CARMINA WOOD
DESIGN

DOWNSTREAM SANITARY SEWER CAPACITY ANALYSIS REPORT

for

Multi-Family Project

0, 46-84 South Linden Street
Town of Amherst, Erie County, New York

Prepared for

South Linden, LLC

493 Kennedy Road
Cheektowaga, NY 14227

Prepared by

Carmina Wood Design

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November 2025
Rev. December 2025

Project Description

This project is a development of a 2.4 acre site located of the vacant land on South Linden Street in the Town of Amherst. Construction will consist of two multi-family buildings totaling 28 units, with detached garage buildings, associated utility, lighting and landscaping improvements. Currently the site is undeveloped consisting of mostly wooded areas. The proposed site development area to be disturbed for this project is approximately 2.25 acres when construction is completed.

Proposed is approximately 335 lf of 6" SDR-35 PVC private sanitary sewer, connected to the existing public sanitary sewer main along the north side of McIntire Road. Each proposed building will wye connect to the proposed 6" sanitary lateral via 6" SDR-35 PVC sanitary laterals at 1.0% minimum slope. Wastewater from the proposed development will flow north under the thruway then north along Long Street, west along Reist Street, and north along North Forest Road, then west along Sheridan Drive through the Town's West Side Interceptor sewer (54"). Flow then goes west and north until ultimately reaching the Town of Amherst Wastewater Treatment Facility (60" to 84"). Refer to the sewer interceptor map located in the TECSmith monitoring section of the downstream sewer capacity analysis report.

Node 1 – Garden Parkway (12"):

Existing Peak Flow measured (wet weather event)	= 1.675 cfs (1.083 mgd)*
Proposed Multi-Family Peak Flow	= 0.035 cfs**
Proposed Total Peak Flow	= 1.710 cfs

Theoretical capacity of existing 12" VTP pipe @ 0.22% = 1.550 cfs

Conclusion: Monitored flows the day of a 1.81" rainfall event exceeded the theoretical capacity of the existing pipe 12" sewer. However, at no time during the monitoring did the flow depth exceed the pipe diameter at Node 1 did flow slow or stall which would have caused a backup or flooding at the manhole. In addition, Sanitary Sewer Overflow (SSO) did not occur. I/I mitigation shall be required for the contribution of this proposed project, and should occur prior to and/or simultaneously as the project implementation in order to ensure adequate capacity exists, and the risk for an SSO is limited.

Node 2 – 224 N Long Street (18"):

Existing Peak Flow measured (wet weather event)	= 6.080 cfs (3.930 mgd)*
Proposed Multi-Family Peak Flow	= 0.035 cfs**
Proposed Total Peak Flow	= 6.115 cfs

Theoretical capacity of existing 18" VTP pipe @ 0.10% = 3.082 cfs

Conclusion: Monitored flows the day of a 1.81" rainfall event exceeded the theoretical capacity of the existing pipe 18" sewer. However, at no time during the monitoring did the flow depth exceed the pipe diameter at Node 1 did flow slow or stall which would have caused a backup or flooding at the manhole. In addition, Sanitary Sewer Overflow (SSO) did not occur. I/I mitigation shall be required for the contribution of this proposed project, and should occur prior to and/or simultaneously as the project implementation in order to ensure adequate capacity exists, and the risk for an SSO is limited.

Node 3 – West Side Interceptor (54”):

Existing Peak Flow measured (wet weather event)	= 14.774 cfs (9.55 mgd)*
Proposed Multi-Family Peak Flow	= 0.035 cfs**
Proposed Total Peak Flow	= 14.809 cfs

Capacity of existing 54” West Side Interceptor sewer = 56.466 cfs (36.5 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:

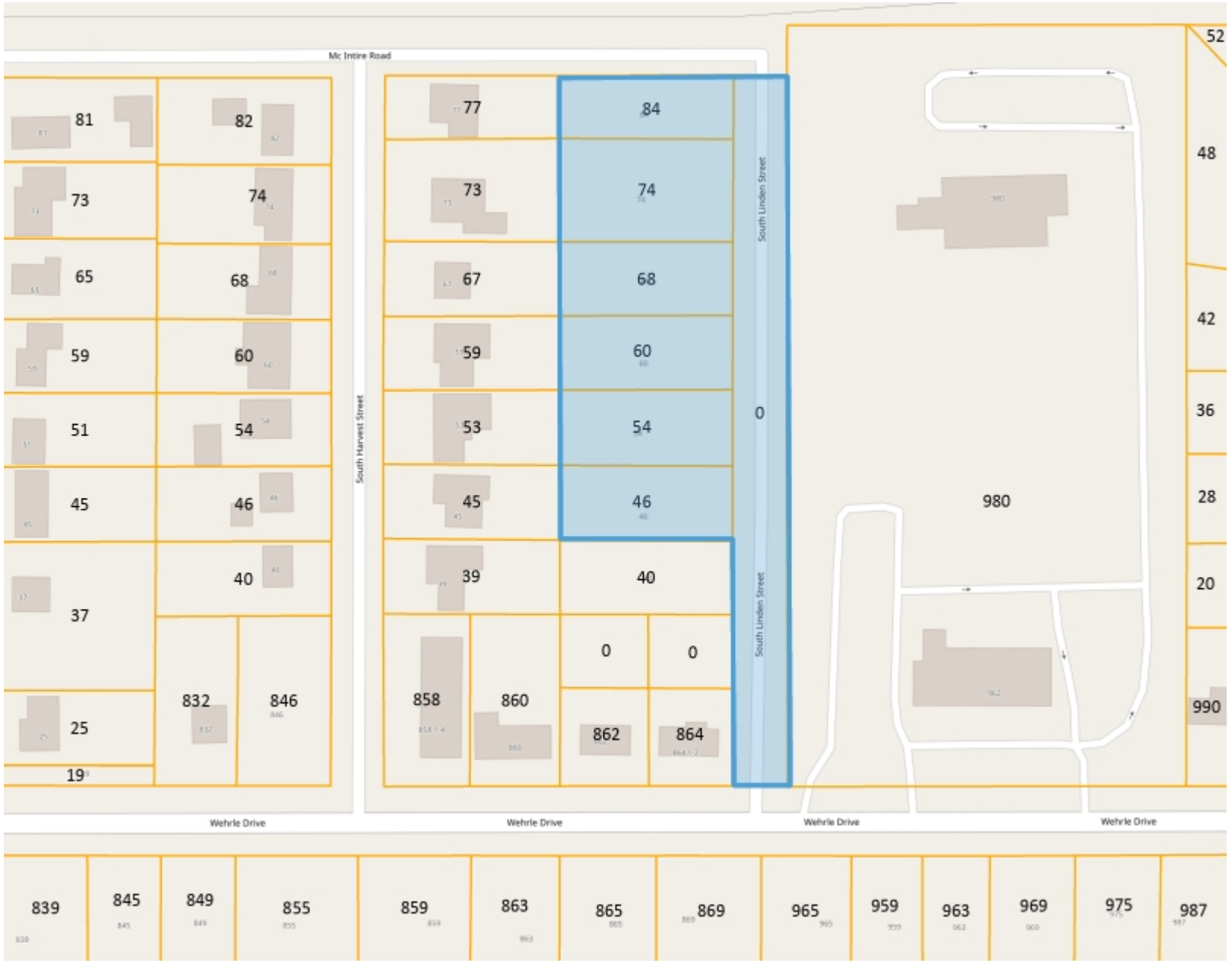
Downstream capacity node information provided by Town of Amherst Engineering Department

*Converted from measurements in TECSmith report dated 11/11/25

**See Sanitary Sewage Demand Calculations

Location Map

Erie County On-Line Mapping Application



Legend

- Parcels

0 0.04 0.1 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

1: 2,257

Sanitary Demand Calculations

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Project No.: 23-4154 Date: 9/22/2025
Project Name: Multi-Family Development rev. 12/15/2025
Project Address: S Linden Street Amherst, NY
Subject: Sanitary Sewer & Water Demand Calcs
Sheet: 1 of 2

Sanitary Sewage Demand Calculations:

110	gal/d/unit	x	12 units	=	1,320	gpd	*use 110 gallons per unit per day (1-bdrm)
220	gal/d/unit	x	12 units	=	2,640	gpd	*use 220 gallons per unit per day (2-bdrm)
330	gal/d/unit	x	4 units	=	1,320	gpd	*use 330 gallons per unit per day (3-bdrm)

Total Site Sanitary Demand: = 5,280 gpd

Find Peak Sanitary Demand:

Peaking Factor based on Population:

Total demand: 5,280 gpd / 100 gpcd = 53 per capita

Population (P) = 53 people

Peaking Factor : $(18 + \sqrt{P}) / (4 + \sqrt{P})$ where P is in thousands

Peaking Factor = 4.31

Peak Sanitary Demand = 5,280 x 4.31 = 22,756 gpd
= 0.023 MGD
= 0.035 cfs

Required Infiltration and Inflow Mitigation:

Peak Sanitary Flow = 22,756 gpd = 15.80 gpm

4:1 offset flow per NYSDEC requirements = 15.80 x 4 = 63.21 gpm req'd

Mitigation Credit = $250 / gpm

Mitigation Agreement Amount = $15,802.83

TECSmith Monitoring Report

TECsmith

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

Date: November 11, 2025

SANITARY SEWER FLOW CAPACITY STUDY – Summary Review

Prepared For: South Linden - Downstream Monitoring Capacity Analysis.

Chris Wood
Carmina Wood Design
80 Silo City Row
Buffalo, New York 14203

Project Name: South Linden - Downstream Monitoring Capacity Analysis.

Flow Monitoring Period: October 8, 2025, to November 5, 2025

Rain Events (> 0.5-inches) Monitored: October 19 (0.53), October 22 (1.81”), and October 30 (0.58”)

Number of Monitoring Nodes: Two (2) downstream manholes

Node Locations and Descriptions:

- Node 1 Garden Parkway (12")
- Node 2 224 North Long Street (18")

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.

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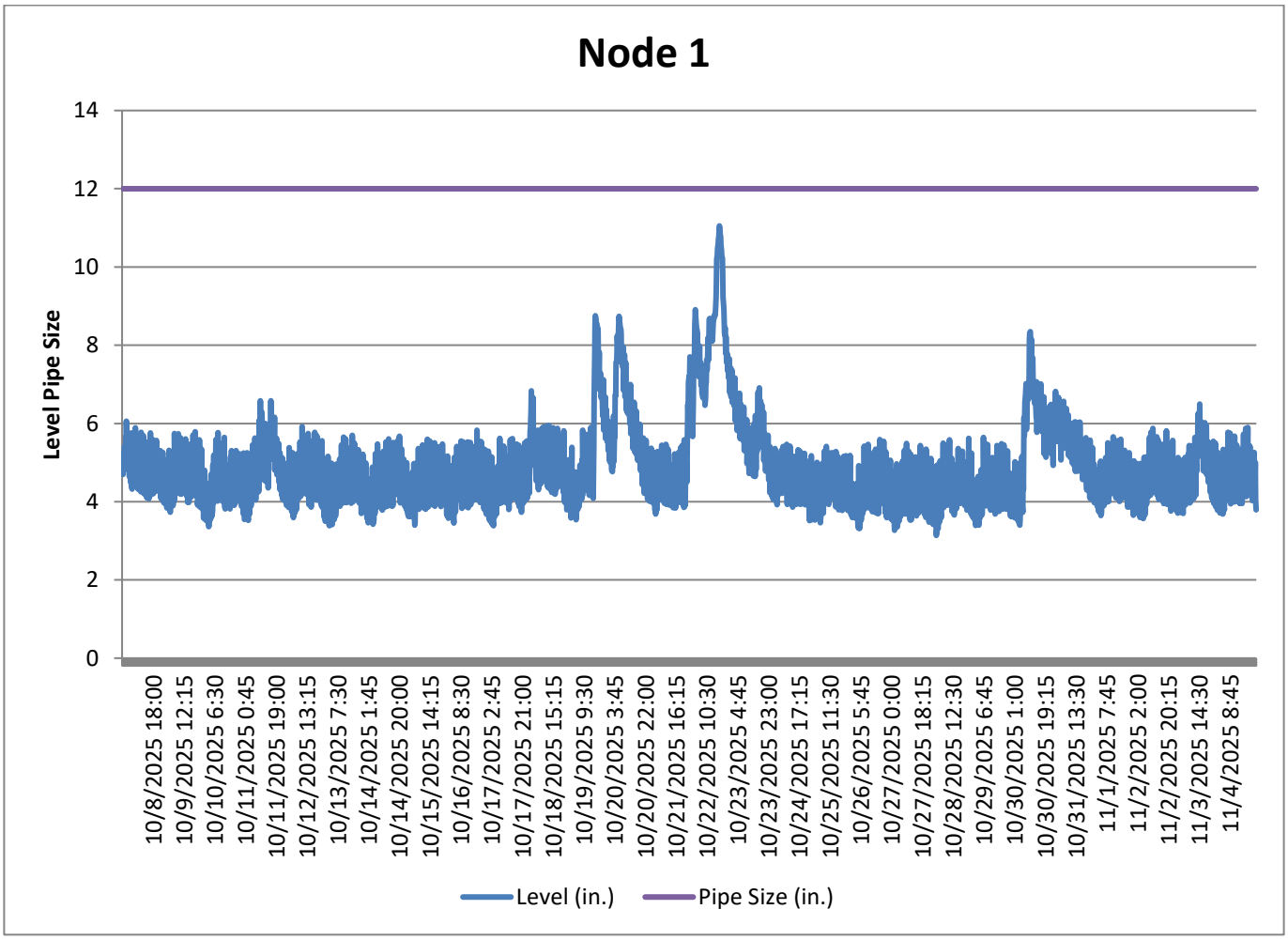
Depth of Flow Capacity Summary:

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 1.



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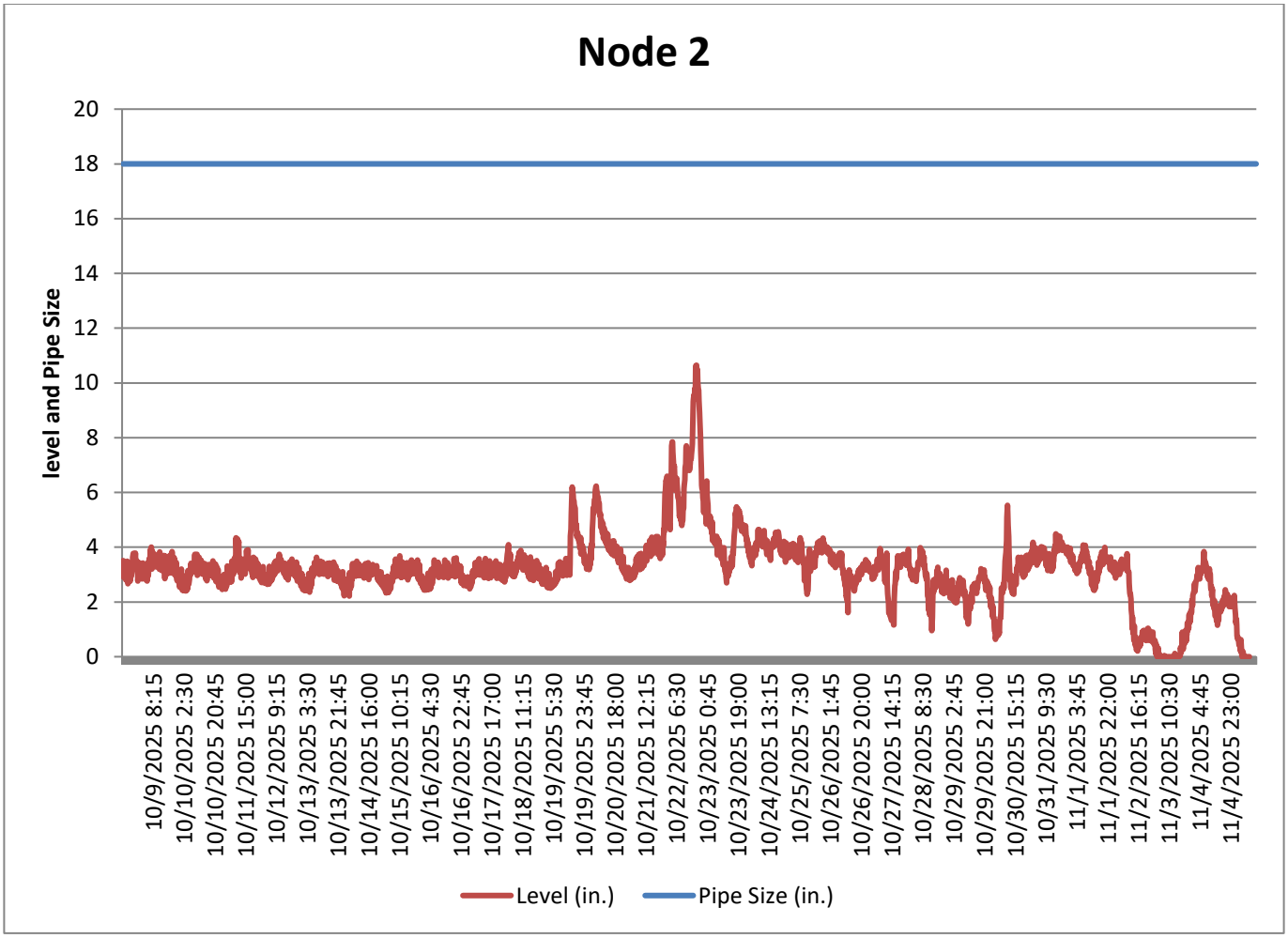
- At no time during the monitoring period did depth of flow exceed pipe diameter at Node 2.



Date	Node 1				Node 2				Rain
	Garden Parkway (12")				224 N Long (18")				
	FLOW (GAL x 1,000)	PEAK FLOW (MGD)	PEAK VEL. (FPS)	PEAK LEVEL (IN)	FLOW (GAL x 1,000)	PEAK FLOW (MGD)	PEAK VEL. (FPS)	PEAK LEVEL (IN)	(inches)
10/8/2025	141.938	0.272	1.146	6.060	191.020	0.676	4.355	3.780	***0.05***
10/9/2025	80.179	0.255	1.102	5.790	500.304	0.778	4.240	4.010	***0***
10/10/2025	123.079	0.330	1.672	5.770	447.470	0.723	4.235	3.740	***0***
10/11/2025	141.519	0.312	1.722	6.580	491.420	0.890	4.435	4.340	***0.39***
10/12/2025	131.728	0.360	1.589	5.920	459.709	0.676	4.248	3.730	***0***
10/13/2025	139.641	0.307	1.408	5.700	449.144	0.639	4.190	3.640	***0***
10/14/2025	128.719	0.257	1.163	5.670	442.953	0.641	4.284	3.480	***0***
10/15/2025	132.427	0.271	1.279	5.600	429.175	0.719	4.277	3.680	***0***
10/16/2025	104.297	0.276	1.202	5.830	419.202	0.671	4.017	3.610	***0***
10/17/2025	113.700	0.245	1.658	5.620	397.751	0.625	4.291	3.590	***0***
10/18/2025	145.204	0.408	1.446	6.830	488.510	0.798	5.463	4.090	***0.24***
10/19/2025	215.276	0.650	1.642	8.750	644.350	1.817	5.463	6.200	***0.53***
10/20/2025	206.121	0.645	1.657	8.740	917.727	1.914	5.628	6.230	***0.38***
10/21/2025	146.612	0.438	1.414	7.040	635.355	1.570	4.734	5.980	***0.29***
10/22/2025	528.442	1.083	2.216	11.050	2188.124	3.930	5.931	10.640	***1.81***
10/23/2025	182.984	0.378	1.702	7.660	1036.431	2.125	5.814	6.420	***0.13***
10/24/2025	139.638	0.291	1.293	5.470	800.895	1.008	4.743	4.640	***0***
10/25/2025	101.755	0.227	1.121	5.410	654.687	0.862	4.423	4.340	***0.01***
10/26/2025	95.929	0.247	1.115	5.590	506.091	0.756	4.529	4.000	***0***
10/27/2025	100.560	0.268	1.369	5.490	466.145	0.734	4.467	3.940	***0***
10/28/2025	96.931	0.218	1.137	5.620	426.896	0.767	4.413	3.980	***0***
10/29/2025	105.942	0.291	1.451	5.640	339.315	0.595	4.401	3.210	***0***
10/30/2025	195.161	0.587	1.600	8.350	463.663	1.584	5.434	5.530	***0.58***
10/31/2025	124.930	0.281	1.216	6.820	712.735	0.993	4.724	4.490	***0.08***
11/1/2025	123.063	0.243	1.110	5.660	564.455	0.838	4.557	4.080	***0***
11/2/2025	79.170	0.223	1.030	5.880	244.576	0.761	4.516	3.760	***0***
11/3/2025	114.708	0.293	1.157	6.490	6.290	0.214	4.173	1.660	***0.11***
11/4/2025	123.773	0.279	1.178	5.900	346.374	0.747	4.756	3.840	***0***
11/5/2025	40.298	0.273	1.176	5.600	23.151	0.339	4.158	2.240	***0.11***
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Town of Amherst Sanitary Sewer Downstream Routing Maps

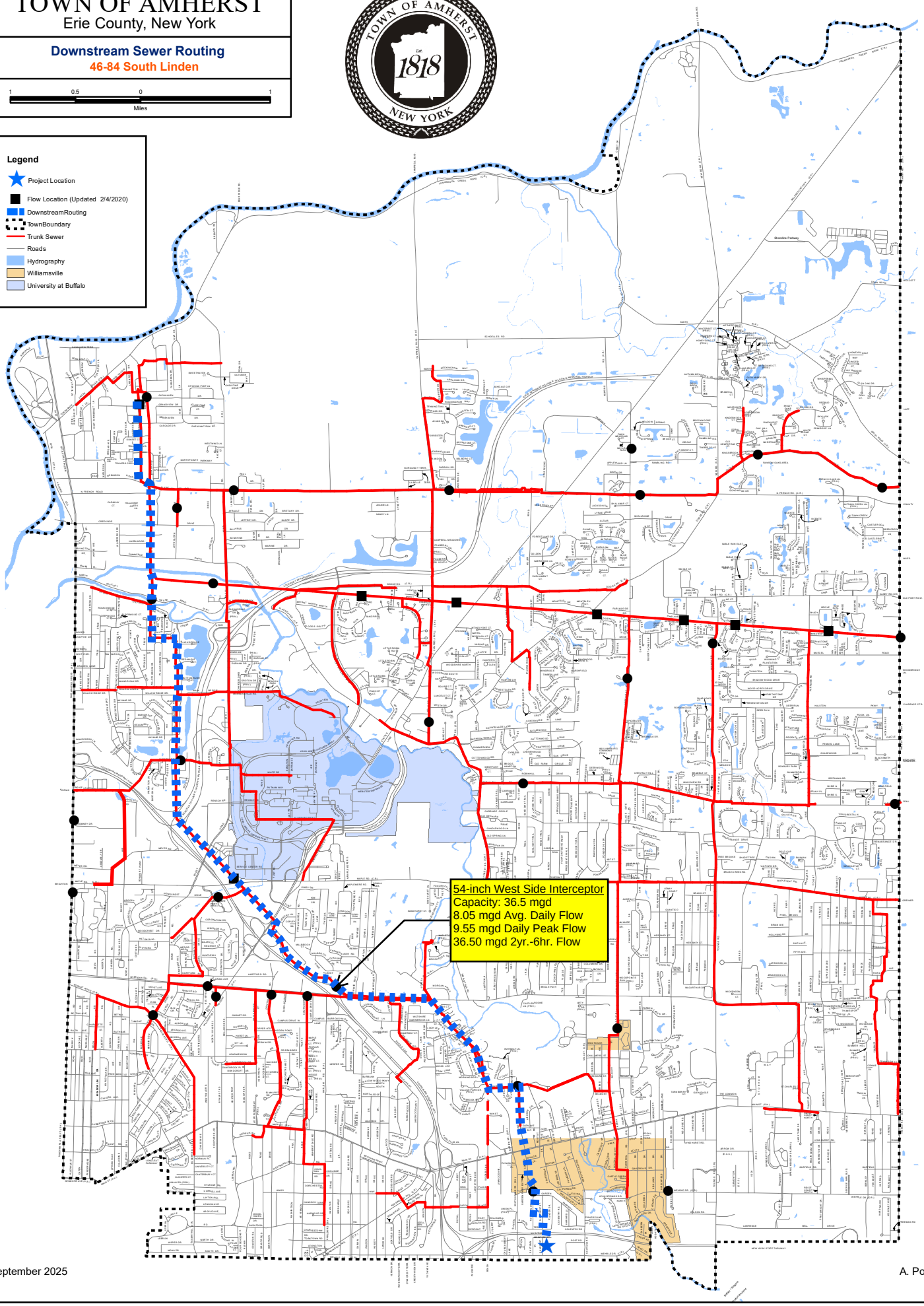
TOWN OF AMHERST
Erie County, New York

Downstream Sewer Routing
46-84 South Linden

1 0.5 0 1
Miles

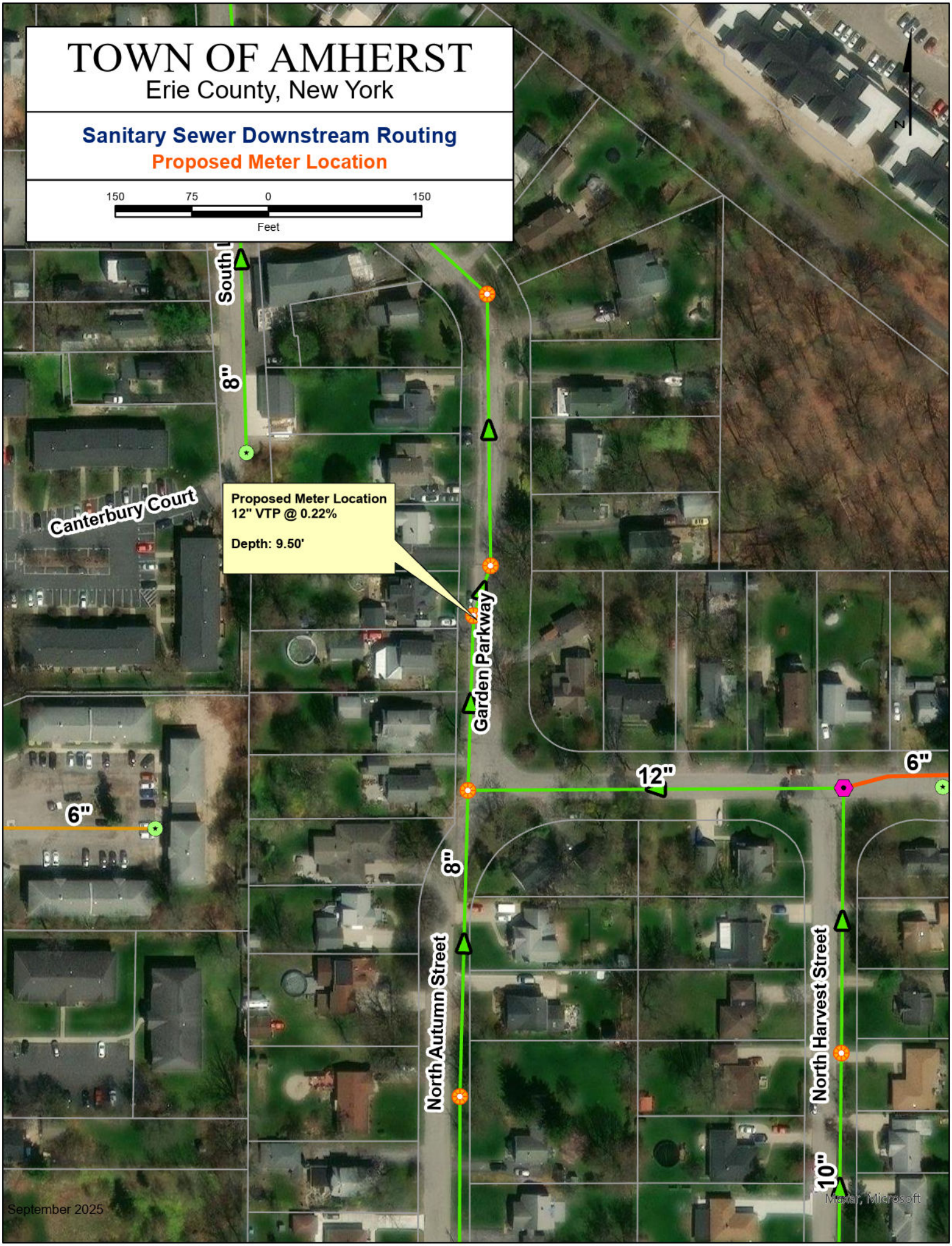
N

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



September 2025

A. Pontikos


TOWN OF AMHERST
Erie County, New York
Sanitary Sewer Downstream Routing
Proposed Meter Location
150 75 0 150
Feet
N
South
8"
Canterbury Court
Proposed Meter Location
12" VTP @ 0.22%
Depth: 9.50'
Garden Parkway
12"
6"
6"
8"
North Autumn Street
North Harvest Street
10"
September 2025
Maxar, Microsoft


TOWN OF AMHERST
Erie County, New York
Sanitary Sewer Downstream Routing
Proposed Meter Location
150 75 0 150
Feet
N
Reist Street
24"
30"
10"
18"
Proposed Meter Location
18" VTP @ 0.10%
Depth: 8.25'
8"
North Long Street
September 2025
Maxar, Microsoft