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*Map and Plan*

# Portland-Pomfret-Dunkirk Sewer District

Prepared for

**Chautauqua County**

3 North Erie Street  
Mayville, New York



July 2022

**Barton & Loguidice**

Portland-Pomfret-Dunkirk Sewer District Inflow & Infiltration Reduction Study  
Chautauqua County, New York

Map and Plan

July 2022

Prepared for

Chautauqua County  
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Mayville, New York 14757

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1.0 Authorization

Chautauqua County retained the services of Barton & Loguidice, D.P.C. (B&L) to prepare a this Map and Plan for the Portland-Pomfret-Dunkirk Sewer District (PPDSD) – Sanitary Sewer Improvements Project.

## 2.0 Background

Chautauqua County owns and operates the Portland-Pomfret-Dunkirk Sewer District (PPDSD), which contains various sanitary sewer collection system and pumping infrastructure. Figure 1 shows mapping of the entire collection system of the PPDSD.

A majority of the sanitary sewer collection system was constructed in the early 1980s and consists of PVC pipe and precast concrete manholes. The Van Buren Point and Shore Acres neighborhoods' sanitary sewer systems were both installed in the 1930s, and consist of a combination of vitrified clay and PVC pipe, and brick or precast concrete manholes. A majority of the manholes in the Van Buren Point neighborhood were replaced by the sewer district in the 1980s; however, few additional improvements to the collection system piping have been completed since original construction. Almost no improvements have been made to the Shore Acres neighborhood collection system since original construction.

A description of the infrastructure in the district is described below:

- Approximately 147 manholes
- Approximately 12,000 feet of 6-inch gravity sewer
- Approximately 16,000 feet of 8-inch gravity sewer
- Approximately 3,100 feet of 10-inch gravity sewer
- Approximately 850 feet of 12-inch gravity sewer
- Approximately 4,000 feet of 4-inch sewer force main
- Approximately 11,600 feet of 8-inch sewer force main
- Five (5) main pump stations
- One (1) small lift station
- Flows conveyed to Village of Fredonia WWTP

### 3.0 Proposed Improvements

A Preliminary Engineering Report was completed in June of 2022 that included a detailed analysis of the PPDS collection system. This analysis included various field investigations that included manhole inspections, sewer televising, smoke testing, flow monitoring, and wet weather flow investigations. As a result of the previously completed detailed engineering study, the following improvements have been recommended to be completed in the PPDS collection system:

- Approximately 6,800 of Additional Sewer Televising
- Approximately 5,000 linear feet of Cured-In-Place Pipe Lining (CIPP)
- Approximately 2,000 linear feet of Sewer Main Replacement with
- Various open cut spot repairs (estimated 10 total)
- Rehabilitation of Approximately 100 manholes
- Rehabilitation of Pump Stations 4 and 5
- Minor Building improvements at all five (5) pump stations
- Rehabilitation of Meter Vault
- Various Miscellaneous Additional Minor Improvements

Specific known improvements are further detailed in Appendix A and Figure 2; however, required additional improvements will be discovered during the project's final design stage and as a result of additional televising. The cost and approximate quantities of these additional improvements are included in the above and project cost estimates, but not detailed on Appendix A and Figure 2.

#### 4.0 Estimate of Probable Cost and Project Financing

The estimated capital cost for the recommended improvements in Section 3.0 is \$1,612,000 (inflated for construction). The PPDS is broken into three distinct areas, the Van Buren Point neighborhood, the Shore Acres neighborhood, and the remaining areas of the district. Itemized cost estimates are included in Appendix B detailing costs breakdowns for each area. The maximum amount to be expended for this project is \$1,612,000.

The County intends to finance the project through NYSEFC financing and other potential grants. The potential financing scenarios, broken down by neighborhood, are summarized in the table below and included in Appendix C. Actual financing for the proposed improvements may vary, and should be explored further by the County.

Table 4-1: Estimated Annual User Cost Summary

Neighborhood	Potential Financing Scenario	Maximum Amount to be Expended	Total Potential Grant	Estimated Annual User Cost Increase
Van Buren Point	EFC Hardship Loan (30 yr, 0%) and a 25% CWSRF or WIIA Grant	\$1,108,000	\$277,000	\$161
Shore Acres	EFC Hardship Loan (30 yr, 0%) and a 25% CWSRF or WIIA Grant	\$289,000	\$72,250	\$268
Other Remaining Areas	EFC Hardship Loan (30 yr, 0%) and a 25% CWSRF or WIIA Grant	\$215,000	\$53,750	\$17

## 5.0 Implementation

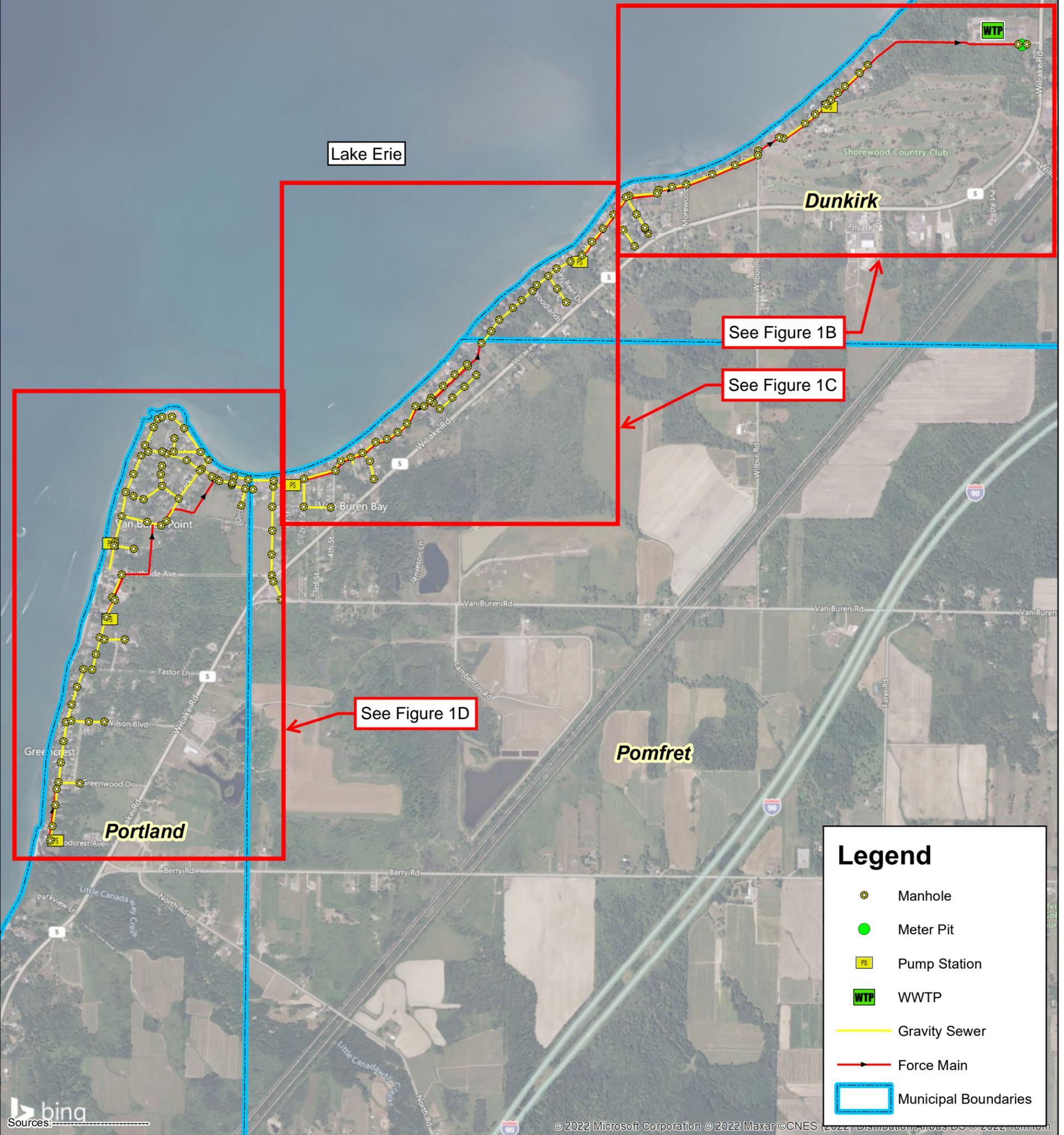
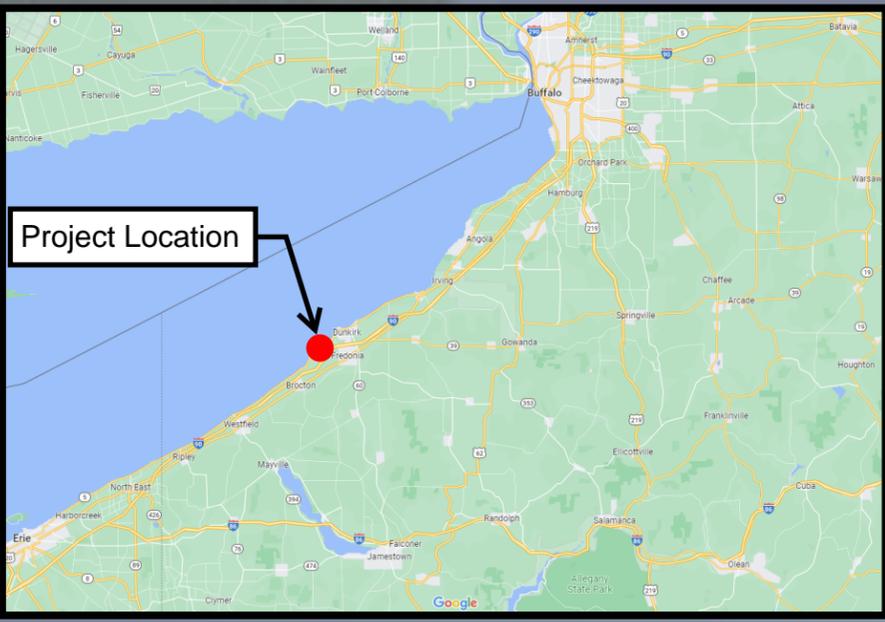
It is recommended that this report be presented to PPDS customers at a Public Informational Meeting. Assuming the County decides to move forward with the improvements project, steps and timeframe for project implementation generally include the following:

- 1.) County accepts Map and Plan
- 2.) Environmental Review (SEQR)
- 3.) Public meeting on proposed improvements
- 4.) County resolution with environmental findings authorizing improvements
- 5.) Bond Resolution
- 6.) Secure Municipal Bond/Funding
- 7.) Design
- 8.) Bidding and Construction

Figures

Figure 1

Project Location and Existing System Map





Lake Erie

Village of Fredonia WWTP

WTP

Pump Station 1

**Legend**

- Meter Pit
- PS Pump Station
- WTP WWTP
- Gravity Sewer
- Force Main

**Manhole**

- X Manhole

Sources: bing

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**Legend**

-  Pump Station
-  WWTP
-  Gravity Sewer
-  Force Main
-  Manhole

Lake Erie

Pump Station 3

Lift Station

Pump Station 4

Pump Station 5

**Legend**

- PS Pump Station
- WTP WWTP
- Gravity Sewer
- Force Main
- Manhole

Sources:-----

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1 inch = 500 feet

Figure 2

Recommended Improvements Map



### Legend

- Meter Pit
- PS Pump Station
- WTP WWTP
- Force Main

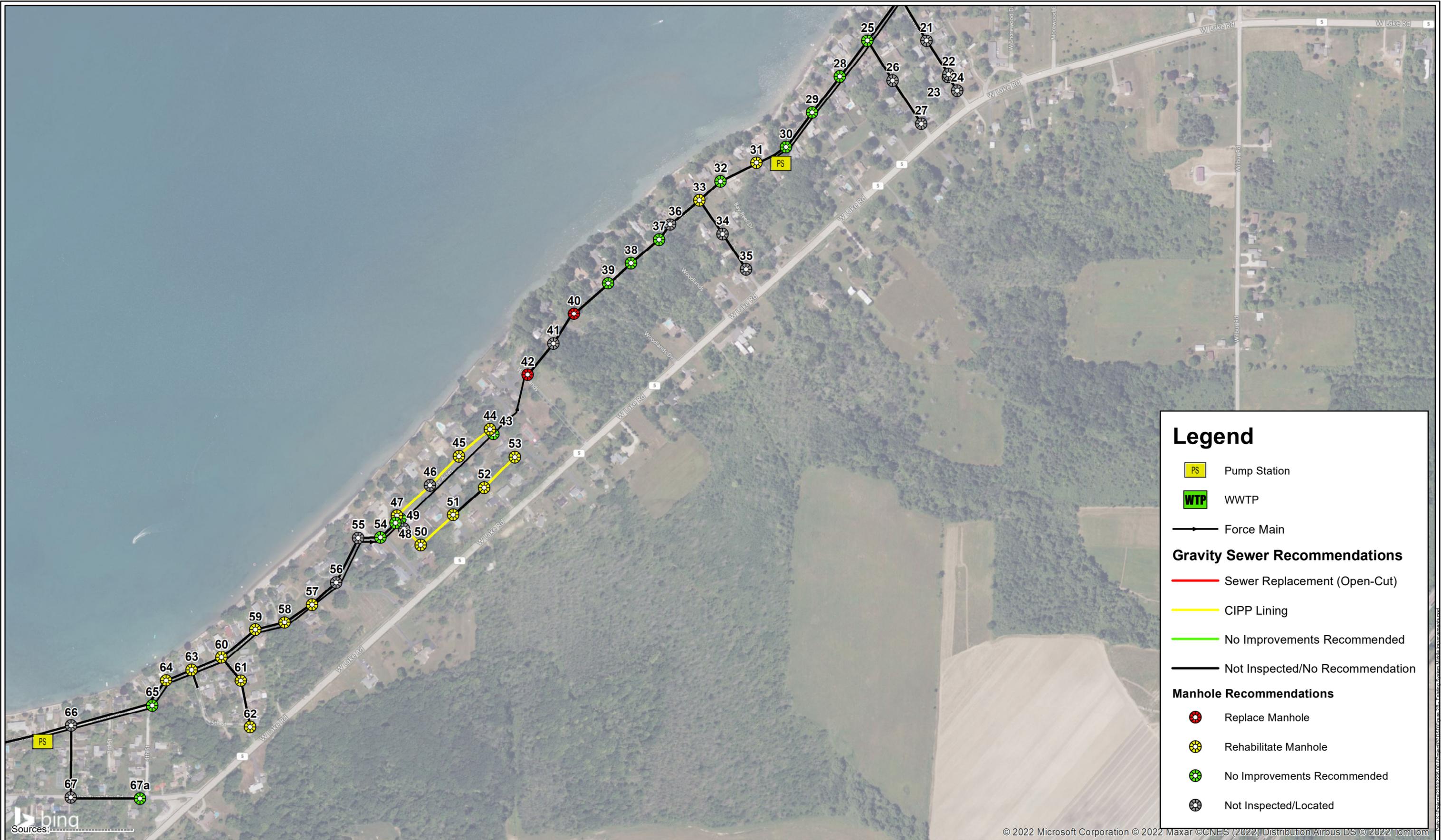
#### Gravity Sewer Recommendations

- Sewer Replacement (Open-Cut)
- CIPP Lining
- No Improvements Recommended
- Not Inspected/No Recommendation

#### Manhole Recommendations

- ⊗ Replace Manhole
- ⊗ Rehabilitate Manhole
- ⊗ No Improvements Recommended
- ⊗ Not Inspected/Located

Path: K:\Projects\2300225\001\Project\PSDF\Figure 2A - Existing System North Improvements.mxd



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**Legend**

- PS Pump Station
- WTP Wastewater Treatment Plant
- Force Main
- Gravity Sewer Recommendations**
- Sewer Replacement (Open-Cut)
- CIPP Lining
- No Improvements Recommended
- Not Inspected/No Recommendation
- Manhole Recommendation**
- Replace Manhole
- Rehabilitate Existing Manhole
- No Improvements Recommended
- Not Inspected/Located

Sources: bing

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## Appendices

## Appendix A

### Manhole Rehabilitation Table

PORTLAND-POMFRET-DUNKIRK SEWER DISTRICT  
RECOMMENDED MANHOLE REHABILITATION PROGRAM

MH #	Street Name	Location	Depth (ft)	Item #1 - Riser Installation	Item #2 - New Frame and Cover	Item #3 - Reform Bench/Channel	Item #4 - Joint Sealing	Item #5 - Infiltration Control	Item #6 - Void Patching	Item #7 - Cementitious Coating	Item #8 - Epoxy Coating	Item #9 - Chimney Seal	Item #10 - Replace Manhole
1A	WWTP Access Road	Grass	8.17								X		X
1B	WWTP Access Road	Grass	7.00								X		X
3	Shorewood Drive East	Road	-	X									
8	Shorewood Drive East	Road	-										
9	Shorewood Drive East	Parking Lot	-				X						
10	Shorewood Drive East	Parking Lot	4.50				X						
12	Morewood Drive	Road	6.92										
13	Morewood Drive	Road	8.67										
14	Morewood Drive	Road	9.50										
15	Morewood Drive	Grass	8.67	X									
16	Morewood Drive	Grass	9.00										
19	Shorewood Drive West	Road	11.67										
20	Shorewood Drive West	Road	11.00										
25	Shorewood Drive West	Road	11.00										
28	Shorewood Drive West	Road	11.25										
29	Shorewood Drive West	Road	-										
30	Shorewood Drive West	Grass	10.50										
31	Shorewood Drive West	Road	13.50								X		
32	Shorewood Drive West	Road	10.67										
33	Shorewood Drive West	Road	-	X									
37	Shorewood Drive West	Road	10.75										
38	Shorewood Drive West	Grass	-										
39	Shorewood Drive West	Grass	9.17										
40	Shorewood Drive West	Grass	-								X		X
42	Shorewood Drive West	Grass	8.67								X		X
43	Shore Acres	Road	6.50										
44	Shore Acres	Gravel Driveway	6.17							X			
45	Shore Acres	Grass	5.42							X			
47	Shore Acres	Grass	3.33										
48	Shore Acres	Road	9.17										
48a	Shore Acres	Road	8.83										
50	Shore Acres	Grass	3.50	X						X			
51	Shore Acres	Grass	4.33	X	X					X			
52	Shore Acres	Grass	5.00	X						X			
53	Shore Acres	Grass	3.75							X			
54	Shore Acres	Road	9.00										
57	5260 West Lake Road	Grass	8.25	X									
58	Lakeside Blvd Ext.	Grass	-	X									
59	Lakeside Blvd Ext.	Road	-	X									
60	Lakeside Blvd Ext.	Road	-	X									
61	6th Street	Road	-	X									
62	6th Street	Road	7.00					X					



PORTLAND-POMFRET-DUNKIRK SEWER DISTRICT  
RECOMMENDED MANHOLE REHABILITATION PROGRAM

MH #	Street Name	Location	Depth (ft)	Item #1 - Riser Installation	Item #2 - New Frame and Cover	Item #3 - Reform Bench/Channel	Item #4 - Joint Sealing	Item #5 - Infiltration Control	Item #6 - Void Patching	Item #7 - Cementitious Coating	Item #8 - Epoxy Coating	Item #9 - Chimney Seal	Item #10 - Replace Manhole
119	Beach Place	Grass	11.00	X				X					
120	Beach Place	Road	11.00										
120A	Beach Place	Grass	6.25	X									
120B	Beach Place	Grass	5.50										
126	Wilson Blvd	Road	8.00										
126A	Wilson Blvd	Grass	6.42					X					
126B	Wilson Blvd	Grass	6.25					X					
126C	Wilson Blvd	Grass	7.25					X					
127	Patterson Lane	Road	-	X									
128	Patterson Lane	Road	-	X									
129	Patterson Lane	Road	-	X									
130	Patterson Lane	Road	7.75										
				21 Ea.	1 Ea.	0 Ea.	2 Ea.	9 Ea.	0 Ea.	28.17 Ft.	43.5 Ft.	0 Ea.	23.83 Ft.
				\$1,500	\$1,500	\$2,000	\$1,150	\$1,400	\$750	\$300	\$600	\$650	\$600
				\$31,500	\$1,500	\$0	\$2,300	\$12,600	\$0	\$8,450	\$26,100	\$0	\$14,300
TOTAL:				\$82,450									

## Appendix B

### Recommended Project Budget Cost Estimate





## Remaining Areas of District Improvements

Item	Description	QTY	Unit	Unit Cost	Total	
1	Manhole Rehabilitation	1	LS	\$39,800.00	\$39,800	
2	Furnish and Install New Manhole	24	VLF	\$600.00	\$14,400	
3	Pump Station Rehabilitation	1	LS	\$50,000.00	\$50,000	
4	Meter Pit Rehabilitation	0.33	LS	\$25,000.00	\$8,333	
5	Miscellaneous Additional Improvements	0.33	LS	\$50,000.00	\$16,667	
<i>Subtotal</i>					<i>\$129,000</i>	
				Inflation to 2024	10%	\$13,000
				Contractor General Conditions	5%	\$6,000
SUBTOTAL OF CONSTRUCTION COSTS					\$148,000	
				Engineering/Legal/Administrative	25%	\$37,000
				Contingency	20%	\$30,000
Estimated Probable Project Cost					\$215,000	

## Appendix C

### Project Financing

**Portland-Pomfret-Dunkirk Sewer District Service Area  
 Financing Breakdown by Neighborhood**

<b>ALTERNATIVE PRELIMINARY PLANS OF FINANCE</b>			
	<b>Van Buren Point</b>	<b>Shore Acres</b>	<b>Remaining Areas</b>
	<b>EFC Hardship Loan and 25% CWSRF/WIIA Grant</b>	<b>EFC Hardship Loan and 25% CWSRF/WIIA Grant</b>	<b>EFC Hardship Loan and 25% CWSRF/WIIA Grant</b>
Rate	0.00%	0.00%	0.00%
Term Length	30	30	30
WIIA Grant (25%)	\$277,000	\$72,250	\$53,750
Congressional Community Project Funding	\$0	\$0	\$0
Estimated Project Cost	\$1,108,000	\$289,000	\$215,000
Total Loan Amount	\$831,000	\$216,750	\$161,250
Annualized Project Cost	\$27,700	\$7,225	\$5,375
<b>Debt Structure</b>			
Number of EDU's	172	27	310
Current Annual Cost Per EDU	\$595	\$853	\$769
Increase in Annual Cost Per EDU	\$161	\$268	\$17
Future Total Annual Cost Per EDU	\$756	\$1,121	\$786

Note: Annual User Costs do not account for treatment cost savings due to reduction in I/I

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**listen**  
*The power to*  
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