The seal water supply system is old and degraded. Its location is a hazard to the electrical equipment.
- The grit chamber is unused and stagnant.
- The large wet well volume contributes to solids deposition.
- The sump pump in the wet well has failed and is difficult to access for maintenance.
- There is limited access for cleaning equipment into the wet well.
- The long residence time and solids deposition contribute to hydrogen sulfide gas production.
- The odor control media has been depleted and is no longer used.
- There is no way to isolate the average daily flow wet well for cleaning.
- The process piping and supports are corroded and need recoating.
- The suction and discharge valves are old and failing.
- There is no way to isolate the process piping for valve replacement.

STRUCTURE

The existing lift station consists of a below-grade cast in place concrete structure divided into several chambers. The top slab of the structure is at grade with several hatches for access and removal of equipment from the below-grade chambers. The above-grade structure consists of an older "corduroy brick" building with separate entrances to the stairwells into the electrical room and headworks room. A newer CMU building that houses the emergency generator and boiler is adjacent to the entrance building.

While the overall structure appears to be in serviceable condition, water infiltration has caused serious corrosion of metals and overall building degradation. Many surface coatings including paints, waterproofing, and insulation are visibly degraded and have exceeded their service lives. Due to such extensive water damage, it is recommended that all existing surface coatings should be removed and replacement coatings applied. The following sections discuss further recommendations for necessary repairs.

Exterior

The exterior fascia of the building is composed of corduroy brick that displays cracking and mortar deterioration. To prevent further damage, the cracks should be caulked. Additionally, tuck pointing is required at locations of mortar deterioration. An overhead door into the Generator room has significant corrosion and should be recoated or replaced.

A removable section of concrete slab is located in the roof of the headworks chamber for access to the grinder. Seepage around the slab has caused deterioration to the insulation on the interior ceiling of the lift station. Currently, a tarp has been placed over the slab in order to reduce seepage. Another access hatch is located on the East side of the lift station above the electrical room. A waterproofing membrane was previously installed on the slab surrounding the hatch. That membrane was damaged and currently sits in bundles on top of the slab, creating areas of water retention. Inside the electrical room, there are signs of water leakage through the existing access hatch.



Figure 7: Exterior Access Hatches

The main access into the wet well is through hinged fiberglass panels. The steel support beams for the fiberglass panels show signs of corrosion. Additionally, one of the access openings is located immediately outside the door to the generator room, a significant safety concern.



Figure 8: Wet Well Access Panels

Upper Level

Multiple areas of the building show signs of roof leakage, causing damage to insulation, harboring mold growth, and rusting the metal roof deck. The roof shingles have likely exceeded their service life and require replacement.

Minor cracks are visible in the interior CMU walls in the above-grade entrance to the headworks chamber. This cracking needs to be sealed.

Electrical Room

The ceiling insulation in the electrical room exhibits signs of moisture retention and molding. The existing insulation should be removed and replaced. The hatch above the electrical room is not sealed, causing leakage. The hatch should be replaced to prevent further water damage.



Figure 9: Electrical Room Ceiling

Pump Room

An overhead crane is located in the pump room for removal and reinstallation of equipment. The posted rating of the crane is two (2) tons, or 4,000 pounds. Equipment weights were not verified but the crane capacity is assumed to be adequate. The support beams for the crane show signs of spalling paint.



Figure 10: Existing Overhead Crane

The existing pipe penetration seals between the drywell and wetwell are significantly corroded. These seals are critical for keeping wastewater and sewer gasses from entering the drywell.



Figure 11: Drywell Pipe Penetration Seals

The concrete slab that composes the ceiling of the pump room contains cracking. These cracks may exacerbate moisture conditions and should be repaired. The floor slab in the pump room shows significant deterioration due to standing water.



Figure 12: Pump Room Ceiling Cracking and Floor Slab

Headworks Chamber

There is an existing elevator that was used to remove the screening dumpster when the mechanical bar screen was in service. The elevator has stopped functioning and without the screening system it has limited usefulness. Adjacent to the elevator is a metal spiral staircase. The tight curvature of the spiral staircase makes it difficult for materials to be carried into the headworks chamber. City Operators have indicated a preference for both the elevator and spiral staircase to be replaced with a straight staircase with an intermediate landing, similar to the stairway into the pump room.



Figure 13: Elevator and Spiral Staircase

The ceiling insulation in the Headworks Chamber exhibits signs of moisture retention and molding. The existing insulation should be removed and replaced.

The existing grating above the open channels does not cover the entire opening at several locations. This presents a safety hazard. All grating should be replaced with solid panels that cover the entirety of the openings. The solid panels will also help to direct gases to an HVAC/hood area.

The concrete channel walls are pitted and spalled, likely due to hydrogen sulfide gases. Continued erosion of the walls could affect the function of the channel. The walls need to be repaired.



Figure 14: Headworks Chamber Ceiling and Channel concrete spalling

A summary of the structural deficiencies Identified is provided below:

- There is minor exterior and interior cracking in the above-grade masonry buildings.
- The exterior hatches in the top slab leak.
- The access hatch into the wet well is located directly in front of generator room door.
- There are interior signs of roof leakage.
- There is significant moisture damage to the interior ceiling insulation.
- The pipe penetration seals between the wet well and dry well are significantly degraded.
- Interior paints and coating systems have degraded.
- The elevator is non-functional and the spiral stairway hinders maintenance access.
- Gaps in the headworks channel grating are a safety hazard.
- There is concrete spalling and deterioration in the headworks channel.

HVAC

The Drywell, headworks chamber, and generator room are all separately heated and ventilated. The drywell is ventilated by an exterior exhaust fan and heated by an electric furnace. The headworks chamber is ventilated by a large air handling unit that includes an activated carbon scrubber for odor control as previously discussed. The headworks chamber is heated by a gas-fired boiler supplemented with an electric unit heaters. The generator room is heated by an electric unit heater but has no active ventilation.

Exterior

The ductwork wrapping on all exterior ductwork is peeling off and in some locations barely attached to the duct. The dampers and actuators associated with the odor control system are rusted through and unusable. The make-up air unit is missing a handle on the shut off panel.

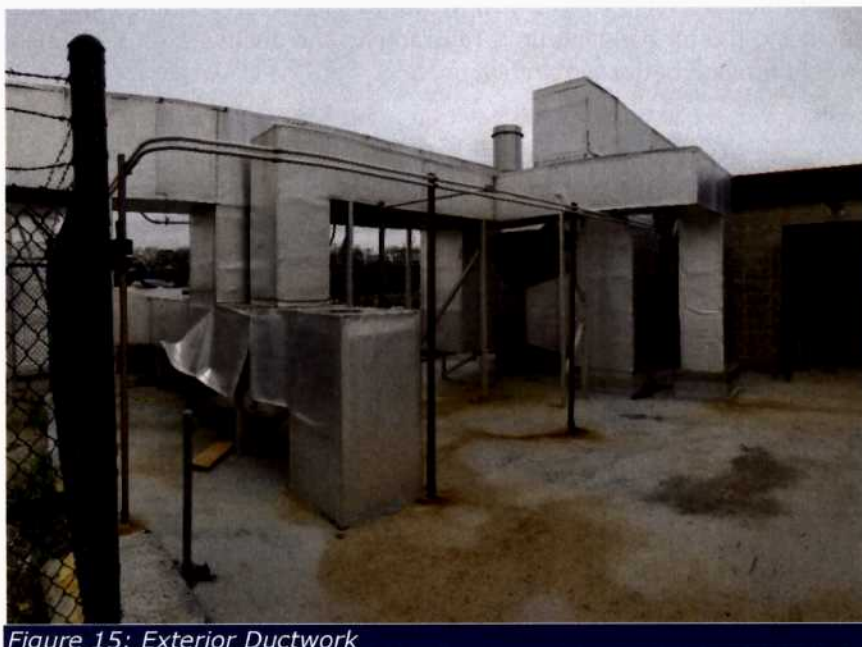


Figure 15: Exterior Ductwork

Emergency Generator Room

The electric heater hanging in the corner of the room is not working. City Staff have indicated that the electrical breaker for the heater trips very frequently. The condition of the heater itself seems to be OK. The seal around the generator exhaust pipe where it penetrates the building wall is visibly broken and should be resealed to prevent rainwater from leaking into the building. There is no active ventilation in the space, however the interior space does not appear to show any significant degradation. There is likely some passive air movement occurring through the large intake and exhaust louvers.

While the boiler appears to be in good working condition, the current location of the boiler in the generator room conflicts with NFPA 110, Standards for Emergency and Standby Power Systems. The code does not allow for other equipment that is not directly related to the generator function to be located in the generator room. To comply with code the boiler will need to be relocated or the space separated into 2 adjacent spaces. Functionally, the large amount of air required by the generator likely starves the gas-fired boiler of oxygen when the generator operates. This could lead to significant issues during a winter power outage.

There is an exhaust duct running through the room that is pulling air from the Electrical Room and Lower Pump Room. The duct will have to be separated from the generator room to comply with NFPA 820 requirements.

Electrical Room and Pump Room

There is currently no dehumidification in the space, and the walls are showing signs of damage from moisture. The exhaust fan that serves this space is currently non-functional. Additionally, there is no air intake louver, limiting the supply of fresh air to the space. Per NFPA 820, if the space is not ventilated with outside air, the space is classified as Class 1, Division 2, Group D, and the electrical equipment would require additional explosion protection. Providing a minimum of six (6) air changes per hour is required to declassify the space. Without the exhaust fan, the air-handling unit is only recirculating air, and the diffusers are mounted high and throwing air horizontally. In the lower pump room, the single exhaust grille is located high up, right below ceiling height. It may not be effectively exhausting the air from the bottom of the room. Replacing the air handling unit, rearranging the ductwork, and installing new downward facing diffusers would provide better air circulation.

Headworks Chamber

The headworks chamber is ventilated by the large air handling unit located outside the lift station. The exhaust duct and hood over are in poor condition. The supply duct appears to be in good condition but could be cleaned, both inside and outside. The explosion proof heaters appear to be out of order. There are no dehumidification measures in the space. Dehumidifiers could help reduce moisture damage to the interior surfaces and insulation.

Per NFPA 820, spaces like the headworks chamber with open wastewater channels are classified as Class 1, Division 1; unless ventilation is provided at 12 air changes per hour. If adequate ventilation is provided, the classification is reduced to Class 1, Division 2, and the requirements for explosion protection are reduced. Based on the documentation provided by the City on the existing air handling unit, adequate ventilation is being provided to reduce the classification in the headworks chamber.



Figure 16: Headworks Chamber Exhaust Hood and Duct

Wet Well

The wet well is actively ventilated by the exhaust fan of the air handling unit used for the headworks chamber. An intake hood is located in the top slab of the wet well and an exhaust duct passes through the wall into the headworks chamber. Based on the information provided by the City, the ventilation in this space does not appear to be adequate to reduce the classification. Therefore, the space is considered a Class 1, Division 1 space.

A summary of the HVAC deficiencies identified is provided below:

- The duct wrap on exterior ducts is degraded.
- The dampers and actuators on the exterior ductwork are rusted and non-functioning.
- The heater in the generator room is not functional due to an electrical issue.
- The seal on the generator exhaust pipe has cracked.
- The boiler located in the generator room violates NFPA 110.
- The exhaust vent passing through the generator room from the electrical room violates NFPA 820.
- There is no dehumidification to reduce moisture damage in several spaces.
- The exhaust fan for the electrical room and pump room has failed.
- There is no intake louver for the electrical room or pump room.
- The ductwork configuration in the pump room is inadequate for proper air circulation.
- The exhaust duct in the headworks chamber is in poor condition.

PLUMBING

Plumbing at Memorial Lift Station consists of a water service line that enters the electrical room from the north. The water line serves a toilet, sink, a small water heater, and the pump seal water system, all located in the electrical room. The water line also serves two hose bibs in the headworks chamber and the pump room, as well as the boiler for heating the headworks chamber.

Boiler Water System

The pumps that circulate water for the boiler show significant corrosion. They are operating at constant circulation volume without a VFD. The connected water pipes are leaking. The air separator does not appear to have a blowdown.

The boiler drain is crowded and needs to be relocated outside of the generator room. The drain pipe passes through the floor slab into the electrical room below and is routed above electrical equipment, creating a potential hazard.



Figure 17: Boiler Circulation Pumps and Drain

Restroom Facilities

There are cold water lines running above the MCC to the restroom facilities, creating a significant potential hazard to the electrical equipment. The toilet, sink, and water heater are in poor shape and could be replaced or removed. The sanitary pipes from the toilet and sink are routed along the ceiling of the pump room below and through the wall into the wet well. The sewer pipes and check valves are in poor condition. City staff have indicated that the restroom facilities are rarely used.

Floor Drains and Sump Pump

The sump pump and associated piping located in the pump room are in poor condition. There is significant standing water in the pump room and the floor drain piping is likely obstructed.

A summary of the plumbing deficiencies identified is provided below:

- The boiler pumps are in poor condition.
- The boiler system should not be located in the same room as the generator.
- The duct from the electrical room should not be routed through the generator room.
- The water piping to restroom is routed above electrical equipment.
- The floor drains and sump pump in the lower pump room are in poor condition.

ELECTRICAL

General

There are several electrical conduits and associated supports throughout the lift station that are severely corroded. Many of these conduits are unused and should be removed. There are several penetrations through the structure for unused conduits that should be sealed after the conduit is removed to prevent leakage. The conduits that are to remain in service should be replaced or recoated, and stainless steel supports provided.

Electrical Service

The building is served by a 3 phase, 480/277 volt 4-wire electrical service. The utility transformer is located outside the building on the north east corner. Unfused service conductors are installed underground from the utility transformer and extend overhead in the electrical room before entering the service disconnect located in the center of the electrical room. The service conductors should be fused to meet current electrical code. The main breaker installed is rated for 1,200 amps. Based on actual energy usage from MidAmerican Energy the service has experienced up to 83% utilization. The service is at or near maximum capacity. Peak demand records were obtained MidAmerican from May of 2014 through April of 2019. Average demand was 156 KW, and the highest recorded usage was 618 KW in June of 2017.

Backup Generator

The facility's electrical service is backed up by a stationary diesel generator. The generator is installed inside the building in the generator room. A 480-volt panelboard serving the equipment in the generator room is located in the adjacent stairway/entrance into the electrical room. The panelboard appears to be in good condition. The generator is rated for 750 KW, has a 1200 amp breaker, and is manufactured by Cummins. The generator's rated capacity appears to be adequate for the highest recorded energy use from the Utility Power. The generator appears to be in good condition, and according to staff is in working order.

Electrical Motor Control Center/Gear

The main service enters a 1200 amp Westinghouse breaker in a motor control center (MCC) in the electrical room. Capacitors are installed above the MCC for power factor correction. There is an MCC mounted transfer switch which appears to be out of service. An ASCO brand transfer switch has been installed outside the MCC and is now in service. There is an existing 1200 amp main breaker installed in the MCC for the generator. The generator breaker is likely not required, and may or may not be in

service. An Allen Bradley 2100 series MCC is installed for motor control and 120/208 volt power distribution.

Considerable corrosion was noted on the MCC and related electrical equipment. None of the MCC sections are installed on housekeeping pads, and corrosion is present at the base of several MCC sections. Foul odor was observed in the electrical room due to the lack of outside air ventilation. City staff indicated a variable speed drive had previously been installed in the MCC to serve pump #5, but had since failed. The VFD was subsequently replaced with a soft starter.

The electrical room has likely been exposed to corrosive gases such as hydrogen sulfide. Corrosive gas exposure is likely responsible for the premature VFD failure and corrosion of soft metals in the MCC. Copper and aluminum are soft metals commonly used as conductors and used within circuit boards. Exposure to corrosive gasses has likely shortened the life of electrical components in the electrical room. Additionally, water lines, water tanks, and water pumps are located in the electrical room, creating a significant potential risk to the electrical equipment.



Figure 18: Existing Motor Control Center

Lighting

The dry well area utilizes florescent lighting. Several of the lights are out of service.

The original lighting in the Headworks chamber utilized high pressure sodium lights, and appear to be explosion proof. Two of the lights are not functioning. Two other lights in the Headworks chamber have been upgraded, and appear to be LED.

Florescent lighting is used in the generator room. One of three florescent lighting fixtures is not functioning.

No emergency lighting fixtures were observed in any areas. Emergency lighting with battery backup is essential for lighting egress paths in the event of a power failure.

There is only one exterior light fixture observed on the south side of the building. The fixture appears to be in poor condition and it is unknown if the fixture operational. Overall, the site and building exterior is not well lit. Additional exterior lighting could benefit both security and maintenance at the lift station.



Figure 19: Headworks Chamber Original Lighting (left) and new LED lighting (right)

Electrical Equipment/Fixtures

An electric hoist is located in the pump room for equipment removal. The hoist is powered by a 480 volt open bus bar running across the ceiling. The open bus bar is very close to the stair handrail, and can be reached from the stairwell. This is a significant electric shock hazard and a barrier should be installed to prevent accidental contact with the bus bar. The bus bar disconnect is also in poor condition.

The sump pump disconnect, control panel, and floats in the lower pump room are in poor condition.



Figure 20: Electric Hoist Bus Bar near stair handrail

Explosion Protection

Headworks Chamber

The headworks chamber is a Class 1, Division 2 rated space. Two significant deficiencies were noted that do not meet electrical code requirements for explosion protection in the space. The conduit to the Parshall Flume level sensor is not explosion proof, and is not properly supported. Additionally, a main junction box is located on the East wall of the headworks chamber. The junction box is an explosion hazard and should be removed. The conduits and circuits currently utilizing the junction box should be removed and re-installed directly to sources.

Wet Well

The Wet Well is a Class 1, Division 1 rated space. A PVC conduit is installed through the top of the wet well and runs back to the pump station control panel. The conduit is required to be explosion proof since it penetrates the wet well which is a hazardous space. There are also various unused conduits and conductors visible inside the wet well, penetrating the wet well top slab, and penetrating the north wall of the wet well into the electrical and pump rooms. Unused conduits should be removed, penetrations properly sealed, and conduits that are to remain must be explosion proof.

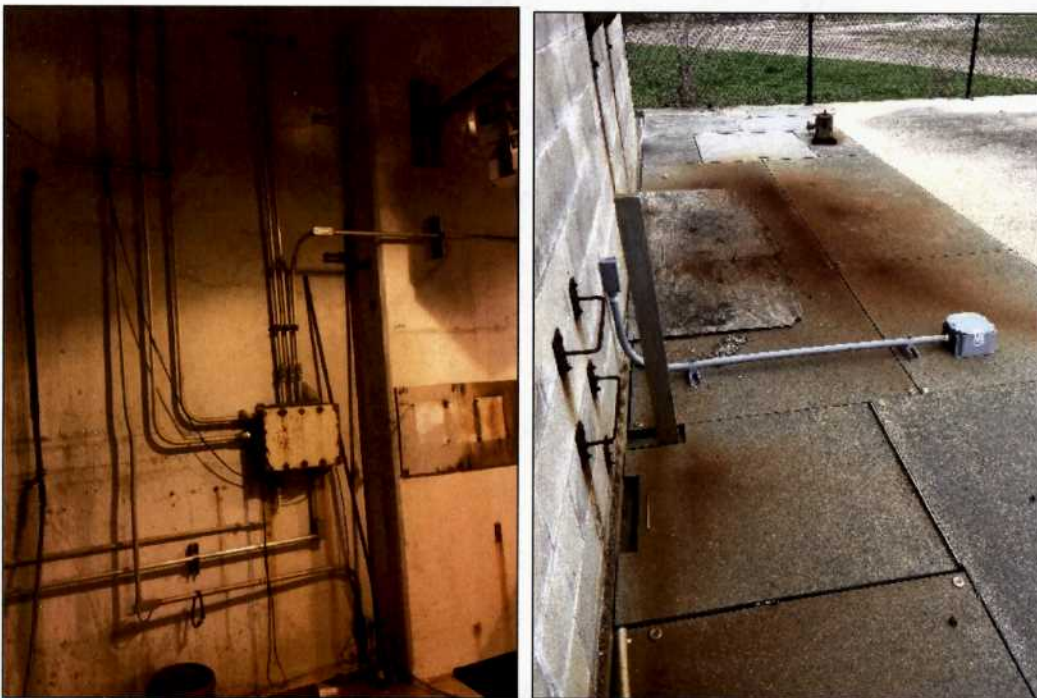


Figure 21: Main junction box in Headworks Chamber and Conduit Penetration into Wet Well

A summary of the electrical deficiencies identified is provided below:

- Several conduits and associated supports throughout the lift station are corroded and in need of replacement or recoating
- Many unused or failed electrical components remain and should be removed
- The service conductors are not protected by fuses
- The existing motor control center show signs of significant corrosion due to moisture and corrosive gas exposure.
- Several light fixtures are out of service
- There is limited exterior lighting.
- Electric shock hazard from the open bus bar powering the electric hoist.
- The sump pump disconnect is in poor condition.
- Several conduits in classified spaces are not explosion proof.

CONTROLS

Life Safety and Environmental Monitoring

Currently, there is very limited environmental monitoring at the Lift Station. It appears that a Fire Alarm System was installed in portions of the existing building, but is no longer in operation. There is currently no ventilation monitoring in the headworks chamber or drywell. Ventilation monitoring is critical in order to alert operators if a failure has occurred in the ventilation system that could create hazardous work conditions or allow the buildup of explosive gases. Additionally there are no permanent gas monitors installed in these spaces. Operators must currently enter the space and lower a gas monitor into the lower areas on a rope to test the air quality. Permanently installed gas monitoring can alert operators of hazardous conditions prior to them entering the space.

Supervisory Control And Data Acquisition

The existing pump control panel PLC is monitored by the water reclamation facilities Supervisory Control And Data Acquisition (SCADA) system over Ethernet. The city owns and maintains a fiber backbone that provides a connection between the lift station and the water reclamation facility. The fiber enters the electrical room and is converted to Category 5 Ethernet cable to make connection to the control system.

While the fiber connection has been installed to the lift station, there is limited data monitoring and control available from outside the lift station and few external alarms are generated to alert operators of critical conditions in the lift station. This is especially important since the facility is not staffed 24x7.

Pump Control System

The main control panel for controlling and monitoring the pump station is located in the electrical room. An Allen Bradley SLC500 Programmable Logic Controller (PLC) system is installed. SLC500 systems are nearing end of life status from the manufacturer. Some components within this family have been discontinued. Therefore, future maintenance of the control system will be difficult. Additionally, there does not appear to be any documentation of the control system at the lift station, making it very difficult to troubleshoot any problems.

A drain line is installed through the floor above the control panel, and water has infiltrated the control panel in the past causing damage. Overall the main control panel, components, and wiring are in poor condition and have reached end of life.



Figure 22: Pump Control System Panel

Grinder Controls

The grinder control panel is located in the electrical room. The system appears to be in good working order. There are signs that the operator interface was replaced with a smaller sized screen. There is currently no alarm to the SCADA system for grinder failure. A level sensor has been installed upstream of the grinder to alarm operators after debris buildup on the stopped grinder has caused the upstream water level to rise.

Instrumentation

Flow Measurement

Flow entering the lift station is measured by a parshall flume in the headworks chamber. The parshall flume level sensor is in poor condition. There is no data logging function in the flow totalizer, so flows can only be read by an operator at the lift station.

Level Measurement

A MultiTrobe level controller is utilized for monitoring the water level in the wet well, and is panel mounted in the control panel. This device has been discontinued by the manufacturer. The backup floats are not readily accessible in the wet well and should be replaced in a new location that is accessible without entering the wet well.

A summary of the controls deficiencies identified is provided below:

- There is no ventilation monitoring or hazardous gas monitoring in any of the spaces.
- There is only limited external monitoring and control through the SCADA system.
- The control panel is in poor condition and components have been discontinued by the manufacturer.
- There is no alarm for grinder failure.
- The flow measurement system has limited functionality
- The wet well level sensors have been discontinued and are difficult to access safely.

Improvement Options

Several improvement alternatives are proposed in order to address the deficiencies noted above. Improvements were categorized into three priority levels based on the following descriptions:

High Priority: Improvements are considered necessary for continued, reliable operation of Memorial Lift Station, code requirements, and addressing health & safety concerns.

Medium Priority: Improvements may not be necessary, but may improve performance, reliability, or efficiency of Memorial Lift Station

Low Priority: Improvements with limited benefit or low benefit to cost ratio.

SITE IMPROVEMENTS

Filling in the animal burrows around the lift station is considered a high priority due to the presence of animal burrows under the transformer pad. Animals may damage the service conductors and interrupt power to the lift station.

Removing the vegetation around the lift station and extending the downspouts are minor tasks that could be completed by City staff or incorporated into the overall improvements project and performed by a contractor.

A summary of the Proposed Site Improvements, including priority and estimated cost is provided in Table 3 below:

Table 3: Proposed Site Improvements

Description	Site Improvements		
	Priority	Recommended?	Estimated Cost
Fill in Animal Burrows	High	Yes	\$800
Remove vegetation around structure	Medium	Yes	\$500
Extend downspouts away from building	Medium	Yes	\$500
Total Recommended Improvements			\$1,800

PROCESS IMPROVEMENTS

Isolation Valve and Bypass Pumping Connection

Priority: High

Cost: \$150,000

In order to service the existing valves and wet well, an isolation valve on the common force main discharge and bypass pumping will be required. With the short lay length between the discharge tee of Pump #5 and the wall of the drywell, the valve and bypass connection will need to be located outside the lift station in a new valve vault. Two hot taps would be installed on the 24-inch force main. One tap will be used to insert an inflatable line stop and the other would be used as a discharge connection for bypass pumps. This would allow a new 24-inch plug valve to be cut into the force main for future isolation for bypass pumping. A new concrete valve vault structure would be built around the force main for future access. The estimated cost of installing the 24-inch isolation valve and bypass pumping for six weeks for construction of other improvements is approximately \$150,000.

For bypass pumping, it is anticipated that the work would be performed during a dry weather period (late fall or winter) and the flowrates would be at or below the capacity of the smaller pumps. Due to the very high peak flows that can occur at Memorial Lift Station during heavy precipitation events, attempting to perform this work in the spring or early summer is not recommended.

Pump Improvements

Several alternatives were evaluated for pump improvements. Because of the limited flow data available, the alternatives maintain the existing lift station capacity.

The use of new submersible pumps to replace the existing dry-pit pumps was also evaluated. However, submersible pumps were determined to be infeasible due to the configuration and layout of the existing wet well. The submersible pumps would need to be installed in the same location as the existing pump suction piping. This would place the access hatches for pump removal directly in front of the doors into the lift station. This location would also be very difficult to access with a lift to remove the pumps and place on a truck for service.

Submersible pumps installed in the existing grit chamber were also evaluated. However, this would leave the average flow wet well stagnant, resulting in the same issues with solids deposition and production of hazardous and corrosive gases. Therefore, maintaining the existing dry-pit pump configuration was deemed to be the simplest, most cost effective alternative for Memorial Lift Station.

Several alternatives were evaluated for the dry-pit configuration as described below. For the Smaller pumps, Alternative 1C, Replace both pumps #1 and #2 is the recommended alternative. Alternative 2, Replace Pumps #3, #4, and #5, is not recommended.

1A: Refurbish Pump #1

Priority: High

Cost: \$45,000

Pump #1 has not been operated in a significant time period and the condition is unknown. However, the pump could be refurbished with new bearings, seals, and impeller. The scope of refurbishment would be similar to the work that was recently done on Pump #2. The estimated cost for pump refurbishment is \$45,000. With this alternative, the seal water service would still be recommended. Additionally, the original pump motor would be used. A new VFD would be provided for the older motor with the MCC improvements. Because of the age, unknown condition, and criticality of Pump #1, this alternative is

not recommended. Even after refurbishment, the remaining life of pump #1 is likely limited. Additionally, the older pump is less efficient than a newer pump would be.

1B: Replace Pump #1

Priority: High

Cost: \$90,000

Given the age and cost of refurbishing Pump #1, full replacement of the pump may be more desirable. The replacement pump would be sized for the same design conditions as the existing pump to provide redundancy to pump #2. A new pump would run more efficiently, would not require seal water, and would include a VFD rated motor. Additionally, a dry-pit submersible pump would be less susceptible to degradation from moisture in the wet well. The estimated cost of replacing Pump #1 is \$90,000.

1C: Replace both Pumps #1 & #2

Priority: High

Cost: \$180,000

With pump #1 out of service, pump #2 has run almost continuously for several years. While Pump #2 was recently refurbished, it may be desirable to replace pump #2 as well. The remaining life of pumps #1 and #2 is likely limited due to their age and condition. Replacing both pumps #1 and #2 would provide the most robust upgrade for handling the average daily flow rates that the lift station experiences the vast majority of the time. Additionally, replacing both pumps would allow for the seal water system to be completely eliminated. The Estimated cost of replacing both pumps #1 and #2 is \$180,000. This option is the recommended alternative for the small pumps as it will provide the greatest reliability for the Lift Station.

2: Replace Pumps #3, #4, and #5

Priority: Low

Cost: \$630,000

Given the age of the existing large pumps, full replacement may be desirable. New pumps would be more efficient and could have slightly smaller motors than the existing pumps. (280 HP vs 300 HP) The estimated cost for replacing the three large pumps is \$630,000. Given the very low run time of the large pumps, the higher efficiency would not result in a significant energy savings. Additionally, the existing pumps were recently refurbished and noted to be in good condition for their age, likely due to the very low run time. Therefore, due to the high cost and limited benefit, replacement of pumps #3, #4, and #5 is not recommended.

Other Process-Related Improvements were evaluated as described below.

Replace peak flow wet well sump pump

Priority: Medium

Cost: \$10,000

The sump pump in the existing peak flow wet well is inoperable and is in need of replacement. The sump pump functions to dewater the peak flow wet well after high flow events and reduce the stagnant water in the wet well. Additionally, the sump pump cannot be accessed until the wet well can be isolated and dewatered, and all of the solids buildup and debris can be removed. Replacement of the sump pump can be accomplished once the cleaning is completed. New pump rails and chain could also be provided to allow the pump to be retrieved without entering the wet well. The estimated cost of replacing the sump pump, including new pump rails, is \$10,000.

Install Wet Well Isolation Gates*Priority: Medium**Cost: \$51,000*

Currently there is no way to isolate the AWW wet well for cleaning operations as solids deposition in the wet well contributes to odors and hydrogen sulfide gas formation. Flow enters the wet well from the influent channel through the three 18-inch diameter openings in the wet well west wall. The addition of three (3) sluice gates to these openings will provide the necessary isolation of the wet well from the incoming flows. These sluice gates will be equipped with a stem and riser operated by a gear driven hand wheel mounted on top of the wet well. The estimated cost for the Sluice Gates is approximately \$51,000.

Replace Pump Header Valves*Priority: High**Cost: \$231,000*

The failed 14-inch plug valve on Pump #1 must be replaced in order for Pump #1 to be used. It is also recommended that the other suction and discharge valves be replaced to prevent pump isolation due to valve failure in the future. In total, this includes replacement of four (4) 14-inch Plug valves, two (2) 14-inch check valves, six (6) 16-inch plug valves, three (3) 16-inch check valves, and one (1) 6-inch surge relief valve. The estimated cost for replacing these valves is \$231,000.

Recoat Discharge Header Piping*Priority: High**Cost: \$20,000*

While the evaluation of the discharge piping indicated that it was still in good condition, recoating is still necessary to prevent additional surface degradation of the piping. Sandblasting and recoating the piping with an epoxy coating system will ensure it remains in good condition for years to come. The estimated cost for recoating the piping is approximately \$20,000.

Install Hatches for Better Vector Truck Access into Wet Well*Priority: Medium**Cost: \$15,000*

Currently, access to both wet wells is through steel covers in each wet well lid. These doors are located in front of the main lift station building access doors. The distance from the gate at the perimeter of the lift station to the cover makes it difficult for vector truck equipment to reach the interior of the wet well for cleaning. Installing new access hatches near the fence would make it easier for cleaning equipment to reach into the wet well. The estimated cost for the new hatches is \$15,000.

Inspect 24-inch Forcemain to WWTP*Priority: Low**Cost: \$380,000*

While the piping in the drywell is in good condition, there is approximately 2.5 miles of ductile iron force main from the lift station to the WWTP. Pure Technologies can provide several evaluation tools to determine the condition of the existing force main. A description of these evaluation tools is provided in Appendix C. The internal inspection probes evaluate the pipe from the inside as it is pushed along with the flow, keeping the system in service during the inspection. The estimated cost of this evaluation is approximately \$380,000. Given the good condition of the piping that was inspected and the high cost of the additional inspection, this alternative is considered a low priority.

Relocate Hydrogen Peroxide Feed Equipment

Priority: Low

Cost: \$ 40,000

Relocating the existing hydrogen peroxide solution storage and feed system equipment to the existing lift station facility would provide easier access to the equipment from the lift station as well as added security for the equipment. The equipment would be located where the existing activated carbon filter is currently located and a new steel building would be required to house the equipment. One benefit of relocating the equipment to the lift station is that the chemical feed rate could be automatically adjusted based on the measured incoming flow rate.

However, other proposed improvements will significantly reduce the stagnant water at the lift station and could significantly reduce or eliminate the need for the hydrogen peroxide feed system. Feeding the hydrogen peroxide directly at the lift station would also eliminate the reaction time that is currently provided in the sewer between the existing feed point and the lift station. Therefore, this alternative is considered low priority. It is recommended that the chemical feed rate be evaluated after the improvements are completed to determine if chemical addition is still required or can be reduced.

A summary of the Process Improvements, including priority and estimated cost is provided in Table 4 below:

Table 4: Proposed Process improvements

Process Improvements			
Description	Priority	Recommended?	Estimated Cost
Force Main Isolation Valve and Bypass Pumping	High	Yes	\$150,000
1A: Refurbish Pump #1	High	No	\$45,000
1B: Replace Pump #1	High	No	\$90,000
1C: Replace Pumps #1 & 2	High	Yes	\$180,000
2: Replace Pumps #3-5	Low	No	\$630,000
Replace Peak Flow Wet Well Sump Pump	Medium	Yes	\$10,000
Relocate Peroxide Feed Equipment	Low	No	\$40,000
Replace Valves	High	Yes	\$231,000
Blast & Recoat Piping	High	Yes	\$20,000
Wet well Isolation Sluice Gates	Medium	Yes	\$51,000
New Hatches for Vactor Truck Access	Medium	Yes	\$15,000
Force Main Evaluation	Low	No	\$380,000
Total Recommended Improvements			\$657,000

STRUCTURAL IMPROVEMENTS

Replace Exterior Hatches

Priority: High

Cost: \$30,000

Replacing the hatches above the headworks chamber and electrical room will help prevent water from leaking into the building and causing further damage.

Rehabilitate Above Grade Structure

Priority: High

Cost: \$25,000

Rehabilitation of the above-grade structure include roof replacement, replacement of damaged ceiling insulation and metal decking, as well as mortar repair and crack sealing in the masonry walls. This will ensure the structure remains weather tight.

Replace Pipe Penetration Seals

Priority: High

Cost: \$10,000

The seals on the pipe penetrations into the wet well should be replaced while the lift station is being bypassed during construction. The piping may need to be temporarily supported while the seals are removed.

Repair Pump Room Ceiling Cracking

Priority: Medium

Cost \$5,000

While the cracking is not a structural concern, it should be patched and sealed to prevent potential degradation of the reinforcing steel.

Demolish Elevator and Spiral Staircase and Build New Stairway.

Priority: Medium

Cost: \$20,000

Removing the non-functional elevator and the spiral staircase will create space for a new stairway to be installed and improve access. The new stairway is anticipated to be aluminum or FRP to reduce future corrosion.

Fill in Grit Chambers

Priority: High

Cost: \$50,000

The Stagnant Grit Chamber will be filled in with sand and capped with a concrete slab. The stop plates that currently isolate the grit chamber will be replaced with new concrete walls. The Concrete wall for the effluent weir will be raised to completely eliminate the grit chamber. The smaller chambers for the grit equipment will also be filled in and capped to remove fall hazards.

Patch Spalled Concrete in Headworks Channel

Priority: High

Cost: 10,000

With the lift station taken out of service and bypassed during construction, the concrete channel should be repaired with cementitious or epoxy grout to prevent additional spalling and degradation.

Replace Grating with Solid Panels

Priority: Medium

Cost \$5,000

Replacing the open grating with solid panels that completely cover the headworks channel will eliminate trip hazards and help manage odors and humidity in the headworks chamber. FRP panels will provide corrosion resistance.

Replace ceiling Insulation

Priority: High

Cost: \$40,000

The molding insulation in the headworks chamber and electrical room should be completely removed and replaced with a new closed-cell insulation. While the insulation is removed, the underside of the concrete slab should be inspected for cracking or other degradation. Additional sealing may be necessary to prevent moisture from penetrating the slab and causing future water damage.

Recoat Interior Surfaces

Priority: High

Cost: \$60,000

The interior surface coatings should be removed and replaced to protect the structure and ensure it remains in good condition.

A summary of the Structural Improvements, including priority and estimated cost is provided in Table 5 below:

Table 5: Proposed Structural Improvements

Structural Improvements			
Description	Priority	Recommended?	Estimated Cost
Replace Exterior Hatches	High	Yes	\$30,000
Rehab above-grade masonry structure	Medium	Yes	\$25,000
Replace Pipe Penetration Seals between wet well and dry well	High	Yes	\$10,000
Repair Ceiling Cracking in Pump room	Medium	Yes	\$10,000
Demo elevator and spiral staircase and install new staircase	Medium	Yes	\$20,000
Fill in Grit Chamber	High	Yes	\$50,000
Patch spalled concrete in Headworks Channel	High	Yes	\$10,000
Replace Grating in Headworks Chamber	Medium	Yes	\$5,000
Remove and replace Ceiling Insulation	High	Yes	\$40,000
Recoat interior walls, floors, and ceilings	High	Yes	\$60,000
Total Recommended Improvements			\$260,000

HVAC IMPROVEMENTS

Replace Wrap on Exterior Ducts

Priority: High

Cost: \$14,000

The duct wrap is important both for protecting the ductwork from corrosion and also for maintaining heat for the heat exchanger. Replacing the wrap on the portions of ductwork to remain is highly recommended.

Demolish Odor Control Scrubber and Associated Ductwork.

Priority: High

Cost: \$10,000

The Odor control system is unused and it is recommended that it be removed. The associated ductwork and bypass dampers that are currently non-functional should also be removed. With the modifications to the ductwork, the air handling unit and heat exchanger should be rebalanced to ensure proper performance.

Repair/Replace Electric Unit Heater in Generator Room

Priority: High

Cost: \$1,000

As the only source of heat in the generator room, the electric unit heater should be repaired or replaced.

Separate Boiler from Generator Room

Priority: High

Cost: \$20,000

In order to comply with NFPA 110, the Boiler system cannot be located in the generator room. It may be feasible to separate the generator room into two spaces to comply with code requirements. Alternatively, a small enclosure could be constructed outside to house the boiler system.

Replace Drywell Exhaust Fan

Priority: High

Cost: \$11,000

A new exhaust fan is required to keep the electrical room declassified and meet NFPA requirements.

Reroute Drywell Ductwork

Priority: High

Cost: \$68,000

The ductwork in the drywell needs to be rerouted to provide adequate circulation in both the pump room and electrical room. Additionally, the ductwork need to be rerouted so as not to pass through the generator room. The new ductwork will exit through the north wall of the lift station and the existing wall penetrations closed with new CMU.

Add Dehumidifiers to Drywell

Priority: High

Cost: \$10,000

Adding commercial grade dehumidification units to both the pump room and electrical room are recommended to help reduce future moisture damage inside the lift station.

Add Intake Louver to Drywell

Priority: High

Cost: \$7,000

An Intake Louver should be provided in the drywell space to ensure adequate fresh air is being supplied.

Replace Exhaust hood and Duct in Headworks Chamber

Priority: High

Cost: \$ 27,000

Clean Supply Duct in Headworks Chamber

Priority: Medium

Cost: \$4,000

Add Dehumidifier to Headworks Chamber

Priority: Medium

Cost \$5,000

If solid covers are provided over the headworks channel, a commercial grade dehumidifier could be adequate for reducing moisture in the headworks chamber. If the channel is left uncovered with open grating, there will likely be too much moisture for the dehumidifier to provide a benefit.

A summary of the HVAC Improvements, including priority and estimated cost is provided in Table 6 below:

Table 6: Proposed HVAC Improvements

HVAC Improvements			
Description	Priority	Recommended?	Estimated Cost
Replace Wrap on Exterior Ducts	High	Yes	\$14,000
Demo Odor Control Scrubber and Associated Ductwork	High	Yes	\$10,000
Repair Electric Unit Heater in Generator Room	High	Yes	\$1,000
Separate boiler from Generator room	High	Yes	\$20,000
Replace Drywell Exhaust Fan	High	Yes	\$11,000
Reroute Drywell Ductwork	High	Yes	\$68,000
Add Dehumidifiers to Drywell	High	Yes	\$10,000
Add Intake louver to Drywell	High	Yes	\$7,000
Replace Exhaust hood and Ductwork in Headworks Chamber	High	Yes	\$27,000
Clean supply Duct in Headworks Chamber	Medium	Yes	\$4,000
Add Dehumidifier to Headworks Chamber	Medium	Yes	\$5,000
Total Recommended Improvements			\$177,000

PLUMBING IMPROVEMENTS

Replace boiler circulation pumps and appurtenances

Priority: High

Cost: \$37,000

Regardless of the final location of the boiler system, the circulation pumps should be replaced due to their condition. New pumps with variable frequency drives will allow the boiler system to operate more efficiently and ensure reliable heating is provided to the headworks chamber.

Relocate Water Piping outside of Electrical Room

Priority: High

Cost \$11,000

The water line entering the lift station in the electrical room should be rerouted away from the electrical equipment. The piping could be relocated over the stairwell and routed directly to the pump room. If water is still necessary for the bathroom facilities, the water piping could be routed along the ceiling of the pump room and up through the floor penetration where the piping currently passes down from the electrical room into the pump room.

Replace Bathroom Fixtures

Priority: Low

Cost: \$7,000

If the bathroom facilities are to remain, the fixtures could be replaced with newer fixtures. Additionally, a curb could be installed around the bathroom area to contain water and prevent it from reaching electrical components.

Demolish Bathroom Fixtures

Priority: High

Cost: \$1,000

It is recommended that the bathroom fixtures be demolished to eliminate the water source in the electrical room.

Replace Pump room Sump Pump

Priority: High

Cost: \$11,000

Due to the poor condition of the existing sump pump, complete replacement is recommended to reduce standing water in the pump room.

Rehabilitate Pump Room Floor Drains

Priority: High

Cost: \$14,000

The floor drains in the pump room should be jetted to remove blockages and ensure there is not standing water in the room. The drain covers should be replaced as well.

A summary of the Plumbing Improvements, including priority and estimated cost is provided in Table 7 below:

Table 7: Proposed Plumbing Improvements

Plumbing Improvements			
Description	Priority	Recommended?	Estimated Cost
Replace boiler Circulation Pumps and Appurtenances	High	Yes	\$37,000
Relocate Water piping outside of electrical room	High	Yes	\$11,000
Replace Bathroom Fixtures	Low	No	\$7,000
Demolish Bathroom Fixtures	High	Yes	\$1,000
Replace Pump Room Sump Pump	High	Yes	\$11,000
Rehabilitate Pump Room floor Drains	High	Yes	\$14,000
Total Recommended Improvements			\$74,000

ELECTRICAL IMPROVEMENTS

Demolish unused conduits and electrical equipment

Priority: Medium

Cost: \$8,000

The unused conduits and electrical equipment should be removed for ease of construction and maintenance activities. Sealing the penetrations from unused conduits will help decrease water seepage and corrosive gases entering the electrical room from the headworks chamber and wet well.

Replace Electrical MCC/Gear

Priority: High

Cost: \$275,000

Due to the age and condition of the existing MCC, full replacement is recommended. This alternative includes VFD's for Pumps #1 and #2 and two-speed starters for Pumps #3, #4, and #5. A new housekeeping pad should be constructed prior to installation of the new MCC to protect them from any moisture present on the floors.

If the MCC is to be replaced, several ancillary improvements must also be made to bring the electrical service up to current code requirements. These improvements include replacing the electrical service entrance, replacing the main switchgear, and installing surge protection on the incoming power lines.

Lighting

Replace the explosion proof high pressure sodium light fixtures in the headworks chamber with LED type.

Priority: Medium

Cost: \$22,000

Replace existing interior and exterior light fixtures with LED type.

Priority: Medium

Cost: \$6,000

Install additional exterior LED light fixtures around the building for security and maintenance activities.

Priority: Medium

Cost: \$3,000

Install emergency lighting fixtures illuminating paths of egress inside and outside the building.

Priority: High

Cost: \$12,000

Install light pole on north side of building for additional security.

Priority: Medium

Cost: \$5,000

Guard Hoist Electrical Bus Bar

Priority: High

Cost: \$500

Adding an aluminum or non-metallic panel to shield the hoist electrical bus bar from accidental contact from the stairwell is an inexpensive but critical safety improvement.

Replace disconnects and conductors in Pump Room

Priority: High

Cost: \$15,000

Due to the age and condition of the disconnects located in the pump room, complete replacement is recommended. Existing disconnects to be replaced serve the hoist, sump pump. New disconnects should be installed for all five pumps as well. The copper wiring between the MCC and the electrical components is likely deteriorated as well and should be replaced when the disconnects are installed.

Replace Conduits in Headworks Chamber and in Wet Well with Explosion Proof Conduits

Priority: High

Cost: \$8,000

Demolish junction box and associated conduits that do not meet explosion proof installation. Install new conduits and conductors from headworks area to electrical room. Demolish and replace PVC conduit with rigid aluminum conduit, and install meeting Class I Division 1 requirements for hazardous locations.

A summary of the Electrical Improvements, including priority and estimated cost is provided in Table 8 below:

Table 8: Proposed Electrical Improvements

Electrical Improvements			
Description	Priority	Recommended?	Estimated Cost
Demo unused conduits and equipment	High	Yes	\$8,000
Replace MCC, Switchgear, and Service Conductors	High	Yes	\$275,000
Replace Explosion proof lighting in Headworks Chamber	Medium	Yes	\$22,000
Replace interior and exterior lights with LED lighting	Medium	Yes	\$6,000
Install additional exterior lighting on building	Medium	Yes	\$3,000
Install emergency egress lighting	High	Yes	\$12,000
Install new light pole near building	Medium	Yes	\$5,000
Guard hoist bus bar	High	Yes	\$500
Replace disconnects and conductors in pump room	High	Yes	\$15,000
Replace conduits in classified spaces with explosion proof conduits	High	Yes	\$8,000
Total Recommended Improvements			\$354,000

CONTROL IMPROVEMENTS

Replace Control and SCADA System

Priority: High

Cost: \$150,000

With the age and condition of the existing control panel, a completely new control system is recommended. The new control system would integrate the pump and grinder control, environmental monitoring, and flow measurement and allow for remote monitoring and control.

Install new ventilation monitoring and hazardous gas monitoring

Priority: High

Cost: \$25,000

Ventilation monitoring and hazardous gas detectors should be installed in both the headworks chamber and drywell. These systems are required by NFPA 820 and will alert operators of hazardous conditions prior to entering the lift station itself.

Replace Instrumentation

Priority: High

Cost: \$40,000

New level reading instrumentation in the lift station are necessary to accurately measure incoming flow and for controlling pump operation. If a new hatch is installed into the wet well, the backup floats could be relocated to be accessible from the hatch without entering the wet well. This instrumentation includes a new level sensor for the parshall flume, two new ultrasonic level sensors to monitor wet well levels, and new backup floats for the wet wells. These sensors would be connected to the new control panel for remote monitoring through SCADA.

Install additional environmental sensors

Priority: Medium

Cost: \$10,000

Installing Flood sensors in the headworks chamber and drywell can alert operators in the event of a pipe break, hydraulic backup or blockage, or other significant failure.

Temperature sensors in the headworks chamber and drywell can alert operators if there are extreme temperature conditions from a heating system failure prior to pipe freezing or electrical issues.

A summary of the Controls Improvements, including priority and estimated cost is provided in Table 4 below:

Table 9: Proposed Controls improvements

Control System Improvements			
Description	Priority	Recommended?	Estimated Cost
Replace Control and SCADA System	High	Yes	\$150,000
Ventilation and Hazardous Gas Monitoring	High	Yes	\$25,000
Replace Instrumentation	High	Yes	\$40,000
Install Flood and Temperature sensors	Medium	Yes	\$10,000
Total Recommended Improvements			\$225,000

Summary

SUMMARY

Memorial Lift Station requires several improvements to maintain reliable operation, meet current electrical and fire protection codes, and to protect worker health and safety. The recommended site improvements includes minor work around the perimeter of the lift station to address animals, vegetation, and drainage. Recommended process improvements include replacement of failed and failing equipment. Structural improvements include work to make the structure weather tight, reapply protective coatings, and patch minor concrete degradation. HVAC improvements include demolition of the unused odor control system, and improvements to ventilation in the drywell area to reduce hazardous gas buildup. Recommended plumbing improvements include replacement of the boiler circulation pumps and removal of the house water piping located above the electrical equipment. Recommended electrical improvements include complete replacement of the motor control center. Recommended Controls Improvements include complete replacement of the existing control system. A summary of the estimated costs is provided in Table 10 below.

Table 10: Summary of Estimated Costs for Recommended Improvements

Description	Estimated Cost
Site Improvements	\$1,800
Process Improvements	\$657,000
Structural Improvements	\$260,000
HVAC Improvements	\$177,000
Plumbing Improvements	\$74,000
Electrical Improvements	\$354,500
Controls Improvements	\$225,000
Subtotal	\$1,749,300
10% Contingency	\$175,000
Engineering, Legal, and Administrative Costs (Estimated 20%)	\$350,000
Total Estimated Project Cost	\$2,275,000

Financial Analysis

POTENTIAL FUNDING SOURCES

Community Development Block Grant

The Community Development Block Grant (CDBG) program is administered by the Iowa Economic Development Authority (IEDA) and allows municipalities to apply for grant funding on a competitive basis each year for water and wastewater improvements. The main criteria used in determining a community's grant eligibility revolves around the City's Low to Moderate Income (LMI) household percentage. To be eligible for funding, the community's LMI percentage needs to be greater than or equal to 51%. According to the IEDA's latest demographic information, the City of Storm Lake's LMI is 52%. Therefore, the City is eligible for a grant of up to \$600,000. The Grant requires a dollar-for-dollar local match, so in order to utilize the full \$600,000 the City would need to provide a minimum of \$600,000 in additional funding.

State Revolving Loan Fund, Clean Water Fund

The SRF is a revolving loan fund through the State of Iowa Finance Authority. Currently, the SRF interest rate is 1.75% for a 20-year loan. In some cases the loan term can be extended to 30 years if the project being funded has a lifespan greater than 30 years. Currently, 30-year rates are 2.75%. SRF loans have a 0.25% annual service fee, thus 2.00% and 3.00% should be expected for the 20-year and 30-year loan rates, respectively. This funding is subject to Federal Davis Bacon Prevailing Wages and has American Iron and Steel Requirements.

The SRF loan program also provides communities to apply for Disadvantaged Status. For clean water projects, the IDNR looks at the community's Median Household Income (MHI), number of rate payers, current and projected debt, along with additional criteria to determine eligibility. If determined eligible, the community can utilize the 30-year term at a discounted rate of 2.00%. The project is still subject to Federal Davis Bacon Prevailing Wages and American Iron and Steel Requirements.

The SRF loan program requires the City to enlist the services of a Municipal Advisor (MA) in order to be eligible for funding. The SRF will reimburse the City \$4,000 for the services of the MA. The MA's assistance is required through the program in an effort to ensure the City has the ability to repay the new debt service while maintaining a healthy wastewater fund balance. To meet the ability of the debt, an adjustment to sanitary sewer rates will be required to maintain a 1.10% debt coverage ratio. This means that the City needs to generate at least 10% more revenue than expenditures for the entire wastewater system on an annual basis.

State Revolving Loan Fund's Planning and Design Loan

SRF offers a Planning and Design (P&D) Loan that is a 0% interest loan for up to three years with no initiation or servicing fees. The P&D loan is intended to be utilized to pay for costs to produce reports such as this Facility Plan, legal/administration fees as necessary, and engineering design of the selected alternative. At the end of the three-year period (or before), the P&D loan can be rolled into a SRF Construction Loan.

SRF Sponsored Project Grant

SRF allows sewer utilities to finance water resource restoration sponsored projects in conjunction with a Clean Water Fund loan of \$1 million or more. On a Clean Water Fund loan with a sponsored project, the utility borrows money for both the wastewater improvements and the water resource improvements. However, SRF reduces the interest rate on the loan so that the debt service payment is the same as if only the wastewater improvements were funded. This effectively provides a grant for the water resources improvements. Total Sponsored Project funding is capped statewide and applications are selected on a competitive basis each fiscal year.

Sponsored Project funding is available up to the lowest of the following:

- 10% of the requested Clean Water Fund loan amount.
- 10% of the final amount of the Clean Water Fund Construction loan.
- The amount requested on the sponsored project application.

Therefore, the City of Storm Lake could be eligible for approximately \$172,000 for water resources restoration projects in conjunction with the anticipated SRF Clean Water Fund Loan for the Memorial Lift Station Improvements. In order to be eligible for a Sponsored Project Grant, the City would need to identify project(s) and apply by March 2020. The Sponsored Project application would need to be closely coordinated with the Clean Water Fund Loan in order to maintain eligibility.

FINANCING SCENARIOS

The City plans to apply for a Community Development Block Grant (CDBG) to fund a portion of the project. The City is eligible for up to \$600,000 from CDBG for this project. The remaining balance will be funded through a State Revolving Fund (SRF) Loan. It has not been determined if the City qualifies for disadvantaged community status at this time. Table 11 shows the estimated annual payments that the City would make based on each funding scenario. The financing evaluation does not incorporate the additional 10% revenue that the City must generate for its own wastewater fund as required by SRF.

Table 11: Financing Scenarios

Program	Rate Term	Grant	Loan	Estimated Annual Debt Service ¹	Total Principal + Interest Paid
SRF 20-Year	2.00% 20-Year	-	\$2,275,000	\$138,000	\$2,762,000
SRF 20-Year + CDBG	2.00% 20-Year	\$600,000	\$1,675,000	\$102,000	\$2,034,000
SRF 30-Year	3.00% 30-Year		\$2,275,000	\$115,000	\$3,453,000
SRF 30-Year + CDBG	3.00% 30-Year	\$600,000	\$1,675,000	\$85,000	\$2,542,000
SRF Disadvantaged ²	2.00% 30-Year		\$2,275,000	\$101,000	\$3,027,000
SRF Disadvantaged ² + CDBG	2.00% 30-Year	\$600,000	\$1,675,000	\$74,000	\$2,229,000

¹ Does not include 110% debt coverage ratio required by SRF.

² Disadvantaged community eligibility to be determined.

Final Considerations and Preliminary Schedule

Based on the evaluation described in this report, it is recommended that the City of Storm Lake proceed with the listed improvements to Memorial Lift Station. The Recommended Financing Scenario is a Community Development Block Grant for \$600,000 with an SRF loan for the remainder of the project cost. If desired, the City could evaluate if they qualify for disadvantaged community status and a longer loan term. The City can also apply for an SRF Sponsored Project grant to fund a water resources improvement project based on the wastewater loan. The preliminary project schedule is as follows:

July 2019	Submit Facility Plan to Iowa DNR
August 2019	Begin Final Design
September 3, 2019	SRF IUP Application Deadline
October 1, 2019	CDBG Application Deadline
December 17, 2019	SRF IUP Approval
December 2019	CDBG Grant Award
January 2020	Submit Final Plans & Specifications to Iowa DNR
March 2020	Issue Plans & Specifications for Bidding
April 2020	Award Contract
Summer 2020	Contractor Procures Equipment and Materials
October 2020	Begin Bypass Pumping and Lift Station Improvements
December 2020	Substantial Completion,
March 2021	Final Completion

APPENDIX A: Existing Lift Station Drawings



APPENDIX B: Pipe Non-Destructive Testing Report

June 4, 2019

Mr. Mark Streed
City of Storm Lake
P.O. Box 1086, 620 Erie Street
Storm Lake, IA

**Subject: 24-inch Ductile Iron Pipe Header, Memorial Lift Station
Ultra Thickness Testing Results Report Letter**

Dear Mr. Mark Streed:

This letter details the findings from the Ultra Thickness Testing (UTT) conducted by Jan X-Ray Services Inc. (JanX) under the direction of Pure Technologies U.S. Inc., a Xylem Brand (Pure Technologies) of the 24-Inch Ductile Iron Pipe (DIP) header at the Memorial Lift Station in Storm Lake, Iowa. The lift station is owned and operated by the City of Storm Lake, Iowa.

Background and Location

The lift station header piping was originally installed in 1983 and has been in continuous use since its construction. The exterior of the DIP piping has noticeable areas of corrosion and chipped paint (see **Figures 1 and 2**). Replacing this piping would require bypass pumping around the entire lift station, which would add significant cost. Therefore, the City of Storm Lake contracted Pure Technologies to collect thickness measurements of the header piping in order to verify the condition of the wall of the pipe, potentially allowing it to remain in place. UTT, an ultrasonic inspection technology, was chosen in order to externally verify the wall thickness of the header piping.

The ultrasonic inspection spanned approximately 36.5 feet of 24-inch DIP pipe and five (5) 24-inch DIP tees (see **Figure 3**). Due to lack of specifications, it was assumed that the 24-inch DIP pipe was Class 52 and the 24-inch DIP tees were Pressure Class 250. It is Pure Technologies understanding that no pressure gauges are installed on the header piping in order to collect direct pressure readings at operating conditions. However, it was determined that a pressure relief valve exists on the header which is set to open at 65 psi. Assuming the valve is in good operating condition, 65 psi would be the maximum operating pressure for the header. These assumptions are important when comparing the measured thicknesses to the design thickness. If the City of Storm Lake finds any additional details or specifications for the lift station header piping, Pure Technologies can compare the updated design thickness with the measured thickness for a more accurate analysis.



Figures 1 and 2: Exterior of the Lift Station Header Piping

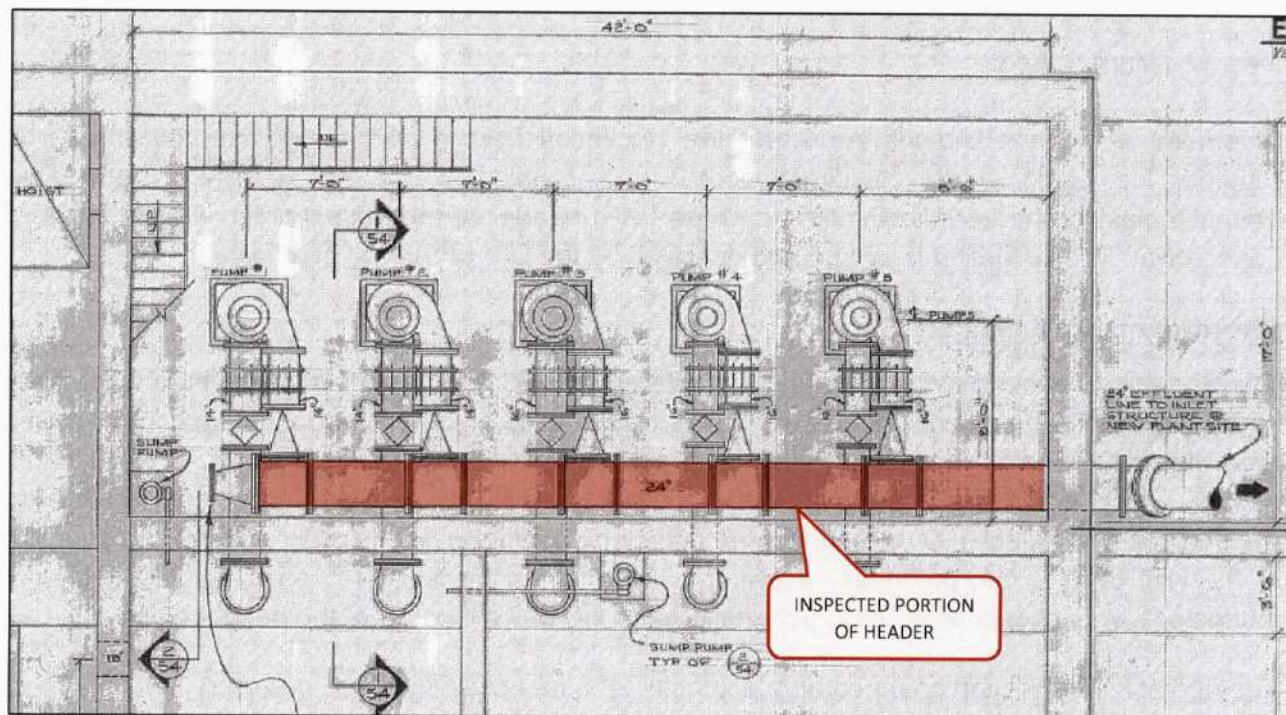


Figure 3: 24-inch DIP Lift Station Header

(Source: Sheet III-54, Prj. 60052S; "Pump Station Equipment and Piping Layout, Waste Treatment Facilities Storm Lake, Iowa"; Dated January 1983)

External Ultra Thickness Testing Results

The thickness measurements were taken using a model UM-1D ultrasonic thickness testing device. The transducer frequency was set to 5 MHz, with a single-element transducer sized at 0.250 inches. Thickness measurements were spaced evenly over the length of the pipes and tees, with nine (9) readings taken for each tee and twelve (12) readings taken for each pipe. A diagram of the measurement locations taken for tees and pipes is shown in **Figure 4**.

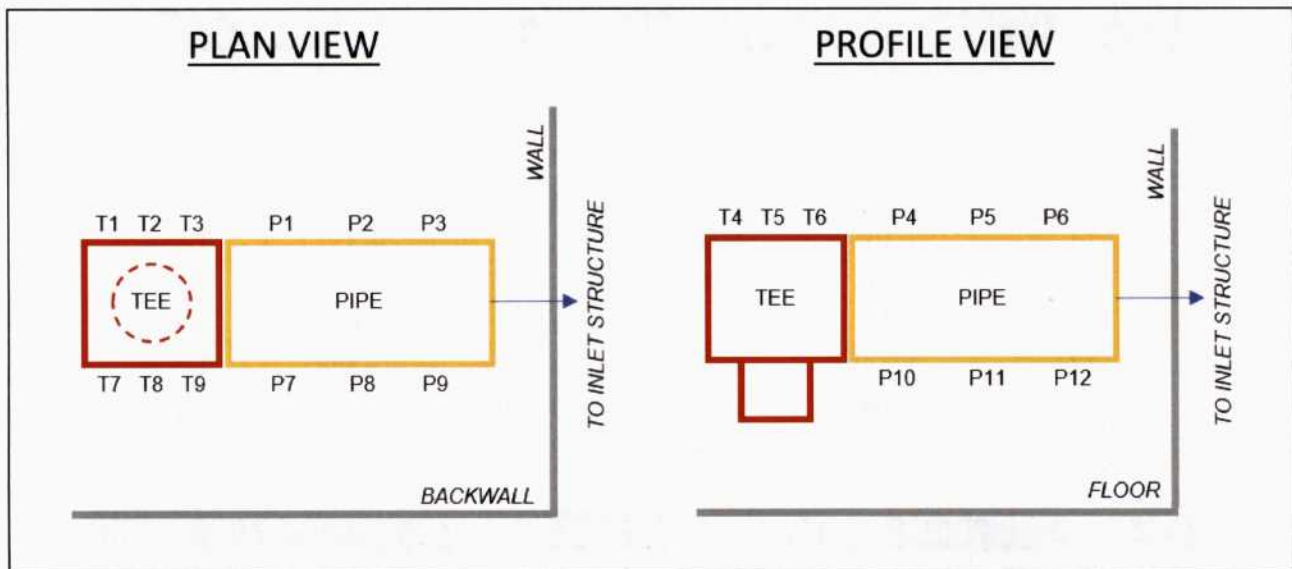


Figure 4: Diagram of Measurement Locations for Tees and Pipes

The tees and pipes were labeled one (1) through five (5), beginning at the sump pump and moving towards the inlet structure. A diagram of the labeled tees and pipes from the inspection is shown below in **Figure 5**. The results for the UTT thickness testing of the tees and the pipes are shown in **Tables 1 and 2**, respectively.

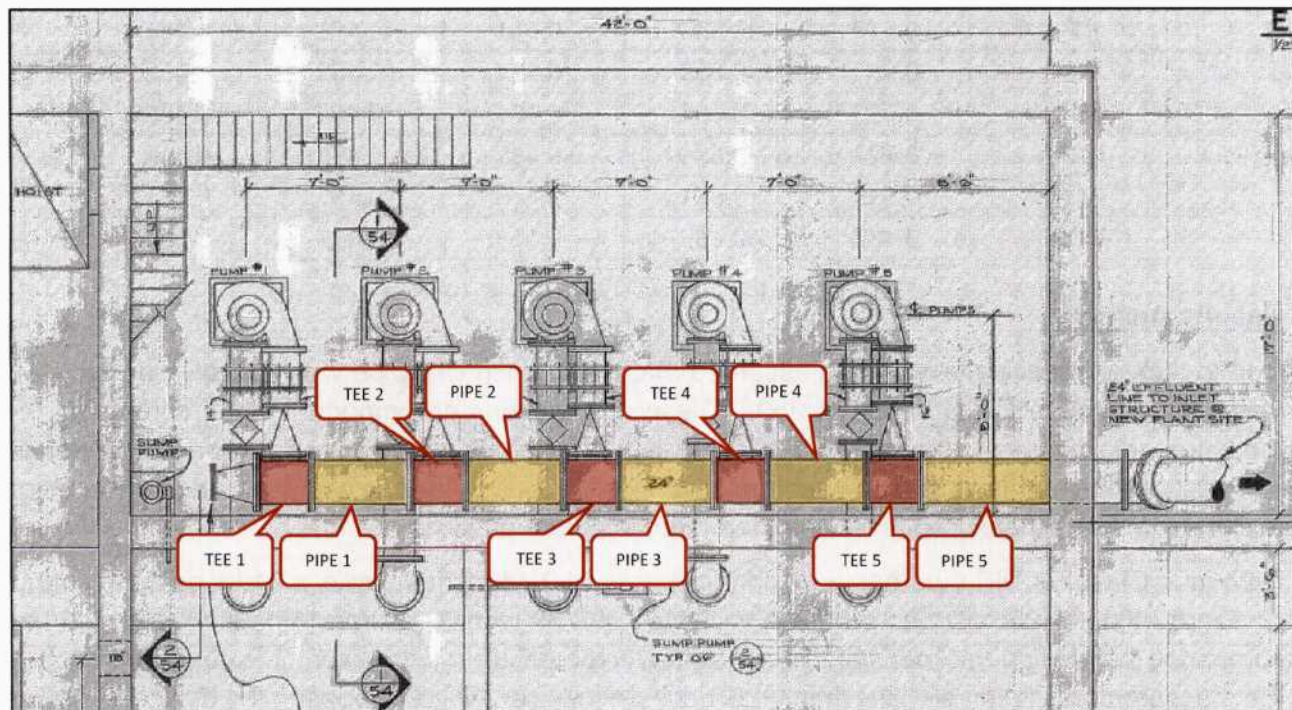


Figure 5: 24-inch DIP Lift Station Header (Labeled Tee & Pipe)

(Source: Sheet III-54, Prj. 60052S; "Pump Station Equipment and Piping Layout, Waste Treatment Facilities Storm Lake, Iowa"; Dated January 1983)

Table 1: Thickness Measurements for Tees (in inches)					
Measurement	Tee 1	Tee 2	Tee 3	Tee 4	Tee 5
T1	1.223	1.207	1.359	1.268	1.491
T2	1.241	1.268	1.294	1.306	1.469
T3	1.248	1.263	1.401	1.315	1.471
T4	1.301	1.321	1.338	1.331	1.454
T5	1.238	1.301	1.347	1.413	1.431
T6	1.287	1.331	1.353	1.442	1.299
T7	1.279	1.362	1.322	1.398	1.306
T8	1.296	1.371	1.359	1.365	1.322
T9	1.301	1.354	1.306	1.315	1.316

Table 2: Thickness Measurements for Pipes (in inches)					
Measurement	Pipe 1	Pipe 2	Pipe 3	Pipe 4	Pipe 5
P1	0.546	0.659	0.491	0.471	0.417
P2	0.554	0.651	0.479	0.454	0.421
P3	0.532	0.584	0.461	0.462	0.435
P4	0.559	0.631	0.468	0.471	0.421
P5	0.531	0.652	0.482	0.451	0.437
P6	0.601	0.591	0.499	0.449	0.435
P7	0.577	0.622	0.501	0.471	0.461
P8	0.587	0.668	0.477	0.465	0.458
P9	0.556	0.604	0.494	0.462	0.466
P10	0.577	0.684	0.481	0.458	0.417
P11	0.533	0.671	0.476	0.467	0.461
P12	0.482	0.665	0.473	0.471	0.509

Results Analysis

Due to lack of specifications, it was assumed that the 24-inch DIP pipe was Class 52 and the 24-inch DIP tees were Pressure Class 250. These assumptions are important when comparing the measured thicknesses to the design thickness. If the City of Storm Lake finds any additional details or specifications for the lift station header piping, Pure Technologies can compare the correct design thickness with the measured thickness for a more accurate analysis.

A 24-inch Class 52 DIP pipe has a design thickness of 0.44 inches, while a 24-inch DI Tee with a pressure rating of 250 psi has a design thickness of 0.89 inches (source: American Pipe). When comparing the design thickness of the tee to the field measurements taken, it is clear that none of the measurements taken are less than 0.89 inches. However, when comparing the design thickness of the pipe to the field measurements taken, it can be seen that "Pipe 5" (closest to the inlet structure wall) has multiple thicknesses less than 0.44 inches.

Seven (7) of the twelve (12) thickness measurements taken for "Pipe 5" are less than 0.44 inches. Out of those seven (7), the maximum wall loss percentage was roughly 5% which was located at

measurements "P1" and "P10" at 0.417 inches. A diagram indicating the measurements taken for "Pipe 5" is shown in **Figure 6**.

Though it is possible that wall loss may have occurred at this location, a wall thickness measurement of 0.417 inches (the minimum observed) for 24-inch DIP corresponds with a design pressure class of 300 pounds per square inch (psi)¹. This pressure class is defined as the rated water pressure of the pipe in psi. Therefore, if the City of Storm Lake is operating the header piping under 300 psi, it can be assumed that the header piping is in serviceable condition.

It is Pure Technologies understanding that no pressure gauges are installed on the header piping in order to collect direct pressure readings at operating conditions. However, it was determined that a pressure relief valve exists on the header which is set to open at 65 psi. Assuming the valve is in good operating condition, 65 psi would be the maximum operating pressure for the header.

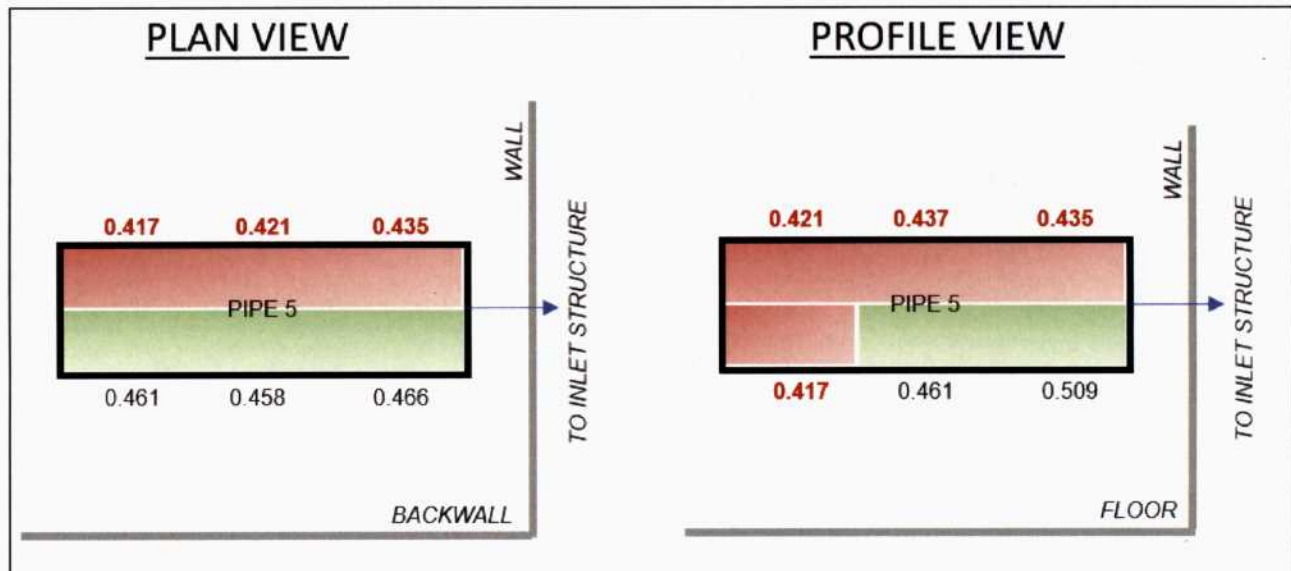


Figure 6: Thickness Measurements (in inches) of "Pipe 5"

Conclusion

Based on the findings from the JanX UTT external field testing, Pure Technologies concluded that only one (1) of the five (5) pipes tested were found to have wall thickness measurements less than the design thickness. The maximum wall loss percentage at this pipe was roughly 5% and was located at measurements "P1" and "P10" of "Pipe 5", at 0.417 inches. Though it is possible that wall loss may have occurred at this location, a wall thickness measurement of 0.417 inches (the minimum observed) for 24-inch DIP corresponds with a design pressure class of 300 pounds per square inch (psi)¹. This pressure class is defined as the rated water pressure of the pipe in psi. Therefore, if the City of Storm Lake is operating the header piping under 300 psi, it can be assumed that the header piping is in serviceable condition. Additionally, it was determined that under normal operating

¹ U.S. Pipe and Foundry Company. "Ductile Iron Pipe Design for Fire Protection, Water & Wastewater". Page P10. Table 2; Pressure Class. 2013 Edition.

conditions, the header piping experiences a maximum operating pressure of 65 psi. Therefore, under those operating conditions, it can be assumed that the header piping is in serviceable condition. Pure Technologies also concluded that none of the five (5) tees tested were found to have wall thickness measurements less than the design thickness. The JanX Field Log used to collect and document the data is included as an appendix to this letter.

If you have any questions or require additional information, please contact us.

Sincerely,

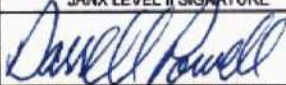
William Barloon

Bill Barloon, P.E.
Area General Manager, Xylem

cc: Steve Bruskiewicz, Business Development Manager, Xylem

Attachments

Appendix A: JanX Field Log

DATE: 5/20/2019		CLIENT: Pure Technologies US, Inc.																		
REPORT No: 1 of 1		JOB LOCALE- CITY, STATE: Storm Lake, IA																		
CLIENT PO No: #2019-052		JANX JOB No:																		
CLIENT W/O No:		JANX PROCEDURE No: UTT-1, Rev. 1																		
CLIENT JOB No:		ACCEPTANCE CRITERIA: Information only																		
ULTRASONIC THICKNESS TESTING TECHNIQUE																				
Instrument Mfg: <u>Landmark</u> Model: <u>UM-1D</u> Serial No: <u>5102212</u> Cal. Date: <u>1/15/2019</u>																				
Transducer Mfg: <u>Landmark</u> Transducer Frequency: <u>5</u> MHz Due Date: <u>1/15/2020</u>																				
Transducer Size: <u>.250"</u> Transducer Type: ☐ Dual Element ☒ Single Element ☐ Delay Line																				
☒ Contact ☐ Angle 0° to Surface ☒ Straight Beam ☒ Spot Thickness Readings Only ☒ Area Scan (see below)																				
Scan Description: <u>Thickness readings; looking for wall loss</u> Max. Scan Rate (in./sec.): <u>N/A</u> Scan Overlap %: <u>N/A</u>																				
Couplant Brand or Type: <u>Sonagel</u> Remarks:																				
PART DESCRIPTION																				
Material: <u>C/S</u> Thickness: <u>.500"</u>																				
Inspection Area Description: <u>24" x .500wt pipe</u>																				
Surface Condition: <u>Clean</u>																				
Surface Preparation: <u>Coating removed and brushed</u>																				
Temp. of Part and Cal. Block within ± 25°F of each other: ☒																				
Calibration Block No: <u>3972</u> Material: <u>C/S</u>																				
<table border="1" style="display: inline-table; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Step 1</th> <th>Step 2</th> <th></th> </tr> </thead> <tbody> <tr> <td>Cal Block Actual Thickness:</td> <td><u>.250"</u></td> <td><u>1"</u></td> <td>Time</td> </tr> <tr> <td>Cal. Reading at Start:</td> <td><u>.250"</u></td> <td><u>.500"</u></td> <td><u>10:30AM</u></td> </tr> <tr> <td>Cal. Reading at End:</td> <td><u>.250"</u></td> <td><u>.500"</u></td> <td><u>2PM</u></td> </tr> </tbody> </table>						Step 1	Step 2		Cal Block Actual Thickness:	<u>.250"</u>	<u>1"</u>	Time	Cal. Reading at Start:	<u>.250"</u>	<u>.500"</u>	<u>10:30AM</u>	Cal. Reading at End:	<u>.250"</u>	<u>.500"</u>	<u>2PM</u>
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Drive to Storm Lake, IA.....																				
BILLING Pure Technologies US, Inc., Attn: William Barloon, 8920 State Route 108; Suite D, Columbia MD 21045																				
ADDRESS:																				
CLIENT SIGNATURE		JANX LEVEL II SIGNATURE		LEVEL II TECHNICIAN																
				Darrell Powell																
CLIENT REP NAME & PHONE NUMBER		TRAVEL MILES	TOTAL HOURS INCLUDING TRAVEL AND WORK	PER DIEM APPLICABLE																
Steve Bruskiewicz (262)305-5238		550	10	Yes																
				TOTAL ITEMS INSPECTED																
				0																
FORM: UTT Report 14-06 CUSTOMER'S SIGNATURE CERTIFIES THAT TIME AND MILEAGE ARE CORRECT AND MATERIALS AND INTERPRETATION ARE ACCEPTED. JANX (517) 531-8210 P.O. Box 190 Parma, MI 49269																				

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Material: <u>C/S</u> Thickness: <u>.500"</u>									
Inspection Area Description: <u>Looking for wall loss; thickness readings</u>									
<u>24" x .500wt pipe</u>									
Surface Condition: <u>Clean</u>									
Surface Preparation: <u>Coating removed and brushed</u>									
Temp. of Part and Cal. Block within $\pm 25^{\circ}\text{F}$ of each other: ☒									
THICKNESS READINGS									
1	Pipe 1	21	Pipe 2	41	Pipe 3	61	Pipe 4	81	Pipe 5
2	0.546	22	0.659	42	0.491	62	0.471	82	0.417
3	0.554	23	0.651	43	0.479	63	0.454	83	0.421
4	0.532	24	0.584	44	0.461	64	0.462	84	0.435
5	0.559	25	0.631	45	0.468	65	0.471	85	0.421
6	0.531	26	0.652	46	0.482	66	0.451	86	0.437
7	0.601	27	0.591	47	0.499	67	0.449	87	0.435
8	0.577	28	0.622	48	0.501	68	0.471	88	0.461
9	0.587	29	0.668	49	0.477	69	0.465	89	0.458
10	0.556	30	0.604	50	0.494	70	0.462	90	0.466
11	0.577	31	0.684	51	0.481	71	0.458	91	0.417
12	0.533	32	0.671	52	0.476	72	0.467	92	0.461
13	0.482	33	0.665	53	0.473	73	0.471	93	0.509
14		34		54		74		94	
15		35		55		75		95	
16		36		56		76		96	
17		37		57		77		97	
18		38		58		78		98	
19		39		59		79		99	
20		40		60		80		100	
SKETCH / PICTURE / REMARKS - AS NEEDED									
Drive in and out of Storm Lake, IA.....									
(9) Readings per "TEE"									
(12) Readings per "PIPE"									
BILLING Pure Technologies US, Inc., Attn: William Barloon, 8920 State Route 108; Suite D, Columbia MD 21045									
ADDRESS:									
CLIENT SIGNATURE		JANX LEVEL II SIGNATURE		LEVEL II TECHNICIAN					
				Darrell Powell					
CLIENT REP NAME & PHONE NUMBER		TRAVEL MILES	TOTAL HOURS INCLUDING TRAVEL AND WORK	PER DIEM APPLICABLE					
Steve Bruskiewicz (262)305-5238		300	14	Yes					
				TOTAL ITEMS INSPECTED					
				10					
Kenny Cox I									
Form: UTT Report 14-05		CUSTOMER'S SIGNATURE CERTIFIES THAT TIME AND MILEAGE ARE CORRECT AND MATERIALS AND INTERPRETATION ARE ACCEPTED.		JANX P.O. Box 190 (517) 531-8210 Parma, MI 49269					

DATE: 5/22/2019		CLIENT: Pure Technologies US, Inc.																			
REPORT No: 1 of 1		JOB LOCALE- CITY, STATE: Storm Lake, IA																			
CLIENT PO No: #2019-052		JANX JOB No:																			
CLIENT W/O No:		JANX PROCEDURE No: UTT-1, Rev. 1																			
CLIENT JOB No:		ACCEPTANCE CRITERIA: information only																			
ULTRASONIC THICKNESS TESTING TECHNIQUE																					
Instrument Mfg: <u>Landmark</u>		Model: <u>UM-1D</u>		Serial No: <u>5102212</u>																	
Transducer Mfg: <u>Landmark</u>		Transducer Frequency: <u>5</u> MHz		Cal. Date: <u>1/15/2019</u>																	
Transducer Size: <u>.250"</u>		Transducer Type: ☐ Dual Element ☒ Single Element		☐ Delay Line																	
☒ Contact ☐ Angle 0° to Surface ☒ Straight Beam		☒ Spot Thickness Readings Only		☒ Area Scan (see below)																	
Scan Description: <u>Thickness readings; looking for wall loss</u>		Max. Scan Rate (in./sec.): <u>N/A</u>		Scan Overlap %: <u>N/A</u>																	
Couplant Brand or Type: <u>Sonagel</u>		Remarks:																			
PART DESCRIPTION			Calibration Block No: <u>3972</u> Material: <u>C/S</u>																		
Material: <u>C/S</u> Thickness: <u>.500"</u>			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th></th> <th>Step 1</th> <th>Step 2</th> <th></th> </tr> <tr> <td>Cal Block Actual Thickness:</td> <td><u>.250"</u></td> <td><u>1"</u></td> <td>Time</td> </tr> <tr> <td>Cal. Reading at Start:</td> <td><u>.250"</u></td> <td><u>.500"</u></td> <td><u>10:30AM</u></td> </tr> <tr> <td>Cal. Reading at End:</td> <td><u>.250"</u></td> <td><u>.500"</u></td> <td><u>2PM</u></td> </tr> </table>				Step 1	Step 2		Cal Block Actual Thickness:	<u>.250"</u>	<u>1"</u>	Time	Cal. Reading at Start:	<u>.250"</u>	<u>.500"</u>	<u>10:30AM</u>	Cal. Reading at End:	<u>.250"</u>	<u>.500"</u>	<u>2PM</u>
	Step 1	Step 2																			
Cal Block Actual Thickness:	<u>.250"</u>	<u>1"</u>	Time																		
Cal. Reading at Start:	<u>.250"</u>	<u>.500"</u>	<u>10:30AM</u>																		
Cal. Reading at End:	<u>.250"</u>	<u>.500"</u>	<u>2PM</u>																		
Inspection Area Description: <u>24" x .500wt pipe</u>			Gate Height: <u> </u> % ☒ Not Applicable																		
Surface Condition: <u>Clean</u>			Gain: <u> </u> dB ☒ Not Applicable																		
Surface Preparation: <u>Coating removed and brushed</u>																					
Temp. of Part and Cal. Block within ± 25°F of each other: ☒																					
THICKNESS READINGS			SKETCH / PICTURE / REMARKS - AS NEEDED																		
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2		22		42																	
3		23		43																	
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Drive from Storm Lake, IA.....																					
BILLING ADDRESS: Pure Technologies US, Inc., Attn: William Barloon, 8920 State Route 108; Suite D, Columbe MD 21045																					
CLIENT SIGNATURE		JANX LEVEL II SIGNATURE		LEVEL II TECHNICIAN																	
				Darrell Powell																	
CLIENT REP NAME & PHONE NUMBER		TRAVEL MILES		TOTAL HOURS INCLUDING TRAVEL AND WORK																	
Steve Bruskiwicz (262)305-5238		550		10																	
		PER DIEM APPLICABLE		TOTAL ITEMS INSPECTED																	
				0																	
				Kenny Cox 1																	
Form UTT Report 14-06		CUSTOMER'S SIGNATURE CERTIFIES THAT TIME AND MILEAGE ARE CORRECT AND MATERIALS AND INTERPRETATION ARE ACCEPTED.		JANX (517) 531-8210 P.O. Box 190 Parma, MI 49269																	

APPENDIX C: Forcemain Evaluation Methods

Transient Pressure Monitoring

The occurrence of pressure transients within a pressure pipeline can have adverse effects on the integrity of a pipe section as they can cause damage such as fatigue stress or even a pipe failure depending on the magnitude of the transient and current condition of the pipe. Accumulated damage of this nature can eventually decrease the structural integrity of the pipe. Therefore, it is important to understand the frequency and magnitude of pressure transients in the 300 mm watermain to ensure that operational protocols can be implemented to maintain the pressures below the specified design. An understanding of the actual pressure in a line will also permit knowledgeable decisions regarding future modifications to the line or facilities that affect the performance of the pipeline.

Traditional pressure monitors collect data in intervals of seconds while transients may occur in fractions of seconds. Pure's transient pressure monitoring system addresses the sampling frequency issue by continuously monitoring pressure and while under normal operating conditions, only recording data every few minutes (based on user defined intervals). However, when a transient occurs in the pipeline, the device detects the transient and begins sampling at a high rate of up to 20 samples per second (20 hertz). This provides periodic pressure readings as well as data on transient events.

Pure requires the subject watermain to be in-service during the monitoring period. The transient pressure monitors require an existing 1/4-inch tap or larger for installation. Pure will install one monitor at location to be determined during the project planning, for thirty (30) days of monitoring. At the end of the data collection period, Pure will analyze the data and include the results in the final condition assessment report to client.



SmartBall[®] Technology

A free-swimming tool for long distance water and wastewater inspections

How SmartBall works?

The SmartBall[®] platform is a free-flowing tool for the assessment of pressurized water and wastewater pipelines 8 inches and larger. It can complete long assessments in a single deployment without disruption to regular pipeline service.

The tool is inserted into a live pipeline and travels with the product flow for up to 21 hours while collecting pipeline condition information. It requires only two access points for insertion and extraction, and is tracked throughout the inspection at predetermined fixed locations on the pipeline.

Applications

Owners of water and wastewater pipelines deal with a variety of infrastructure challenges; the SmartBall platform can collect a variety of pipeline condition information in a single deployment that helps owners manage their assets more effectively.

Leak Detection

The tool is equipped with a highly sensitive acoustic sensor that can detect pinhole-sized leaks on pressurized pipelines. The SmartBall platform has been able to identify leaks as small as 0.028 gal/min (0.11 liters) and has a typical location accuracy of within 6 feet (1.8 meters).

Gas Pocket Detection

The acoustic sensor is also able to identify the sound of trapped gas within pressurized mains. The presence of trapped gas can adversely affect pipeline flow or lead to degradation of the pipe wall in sewer force mains.

Inspection Benefits

- Easy to deploy through existing pipeline features
- No disruption to regular pipeline service
- Can complete long inspections in a single deployment
- Highly sensitive acoustic sensor that can locate very small leaks
- Can identify features relevant to the operation and mapping of the pipeline
- Indicates the position of leaks, and gas pockets relative to known points





PipeDiver[®] Condition Assessment

An innovative, free-swimming condition assessment tool that operates while a pipeline remains in service

PipeDiver Technology

The PipeDiver platform is ideal for critical large-diameter pipelines that cannot be removed from service due to lack of redundancy or operational constraints. It can be effectively deployed for long inspections on several types of pipe to determine baseline condition; on concrete pressure pipe, the tool can identify and locate broken wire wraps, which are the main indication that this type of pipe will eventually fail; for metallic pipes that utilize a steel cylinder as the main structural component, the tool can locate and detect areas of corrosion and cylinder defects.

When inserted into a live pipeline through a hot tap connection, an existing access or a submerged tank, the tool travels with the product flow and is able to navigate most butterfly valves and bends in the pipeline.

Inspection Benefits

- No disruption to regular pipeline service
- Long inspection distances can be covered in a single deployment
- Accurate results that pinpoint areas of distress help optimize repair planning
- Effective on a variety of pipe materials
- More cost-effective than methods that require shutdown and dewatering



Staff Summary

3/2/2020

Agenda Item # 11.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Keri Navratil, City Manager

SUBJECT: **Motion Setting Public Hearing on Community and Housing Needs Assessment**

BACKGROUND: The City Council will hold a public hearing in the Council Chambers at City Hall, 620 Erie Street, Storm Lake, Iowa, to consider a Community Development and Housing Needs Assessment. The assessment will outline projects that the City has identified as community and housing needs over the next few years.

This meeting will be held to give residents information concerning the proposed assessment. Citizens are encouraged to attend and express their preferences about the proposed activities.

FISCAL IMPACT: N/A

RECOMMENDATION: Set Public Hearing for March 16, 2020 at 5:00 p.m. in City Council Chambers.

ATTACHMENTS:

Description	Type
Public Hearing Notice	Backup Material

PUBLIC HEARING NOTICE

The City of Storm Lake, Iowa, is hereby serving as Public Notice that on March 16, 2020, at 5:00 p.m., the City Council will hold a public hearing in the Council Chambers at City Hall, 620 Erie Street, Storm Lake, Iowa, to consider a Community Development and Housing Needs Assessment. The assessment will outline projects that the City has identified as community and housing needs over the next few years.

This meeting will be held to give residents information concerning the proposed assessment. Citizens are encouraged to attend and express their preferences about the proposed activities. Anyone having questions about this project or requiring special accommodations at the upcoming hearing may contact the City Manager at 712-732-8000.

Mayra Martinez
City Clerk
City of Storm Lake, Iowa

Staff Summary

3/2/2020

Agenda Item # 12.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Keri Navratil, City Manager

SUBJECT: **Resolution No. 57-R-2019-202 Authorizing Execution Of A Termination Agreement By And Between The City Of Storm Lake And FB Storm Lake I, LLC Terminating The Agreement For Private Development By And Between The City Of Storm Lake And FB Storm Lake I, LLC**

BACKGROUND: This resolution would terminate the Urban Renewal Plan for South School. Projects that would have occurred in the Urban Renewal Area will no longer be allowed to pursue economic development grants. Projects that do occur, would be eligible tax abatement as allowed through the Urban Revitalization Plan.

FISCAL IMPACT: There is no financial impact at this time.

RECOMMENDATION: Approve Resolution No. 57-R-2019-2020 Terminating The South School Urban Renewal Plan For The South School Urban Renewal Area And Ending The South School Urban Renewal Area

ATTACHMENTS:

Description	Type
□ Resolution No. 57-R-2019-2020	Resolution

RESOLUTION NO. 57-R-2019-2020

RESOLUTION TERMINATING THE SOUTH SCHOOL URBAN RENEWAL PLAN FOR THE SOUTH SCHOOL URBAN RENEWAL AREA AND ENDING THE SOUTH SCHOOL URBAN RENEWAL AREA

WHEREAS, the City of Storm Lake (“City”) adopted the South School Urban Renewal Plan (“Plan”) for the South School Urban Renewal Area (“Urban Renewal Area”) by Resolution No. 16-R-2016-2017 on September 16, 2016; and

WHEREAS, the Urban Renewal Area consisted of the following property:

LOTS ONE (1), TWO (2), THREE (3), FOUR (4), AND FIVE (5), BLOCK FORTY (40) ORIGINAL TOWN OF STORM LAKE, IOWA **EXCEPT** THE EAST ONE HUNDRED SEVENTY-TWO FEET (E. 172’) OF THE NORTH SIXTY-FIVE FEET (N. 65’) OF LOT ONE (1), BLOCK FORTY (40), ORIGINAL TOWN OF STORM LAKE, IOWA;

Together with the following-described parts of street rights-of-way abutting the above-described property:

The Third Street right-of-way commencing at its intersection with the western boundary of the Irving Street right-of-way on the West and extending one hundred twenty-eight feet (128’) eastward;

And

The Irving Street right-of-way commencing at its intersection with the northern boundary of the Third Street Right-of-way on the North and extending five hundred feet (500’) southward;

And

The Cayuga Street right-of-way commencing one hundred sixty feet (160’) north of its intersection with the southern boundary of the Second Street right-of-way on the South and extending three hundred thirty-five feet (335’) northward.

WHEREAS, the City adopted Ordinance No. 02-O-2016-2017 on October 3, 2016 to implement the division of property tax revenues under Iowa Code Section 403.19 in the Urban Renewal Area; and

WHEREAS, the projects described in the Plan are no longer anticipated to proceed as originally contemplated, and therefore the City has determined that the Plan is no longer needed for the purposes set forth in Iowa Code Chapter 403; and

WHEREAS, the City has determined that it is in the best interest of the City to formally terminate the Plan and end the Urban Renewal Area.

NOW, THEREFORE, BE IT RESOLVED, BY THE CITY COUNCIL OF THE CITY OF STORM LAKE, STATE OF IOWA:

Section 1. The South School Urban Renewal Plan for the South School Urban Renewal Area, adopted by the City on September 16, 2016, is hereby repealed, and the South School Urban Renewal Area is hereby terminated.

Section 2. Ordinance No. 02-O-2016-2017 providing for the division of revenue under Iowa Code Section 403.19 in the Urban Renewal Area, as amended, will be repealed by separate ordinance.

PASSED AND APPROVED this 2nd day of March, 2020.

Michael Porsch, Mayor

ATTEST:

Mayra A. Martinez, City Clerk

Staff Summary

3/2/2020

Agenda Item # 13.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Keri Navratil, City Manager

SUBJECT: **Ordinance No. 05-O-2019-2020 for the Division of Revenues under Iowa Code Section 403.19 for South School Urban Renewal Plan**

BACKGROUND: The City created the South School Urban Renewal Area. This Ordinance allows the taxes collected in the South School Urban Renewal Area be used as an economic development grants to assist in the renovation of South School for market rate apartments

FISCAL IMPACT: The City will begin to collect taxes on this property for the first time in 88 years.

RECOMMENDATION: Approve 1st reading - March 2, 2020
Approve 2nd reading- March 16, 2020
Approve 3rd reading and adopt - April 6, 2020

ATTACHMENTS:

Description	Type
Ordinance No. 05-O-2019-2020	Ordinance

ORDINANCE NO. 05-O-2019-2020

AN ORDINANCE REPEALING ORDINANCE NO. 02-O-2016-2017 PROVIDING FOR THE DIVISION OF TAXES LEVIED ON TAXABLE PROPERTY IN THE SOUTH SCHOOL URBAN RENEWAL AREA, IN THE CITY OF STORM LAKE, IOWA, PURSUANT TO SECTION 403.19 OF THE CODE OF IOWA.

WHEREAS, the City of Storm Lake (“City”) adopted the South School Urban Renewal Plan (“Plan”) for the South School Urban Renewal Area (“Urban Renewal Area”) by action of the City Council on September 16, 2016; and

WHEREAS, the City adopted Ordinance No. 02-O-2016-2017 on October 3, 2016 to implement the division of property tax revenues under Iowa Code Section 403.19 in the Urban Renewal Area; and

WHEREAS, any debt that has been certified for reimbursement from the Urban Renewal Area has been fully paid and there are no current obligations under the Plan to be paid from any tax increment within the Urban Renewal Area; and

WHEREAS, the projects described in the Plan will no longer proceed as originally contemplated, and therefore the City determined the Plan was no longer needed and the City Council has terminated the Plan and the Urban Renewal Area by Resolution No. 57-R-2019-2020; and

WHEREAS, accordingly, the City has determined to repeal Ordinance No. 02-O-2016-2017 providing for the division of taxes levied on taxable property in the Urban Renewal Area.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF STORM LAKE, STATE OF IOWA:

Section 1. That Ordinance No. 02-O-2016-2017 is hereby repealed in its entirety and shall have no further effect.

Section 2. All ordinances or parts of ordinances in conflict with the provisions of this Ordinance are hereby repealed.

Section 3. This Ordinance shall be in effect after its final passage, approval and publication as provided by law.

PASSED AND APPROVED the 2nd day of March, 2020.

Michael Porsch, Mayor

ATTEST:

Mayra A. Martinez, City Clerk

Read First Time: _____, 2020 Vote for passage: _____

Read Second Time: _____, 2020 Vote for passage: _____

Read Third Time: _____, 2020 Vote for passage: _____

PASSED AND APPROVED: _____, 2020.

I, _____, City Clerk of the City of Storm Lake, State of Iowa, hereby certify that the above and foregoing is a true copy of Ordinance No. _____ passed and approved by the City Council of the City at a meeting held _____, 2020, signed by the Mayor on _____, 2020, and published in the Storm Lake Times on _____, 2020.

City Clerk, City of Storm Lake, State of Iowa

(SEAL)

01689295-1\11149-117

Staff Summary

3/2/2020

Agenda Item # 14.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Keri Navratil, City Manager

SUBJECT: **Resolution No. R-2019-2020 Authorizing Execution Of A Termination Agreement By And Between The City Of Storm Lake And FB Storm Lake I, LLC Terminating The Agreement For Private Development By And Between The City Of Storm Lake And FB Storm Lake I, LLC**

BACKGROUND: On November 1, 2016 the City entered into a Developer's Agreement with FB Storm Lake I, LLC to renovate South School into 39 market rate apartments. The total investment to the project will be over \$5,700,000.
The amount of economic development grants approved is as follows and would not exceed \$800,000.

In order to receive the economic development grants, the project needed to be completed by December 31, 2019. Although the project has started, they have not completed the project in the negotiated timeline. In discussions with the developer, it would be mutually beneficial to terminate the agreement with FB Storm Lake I, LLC.

FB Storm Lake I, LLC will still move forward with construction, but will qualify for the Tax Abatement offered under the City's Urban Revitalization Plan.

FISCAL IMPACT: The property has not generated taxes for over 88 years.

RECOMMENDATION: Approve Resolution No. 58-R-2019-2020 terminating the Developer's Agreement with FB Storm Lake I, LLC.

ATTACHMENTS:

Description	Type
□ Resolution No. 58-R-2019-2020	Resolution

RESOLUTION NO. 57-R-2019-2020

**RESOLUTION AUTHORIZING EXECUTION OF A
TERMINATION AGREEMENT BY AND BETWEEN THE CITY
OF STORM LAKE AND FB STORM LAKE I, LLC
TERMINATING THE AGREEMENT FOR PRIVATE
DEVELOPMENT BY AND BETWEEN THE CITY OF STORM
LAKE AND FB STORM LAKE I, LLC**

WHEREAS, by Resolution No. 16-R-2016-2017, adopted September 16, 2016, this Council found and determined that certain areas located within the City are eligible and should be designated as an urban renewal area under Iowa law, and approved and adopted the South School Urban Renewal Plan (the "Plan" or "Urban Renewal Plan") for the South School Urban Renewal Area (the "Area" or "Urban Renewal Area") described therein, which Plan is on file in the office of the Recorder of Buena Vista County; and

WHEREAS, the City of Storm Lake, Iowa ("City") and FB Storm Lake I, LLC ("Developer") entered into an Agreement for Private Development dated November 1, 2016 as authorized by Resolution No. 23-R-2016-2017 of the City ("Agreement"); and

WHEREAS, pursuant to the Agreement, the Developer agreed to construct certain Minimum Improvements to convert vacant school buildings into apartments located on certain real property within the Urban Renewal Area, under the terms and conditions of the Agreement, which real property is legally described as follows:

Lots one (1), Two (2), Three (3), Four (4), and Five (5), Block Forty (40), Original Town of Storm Lake, Iowa Except the East One Hundred Seventy-Two Feet (E.172') of the North Sixty-Five Feet (N. 65') of Lot One (1), Block Forty (40), Original Town of Storm Lake, Iowa.

Buena Vista County Parcel No. 14-03-402-005

(the "Development Property"); and

WHEREAS, the Project described in the Agreement has not yet been completed pursuant to the terms set forth therein; and

WHEREAS, the Developer now desires to apply for a tax abatement incentive under the City's Urban Revitalization Plan following completion of the Project, in lieu of receiving an incentive under the terms of the Agreement as part of the City's urban renewal activities in the Urban Renewal Area; and

WHEREAS, for Developer to apply for tax abatement under the City's Urban Revitalization Plan, no development agreement between the Parties is necessary, and the Development Property will need to be removed from the Urban Renewal Area; and

WHEREAS, the City now desires to terminate the Agreement by execution of a Termination Agreement by and between the City and Developer, and anticipates taking separate action terminating the South School Urban Renewal Plan and end the South School Urban Renewal Area.

NOW THEREFORE, BE IT RESOLVED, BY THE CITY COUNCIL OF THE CITY OF STORM LAKE, STATE OF IOWA:

Section 1. That the form and content of the Termination Agreement, the provisions of which are incorporated herein by reference, be and the same hereby are in all respects authorized, approved and confirmed, and the Mayor and the City Clerk be and they hereby are authorized, empowered and directed to execute, attest, seal, deliver, and record the Termination Agreement for and on behalf of the City in substantially the form and content now before this meeting, but with such changes, modifications, additions or deletions therein as shall be approved by such officers, and that from and after the execution and delivery of the Termination Agreement, the Mayor and the City Clerk are hereby authorized, empowered and directed to do all such acts and things and to execute all such documents as may be necessary to carry out and comply with the provisions of the Termination Agreement as executed.

PASSED AND APPROVED this 2nd day of March, 2020.

Michael Porsch, Mayor

ATTEST:

Mayra A. Martinez, City Clerk

Staff Summary

3/2/2020

Agenda Item # 15.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: Brian Oakleaf, Finance Director

SUBJECT: **Motion Setting Public Hearing on Fiscal Year 2020-2021 Budget**

BACKGROUND: This agenda item will set the Public Hearing for the Fiscal Year 2020-2021 Budget for Monday, March 16th, 2020 at 5:00 P.M. in City Council Chambers.

State of Iowa Code requires that the City hold a public hearing on any Budget or Budget Amendment prior to adoption. Notice of the public hearing will be published in the newspaper as required by State Code.

Upon conclusion of the Public Hearing, the Budget, which received concurrence from Council at previous Budget Workshops will be submitted for adoption.

FISCAL IMPACT: The fiscal impact to set the public hearing is the cost of publication.

RECOMMENDATION: Set the public hearing for Monday, March 16th, 2020 at 5:00 P.M.

Staff Summary

3/2/2020

Agenda Item # 16.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM: David Derragon, Assistant City Manager

SUBJECT: **Motion to Approve the FY2021 FAST Act Application for Oneida Street Reconstruction Phase 2 Project**

BACKGROUND: The City of Storm Lake receives Federal Transportation allocations which are administered by the Northwest Iowa Planning and Development Commission. Comprised of 9 counties and the associated cities within, this organization requires an application process for determining funding priorities within the region. The City of Storm Lake is making an application to replace Oneida from East Railroad Street to Lakeshore. This would be a complete reconstruction of the paving surface with complete upgrades to the storm sewer, water, and sanitary sewer systems.

FISCAL IMPACT: The total project cost is expected to be \$2,645,800. Of this amount, \$2,169,556 will be using local match money funded from Road Use, Franchise Fee, and LOST funds. The City of Storm Lake is requesting FAST Act funds in the amount of \$476,244 with this application.

RECOMMENDATION: Authorize the Mayor to sign the application

ATTACHMENTS:

Description	Type
□ Grant Application	Backup Material

LYON	OSCEOLA	DICKINSON	EMMET
SIOUX	O'BRIEN	CLAY	PALO ALTO
		BUENA VISTA	

REGION III

FAST Act

APPLICATION

2021-2024 Regional Transportation Improvement Program Years

Application Produced by: The Northwest Iowa Planning & Development Commission

APPLICATION FOR REGION III TRANSPORTATION PROJECTS

Complete and return the original plus copy to: Ted Kourousis, Executive Director, NWIPDC

P.O. Box 1493, Spencer, Iowa 51301 by 4:30 p.m. **3/20/2020**

(Fully executed applications will be accepted electronically: **ted.kourousis@nwipdc.org** Do not send maps larger than 8.5" x 14" legal size paper)

1. Project Name: Oneida Street Reconstruction – Phase 2		Date: 3/2/2020	
2. Contact Person: David M Derragon, Assistant City Manager		Phone Number: 712-732-8000	
3. Address of Contact Person	City	County	Zip Code
PO Box 1086	Storm Lake, Iowa	Buena Vista	50588
4. Project Sponsor (lead entity if multi-jurisdictional)		Sponsor Signature	
City of Storm Lake			

5. Classification of Project: (check all that apply)

- | | |
|---|--|
| ☒ Highway | ☐ Transit |
| ☒ Construction, reconstruction
resurfacing, restoration, and
rehabilitation | ☐ Capital Costs for
transit projects |
| ☐ Highway safety improvements
Capital and operating costs for traffic
management and control | ☐ Surface Trans.
planning for transit
technology transfer
activities |
| ☐ Surface Transportation planning, highway
And research and development | |
| ☐ Operational Improvements | |
| ☐ Fringe and corridor parking facilities | |
| ☐ Most transportation control measures in
The Clean Air Act | |
| ☐ Development and establishment of
management system | |

6. Please describe the proposed project within the space provided.

This project involves the reconstruction of Oneida Street from East Railroad Street to Lakeshore on the City. Project includes removal and replacement of a 70+ year old collector street in a 100 foot right of way with a new roadway designed to carry the current traffic loading. The roadway is beyond its useful life and requires substantial patching and other repairs yearly. The corridor has heavy commercial and industrial users along its west side with dependence on good infrastructure to serve its clients. The roadway is also a main north-south corridor that connects the schools with the main residential areas of the community. Businesses located along the roadway include service companies such as a feed mill with scales that service Hillshire and Tyson Foods and the School Transportation Fleet Facility. This road also serves as a primary north – south route for public safety services. The project will consist of removal and replacement of approximately 1800 feet of 31 foot wide roadway with replacement using a 31 foot wide PCCC pavement, 8" thick on a modified subgrade with subdrains. The total project cost is approximately \$2,645,800 with the city applying for 50% STP funding for the roadway portion of the project. Other improvements to be financed by the city include storm sewer, water main and sanitary sewer improvements along with the engineering costs. No easement or right of way acquisition is anticipated with the project.

7. Please provide a brief description of the project area. Include a map with the area marked (please do not enclose and color maps or maps larger than 8.5" x 14" (legal size) paper

Oneida Street is a main north – south corridor in the city that runs from 13th Street on the north side of the city to the lake on the south. The roadway serves as a collector roadway in the community and is a main route for public safety services. See attached map of the city.

8. Project Budget

EXPENSES		REVENUE		
ITEM	COST	SOURCE	AMOUNT	%
Land/Site Acquisition Costs	-0-	Regional	\$476,244	18
Construction/Materials Costs	\$2,083,310	Local	\$2,169,556	Click here to enter text
Engineering/Consulting Costs	\$562,490		Click here to enter text	82
Capital Acquisition explain:	Click here to enter text.		Click here to enter text	Click here to enter text
Click here to enter text.			Click here to enter text	Click here to enter text
Other (expl.)				
Click here to enter text.				
TOTAL COST	\$2,645,800	TOTAL COST	\$2,645,800	100

9. Work plan and schedule for project completion (please be sure to coincide the work plan with the correct federal fiscal year, fiscal year for this cycle is 2021-2024(Federal fiscal year is October 1-September 30)

The proposed schedule for the improvements anticipated to be construction in the CY 2024 follows: 1) Design Phase May 2023 to October 2023; 2) Letting December 2023 – January 2024; 3) Construction April 2024 to September 2024; 4) Project Closeout October 2024 – December 2024.

10. Is there a need to coordinate with another entity in the programming and/or implementation of this project?

☐ Yes

☒ No

If yes, list other entities involved and describe the interaction needed and coordination to date.

Click here to enter text.

PRELIMINARY COST ESTIMATE

Summary of Improvements

Oneida Street Reconstruction, Phase 2

City of Storm Lake, Iowa

Project No. P11.120339

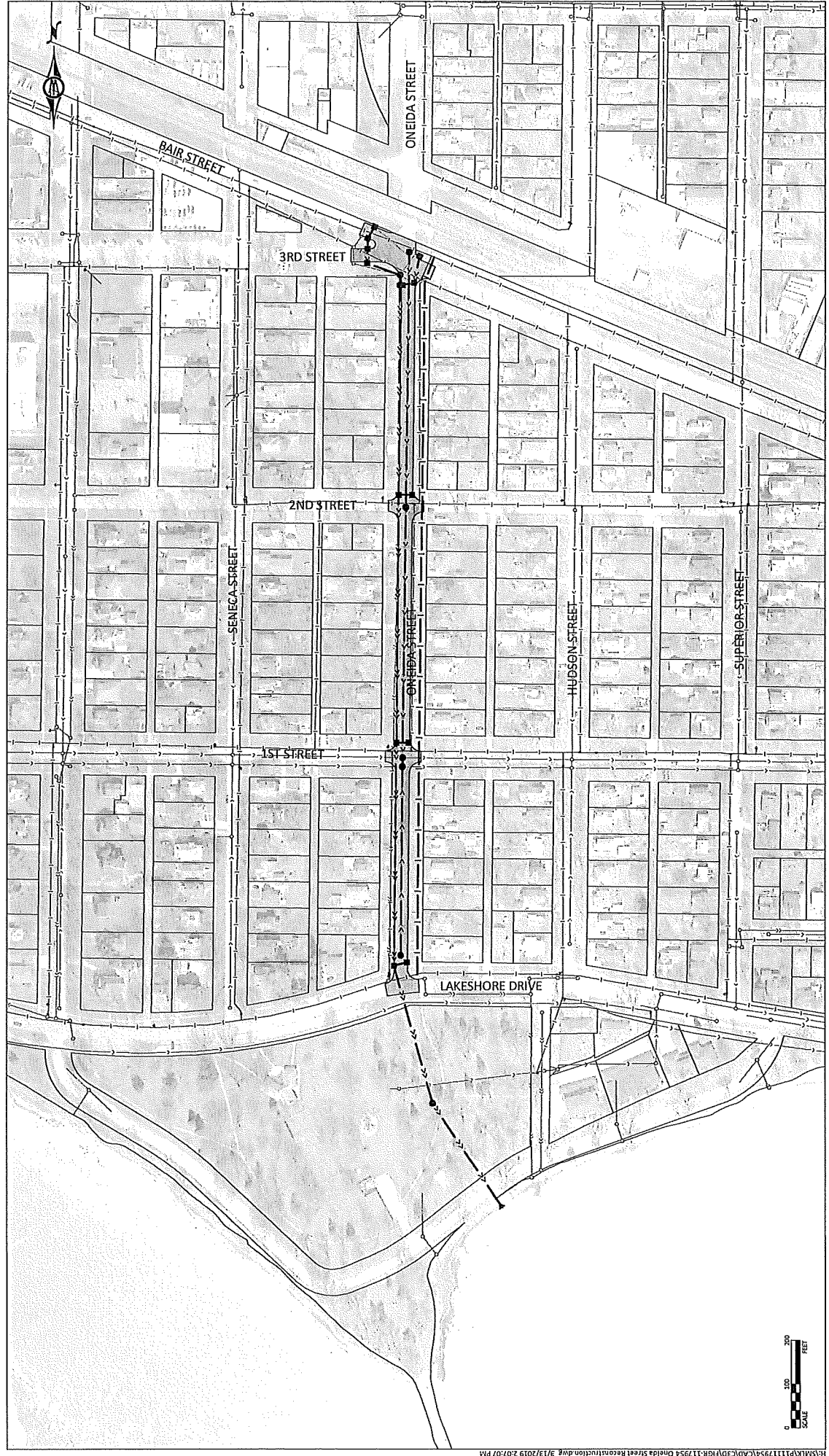


Real People. Real Solutions.

2/20/2020

Segment	Street & Grading Cost	Sidewalk Cost	Sanitary Sewer Cost	Watermain Cost	Storm Sewer Cost	Project Cost
Oneida Street - 3rd Street to Lakeshore Drive	\$1,218,700.00	\$208,400.00	\$320,700.00	\$417,800.00	\$480,200.00	\$2,645,800.00
Total Estimated Project Cost	\$1,218,700.00	\$208,400.00	\$320,700.00	\$417,800.00	\$480,200.00	\$2,645,800.00

Preliminary Cost Estimate
Bolton & Menk, Inc.



QUESTIONS 11-13 ARE FOR HIGHWAY PROJECTS ONLY

11. If applicable, what is the Average Daily Traffic of the proposed project?

850

12. If applicable, what is the Federal Functional Classification(s) of the route within the proposed project?

Collector

13. If applicable, what are the basic roadway sufficiency numbers for the route within the proposed project?

Unknown

PROJECT CHECKLIST

14. The following items are required		Note: Applications must specifically and directly answer each criterion within the space provided to receive points. Pertinent attachments are allowed such as maps, drawings, and/or photos as long as they are reproducible
☒	Project Description	
☒	Project Location Map (reproducible)	
☒	Project Budget	
☒	Project work plan with schedule	

Please fill in the following appropriate blanks:

We, the City of Storm Lake Support this application for Oneida Street Reconstruction – Phase 2
(City, County or State) (Project Name)

by submitting this application, Regional FAST Act

(underline one)

funds in the amount of \$476,244 are requested. This project has the support of local match

funding of \$2,169,556, which is Click here to enter text.% of the anticipated project costs.

BY: _____

Michael Porsch, Mayor

ATTEST: _____

Mayra Martinez, City Clerk

Staff Summary

3/2/2020

Agenda Item # 17.



City of Storm Lake
PO Box 1086
Storm Lake, IA 50588
p (712) 732-8000
f (712) 732-4114

REPORT TO: Honorable Mayor and City Council

FROM:

SUBJECT: **City Council Requested Items**

BACKGROUND: Future City Council Work Sessions:
Unscheduled Items:
1. None At This Time

FISCAL IMPACT: No Fiscal Impact at this time.

RECOMMENDATION: Concurrence for each item to be considered for a specified City Council Meeting work session or deny work session consideration for the following items:
1. none at this time