CARMINAWOOD
DESIGN

# DOWNSTREAM SANITARY SEWER CAPACITY ANALYSIS REPORT

**for**

## Uptown Apartments

**2190-2200 Wehrle Drive**
**Town of Amherst, Erie County, New York**

**Prepared for**

## Young Development Inc.

**1120 Bullis Road**
**Elma, New York 14059**

**Prepared by**


## Carmina Wood Design

**487 Main Street, Suite 500**
**Buffalo, NY 14203**

**Telephone: (716) 842-3165**
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**June 2025**

Project Description

This project is a development of a 24.9 acre site located at 2190 & 2200 Wehrle Drive in the Town of Amherst. Construction will consist of mixture of two or four story multi-family building totaling 332 units, with attached garage buildings, associated utility, lighting and landscaping improvements.

An existing 8" public sanitary sewer main is located along Wehrle Drive and will be utilized for this project. A new 8" PVC private sanitary sewer lateral will be installed and connected to this existing sewer.

Wastewater from the proposed project will flow east on Wehrle Drive, north to Sheridan Drive, then west Sheridan Drive, and then north along Youngs Road. Flows are then conveyed west through the 60" Peanut Line sewer, and ultimately north to the Town of Amherst Wastewater Treatment Facility. Refer to the sewer routing map located in the TECSmith monitoring section of this downstream sewer capacity analysis report.

**Node 1 – Ferndale Rd & Wehrle Dr (8"):**

| | |
|---|---|
| Existing Peak Flow measured (wet weather event) | = 0.011 cfs (0.007 mgd)* |
| Proposed Multi-Family Peak Flow | = 0.380 cfs** |
| Proposed Total Peak Flow | = 0.391 cfs |

Theoretical capacity of existing 8" PVC pipe @ 0.36% = 0.856 cfs

Conclusion: The proposed total peak flow is less than the capacity of the 8" PVC pipe, therefore there is sufficient capacity. At no time during the monitoring period did flow depth exceed the pipe diameter at Node 1 of the downstream monitoring points during the rain events monitored.

**Node 2 – Main St & Brompton Rd (12"):**

| | |
|---|---|
| Existing Peak Flow measured (wet weather event) | = 1.374 cfs (0.888 mgd)* |
| Proposed Multi-Family Peak Flow | = 0.380 cfs** |
| Proposed Total Peak Flow | = 1.754 cfs |

Theoretical capacity of existing 12" PVC pipe @ 0.22% = 1.973 cfs

Conclusion: The proposed total peak flow is less than the capacity of the 12" PVC pipe, therefore there is sufficient capacity. At no time during the monitoring period did flow depth exceed the pipe diameter at Node 2 of the downstream monitoring points during the rain events monitored.

**Node 3 – Peanut Line (60"):**

| | |
|---|---|
| Existing Peak Flow measured (wet weather event) | = 56.466 cfs (36.50 mgd)* |
| Proposed Uptown Apartments Peak Flow | = 0.265 cfs** |
| Proposed Total Peak Flow | = 56.731 cfs |

Capacity of existing 60" Peanut Line sewer = 88.798 cfs (57.4 mgd)

Conclusion: The proposed total peak flow is less than the capacity of the 60" Peanut Line sewer, therefore there is sufficient capacity.

Foot Notes:

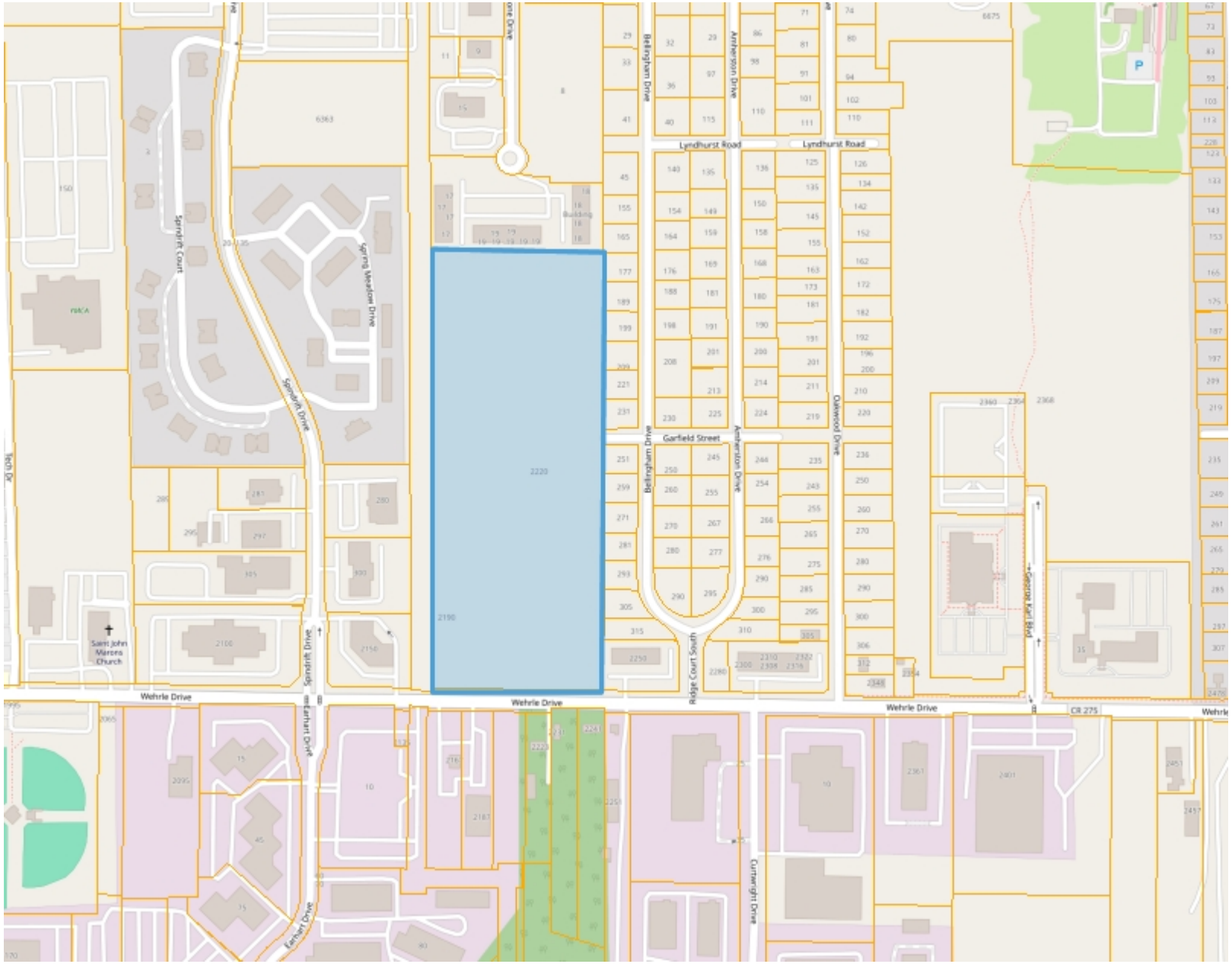
Downstream capacity node information provided by Town of Amherst Engineering Department

*Converted from measurements in TECSmith report dated 4/9/25

**See Sanitary Sewage Demand Calculations

# Location Map

# Erie County On-Line Mapping Application





**Legend**

- Parcels

0 0.14 0.3 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
THIS MAP IS NOT TO BE USED FOR NAVIGATION

**ERIE COUNTY**
**DEPARTMENT OF ENVIRONMENT & PLANNING**
**OFFICE OF GIS**

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

1: 9,028

# Sanitary Demand Calculations

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Project No.: 25-4006 Date: 6/9/2025
Project Name: Uptown Apartments
Project Address: 2190-2200 Wehrle Drive Amherst, NY
Subject: Sanitary Sewer & Water Demand Calcs
Sheet: 1 of 2

**Sanitary Sewage Demand Calculations:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 110 | gal/d/unit | x | 114 | unit | = | 12,540 | gpd | *use 110 gallons per unit per day (1 bdrm) |
| 220 | gal/d/unit | x | 198 | unit | = | 43,560 | gpd | *use 220 gallons per unit per day (2 bdrm) |
| 330 | gal/d/unit | x | 20 | unit | = | 6,600 | gpd | *use 330 gallons per unit per day (3 bdrm) |

Total Site Sanitary Demand: = 62,700 gpd

Find Peak Sanitary Demand:

Peaking Factor based on Population:

Total demand: 62,700 gpd / 100 gpcd = 627 per capita

Population (P) = 627 people

Peaking Factor : (18 +√P) / (4 + √P ) where P is in thousands

Peaking Factor = 3.92

Peak Sanitary Demand = 62,700 x 3.92 = 245,887 gpd
= 0.246 MGD
= 0.380 cfs

**Required Infiltration and Inflow Mitigation:**

Peak Sanitary Flow = 245,887 gpd = 170.75 gpm

4:1 offset flow per NYSDEC requirements = 170.75 x 4 = 683.02 gpm req'd

Mitigation Credit = $250 / gpm

**Mitigation Agreement Amount = $170,754.63**

# TECSmith Monitoring Report

| Date | Node 1 | | | Node 2 | | | Rain |
|---|---|---|---|---|---|---|---|
| | Ferndale Rd & Wehrle Dr (8") | | | Main St & Brompton Rd (12") | | | |
| | FLOW (GAL x 1,000) | PEAK FLOW (MGD) | PEAK LEVEL (IN) | FLOW (GAL x 1,000) | PEAK FLOW (MGD) | PEAK LEVEL (IN) | (inches) |
| 3/6/2025 | 3.190 | 0.009 | 3.353 | 250.390 | 0.883 | 9.023 | ***0*** |
| 3/7/2025 | 7.170 | 0.008 | 3.127 | 467.359 | 0.807 | 8.796 | ***0*** |
| 3/8/2025 | 6.927 | 0.007 | 2.902 | 410.805 | 0.723 | 8.552 | ***0*** |
| 3/9/2025 | 6.996 | 0.007 | 2.902 | 361.424 | 0.673 | 8.935 | ***0*** |
| 3/10/2025 | 6.888 | 0.009 | 3.296 | 353.179 | 0.747 | 8.608 | ***0*** |
| 3/11/2025 | 6.713 | 0.008 | 3.184 | 370.404 | 0.744 | 8.458 | ***0*** |
| 3/12/2025 | 6.800 | 0.008 | 2.959 | 326.065 | 0.661 | 8.315 | ***0*** |
| 3/13/2025 | 6.870 | 0.008 | 3.015 | 250.580 | 0.693 | 8.326 | ***0*** |
| 3/14/2025 | 6.870 | 0.008 | 3.015 | 260.516 | 0.723 | 8.392 | ***0*** |
| 3/15/2025 | 6.760 | 0.007 | 2.779 | 218.171 | 0.710 | 8.010 | ***0.03*** |
| 3/16/2025 | 6.625 | 0.007 | 2.902 | 249.974 | 0.787 | 8.634 | ***0.3*** |
| 3/17/2025 | 6.875 | 0.007 | 2.913 | 266.733 | 0.701 | 8.210 | ***0.04*** |
| 3/18/2025 | 6.736 | 0.008 | 3.197 | 266.140 | 0.756 | 8.336 | ***0*** |
| 3/19/2025 | 6.446 | 0.008 | 3.088 | 252.990 | 0.699 | 8.390 | ***0*** |
| 3/20/2025 | 6.446 | 0.007 | 2.870 | 240.724 | 0.762 | 9.012 | ***0*** |
| 3/21/2025 | 6.612 | 0.007 | 2.945 | 219.384 | 0.653 | 8.213 | ***0*** |
| 3/22/2025 | 6.532 | 0.007 | 2.925 | 203.180 | 0.641 | 8.210 | ***0.09*** |
| 3/23/2025 | 6.535 | 0.007 | 2.703 | 205.250 | 0.728 | 8.728 | ***0.02*** |
| 3/24/2025 | 6.346 | 0.007 | 2.655 | 236.652 | 0.774 | 8.740 | ***0*** |
| 3/25/2025 | 5.690 | 0.007 | 2.621 | 201.267 | 0.621 | 7.813 | ***0*** |
| 3/26/2025 | 5.428 | 0.008 | 3.071 | 216.208 | 0.623 | 8.243 | ***0.03*** |
| 3/27/2025 | 5.434 | 0.007 | 2.677 | 207.866 | 0.638 | 8.755 | ***0*** |
| 3/28/2025 | 5.470 | 0.007 | 2.677 | 222.267 | 0.659 | 8.655 | ***0.23*** |
| 3/29/2025 | 5.468 | 0.006 | 2.508 | 225.624 | 0.762 | 8.299 | ***0.23*** |
| 3/30/2025 | 5.865 | 0.006 | 2.628 | 263.182 | 0.730 | 8.314 | ***0.25*** |
| 3/31/2025 | 6.299 | 0.007 | 2.790 | 305.824 | 0.797 | 9.021 | ***0.02*** |
| 4/1/2025 | 6.243 | 0.007 | 2.902 | 284.003 | 0.729 | 8.070 | ***0*** |
| 4/2/2025 | 6.315 | 0.007 | 2.733 | 373.197 | 0.888 | 9.042 | ***0.82*** |
| 4/3/2025 | 4.003 | 0.007 | 2.846 | 293.288 | 0.895 | 9.201 | ***0.3*** |
| --- | --- | --- | --- | --- | --- | --- | ***2.36*** |

# TECsmith

TECSMITH, Inc.
PO Box 95
Clarence, NY 14031
716-462-0382

Date: April 9, 2025

**SANITARY SEWER FLOW CAPACITY STUDY – Summary Review**

**Prepared For:** 2190 Wehrle - Downstream Monitoring Capacity Analysis.

Patrick Sheedy Jr., P.E.
CARMINAWOOD DESIGN
80 Silo City Row
Buffalo, New York 14203

**Project Name:** 2190 Wehrle - Downstream Monitoring Capacity Analysis.

**Flow Monitoring Period:** March 6, 2025 to April 3, 2025

**Rain Events (> 0.5-inches) Monitored:** April 2 (0.82”)

**Number of Monitoring Nodes:** Two (2) downstream manholes

**Node Locations and Descriptions:**

- Node 1 Ferndale Rd & Wehrle Dr (8")
- Node 2 Main St & Brompton Rd (12")

## Summary Conclusion:

Based on the data presented in this report, specifically the flow depth measurements recorded (see graphs below)

- At no time did the flow depth exceed pipe diameter at any of the downstream monitoring points during the wet weather vents monitored.
- At no time during the monitoring period did the flow at any point slow or stall which would have caused a backup or flooding at the manhole.

# TECsmith

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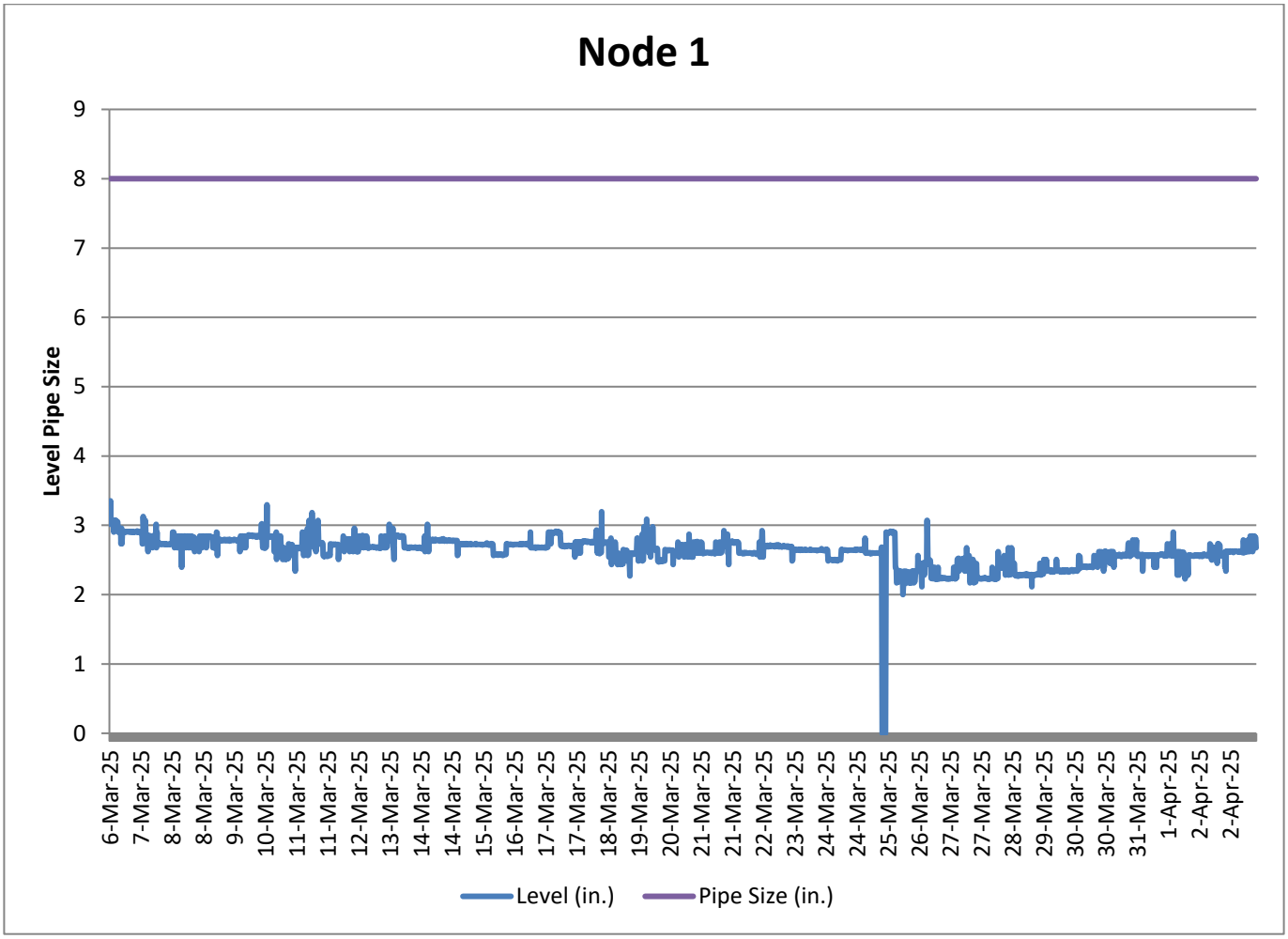
**Depth of Flow Capacity Summary:**

*Depth of flow capacity is based on diameter of pipe. See graphs below.*

- At no time during the monitoring period did depth of flow exceed pipe diameter at Node



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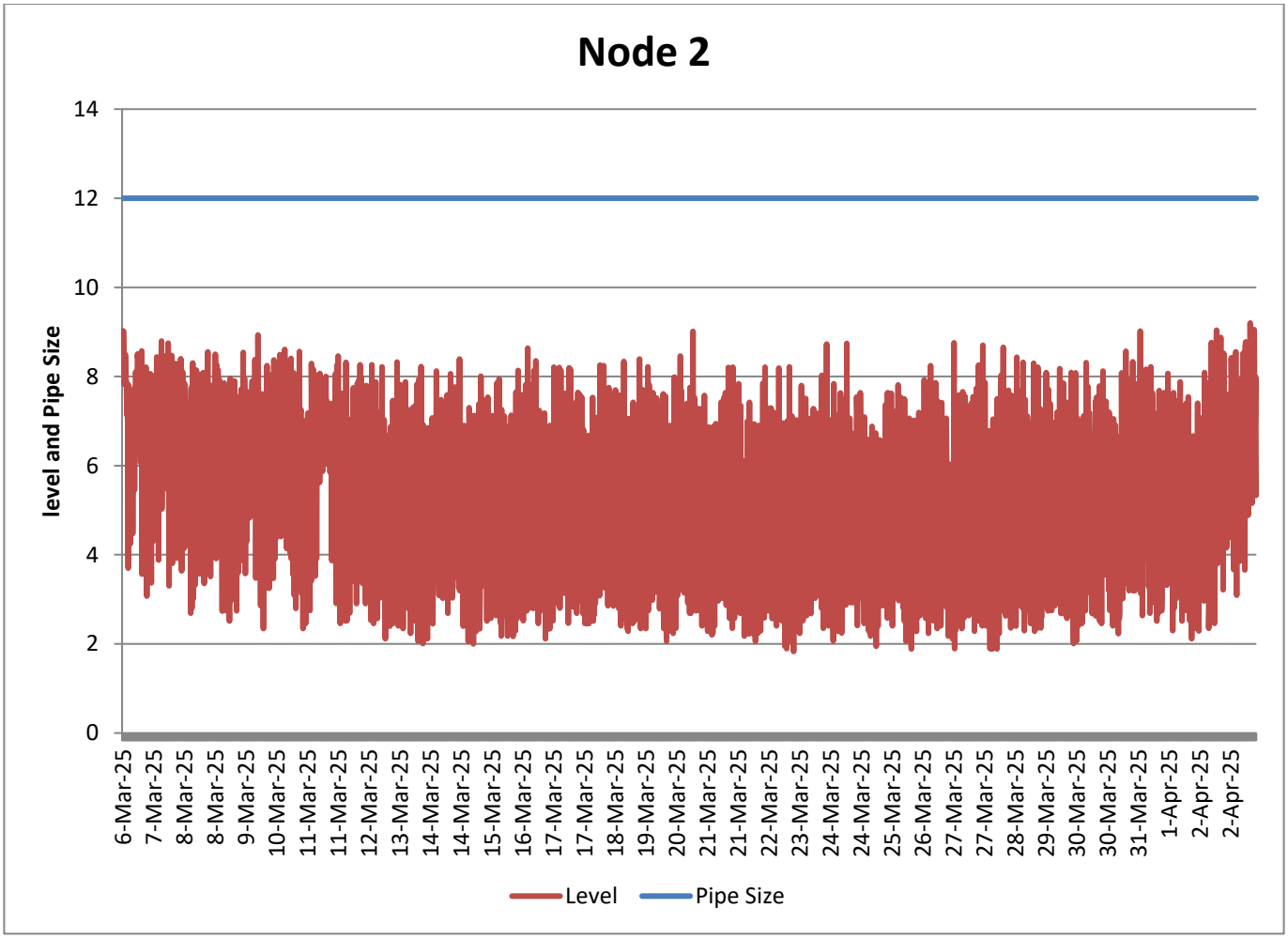
- At no time during the monitoring period did depth of flow exceed pipe diameter at Node 2



# Town of Amherst Sanitary Sewer Downstream Routing Maps

# TOWN OF AMHERST
Erie County, New York

**Downstream Sewer Routing**

**2190 Wehrle Drive**

1 0.5 0 1
Miles

N

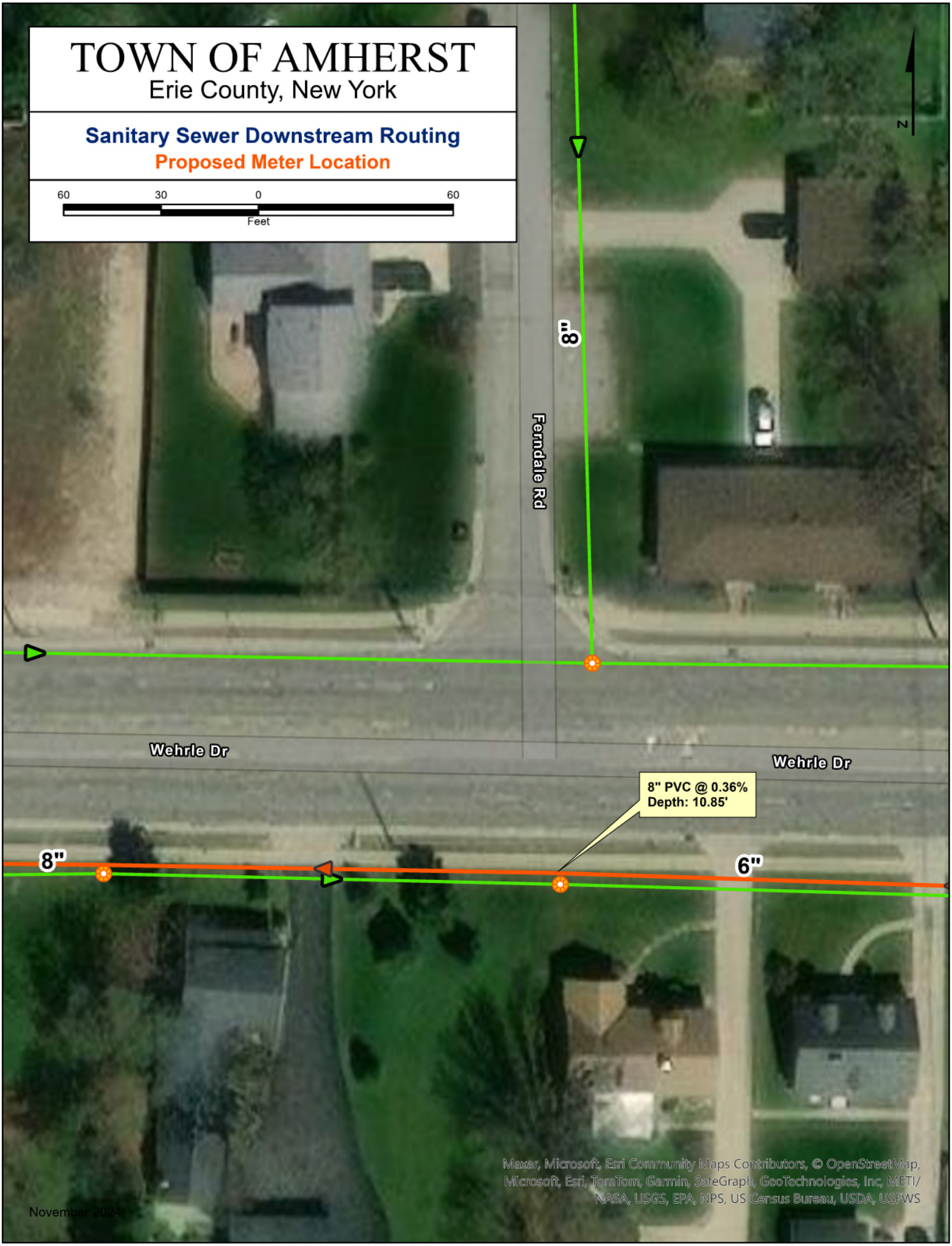
**Legend**

- Project Location
- Flow Location (Updated 2/4/2020)
- DownstreamRouting
- TownBoundary
- Trunk Sewer
- Roads
- Hydrography
- Williamsville
- University at Buffalo

60-inch Peanut Line
Capacity: 57.4 mgd
8.37 mgd Avg. Daily Flow
11.55 mgd Daily Peak Flow
36.60 mgd 2yr.-6hr. Flow

February 2025

A. Pontikos


TOWN OF AMHERST
Erie County, New York
Sanitary Sewer Downstream Routing
Proposed Meter Location
60 30 0 60
Feet
N
8"
Ferndale Rd
Wehrle Dr
Wehrle Dr
8" PVC @ 0.36%
Depth: 10.85'
8"
6"
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November 2024


TOWN OF AMHERST
Erie County, New York
Sanitary Sewer Downstream Routing
Proposed Meter Location
100 50 0 100
Feet
N
Brompton Rd
Buffalo Dental Group
10"
12" PVC @ 0.22%
Depth: 12.45'
Main St
12"
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November 2024