April 19, 2024

To: Director, Part. II.1, Environmental Protection Act
The Ontario Ministry of Environment, Conservation, and Parks (MECP)

From: The Corporation of the Town of Tecumseh
917 Lesperance Road, Tecumseh, Ontario N8N 1W9

Re: **Town of Tecumseh Stormwater Management System (#040-S701)**
Annual Performance Report for 2023

The enclosed Annual Performance Report for Town of Tecumseh Stormwater Management System (#040-S701, Issue 1) has been prepared by the Operating Authority, the Corporation of The Town of Tecumseh, for the operating year of 2023.

This report is submitted to the District Manager in accordance with Schedule E, Section 5.2 of Environmental Compliance Approval ECA #040-S701.

The report enclosed is to be made available, on request and without charge, to members of the public who are served by the Authorized system; and made available, by June 1st, 2024 to members of the public without charge by publishing the report on the Town of Tecumseh website.

If you have any questions, please feel free to contact the undersigned.

Respectfully,

Joseph Lappalainen, E.I.T.
Project Technician
The Corporation of the Town of Tecumseh

cc: Phil Bartnik, P.Eng. - Director of Public Works & Engineering Services, Town of Tecumseh
John Henderson, P.Eng. - Manager Engineering Services, Town of Tecumseh
Kirby McArdle, P.Eng. - Manager Public Works & Transportation, Town of Tecumseh

Annual Performance Report

For

Town of Tecumseh Stormwater Management System (#040-S701)

for the Year 2023

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Introduction

The Town of Tecumseh's Stormwater Management System is owned and operated by the Town of Tecumseh. The stormwater management system serving the Town of Tecumseh's drainage area consists of storm sewers, culverts, roadside ditches, municipal drains, wet ponds, stormwater pump stations, stormwater management facilities, and gravity outlets.

This annual performance report of the 2023 operation of the Town of Tecumseh's Municipal Stormwater Management System is completed in accordance with the Environmental Compliance Approval (ECA) #040-S701 (issued number 1 on April 28th, 2023), Schedule E, Section 5.2. As this is the first report, it covers the period of July 1st, 2023 to December 31st, 2023, as per Schedule E, Section 5.2.1(a).

Schedule E, Section 5.2 of ECA #040-S701 requires annual performance reports to contain the following subsections:

a) A Summary of All Monitoring Data Along with An Interpretation of the Data and An Overview of The Condition and Operational Performance of The Authorized System and Any Adverse Effects on the Natural Environment;
b) A Summary and Interpretation of Environmental Trends Based on All Monitoring Information and Data for The Previous Five (5) Years;
c) A Summary of Any Operating Problems Encountered and Corrective Actions Taken;
d) A Summary of All Inspections, Maintenance, And Repairs Carried Out on Any Major Structure, Equipment, Apparatus, Mechanism, Or Thing Forming Part of The Authorized System;
e) A Summary of The Calibration and Maintenance Carried Out on All Monitoring Equipment;
f) A Summary of Any Complaints Related to The Sewage Works Received During the Reporting Period and Any Steps Taken to Address the Complaints;
g) A Summary of All Alterations to The Authorized System Within the Reporting Period That Are Authorized By This Approval Including A List Of Alterations That Pose A Significant Drinking Water Threat;
h) A Summary of All Spills or Abnormal Discharge Events;
i) A Summary of Actions Taken, Including Timelines, To Improve or Correct Performance of Any Aspect Of The Authorized System; And
j) A Summary of The Status of Actions for The Previous Reporting Year

The above-mentioned sections are enclosed in the following document, followed by an overall summary of the system performance and an appendix containing referenced documents.

5.2 (a) A Summary of All Monitoring Data Along with An Interpretation of the Data and An Overview of The Condition and Operational Performance of The Authorized System and Any Adverse Effects on the Natural Environment;

Monitoring data for the Town's pumping stations is limited to equipment (pump) run time operation measured in hours. Two of eight storm pumping stations utilize Supervisory Control and Data Acquisition (SCADA) to track daily pump run times. There are instances where the Town's SCADA is down due to technical complications and run times are not able to be generated for the stations that are equipped with this equipment. Nonetheless, run times are recorded manually each time a pump station is visited for inspection by the Town operator.

A summary of monthly pump run times from each station are shown below.

Table 1: Approximate Pump Run Times (Hours) from Each Station for 2023 Reporting Period

Month / Pumping Station	July	August	September	October	November	December	Yearly Total
Brighton	139.8	108.9	33.2	63.8	55.2	47.4	**448.3**
***East St. Louis**	30.7	33.0	6.2	5.9	7.0	7.7	**90.5**
***Lesperance**	61.2	76.0	20.3	22.6	11.7	20.6	**212.4**
Manning	133.6	283.8	78.5	170.2	128.5	193.2	**987.9**
***PJ Cecile Kensington**	19.2	31.7	3.3	1.8	2.9	3.3	**62.2**
***Scully Edgewater**	25.9	28.9	5.9	4.3	1.3	6.3	**72.6**
***St. Mark's**	9.8	15.0	1.2	1.8	0.4	1.7	**30.0**
***West St. Louis**	29.9	39.7	8.6	4.9	7.4	7.7	**98.2**
Monthly Totals	**450.1**	**617.0**	**157.2**	**275.3**	**214.4**	**287.9**	**2002.1**

**Please note that run times for these stations are approximate and time periods vary from 4 to 5-week periods as they reflect the time at which the Town storm operator attends the pump station for inspection, which for this report was not consistently at the start/end of each month.*

Interpretations of the data and an overview of the conditional and operational performance of the Town's pumping stations is not achievable.

5.2 (b) A Summary and Interpretation of Environmental Trends Based on All Monitoring Information and Data for The Previous Five (5) Years;

A summary and interpretation of environmental trends based on equipment runtimes is not achievable.

5.2 (c) A Summary of Any Operating Problems Encountered and Corrective Actions Taken;

Operating problems of the Town's storm pumping stations are identified through monthly (minimum) inspections conducted by the Town's stormwater operator to review of pump station operation, annual load testing and bi-annual inspection completed by third-party (CF Industrial), and service callouts responded to by the Town's stormwater operator. Corrective actions taken varies depending on the scope of the operating problem encountered, including maintenance (preventative or corrective), renewal/rehabilitation, or replacement if component is in a state of disrepair. Other operating problems related to the storm sewer system are identified though responses to service request calls from the general public.

Appendix I contains a summary of all operating issues encountered and subsequent corrective actions taken to maintain performance of the stormwater management system, including the storm sewer system and pumping stations.

5.2 (d) A Summary of All Inspections, Maintenance, And Repairs Carried Out on Any Major Structure, Equipment, Apparatus, Mechanism, Or Thing Forming Part of The Authorized System;

Inspections of the Town's storm pumping stations are conducted on a monthly basis and during and/or after storm events by the Town's stormwater operator to confirm operation of pump station. Information recorded at each inspection includes outdoor conditions, valve (siphon and/or fish sanctuary) checks, building temperature, generator status, bar screen(s) operation, wet well levels, PLC checks, and other general remarks as needed. Information specific to the pumps is also recorded including cumulative run times in hours, pumps in auto checks, and grease and oil levels. When necessary, preventative maintenance and/or repairs is administered and recorded on the following inspection log(s). Generators for each pumping station undergo annual load testing and bi-annual inspection, each conducted by third party (CF Industrial). Inspections and maintenance carried out on the storm system are conducted through work orders when responding to service request calls from the general public.

A summary of inspections, maintenance and repairs undertaken on the Town's stormwater management system as denoted under Schedule B, Section 1.4 in the 2023 reporting period is shown in the following table.

Table 2: Summary of Inspections Carried Out on System in 2023

Component	# of Inspections	Comments
Stormwater Pumping Stations		
SPS01 – Lesperance Road Pump Station	20	-Pump #3 lower bearing greased -High wet well levels recorded twice due to August 2024 rain event

SPS02 – West St. Louis Pump Station	25	-Switched lead pump to pump #2 -High wet well levels recorded once due to August 2024 rain event -Generator failure (temperature low)
SPS03 – East St. Louis Pump Station	19	-Pumps #1 and #3 faults and resets OK -Normal wet well levels
SPS04 – Manning Road Pump Station	33	-Pump #1 fault and reset OK -Pump #2 vibration alarm suspected due to debris reset OK -Bar screen #2 shock absorber replaced -Bar screen #1 shock absorber replaced -Normal wet well levels
SPS05 – Scully Edgewater Pump Station	22	-Normal wet well levels
SPS06 – St. Mark's Pump Station	24	-Pumps #1 and #2 reset and switched to pump #2 OK -High wet well levels recorded once due to August 2024 rain event -Generator transfer switch control board burnout
SPS07 – PJ Cecile Kensington Pump Station	24	-Pumps #1 and #2 greased -Switched lead pump to pump #1 -Normal wet well levels
SPS08 – Brighton Pump Station	35	-Pumps #2 and #5 out of service and replaced -Pumps #1 and #4 faults and resets -Normal wet well levels

Appendix II depicts a summary of maintenance and repair activities undertaken through inspections to maintain performance of the stormwater management system.

5.2 (e) A Summary of The Calibration and Maintenance Carried Out on All Monitoring Equipment;

Calibration and maintenance of monitoring equipment used in two of the Town's pumping stations is conducted through the following;

- as identified through weekly inspections by Town stormwater operator
- annually by Service Provider (Onyx Engineering)

The following tables contains a summary of all calibration and maintenance carried out to maintain performance of the Town's monitoring equipment.

Table 3: SPS04 – Manning Road Pumping Station Calibration and Maintenance

Date	Calibration and/or Maintenance Activity
September 13, 2023	HMI fault calibrated by Onyx Engineering

October 18, 2023	Annual PLC back-up by Onyx Engineering

Table 4: SPS08 – Brighton Road Pumping Station Calibration and Maintenance

Date	Calibration and Maintenance Activity
September 13, 2023	Human-machine interface (HMI) calibrated by Onyx Engineering
October 18, 2023	Annual PLC back-up by Onyx Engineering

5.2 (f) A Summary of Any Complaints Related to The Sewage Works Received During the Reporting Period and Any Steps Taken to Address the Complaints;

The Town receives all complaints or concerns related to sewage works within the stormwater management system including service connections (lateral), mainline sewers, catch basins, maintenance holes, general drainage, restoration, and other (miscellaneous). The Town addressed complaints through direct contact with residents and site visitations as deemed necessary by Public Works staff.

The Town received 1 call related to storm pumping stations, specifically regarding the noise generation on site for a period of roughly two days. The Town received a total of 32 calls as complaints related to linear infrastructure including storm sewer mainlines, culverts, catch basins and drainage. A summary of complaints received through the Town's CityWorks Work Management System is provided in the following table:

Table 5: CityWorks Service Request Summary for Stormwater Management System

Service Request Type	# of Service Requests
Sewer – General drainage	11
Completed	8
In progress	3
Sewer – General catch basin issue	13
Completed	12
In progress	1
Sewer – Plugged catch basin	2
Completed	2
In progress	0
Sewer – Storm sewer obstruction	5
Completed	5
In progress	0
Sewer – Complaints related to storm sewer backup	2
Completed	2
In progress	0
TOTAL	**33**
Completed	**33**
In progress	**0**

A map of all service request locations for the Tecumseh Stormwater Management Facility is provided in Appendix III.

5.2 (g) A Summary of All Alterations to The Authorized System Within the Reporting Period That Are Authorized By This Approval Including A List Of Alterations That Pose A Significant Drinking Water Threat;

No Alterations to the stormwater management system were completed during this reporting period.

5.2 (h) A Summary of All Spills or Abnormal Discharge Events;

None to report in 2023.

5.2 (i) A Summary of Actions Taken, Including Timelines, To Improve or Correct Performance of Any Aspect Of The Authorized System; And

None to report in 2023.

5.2 (j) A Summary of The Status of Actions for The Previous Reporting Year

There is no previous reporting year as this is the first annual performance report for the Tecumseh Stormwater Management System.

APPENDICES

Appendix I: Summary of Operating Problems Encountered and Corrective Actions Taken

Storm Sewer System

Operating Problem	Corrective Action	# of Instances
Sewer mainline backup - surface flooding	CCTV inspection	2
	Flushing (CCTV)	0
	Sewer spot repair (open cut)	0
	Other - through development or construction	2
Maintenance hole backup	MH cleaning/flushing	0
	MH repair	1
	Inspection (CCTV or visual)	1
Service connection backup	CCTV inspection	2
	PDC spot repair or replacement (open cut)	2
Catch basin backup	CB cleaning/flushing	5
	CB repair	2
	Inspection (CCTV or visual)	11
General drainage	Bank repairs	1
	Culvert repair or replacement	0
	Culvert flushing	0
	Ditching	0

SPS01 – Lesperance Road Pumping Station
None to report in 2023 reporting period.

SPS02 – West St. Louis Pumping Station

Date	Operating Problem Encountered	Corrective Action
September 22, 2023	Generator transfer switch controller burnt out	CF Industrial to install new transfer switch controller; completed October 25, 2023
October 3, 2023	Fuse 'B' of generator control power supply blown	Replace fuse and monitor
November 5, 2023	Fuses 'A' and 'B' of generator control power supply blown	Replace fuse and monitor

SPS03 – East St. Louis Pumping Station

Date	Operating Problem Encountered	Corrective Action
August 10, 2023	Pump #3 fault	Reset pump and monitor
August 28, 2023	Pumps #1 and #3 fault	Reset pump and monitor

SPS04 – Manning Road Pumping Station

Date	Operating Problem Encountered	Corrective Action
July 2, 2023	Pump #1 fault	Reset pump and monitor
July 25, 2023	Bar screen #2 jammed at bottom due to shock break	Greased and new shock absorber installed on August 3, 2023
August 25, 2023	Pump #2 vibration alarm due to suspected debris caught in pump well	Reset pump and monitor
September 8, 2023	HMI error	Onyx Engineering contacted to troubleshoot
September 12, 2023	HMI error	Onyx Engineering contacted to troubleshoot
September 13, 2023	HMI error	Onyx Engineering contacted to troubleshoot; completed
October 4, 2023	Bar screen #1 rake fault	New shock absorber and greased on October 4, 2023

SPS05 – Scully Pumping Station

None to report in 2023 reporting period.

SPS06 – St. Mark's Pumping Station

Date	Operating Problem Encountered	Corrective Action
July 2, 2023	Pump #2 fault	Reset pump and monitor
August 25, 2023	Pumps #1 and #2 faults	Reset pump and monitor
October 23, 2023	Fuse 'C' of generator control power supply blown	Replace fuse and monitor
November 1, 2023	Generator running due to transfer switch control board burnt out	CF Industrial to install new transfer switch controller; completed on November 15, 2023 (Morning)
November 15, 2023 (Evening)	Generator transfer switch panel failure; new transfer switch burnt out (callout from Security One)	CF Industrial to repair or find solution

SPS07 – PJ Cecile Kensington Pumping Station

None to report in 2023 reporting period.

SPS08 – Brighton Pumping Station

Date	Operating Problem Encountered	Corrective Action
July 1, 2023	Motor starter failure on pumps #2 and #5	Ordered new motor starter for pumps; installed and running on December 7, 2023
July 2, 2023	Pumps #1 and #4 fault	Reset pump and monitor

July 3, 2023	Pumps #1 and #4 fault and general alarm	Reset pump and alarm and monitor
August 25, 2023	Pumps #1 and #4 fault	Reset pump and monitor
September 8, 2023	HMI error	Onyx Engineering contacted to troubleshoot; completed on September 13th

Appendix II: Summary of Maintenance and/Repair Activities Carried Out

Storm Sewer System

Date	Maintenance and/or Repair Activity
July 13, 2023	Flushed catch basin inlet piping at 335 Fairway Crescent
July 13, 2023	Visually inspected of catch basin and outlet pipe at 1675 Chornoby
July 21, 2023	Camera inspected storm sewer at 12145 Gouin Street
July 26, 2023	Cleared mud from filter cloth of catch basin at 12459 Riverside Drive
July 28, 2023	Cleaned off catch basin frame grate and placed stone at 12734 Riverside Drive East
August 3, 2023	Visually inspected catch basin risers and boxout at 2965 Strawberry
August 9, 2023	Raised maintenance hole 23A/1777 (on Lacasse Boulevard) to existing grade
August 9, 2023	Camera inspected storm sewer and maintenance holes on east side of Lacasse Boulevard
August 23, 2023	Visually inspected catch basin sump at 124 Kenny Court
August 23, 2023	Visually inspected catch basin sump at 11892 Brouillette Court
August 23, 2023	Visually inspected catch basin across from 12446 Renaud Street
August 23, 2023	Visually inspected catch basin at 335 Fairway Crescent
August 26, 2023	Cleaned mulch and debris from catch basin at southwest corner of 161 Edgewater
August 28, 2023	Camera inspected catch basin leads at 1840 Blackacre Drive
September 2, 2023	Repair and replaced 6” PDC from storm sewer mainline to existing drainage pipe on private property at 12490 Dillon Drive
September 13, 2023	Related to development (Brouillette Manor Ltc.) stormwater management works
September 14, 2023	Camera inspected catch basin lead at 1611 Manning Road
September 15, 2023	Camera inspected catch basin leads at 12127 Tecumseh Road East
September 15, 2023	Camera inspected PDC at 11892 Brouillette Court
October 16, 2023	Moved rip-rap stone along eroding drain bank at 7386 11th Concession Road
October 16, 2023	Camera inspected PDC at 115 David Crescent
October 24, 2023	Camera inspected catch basin outlet pipes at 424 Green Valley Drive
November 13, 2023	Installed risers to bring catch basin to correct grade at 335 Fairway Crescent

November 22, 2023	Visually inspected catch basin sump and leads at 157 Kensington Boulevard
November 24, 2023	Private curb reinstatement by Contractor to improve surface drainage at 4971 Walker Road related to Capital project deficiency
December 22, 2023	Replaced PDC at 115 David Crescent
December 22, 2023	Cleaned debris out of catch basin and installed catch basin risers to at 13158 Riverside Drive East

SWM001 – Grassed Swale and French Drains Dimu Subdivision
None to report in 2023.

SWM002 – SWM Wet Pond Lakewood Subdivision

Date	Maintenance and/or Repair Activity
Month of July	-Grass cutting maintenance once a week
Month of August	-Grass cutting maintenance once a week
Month of September	-Grass cutting maintenance once a week
Month of October	-Grass cutting maintenance twice a week
Month of November	-Grass cutting maintenance once a week

SWM003 – Infiltration Pipe Greenhills Subdivision
None to report in 2023 reporting period.

SWM004 – SWM Dry Pond Roscon Industrial
None to report in 2023 reporting period.

SWM005 – SWM Dry Pond Strawberry Ridge Phase 4

Date	Maintenance and/or Repair Activity
Month of July	-Grass cutting maintenance once a week
Month of August	-Grass cutting maintenance once a week
Month of September	-Grass cutting maintenance once a week
Month of October	-Grass cutting maintenance twice a week
Month of November	-Grass cutting maintenance once a week

SWM006 – OGS Unit Arbour Grove
None to report in 2023 reporting period.

SWM007 – OGS Unit Silverman Subdivision
None to report in 2023 reporting period.

SWM008 – OGS Unit Elderberry
None to report in 2023 reporting period.

SWM009 – OGS Unit Westlake

None to report in 2023 reporting period.

SWM011 – Lot Level Controls to SWM Wet Pond Forebay Lakewood Subdivision

None to report in 2023 reporting period.

SPS01 – Lesperance Road Pumping Station

Date	Maintenance and/or Repair Activity
August 10, 2023	Generator testing
September 28, 2023	Bi-annual generator service load bank testing CF Industrial
October 27, 2023	Generator testing
November 27, 2023	Generator testing Pump #3 lower bearing greased

SPS02 – West St. Louis Pumping Station

Date	Maintenance and/or Repair Activity
August 10, 2023	Generator testing
September 28, 2023	Bi-annual generator service load bank testing CF Industrial
October 3, 2023	Fuse 'B' for transformer switch panel and controller replacement
October 25, 2023	New transformer switch panel and controller installed
October 27, 2023	Generator testing
November 5, 2023	Generator testing
November 5, 2023	Fuses 'A' and 'B' for transformer switch panel and controller replacement
November 16, 2023	Transformer switch panel and controller testing
November 27, 2023	Generator testing
December 12, 2023	Generator heater replacement

SPS03 – East St. Louis Pumping Station

Date	Maintenance and/or Repair Activity
August 28, 2023	Pump #3 lower bearing grease filled
September 28, 2023	Bi-annual generator service load bank testing by CF Industrial
October 27, 2023	Generator testing
November 27, 2023	Generator testing

SPS04 – Manning Road Pumping Station

Date	Maintenance and/or Repair Activity
July 11, 2023	Generator testing
July 27, 2023	Bar screen #2 maintenance
August 3, 2023	Bar screen #2 new shock absorbers installed and greased
August 10, 2023	Generator testing
September 28, 2023	Bi-annual generator service load bank testing CF Industrial
October 4, 2023	Bar screen #1 new shock absorbers installed and greased
October 25, 2023	Generator testing

SPS05 – Scully Pumping Station

Date	Maintenance and/or Repair Activity
August 2, 2023	Generator testing
September 28, 2023	Bi-annual generator service load bank testing CF Industrial
October 25, 2023	Generator testing

SPS06 – St. Mark's Pumping Station

Date	Maintenance and/or Repair Activity
August 2, 2023	Generator testing
September 28, 2023	Bi-annual generator service load bank testing CF Industrial
October 23, 2023	Generator testing
October 23, 2023	Fuse for transfer switch panel and controller replacement
October 25, 2023	Generator testing (following fuse replacement)
November 15, 2023	New transfer switch controller installed and tested by CF Industrial
November 15, 2023	Generator testing

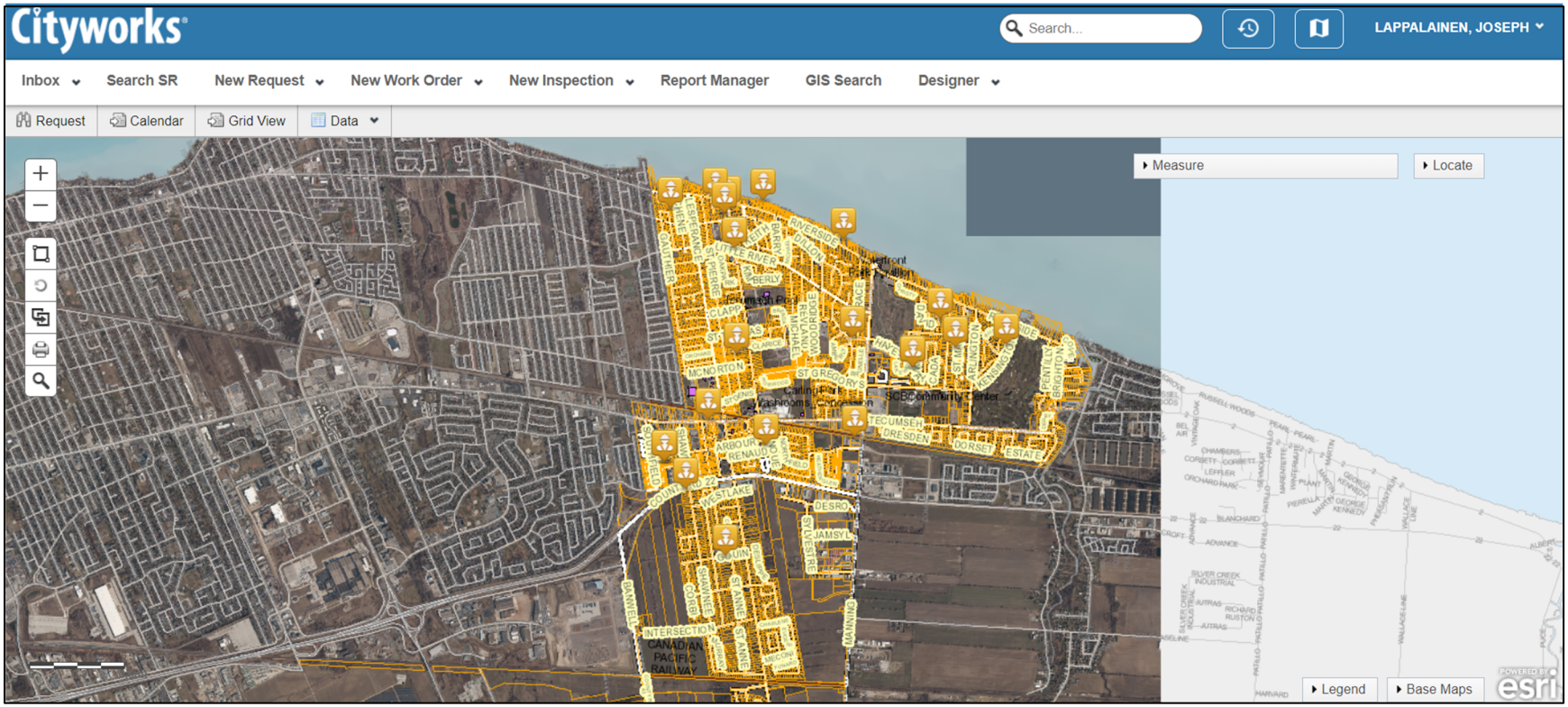
SPS07 – PJ Cecile Pumping Station

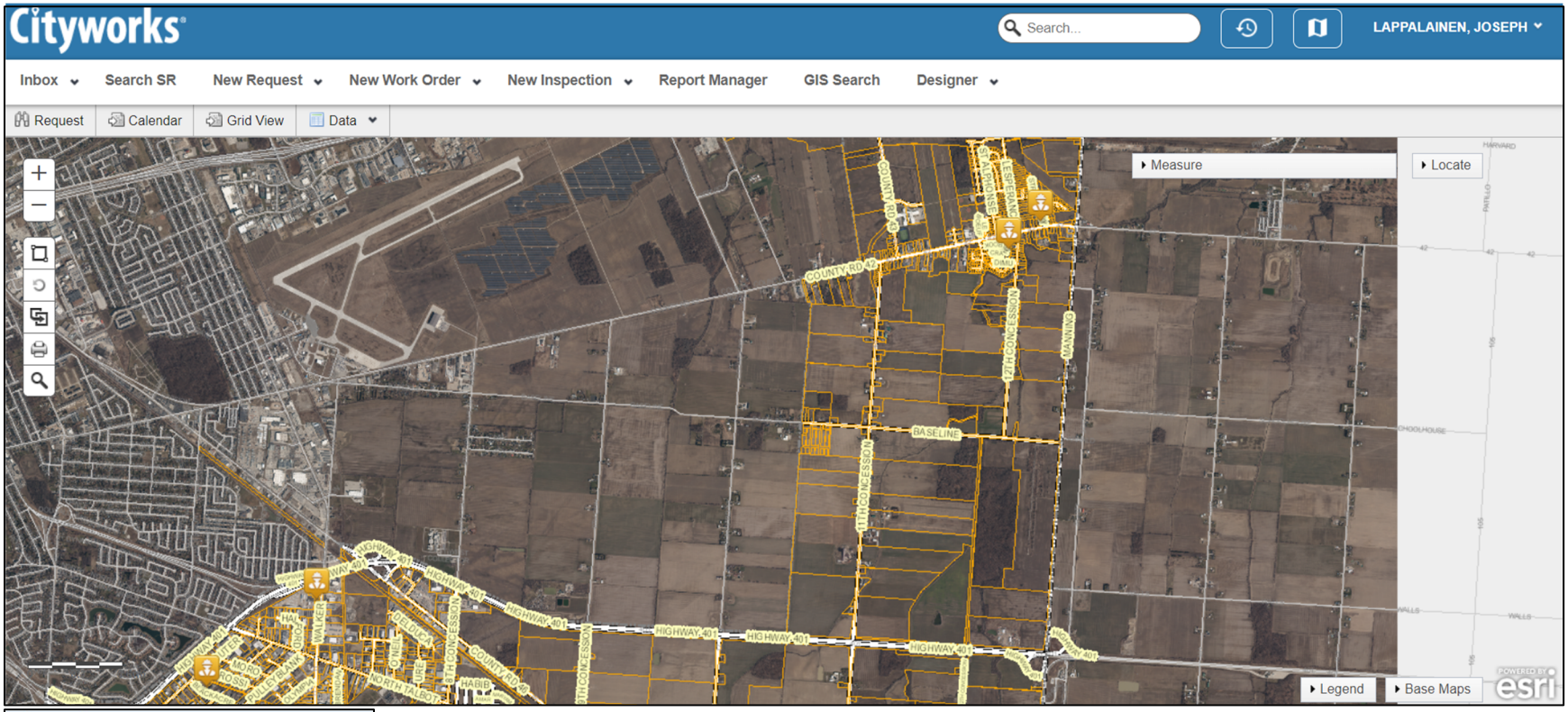
Date	Maintenance and/or Repair Activity
August 2, 2023	Generator testing
August 28, 2023	Pumps #1 and #2 greased
September 28, 2023	Bi-annual generator service load bank testing CF Industrial
October 23, 2023	Generator testing

SPS08 – Brighton Pumping Station

Date	Maintenance and/or Repair Activity
July 10, 2023	Generator testing
August 2, 2023	Generator testing
August 28, 2023	Pump #6 greased
September 26, 2023	Bi-annual generator service load bank testing CF Industrial
October 20, 2023	Installing motor starters for pumps #2 and #5
October 23, 2023	Generator testing
November 27, 2023	Generator testing
December 7, 2023	New motor starters installed for pumps #2 and #5 Pumps #2, #5, and #6 greased

Appendix III: Service Request Map View for Town of Tecumseh Stormwater Management System

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GIS Search
Designer
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Measure
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CLI-ECA Storm System 2023 Complaints