VILLAGE OF JACKSON
BOARD OF PUBLIC WORKS MEETING AGENDA
Tuesday, February 27, 2024 at 6:00 PM

Jackson Municipal Complex
Village Board Room
N168W19851 Main Street
Jackson, WI 53037

1. Call to Order and Roll Call
2. Approval of Minutes for the Board of Public Works Meeting of January 30, 2024
3. Discussion on Stormwater Issue at 2283 Fenceline Drive - Amy Gill
4. 2024 License Agreement for Farming Public Land in TID #7
5. 2024 Wastewater Treatment Plant Project - Construction Services with Town & County Engineering, in the Amount of $331,000.00
6. Change Order #4 - Jackson Wastewater Treatment Facility Storage Garage - Hunzinger Construction
7. Pay Request #5, Final - Jackson Wastewater Treatment Facility Storage Garage - Hunzinger Construction, in the Amount of $76,989.91
8. Pay Request #4 - STH 60 Street Lighting Project - Wil-Surge, in the Amount of $13,123.68
9. Review of Electric Easement - We-Energies - Outlot 2, Oaks of Jackson
10. Review of Twin Creeks Lift Station and Sanitary Sewer Interceptor Study
11. Announcing Spring Cleanup Day for 2024
12. Director of Public Works Report
13. Citizens/Village Staff to address the Board of Public Works
14. Adjourn

Persons with disabilities requiring special accommodations for attendance at the meeting should contact the Administration Department at the Jackson Municipal Complex at least one (1) business day prior to the meeting.

It is possible that members of the Village Board may attend the above meeting. No action will be taken by any governmental body at this meeting other than the governmental body specifically referred to in this meeting notice. This notice is given so that members of the Village Board may attend the meeting without violating the open meeting law.

MINUTES
BOARD OF PUBLIC WORKS MEETING
Tuesday, January 30, 2024 at 6:00 PM
Board of Public Works Meeting

1. Call to Order and Roll Call

   The meeting was called to order at 6:00 PM by Pres. Heckendorf.

   Members Present: Pres. Heckendorf, Tr. Engelhardt, Ethan Hollenberger, Randy Matter, Stephanie Egner, Jeff Mitchell, and Chris Sberna.
   Members Excused: None
   Members Absent: None
   Staff Present: Administrator Jen Keller, Public Works Director Brian Kober, Police Chief Vossekuil, and Clerk Anastasia Gonstead.
   Trustees Present in Audience: Tr. Kruepke

2. Approval of Minutes for the Board of Public Works Meeting of November 28, 2023

   The motion to approve the minutes for the Board of Public Works meeting of November 28, 2023, was made by E. Hollenberger and seconded by C. Sberna.

   Vote: 7 ayes, 0 nays. Motion carried.

3. Discussion on Glen Brooke Drive Traffic Concerns - Residents Mike and Kristin Kania

   Handout given to the body, by Mike and Kristin Kania. Mr. Kania spoke to the body and provided background on concerns they are having regarding speeding in the Village of Jackson.

   Director Kober continued the discussion, further expanding upon the memo that was included in the agenda packet. Chief Vossekuil explained to the body the steps the police department takes each time they receive a traffic complaint. He provided the option of a speed study through use of a shared speed trailer, but cautioned that results can be skewed. Chief Vossekuil also provided the option that other communities use digital speed limit signs that will flash if you go five (5) miles over the speed limit.

   The body continued discussion regarding various options, including a speed study and markings on the roads, as well as barriers with the State Hwy 60 road construction that is forthcoming this year.

   Mr. Kania addressed the body again and encouraged them to pursue some of the options he presented in his handout and not take the money to use on something like a speed study, which takes time. Director Kober clarified that a speed study does not cost additional money, other than the staff hours put into it.

The body expressed interest in pursuing a speed study, when feasible, and using that data to make a future decision. No formal action taken/needed at this time.

4. Review of Bids for the 2024 Jackson Wastewater Treatment Plant Improvement Project

Director Kober provided an overview of the the project, the base bid and the alternates, as well as the received bids. A supplemental handout regarding the bids was provided to the body, with Director Kober providing an overview of it. Tr. Engelhardt inquired about the longevity of the piping. Director Kober provided an explanation of what they currently have vs. the alternative they are looking to pursue.

Motion to recommend the Village Board award JH Hassinger a contract for the Base Bid, Supplemental Bid, and Alternative Bid Items C-2 and C-3 for $4,715,248.00 by Pres. Heckendorf and seconded by E. Hollenberger.

Vote: 7 ayes, 0 nays. Motion carried.

5. Change Order #1 - Jackson Wastewater Treatment Facility Storage Garage - Hunzinger Construction

Director Kober explained the background for Change Order #1, including the reasoning for the $51,677.00 credit, resulting in a new contract amount of $815,323.00.

The motion to recommend to the Budget and Finance Committee and to the Village Board to approve Change Order #1 for the Jackson Wastewater Treatment Facility Storage Garage, with Hunzinger Construction, was made by E. Hollenberger and seconded by Tr. Engelhardt.

Discussion: Tr. Engelhardt had questions about the materials being used. Director Kober clarified.

Vote: 7 ayes, 0 nays. Motion carried.

6. Change Order #2 - Jackson Wastewater Treatment Facility Storage Garage - Hunzinger Construction

Director Kober provided the background for Change Order #2, including the reasoning for the additional $684.00, resulting in a new contract amount of $816,007.00.

The motion to recommend to the Budget and Finance Committee and to the Village Board to approve Change Order #2 for the Jackson Wastewater Treatement Facility Storage Garage, with Hunzinger Construction, was made by Tr. Engelhardt and seconded by J. Mitchell.

Vote: 7 ayes, 0 nays. Motion carried.

7. Change Order #3 - Jackson Wastewater Treatment Facility Storage Garage - Hunzinger Construction

Director Kober provided the background for Change Order #3, including the reasoning for the $1,200.00 credit, resulting in a new contract amount of $814,123.00.

The motion to recommend to the Budget and Finance Committee and to the Village Board to

approve Change Order #3 for the Jackson Wastewater Treatment Facility Storage Garage, with Hunzinger Construction, was made by E. Hollenberger and seconded by Tr. Engelhardt.

Vote: 7 ayes, 0 nays. Motion carried.

8. Pay Request #3 - Jackson Wastewater Treatment Facility Storage Garage - Hunzinger Construction, in the Amount of $227,905.83

Director Kober provided an update on the project, and added that the pay request reflects Change Order #1.

The motion to recommend to the Budget and Finance Committee and to the Village Board to approve Pay Request #3 for the Jackson Wastewater Treatment Facility Storage Garage, to Hunzinger Construction, in the amount of $227,905.83 was made by Tr. Matter and seconded by J. Mitchell.

Vote: 7 ayes, 0 nays. Motion carried.

9. Pay Request # 4 - Jackson Wastewater Treatment Facility Storage Garage - Hunzinger Construction, in the Amount of $142,692.68

Director Kober provided an update on the project, adding that there may be additional change orders forthcoming.

The motion to recommend to the Budget and Finance Committee and to the Village Board to approve Pay Request #4 for the Jackson Wastewater Treatment Facility Storage Garage, to Hunzinger Construction, in the amount of $142,692.68 was made by Tr. Matter and seconded by E. Hollenberger.

Vote: 7 ayes, 0 nays. Motion carried.

10. Pay Request #2 - STH 60 Street Lighting Project - Wil-Surge, in the Amount of $94,502.93

Director Kober provided an update on the project. Director Kober also explained that this matter has already gone to the Budget & Finance Committee and will go to the Village Board the evening of this meeting. The process was changed due to the canceled meeting from earlier in January.

The motion to recommend to the Village Board to approve Pay Request #2 for the State Hwy 60 Street Lighting Project, to Wil-Surge, in the amount of $94,502.93 was made by Tr. Matter and seconded by Tr. Engelhardt.

Vote: 7 ayes, 0 nays. Motion carried.

11. Pay Request #3 - STH 60 Street Lighting Project - Wil-Surge, in the Amount of $125,124.79

The motion to recommend to the Budget and Finance Committee and to the Village Board to approve Pay Request #3 for the State Hwy 60 Street Lighting Project, to Wil-Surge, in the amount of $125,124.79 was made by C. Sberna and seconded by Tr. Engelhardt.

Vote: 7 ayes, 0 nays. Motion carried.

12. Review Bids for the Eagle Drive & STH 60 Intersection Improvement Project

Director Kober provided an overview of his memo included in the agenda packet. He explained WI DOT bid both the projects together. Bids came in 21% lower than anticipated. There were six bidders, the difference was minimal between the highest and lowest bid, they were competitive. Vinton Construction was the low bidder.

The motion to recommend the Village Board approve the bid from Vinton Construction, for the Eagle Drive and State Hwy 60 Roundabout Project, in the amount of $294,459.02 was made by Pres. Heckendorf and seconded by Tr. Engelhardt.

Vote: 7 ayes, 0 nays. Motion carried.

13. Review of DNR Urban Non-Point Source Planning Grant Report - Draft

Director Kober provided an overview of the draft DNR Urban Non-Point Source Planning Grant report. Waiting for some exhibits to be added. Once finalized, proposing a biofilter to take care of stormwater on the east side of the road, on either side of the creek. Next month he should have the final report. Tr. Engelhardt asked how this would affect the proposed dog park. Director Kober provided an explanation of where each would be located.

No action needed/taken.

14. Director of Public Works Report

Director Kober provided a summary of his report included in the agenda packet.

The motion to place the Director of Public Works monthly report on file was made by Pres. Heckendorf and seconded by E. Hollenberger.

Vote: 7 ayes, 0 nays. Motion carried.

15. Citizens/Village Staff to address the Board of Public Works

None.

16. Adjourn

A motion to adjourn the meeting was made by Pres. Heckendorf and seconded by Tr. Engelhardt.

Vote: 7 ayes, 0 nays. Motion carried. The meeting was adjourned at 6:49 PM.

Respectfully Submitted,
Anastasia Gonstead - Village Clerk

Memo

To: Jen Keller, Village Administrator

From: Brian W. Kober, P. E., Director of Public Works BWK

Subject: 2283 Fenceline Drive – Sump Pumps Continuous Running

Date: February 20, 2024

Policy Question: The Property Owner (Amy Gill) at 2283 Fenceline Drive called the Jackson Water Utility for help on her sump pumps (two) running continuously and stated she could not sleep. After investigation and providing free service is the Jackson Water Utility required to continue in finding a solution?

Background:

1) After 2004, when the water main was installed on East Gate Drive, the previous property owner had problems with the sump pump continuously running. After investigation, the Jackson Water Utility found the water main to be leaking causing the sump pump to continuously run. The water main was repaired, and the sump pump stopped running continuously.
2) In August of 2022, the sanitary sewer and water main was extended from East Gate Drive to the east to serve the development of Maple Fields Phase 1. Hydraulic dams were installed during the installation of the sewer and water mains. The hydraulic dams are designed to stop the ground water in the trench from traveling downhill. The property of 2283 Fenceline Drive is at the bottom of the hill.
3) In April of 2023, Mrs. Amy Gill initially contacted Jeff Kreutzinger Water Supervisor of the sump pump issue. On May 3, 2023, the stormwater pond east of said property was die tested and no die was found in the sump pump basins of 2283 Fenceline Drive or 2297 Fenceline Drive.
4) On May 11, 2023, the water main was exposed by hydro-excavation and die test with a different color and no die was found in any sump pump basin.
5) On June 1, 2023, Jeff Deitsch Utility Superintendent, and Brian Kober, Director of Public Works met with Steve and Amy Gill at there home, and both sump pump basins were inspected. The sump pumps were turned off to determine the height of the ground water in the basins and in order to raise the pumps to a height out of the water, so the continuous pumping stops. The new pump height will only pump water from the outside of the foundation wall. The first attempted of raising the pumps was done by the property

owner. The pumps needed to be raised higher, so the Utility Superintendent helped in the final adjustments of the pumps.

6) The pumps had stopped with the adjustments, although, rain/snow occurred, and the sump pumps started pumping again on a continuous basis.
7) During one of the onsite visits and inspection of the sump pump basins found to have holes drilled in the bottom of the basins. The holes cause unnecessary groundwater to enter the basin. The sump pump basin is designed to capture water from the drain tile on the outside of the foundation wall. The unnecessary groundwater is causing the pumps to run continuously.
8) On February 5, 2024, Mrs. Amy Gill requested to be on the next Board of Public Works meeting agenda.

Summary: Many hours have been spent by the Jackson Water Utility to find a solution for the continuous sump pump running. As per her email, Mrs. Amy Gill has extended her sincere gratitude and appreciation on finding a solution. The die testing was done to see if excess groundwater is coming from the new development (Maple Fields), and the tests were negative. The said property is located in a wet area (Twin Creeks Subdivision) with high groundwater. Recommend changing the sump basins with no holes in the bottom to have the sump pumps only pump water from the drain tile.

If you have any questions, please do not hesitate to ask.

Brian W. Kober, P.E.

From: Gill, Amy
To: Brian Kober
Cc: steve@teamescape262.com; Jen Keller; Brian Heckendorf; Jeff Deitsch; Jeff Kreutzinger; Kevin Anderson
Subject: RE: 2283 Fenceline Drive Water Drainage Problem
Date: Wednesday, February 7, 2024 3:34:10 PM
Attachments: image001.png
image002.png
image003.png
image004.png

Brian,
Thank you for the response and helping me get aligned with the next tactical step to address the drainage problem. I would like to extend my sincere gratitude and appreciation in helping navigate through this problem for the last 2 years. You and your team went above and beyond to help identify root cause.

I will attend the February 27th meeting and will watch for the meeting agenda via email.

Regards,
Amy Gill

From: Brian Kober <brian.kober@villageofjacksonwi.gov>
Sent: Wednesday, February 7, 2024 3:17 PM
To: Gill, Amy <Amy.Gill@fisglobal.com>
Cc: steve@teamescape262.com; Jen Keller <jen.keller@villageofjacksonwi.gov>; Brian Heckendorf <brian.heckendorf@villageofjacksonwi.gov>; Jeff Deitsch <jeff.deitsch@villageofjacksonwi.gov>; Jeff Kreutzinger <jeff.kreutzinger@villageofjacksonwi.gov>; Kevin Anderson <kevin@neumanncompanies.com>
Subject: RE: 2283 Fenceline Drive Water Drainage Problem

Amy,

Per your request, the "2283 Fenceline Drive Water Drainage Problem" will be an item for discussion on the Board of Public Works Tuesday, February 27, 2024 meeting agenda. The meeting is at 6:00 PM in the Village Board Room located at Municipal Complex (N168 W19851 Main Street).

Since, the item has been requested to be on the Board of Public Works agenda, all communications between you and the Village will cease until the Board of Public Works Committee determines how to proceed.

Once the meeting's agenda has been created (Thursday, February 22nd) a copy will be emailed to you.

Brian W. Kober. P.E.
Director of Public Works/Village Engineer
Village of Jackson
W194 N16660 Eagle Drive

Jackson, WI 53037
Phone: 262-677-0707
Fax: 262-677-8770

From: Gill, Amy <Amy.Gill@fisglobal.com>
Sent: Monday, February 5, 2024 5:04 PM
To: Brian Kober <brian.kober@villageofjacksonwi.gov>
Cc: steve@teamescape262.com
Subject: 2283 Fenceline Drive Water Drainage Problem

Brian,
I went over to my neighbor's house (southeast) immediately after we talked to check in with them on their sump pump frequency. Jeff Deitsch (tall Jeff) had interviewed them (Jake & Nicole) about a year ago and they confirmed that their sump pump began to increase in frequency after the development occurred. Today, February 5th, 2024, Jake (neighbor) stated that his sump pump is going off constantly. He seemed a bit 'defeated' about the situation and asked if I had made any progress with the village on root cause.

In conclusion, 2 homes are having same problem since development. The symptoms and timeline of the issue match across both homeowners. How do we get this escalated to the proper team for further assessment? It is hard to believe that both homes may have ineffective sump pump processes/systems.

I appreciate your help.

Amy Gill
Sr. Director, IT Systems
IBS SAS MAS FRC Service Delivery
Cell: 262-853-8967
amy.gill@fisglobal.com

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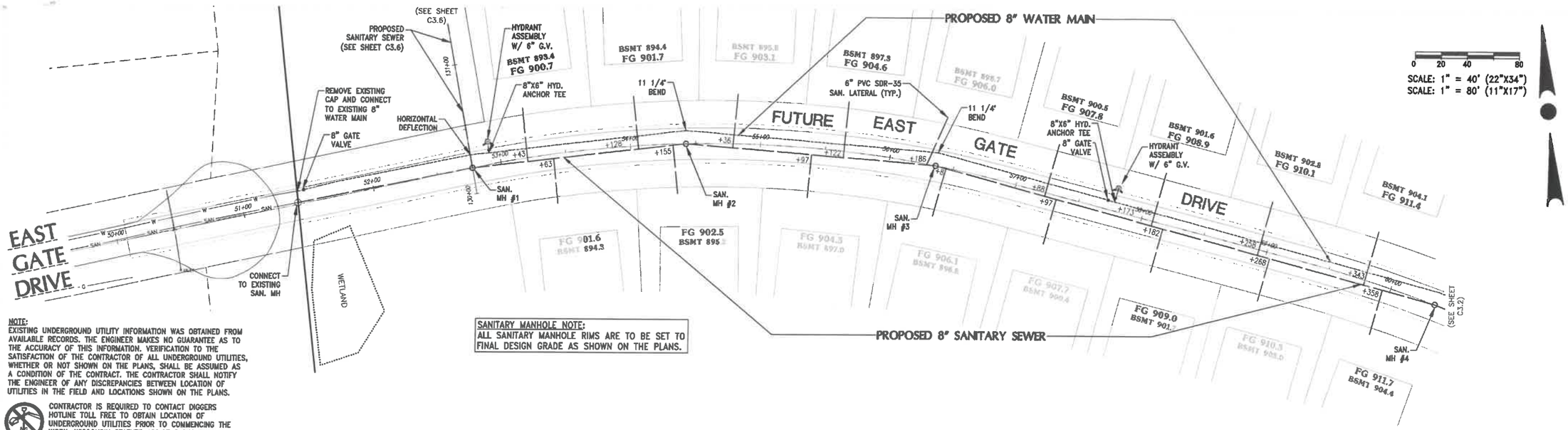


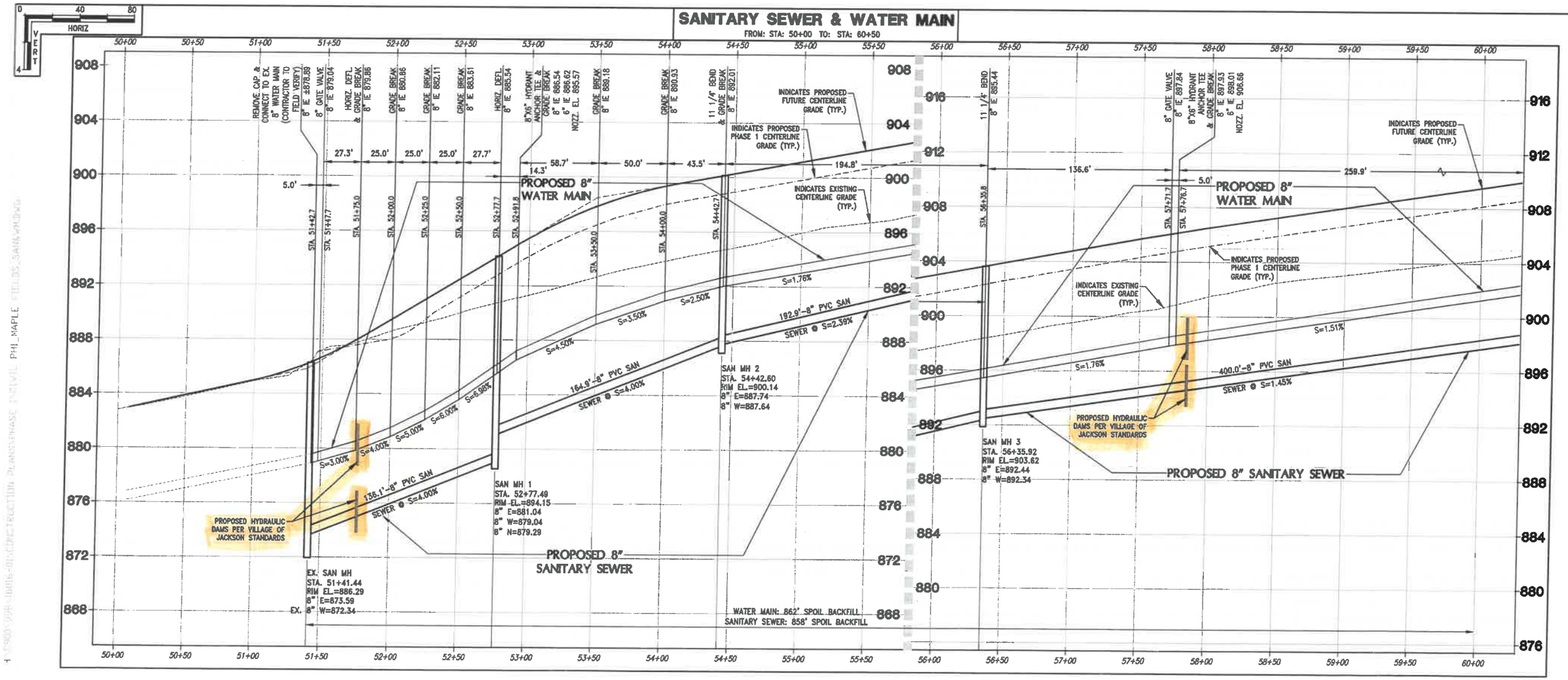
NOTE:
EXISTING UNDERGROUND UTILITY INFORMATION WAS OBTAINED FROM AVAILABLE RECORDS. THE ENGINEER MAKES NO GUARANTEE AS TO THE ACCURACY OF THIS INFORMATION. VERIFICATION TO THE SATISFACTION OF THE CONTRACTOR OF ALL UNDERGROUND UTILITIES, WHETHER OR NOT SHOWN ON THE PLANS, SHALL BE ASSUMED AS A CONDITION OF THE CONTRACT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN LOCATION OF UTILITIES IN THE FIELD AND LOCATIONS SHOWN ON THE PLANS.

CONTRACTOR IS REQUIRED TO CONTACT DIGGERS HOTLINE TOLL FREE TO OBTAIN LOCATION OF UNDERGROUND UTILITIES PRIOR TO COMMENCING THE WORK. WISCONSIN STATUTE 182.0715 REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.
CALL DIGGERS HOTLINE 1-800-242-8511

SANITARY MANHOLE NOTE:
ALL SANITARY MANHOLE RIMS ARE TO BE SET TO FINAL DESIGN GRADE AS SHOWN ON THE PLANS.

SANITARY SEWER & WATER MAIN

FROM: STA: 50+00 TO: STA: 60+50



WISCONSIN PROFESSIONAL ENGINEER
JOSHUA D. PUDELKO
E-39420
WAUWATOSA, WI

TRIO DESIGN • LAND SURVEYING CIVIL ENGINEERING
4100 N. CALHOUN RD
BROOKFIELD, WI 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481
EMAIL: mail@trioeng.com

PROJECT:
MAPLE FIELDS – PHASE 1
SINGLE FAMILY RESIDENTIAL SUBDIVISION
VILLAGE OF JACKSON, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

REVISION HISTORY	
DATE	DESCRIPTION
09/30/2021	PRELIM CIVIL PLANS
11/04/2021	VILLAGE SUBMITTAL
02/16/2022	PHASE 1 SUBMITTAL
03/18/2022	WATER MAIN/GRADING UPDATES
04/28/2022	PER VILLAGE REVIEW
05/11/2022	SANITARY SEWER UPDATES

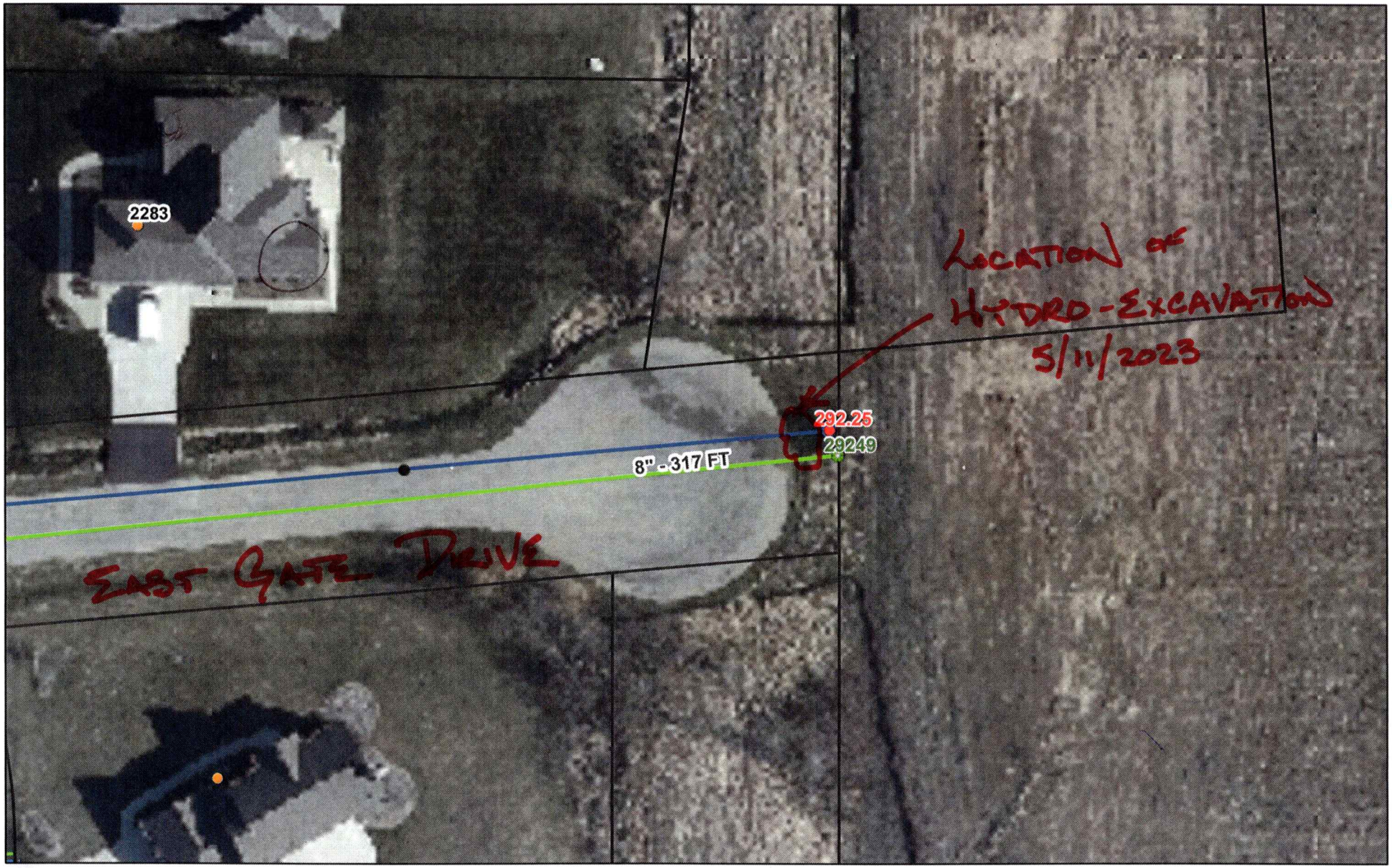
DATE: MAY 11, 2022

JOB NUMBER: 16016

DESCRIPTION: SANITARY SEWER & WATER MAIN PLAN & PROFILE

SHEET C3.1

Village of Jackson



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Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA,

Village of Jackson

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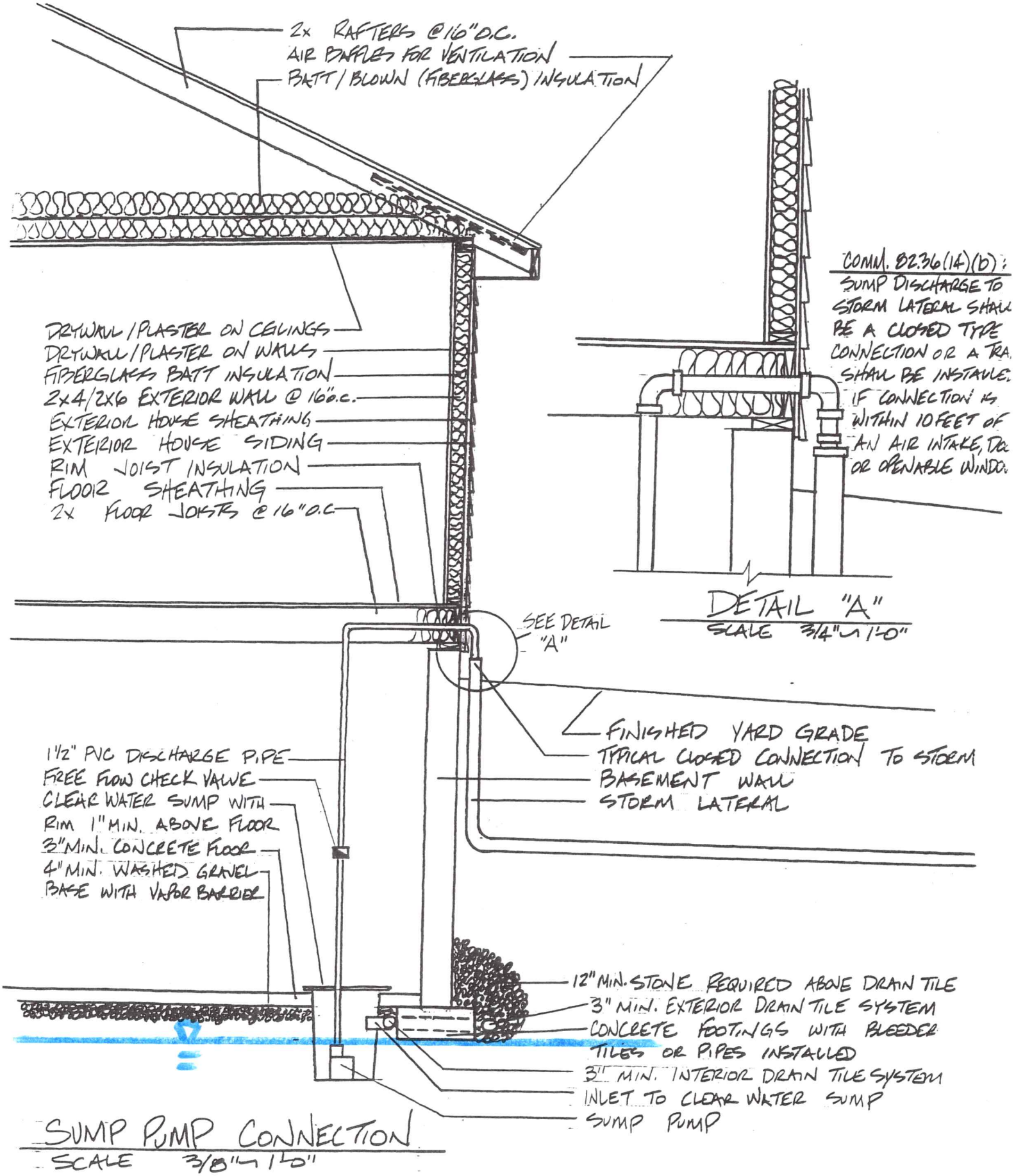
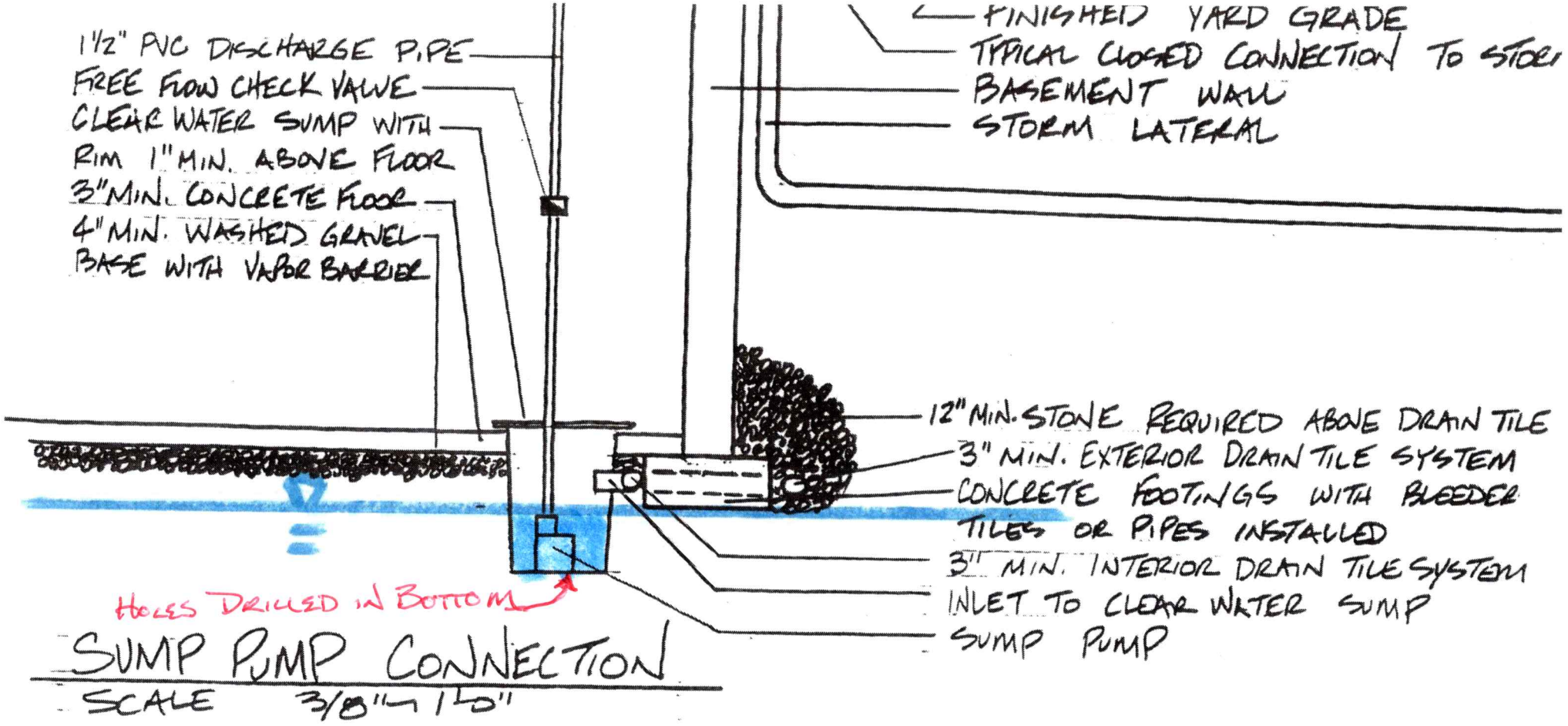

2x RAFTERS @16" O.C.
AIR BAFFLES FOR VENTILATION
BATT / BLOWN (FIBERGLASS) INSULATION
DRYWALL / PLASTER ON CEILINGS
DRYWALL / PLASTER ON WALLS
FIBERGLASS BATT INSULATION
2x4/2x6 EXTERIOR WALL @ 16" o.c.
EXTERIOR HOUSE SHEATHING
EXTERIOR HOUSE SIDING
RIM JOIST INSULATION
FLOOR SHEATHING
2x FLOOR JOISTS @ 16" O.C.
SEE DETAIL "A"
1 1/2" PVC DISCHARGE PIPE
FREE FLOW CHECK VALVE
CLEAR WATER SUMP WITH RIM 1" MIN. ABOVE FLOOR
3" MIN. CONCRETE FLOOR
4" MIN. WASHED GRAVEL BASE WITH VAPOR BARRIER
FINISHED YARD GRADE
TYPICAL CLOSED CONNECTION TO STORM
BASEMENT WALL
STORM LATERAL
12" MIN. STONE REQUIRED ABOVE DRAIN TILE
3" MIN. EXTERIOR DRAIN TILE SYSTEM
CONCRETE FOOTINGS WITH BLEEDER TILES OR PIPES INSTALLED
3" MIN. INTERIOR DRAIN TILE SYSTEM
INLET TO CLEAR WATER SUMP
SUMP PUMP
COMM. 82.36(14)(b): SUMP DISCHARGE TO STORM LATERAL SHALL BE A CLOSED TYPE CONNECTION OR A TRA
SHALL BE INSTALLE
IF CONNECTION IS WITHIN 10 FEET OF AN AIR INTAKE, DO
OR OPENABLE WINDO
DETAIL "A"
SCALE 3/4" = 1'-0"
SUMP PUMP CONNECTION
SCALE 3/8" = 1'-0"



SUMP PUMP CONNECTION

SCALE 3/8"=1'-0"

Amendment to 2024 License Agreement to Farm Public Land

THIS LICENSE AGREEMENT TO FARM PUBLIC LAND is made this _____ day of_____, 2024, between the VILLAGE OF JACKSON, a municipal corporation, of Washington County, Wisconsin ("VILLAGE"), and Robert Loduha, ("Licensee").

WITNESSETH:

The VILLAGE is the owner of a parcel of land located in the Village of Jackson, which is vacant public land located Sec. 20, T10N, R20E PT OF NE NW LOT 2 DOC 1466506 + 1466507 EXC CSM 6969 and identified by Tax Key: V3_053600C. As the VILLAGE has plans to sell a portion of the property, there shall be an amendment to the agreement to only lease LOT 3 as there are no current plans to develop that portion of the property in 2023, and to limit weed growth during 2023, the VILLAGE will grant a license to Robert Loduha for the purpose of farming. In the event the VILLAGE chooses to change the use of these subject lands as commonly defined, a "Term of Convenience" of no less than 120 days shall be provided to the Licensee. Any financial loss for the removal of planted crops, due to termination of the agreement, shall be reimbursed to the Licensee by the VILLAGE with a maximum allowable repayment in the sum of $1,000. This repayment shall be calculated proportionately to the amount of land to be restored and sold or developed.

NOW THEREFORE, IT IS AGREED between the VILLAGE and Licensee as follows:

1. Premises. VILLAGE, in consideration of the covenants contained herein, agree to issue a License Agreement to Robert Loduha for the space and area referred to below as the "demised premises" for a fee upon the terms set forth for the purposes of farming.

2. Demised Premises. The demised premise consists of vacant public land located in Sec. 20, T10N, R20E PT OF NE NW LOT 2 DOC 1466506 + 1466507 EXC CSM 7284 and identified by Tax Key: V3_053600H which consists of 3 acres for LOT 3. This land is not currently maintained by the Village of Jackson. See EXHIBIT A for map details.

3. Term. The term of this license agreement is from May 1, 2024 to November 30, 2024.

4. Obligations of Licensee.

A. Type of Operation. The demised premises shall be occupied and used by Licensee for farming purposes only. The Village benefits by the continued maintenance of the property. These crops may be harvested and sold by the Licensee as he/she sees fit. The Village is not entitled to any proceeds from the sale of these crops.

B. Cleanliness, Trash, Etc. Licensee shall maintain the demised premises in a clean, neat and sanitary condition.

5. License Fee. The License Fee shall be 2.5 acres at $130.00 per acre for a total of $325 per year. The full License Fee shall be payable upon cropping of the land, or before November 30th, 2024.

6. Insurance.

A. Fire Insurance. Licensee shall procure and keep in force fire and extended coverage insurance upon its improvements, furniture, furnishings, fixtures and equipment to their full insurable value and shall furnish the VILLAGE'S Clerk with evidence that coverage has been procured and is being maintained in full force.

B. Liability Insurance. Licensee shall maintain with insurance underwriters satisfactory to the VILLAGE a standard form of policy or policies of insurance in such amounts as may from time to time be approved by VILLAGE protecting both Licensee and VILLAGE against public liability, products liability and property damage. Licensee shall promptly, after the execution of this License Agreement, furnish such policy or policies for property damage growing out of any one accident or other cause in the sum of not less than $1 million, for personal injury/death growing out of any one accident or other cause with liability of not less than $1 million, the coverage to include products liability. It is understood that the specified amounts of insurance in no way limits the liability of Licensee, and that Licensee shall carry insurance in amounts so as to indemnify the VILLAGE from all claims, suits, demands and actions. Licensee shall furnish a certificate from the insurance carrier or carriers showing insurance to be in full force during the term of this contract or shall deposit copies of the policies that give this coverage with VILLAGE'S Clerk.

7. Indemnity. Licensee agrees to defend and indemnify the VILLAGE from all fines, suits, claims, demands and actions of any kind by reason of any of its operations under this license agreement and agrees to assume all the risk in the operation of its business and shall be solely responsible and answerable in damages for any accidents or injuries to persons or property.

8. Signs. Licensee shall not erect, install, operate or cause or permit to be erected, installed or operated in or upon the demised premises, any signs or other similar advertising device without having first obtained the approval of the VILLAGE.

9. Land Condition at End of License. Licensee shall disc/till the land after crops have been removed and return the land to its original condition, unless otherwise approved by the Village Board, by no later than November 30, 2024.

10. Nonassignment or Subletting. Licensee shall not assign this agreement and its rights, in whole or in part, except with the prior written consent of the VILLAGE.

11. Default. In the event that Licensee shall fail to pay the agreed upon License Fee the VILLAGE shall have the right to terminate this License Agreement. In the event Licensee fails to keep and perform or shall violate the terms, covenants and conditions of this license agreement on its part to be kept and performed and Licensee shall not have cured or corrected this failure or violation within ten (10) days after written notice shall have been given to Licensee, the VILLAGE shall have the right to terminate this license agreement.

Upon the occurrence one or more of the events of default, Licensee's right to possession of the demised premises shall terminate, and Licensee shall surrender possession of the demised premises immediately. In this event, Licensee grants to the VILLAGE full and free license to enter into and upon the premises or any part of them to take possession with or without process of law and to expel and remove the Licensee.

12. Not Joint Venture. It is mutually understood and agreed that nothing contained in this License Agreement is intended, or shall be construed as, in any way creating or establishing the relationship of co-partners or joint venturers between the parties or as constituting the Licensee as the agent or representative of VILLAGE for any purpose or in any manner.

13. Rules and Regulations. Licensee shall observe all of the VILLAGE'S and Washington County ordinances as well as the State of Wisconsin Statutes regarding activity on the farmed property.

14. Termination Without Cause. If this License Agreement is determined to be invalid or beyond the authority of the VILLAGE or if the Village Board without cause acts to terminate this License Agreement, Licensee shall cease using the demised premises as an extension of its operation and shall abandon the same within 10 days after written notification of the termination.

15. Entire Agreement/Amendment. The License Agreement contains the entire agreement of the parties and there are no other promises or conditions in any other agreement whether oral or written. This License Agreement may be modified or amended in writing, if the writing is signed by both parties and approved by the Village Board with a favorable recommendation from the Board of Public Works.

16. Severability. If any portion of this License Agreement shall be held to be invalid or unenforceable for any reason, the remaining provisions shall continue to be valid and enforceable. If a Court finds that any provision of the License Agreement is invalid or enforceable, then such provision shall be deemed to be written, construed, and enforced as so limited.

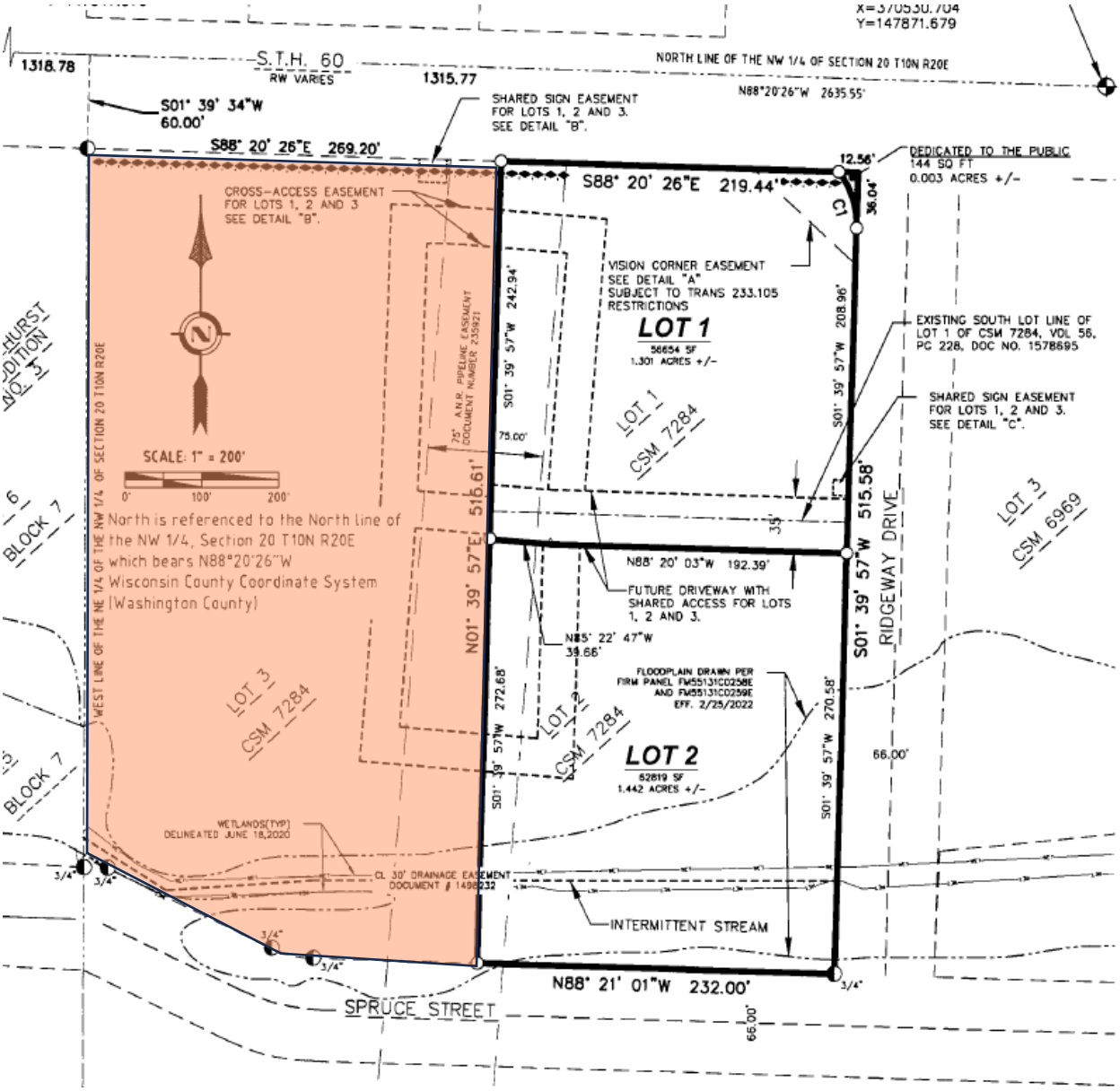
17. Governing Law. The License shall be construed in accordance with the laws in the State of Wisconsin.

IN WITNESS WHEREOF, the parties hereto have executed this license agreement on the day and year first above written.

License Issuer:	**Licensee:**
VILLAGE OF JACKSON	Robert Loduha
By:_____ Brian J. Heckendorf, Village President	By:_____ Robert Loduha

Attest:_____
Anastasia Gonstead, Village Clerk

EXHIBIT A


X=370530.704
Y=147871.679
1318.78
S.T.H. 60
RW VARIES
1315.77
NORTH LINE OF THE NW 1/4 OF SECTION 20 T10N R20E
N88°20'26"W 2635.55'
S01° 39' 34"W
60.00'
SHARED SIGN EASEMENT
FOR LOTS 1, 2 AND 3.
SEE DETAIL "B".
S88° 20' 26"E 269.20'
S88° 20' 26"E 219.44'
12.56'
DEDICATED TO THE PUBLIC
144 SQ FT
0.003 ACRES +/-
C1
36.04'
CROSS-ACCESS EASEMENT
FOR LOTS 1, 2 AND 3
SEE DETAIL "B".
VISION CORNER EASEMENT
SEE DETAIL "A"
SUBJECT TO TRANS 233.105
RESTRICTIONS
LOT 1
56654 SF
1.301 ACRES +/-
S01° 39' 57"W 242.94'
S01° 39' 57"W 208.96'
EXISTING SOUTH LOT LINE OF
LOT 1 OF CSM 7284, VOL 56,
PG 228, DOC NO. 1578695
SHARED SIGN EASEMENT
FOR LOTS 1, 2 AND 3.
SEE DETAIL "C".
75' A.N.R. PIPELINE EASEMENT
DOCUMENT NUMBER 235921
75.00'
LOT 1
CSM 7284
SCALE: 1" = 200'
0'
100'
200'
North is referenced to the North line of
the NW 1/4, Section 20 T10N R20E
which bears N88°20'26"W
Wisconsin County Coordinate System
(Washington County)
WEST LINE OF THE NE 1/4 OF THE NW 1/4 OF SECTION 20 T10N R20E
N01° 39' 57"E 516.61'
35'
S01° 39' 57"W 515.58'
RIDGEWAY DRIVE
LOT 3
CSM 6969
BLOCK 7
N88° 20' 03"W 192.39'
FUTURE DRIVEWAY WITH
SHARED ACCESS FOR LOTS
1, 2 AND 3.
N85° 22' 47"W
39.66'
FLOODPLAIN DRAWN PER
FIRM PANEL FW55131C0258E
AND FW55131C0259E
EFF. 2/25/2022
LOT 3
CSM 7284
LOT 2
CSM 7284
LOT 2
62819 SF
1.442 ACRES +/-
S01° 39' 57"W 272.68'
S01° 39' 57"W 270.58'
66.00'
WETLANDS(TYP)
DELINEATED JUNE 18,2020
CL 30' DRAINAGE EASEMENT
DOCUMENT # 1496232
INTERMITTENT STREAM
3/4"
N88° 21' 01"W 232.00'
SPRUCE STREET
66.00'

This is Task Order No. 6,
consisting of 3 pages.
(JK 21)

Task Order – Standard Hourly Rates Basis

In accordance with Paragraph 1.01 of the Agreement Between Village of Jackson (Owner) and Town & Country Engineering, Inc. (Engineer) for Professional Services – Task Order Edition, dated February 10, 2016 ("Agreement"), Owner and Engineer agree as follows:

1. Background Data

a. Effective Date of Task Order: February 6, 2024

b. Specific Project (title): WWTF Tertiary Filters and Disinfection Construction

c. Specific Project (description): See Attachment A.

2. Services of Engineer

A. The specific services to be provided or furnished by Engineer under this Task Order are described in Attachment A and the services (and related terms and conditions) set forth in the following sections of Exhibit A, as attached to the Agreement referred to above, such sections being hereby incorporated by reference:

- Construction Phase Services (Exhibit A, Paragraph A1.05)
  - including Resident Project Representative (RPR) services (A1.05.A.2)

B. All of the services included above comprise Basic Services for purposes of Engineer's compensation under this Task Order.

3. Additional Services

Those services (and related terms and conditions) set forth in Paragraph A2.01 of Exhibit A, as attached to the Agreement referred to above, such paragraph being hereby incorporated by reference.

4. Owner's Responsibilities

Owner shall have those responsibilities set forth in Article 2 of the Agreement and in Exhibit B, as attached to the Agreement referred to above, such Article and Exhibit being hereby incorporated by reference.

5. Task Order Schedule

In addition to any schedule provisions provided in Exhibit A, as attached to the Agreement referred to above, or elsewhere, the parties shall meet the schedule set forth in Attachment A.

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6. Payments to Engineer

A. Owner shall pay Engineer for Basic Services set forth above, except for services of Engineer's Resident Project Representative, if any, as follows:

1. An amount equal to the cumulative hours charged to the Project by each class of Engineer's personnel times Standard Hourly Rates for each applicable billing class for all services performed on the Project, plus Reimbursable Expenses.
2. Engineer's Standard Hourly Rates Schedule is shown below.
3. The total compensation for services under this Task Order is not-to-exceed $331,000.

B. Compensation for Reimbursable Expenses

1. Owner shall pay Engineer for all Reimbursable Expenses at the rates set forth below.

Standard Hourly Rates and Reimbursable Expense Rates Schedule

Standard Hourly Rates and Reimbursable Expense Rates are set forth below. Standard Hourly Rates include salaries and wages paid to personnel in each billing class plus the cost of customary and statutory benefits, general and administrative overhead, non-project operating costs, and operating margin or profit.

Schedule:

Principal	$170.00
Senior Project Manager	$165.00
Senior Project Engineer	$160.00
Project Engineer IV	$150.00
Project Engineer III	$145.00
Project Engineer II	$140.00
Project Engineer I	$135.00
Staff Engineer II	$120.00
Staff Engineer I	$110.00
Senior Engineering Technician	$110.00
Engineering Technician III	$105.00
Engineering Technician II	$100.00
Engineering Technician I	$90.00
GIS Analyst	$110.00
GIS Technician	$100.00
Survey Crew Chief	$110.00
Construction Technician II	$100.00
Construction Technician I	$85.00
Administrative II	$80.00
Administrative I	$75.00
Grant Writer	$95.00
Mileage	$0.65 per mile
Total Station/GPS Survey Equipment	$20.00 per hour of actual use
Computer used for CADD	$15.00 per hour of actual use
Plotter	$15.00 per plan page

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7. Terms and Conditions

Execution of this Task Order by Owner and Engineer shall make it subject to the terms and conditions of the Agreement (as modified above), which Agreement is incorporated by this reference. Engineer is authorized to begin performance upon its receipt of a copy of this Task Order signed by Owner.

The Effective Date of this Task Order is February 6, 2024.

OWNER: Village of Jackson	ENGINEER: Town & Country Engineering, Inc.
By: _____	By: _____
Print Name: Brian Kober, P.E.	Print Name: Gregory J. Droessler, P.E.
Title: Public Works Director	Title: Vice-President
Date: _____	Date: 2/6/2024
	Engineer License or Firm's Certificate No. (if required): 37471-006
	State of: Wisconsin
DESIGNATED REPRESENTATIVE FOR TASK ORDER:	DESIGNATED REPRESENTATIVE FOR TASK ORDER:
Name: Brian Kober	Name: Greg Droessler, P.E.
Title: Public Works Director	Title: Vice President
Address: N168 W20733 Main Street Jackson, WI 53037	Address: 10505 Corporate Drive, Suite 105A Pleasant Prairie, WI 53158
E-Mail Address: dirpubwks@villageofjackson.com	E-Mail Address: gdroessler@tcengineers.net
Phone: (262) 677-0707	Phone: (262) 925-3210

EJCDC® E-505, Agreement Between Owner and Engineer for Professional Services – Task Order Edition.
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ATTACHMENT A

MEMORANDUM

Date: February 6, 2024

To: Brian Kober, P.E. – Director of Public Works

From: Greg Droessler, P.E.

Subject: Scope of Services - Construction Engineering Services and Part-Time Inspection Service for the Wastewater Treatment Facility

The Village of Jackson is upgrading the wastewater treatment facility with the addition onto the tertiary filter building, addition of UV disinfection, process piping work, electrical and SCADA upgrades, and miscellaneous site improvements. The general scope of the project is based on the plans and specifications dated January 2024. This Contract is for assisting the Village with construction administration and part-time resident engineering for this project.

It is anticipated that the Notice to Proceed will be issued to the contractor in February 2024. Per the contract, all work is to be substantially complete in 600 days, or approximately by October 2025. Final completion of the project is anticipated to be 60 days later, or December 2025.

The scope of services for the project includes the following major tasks:

A. Scope of Services – Construction Administration Service

1. The Engineer will perform such tasks as contract award, construction administration, review of construction time schedules, project management, construction coordination, change order requests, pay requests, record drawings, periodic site visits, and construction project meetings. Village Board and/or Public Works Committee meetings will also be attended upon request.

2. Project work tasks also included are shop drawing review for all equipment and materials, review of operation and maintenance manuals, coordination of equipment start-up, SCADA coordination, and loan services and disbursement requests.

3. Construction engineering services, for the civil, process, structural, architectural, heating/ventilating, and electrical services for the wastewater treatment facility upgrades. Sub-consultants utilized on the construction phase of the project are the same as those used in the design phase.

4. Preparation of WWTF O&M manual updates as required by the DNR for the project improvements. Updates will be made to chapters of the existing O&M manual to include the new process equipment, SCADA, and ventilation updates.

B. Scope of Services – Part-Time Resident Engineering.

1. Part-time resident inspection is proposed for the duration of the project. We will be onsite for all critical underground piping installation and foundation work. During the remainder of the project, we anticipate being onsite approximately 10-20 hours every week for approximately 50 weeks. Additional hours have been budgeted for closeout between substantial and final completion.

2. The final cost will greatly depend on the Contractor, his subcontractors, construction schedule, and difficulty of the work undertaken.

The awarded construction contract for the wastewater facilities upgrade is $4,715,248. The estimated construction administration services cost for the above scope is $201,000 and will be provided on an hourly basis. Part-time resident engineering services will also be provided on an hourly basis for a cost of $130,000; thus, the total of these phases will be provided for a Not to Exceed price of $331,000.

We at Town & Country Engineering, Inc. wish to thank you for allowing us to serve the Village on this project. If you have any questions regarding the above material, please feel free to call.

PCCO #004

Hunzinger Construction Company
21100 Enterprise Avenue
Brookfield, Wisconsin 53045-5226
Phone: (262) 797-0797
Fax: (262) 797-0474

Project: 23-155 - Jackson - 2023 WWTF Storage Garage Expansion
W194N16658 Eagle Dr.
Jackson, Wisconsin 53037
Phone: 414-430-7196
Fax: 262-797-0474

Prime Contract Change Order #004: CE #008 - Omit Painting of Gas & Air Piping

TO:	**Village of Jackson** W194N16660 Eagle Drive Jackson, Wisconsin 53037	**FROM:**	**Hunzinger Construction Company** 21100 Enterprise Avenue Brookfield Wisconsin 53045-5226
DATE CREATED:	2/ 13 /2024	**CREATED BY:**	Matt Horton **(Hunzinger Construction Company)**
AIA CONTRACT#:		**REVISION:**	0
DESIGNATED REVIEWER:		**REVIEWED BY:**	
SCHEDULE IMPACT:	0 days	**EXECUTED:**	No
CONTRACT FOR:	1:HCCo. Prime/General Contract	**TOTAL AMOUNT:**	($2,409.00)

DESCRIPTION:
CE #008 - Omit Painting of Gas and Compressed Air Piping
Omit painting of the Natural Gas and Compressed Air Piping as noted in Structure 95 Punch List items Nos. 13 & 14, in exchange for a cost credit for same, as approved by the Village of Jackson.

ATTACHMENTS:
HCCo COR - Omit M & P Pipe Painting.pdf

POTENTIAL CHANGE ORDERS IN THIS CHANGE ORDER:

PCO #	Title	Schedule Impact	Amount
007	CE #008 - Omit Painting of Gas & Air Piping	0 days	(2,409.00)
		TOTAL:	**($2,409.00)**

The original (Contract Sum)	$ 867,000.00
Net change by previously authorized Change Orders	($52,193.00)
The contract sum prior to this Change Order was	$ 814,807.00
The contract sum will be decreased by this Change Order in the amount of	($2,409.00)
The new contract sum including this Change Order will be	$ 812,398.00

The contract time will not be changed by this Change Order by 0 days

Gregory Droessler, P.E. (Town & Country Engineering, Inc.)
6264 Nesbitt Road
Madison Wisconsin 53719

SIGNATURE **DATE**

Village of Jackson
W194N16660 Eagle Drive
Jackson Wisconsin 53037

SIGNATURE **DATE**

Hunzinger Construction Company
21100 Enterprise Avenue
Brookfield Wisconsin 53045-5226

02/13/24
James R Hunzinger-EVP

SIGNATURE **DATE**

Matt Horton

From: Gregory Droessler <gdroessler@tcengineers.net>
Sent: Monday, February 12, 2024 10:48 AM
To: Matt Horton
Cc: Joel Becker; Phillip Moran, Jr.
Subject: RE: Jackson WWTF - Punch list: Credit for Omitting Painting of Gas & Compressed Air Piping

Matt,

I talked to Brain about this and he's good with this credit offer.

I've seen the onslaught of email notices today for the punch list, please just let me know when you're all set and I'll do a last walk-thru with the staff and get this closed out. Feel free to email me the record drawings or let me know if they are full size and to be picked up.

Thanks,

Greg

Gregory J. Droessler, P.E. – Vice President
gdroessler@tcengineers.net
Town and Country Engineering, Inc.
10505 Corporate Drive
Suite 105A
Pleasant Prairie, WI 53158
262.925.3210 (direct)
608.273.3350 (office)
262.620.2914 (cell)

From: Matt Horton <mhorton@hunzinger.com>
Sent: Friday, February 9, 2024 3:17 PM
To: Gregory Droessler <gdroessler@tcengineers.net>
Cc: Joel Becker <JBecker@hunzinger.com>; Phillip Moran, Jr. <pmoran@hunzinger.com>
Subject: RE: Jackson WWTF - Punch list: Credit for Omitting Painting of Gas & Compressed Air Piping
Importance: High

Greg,
I'm following up regarding the Structure 95 Punch List Items #13 & #14 – Painting of Gas & Compressed Air Piping Not Completed.
We propose to credit the Village of Jackson ($2,409) to OMIT the Painting of the Natural Gas and Compressed Air Piping from the scope of the project.
Please advise if this is acceptable. If so, we will follow up with a formal a deductive change order and itemize the CREDIT on the final pay application accordingly.
Thanks,
Matt

Matt Horton ***LEED AP BD+C***
Senior Project Manager

p. 262-780-9132 m. 414-640-0323
Hunzinger Construction Company
An ESOP Company
21100 Enterprise Ave. Brookfield, WI 53045
mhorton@hunzinger.com **www.hunzinger.com**

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not the named addressee, you are not authorized to read, print, retain, copy, or disseminate this message or any part of it. If you have received this message in error, please notify the s
immediately and delete all copies of this message.

From: Gregory Droessler <gdroessler@tcengineers.net>
Sent: Wednesday, January 31, 2024 7:40 AM
To: Matt Horton <mhorton@hunzinger.com>
Cc: Brian Kober <brian.kober@villageofjacksonwi.gov>; Chad Russ <chad.russ@villageofjacksonwi.gov>; Jeff Deitsch <jeff.deitsch@villageofjacksonwi.gov>; Phillip Moran, Jr. <pmoran@hunzinger.com>
Subject: Jackson punch list

Matt,

Please find attached the punch list for Jackson. Much of the list is labeling, but there are some issues with the wrong breakers used, etc. that need to be sorted out. We also highlighted 4 items that were not done per the specs that the Village is willing to consider leaving "as is", but there should be credits offered as it saved your electrical and HVAC guys a fair amount of work for some (painting and installing conduit), or a fair amount in using EMT instead of rigid per the specs. Please look this over and give me a call with any questions.

Thanks,

Greg

Gregory J. Droessler, P.E. – Vice President
gdroessler@tcengineers.net
Town and Country Engineering, Inc.
10505 Corporate Drive
Suite 105A
Pleasant Prairie, WI 53158
262.925.3210 (direct)
608.273.3350 (office)
262.620.2914 (cell)

APPLICATION AND CERTIFICATE FOR PAYMENT

AIA DOCUMENT G702

TO:	Village of Jackson, Wi Public Works Attn: Brian Kober P.E. W194 N16660 Eagle Dr, Jackson, WI 53037	PROJECT:	Jackson 2023 WWTF Garage Exp W194 N16658 Eagle Dr. Jackson, WI 53037	APPLICATION NO.: 23-155 PERIOD TO: 2/13/2024 PROJECT NOS.: 23155	Distribution to: ☐ OWNER ☐ ARCHITECT ☐ CONTRACTOR
FROM CONTRACTOR:	Hunzinger Construction Company 21100 Enterprise Ave. Brookfield, WI 53045	VIA ARCHITECT:	Town & Country Engineering Attn: Greg Droessler ,	CONTRACT DATE: 8/8/2023 INVOICE #: 224003	☐ ☐
CONTRACT FOR:	General Contract				

Wiring instructions can only be changed by verbal confirmation from John Hunzinger - President of Hunzinger Construction Company

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract Continuation Sheet is attached.

1. **ORIGINAL CONTRACT SUM**		$867,000.00
2. **Net change by Change Orders**		-$54,602.00
3. **CONTRACT SUM TO DATE** (Line 1 + 2)		$812,398.00
4. **TOTAL COMPLETED & STORED TO DATE** (Column G on Continuation Sheet)		$812,398.00
5. **RETAINAGE:**		
a. 0.00 % of Completed Work (Columns D + E on Continuation Sheet)	$0.00	
b. 0.00 % of Stored Material (Column E.1 on Continuation Sheet)	$0.00	
Total Retainage (Line 5a + 5b or Total in Column I of Continuation Sheet)		$0.00
6. **TOTAL EARNED LESS RETAINAGE** (Line 4 less Line 5 Total)		$812,398.00
7. **LESS PREVIOUS CERTIFICATES FOR PAYMENT** (Line 6 from prior Certificate)		$735,408.09
8. **CURRENT PAYMENT DUE**		**$76,989.91**
9. **BALANCE TO FINISH, INCLUDING RETAINAGE** (Line 3 less line 6)	$0.00	

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	2,162.00	-53,839.00
Total approved this Month	684.00	-3,609.00
TOTALS	2,846.00	-57,448.00
NET CHANGES by Change Order		-54,602.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR: Hunzinger Construction Company

By: _____ Date: 2/19/24

State of: Wisconsin
County of: Waukesha
Subscribed and sworn before me this 19th day of February, 2024

Notary Public: _____
My Commission expires: 3/29/26

NOTARY PUBLIC RICHARD R. KUBLY STATE OF WISCONSIN

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED $ 76,989.91

(Attach explanation if amount certified differs from the amount applied for. Initial all figures on this Application and on the Continuation Sheet that are changed to conform to the amount certified.)

ARCHITECT: Town & Country Engineering

By: _____ Date: 2/19/24

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

CONTINUATION SHEET

AIA DOCUMENT G703

AIA Document G702, APPLICATION AND CERTIFICATE FOR PAYMENT ,
containing Contractor's signed Certification, is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO.: 23-155
APPLICATION DATE: 2/19/2024
PERIOD TO: 2/13/2024
ARCHITECT'S PROJECT NO: 23155

A	B	C	C.1	C.2	D	E	E.1	F	G	H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULE OF VALUES	APPROVED CHANGES TO DATE	REVISED SCHEDULE OF VALUES	PREVIOUS APPLICATIONS	**THIS PERIOD**	MATERIALS PRESENTLY STORED	TOTAL COMPLETED AND STORED TO DATE (D+E)	% (F/C)	BALANCE TO FINISH (C-F)	RETAINAGE (IF VARIABLE RATE)
1	General Conditions/Requirement	157,068.00	0.00	157,068.00	149,214.60	7,853.40	0.00	157,068.00	100.00	0.00	0.00
2	Site Demo & Earthwork	48,873.00	0.00	48,873.00	48,873.00	0.00	0.00	48,873.00	100.00	0.00	0.00
3	Selective Demolition	6,670.00	0.00	6,670.00	6,670.00	0.00	0.00	6,670.00	100.00	0.00	0.00
4	Concrete	53,541.00	0.00	53,541.00	53,541.00	0.00	0.00	53,541.00	100.00	0.00	0.00
5	Carpentry	125,801.00	0.00	125,801.00	125,801.00	0.00	0.00	125,801.00	100.00	0.00	0.00
6	Roofing & sheet Metal	122,323.00	0.00	122,323.00	122,323.00	0.00	0.00	122,323.00	100.00	0.00	0.00
7	Metal Wall/Ceiling Panel Sys	101,167.00	0.00	101,167.00	101,167.00	0.00	0.00	101,167.00	100.00	0.00	0.00
8	OH Doors	32,371.00	0.00	32,371.00	32,371.00	0.00	0.00	32,371.00	100.00	0.00	0.00
9	Plumbing Systems	23,685.00	0.00	23,685.00	20,200.00	3,485.00	0.00	23,685.00	100.00	0.00	0.00
10	HVAC Systems	155,262.00	0.00	155,262.00	129,900.00	25,362.00	0.00	155,262.00	100.00	0.00	0.00
11	Electrical Systems	23,772.00	0.00	23,772.00	19,263.20	4,508.80	0.00	23,772.00	100.00	0.00	0.00
12	GC Performance/Payment Bonds	6,361.00	0.00	6,361.00	6,361.00	0.00	0.00	6,361.00	100.00	0.00	0.00
13	GC Insurances	10,106.00	0.00	10,106.00	10,106.00	0.00	0.00	10,106.00	100.00	0.00	0.00
14	PCCO#1-PCO#1: Alt. Roofing	0.00	-48,250.00	-48,250.00	-48,250.00	0.00	0.00	-48,250.00	100.00	0.00	0.00
15	PCCO#1-PCO#2: Alt. Metal Panel	0.00	-4,189.00	-4,189.00	-4,189.00	0.00	0.00	-4,189.00	100.00	0.00	0.00
16	PCCO#1-PCO#3: Alt. Windows	0.00	-1,400.00	-1,400.00	-1,400.00	0.00	0.00	-1,400.00	100.00	0.00	0.00
17	PCCO#1-PCO#4: MAU Stand	0.00	2,162.00	2,162.00	2,162.00	0.00	0.00	2,162.00	100.00	0.00	0.00
18	PCCO#2-PCO#5 Lighting Mods	0.00	684.00	684.00	0.00	684.00	0.00	684.00	100.00	0.00	0.00
19	PCCO#3-PCO#6 Omit OH Dr Horn	0.00	-1,200.00	-1,200.00	0.00	-1,200.00	0.00	-1,200.00	100.00	0.00	0.00
20	PCCO#4-PCO#7Omit Pipe Painting	0.00	-2,409.00	-2,409.00	0.00	-2,409.00	0.00	-2,409.00	100.00	0.00	0.00

CONTINUATION SHEET

AIA DOCUMENT G703

AIA Document G702, APPLICATION AND CERTIFICATE FOR PAYMENT ,
containing Contractor's signed Certification, is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO.: 23-155
APPLICATION DATE: 2/19/2024
PERIOD TO: 2/13/2024
ARCHITECT'S PROJECT NO: 23155

A	B	C	C.1	C.2	D	E	E.1	F	G	H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULE OF VALUES	APPROVED CHANGES TO DATE	REVISED SCHEDULE OF VALUES	PREVIOUS APPLICATIONS	**THIS PERIOD**	MATERIALS PRESENTLY STORED	TOTAL COMPLETED AND STORED TO DATE (D+E)	% (F/C)	BALANCE TO FINISH (C-F)	RETAINAGE (IF VARIABLE RATE)
	TOTALS	867,000.00	-54,602.00	812,398.00	774,113.80	38,284.20	0.00	812,398.00	100.00	0.00	0.00

GREMMER
& ASSOCIATES, INC.
CONSULTING ENGINEERS

93 South Pioneer Road, Suite 300
Fond du Lac, WI 54935
Phone 920-924-5720
Fax 920-924-5725

February 22, 2024

Village of Jackson
W194 N16660 Eagle Drive
Jackson, WI 53037

Attention: Brian Kober, P.E.
Director of Public Works

Subject: Project: VOJ 23-02
STH 60 – Street Lighting
Industrial Drive – Ridgeway Drive
Pay Request #4

Dear Mr. Kober:

Enclosed you will find Pay Request #4 for the STH 60 Street Lighting project in the Village of Jackson. The total amount, due to the contractor, has been reduced by five percent (5%) for retainage but not to exceed maximum retainage. The maximum retainage was met with the previous pay request #2. This is per Article 6.02.A.1 Progress Payments; Retainage, of Contract Document 00500, Agreement:

Total work completed to date	= $355,019.18
Work completed, Pay Request #4	= $13,123.68
Total Retainage	= $9,454.40
Amount due to Contractor, Pay Request #4	= $13,123.68

If you have any questions or comments, please contact me at (920) 924-5720.

Sincerely,

Blake Furlano

Blake Furlano
Project Inspector
Gremmer & Associates, Inc.

Project VOJ 23-02
STH 60 - Street Lighting
Industrial Drive - Ridgeway Drive

Pay Request #4
Wil-Surge - Prime Contractor

				Wil-Surge		Pay Request #1		Pay Request #2		Pay Request #3		Pay Request #4		Cumulative Totals		% Complete
Item No.	Description	Units	Total	Unit Price	Bid Total	Actual Quantity	Total	Actual Quantity	Total	Actual Quantity	Total	Actual Quantity	Total	Actual Quantity	Total	
619.1000	Mobilization	EACH	1	$15,428.00	$15,428.00	1.0	$15,428.00	0	$0.00	0.00	$0.00	0.00	$0.00	1	$15,428.00	100%
628.7015	Inlet Protection Type C	EACH	25	$89.00	$2,225.00	0.0	$0.00	0	$0.00	0.00	$0.00	0.00	$0.00	0	$0.00	0%
643.5000	Traffic Control	LS	1	$16,871.00	$16,871.00	1.0	$16,871.00	0	$0.00	0.00	$0.00	0.00	$0.00	1	$16,871.00	100%
653.0164	Pull Boxes Non-Conductive 24x42-Inch	EACH	17	$987.00	$16,779.00	0.0	$0.00	0	$0.00	17.00	$16,779.00	0.00	$0.00	17	$16,779.00	100%
654.0105	Concrete Bases Type 5	EACH	36	$891.00	$32,076.00	0.0	$0.00	36	$32,076.00	0.00	$0.00	0.00	$0.00	36	$32,076.00	100%
655.0610	Electrical Wire Lighting 12 AWG	LF	7,629	$0.92	$7,018.68	0.0	$0.00	0	$0.00	256.00	$235.52	7344.00	$6,756.48	7600	$6,992.00	100%
655.0620	Electrical Wire Lighting 8 AWG	LF	20,342	$1.68	$34,174.56	0.0	$0.00	0	$0.00	21467.00	$36,064.56	0.00	$0.00	21467	$36,064.56	106%
655.0625	Electrical Wire Lighting 6 AWG	LF	30,513	$1.81	$55,228.53	0.0	$0.00	0.00	$0.00	32200.50	$58,282.91	0.00	$0.00	32201	$58,282.91	106%
671.0212	Conduit HDPE Directional Bore 1-Duct 2-Inch	LF	10,835	$13.79	$149,414.65	5267.0	$72,631.93	4782	$65,943.78	100.00	$1,379.00	0.00	$0.00	10149	$139,954.71	94%
SPV.0060.01	Install Village Furnished Lighting Unit	EACH	36	$832.00	$29,952.00	0.0	$0.00	0	$0.00	0.00	$0.00	0.00	$0.00	0	$0.00	0%
SPV.0060.02	Install Village Furnished Meter Breaker Pedestal	EACH	2	$6,910.00	$13,820.00	2.0	$13,820.00	0	$0.00	0.00	$0.00	0.00	$0.00	2	$13,820.00	100%
SPV.0180.01	Concrete Restoration	SY	3.3	$348.00	$1,148.40	0.0	$0.00	0	$0.00	0.00	$0.00	0.00	$0.00	0	$0.00	0%
SPV.0180.02	Asphalt Restoration	SY	5	$808.00	$4,040.00	0.0	$0.00	0	$0.00	0.00	$0.00	0.00	$0.00	0	$0.00	0%
CO #1	Concrete Replacement (Replaces Item SPV.0180.01)	SF	700	$13.00	$9,100.00	0.0	$0.00	0	$0.00	952.60	$12,383.80	74.40	$967.20	1027	$13,351.00	147%
CO #2	Concrete Base 24" Dia Base	EACH	36	$150.00	$5,400.00	0.0	$0.00	0	$0.00	0.00	$0.00	36.00	$5,400.00	36	$5,400.00	100%
				STH 60 TOTAL	**$392,675.82**		**$118,750.93**		**$98,019.78**		**$125,124.79**		**$13,123.68**		**$355,019.18**	**90%**
				TOTAL	**$392,675.82**		**$118,750.93**		**$98,019.78**		**$125,124.79**		**$13,123.68**		**$355,019.18**	**90.41%**

Wil-Surge original bid #
$378,175.82
Difference / Increase of
$13,351.60

$5,937.55 Retainage Est #1
$3,516.85 Retainage Est #2
$0.00 Retainage Est #3
$0.00 Retainage Est #4

Max retainage to hold = $9,454.40
Based off original bid price

Work completed, previous estimate	**$125,124.79**
Work completed, this estimate	**$13,123.68**
Total work completed	**$355,019.18**
Retainage, this estimate	**$0.00**
Total retainage, previous estimates	**$9,454.40**
Total retainage	**$9,454.40**
Amount due to contractor, this estimate	**$13,123.68**

Memo

To: Board of Public Works

From: Brian W. Kober, P. E., Director of Public Works BWK

Subject: We-Energies Electric Easement Outlot 2 Oaks of Jackson

Date: February 21, 2024

Village owned streetlights are being installed along Spruce Street from Eagle Drive to Ridgeway Drive. The easement is needed to energize the electric service to power the streetlights.

If you have any questions, please do not hesitate to ask.

Brian W. Kober, P.E.

DISTRIBUTION EASEMENT UNDERGROUND

Document Number

WR NO. **4944058** IO NO. **5475**

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, **VILLAGE OF JACKSON,** hereinafter referred to as "Grantor", owner of land, hereby grants and warrants to **WISCONSIN ELECTRIC POWER COMPANY, a Wisconsin corporation doing business as We Energies,** hereinafter referred to as "Grantee", a permanent easement upon, within, beneath, over and across a part of Grantor's land hereinafter referred to as "easement area".

The easement area is described as strips of land 12 feet in width being a part of **Outlot 2 of THE OAKS OF JACKSON**, a subdivision as recorded in the office of the Register of Deeds for Washington County in Volume 53 on Pages 117-120 as Document No. 1586076 on October 11, 2023 and being a part of the Northeast 1/4 of the Northwest 1/4 of Section 20, Township 10 North, Range 20 East in the Village of Jackson, Washington County, Wisconsin.

The location of the easement area with respect to Grantor's land is as shown on the attached drawing, marked Exhibit "A", and made a part of this document.

RETURN TO:
We Energies
PROPERTY RIGHTS & INFORMATION GROUP
231 W. MICHIGAN STREET, ROOM P277
PO BOX 2046
MILWAUKEE, WI 53201-2046

V3-0536043
(Parcel Identification Number)

1. **Purpose:** The purpose of this easement is to construct, install, operate, maintain, repair, replace and extend underground utility facilities, conduit and cables, electric pad-mounted transformers, manhole, electric pad-mounted switch-fuse units, electric pad-mounted vacuum fault interrupter, concrete slabs, power pedestals, riser equipment, terminals and markers, together with all necessary and appurtenant equipment under and above ground as deemed necessary by Grantee, all to transmit electric energy, signals, television and telecommunication services, including the customary growth and replacement thereof. Trees, bushes, branches and roots may be trimmed or removed so as not to interfere with Grantee's use of the easement area.

2. **Access:** Grantee or its agents shall have the right to enter and use Grantor's land with full right of ingress and egress over and across the easement area and adjacent lands of Grantor for the purpose of exercising its rights in the easement area.

3. **Buildings or Other Structures:** Grantor agrees that no structures will be erected in the easement area or in such close proximity to Grantee's facilities as to create a violation of all applicable State of Wisconsin electric codes or any amendments thereto.

4. **Elevation:** Grantor agrees that the elevation of the ground surface existing as of the date of the initial installation of Grantee's facilities within the easement area will not be altered by more than 4 inches without the written consent of Grantee.

5. **Restoration:** Grantee agrees to restore or cause to have restored Grantor's land, as nearly as is reasonably possible, to the condition existing prior to such entry by Grantee or its agents. This restoration, however, does not apply to the initial installation of said facilities or any trees, bushes, branches or roots which may interfere with Grantee's use of the easement area.

6. **Exercise of Rights:** It is agreed that the complete exercise of the rights herein conveyed may be gradual and not fully exercised until some time in the future, and that none of the rights herein granted shall be lost by non-use.

7. **Binding on Future Parties:** This grant of easement shall be binding upon and inure to the benefit of the heirs, successors and assigns of all parties hereto.

8. **Easement Review**: Grantor acknowledges receipt of materials which describe Grantor's rights and options in the easement negotiation process and furthermore acknowledges that Grantor has had at least 5 days to review this easement document *or* voluntarily waives the five day review period.

Grantor:

VILLAGE OF JACKSON

By _____

(Print name and title): _____

By _____

(Print name and title): _____

Personally came before me in _____ County, Wisconsin on _____, 2024,

the above named _____, the _____

and _____, the _____

of the VILLAGE OF JACKSON, for the municipal corporation, by its authority, and pursuant to Resolution File

No. _____ adopted by its _____ on _____, 2024.

_____

Notary Public Signature, State of Wisconsin

_____

Notary Public Name (Typed or Printed)

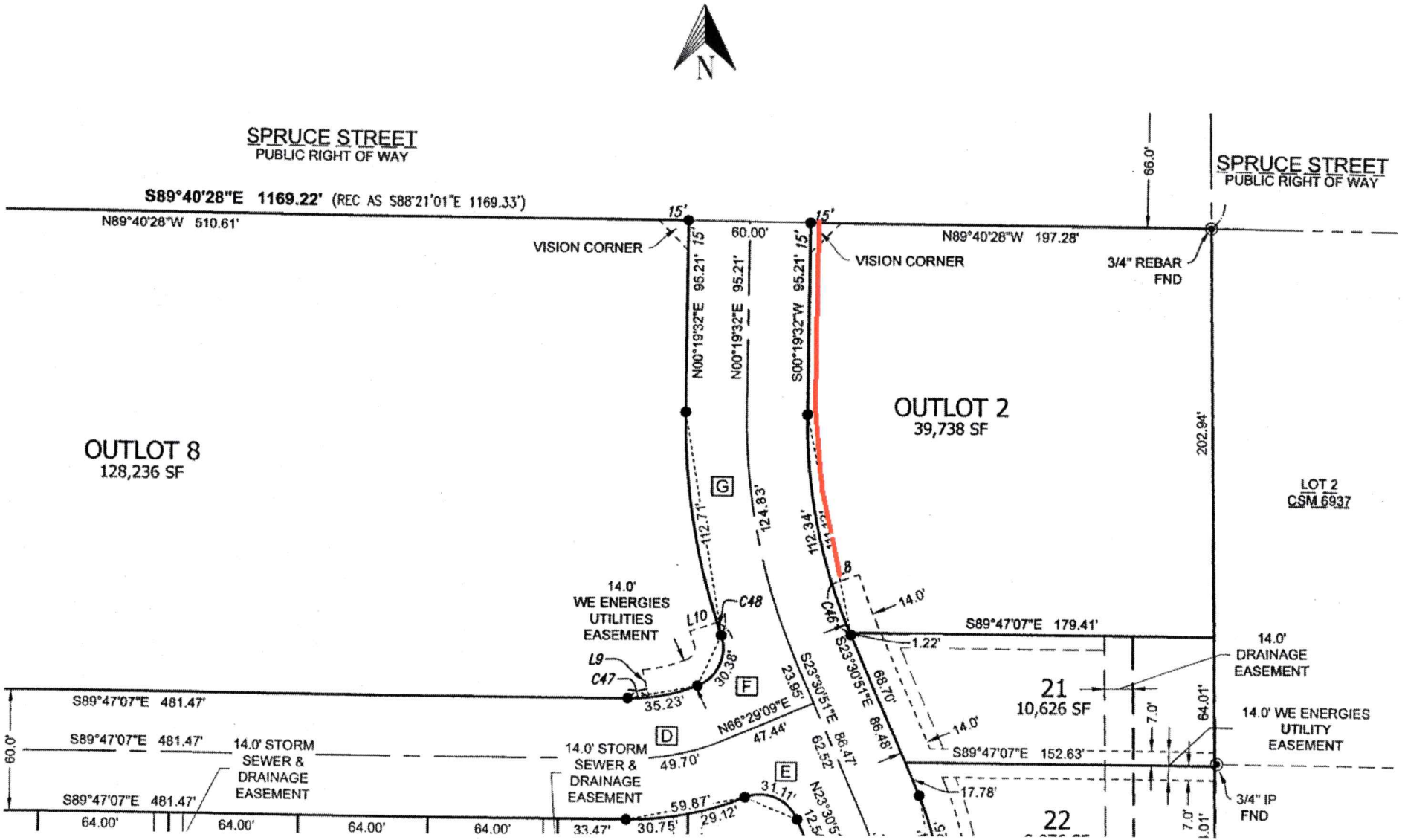
(NOTARY STAMP/SEAL)

My commission expires _____

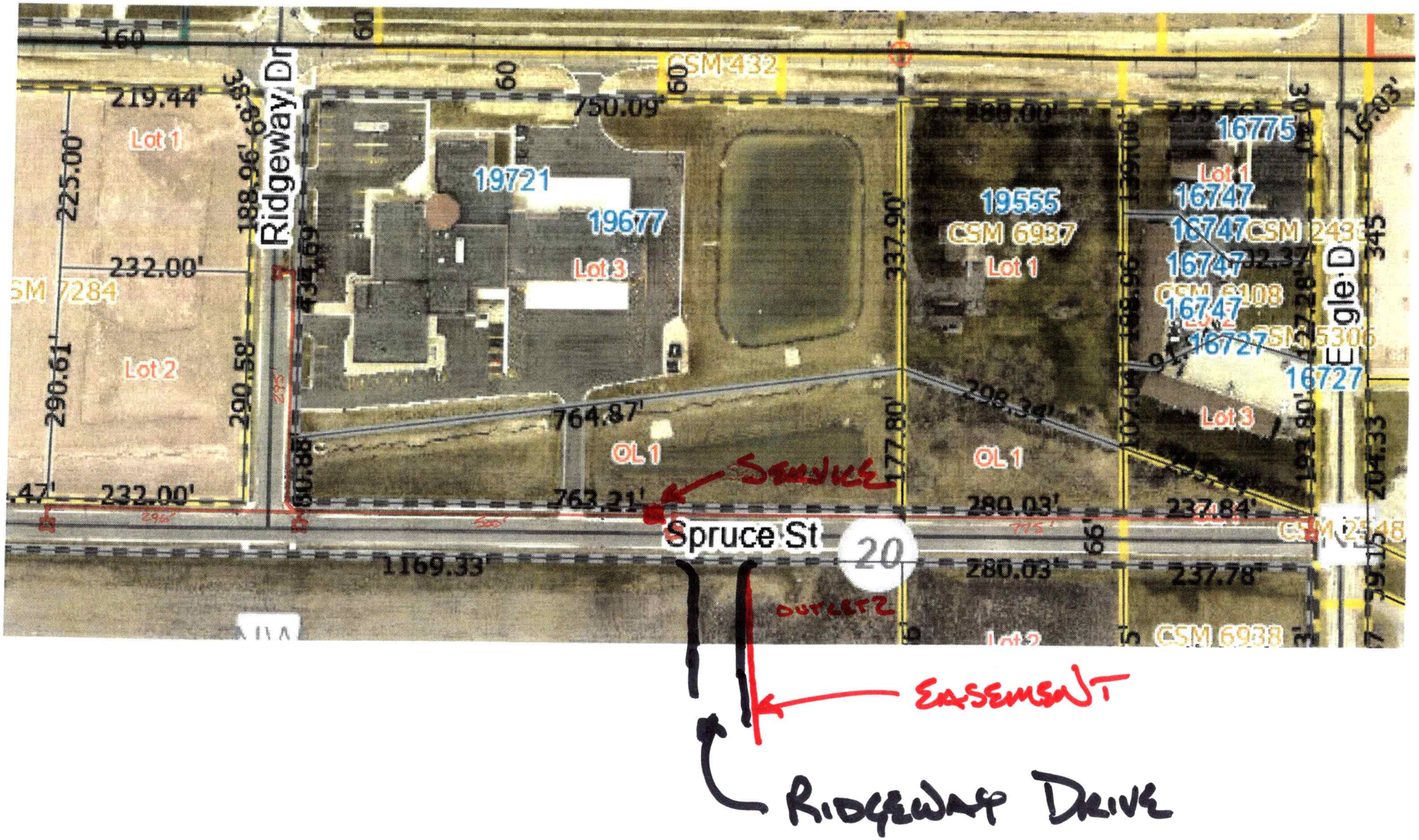
This instrument was drafted by Michele Arendt on behalf of Wisconsin Electric Power Company, PO Box 2046, Milwaukee, Wisconsin 53201-2046.

TEMPORARY EXHIBIT A

= Proposed Easement Area



SPRUCE ST & RIDGEWAY DR



Report

Twin Creeks Lift Station and Sanitary Sewer Interceptor Study

Village of Jackson
Jackson, Wisconsin

January 2024

Project I.D.: 0022J100.00

Solving our clients' toughest science and engineering challenges.

Twin Creeks Lift Station and Sanitary Sewer Interceptor Study

Project ID: 0022J100.00

Prepared for

Village of Jackson

3146 Division Road
Jackson, WI 53037

Prepared by

Foth Infrastructure & Environment, LLC

January 2024

REUSE OF DOCUMENTS

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Sanitary Sewer Collection System Study

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Sanitary Sewer Collection System Study

Executive Summary

Project Summary

Foth Infrastructure & Environment, LLC (Foth) was retained by the Village of Jackson to prepare a study report for the 30-inch sanitary sewer interceptor from the intersection of Sherman Road and Jackson Drive to the intersection of Hickory Land and Eagle Drive. The study also includes an evaluation of the Twin Creeks Lift Station located on the south side of the intersection of Sherman Road and Jackson Drive. The interceptor was installed in the late 1990's and serves the west and southern portion of the Village. The lift station was constructed in the early 2000's and serves the Twin Creeks and Maple Fields subdivisions located on the south side of the Village.

Purpose

The purpose of this study is to assess the condition and capacities of the Twin Creeks Lift Station and 30-inch sanitary sewer interceptor. The Village wants to determine the lift station and interceptor capacities are and when upgrades would likely be required to accommodate future growth.

Scope

The study included the following tasks:

- Install five sewer flow meters.
- Investigate the structural condition of the interceptor manholes.
- Review sewer televising reports and video of the 30-inch interceptor provided by the Village.
- Investigate the current condition of the Twin Creeks Lift Station structure and equipment.
- Evaluate flow data from flow meters.
- Estimate future flows based on growth projections and future land use maps.
- Evaluate the capacities of the interceptor and the Twin Creeks Lift Station.
- Recommend current and future improvements to the 30-inch interceptor and Twin Creeks Lift Station.

Conclusions/Recommendations

Based on the findings of this report, conclusions are as follows:

- The Twin Creeks Lift Station pump capacity and wet-well set points are currently adequate to convey existing flow conditions. Minor adjustments can be made to pump set-points in the future to adjust for growth. As flows to the lift station continue to increase, or when the existing pumps require significant repairs, larger pumps should be installed. The pump controller and motor controls should be updated when the pumps are replaced (See Section 2.3.1 and 6.3 for specific recommendations).

- Based on flow modeling it is estimated that there is enough storage capacity in the upstream sewer for the existing lift station pumps to convey the projected 2050 peak flows without creating a back-up into the basement of the first house upstream from the lift station. However, surcharging into the upstream sewer is not a desired condition, so the pumps should be upgraded before this scenario occurs.

- Based on flow modeling, the capacity of the interceptor is adequate to convey the existing and future 2050 flow conditions for the 5-year 6-hour rain event.

- The interceptor manholes are in good condition. Only minor repairs and grouting is recommended to maintain the integrity of these service points.

- The flow metering data indicates that sewer basins 1, 2, and 4 experience infiltration rates during wet weather events that exceed the excessive infiltration threshold of 1,500 gallons per inch-diameter-mile, according to EPA standards. Further I/I field investigations should be conducted to detail potential sources of infiltration and possible remedies.

- Based on flow modeling it is estimated that the existing interceptor has adequate reserve capacity to convey a 25-year, 6-hour rain event in addition to future projected 2050 flows. Modeling indicates that the interceptor would begin discharging out of manhole covers during a 500-year, 6-hour event.

1. Introduction

1.1 Purpose

The Village of Jackson, WI has experienced significant growth and is anticipating continued growth through the year 2050. The Village retained Foth to complete a study of the existing Twin Creeks Lift Station and 30-inch sanitary sewer interceptor to evaluate the impacts of the continued growth on these facilities.

1.2 Project Understanding

In 2021, City Water prepared a report, *Water & Sewer Expansion Analysis,* that provides recommendations to serve future developments and indicates the impact future development will have on the Twin Creeks Lift Station and 30-inch sanitary sewer interceptor. The recommendations from this report were as follows:

- To serve future developments southeast of Cedar Creek, the existing Twin Creeks Lift Station must be improved or replaced. Future study and analysis will be needed to design a lift station capable of meeting flow and head requirements.
- To serve future developments west on Sherman Rd and southeast of Cedar Creek, the existing 30-inch interceptor sewer must be improved or replaced. Options included relaying the existing 30-inch sewer or adding a secondary interceptor. A secondary interceptor could potentially be installed over a partial distance, with an overflow or diversion manhole to redirect flow in excess of the current 30-inch capacity. Further study and analysis will be needed to design an interceptor that meets the future demand requirements.

The intent of the current study is to pursue the recommendations from the 2021 report by performing further field inspection and testing of the lift station and 30-inch interceptor. This study included sewer flow metering, calibrated sewer modeling, and lift station analysis to determine existing wastewater flows, current capacity requirements, and projected future flows and capacity needs.

1.3 Phases and Scope

This report includes a review of the existing conditions and future demands projected for the Twin Creeks Lift Station and 30-inch sanitary sewer interceptor as well as future maintenance and growth upgrades recommended for the system. The following is an outline of the various phases of the study:

- Preliminary Investigation:
    - Review of Owner provided record drawings and GIS mapping.
    - Create base mapping and GIS exhibits.
    - Perform non-entry field investigations of 30-inch sanitary sewer interceptor manholes.
        - Documentation of condition; number/height of adjustment rings and seals; structure size; visible deterioration and evidence of I/I.
- Flow Metering:
    - Installation of five (5) flow meters along the 30-inch interceptor.
    - Flow data analysis.
        - Current daily dry and wet weather diurnal flows.
        - Rates of I/I.

        - Peak flows from documented rain events.
- Interceptor Sewer Evaluation/Capacity Analysis:
    - Pipeline capacity assessment.
    - Service area flow evaluation (current and future).
        - Review existing facility reports.
        - Generate/confirm future peak flows through 2050 utilizing SewerGEMS modeling calibrated to flow metering results.
        - Compare projected peak flows with the gravity system capacities.
        - Identify deficiencies.
    - Recommend future rehabilitation or re-routing alternates as necessary.
- Lift Station Evaluation/Capacity Analysis:
    - Service area capacity evaluation (current and future)
        - Review of existing reports and SCADA data.
        - Generate/confirm future peak flows.
        - Compare projected peak flows with the lift station, force main, and upstream gravity sewer capacities.
        - Review lift station O&M manual.
        - Field visit and wet well drawdown test.
        - Identify deficiencies.
        - Evaluate existing control and communication equipment conditions, pump capacity, and need for upgrades.

2. Background and Condition Assessment

2.1 Project Description and Background

The subject sanitary sewer interceptor is a 30-inch and 36-inch pipe system that follows Sherman Road to the east, then travels on the north side of Cedar Creek to the northeast to Eagle Drive, arriving at the Wastewater Treatment Plant. (See Figure 1). The interceptor was constructed in the late 1990's and consists of primarily 30-inch Reinforced Concrete Pipe (RCP). The last two segments of the interceptor near the treatment plant are 36-inches in diameter. Along the interceptor, concrete manholes provide access to the pipeline for maintenance and cleaning. The Twin Creeks Lift Station was constructed in the early 2000's and pumps into the interceptor at a manhole located at the intersection of Sherman Road and Jackson Drive. It primarily receives wastewater from two new residential developments. The Village provided information for the existing Twin Creeks Lift Station and sanitary sewer interceptor including GIS data of the entire system, record drawings, SCADA Data, and manhole (MH) inspection forms.

This study focused on evaluating the current and future capacity requirements for the 30-inch interceptor and the Twin Creeks Lift Station. Sanitary sewer systems will typically reach peak flows during wet weather events due to infiltration and inflow (I/I). Therefore, the peak design capacities used to evaluate the interceptor and lift station in this study correspond to a 5-year, 6-hour rain event and a 25-year, 6-hour rain event. These rain events are typical engineering design standards with the 5-year, 6-hour event level of protection being generally accepted by the WDNR as being a minimum standard to meet for public sanitary sewer systems. The Twin Creeks Lift Station was also evaluated with regard to control and communication equipment conditions, pump capacity, and needs for upgrades.

The Village has hired a contractor to televise and grout the joints of the sanitary sewer interceptor as part of their sewer maintenance plan. This is a recurring project that takes place when the previous grout begins to fail. The goal of this work is to reduce the rate of inflow and infiltration within the interceptor with the intention of reducing treatment costs. The next grouting project is planned to take place in the near future, therefore the meter data represents flows prior to the planned sewer rehabilitation.

2.2 Manhole Assessment

Field inspections were performed on eighteen (18) manholes along the sanitary sewer interceptor using inspection forms provided by the Village. The inspections identified current conditions of the manholes using a rating scale of 1-5. Table 1 provides a brief description of the Village's rating system. During the inspections, 360-degree photos were taken of each manhole structure.

Table 2 summarizes the manholes inspected, the associated rating, and comments on the condition of the structure. The inspection reports, photos, and exhibit representing manholes inspected are provided in Appendix A.

Table 1. Village of Jackson Rating Criteria

Village of Jackson Rating Criteria		
Rating	**Condition**	**Repair Needs**
1	New	N/A
2	Good	No Repair
3	Fair	Minor Repair
4	Poor	Major Repair
5	Unsafe	Total Replacement
6	Not Present	

The following parts of each manhole were inspected and documented.

- Lid/Casting
- Rings/Seals
- Cone/Barrels/Bench
- Steps
- Drops
- Pipe Inverts
- Description of current manhole condition

Table 2. Inspected Manhole Conditions

Condition of Inspected Manholes within Sanitary Sewer Interceptor		
Manhole ID	**Condition**	**Situation Found**
20102	Fair	Rim/casting is deteriorating on the inside. Staining present on inside of manhole and rebar is exposed at cone.
20103	Good	Flow is over the sides of bench and flowline isn't very developed.
20104	Good	Moist walls but no active infiltration. Flow from northwest is dropping on bench and not into flowline.
20105	Good	None.
20301	Good	Wet bench with mud and some debris present.
20302	Good	Some rocks/concrete chips on top of doghouse.
20303	Good	Gravel build-up on bench.
20304	Fair	Some build-up and wet bench. Gaps present in mortar around pipe at doghouse.
20305	Good	Some moisture by steps and concrete chipping at 8" slab.
20306	Fair	Runner at top of pipe from east. The runner is from mortar around outside of pipe at doghouse.
20307	Fair	Top of 8" slab is dripping on north side. Slab and barrel joint is wet which may be location of dripper. Runner located at top of southwest pipe.
20308	Good	None.
20309	Good	None.
20310	Good	None.
20311	Fair	Build up on bench and concrete chipping on 8" slab. Possible dripper around doghouse of western pipe.
19401	Good	None.
19402	Good	Wet spots on bench on north side.
29201-1	Good	Wet bench and surcharge evidence with debris on steps.

As seen in Table 2, defects within the sanitary sewer interceptor manholes include infiltration, debris on the benches, minor chipping of concrete, and wet/stained manhole walls. These defects were used to determine the rating of each individual manhole.

The manholes along the interceptor system are generally in good condition, especially the manholes of the interceptor located along Cedar Creek in a topographically low area. However, multiple manholes may need minor repairs in the future. The grouting project mentioned earlier in this study, may resolve some of the minor infiltration defects currently present at the time inspections occurred. No immediate remediation is recommended, but annual inspections should be conducted of the manholes labeled "Fair" to possibly prevent further damage.

2.3 Twin Creeks Lift Station Assessment

The Twins Creek Lift Station is located in the Village of Jackson, WI, north of Cedar Creek and south of Sherman Road as depicted in Figure 1. The Sewer Service Area (SSA) consists of primarily single family residential.

2.3.1 Condition Assessment

The Twin Creeks Lift Station is a duplex submersible pump station constructed in 2002. The site contains the wet well, a separate valve vault, and a self-standing duplex control panel. An emergency bypass pump connection is available at the valve vault and an emergency generator plug is mounted to the side of the control panel. The 4-inch force main connects to a manhole on Sherman Rd. approximately 40 feet downstream. The station includes the following specific components:

- A 6-foot diameter concrete wet well.
    - Inlet gravity piping is 15-inch diameter.
- A 6-foot diameter concrete valve vault with 4-inch piping and valves.
    - Emergency pump bypass connection.
- Force main pipe is 4-inch diameter ductile iron.
    - Approximately 40-feet between the lift station and discharge manhole.
- Two (2) pumps provide conveyance:
    - 2x Flygt models CP3085.182 MT 3~ 436.
- A stand-alone duplex control panel (230volt /1ph / 3 wires).
    - VFD's to convert 1ph to 3ph.
    - Pressure transducer – primary level control.
    - 4 float backup system – secondary level control and alarms.
    - Emergency generator plug connection.
    - Remote SCADA monitoring – radio system.

A condition assessment inspection was conducted on August 30, 2023. The inspection report and photos are provided in Appendix D. No significant issues were identified. Minor recommendations are as follows:

- Based on the pump field testing, it appears that the impellers are starting to wear and are showing a minor loss in pumping capacity (approx. 10-15% of new). This is typical for the pump age/hours. Monitor if pump-down run times increase or clogging becomes more prevalent.
- Minor concrete lip at edges of wet well and valve vault structures which is a potential tripping hazard. Consider providing a tapered strip or correct when the pavement is rehabilitated in the future.
- Install fall safety retro-grate to wet well and valve vault hatch.
- Add confined space/hazardous gas warning sign at valve vault hatch (similar to the wet well).
- Inspect valve vault floor drain. There was some standing water on the floor indicating the drain may be clogged.
- Check local codes for allowing steps in valve vault. If not allowed, remove the steps.
- Install strain relief cord/cable supports in wet well (the next time pumps are pulled for service or are replaced).
- Ensure printed copy of O&M manual and wiring diagrams are on-site in moisture sealed bag/container.
- Keep copy of VFD programming (USB thumb drive) on-site in sealed container.
- Keep copy of PLC programming for radio system (USB thumb drive) on-site in sealed container.
- Keep spare parts (fuses, relays, etc.) on-site in sealed container.

- Test backup generator plug with actual trailer generator unit that will be used during emergencies. Test at least once a year and train staff how to use the equipment when testing.
- Consider adding a flood light to illuminate the site.

2.3.2 Existing Wastewater Flows

2.3.2.1 Existing Flow Data

Direct flow measurement at the lift station is not possible because there is not a flow meter installed on the influent sewer. Estimates of the flow rates entering the lift station can be calculated using pump run times and by performing a draw down test. A draw down test was performed on August 30, 2023. Between 8:30-9:30am, the sewer flow rate into the lift station was observed to be approximately 40,320 gallons per day (GPD).

2.3.2.2 Estimated Existing Flows

Existing average day flows were estimated for the Twin Creeks Lift Station SSA using the same techniques that will be used for projecting future flows. The population of the SSA was calculated by totaling the number of existing dwelling units (DUs) and multiplying by a factor of 2.4 people per DU, to obtain an estimated population of 307 people (2.4 people per DU was the value determined in the Village's Facilities Plan Report written by Town & Country, November 2022). A per capita average flow rate of 49 gallons-per-capita-per-day (gpcpd) was applied to the calculated population to determine the average annual design flow. The calculated annual average flow rate is 14,400 GPD. Table 3 below summarizes the Lift Station's estimated existing flows.

Table 3. Twin Creeks Lift Station Estimated Existing Flows

Twin Creeks Lift Station Estimated Existing Flows				
Land Use	**Location**	**Total Homes (DUs)**	**Total Average Daily Flow (GPD)**	**Population Equivalent**
Single Family Residential	Twin Creeks Sub-Division from Jackson Drive	115	13,390	275
Single Family Residential	Twin Creeks Sub-Division from Sherman Road	13	1,580	32
Total		**128**	**14,970**	**307**

2.3.3 Lift Station Description

The existing Twin Creeks Lift Station, installed in 2002, is a submersible lift station, consisting of a 6-ft diameter concrete wet well, two submersible pumps, a 6-foot diameter concrete valve vault, and a 4-inch diameter ductile iron force main. The total "firm" pumping capacity of the lift station is approximately 160-170 gpm. This capacity approximation refers to one pump being out of service which is an industry standard and is recommended by the Wisconsin Department of Natural Resources (DNR). Tables 4 & 5 depict the existing lift station and pump parameters.

Table 4. Twin Creeks Lift Station Parameters

Parameter	Value
Wet Well Diameter, ft	6
Wet Well utilized during a pump cycle (On/Off), ft	2
Number of pumps	2

Table 5. Twin Creeks Lift Station Pump Parameters

Parameter	Value
Manufacturer	Flygt
Model	CP 3085 MT 3~ 436
Original Pumping Capacity, gpm (ea.)	160 - 170
TDH, ft	18 - 20
Inlet Size, in	3
Outlet Size, in	3
Speed, rpm	1670
Motor Size, HP	2.2
Motor Control	VFD (for phase conversion)

2.3.4 Future Conditions

The Twin Creeks Lift Station service area is anticipated to expand in the future which will result in increased flows to the lift station. The growth in the service area is primarily the result of developing farmland into residential housing. See Figures C-1 & C-2 in Appendix C for existing and future land use maps used in the analysis. 2050 land use data was used to determine future flows. The calculated increase in annual average flow rate due to future development within the lift station service area is 51,840 GPD, for a total 2050 average flow of 66,240 GPD. Table 6 depicts the 2050 flows to the lift station. A peaking factor of 6.1 was applied to the average flow to obtain the peak design flow. This peaking factor was derived from the model based on the 25-Year Peaking Factor calculated using the flow metering data from in Basin 4. Basin 4 is also a residential area, so it is assumed that the peaking factor for the lift station service area will be similar. The 2050 peak design flow for the service is 407,520 GPD.

Table 6. Future 2050 Twin Creeks Lift Station Flows

Usage	Location	Area (acres)	Total Average Daily Flow (GPD)	Population Equivalent
Low Density (Single Family) Residential	East of Jackson Dr and West of Twin Creeks Rd	4.5	2,131	43
Low Density (Single Family) Residential	Maple Fields Sub-Division	78.1	36,576	747
Low Density (Single Family) Residential	East of Creekwood Cir and West of Sherman Parc Cir	19.3	9,029	185
Low Density (Single Family) Residential	West of Creekwood Cir and East of Jackson Dr	8.6	4,018	82
Total 2050 Additional		**111**	**51,840**	**1057**
		Total Average Daily Flow (cfs)	**Peak Flow (GPD)***	**Population Equivalent**
Existing Flow		0.023		307
Additional 2050 Flow		0.08		1057
Combined Flows		**0.103**	**407,520**	**1364**

**A peaking factor of 6.1 was used to determine peak flow based on measured flow data for a 5-year 6-hour rain event*

2.3.5 Recommendation

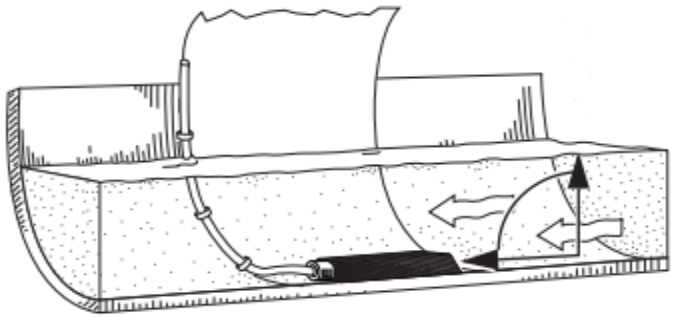
Based on the pump analysis, the 2050 estimated peak flow is greater than the current available pumping rate. Therefore, during the peak flow event, the lift station will surcharge above the high-water level (HWL) alarm set point. However, there is significant storage volume in the upstream gravity sewer into which the wastewater can surcharge without backing up into basements. As the lift station surcharges, the pumps will produce more flow than their average 160-170 gpm due to the increase in static head. For example, with 5 feet of surcharging, one pump will discharge an estimated 225 gpm. At 10-feet of surcharge, the pump will discharge an estimated 280 gpm, matching the projected 2050 flows going to the lift station. Note that the projected 280 gpm is an instantaneous peak flow that will not be sustained over a long period of time. Currently, the first upstream sewer lateral has an invert elevation of approximately 839. If the wet well surcharges 10 feet, the surcharge elevation will be approximately 834. Therefore, the storage capacity in the 15-inch sewer pipe is sufficient to attenuate the anticipated peak flow without impacting any sewer laterals upstream. Surcharging the upstream sewer is not an ideal situation, as solids may begin to accumulate on the pipe walls and in manholes. However, the additional storage will give the Village time to plan for lift station upgrades once the sewer begins surcharging during peak flow events. If major repairs are needed on the pumps prior to experiencing higher peak flows, it is recommended that the pumps be replaced with larger pumps at that time.

3. Flow Metering Analysis

3.1 Flow Metering Equipment and Methods

ISCO® 2150 Area/Velocity meters were used for the sanitary sewer flow metering. The meter sensor is installed in the sanitary sewer flow as shown below. The sensor sends a Doppler signal upstream to measure mean velocity of the sewer flow and a transducer measures flow depth. A data storage module secured near the top of the MH steps records 15-minute flow data as calculated from the velocity and

depth measurements. Using these meters, Foth was able to collect flow data every 15 minutes over the duration of the flow meter installation.



Flow Meter Sensor Installation

Five flow meters were installed on March 13, 2023, as depicted in Figure 1. Two (2) of the meters were installed in 12-inch PVC pipes, two (2) in 30-inch RCP pipes, and one (1) in 36-inch RCP pipe which was furthest downstream and closest to the Wastewater Treatment Plant. These locations were selected to gather information from each sewer basin that contributes flow to the sanitary sewer interceptor.

The purpose of flow metering is to provide the flow data necessary to determine how the sewer is performing throughout the day and under various weather conditions. By comparing average dry weather flows to average wet weather flows, calculations can be done to determine how much infiltration and inflow is entering the sewer system. The flow data will also indicate what remaining pipe capacity is available during peak flows.

3.2 Sewersheds

The Sewer Service Area (SSA) for this study consists of four (4) basins that serve the western and southern portions of the Village. Each basin that contributes flow to the interceptor is depicted in Figure 2. The four basins connect to the interceptor at different locations. The wastewater ultimately flows to the Wastewater Treatment Plant located on Eagle Drive.

VILLAGE OF JACKSON

FIGURE 1: PROJECT OVERVIEW

Meter 1 Basin
Meter 2 Basin
Meter 3 Basin
Meter 4 Basin
Metering Locations
Sanitary Manholes
Sanitary Pipes
30" Interceptor

Z:\WI\Washington_Co\Jackson\mxd\Figure 2 Metering and Basin Locations.mxd

JANUARY 2024

0 375 750 1,500 ft

N

Foth

I-45
STH 60
EAGLE DRIVE
HICKORY LANE
JACKSON DRIVE
SHERMAN ROAD
1
2
3
4
5
Wastewater Treatment Plant
Scope of Study - 30" Interceptor
Twin Creeks Lift Station

3.3 Rain Data

The Village experienced a relatively wet spring with a series of rain events, thus raising the groundwater table and providing a good representation of infiltration conditions. The summer months were dry, providing dry weather flows to compare with base population flow averages. Table 7 summarizes the National Oceanic and Atmospheric Administration's (NOAA) average monthly precipitation totals compared to the actual rainfall totals recorded in the Village of Jackson as reported on Weather Underground during flow metering.

Table 7. Average Monthly Rainfall vs Actual Monthly Rainfall

NOAA Average Monthly Precipitation versus Actual 2023 Monthly Precipitation Accumulation		
Month	**Monthly Averages (Inches)**	**Actual Accumulation (Inches)**
March	1.78	2.20
April	3.54	3.70
May	3.35	1.11
June	4.00	1.22
July	3.99	2.47
August	3.31	4.41
September	2.95	4.59

As seen in Figure 2 below, the Village of Jackson experienced a fairly large rain event on April 19, 2023, of 2.25-inches. This rain event is equivalent to a 5 year, 6-hour event per NOAA's point precipitation frequency (PF) estimates. Ideally, the Village would have experienced a larger storm during flow metering that would have stressed the capacity of the 30-inch interceptor to a greater extent, but unfortunately this did not occur. The April rain event was used to analyze the interceptor rather than the larger event in August because the groundwater table was assumed to be higher in April due to spring thaw/melt, which would increase the amount of I/I entering the sewer system providing the highest measured flows of the metering period. A smaller rain event will be reviewed as well in this report to summarize how the system responds to a common, more frequent rain event.

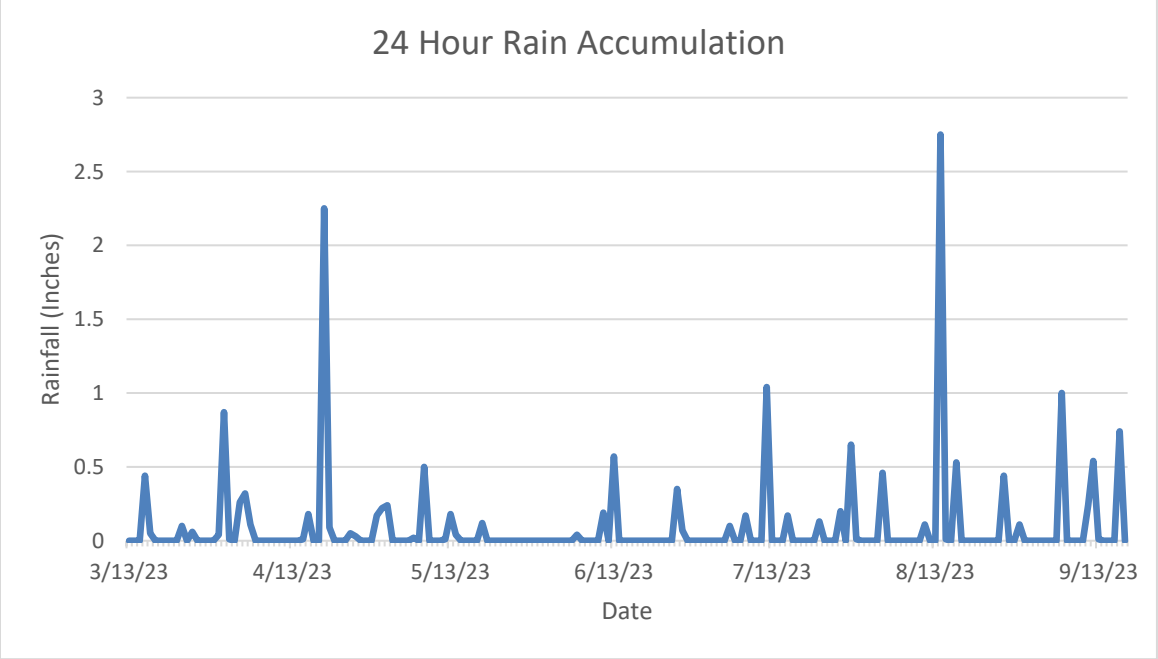


Figure 2: 24-Hour Rain Accumulation per Day

3.4 Infiltration Summary

Defined by the Environmental Protection Agency (EPA), infiltration is groundwater that infiltrates a sewer system through defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow. Data from the drier summer months of May – July was used to determine the SSA's dry weather average flow. This was used to establish the best available base sewage flow to compare and quantify infiltration and inflow rates into the system.

Next, wet weather periods of about a week in length from March – May were used to calculate wet weather averages. This period included months of above average precipitation, allowing the groundwater table to rise from the spring melt and thaw. This is not purely infiltration though, since it is unlikely that all sources of inflow are eliminated during any given week. Table 8 summarizes these averages.

Table 8. Dry Weather and Wet Weather Averages

Meter Number (GIS MH Number)	Flow Meter Location	Pipe Size (inches)	Dry Weather Ave (GPD)	Wet Weather Ave (GPD)
#1 (19401)	Sherman Rd & Jackson Dr	30	318,990	615,750
#2 (20105)	SW of Hickory Ln & Eagle Dr	30	334,240	637,770
#3 (20108)	NW of Hickory Ln & Eagle Dr	12	67,870	124,290
#4 (20108)	SE of Hickory Ln & Eagle Dr	12	50,660	97,020
#5 (20103)	NE of Hickory Ln & Eagle Dr	36	486,210	910,430

Infiltration is calculated from the difference between wet and dry weather averages. Inflow is expected to be near zero during periods without rain, so the difference is assumed to be all infiltration. According to the EPA, infiltration rates above 1,500 gallons per day per inch-diameter-mile (gpd/idm) is considered excessive.

Each basin in the study area consists of pipe of various lengths and sizes, so weighted averages were calculated for the basin pipe diameters. The total length of pipe in miles was multiplied by the weighted average pipe diameter to determine the inch-diameter-mile (idm) of pipe for each basin. Dividing gallons per day of average infiltration by inch-diameter-mile results in the quantity of infiltration per length of pipe. These totals can be viewed below in Table 9.

The calculation to determine the average infiltration rates for Basins 1, 3 and 4 are simply the differences between the wet and dry weather averages at the respective flow meters. The average infiltration rate for Basin 2 was determined by subtracting the flows of meters 1, 3, and 4 from meter 5 first.

Table 9. Infiltration per Basin

Basin #	Infiltration Rate (cfs)	Infiltration Rate (gpd)	Weighted Ave Pipe Size	Total Length of Pipe (miles)	Inch-diameter-mile (idm)	gpd/idm
1	0.46	296,760	11.2	14.85	166.9	1,779
2	0.04	24,720	12.6	5.11	64.5	383
3	0.09	56,420	8.5	3.02	25.8	2,187
4	0.07	46,630	8.3	3.23	26.7	1,746

Basins 1, 3, and 4 show excessive infiltration per the recommended EPA standards while Basin 2 is well below the threshold. A plausible explanation for why Basin 2 has a lower infiltration rate than the other basins is that the sewer pipe in Basin 2 was installed more recently. 98% of the sewer pipe in Basin 2 was installed after 1997. In contrast, 70% of the pipe in Basin 3, the basin with the highest infiltration rate, was installed prior to 1997. Based on these infiltration calculations, the priority for future I/I investigations should be Basin 3, followed by Basin 1, then Basin 4.

3.5 Inflow Summary

The EPA defines inflow as water other than sanitary flow that enters a sewer system from sources which include, but are not limited to, roof leaders, cellar drains, yard drains, area drains, drains from wet areas, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, stormwater, surface runoff, street was-water, or drainages. Inflow does not include, and is distinguished from, dry weather infiltration. Wet weather events cause the most stress on the capacity of all wastewater conveyance systems, mainly due to inflow. As discussed previously, during the flow metering period the Village experienced a 5 year, 6-hour rain event of 2.25-inches on April 19, 2023.

Tables 11 and 12 below, were compiled to compare wet weather peak flows to dry weather average flows experienced during the flow metering period for the peak rain events. It has been Foth's experience, that older sewers in the southeastern portion of the state generally experience wet to dry weather ratios ranging between 4:1 and 8:1. For the purpose of this study, the ratios have been calculated by basin for the rain events on April 19, 2023, and July 12, 2023. The ratios are another means of comparison to use when deciding in which basin to perform additional I/I investigations.

Table 11 indicates how the system responds to a rain event during an above average precipitation period. Figure 3 depicts the high inflow basins during an above average precipitation period.

Table 10. Peaking Factors

Peaking Factor Level
Excessive: >8
Moderate: 4-8
Low :1-4

Table 11. Wet to Dry Peaking Factors for April 19, 2023, Peak Rain Event (2.25-inches)

Meter Number (GIS MH Number)	Flow Meter Location	Pipe Size (inches)	April 19 Event Peak Flow (GPD)	Dry Weather Ave (GPD)	Ratio of Peak Wet Weather to Dry Weather Ave
#1 (19401)	Sherman Rd & Jackson Dr	30	4,239,780	316,670	**13.4**
#2 (20105)	SW of Hickory Ln & Eagle Dr	30	3,847,300	336,060	**11.4**
#3 (20108)	NW of Hickory Ln & Eagle Dr	12	372,320	71,090	**5.3**
#4 (20108)	SE of Hickory Ln & Eagle Dr	12	206,630	51,700	**4.0**
#5 (20103)	NE of Hickory Ln & Eagle Dr	36	4,100,520	484,700	**8.5**

Table 12 indicates how the system responds to a smaller, more common rain event during a period of below average rainfall.

Table 12. Wet to Dry Peaking Factors for July 12, 2023, Rain Event (1.04-Inches)

Meter Number (GIS MH Number)	Flow Meter Location	Pipe Size (inches)	July 12 Event Peak Flow (GPD)	Dry Weather Ave (GPD)	Ratio of Peak Wet Weather to Dry Weather Ave
#1 (19401)	Sherman Rd & Jackson Dr	30	734,890	316,670	**2.3**
#2 (20105)	SW of Hickory Ln & Eagle Dr	30	939,300	336,060	**2.8**
#3 (20108)	NW of Hickory Ln & Eagle Dr	12	242,390	71,090	**3.5**
#4 (20108)	SE of Hickory Ln & Eagle Dr	12	124,540	51,7020	**2.4**
#5 (20103)	NE of Hickory Ln & Eagle Dr	36	1,304,010	484,700	**2.7**

It is interesting to note that during the April 19, 2023, rain event, only the interceptor experienced excessive peak flows while the smaller sewers recorded a moderate response. Based on these inflow results, Basin 1 and the interceptor would be the highest priority to investigate further for I/I.

As mentioned, the purpose of the flow metering for this study was to get a snapshot of how the existing interceptor is currently performing and to determine whether the interceptor has capacity for expected future flows from the growing community. This study only provides the wet weather response of the subject interceptor and is not intended to provide a full-scale Sanitary Sewer Evaluation Survey (SSES) analysis. The conclusions drawn from the metering analysis are as follows:

- Infiltration within Basins 1, 3, and 4 would be considered excessive per EPA standards for wet weather conditions.
- Peak wet weather induced I/I is excessive within the interceptor, primarily upstream from Meter 1 within Basin 1, especially when groundwater is high, causing peaks between 8:1 and 13:1.
- Some manholes along the interceptor had recorded active infiltration. Addressing these repairs would reduce the amount of I/I in the system.
- The Village has hired a contractor to grout the interceptor. The work will take place in the near future. Additional flow metering could be performed after the grouting is completed to determine the effectiveness of the procedure.

VILLAGE OF JACKSON

FIGURE 3: HIGH INFLOW & INFILTRATION BASINS

APRIL 19, 2023 5-YEAR 6-HOUR RAIN EVENT

- Excessive Inflow
- Moderate Inflow
- Metering Locations
- Sanitary Manholes
- Sanitary Pipes
- 30" Interceptor

Z:\WI\Washington_Co\Jackson\mxd\Figure 2 Metering and Basin Locations.mxd

JANUARY 2024

0 375 750 1,500 ft

N

Foth

I-45

STH 60

EAGLE DRIVE

JACKSON DRIVE

HICKORY LANE

SHERMAN ROAD

1 2 3 4 5

Wastewater Treatment Plant

Scope of Study - 30" Interceptor

Twin Creeks Lift Station

4. Existing and Future Land Use

4.1 Growth

The Village of Jackson is currently experiencing growth and is projected to continue to grow throughout the next couple of decades. The majority of the growth is anticipated to occur in the west and south sides of the Village. These areas are tributary to the 30-inch interceptor and lift station. The projected future growth is the basis for determining the future wastewater flows, and in turn, the required capacity of the 30-inch interceptor and lift station.

4.2 Current Land Use

The Village's current land use map and the daily loadings provided by Town & Country Engineering in the Wastewater Treatment Facilities Planning Document (2022) were used to calculate the current expected average daily base flows that are generated upstream of the lift station and the 30-inch interceptor. Table 13 below summarizes the calculations. The existing and 2050 land use maps are included in Appendix C.

Table 13. Current Land Use Daily Flows

Property Type Usage	Total Homes (DU)	Loading Rate (GPD/DU) *	Total Area (Acres)**	Loading Rate (GPD/acre)	Total Average Daily Flow (GPD)	Total Average Daily Flow (cfs)
BASIN 1						
DU – Residential Dwelling	757	117			88,569	0.14
C/LI – Commercial and Light Industrial			67	800	53,600	0.08
HDR – High Density (Multi-Family) Residential			45	1,170	52,650	0.08
I – Industrial			139	1,000	139,000	0.22
				Subtotal:	**333,819**	**0.52**
BASIN 2						
DU – Residential Dwelling	286	117			33,462	0.05
				Subtotal:	**33,462**	**0.05**
BASIN 3						
DU – Residential Dwelling	251	117			33,462	0.04
HDR – High Density (Multi-Family) Residential			28	1,170	33,462	0.05
O/I – Office and Institutional			2	600	33,462	0.002
				Subtotal:	**63,327**	**0.092**
BASIN 4						
DU – Residential Dwelling	361	117			42,237	0.07
I - Industrial			6.5	1000	6,500	0.01
				Subtotal:	**48,737**	**0.08**
				Total Existing Land Use Average Daily Flows:	**479,345**	**0.742**

**Per Town & Country Facilities Plan Report, November 2022: 2.39 ppl/DU and 49 gpcpd.*
***Streets, floodplain, environmental corridors, parks, and open spaces identified via GIS mapping application were not include in area calculations.*

Based on the land use calculation, it is estimated that the 30-inch interceptor currently experiences a base flow of approximately 0.742 cfs. As seen in Table 8, flow meter 5, which accounts the total flow through

the interceptor, recorded dry weather averages of approximately 0.75 cfs. The similarities in these totals provide assurance that the loading rates, land use, and flow metering data are accurate.

4.3 2050 Projected Land Use

Because the Village is growing in areas that are upstream of the 30-inch interceptor, it is critical from a sewer system planning perspective to determine if the 30-inch interceptor has enough capacity to accommodate the anticipated growth. Using the Village's 2050 Land Use Plan and the 2022 Facilities Plan, the average daily wastewater flows for projected development through 2050 were calculated. The calculations are presented in Table 14. Note Basins 3 & 4 are excluded as they are primarily built out.

Table 14. Additional Future Daily Flows Through 2050

BASIN 1				
Property Type Usage	**Total Area (Acres)****	**Loading Rate (GPD/acre)**	**Total Average Daily Flow (GPD)**	**Total Average Daily Flow (cfs)**
C/I – Commercial and Light Industrial	133	800	106,400	0.16
I – Industrial	96	1000	96,000	0.15
LDR – Low Density (Single Family) Residential	290	468	135,720	0.21
MDR – Medium Density Residential	13	878	11,414	0.02
		Subtotal:	**349,534**	**0.54**
BASIN 2				
LDR – Low Density (Single Family) Residential	115	468	53,820	0.08
MDR – Medium Density Residential	32	878	28,096	0.05
		Subtotal:	**81,916**	**0.13**
Total Additional 2050 Future Land Use Average Daily Flows:			**431,450**	**0.67**
Total Combined 2050 Future Land Use Average Daily Flows:			**910,795**	**1.41**

**Per Town & Country Facilities Plan Report, November 2022: 2.39 ppl/DU and 49 gpcpd.*
***Streets, floodplain, environmental corridors, parks, and open spaces identified via GIS mapping application were not include in area calculations.*

The estimated additional future average daily flow from projected growth in the metering basins through 2050 is 431,450 GPD or 0.67 cfs. The estimated total average daily flow in 2050 is 910,795 GPD or 1.41 cfs. This is the amount of additional wastewater that will need to be conveyed through the 30-inch interceptor in the future. To determine the impact this will have on the interceptor, a hydraulic model was created. The hydraulic model is discussed in detail in the next section of this report.

5. Sanitary Sewer Hydraulic Model

5.1 Overview of Modeling Software and Scope

The Village of Jackson sanitary sewer interceptor model (Model) was developed using Bentley SewerGEMS CONNECT (SewerGEMS) modeling software, which is a software product specifically designed for sanitary and combined sewer modeling. The purpose of the Model is to create a method to evaluate the 30-inch interceptor under future projected flow conditions. The Model was calibrated using the flow metering data to provide an accurate depiction of current conditions. The calibrated Model was then used with projected future flow conditions to analyze the interceptor. The methods are described below.

Modeling the sanitary sewer system tributary to the 30-inch interceptor included the following:

- Calibration of Existing Flows
    - Calibrate the Model's dry-weather flows to the flow metering data dry-weather averages.
    - Calibrate the Model's wet-weather hydrograph, also known as rain event flows, with rain events captured by the flow data.
- 2050 Projection
    - Enter the 2050 future land uses and their associated flows into the Model to determine the 2050 average dry-weather flows.
    - Simulate various rain events to determine their impact on the interceptor in the year 2050.

5.2 Modeling Creation

The Model was constructed using the ArcGIS interface in SewerGEMS. The elements and attributes provided by the Village in ArcGIS were imported to SewerGEMS and any incomplete or missing data was manually input using collection system record drawings. The Model was then evaluated using the connectivity review tools in SewerGEMS to ensure a hydraulically coherent model.

5.3 Model Calibration

5.3.1 Average Dry-Weather Flows

Average dry-weather flows were determined by developing land use-based flow estimates and calibrating these flows to the flow meter data. Calibration of the Model focused on adjusting modeled loading patterns with the flow data. Unit sanitary loads were entered into the model based on the existing land use summarized in Table 13 above. The Model's dry-weather flows were calibrated to match the typical diurnal flow variation for the sanitary sewer basins. Data from the drier summer months of May – July was used to determine the SSA's dry weather average flow which is summarized in Figure 4.

Flow metering data from June 17 –24, 2023 along with data from July 18 – August 10, 2023 were used to determine average diurnal patterns during the dry weather periods. Figure 4 shows the model average flow at Meter 5 when compared to the average diurnal patterns extracted from flow metering.

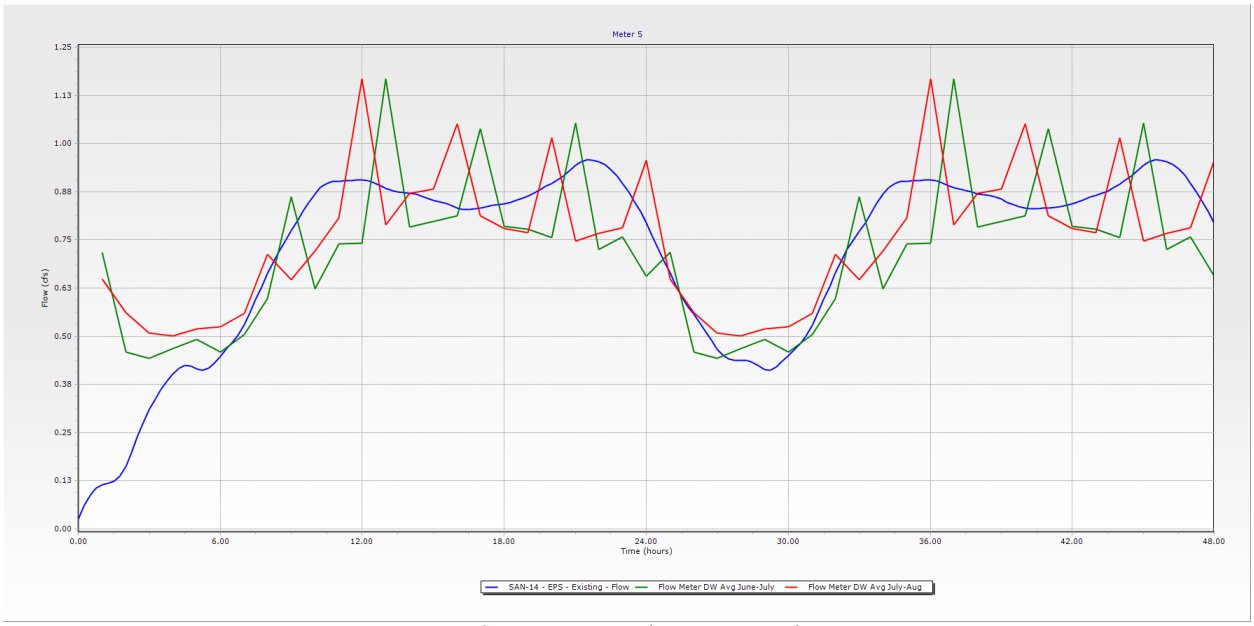


Figure 4: Average Daily Flow Output from the Model (shown in blue) Compared to the Dry Weather Meter Data from June (shown in red) and July/August (shown in green) at Meter 5.

5.3.2 Rain Event Calibration

Wet weather flows were modeled using the RTK method to convert rainfall to sewer flow, which combines flows from rapid inflow, moderate infiltration, and slow infiltration components to produce a single hydrograph shape specific to the area being modeled. “R” is the fraction of precipitation that enters the collection system for that component, “T” is the time from the precipitation pulse to the peak of rapid inflow of the hydrograph, and “K” is the ratio of time to peak flow to time to the end of the hydrograph. RDII sources in the system include inflow at services, sump pumps, and manholes as well as infiltration at manholes and cracks in the sewer pipes and joints. These sources are not metered or specifically known and therefore the RTK method is used to determine a hydrograph that simulates the system’s rain events. The R, T and K parameters were based on metered data that captured rain events.

The rain event on April 19, 2023, was used to determine the values for the RTK method in the model. The Village of Jackson received approximately 2.25-inches of rain over a course of 6 hours, making it approximately a 5-Year, 6-hour precipitation event when compared to NOAA PF estimates. Figure 5 shows the Model output at Meter 5 when compared to the flow data from April 19, 2023.approximately a 5-Year, 6-hour precipitation event when compared to NOAA PF estimates. Figure 5 shows the Model output at Meter 5 when compared to the flow data from April 19, 2023.

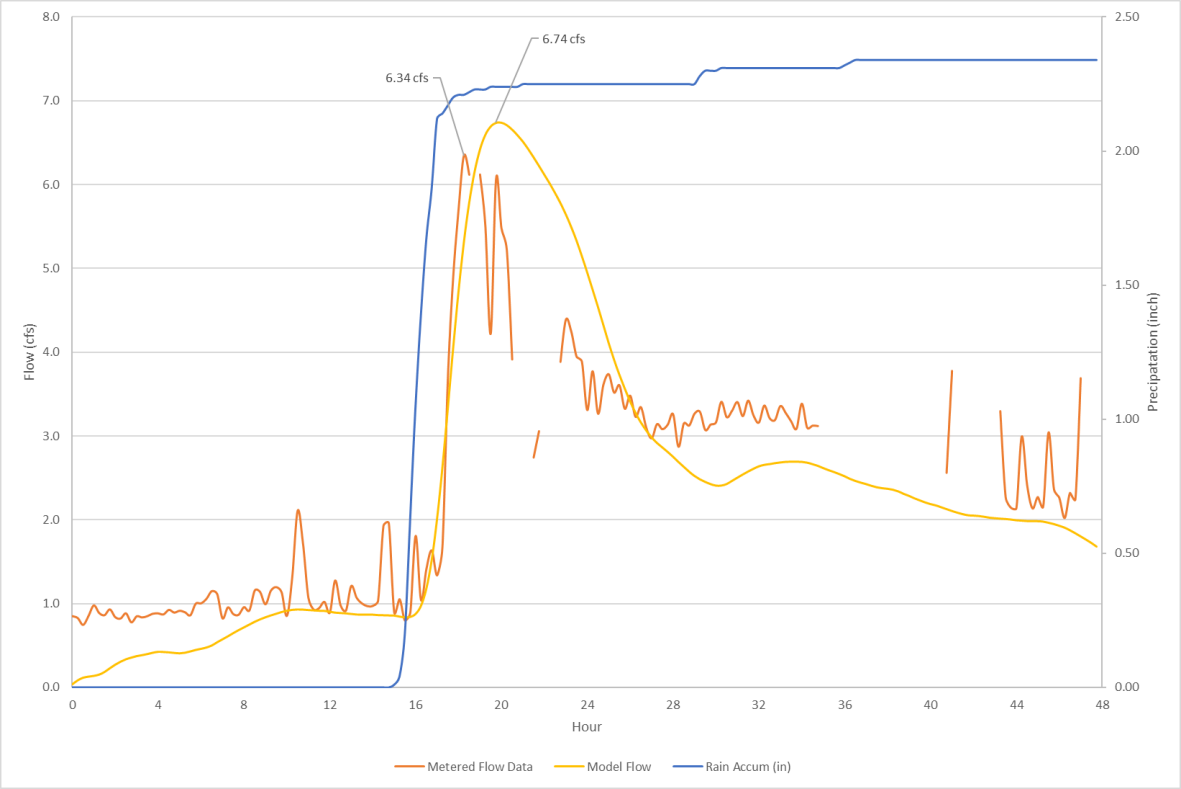


Figure 5. Model Output (yellow) vs. Metered Flow Data (orange) at Meter 5 for the April 19, 2023 Rain Event.

5.4 2050 Projection Analysis and Simulation

5.4.1 2050 Dry-Weather Flows

The goal of the Model was to determine the impacts of future 2050 sanitary sewer flows on the existing system, including impacts from proposed development. Future land use data, provided by the Village, was used to determine the 2050 average day dry-weather flows. Area-based unit sanitary loads were entered into the model based on the 2050 land use which is summarized in Table 14.

The 2050 dry-weather average was determined to be 1.36 cfs. Figure 6 compares the existing and 2050 dry-weather diurnal curve generated from the model.

Based on the dry-weather average flow, the Model indicates a maximum flow of 1.70 cfs in the interceptor, which is 26.5% of the overall pipe capacity.

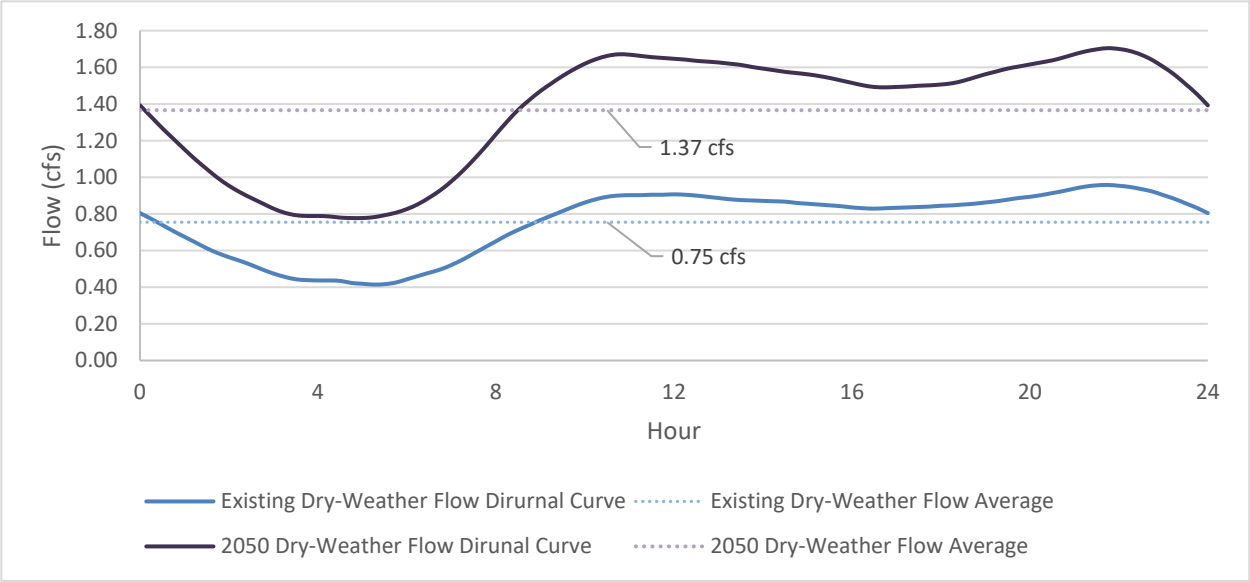


Figure 6: Projected 2050 Base Dry-Weather Diurnal Flows

5.4.2 2050 Rain Event Analysis

The Model was evaluated to determine the effect of various rain events on the 30-inch interceptor. For this analysis, several rain events were simulated to determine when the interceptor reached full pipe capacity and when the interceptor started to surcharge. Each of the fifteen (15) interceptor pipe segments were analyzed. Figure 7 shows the how the interceptor segments were numbered for this capacity review.

The rain events simulated were extracted from NOAA precipitation frequency estimates for the Village along with SEWRPC Estimated Rainfall Distribution curves. The design rain event is the theoretical rainfall event, based on historical records for the area. The "Year" indicates the recurrence interval, and the "hour" indicates the duration of the rainfall event. Table 15 is a summary of the rain events modeled during the 2050 rainfall analysis.

Table 15. NOAA Precipitation Frequency Estimates for the Village of Jackson.

Rain Event	Precipitation Depth (Inches)
5 Year 6 Hour	2.50
5 Year 12 Hour	2.84
5 Year 24 Hour	3.24
10 Year 6 Hour	2.98
10 Year 24 Hour	3.81
25 Year 6 Hour	3.71
50 Year 6 Hour	4.35
100 Year 6 Hour	5.04
100 Year 24 Hour	6.43
200 Year 6 Hour	5.79
500 Year 6 Hour	6.88

VILLAGE OF JACKSON

FIGURE 7: INTERCEPTOR SEGMENTS FOR CAPACITY ANALYSIS

Pipe Diameter

- 8"
- 10"
- 12"
- 15"
- 18"
- 21"
- 24"
- 30"
- 36"

Pipe Within Capacity Analysis

Z:\WI\Washington_Co\Jackson\mxd\Figure 7 Interceptor Pipe Analysis.mxd

NOVEMBER 2023

0 125 250 500 ft

Foth

JACKSON DRIVE

EAGLE DRIVE

HICKORY LANE

SHERMAN ROAD

Twin Creeks Lift Station

Wasterwater Treatment Plant

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Based on Model results, the interceptor is capable of conveying 5-Year and 10-Year rainfall events without surcharging any pipe. The interceptor reached full capacity at pipe segments along the interceptor beginning at the 25-Year, 6-Hour rainfall event. The Model indicated that the interceptor surcharged over manhole rim grade during a 500-Year, 6-Hour rainfall event. The results of each rain event modeled are summarized below in Table 16.

Table 16. Model Results for NOAA Rainfall Events.

Rain Event	Precipitation Depth (Inches)	Flow (cfs)	Depth (Maximum) / Rise (%)	Peaking Factor
5 Year 6 Hour	2.50	10.1	74	7.4
5 Year 12 Hour	2.84	10.3	75	7.5
5 Year 24 Hour	3.24	9.4	70	6.9
10 Year 6 Hour	2.98	11.8	85	8.6
10 Year 24 Hour	3.81	10.8	78	7.9
25 Year 6 Hour	3.71	14.4	100	10.5
50 Year 6 Hour	4.35	16.7	100	7.4
100 Year 6 Hour	5.04	19.1	100	14.0
100 Year 24 Hour	6.43	19.1	100	12.6
200 Year 6 Hour	5.79	21.8	100	16.0
500 Year 6 Hour	6.88	25.7	100	18.8

5.4.2.1 2050 - 5 Year 6 Hour Rain Event

The 5-Year, 6-Hour rain event is estimated to accumulate 2.50-inches of rain during a 6-hour period. The results of this analysis generated a peak flow of 10.1 cfs, with a peaking factor of 7.4 and a maximum capacity utilization of 74% for pipe segment ten (10). Table 17 depicts maximum capacity utilization data for each pipe segment along the interceptor during the 5-Year, 6-Hour rain event. Figure 8 shows the capacity utilization profile simulation (HGL) real time for this rain event; which is contained within the pipe.

Table 17. 5-Year, 6-Hour Rainfall Event Interceptor Analysis Results

Label	Diameter (Inches)	Slope (%)	Capacity* (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity Maximum (ft/s)	Depth (Maximum) / Rise (%)
SAN-1	30	0.081	11.7	8.9	2.62	65.9
SAN-2	30	0.093	12.5	9.2	2.79	67.3
SAN-3	30	0.106	13.4	9.2	2.94	71.5
SAN-4	30	0.058	9.9	9.2	2.28	74
SAN-5	30	0.054	9.5	9.2	2.2	72.2
SAN-6	30	0.111	13.7	9.2	2.99	73.3
SAN-7	30	0.018	5.6	9.2	1.87	73.9
SAN-8	30	0.071	11.0	9.2	2.5	72.6
SAN-9	30	0.073	11.1	9.2	2.53	73.6
SAN-10	30	0.058	9.9	9.2	2.29	74
SAN-11	30	0.062	10.2	9.2	2.35	73.4
SAN-12	30	0.049	9.1	9.2	2.12	71.2
SAN-13	30	0.083	11.8	9.2	2.67	69.8
SAN-14	30	0.038	8.0	10.1	2.05	64.9
SAN-15	36	0.083	19.2	10.1	2.75	47.8

**Maximum capacity of the pipe segment at 100% full*

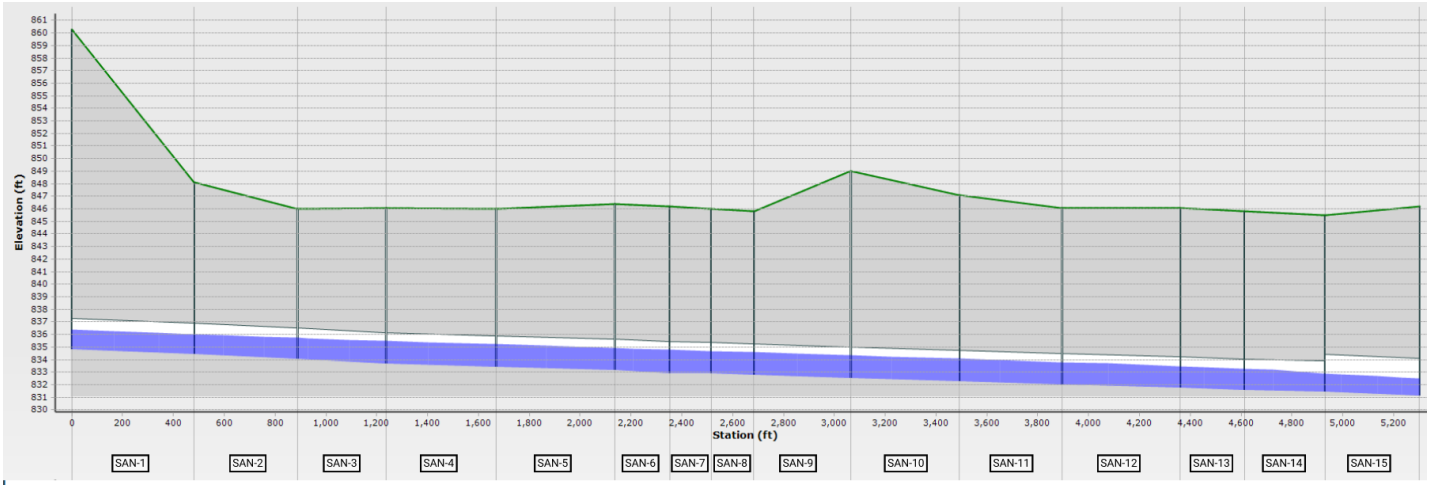


Figure 8. Interceptor Profile During a 5-Year, 6-Hour Rainfall Event.

5.4.2.2 2050 - 25 Year 6 Hour Rain Event

While the 5-Year 6-Hour rain event is commonly acknowledged by the WDNR and area communities as an acceptable sewer system level of service, further rain events were simulated to provide a sensitivity analysis. The 25-Year, 6-Hour rain event is estimated to accumulate 3.71-inches of rain during a 6-hour period. The results of this analysis generated a peak flow of 14.4 cfs, with a peaking factor of 10.5 and a maximum capacity of 100% for pipe segments one (1) through ten (10) along the interceptor. Table 18 depicts the maximum results of the interceptor during the rain event. Figure 9 shows the capacity profile in real time for this rain event.

Table 18. 25-Year 6-Hour Rainfall Event Interceptor Analysis Results

Label	Diameter (Inches)	Slope (%)	Capacity* (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity Maximum (ft/s)	Depth (Maximum) / Rise (%)
SAN-1	30	0.081	11.7	12.8	2.71	100
SAN-2	30	0.093	12.5	13.2	2.91	100
SAN-3	30	0.106	13.4	13.2	3.08	100
SAN-4	30	0.058	9.9	13.2	2.69	100
SAN-5	30	0.054	9.5	13.2	2.69	100
SAN-6	30	0.111	13.7	13.2	3.16	100
SAN-7	30	0.018	5.6	13.2	2.69	100
SAN-8	30	0.071	11.0	13.2	2.69	100
SAN-9	30	0.073	11.1	13.2	2.70	100
SAN-10	30	0.058	9.9	13.2	2.69	100
SAN-11	30	0.062	10.2	13.2	2.69	99
SAN-12	30	0.049	9.1	13.2	2.69	92
SAN-13	30	0.083	11.8	13.2	2.75	87.3
SAN-14	30	0.038	8.0	14.4	2.93	79.5
SAN-15	36	0.083	19.2	14.4	2.98	57.7

**Maximum capacity of the pipe segment at 100% full*

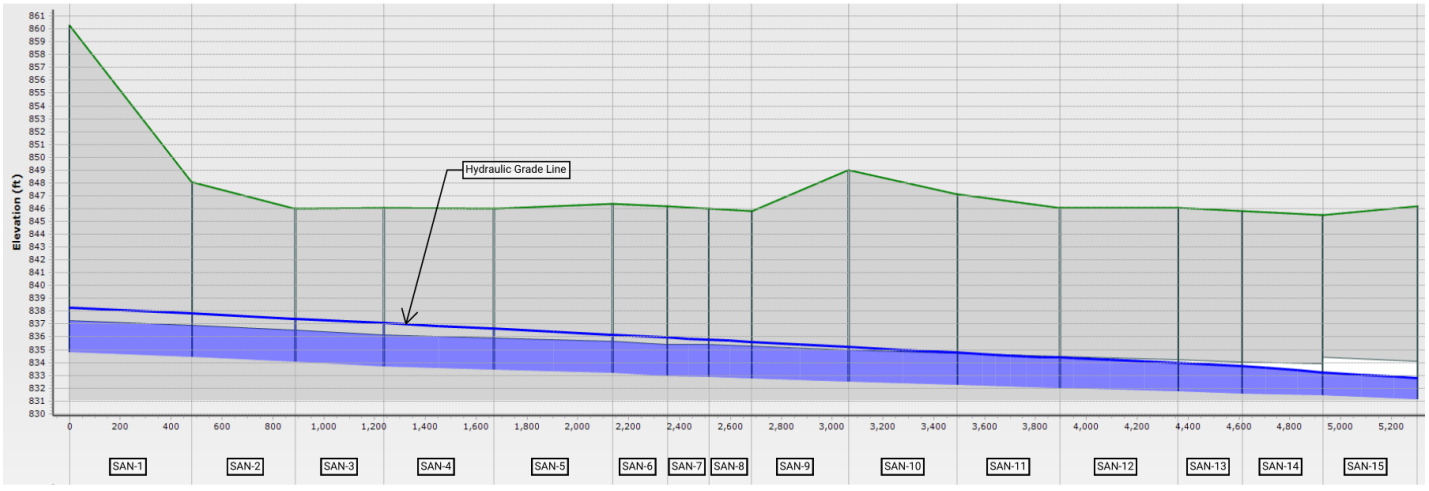


Figure 9. Interceptor Profile During a 25-Year, 6-Hour Rainfall Event.

5.4.2.3 2050 - 500 Year 6 Hour Rain Event

Additional modeling was performed to estimate when the interceptor surcharging would reach the level of at grade discharge. The 500-Year, 6-Hour rain event is estimated to accumulate 6.88-inches of rain during a 6-hour period. This rain event resulted in the system surcharging at two different manholes along the interceptor. The results of this analysis generated a peak flow of 25.7 cfs, with a peaking factor of 18.8 and a maximum capacity of 100% for pipe segments one (1) through fourteen (14). Table 19 depicts the maximum results of the interceptor during the 500 Year 6-Hour rain event. Figure 10 shows the capacity profile in real time for this rain event.

Table 19. 500-Year, 6-Hour Rainfall Event Interceptor Analysis Results

Label	Diameter (Inches)	Slope (%)	Capacity (Design) (cfs)	Flow (Maximum) (cfs)	Velocity Maximum (ft/s)	Depth (Maximum) / Rise (%)
SAN-1	30	0.081	11.7	23.1	4.70	100
SAN-2	30	0.093	12.5	23.7	4.84	100
SAN-3	30	0.106	13.4	23.7	4.83	100
SAN-4	30	0.058	9.9	23.7	4.83	100
SAN-5	30	0.054	9.5	23.7	4.83	100
SAN-6	30	0.111	13.7	23.7	4.83	100
SAN-7	30	0.018	5.6	23.7	4.83	100
SAN-8	30	0.071	11.0	23.7	4.83	100
SAN-9	30	0.073	11.1	23.7	4.84	100
SAN-10	30	0.058	9.9	23.7	4.83	100
SAN-11	30	0.062	10.2	23.7	4.83	100
SAN-12	30	0.049	9.1	23.7	4.83	100
SAN-13	30	0.083	11.8	23.7	4.83	100
SAN-14	30	0.038	8.0	25.7	5.24	100
SAN-15	36	0.083	19.2	25.7	3.63	79.3

**Maximum capacity of the pipe segments at 100% full*

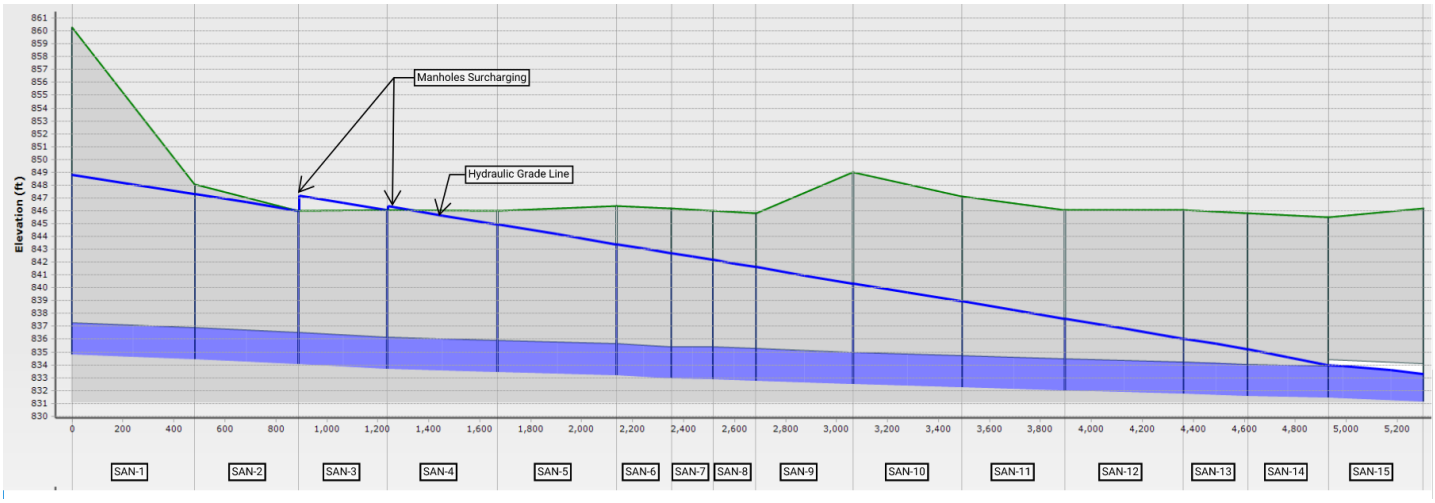


Figure 10. Interceptor Profile During a 500-Year, 6-Hour Rainfall Event.

6. Recommendations

6.1 Basins

- Basins 1, 3, and 4 have somewhat excessive infiltration per EPA standards. Further studies and field investigations should be conducted within each of these basins to pinpoint cost effective approaches to remove the clear water infiltration.

6.2 Interceptor

- Based on flow modeling, the capacity of the interceptor is adequate to convey the existing and future 2050 flow conditions for the 5-year 6-hour rain event.

- The interceptor manholes are generally in good condition. If budgets and time allows, minor repairs and cleaning should be conducted within a couple of years to prevent further defects. An annual inspection of each manhole along the interceptor is recommended to track and record defects of the structures.

- Continue to clear and grub along interceptor route as some manholes are located within forested and swampy land to maintain access.

- Further I/I and sanitary sewer evaluation survey (SSES) analysis studies should be performed once the grouting project is complete to determine the effectiveness of the project on reducing I/I.

6.3 Twin Creeks Lift Station

- The pump station is operating well as-is, minor recommendations are included in Section 2.3.5 and in the attached LS assessment in Appendix A.

- As flows to the Lift Station increase over time, it will eventually overcome the pumps' current capacity of 160-170 gpm. When this happens, the wet well level will rise, and the incoming gravity pipe will begin to surcharge. This is not a negative thing for the lift station or the pumps. Extra capacity is generated from the reduction in static lift caused by the surcharged level. Because the force main is so short, and the pump curve is so flat, a small change in static head has a large effect on pump capacity. If the Village is comfortable with surcharging over the typical wet well level, the existing pumps will be adequate for some time.

- If the surcharge level becomes higher than 10-feet, when the pump output matches proposed 2050 flow projections, then the pumps should be upsized. This update will be relatively minor to achieve a new pumping capacity of approx. 280 gpm (to match the future peak flow rates) and upsizing will include new submersible pumps. The motor size will go from 2.2hp up to 3.5 - 5hp, depending on the final pump selection. The existing base elbows and guide rails should still be usable if the Village chooses to stay with Flygt pumps.

- At the time the pumps are upsized, other control components should also be replaced to increase reliability. At a minimum, this should include two new VFD's (used for phase conversion), a new pump controller (due to age and hours of use), and new pump monitoring modules. At the time of replacement, other power devices may also be up for pro-active replacement depending on age and condition at that time.

- It is recommended that the typical wet well operating range be adjusted from the existing 2-feet setpoint. Adjust setpoints to 2.5-feet for 15-minute cycles or 3-feet for 20-minute cycle intervals. This will allow more time between pump-down cycles which will prevent the pumps from cycling

too often. After changing these setpoints, the backup/alarm floats should also be adjusted accordingly.

7. References

City Water, LLC. October 2021. *Water & Sewer Expansion Analysis*.

Southeastern Wisconsin Regional Planning Commission. November 2019. *A Comprehensive Plan for The Village of Jackson: 2050.*

Town & Country Engineering, Inc., November 2022. *Wastewater Treatment Facility Facilities Planning Document.*

United States Environmental Protection Agency. June 2014. *Quick Guide for Estimating Infiltration and Inflow.*

Appendix A – Manhole Inspection Reports

VILLAGE OF JACKSON

FIGURE A: MANHOLE INSPECTION MAP

Sanitary Pipes

Sanitary Manholes

Manhole Inspected

Z:\WI\Washington_Co\Jackson\mxd\Figure X Manhole Inspection Map.mxd

NOVEMBER 2023

0 125 250 500 ft

N

Foth

JACKSON DRIVE

EAGLE DRIVE

HICKORY LANE

SHERMAN ROAD

Wasterwater Treatment Plant

Twin Creeks Lift Station

17 (20102)

16 (20103)

1 (20104)

2 (20105)

3 (20301)

4 (20302)

18 (20303)

5 (20304)

6 (20305)

8 (20306)

7 (20307)

9 (20308)

10 (20309)

11 (20310)

13 (20311)

12 (29201-1)

14 (19401)

15 (19402)

(1)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

[ ] Maintenance [ ] Repair [x] Scheduled [ ] Emergency

[x] Sanitary [ ] Water [ ] Storm [ ] Telecom [ ] Electric [ ] Other _____

ID 20104 Material CONCRETE Street Location(s) EAGLE & HICKORY

Size 48" CONE/BARRELS 60" BASE Elevation Address (if applicable) _____

[x] Pipe [x] Structure

- [x] Main Line
- [ ] Service Line

- [ ] Photo Eye
- [ ] Clean Out
- [ ] Catch Basin
- [x] Manhole
- [ ] Valve
- [ ] Hydrant
- [ ] Endwall
- [ ] Pole
- [ ] Antennae
- [ ] Other _____

Lateral/Drop in MH (Circle) NW (Dir.) 11.7

Lateral/Drop in MH (Circle) SW (Dir.) 14.20

Lateral/Drop in MH (Circle) SE (Dir.) 12.42

14.3 - NE

- [✓] Lid
- [ ] Rings
- [8"x] Internal Seal
- [x] Walls
- [NW] Steps
- [ ] Floor

10" CASTING

1 CONE (48") 1 BENCH (60")
2 BARRELS (48")
1 8" SLAB

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

[x] Inspected [ ] Other _____

[ ] Jetted Length _____

[ ] Televised Length _____

[ ] Replaced/Repaired

Situation Found MOIST WALLS BUT NO ACTIVE INFILTRATION. FLOW FROM NW IS DROPPING ON BENCH.

Work Performed By MHY Date _____

Revised 1/11/23

(2)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

☐ Maintenance ☐ Repair ☒ Scheduled ☐ Emergency

☒ Sanitary ☐ Water ☐ Storm ☐ Telecom ☐ Electric ☐ Other _____

ID 20105 Material CONCRETE Street Location(s) 1 MH WEST OF EAGLE/HICKORY

Size 48" CONES/BARRELS
60" BASE Elevation Address (if applicable) _____

☐ Pipe

- ☐ Main Line
- ☐ Service Line

☒ Structure

- ☐ Photo Eye
- ☐ Clean Out
- ☐ Catch Basin
- ☒ Manhole
- ☐ Valve
- ☐ Hydrant
- ☐ Endwall
- ☐ Pole
- ☐ Antennae
- ☐ Other _____

Lateral/Drop (Circle) in MH NE (Dir.) 14.15

Lateral/Drop (Circle) in MH SW (Dir.) 14.14

Lateral/Drop (Circle) in MH _____ (Dir.)

- ☒ Lid
- ___ Rings
- ___ Internal Seal
- ___ Walls
- 5 Steps
- ___ Floor

10" CASTING
1 CONE (48") 1 BENCH (60")
2 BARRELS (48")
1 8" SLAB

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

☒ Inspected
☐ Jetted Length _____
☐ Televised Length _____
☐ Replaced/Repaired
☐ Other _____

Situation Found _____

Work Performed By MHY Date _____

Revised 1/11/23

(3)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

☐ Maintenance ☐ Repair ☒ Scheduled ☐ Emergency

☒ Sanitary ☐ Water ☐ Storm ☐ Telecom ☐ Electric ☐ Other _____

ID 20301 Material CONCRETE Street Location(s) _____

Size 48" DIA Elevation Address (if applicable) _____

☐ Pipe

- ☐ Main Line
- ☐ Service Line

☒ Structure

- ☐ Photo Eye
- ☐ Clean Out
- ☐ Catch Basin
- ☒ Manhole
- ☐ Valve
- ☐ Hydrant
- ☐ Endwall
- ☐ Pole
- ☐ Antennae
- ☐ Other _____

Lateral/Drop (Circle) in MH (Dir.) NW 12.98

Lateral/Drop (Circle) in MH (Dir.) SW 14.13

Lateral/Drop (Circle) in MH (Dir.) NE 14.13

✓ Lid ___ Walls
___ Rings NW Steps
9" Internal Seal ___ Floor

16" CASTING
1 CONE (48")
2 BARRELS (48")
1 BENCH (48")

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

☒ Inspected
☐ Jetted Length _____
☐ Televised Length _____
☐ Replaced/Repaired
☐ Other _____

Situation Found WET BENCH W/ MUD & SOME DEBRIS PRESENT

Work Performed By MHY Date _____

Revised 1/11/23

(4)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

☐ Maintenance ☐ Repair ☒ Scheduled ☐ Emergency

☒ Sanitary ☐ Water ☐ Storm ☐ Telecom ☐ Electric ☐ Other _____

ID 20302 Material CONCRETE Street Location(s) _____

Size 48" DIA CONE/BARRELS
60" BASE

Elevation

Address (if applicable) _____

☐ Pipe

- ☐ Main Line
- ☐ Service Line

☒ Structure

- ☐ Photo Eye
- ☐ Clean Out
- ☐ Catch Basin
- ☒ Manhole
- ☐ Valve
- ☐ Hydrant
- ☐ Endwall
- ☐ Pole
- ☐ Antennae
- ☐ Other _____

Lateral/Drop in MH NE (Circle) (Dir.)

Lateral/Drop in MH SW (Circle) (Dir.)

Lateral/Drop in MH _____ (Circle) _____ (Dir.)

☒ Lid ___ Walls
6" Rings – PAVING RINGS 5 Steps
10" Internal Seal ___ Floor

10" CASTING 1 8" SLAB
1 CONE (48")
2 BARRELS (48")
1 BENCH (60")

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

☒ Inspected
☐ Jetted Length _____
☐ Televised Length _____
☐ Replaced/Repaired
☐ Other _____

Situation Found SOME ROCKS / CONCRETE CHIPS ON TOP OF DOGHOUSE. NO ACTIVE INFILTRATION.

Work Performed By MHY Date _____

Revised 1/11/23

(5)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

[ ] Maintenance [ ] Repair [X] Scheduled [ ] Emergency

[X] Sanitary [ ] Water [ ] Storm [ ] Telecom [ ] Electric [ ] Other _____

ID 20304 Material CONCRETE Street Location(s) _____

Size 48" CONE/BARRELS 60" BASE Elevation Address (if applicable) _____

[ ] Pipe

- [ ] Main Line
- [ ] Service Line

[X] Structure

- [ ] Photo Eye
- [ ] Clean Out
- [ ] Catch Basin
- [X] Manhole
- [ ] Valve
- [ ] Hydrant
- [ ] Endwall
- [ ] Pole
- [ ] Antennae
- [ ] Other _____

Lateral/Drop in MH (Circle) SE (Dir.) 10.97

Lateral/Drop in MH (Circle) NE (Dir.) 13.16

Lateral/Drop in MH (Circle) SW (Dir.) 13.16

- [X] Lid
- ___ Rings
- 9" Internal Seal
- ___ Walls
- SE Steps
- ___ Floor

10" CASTING
1 CONE (48")
1 BARREL (48")
1 8" SLAB
1 BENCH (60")

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

[X] Inspected
[ ] Jetted Length _____
[ ] Televised Length _____
[ ] Replaced/Repaired
[ ] Other _____

Situation Found SOME BULD-UP AND WETNESS ON BENCH. SOME GAPS IN MORTAR AROUND DOGHOUSE.

Work Performed By MHY Date _____

Revised 1/11/23

(6)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

[ ] Maintenance [ ] Repair [X] Scheduled [ ] Emergency

[X] Sanitary [ ] Water [ ] Storm [ ] Telecom [ ] Electric [ ] Other _____

ID 20305 Material CONCRETE Street Location(s) _____

Size 48" CONE/ BARREL
60" BASE Elevation Address (if applicable) _____

[ ] Pipe

- [ ] Main Line
- [ ] Service Line

[X] Structure

- [ ] Photo Eye
- [ ] Clean Out
- [ ] Catch Basin
- [X] Manhole
- [ ] Valve
- [ ] Hydrant
- [ ] Endwall
- [ ] Pole
- [ ] Antennae
- [ ] Other _____

Lateral/Drop in MH (Circle) NE (Dir.) 12.21

Lateral/Drop in MH (Circle) W (Dir.) 12.17

Lateral/Drop in MH (Circle) _____ (Dir.)

- [X] Lid
- [ ] Rings
- 10" Internal Seal
- [ ] Walls
- 5 Steps
- [ ] Floor

10" CASTING
1 CONE (48")
1 BARREL (48")
1 8" SLAB
1 BENCH (60")

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

[X] Inspected
[ ] Jetted Length _____
[ ] Televised Length _____
[ ] Replaced/Repaired
[ ] Other _____

Situation Found SOME MOISTURE BY STEPS AND CONCRETE CHIPPING AT 8" SLAB.

Work Performed By MHY Date _____

Revised 1/11/23

(7)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

[ ] Maintenance [ ] Repair [X] Scheduled [ ] Emergency

[X] Sanitary [ ] Water [ ] Storm [ ] Telecom [ ] Electric [ ] Other _____

ID 20307 Material CONCRETE Street Location(s) _____

Size 48" CONE/BARREL, 60" BASE Elevation Address (if applicable) _____

[ ] Pipe

- [ ] Main Line
- [ ] Service Line

[X] Structure

- [ ] Photo Eye
- [ ] Clean Out
- [ ] Catch Basin
- [X] Manhole
- [ ] Valve
- [ ] Hydrant
- [ ] Endwall
- [ ] Pole
- [ ] Antennae
- [ ] Other _____

Lateral/Drop in MH (Circle) NE (Dir.) 13.27

Lateral/Drop in MH (Circle) SW (Dir.) 13.24

Lateral/Drop in MH (Circle) NW (Dir.) 12.59

- [X] Lid
- [ ] Rings
- 10" Internal Seal
- [ ] Walls
- SE Steps
- [ ] Floor

10" CASTING
1 CONE (48")
1 BARREL (48")
1 8" SLAB
1 BENCH (60")

Manhole Rating Scale

(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

- [ ] Inspected
- [ ] Jetted Length _____
- [ ] Televised Length _____
- [ ] Replaced/Repaired
- [ ] Other _____

Situation Found TOP OF 8" SLAB IS DRIPPING ON NORTH SIDE. SLAB & BARREL JOINT IS WET, POSSIBLE LOCATION OF DRIP. RUNNER LOCATED AT TOP OF SW PIPE ON INTERCEPTOR.

Work Performed By MHY Date _____

(8)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

[ ] Maintenance [ ] Repair [x] Scheduled [ ] Emergency

[x] Sanitary [ ] Water [ ] Storm [ ] Telecom [ ] Electric [ ] Other ____

ID 20306 Material CONCRETE Street Location(s) ____

Size 48" CONE/BARRELS Elevation Address (if applicable) ____

60" BASE

[ ] Pipe

- [ ] Main Line
- [ ] Service Line

[x] Structure

- [ ] Photo Eye
- [ ] Clean Out
- [ ] Catch Basin
- [x] Manhole
- [ ] Valve
- [ ] Hydrant
- [ ] Endwall
- [ ] Pole
- [ ] Antennae
- [ ] Other ____

Lateral/Drop in MH (Circle) E (Dir.) 13.43

Lateral/Drop in MH (Circle) SW (Dir.) 13.22

Lateral/Drop in MH (Circle) ____ (Dir.) ____

- [x] Lid
- ___ Rings
- 9" Internal Seal
- ___ Walls
- NW Steps
- ___ Floor

10" CASTING
1 CONE (48")
1 BARREL (48")
1 8" SLAB
1 BENCH (60")

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

[x] Inspected
[ ] Jetted Length ____
[ ] Televised Length ____
[ ] Replaced/Repaired
[ ] Other ____

Situation Found RUNNER AT TOP OF PIPE GOING EAST COMING FROM MORTAR AROUND OUTSIDE OF PIPE.

Work Performed By MHY Date ____

Revised 1/11/23

(9)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

☐ Maintenance ☐ Repair ☒ Scheduled ☐ Emergency

☒ Sanitary ☐ Water ☐ Storm ☐ Telecom ☐ Electric ☐ Other _____

ID 20308 Material CONCRETE Street Location(s) _____

Size 48" CONE/BARRELS Elevation Address (if applicable) _____
60" BASE

☐ Pipe ☒ Structure

- ☐ Main Line
- ☐ Service Line

- ☐ Photo Eye
- ☐ Clean Out
- ☐ Catch Basin
- ☒ Manhole
- ☐ Valve
- ☐ Hydrant
- ☐ Endwall
- ☐ Pole
- ☐ Antennae
- ☐ Other _____

Lateral/Drop (Circle) in MH (Dir.) NE 15.67

Lateral/Drop (Circle) in MH (Dir.) SW 15.62

Lateral/Drop (Circle) in MH (Dir.)

- ☒ Lid
- ___ Rings
- 9" Internal Seal
- ___ Walls
- NW Steps
- ___ Floor

10" CASTING
1 CONE (48")
1 BARREL (48")
1 8" SLAB
1 BENCH (60")

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

☒ Inspected
☐ Jetted Length _____
☐ Televised Length _____
☐ Replaced/Repaired

☐ Other _____

Situation Found _____

Work Performed By MHY Date _____

Revised 1/11/23

(10)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

[ ] Maintenance [ ] Repair [X] Scheduled [ ] Emergency

[X] Sanitary [ ] Water [ ] Storm [ ] Telecom [ ] Electric [ ] Other _____

ID 20309 Material CONCRETE Street Location(s) _____

Size 48" DIA Elevation Address (if applicable) _____

[ ] Pipe

- [ ] Main Line
- [ ] Service Line

[X] Structure

- [ ] Photo Eye
- [ ] Clean Out
- [ ] Catch Basin
- [X] Manhole
- [ ] Valve
- [ ] Hydrant
- [ ] Endwall
- [ ] Pole
- [ ] Antennae
- [ ] Other _____

Lateral/Drop in MH (Circle) 12.46 (Dir.) NE

Lateral/Drop in MH (Circle) 12.41 (Dir.) SW

Lateral/Drop in MH (Circle) _____ (Dir.) _____

- [X] Lid
- [ ] Rings
- [9"] Internal Seal
- [ ] Walls
- [NW] Steps
- [ ] Floor

10" CASTING
1 CONE
1 BARREL
1 BENCH

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

[X] Inspected
[ ] Jetted Length _____
[ ] Televised Length _____
[ ] Replaced/Repaired

[ ] Other _____

Situation Found _____

Work Performed By MHY Date _____

Revised 1/11/23

(11)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

☐ Maintenance ☐ Repair ☒ Scheduled ☐ Emergency

☒ Sanitary ☐ Water ☐ Storm ☐ Telecom ☐ Electric ☐ Other _____

ID 20310 Material CONCRETE Street Location(s) _____

Size 48" CONE/BARRELS 60" BASE Elevation Address (if applicable) _____

☐ Pipe

- ☐ Main Line
- ☐ Service Line

☒ Structure

- ☐ Photo Eye
- ☐ Clean Out
- ☐ Catch Basin
- ☒ Manhole
- ☐ Valve
- ☐ Hydrant
- ☐ Endwall
- ☐ Pole
- ☐ Antennae
- ☐ Other _____

Lateral/Drop in MH (Circle) NE (Dir.) 12.15

Lateral/Drop in MH (Circle) SW (Dir.) 12.09

Lateral/Drop in MH (Circle) _____ (Dir.)

- ☒ Lid
- ___ Rings
- 8" Internal Seal
- ___ Walls
- SE Steps
- ___ Floor

10" CASTING
1 CONE (48")
1 SLAB - 8"
1 BENCH (60")

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

☒ Inspected
☐ Jetted Length _____
☐ Televised Length _____
☐ Replaced/Repaired

☐ Other _____

Situation Found _____

Work Performed By MHY Date _____

Revised 1/11/23

(12)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

[ ] Maintenance [ ] Repair [X] Scheduled [ ] Emergency

[X] Sanitary [ ] Water [ ] Storm [ ] Telecom [ ] Electric [ ] Other ____

ID 29201-1 Material CONCRETE Street Location(s) ____

Size 48" DIA Elevation Address (if applicable) ____

[ ] Pipe

- [ ] Main Line
- [ ] Service Line

[X] Structure

- [ ] Photo Eye
- [ ] Clean Out
- [ ] Catch Basin
- [X] Manhole
- [ ] Valve
- [ ] Hydrant
- [ ] Endwall
- [ ] Pole
- [ ] Antennae
- [ ] Other ____

Lateral/Drop (Circle) in MH N (Dir.) 14.1

Lateral/Drop (Circle) in MH S (Dir.) 14.0

Lateral/Drop (Circle) in MH S (Dir.) 7.75

- [X] Lid
- [ ] Rings
- [ ] Internal Seal
- [ ] Walls
- NE Steps
- [ ] Floor

10" CASTING
1 CONE
1 BARREL
1 BENCH

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

[X] Inspected
[ ] Jetted Length ____
[ ] Televised Length ____
[ ] Replaced/Repaired
[ ] Other ____

Situation Found WET BENCH. SURCHARGE EVIDENCE WITH DEBRIS ON STEPS

Work Performed By MHy Date ____

Revised 1/11/23

(13)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

[ ] Maintenance [ ] Repair [X] Scheduled [ ] Emergency

[X] Sanitary [ ] Water [ ] Storm [ ] Telecom [ ] Electric [ ] Other _____

ID 20311 Material CONCRETE Street Location(s) _____

Size 48" CONE/BARRELS 60" BASE Elevation Address (if applicable) _____

[ ] Pipe

- [ ] Main Line
- [ ] Service Line

[X] Structure

- [ ] Photo Eye
- [ ] Clean Out
- [ ] Catch Basin
- [X] Manhole
- [ ] Valve
- [ ] Hydrant
- [ ] Endwall
- [ ] Pole
- [ ] Antennae
- [ ] Other _____

Lateral/Drop in MH (Circle) NE (Dir.) 14.24

Lateral/Drop in MH (Circle) W (Dir.) 14.20

Lateral/Drop in MH (Circle) S (Dir.) 13.79

11.5 - N

- [X] Lid
- ___ Rings
- 22" Internal Seal
- ___ Walls
- 5 Steps
- ___ Floor

10" CASTING
1 CONE (48")
1 BARREL (48")
1 8" SLAB
1 BENCH (60")

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

[X] Inspected
[ ] Jetted Length _____
[ ] Televised Length _____
[ ] Replaced/Repaired
[ ] Other _____

Situation Found SOME BUILD UP ON BENCH & CONCRETE CHIPPING ON 8" SLAB. POSSIBLE DRIPPER AROUND DOGHOUSE OF WESTERN PIPE.

Work Performed By MHY Date _____

Revised 1/11/23

(14)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

[ ] Maintenance [ ] Repair [X] Scheduled [ ] Emergency

[X] Sanitary [ ] Water [ ] Storm [ ] Telecom [ ] Electric [ ] Other _____

ID 19401 Material CONCRETE Street Location(s) _____

Size 48" CONE/BARRELS
60" BASE Elevation Address (if applicable) _____

[ ] Pipe
- [ ] Main Line
- [ ] Service Line

[X] Structure
- [ ] Photo Eye
- [ ] Clean Out
- [ ] Catch Basin
- [X] Manhole
- [ ] Valve
- [ ] Hydrant
- [ ] Endwall
- [ ] Pole
- [ ] Antennae
- [ ] Other _____

Lateral/Drop in MH (Circle) E (Dir.) 25.54

Lateral/Drop in MH (Circle) W (Dir.) 25.42

Lateral/Drop in MH (Circle) _____ (Dir.) _____

[X] Lid [ ] Walls
[ ] Rings [5] Steps
[9"] Internal Seal [ ] Floor

10" CASTING
1 CONE (48")
4 BARRELS (48")
18" SLAB
1 BENCH (60")

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

[X] Inspected
[ ] Jetted Length _____
[ ] Televised Length _____
[ ] Replaced/Repaired
[ ] Other _____

Situation Found _____

Work Performed By MHY Date _____

Revised 1/11/23

(15)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

[ ] Maintenance [ ] Repair [x] Scheduled [ ] Emergency

[x] Sanitary [ ] Water [ ] Storm [ ] Telecom [ ] Electric [ ] Other _____

ID 19402 Material CONCRETE Street Location(s) _____

Size 48" DIA Elevation Address (if applicable) _____

[ ] Pipe

- [ ] Main Line
- [ ] Service Line

[x] Structure

- [ ] Photo Eye
- [ ] Clean Out
- [ ] Catch Basin
- [x] Manhole
- [ ] Valve
- [ ] Hydrant
- [ ] Endwall
- [ ] Pole
- [ ] Antennae
- [ ] Other _____

Lateral/Drop (Circle) in MH 4"N - 13.83 (Dir.)

Lateral/Drop (Circle) in MH NW (Dir.) 14.37

Lateral/Drop (Circle) in MH E (Dir.) 16.30

16.30 - W

- [x] Lid
- ___ Rings
- 9" Internal Seal
- ___ Walls
- 5 Steps
- ___ Floor

1 CONE
2 BARRELS
1 BENCH

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

[x] Inspected
[ ] Jetted Length _____
[ ] Televised Length _____
[ ] Replaced/Repaired

[ ] Other _____

Situation Found SOME WETSPOTS ON BENCH ON NORTH SIDE

Work Performed By MHY Date _____

Revised 1/11/23

(16)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

[ ] Maintenance [ ] Repair [x] Scheduled [ ] Emergency

[x] Sanitary [ ] Water [ ] Storm [ ] Telecom [ ] Electric [ ] Other _____

ID 20103 Material CONCRETE Street Location(s) _____

Size 48" CONE/BARRELS 72" BASE Elevation Address (if applicable) _____

[ ] Pipe

- [ ] Main Line
- [ ] Service Line

[x] Structure

- [ ] Photo Eye
- [ ] Clean Out
- [ ] Catch Basin
- [x] Manhole
- [ ] Valve
- [ ] Hydrant
- [ ] Endwall
- [ ] Pole
- [ ] Antennae
- [ ] Other _____

Lateral/Drop (Circle) in MH N (Dir.) 14.32

Lateral/Drop (Circle) in MH SW (Dir.) 14.1

Lateral/Drop (Circle) in MH _____ (Dir.)

[x] Lid [ ] Rings 8" Internal Seal

[ ] Walls 56 Steps [ ] Floor

10" CASTING
1 CONE (48")
1 8" SLAB
1 BENCH (72")

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

[x] Inspected

[ ] Jetted Length _____

[ ] Televised Length _____

[ ] Replaced/Repaired

[ ] Other _____

Situation Found FLOW IS OVER BENCH AND FLOWLINE ~~IS~~ ISN'T VERY DEVELOPED.

Work Performed By MHY Date _____

Revised 1/11/23

(17)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 5/9/2023

☐ Maintenance ☐ Repair ☒ Scheduled ☐ Emergency

☒ Sanitary ☐ Water ☐ Storm ☐ Telecom ☐ Electric ☐ Other _____

ID 20102 Material CONCRETE Street Location(s) _____

Size 48" CONE/BARRELS Elevation Address (if applicable) _____
84" BASE

☐ Pipe ☒ Structure

- ☐ Main Line
- ☐ Service Line

- ☐ Photo Eye
- ☐ Clean Out
- ☐ Catch Basin
- ☒ Manhole

- ☐ Valve
- ☐ Hydrant
- ☐ Endwall

- ☐ Pole
- ☐ Antennae
- ☐ Other _____

Lateral/Drop (Circle) in MH 15.07 S (Dir.)

Lateral/Drop (Circle) in MH 15.20 E (Dir.)

Lateral/Drop (Circle) in MH _____ (Dir.)

- ☒ Lid
- ☐ Rings
- 10" Internal Seal

- ☐ Walls
- W Steps
- ☐ Floor

10" CASTING
1 CONE (48")
1 BARREL (48")
1 8" SLAB
1 BENCH (84")

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

☒ Inspected ☐ Other _____

☐ Jetted Length _____

☐ Televised Length _____

☐ Replaced/Repaired

Situation Found RIM/CASTING IS DETERIORATING ON THE INSIDE. LOTS OF STAINING ON INSIDE OF MANHOLE. SOME EXPOSED REBAR AT CONE.

Work Performed By MHY Date _____

Revised 1/11/23

(18)

Jackson Sewer Utility

UTILITY WORK RECORD

Date 7/18/23

☐ Maintenance ☐ Repair ☒ Scheduled ☐ Emergency

☒ Sanitary ☐ Water ☐ Storm ☐ Telecom ☐ Electric ☐ Other _____

ID 20303 Material CONCRETE Street Location(s) _____

Size 48" CONE/BARRELS
60" BASE Elevation Address (if applicable) _____

☐ Pipe

- ☐ Main Line
- ☐ Service Line

☒ Structure

- ☐ Photo Eye
- ☐ Clean Out
- ☐ Catch Basin
- ☒ Manhole
- ☐ Valve
- ☐ Hydrant
- ☐ Endwall
- ☐ Pole
- ☐ Antennae
- ☐ Other _____

Lateral/Drop in MH (Circle) NE (Dir.) 19.80

Lateral/Drop in MH (Circle) SW (Dir.) 19.70

Lateral/Drop in MH (Circle) _____ (Dir.)

- ☒ Lid
- 12" Rings
- ✓ Internal Seal
- ___ Walls
- N Steps
- ___ Floor

3-2" PAVING RINGS
1 CONE (48")
2 BARRELS (48")
1 8" SLAB
1 BENCH (60")

Manhole Rating Scale
(1) New condition
(2) Good condition: No repair needed
(3) Fair condition: Minor repair needed
(4) Poor condition: Major repair needed
(5) Unsafe condition: Total replacement needed
(6) Not present

☒ Inspected
☐ Jetted Length _____
☐ Televised Length _____
☐ Replaced/Repaired

☐ Other _____

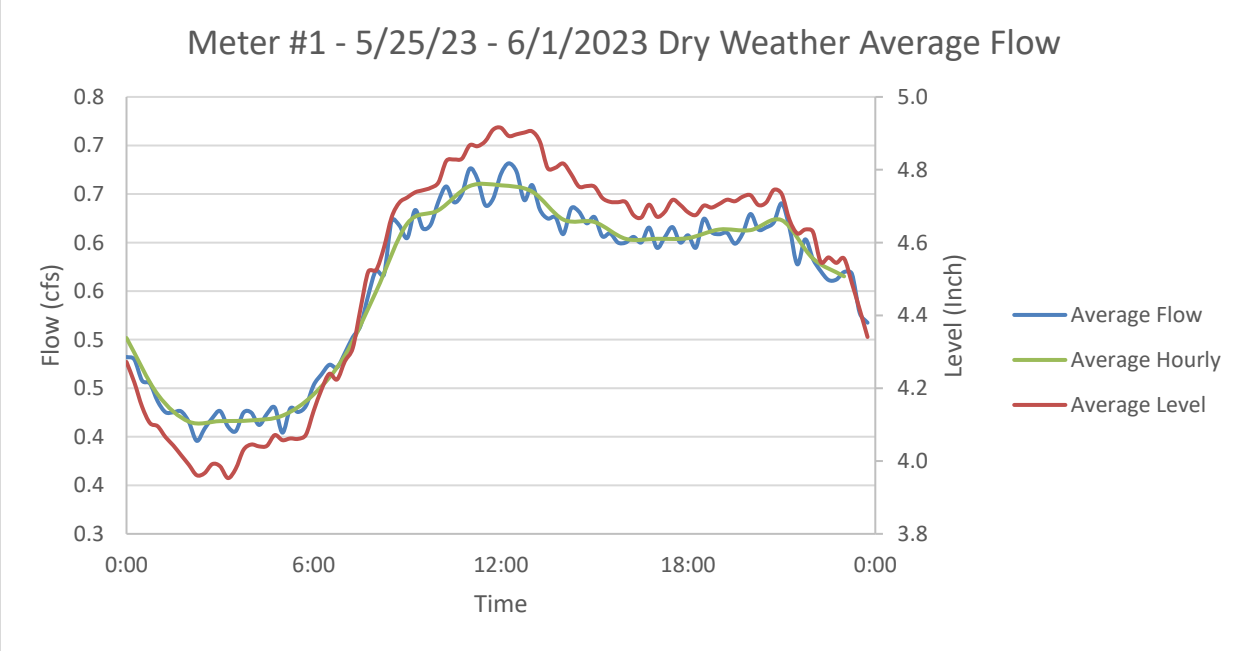
Situation Found GRAVEL BUILD UP ON BENCH

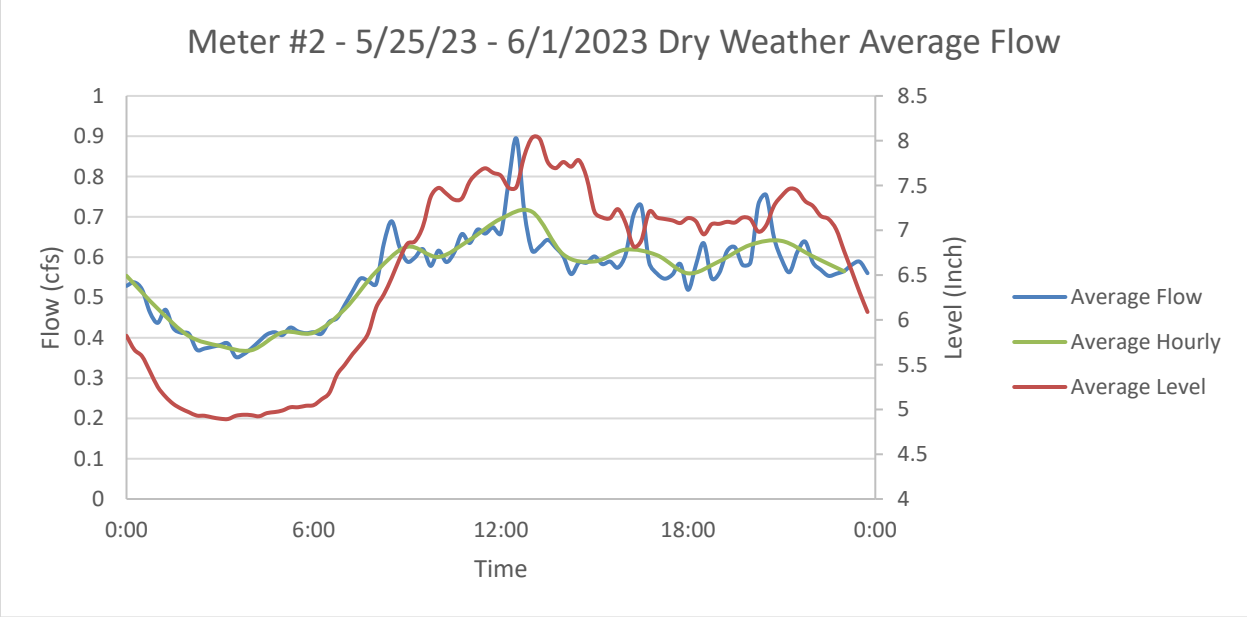
Work Performed By MHY Date _____

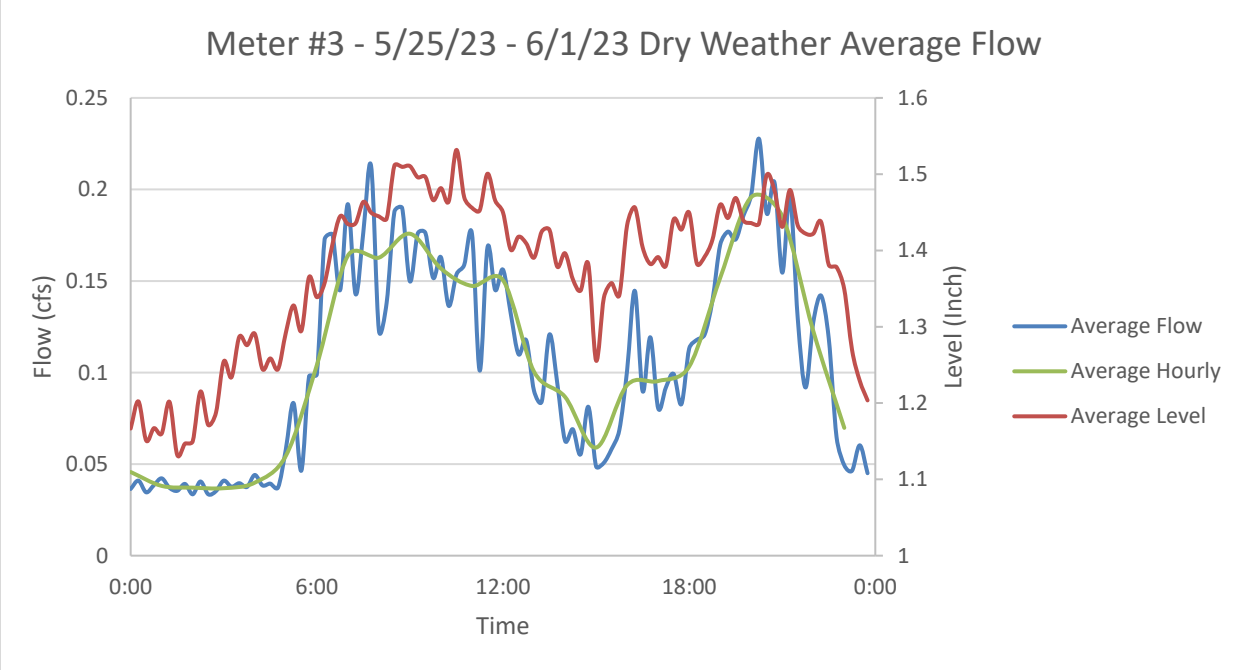
Revised 1/11/23

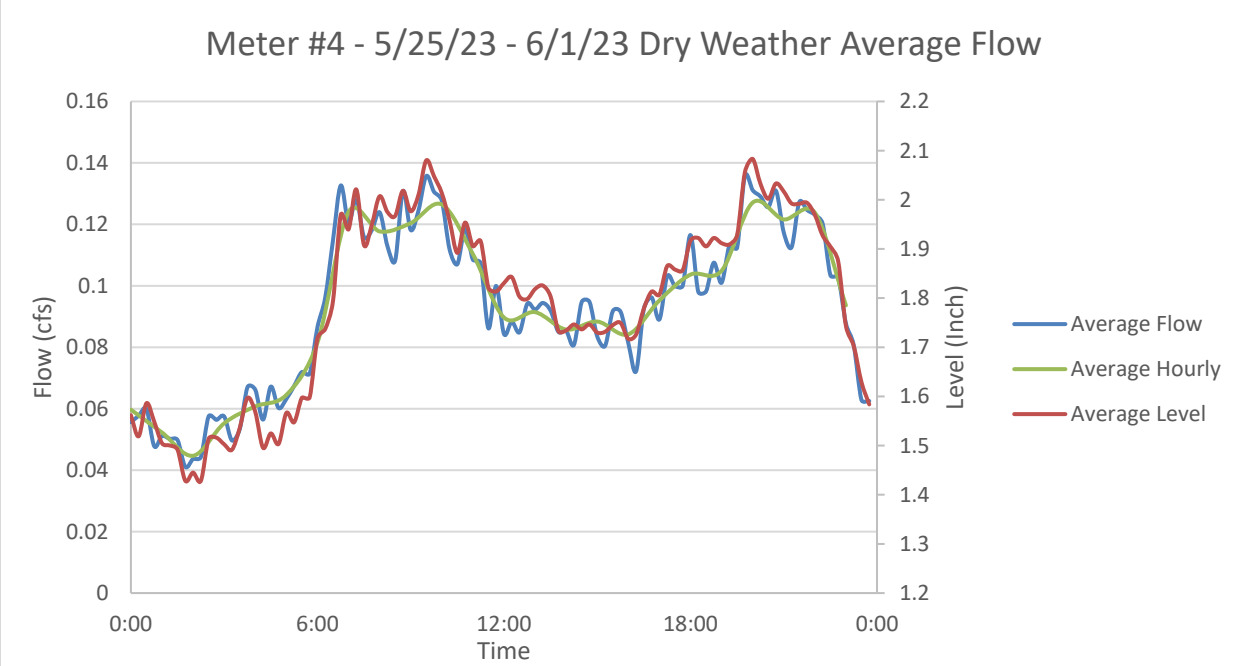
Appendix B – Dry and Wet Weather Average Flows

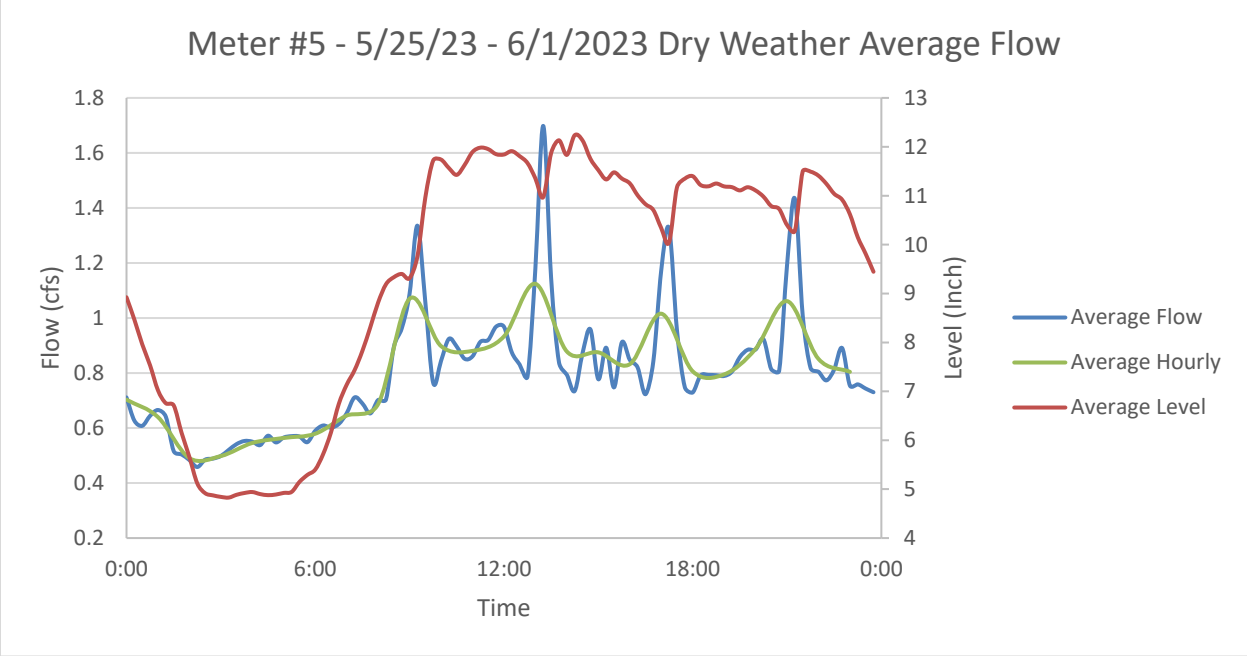
Dry Weather Averages 5/25/23 – 6/1/2023



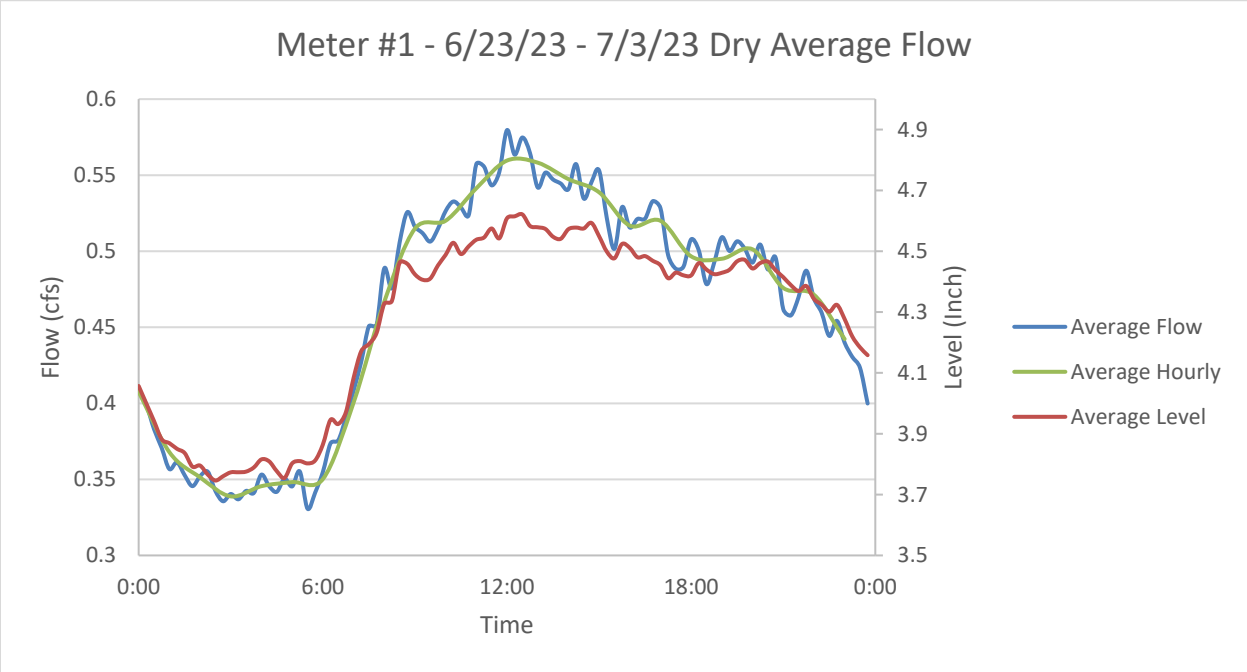


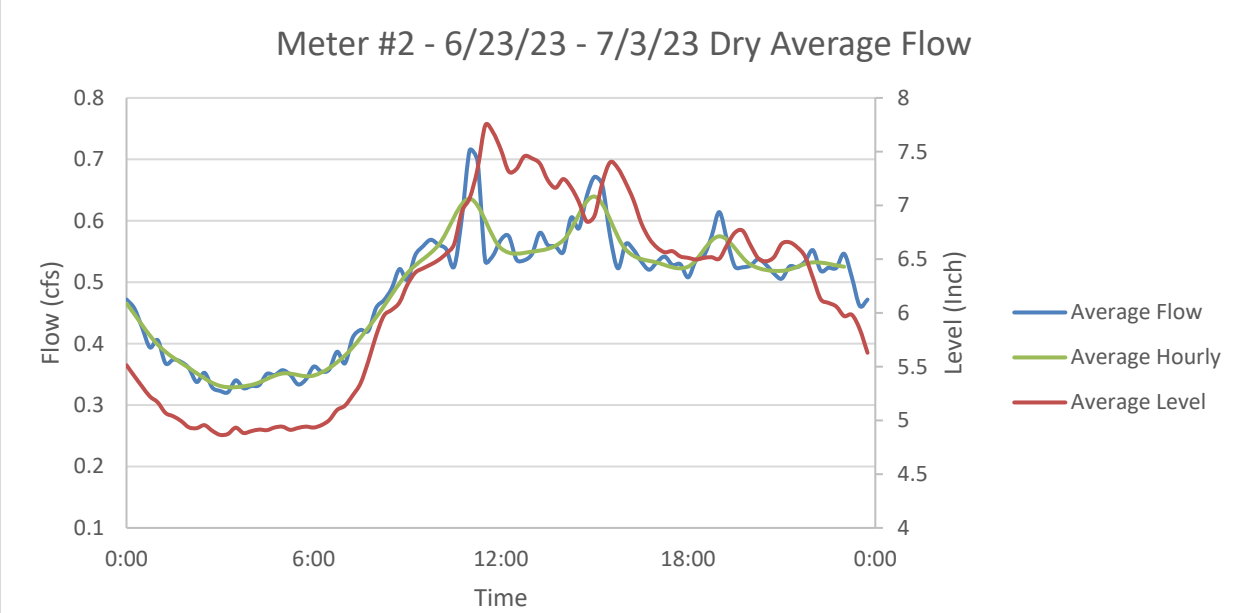

Meter #3 - 5/25/23 - 6/1/23 Dry Weather Average Flow
Flow (cfs)
0.25
0.2
0.15
0.1
0.05
0
Level (Inch)
1.6
1.5
1.4
1.3
1.2
1.1
1
0:00
6:00
12:00
18:00
0:00
Time
Average Flow
Average Hourly
Average Level

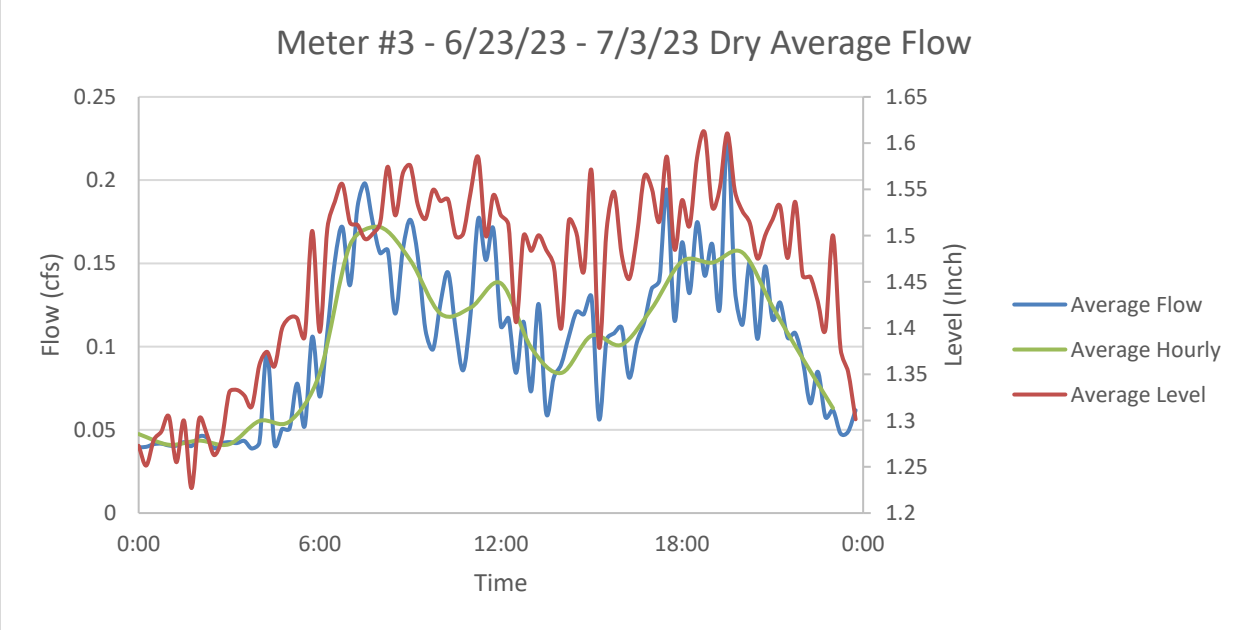

Meter #4 - 5/25/23 - 6/1/23 Dry Weather Average Flow
Flow (cfs)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Level (Inch)
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
0:00
6:00
12:00
18:00
0:00
Time
Average Flow
Average Hourly
Average Level

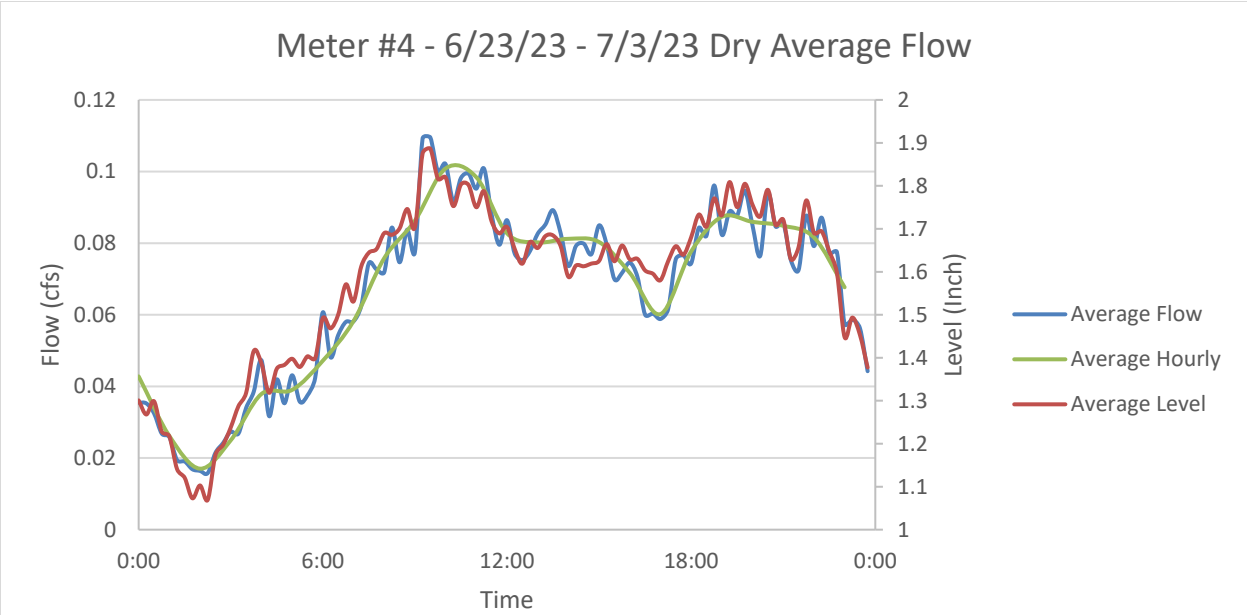


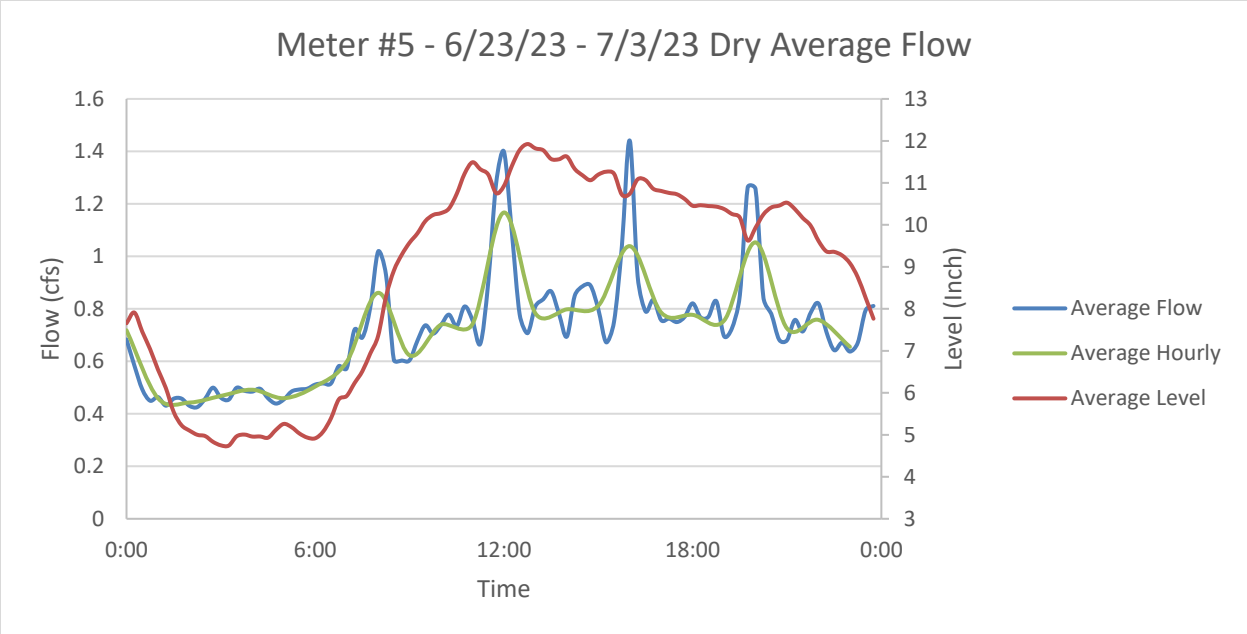
Dry Weather Averages 6/23/23 – 7/3/2023



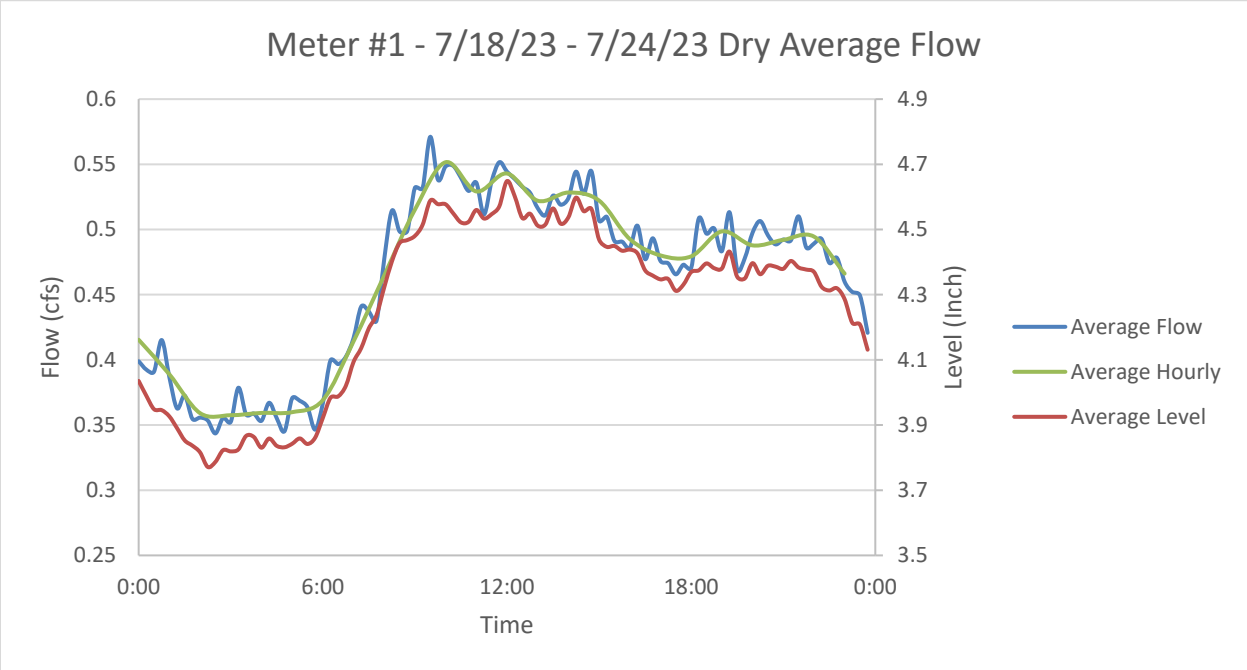

Meter #2 - 6/23/23 - 7/3/23 Dry Average Flow
Flow (cfs)
Level (Inch)
Time
0:00
6:00
12:00
18:00
0:00
Average Flow
Average Hourly
Average Level

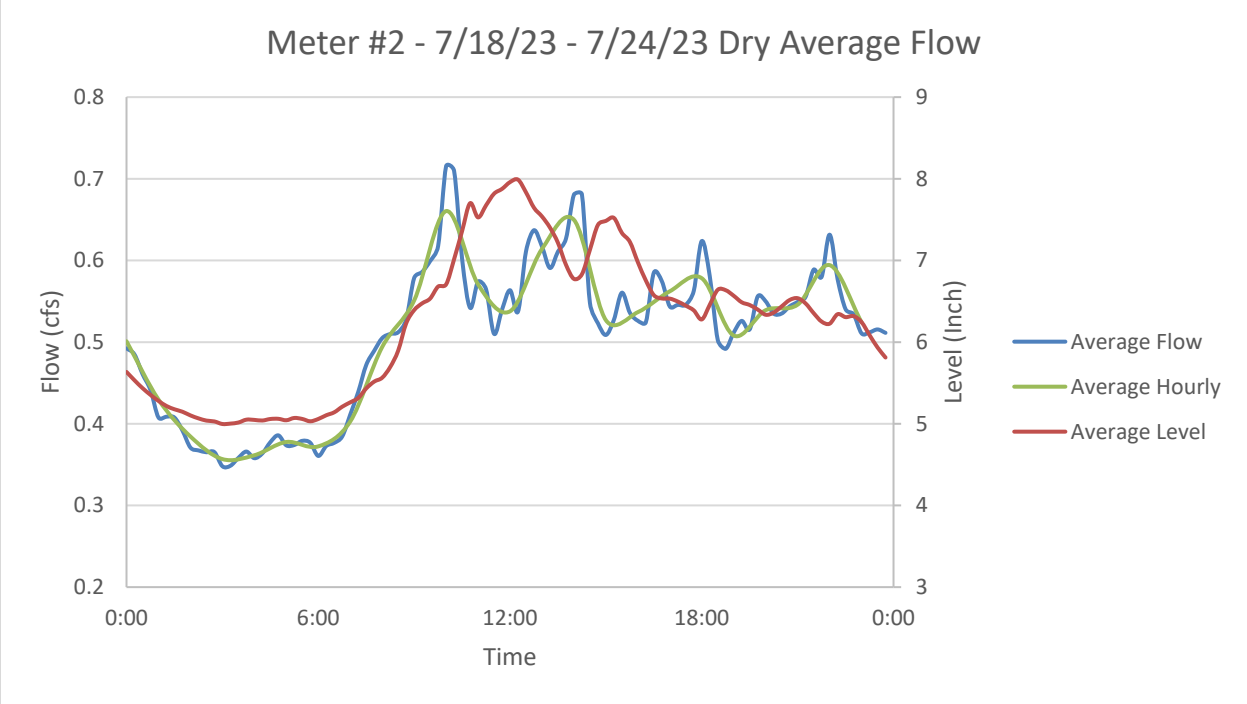

Meter #3 - 6/23/23 - 7/3/23 Dry Average Flow
Flow (cfs)
Level (Inch)
Time
0:00
6:00
12:00
18:00
0:00
Average Flow
Average Hourly
Average Level

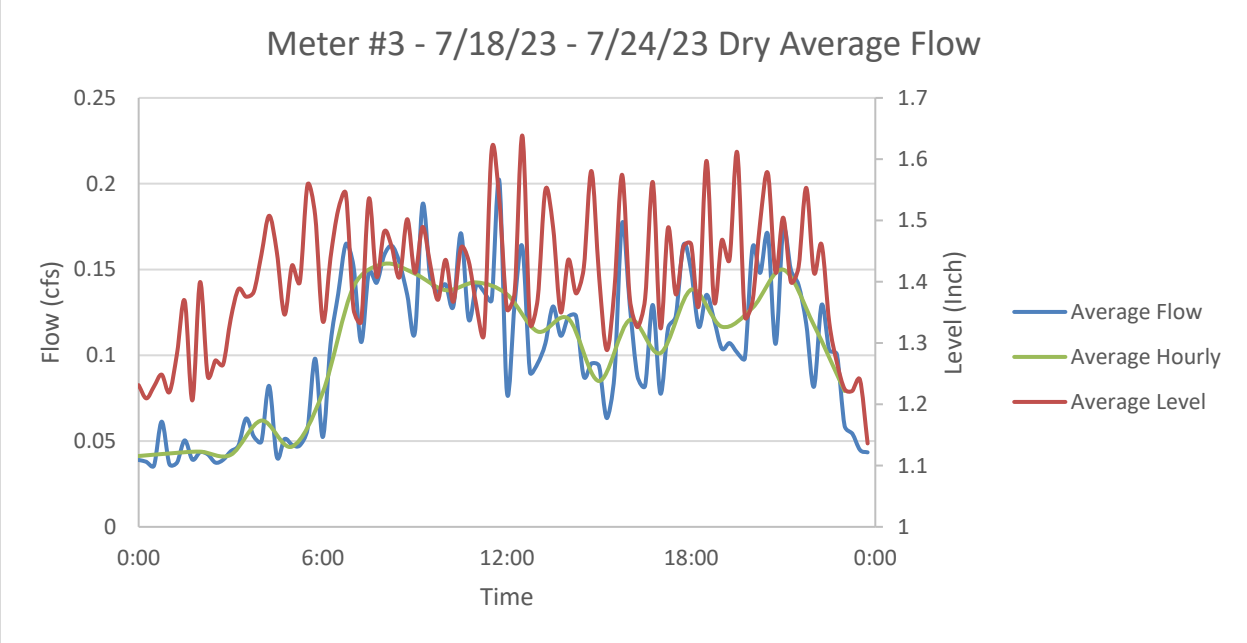

Meter #4 - 6/23/23 - 7/3/23 Dry Average Flow
Flow (cfs)
Level (Inch)
Time
0.12
0.1
0.08
0.06
0.04
0.02
0
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0:00
6:00
12:00
18:00
0:00
Average Flow
Average Hourly
Average Level

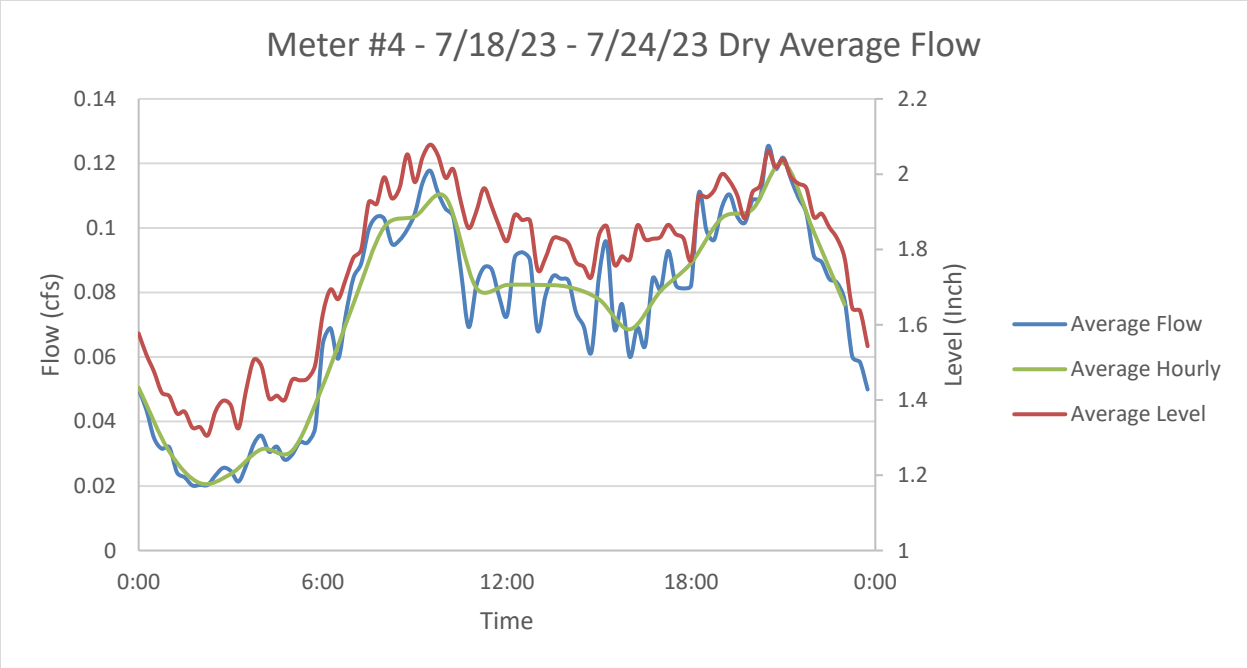

Meter #5 - 6/23/23 - 7/3/23 Dry Average Flow
Flow (cfs)
Level (Inch)
Time
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
13
12
11
10
9
8
7
6
5
4
3
0:00
6:00
12:00
18:00
0:00
Average Flow
Average Hourly
Average Level

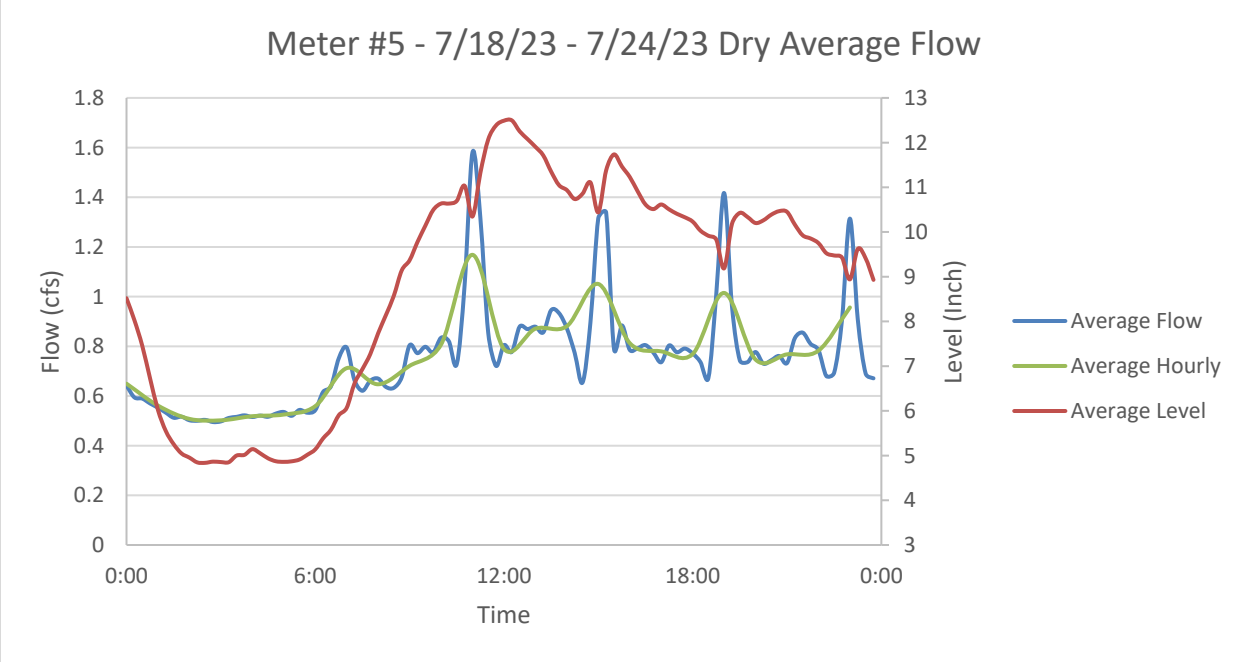
Dry Weather Averages 7/18/23 – 7/24/2023



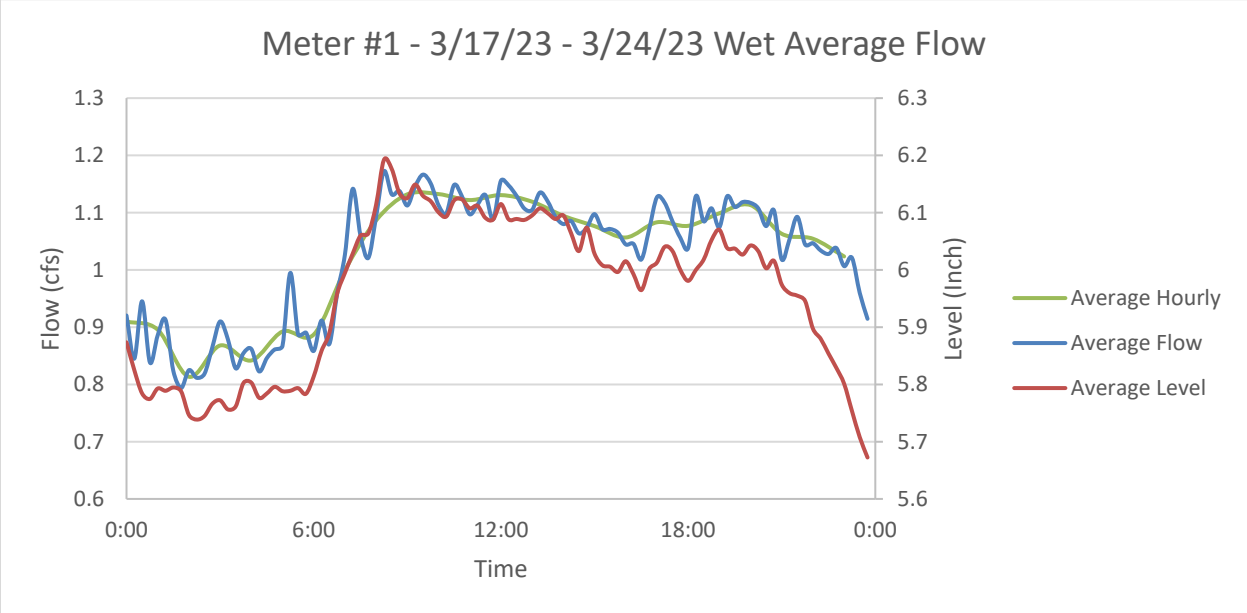


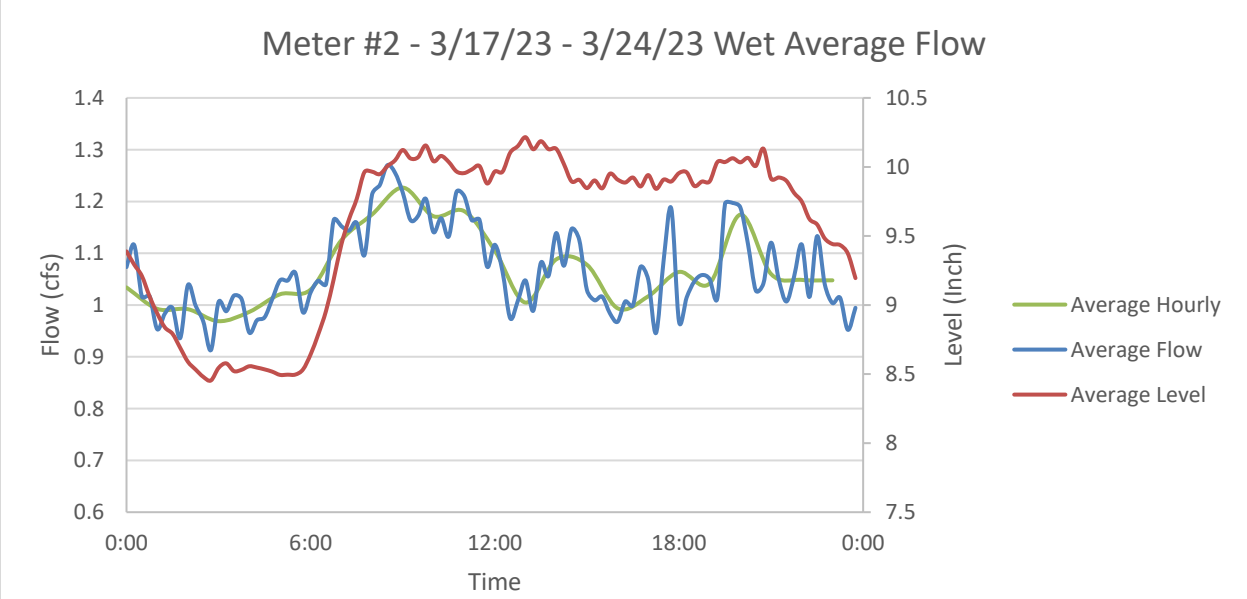

Meter #3 - 7/18/23 - 7/24/23 Dry Average Flow
Flow (cfs)
0.25
0.2
0.15
0.1
0.05
0
Level (Inch)
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0:00
6:00
12:00
18:00
0:00
Time
Average Flow
Average Hourly
Average Level

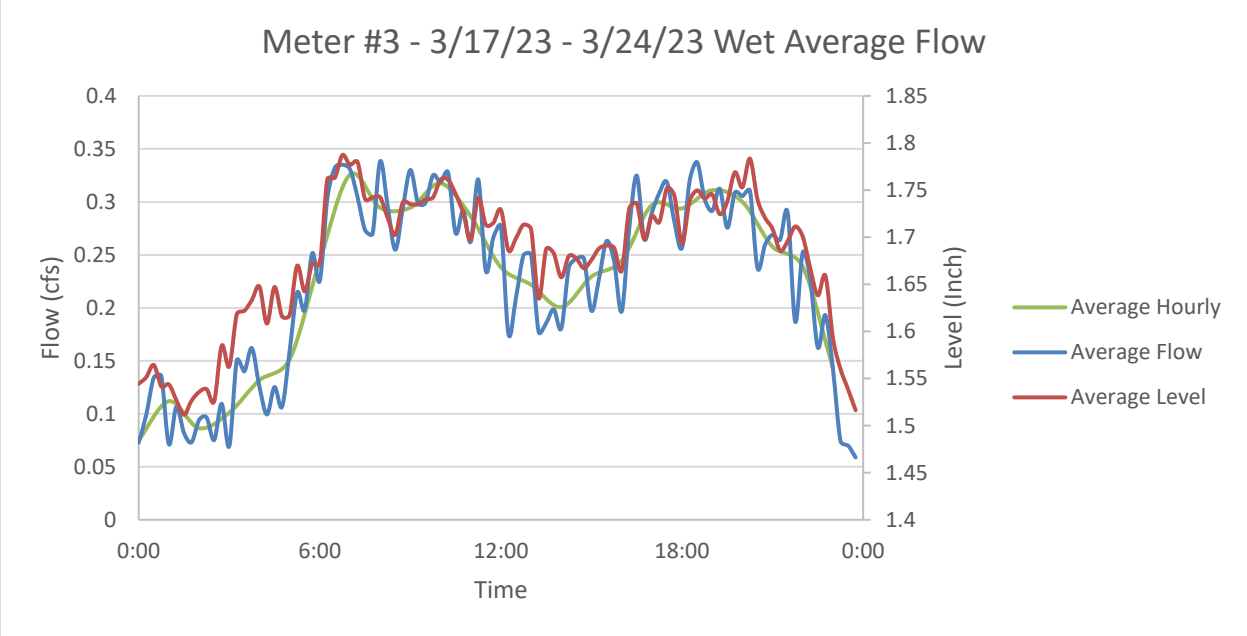

Meter #4 - 7/18/23 - 7/24/23 Dry Average Flow
Flow (cfs)
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Level (Inch)
2.2
2
1.8
1.6
1.4
1.2
1
0:00
6:00
12:00
18:00
0:00
Time
Average Flow
Average Hourly
Average Level

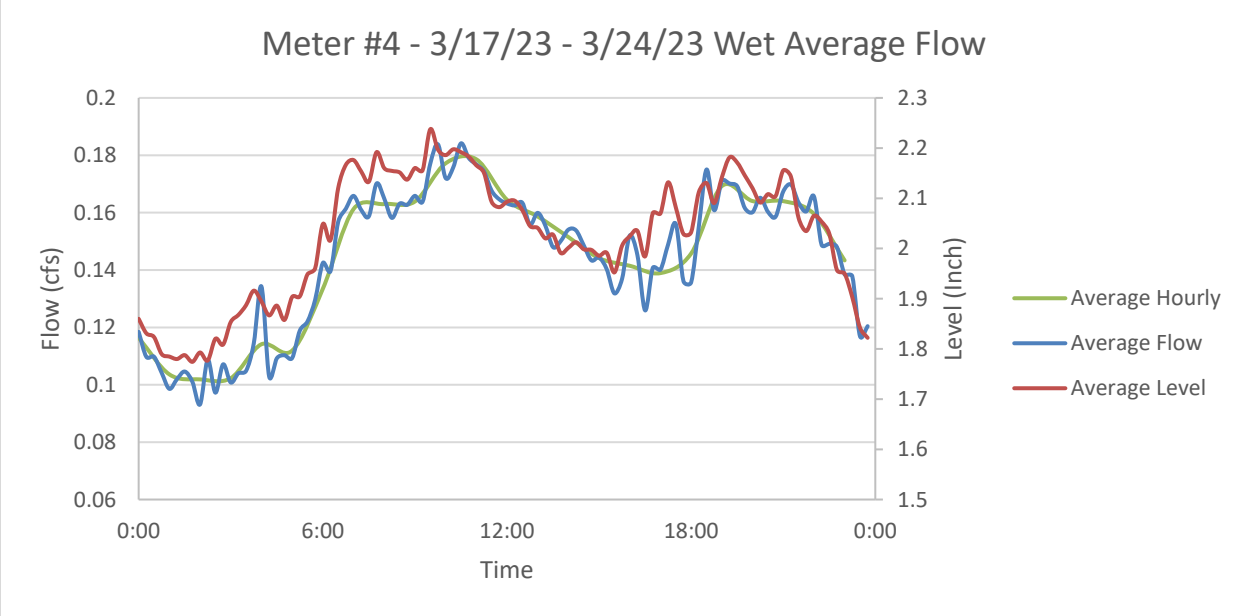


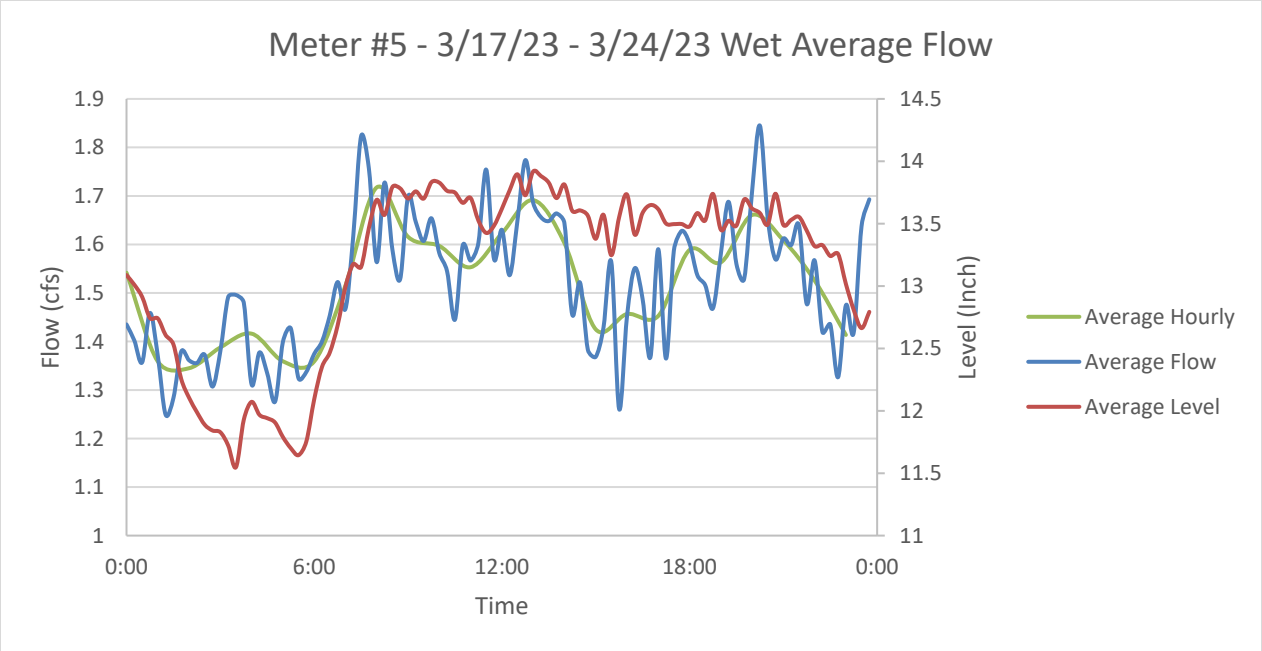
Wet Weather Averages 3/17/23 – 3/24/2023



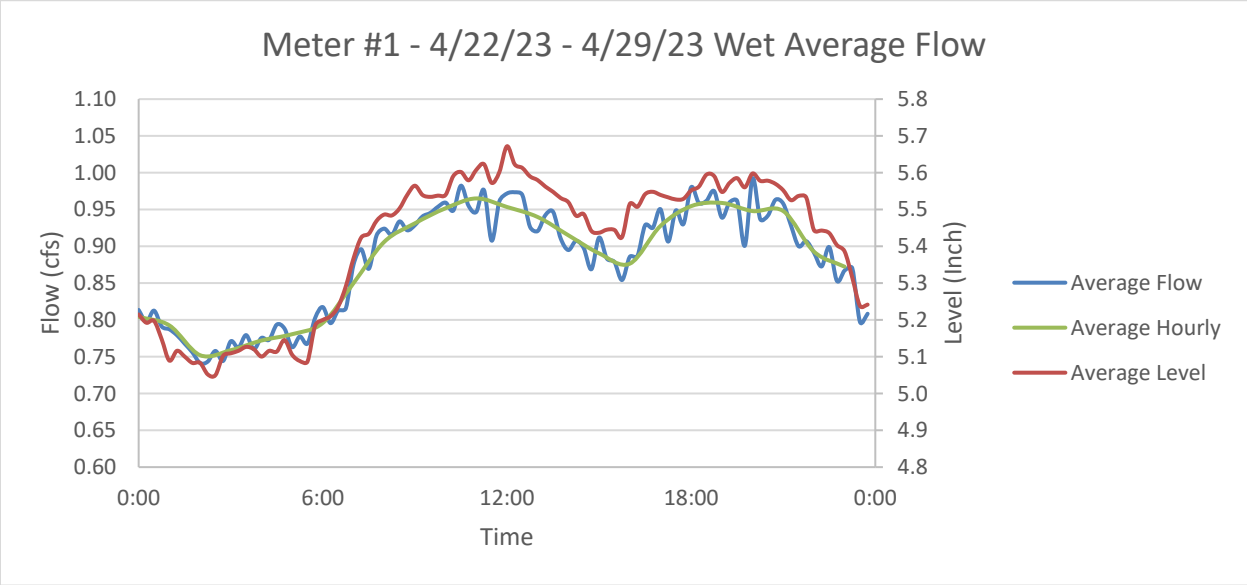

Meter #2 - 3/17/23 - 3/24/23 Wet Average Flow
Flow (cfs)
Level (Inch)
Time
0:00
6:00
12:00
18:00
0:00
Average Hourly
Average Flow
Average Level

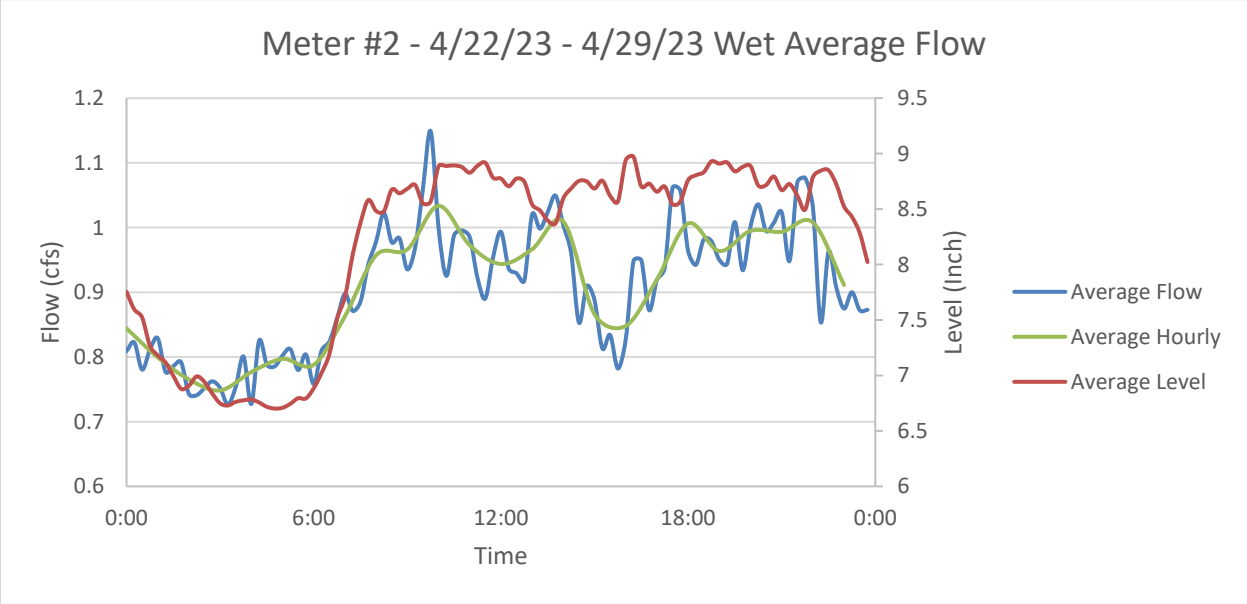

Meter #3 - 3/17/23 - 3/24/23 Wet Average Flow
Flow (cfs)
Level (Inch)
Time
0:00
6:00
12:00
18:00
0:00
Average Hourly
Average Flow
Average Level

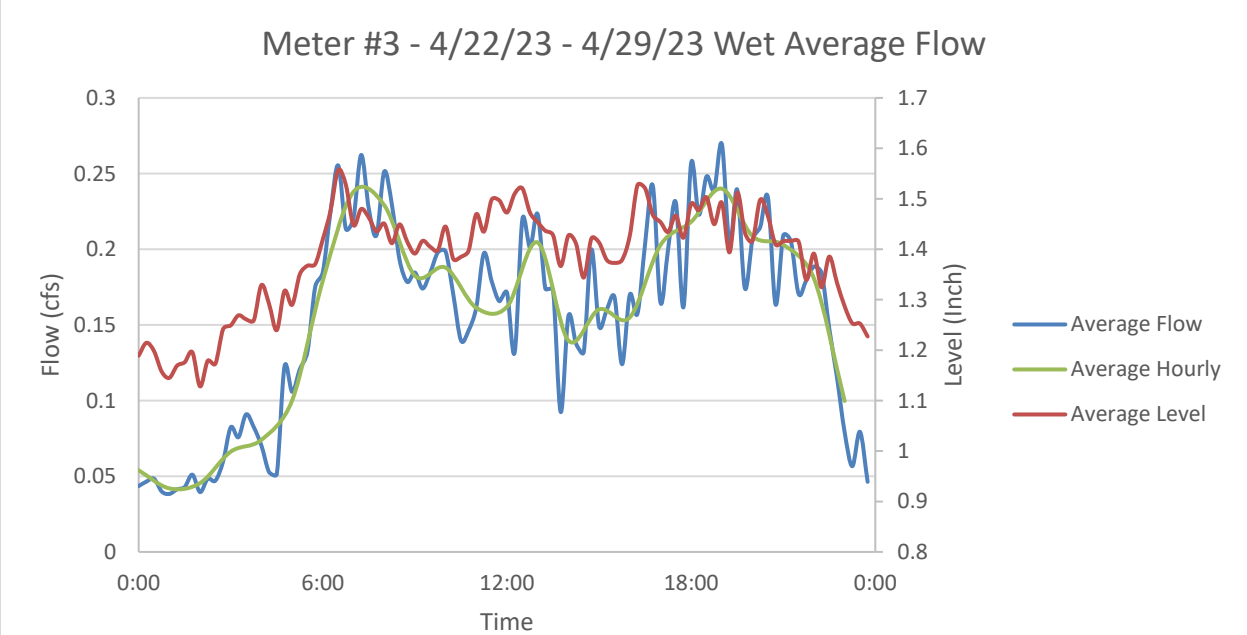

Meter #4 - 3/17/23 - 3/24/23 Wet Average Flow
Flow (cfs)
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
Level (Inch)
2.3
2.2
2.1
2
1.9
1.8
1.7
1.6
1.5
0:00
6:00
12:00
18:00
0:00
Time
Average Hourly
Average Flow
Average Level

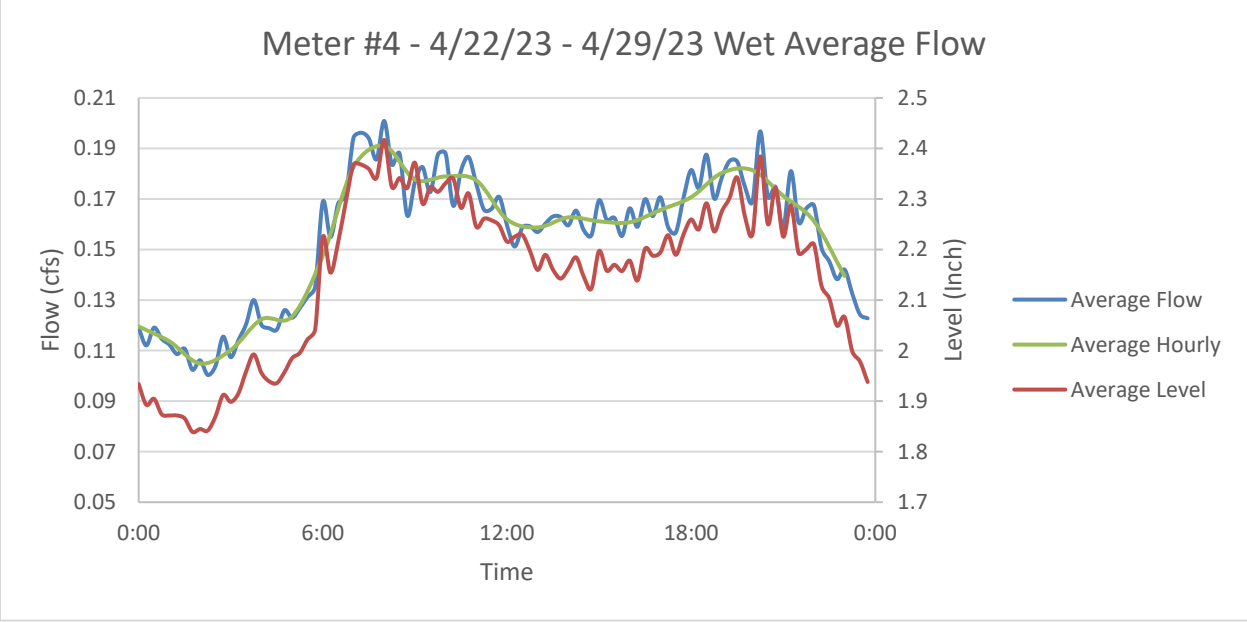

Meter #5 - 3/17/23 - 3/24/23 Wet Average Flow
Flow (cfs)
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
Level (Inch)
14.5
14
13.5
13
12.5
12
11.5
11
0:00
6:00
12:00
18:00
0:00
Time
Average Hourly
Average Flow
Average Level

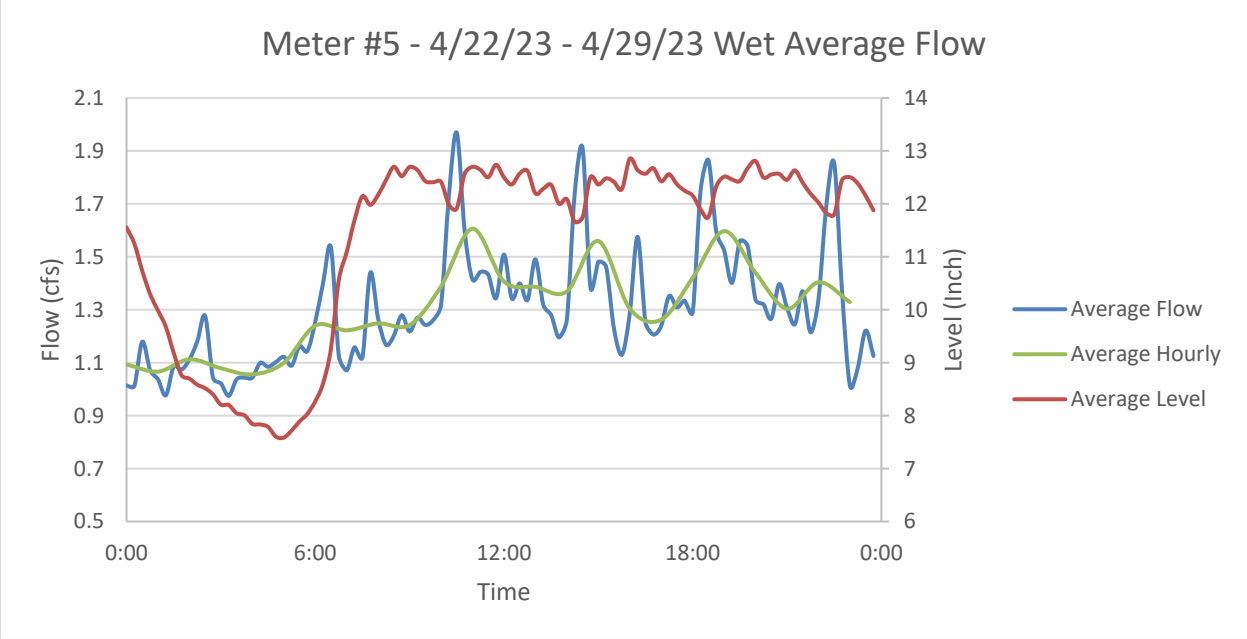
Wet Weather Averages 4/22/23 – 4/29/2023






Meter #3 - 4/22/23 - 4/29/23 Wet Average Flow
Flow (cfs)
Level (Inch)
Time
0.3
0.25
0.2
0.15
0.1
0.05
0
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0:00
6:00
12:00
18:00
0:00
Average Flow
Average Hourly
Average Level


Meter #4 - 4/22/23 - 4/29/23 Wet Average Flow
Flow (cfs)
Level (Inch)
Time
0.21
0.19
0.17
0.15
0.13
0.11
0.09
0.07
0.05
2.5
2.4
2.3
2.2
2.1
2
1.9
1.8
1.7
0:00
6:00
12:00
18:00
0:00
Average Flow
Average Hourly
Average Level


Meter #5 - 4/22/23 - 4/29/23 Wet Average Flow
Flow (cfs)
2.1
1.9
1.7
1.5
1.3
1.1
0.9
0.7
0.5
Level (Inch)
14
13
12
11
10
9
8
7
6
0:00
6:00
12:00
18:00
0:00
Time
Average Flow
Average Hourly
Average Level

Appendix C – Existing and 2050 Land Use Exhibits

VILLAGE OF JACKSON

FIGURE C-1: EXISTING LAND USE

- Meter 1 Basin
- Meter 2 Basin
- Meter 3 Basin
- Meter 4 Basin
- Farmland Preservation Area
- General Agriculture
- Agricultural and Rural Residential
- Suburban Density Residential
- Medium Density Urban Residential
- Multi - Family / High Density Urban Residential
- Mixed Use
- General Commercial
- Office / Professional Services Park
- Business / Industrial Park
- Industrial
- Governmental and Institutional
- Park and Recreation
- Streets and Highways
- Other Transportation and Utilities
- Extractive
- Landfill
- Primary Environmental Corridor
- Isolated Natural Resource Area
- Wetland; Wetland Outside of PEC or INRA
- Other Conservancy Lands to be Preserved
- Surface Water

Z:\WI\Washington_Co\Jackson\mxd\Figure C-1 Existing Land Use.mxd

NOVEMBER 2023

0 375 750 1,500 ft

N

Foth

I-45

JACKSON DRIVE

STH 60

Wasterwater Treatment Plant

SHERMAN ROAD

Twin Creeks Lift Station

VILLAGE OF JACKSON

FIGURE C-2: FUTURE 2050 LAND USE

- Meter 1 Basin
- Meter 2 Basin
- Meter 3 Basin
- Meter 4 Basin

- Farmland Preservation Area
- General Agriculture
- Agricultural and Rural Residential
- Suburban Density Residential
- Medium Density Urban Residential
- Multi - Family / High Density Urban Residential
- Mixed Use
- General Commercial
- Office / Professional Services Park
- Business / Industrial Park
- Industrial
- Governmental and Institutional
- Park and Recreation
- Streets and Highways
- Other Transportation and Utilities
- Extractive
- Landfill
- Primary Environmental Corridor
- Isolated Natural Resource Area
- Wetland; Wetland Outside of PEC or INRA
- Other Conservancy Lands to be Preserved
- Surface Water

Z:\WI\Washington_Co\Jackson\mxd\Figure C-2 Future Land Use.mxd

NOVEMBER 2023

0 375 750 1,500 ft

N

Foth

I-45

JACKSON DRIVE

STH 60

Wasterwater Treatment Plant

SHERMAN ROAD

Twin Creeks Lift Station

Appendix D – Twin Creeks Lift Station Assessment Report

Pump Station Name: **Twin Creeks Lift Station**
Location: 2534 Sherman Rd, Jackson, WI

Client: Village of Jackson

Date: 8/30/2022

Time: 9:00 am

Disclaimer: The data used to fill this Form was collected by a limited surface field inspection, conversations with the operator(s), and reviewing documents provided by the Village. Information listed should not be used to order equipment without being re-verified for accuracy.

Background Information:

Fluid: ☐ Water ☐ Stormwater ☒ Wastewater ☐ Leachate ☐ Other _____
Year Station Built: 2002
Wet Well: 6' Dia. x 25.9' deep
Pumps: Two (2) Submersibles
Valve Vault: Separate Structure – 6' Dia.
Meter Vault: none
Piping & Valves & Force Main: 4"

Pump and Motor DATA

Pump Data:

	Pump 1	**Pump 2**
Operating Condition (Observed)(GPM/TDH)	Avg. Observed: ~160 GPM @ 19 TDH	Avg. Observed: ~168 GPM @ 19 TDH
Pump Type	Submersible	Submersible
Manufacturer/ Model	FLYGT CP3085.182 MT 3~ 436	FLYGT CP3085.182 MT 3~ 436
Serial #	Not recorded	Not recorded
Year Installed	2002	2002
Motor Configuration	Directly coupled submersible	Directly coupled submersible
Discharge Size	3"	3"
RPM	1670	1670
Impeller Diameter	147 mm	147 mm
Rotation	CW	CW

*Information obtained from City, not verified during the field inspection.

Motor Data:

	Motor 1	**Motor 2**
Manufacturer/ Model	FLYGT C3085.182 15-07-4AL-W	FLYGT C3085.182 15-07-4AL-W
Serial #	Not recorded	Not recorded
Year Installed	With pump	With pump

Submersible Pump Station Data & Condition Assessment Form

Twin Creeks Lift Station – Jackson, WI

Motor Configuration	Directly coupled submersible	Directly coupled submersible
Horsepower	2.2 HP *	2.2 HP *
Frame	Not recorded	Not recorded
Voltage/Phase/HZ	230v/3p/60hz	230v/3p/60hz
Full Load Amps	Not recorded	Not recorded
Actual Amps	Not recorded	Not recorded
Hours	See SCADA	See SCADA
Efficiency	☒ Standard ☐ Premium	☒ Standard ☐ Premium
Over-temperature protection	☒ Yes ☐ No ☐ N/A	☒ Yes ☐ No ☐ N/A

*Information obtained from O&M Manual, not verified during the field inspection.

CONDITION ASSESSSMENTS

Rating Criteria (5 best to 1 worst):

General Condition Rating

5 New or nearly new equipment or structure.
4 Well maintained & good condition, no present concerns/needs.
3 Visible degradation of equipment or structure is starting, should be monitored, needs nearing.
2 Equipment or structure integrity compromised by corrosion and wear, needs present.
1 Equipment or structure integrity severely compromised by corrosion and wear. Possible imminent failure.

General Functionality Rating

5 Structure or equipment functions like new or nearly new
4 Structure or equipment functions as intended, no present or nearing concerns..
3 Structure or equipment is in service and functioning well, but maintenance needs are nearing.
2 Structure or equipment is in service, but function is poor/highly impaired.
1 Structure or equipment has failed, not currently functioning for its intended use.

Pump and Motor

Pump

General Condition Rating ☐ 1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 Not visible, reported working well.
General Functionality Rating ☐ 1 ☐ 2 ☒ 3 ☒ 4 ☐ 5 Not visible, reported working well.

Criteria		Comments
Operating on Curve	☒ Yes ☒ No ☐ N/A	Based on the pump field testing, it appears that the impellers are starting to wear and are showing a minor loss in pumping capacity (approx. 10-15% of new). This is typical for the pump

		age/hours. Monitor if pump-down run times increase or clogging becomes more prevalent.
Seals functional	☒ Yes ☐ No ☐ N/A	
Spare parts available	☐ Yes ☒ No ☐ N/A	
Pump noise present	☐ Yes ☒ No ☐ N/A	
Vibration present	☐ Yes ☒ No ☐ N/A	
Coatings intact	☐ Yes ☐ No ☒ N/A	Submerged, not visible, little importance.

Motor

General Condition Rating ☐ 1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 Submerged, not visible. Working.
General Functionality Rating ☐ 1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 Submerged, not visible. Working.

Criteria		**Comments**
Cord cap intact/sealed	☒ Yes ☐ No ☐ N/A	
Motor noise present	☐ Yes ☒ No ☐ N/A	
Vibration present	☐ Yes ☒ No ☐ N/A	
Coatings intact	☐ Yes ☐ No ☒ N/A	Submerged, not visible, little importance.

Structures and Mechanicals

Wet Well

General Condition Rating ☐ 1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 _____
General Functionality Rating ☐ 1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 _____

Criteria - Internal		**Comments**
Discharge Valve		
Accessible for operation and maintained	☐ Yes ☐ No ☒ N/A	None present.
Function Concerns	☐ Yes ☐ No ☒ N/A	None present.
Check Valve		
Accessible for operation and maintained	☐ Yes ☐ No ☒ N/A	None present.
Function Concerns	☐ Yes ☐ No ☒ N/A	None present.
Flow Meter		
Reliable output	☐ Yes ☐ No ☒ N/A	None present.
Sufficient straight run	☐ Yes ☐ No ☒ N/A	None present.
Piping		
Evidence of corrosion	☒ Yes ☐ No ☐ N/A	Typical of wet well, no current concern.
Evidence of leaks	☐ Yes ☒ No ☐ N/A	
Hydraulic transient effects	☐ Yes ☒ No ☐ N/A	
Base Elbow Functioning	☒ Yes ☐ No ☐ N/A	

Restrained in accordance with Hydraulic Institute Standards	☐ Yes ☐ No ☒ N/A	Completely rigid from base elbow anchors and wall link-seals.
Other Items		
Trash basket installed and functioning	☐ Yes ☐ No ☒ N/A	
Fats-Oils-Grease (F.O.G.) present	☐ Yes ☒ No ☐ N/A	Minimal observed day of inspection – if F.O.G. builds up more and causes issues with level control or pump clogging, consider adding a mixer, bubbler, or chemical treatment.
Pump cords/cables supported properly	☐ Yes ☒ No ☐ N/A	Recommend: 1. Strain relief cord/cable supports should be added. Kellem type or equivalent. All stainless steel.
Cords/cables/chains managed well in space	☒ Yes ☐ No ☐ N/A	
Pump cords/cables have local junction box available requiring no/minimal pulling through conduits to remove pump from site	☐ Yes ☒ No ☐ N/A	
Guide rails fully functioning and secure	☒ Yes ☐ No ☐ N/A	
Corrosion proof hardware/anchors used	☒ Yes ☐ No ☐ N/A	

Criteria - External		**Comments**
Hatchway assessable & functioning	☒ Yes ☐ No ☐ N/A	
Hatch corrosion resistant materials	☒ Yes ☐ No ☐ N/A	
Hatch hold-open arm present and functioning	☒ Yes ☐ No ☐ N/A	
Davit crane present	☐ Yes ☒ No ☐ N/A	
Vent pipe present	☒ Yes ☐ No ☐ N/A	
Trip hazard(s) present near hatch	☒ Yes ☐ No ☐ N/A	Minor concrete lip at edges of wet well and valve vault structures which is a potential tripping hazard. Recommend: 1. consider providing a tapered strip or correct when the pavement is rehabilitated in the future.
Fall safety grate on hatch present	☐ Yes ☒ No ☐ N/A	Recommend: 1. add hatch safety grate (retrofit kit should be available)
Odor present during inspection	☐ Yes ☒ No ☐ N/A	

Confined space/hazard sign present	☒ Yes ☐ No ☐ N/A	
Dangerous/Hazardous gases sign present	☒ Yes ☐ No ☐ N/A	
Copy of pump Operation and Maintenance (O&M) manuals on-site	☐ Yes ☒ No ☐ N/A	Recommend: 1. keep copy on site

Valve Vault

General Condition Rating ☐ 1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 _____
General Functionality Rating ☐ 1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 _____

Criteria - Internal		**Comments**
Discharge Valve		
Accessible for operation and maintained	☒ Yes ☐ No ☐ N/A	
Function concerns	☐ Yes ☒ No ☐ N/A	
Check Valve		
Accessible for operation and maintained	☒ Yes ☐ No ☐ N/A	
Function concerns	☐ Yes ☒ No ☐ N/A	
Flow Meter		
Reliable output	☐ Yes ☐ No ☒ N/A	
Sufficient straight run	☐ Yes ☐ No ☒ N/A	
Piping		
Evidence of corrosion	☒ Yes ☐ No ☐ N/A	Typical of age, no concerns.
Evidence of leaks	☐ Yes ☒ No ☐ N/A	
Hydraulic transient effects	☐ Yes ☒ No ☐ N/A	
Support appears adequate	☒ Yes ☐ No ☐ N/A	
Restrained in accordance with Hydraulic Institute Standards	☒ Yes ☐ No ☐ N/A	Completely rigid from wall link-seals/grout.
Other Items		
Manhole steps	☒ Yes ☐ No ☐ N/A	Steps appear in good condition. Recommend: 1. check local codes for steps being allowed in manholes. If not allowed, remove steps.
Flooded	☐ Yes ☒ No ☐ N/A	
Active groundwater leaking in	☐ Yes ☒ No ☐ N/A	Minimal signs.
Floor drain back to wet well	☒ Yes ☐ No ☐ N/A	Valve vault floor drain has potential clog, minor standing water was present. Recommend: 1. check for clog and resolve

Criteria - External		**Comments**
Hatchway assessable & functioning	☒ Yes ☐ No ☐ N/A	
Hatch corrosion resistant materials	☒ Yes ☐ No ☐ N/A	
Hatch hold-open arm present and functioning	☒ Yes ☐ No ☐ N/A	
Trip hazard(s) present near hatch	☒ Yes ☐ No ☐ N/A	Minor concrete lip at edges of wet well and valve vault structures which is a potential tripping hazard. Recommend: 1. consider providing a tapered strip or correct when the pavement is rehabilitated in the future.
Fall safety grate on hatch present	☐ Yes ☒ No ☐ N/A	Recommend: 1. adding hatch safety grate (retrofit kit should be available)
Confined space/hazard sign present	☐ Yes ☒ No ☐ N/A	Recommend: 1. add sign at hatch
Dangerous/Hazardous gases sign present	☐ Yes ☒ No ☐ N/A	Recommend: 1. add sign at hatch

Electrical

Pump Controls

General Condition Rating ☐ 1 ☐ 2 ☒ 3 ☒ 4 ☐ 5 _____
General Functionality Rating ☐ 1 ☐ 2 ☒ 3 ☒ 4 ☐ 5 _____

Criteria		**Comments**
Location		
Inside Climate Controlled Building	☐ Yes ☒ No ☐ N/A	
Outside	☒ Yes ☐ No ☐ N/A	
If outside, heated and insulated panel	☒ Yes ☐ No ☐ N/A	

Submersible Pump Station Data & Condition Assessment Form

Twin Creeks Lift Station – Jackson, WI

Level Sensing Devices		
Submersible Level Transducer	☐ Yes ☒ No ☐ N/A	
Floats	☒ Yes ☐ No ☐ N/A	4 Float system. Low, lead pump, lag pump, High.
Controlling Hardware		
PLC & Relays	☐ Yes ☒ No ☐ N/A	
Pre-programed/hardwired Station Controller	☒ Yes ☐ No ☐ N/A	MPE – SC2000
Relay Only (no PLC)	☐ Yes ☒ No ☐ N/A	
Other	☐ Yes ☒ No ☐ N/A	
Operator Interface		
Human Machine Interface (HMI) touchscreen	☐ Yes ☒ No ☐ N/A	Very basic: MPE – SC2000
Hand-Off-Auto switches for each pump	☒ Yes ☐ No ☐ N/A	
Hardwired alarm lights on front of panel	☒ Yes ☐ No ☐ N/A	MPE plate with lights.
Other	☐ Yes ☐ No ☐ N/A	
Telemetry/SCADA		
Radio	☒ Yes ☐ No ☐ N/A	In conjunction with Micrologix 1000
Cellular	☐ Yes ☒ No ☐ N/A	
Phoneline	☐ Yes ☒ No ☐ N/A	
Fiber	☐ Yes ☒ No ☐ N/A	
Other	☐ Yes ☐ No ☐ N/A	
Control Power Backup		
Universal 120V Power Supply (UPS) Unit	☒ Yes ☐ No ☐ N/A	Recommend: 1. Test unit regularly and keep test/replacement log taped to side of unit.
DC Batteries	☐ Yes ☒ No ☒ N/A	
Other	☐ Yes ☐ No ☐ N/A	
Surge Protection		
Lighting protection devices	☒ Yes ☐ No ☐ N/A	
Other	☐ Yes ☐ No ☐ N/A	
Other Items		
Copy of pump control panel wiring drawings present	☐ Yes ☒ No ☐ N/A	Recommend: 1. Keep copy on-site
Copy of PLC programing file present (USB thumb drive)	☐ Yes ☒ No ☐ N/A	Recommend: 1. Keep copy on-site in sealed container
Copy of HMI programing file present (USB thumb drive)	☐ Yes ☒ No ☐ N/A	Recommend: 1. Keep copy on-site in sealed container
Common spare parts onsite (i.e. – relays, fuses)	☐ Yes ☒ No ☐ N/A	Recommend: 1. Keep common parts on-site in sealed container

Submersible Pump Station Data & Condition Assessment Form

Twin Creeks Lift Station – Jackson, WI

Motor Power & Starters

General Condition Rating ☐ 1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 _____

General Functionality Rating ☐ 1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 _____

Criteria		Comments
Location		
Inside Control Building	☐ Yes ☒ No ☐ N/A	
Outside	☒ Yes ☐ No ☐ N/A	Shared with pump control panel.
If outside, heated and insulated panel	☒ Yes ☐ No ☒ N/A	
Enclosure Type		
Wall/Floor Mount Panel(s)	☒ Yes ☐ No ☐ N/A	
Motor Control Center (MCC)	☐ Yes ☐ No ☐ N/A	
Other	☐ Yes ☐ No ☐ N/A	
Starter Type		
Across-the-line (ATL)	☐ Yes ☒ No ☐ N/A	
Soft starters	☐ Yes ☒ No ☐ N/A	
Variable Frequency Drive (VFD)	☒ Yes ☐ No ☐ N/A	Primary function is converting 1ph to 3ph.
Other	☐ Yes ☐ No ☐ N/A	
Other Items		
Copy of wiring drawings present	☐ Yes ☒ No ☐ N/A	Recommend: 1. Print and keep copy on-site
Copy of VFD or Soft Starter programing file/parameters present (USB thumb drive)	☐ Yes ☒ No ☐ N/A	Recommend: 1. Keep copy on-site in sealed container
Common spare parts onsite (i.e. – relays, fuses)	☐ Yes ☒ No ☐ N/A	Recommend: 1. Keep common parts on-site in sealed container
Local pump shutoffs near wet well	☐ Yes ☐ No ☒ N/A	Close/visual proximity already.

Back-up Power

General Condition Rating ☐ 1 ☐ 2 ☒ 3 ☒ 4 ☐ 5 Exterior enclosure coatings poor.

General Functionality Rating ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Not Tested. No issues reported.

Criteria		Comments
Generator size is sufficient for pumps and auxiliary equipment	☐ Yes ☐ No ☒ N/A	Generator plug connection for trailer mounted generator. Not present, not tested. Recommend:

		1. Do a live test with the trailer generator at least once a year. Train staff when doing.
Fuel tank sized for 24-hour operation	☐ Yes ☐ No ☒ N/A	Not verified.
Fuel tank spill containment provisions	☐ Yes ☐ No ☒ N/A	Not verified.
Transfer switch condition satisfactory	☐ Yes ☐ No ☒ N/A	Not tested.

Site

Overall:

General Condition Rating ☐ 1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 _____
General Functionality Rating ☐ 1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 _____

Criteria		**Comments**
Parking and Vehicle In/Out		
Adequate	☒ Yes ☐ No ☐ N/A	
Driving surface		
Acceptable/functional	☒ Yes ☐ No ☐ N/A	HMA & Concrete.
Drainage		
Adequate	☒ Yes ☐ No ☐ N/A	No issues noted or observed.
Lighting		
Overall site	☐ Yes ☒ No ☐ N/A	Only a street light across the street. Recommend: 1. Consider adding a light at the site.
Well Well	☐ Yes ☒ No ☐ N/A	
Control Panel (if exterior)	☐ Yes ☒ No ☐ N/A	
Security		
Locked fence	☐ Yes ☒ No ☐ N/A	
CCTV cameras	☐ Yes ☒ No ☐ N/A	
Other	☐ Yes ☐ No ☐ N/A	
Future Expansion		
Space available	☒ Yes ☐ No ☐ N/A	Space appears to be available if needed.

Other Issues

Safety: Trip hazards around wet well hatch as noted. Safety grates could be added to hatch openings. Hazardous gas sign should be added at valve vault.

Comments: Overall the lift station site appears to be functioning well for the Owner. Minor recommendations as noted.

Submersible Pump Station Data & Condition Assessment Form

Twin Creeks Lift Station – Jackson, WI

Site Photos (taken on 8/30/23)

Submersible Pump Station Data & Condition Assessment Form

Twin Creeks Lift Station – Jackson, WI

Site Photos (taken on 11/7/23 & 8/30/23)

Memo

To: Board of Public Works

From: Brian W. Kober, P. E., Director of Public Works

Subject: Spring Cleanup Day and Yard Waste/Brush Pickup

Date: February 21, 2024

CC: Village Board

The 2024 Spring Clean-up Day is scheduled for Saturday, April 27, 2024, from 9:00 AM to 12:00 PM. The residents will be able to drop off bags of leaves or yard waste, household waste (TV, microwaves, furniture, computers, etc.), and metal. The following is a breakdown of the proposed schedule for chipping and bag pick-up for the year:

Spring Season

Chipping and Bag Pick-up will start on Monday, April 29th and then each Monday until Tuesday, May 28th.

Fall Season

Chipping and Bag Pick-up will start again on Monday, October 7th and then each Monday until Monday, November 25th. The crew will continue until the leaves are gone, or the snow flies.

Summer Season

Chipping will only be done during the summer months. Every third Monday has been scheduled: June 17th, July 15th, Aug 19th, and Sept 16th, or after a storm.

Yard Waste Drop-Off Site

1) The yard waste drop-off site at the Public Works facility (W194 N16660 Eagle Drive) is an automated self-serve site for Village of Jackson residents only. For entrance to the site, residents must obtain an access card from Public Works office.

2) Village residents will receive one free card. A fee will be charged for lost or extra cards. Cards can be obtained in person at the Public Works office (W194 N16660 Eagle Drive). Proof of Village residency will be required.

3) The yard waste drop-off site will accept yard waste in biodegradable paper bags, and brush.

If you have any questions, please let me know.

Brian W. Kober, P.E.

Public Works Report
February 27, 2024

Treatment Plant - Designed Capacity – 1.69 million gallons per day
Peak Flow Capacity – 6.0 million gallons per day

Year 2022

January	Avg. Flow 839,968 g.p.d.	Min. Flow 720,000 g.p.d.	Max. 960,000 g.p.d.
February	Avg. Flow 848,571 g.p.d.	Min. Flow 710,000 g.p.d.	Max. 1.080 MGD
March	Avg. Flow 1.499 MGD	Min. Flow 890,000 g.p.d.	Max. 3.910 MGD
April	Avg. Flow 2.245 MGD	Min. Flow 1.200 MGD	Max. 4.100 MGD
May	Avg. Flow 1.237 MGD	Min. Flow 850,000 g.p.d.	Max. 2.070 MGD
June	Avg. Flow 1.438 MGD	Min. Flow 780,000 g.p.d.	Max. 3.680 MGD
July	Avg. Flow 1.141 MGD	Min. Flow 760,000 g.p.d.	Max. 2.370 MGD
August	Avg. Flow 1.139 MGD	Min. Flow 810,000 g.p.d.	Max. 1.920 MGD
September	Avg. Flow 1.395 MGD	Min. Flow 780,000 g.p.d.	Max. 4.160 MGD
October	Avg. Flow 920,322 g.p.d.	Min. Flow 760,000 g.p.d.	Max. 1.130 MGD
November	Avg. Flow 1.259 MGD	Min. Flow 810,000 g.p.d.	Max. 2.660 MGD
December	Avg. Flow 1.267 MGD	Min. Flow 930,000 g.p.d.	Max. 2.190 MGD

Year 2023

January	Avg. Flow 1.247 MGD	Min. Flow 1.010 MGD	Max. 1.560 MGD
February	Avg. Flow 1.351 MGD	Min. Flow 950,000 g.p.d.	Max. 3.130 MGD
March	Avg. Flow 1.762 MGD	Min. Flow 1.250 MGD	Max. 2.560 MGD
April	Avg. Flow 1.594 MGD	Min. Flow 980,000 g.p.d.	Max. 3.290 MGD
May	Avg. Flow 1.094 MGD	Min. Flow 780,000 g.p.d.	Max. 1.520 MGD
June	Avg. Flow 875,333 g.p.d.	Min. Flow 750,000 g.p.d.	Max. 1.050 MGD
July	Avg. Flow 841,935 g.p.d.	Min. Flow 680,000 g.p.d.	Max. 1.050 MGD
August	Avg. Flow 1.022 MGD	Min. Flow 710,000 g.p.d.	Max. 2.070 MGD
September	Avg. Flow 968,667 g.p.d.	Min. Flow 740,000 g.p.d.	Max. 1.270 MGD
October	Avg. Flow 1.154 MGD	Min. Flow 770,000 g.p.d.	Max. 1.900 MGD
November	Avg. Flow 1.080 MGD	Min. Flow 870,000 g.p.d.	Max. 1.720 MGD
December	Avg. Flow 1.146 MGD	Min. Flow 850,000 g.p.d.	Max. 1.440 MGD

Year 2024

January	Avg. Flow 1.337 MGD	Min. Flow 980,000 g.p.d.	Max. 2.260 MGD

Years Summary of Water Consumption

2010 Total Pumpage 239,326,000 gallons
2011 Total Pumpage 240,268,000 gallons
2012 Total Pumpage 253,492,000 gallons
2013 Total Pumpage 228,371,000 gallons
2014 Total Pumpage 230,973,000 gallons
2015 Total Pumpage 222,621,000 gallons
2016 Total Pumpage 254,531,000 gallons
2017 Total Pumpage 251,387,000 gallons
2018 Total Pumpage 241,322,000 gallons
2019 Total Pumpage 253,427,000 gallons
2020 Total Pumpage 259,413,000 gallons
2021 Total Pumpage 242,216,000 gallons
2022 Total Pumpage 222,033,000 gallons

Year 2022

Jan.	Avg.	553,580 g.p.d	Highest Day 707,000 gals.	Total	17,161,000 gallons
Feb.	Avg.	575,360 g.p.d.	Highest Day 683,000 gals.	Total	16,110,000 gallons
March	Avg.	578,290 g.p.d.	Highest Day 861,000 gals.	Total	17,927,000 gallons
April	Avg.	606,400 g.p.d.	Highest Day 1.084 MGD	Total	18,192,000 gallons
May	Avg.	605,190 g.p.d.	Highest Day 808,000 gals.	Total	18,761,000 gallons
June	Avg.	660,500 g.p.d.	Highest Day 1.034 MGD	Total	19,815,000 gallons
July	Avg.	685,520 g.p.d.	Highest Day 853,000 gals.	Total	21,251,000 gallons
August	Avg.	654,160 g.p.d.	Highest Day 800,000 gals.	Total	20,279,000 gallons
Sept	Avg.	602,170 g.p.d.	Highest Day 727,000 gals.	Total	18,065,000 gallons
October	Avg.	661,390 g.p.d.	Highest Day 1.185 MGD	Total	20,503,000 gallons
Nov	Avg.	561,670 g.p.d.	Highest Day 714,000 gals.	Total	16,850,000 gallons
Dec	Avg.	552,160 g.p.d.	Highest Day 712,000 gals.	Total	17,117,000 gallons

Year 2023

Jan.	Avg.	544,810 g.p.d.	Highest Day 716,000 gals.	Total	16,889,000 gallons
Feb.	Avg.	576,070 g.p.d.	Highest Day 762,000 gals.	Total	16,130,000 gallons
March	Avg.	532,060 g.p.d.	Highest Day 713,000 gals.	Total	16,494,000 gallons
April	Avg.	597,230 g.p.d.	Highest Day 869,000 gals.	Total	17,917,000 gallons
May	Avg.	651,650 g.p.d.	Highest Day 1.243 MGD	Total	20,201,000 gallons
June	Avg.	850,070 g.p.d.	Highest Day 1.018 MGD	Total	24,152,000 gallons
July	Avg.	793,870 g.p.d.	Highest Day 944,000 gals.	Total	24,610,000 gallons
August	Avg.	737,060 g.p.d.	Highest Day 1.019 MGD	Total	22,849,000 gallons
Sept	Avg.	616,330 g.p.d.	Highest Day 790,000 gals.	Total	18,490,000 gallons
Oct	Avg.	611,900 g.p.d.	Highest Day 986,000 gals.	Total	18,969,000 gallons
Nov	Avg.	531,570 g.p.d.	Highest Day 728,000 gals.	Total	15,947,000 gallons
Dec	Avg.	549,970 g.p.d.	Highest Day 770,000 gals.	Total	17,049,000 gallons

Pump Capacity Well #1- 400 g.p.m. Well #3 -900 g.p.m. Well #4 - 1200 g.p.m. Well #5 – 1,100 g.p.m. Well #6 – 800 g.p.m.

Year 2024

Jan.	Avg.	564,060 g.p.d.	Highest Day 733,000 gals.	Total	17,486,000 gallons

WWTP – Holding & Septage Receiving

2005	$ 87,562.01	**2006**	$101,115.11	**2007**	$152,201.07	**2008**	$210,441.47
2009	$183,815.34	**2010**	$197,653.66	**2011**	$220,576.28	**2012**	$236,224.70
2013	$235,336.46	**2014**	$203,938.32	**2015**	$210,644.47	**2016**	$220,473.17
2017	$232,358.23	**2018**	$245,767.74	**2019**	$219,822.80	**2020**	$204,656.11
2021	$209,083.10	**2022**	$251,109.46	**2023**	$157,332.20		

2021	**Holdings (gals)**	**Grease (gals)**	**G Decant (gals)**	**Septage (gals)**	**S Decant (gals)**	**Total Billings**
January	1,284,600			6,650	77,250	$12,507.30
February	1,386,475			3,000	44,450	$12,338.05
March	1,633,050			27,600	206,050	$19,457.65
April	1,425,850			38,000	268,500	$19,829.30
May	1,297,900			34,550	232,100	$17,740.45
June	1,392,350			52,800	258,500	$19,977.30
July	1,338,500			31,600	245,050	$18,256.25
August	1,499,450			31,200	196,250	$18,305.85
September	1,389,200			23,900	213,400	$17,524.10
October	1,275,550			16,250	297,260	$18,367.15
November	1,249,400			22,400	224,200	$16,608.20
December	1,448,000			32,000	205,900	$18,171.50

2022	**Holdings (gals)**	**Grease (gals)**	**G Decant (gals)**	**Septage (gals)**	**S Decant (gals)**	**Total Billings**
January	1,311,750	2,700			40,650	$11,780.25
February	1,321,050	8,000			48,350	$12,577.15
March	2,076,350	2,000		40,750	303,750	$26,238.30
April	1,791,650	5,400	1,500	101,700	326,050	$27,660.95
May	1,703,450		5,200	164,850	288,100	$28,456.35
June	1,759,050	3,000		100,400	373,050	$28,348.65
July	1,437,400	2,700		92,100	186,800	$20,583.70
August	1,670,350	1,200	3,500	63,700	242,850	$22,560.55
September	1,479,850			73,350	168,950	$19,363.30
October	1,204,370	3,000	5,500	47,650	253,200	$18,629.21
November	1,264,850		1,000	48,300	228,250	$18,038.55
December	1,454,750		4,000	24,100	159,600	$16,872.50

2023	**Holdings (gals)**	**Grease (gals)**	**G Decant (gals)**	**Septage (gals)**	**S Decant (gals)**	**Total Billings**
January	1,232,950		1,000	2,800	72,460	$11,841.10
February	1,299,600			1,000	27,000	$11,121.30
March	849,250			18,800	62,550	$ 9,203.75
April	Primary Clarifiers were receiving new diffusers.					
May	1,011,750			44,350	121,650	$13,131.00
June	1,089,100			44,100	148,950	$14,421.05
July	928,350		3,500	6,000	110,500	$12,546.00
August	1,212,400			8,000	121,800	$15,649.00
September	1,083,000			10,400	100,350	$13,962.75
October	1,148,850			8,200	280,750	$18,999.25
November	1,020,400			16,500	302,800	$18,764.00
December	1,262,300			2,000	198,000	$17,693.00

Morning Meadows Subdivision
Streetlights are being installed by the Village in Phase 1 and 2. Phase 3 has the north Cal du sac did not pass the proof roll for compaction of the road base, so the road will be completed in 2024. Final plat is being approved minus the north Cal du sac. Utility as-builts are being finalized with utility acceptance at the next Board of Public Works meeting.

Eagle Drive & STH 60 Intersection Improvement
Vinton Construction was the low bidder for the project. We are working on a construction schedule with the project starting as early as March 2024.

Midwest Fiber Installation
Street Opening Permits have been approved for the Fiber to the Home Project. Now the request will be made with Mid-West for fiber to Utility owned properties. Have email Mid-West Fiber for an update. No update.

WWTP 2024 Tertiary Filters and UV Disinfection
Construction inspection service agreement by Town & Country is being reviewed at this meeting. Once the construction agreement is approved, then we will start working on the CWFP Loan for the project. Looking to possibly start the project in April.

Stormwater Ponds Management Inspection Program
A new schedule has been created to have all reports completed by May 1, 2024. No Update.

CTH P (Sherman Road to STH 60) Utility Project
All punch list items have been addressed and we are holding the retainage for landscaping touchup in 2024. We-Energies Gas is moving existing gas line for this year's CTH P Reconstruction Project.

Maple Fields Subdivision
Streetlights are being installed in Phase 1. The final lift will be the remaining item. Phase 2 plans are being reviewed for a possible start in April 2024. No Update.

Next Generation Housing
Streetlights are being installed. Waiting for We-Energies to energize the electric service for the streetlights on Ridgeway Drive. We-Energies is requesting an electric easement on Outlot 2 to provide power to the electric service on Spruce Street.

Hickory Lane Reconstruction Project
We are waiting on the final version of the DNR UNPS Planning Grant Report. Once the report is approved by the DNR, we will proceed accordingly.

Main Street Streetlight Replacement Project
All the streetlights have been installed and are wired. Banner arms installed, flag holders, and landscaping still need to be accomplished. Once the lights have been tested and approved, the Village will notify We-Energies to remove the existing poles.

WWTP Storage Building Addition
The final pay request for the building addition is at this meeting to close out the project.

DNR UNPS Planning Grant
CDM Smith Engineering is finalizing the report of the DNR Urban Nonpoint Source Grant. Reimbursement will be requested from the DNR as per the grant requirements.

Respectfully submitted, Brian W. Kober, P.E.