Springport-Fleming Water District Map and Plan

Fleming-Springport-Owasco Joint Water Project

March 2025

Prepared by:
Square Engineering D.P.C.
1385 Hertel Avenue
Buffalo, NY 14216

Prepared for:
Springport-Fleming Water District
(Springport District #2 / Fleming District #6)

square
engineering

Table of Contents

Figures

Appendices

1. Authorization

The Towns of Springport and Fleming authorized Square Engineering D.P.C, a NYS licensed professional engineering company, to prepare this Map and Plan for the Springport-Fleming Water District. The Map and Plan was prepared in accordance with NYS Town Law § 202-b.

2. Executive Summary

The Towns of Springport and Fleming jointly own and operate the Springport-Fleming Water District, a shared water distribution system. Separately, the Town of Owasco owns and manages the Owasco Water District, which also supplies water to the Fleming Consolidated Water District in the Town of Fleming. Each of these districts—the Springport-Fleming Water District, the Fleming Consolidated Water District, and the Owasco Water District—faces deficiencies, primarily related to the need for water main replacements and the optimization of operations.

This project aims to address deficiencies while enhancing operational efficiency and reducing costs through collaboration among the three townships. A key component of the project is the connection of the Springport-Fleming Water District to the Fleming Consolidated Water District, enabling water to be supplied from the Owasco Water District. This transition will provide a more cost-effective water supply for the Springport-Fleming Water District, which currently purchases water from the Cayuga County Water and Sewer Authority (CCWSA). By switching suppliers, all three townships will benefit—Owasco Water District will see increased revenue from water sales, while Springport and Fleming users will experience lower water purchase costs.

This report describes the various capital improvements that can be made to address infrastructure needs under a joint water system improvement project involving all three water districts. The total estimated cost of the entire joint project will be $7,821,000. However, of this entire joint project cost, the maximum amount to be expended by the Springport-Fleming Water District is estimated to be $4,939,496. Although total annual water user costs for the Springport-Fleming Water District is expected to increase due to capital improvements, the District will benefit from lower water purchase costs and stable long term water purchase rate. Exact impacts to user costs will vary dependent on the amount of grants secured. The yearly savings on water purchase cost will offset some, but not all yearly capital debt. Cost impacts to users will be dependent on the project's final funding package.

3. Background and Existing Facilities

3.1. Project Location

The three water service areas included under the overall joint project each operate under distinct and separate management structures. The Town of Owasco oversees the Owasco Water District, while the Town of Fleming manages the Fleming Consolidated Water District. The Springport-Fleming Water District—including Springport Water District #2 and Fleming Water District #6—is jointly managed by the Towns of Fleming and Springport. A map of the project location and existing water facilities is provided in Figure 1.

3.2. Springport-Fleming Water District

3.2.1. System Overview

The Springport-Fleming Water District includes areas in the central and eastern portions of the Town of Springport as well as areas in the western portions of the Town of Fleming. Water is provided to the District by the Cayuga County Sewer and Water Authority (CCWSA) through a meter pit connection located on Pinckney Road near Half Acre Road in the Town of Aurelius. The CCWSA purchases the water from the City of Auburn and resells it to the Springport-Fleming Water District. The cost of water purchase has been recently subject to significant increases and is much higher other nearby communities. The District not only pays an increase rate from the City of Auburn as an outside user, they pay additional mark up from the CCWSA. The City of Auburns water source is Owasco Lake.

3.2.2. System Deficiencies

A significant challenge facing the water system is the instability and unpredictability of water rates. The District is subject to political and financial factors beyond its control, making long-term financial planning difficult without a stable and reasonably priced water purchase contract. Additionally, the district has various infrastructure deficiencies that contribute to increase water usage. It has been reported that, despite being relatively new, approximately 9,500 feet of the 12-inch water main from the meter on Pickney Road to Lockwood Road was not properly bedded during installation and rests directly on rock. As a result, this section experiences frequent leaks and breaks, requiring continuous maintenance. Another area of improvement that could be completed is with shared service operations. The District may be able to shares services with nearby other District's (Owasco, Fleming) to reduce operation costs.

3.3. Fleming Consolidated Water District

3.3.1. System Overview

The Fleming Consolidated Water District includes areas in the central and eastern portions of the Town of Fleming. Water is provided to the District by the Town of Owasco through a meter pit connection located in Emerson Park. The Town of Fleming

intermunicipal agreement with the Town of Owasco currently includes a minimum water purchase of 150,000 gallons per day (54,750,000 gallons per year). The average Fleming usage for the last 3 years has been 47,394,080 and therefore the District is charged for some water that they do not use.

3.3.2. System Deficiencies

The Fleming Consolidated District is served from Owasco off of a 12-inch water main that crosses the Owasco Outlet in Emerson Park. After the water main crosses the Outlet it heads northwest into the Lake Road/Sand Beach Road/White Bridge Road traffic circle where the water main reduces to a 6-inch pipe. The 6-inch pipe travels down Lake Road and essentially serves as the main water service to the entire Fleming Consolidated district. This 6-inch main is not only undersized, creating a bottleneck in the Fleming Consolidated District, but the 6-inch main is the only way water is transported to the District making it an extremely critical piece of infrastructure. The lack of redundancy, old age, and small size of the 6-inch transmission main is a major deficiency and puts the Fleming Consolidated District at great risk of losing water during main breaks.

The Fleming Consolidated District also contains various antiquated water mains that are aged, experiences frequent breaks, and need replacement. The following sections of water main in the Town of Fleming were reported by the Town to be deficient:

- Willowbrook Road - 1,900 feet of water main along Willowbrook Road between Route 34 and Dunning Ave
- Route 34B - 2,100 feet of water main along Route 34B from Route 34 south to the end of the existing water system

3.4. Owasco Water District

3.4.1. System Overview

The Owasco Water District includes areas in the northwestern and southwestern portions of the Town of Owasco. Operationally, the water system is broken up into two water districts the northern water district (sometimes referred to as "District 1") and the southern water district (sometimes referred to as "District 2"). The Town Fleming Consolidated Water District (sometimes referred to by Owasco as "District 3") purchases bulk water from the Town of Owasco through a connection located in Emerson Park from the Owasco northern water district. Owasco's District 1 distribution system contains approximately 98,500 feet of piping, which ranges in size from 4-inch to 18-inch piping. A wide variety of pipe materials including cast iron, asbestos cement, ductile iron, PVC, and galvanized steel are located within the water system. Owasco currently has plans to replace various sections of old distribution piping.

3.4.2. System Deficiencies

The Owasco Water system does contain a significant amount of antiquated distribution piping and various other deficiencies, however the purpose of this project is to have Owasco efficiently share services with the Town of Fleming and the Town of Springport. Key infrastructure in Owasco that would be related to Fleming and Springport includes the low lift station, water treatment filters, high lift pumps, transmission piping (from Water Plant and to Fleming and to the Town Hall Road Tank), and the Town Hall Road Tank. This infrastructure is largely in good condition and much of it is less than 10 years old, with the major exception of the 8" Asbestos Cement water main from the water plant to Martins Point. Based on hydraulic modeling and field investigations previously completed by Barton and Loguidice, this water main creates a considerable amount of head loss for unknown reasons and should be replaced based on the pipe material (Asbestos Cement). Asbestos cement piping is considered hazardous to human health.

4. Equivalent Dwelling Units of Each District

An equivalent dwelling unit (EDU) is the unit to which a community charges a customer for utility service. An EDU generally equates all customers to a typical single-family home, with one single family being assessed one EDU. There are three separate water districts that would be involved in this joint project and EDU information for each District is summarized below. All three water districts consist of mostly residential users, although there is some sporadic commercial development through the different districts.

Water District	Est. District Population	Est. Number of Connections	Estimated EDU's
Springport-Fleming Water District	500	354	467.3
Fleming Consolidated Water District	2,000	837	965.5
Owasco Water District	3,000	1,631	1,720.5
Combined Total	**5,500**	**2,822**	**3,153.3**

Equivalent Dwelling Units (EDUs) in the Springport-Fleming Water District will be responsible for capital debt payments only for a specific portion of the project improvements, with costs capped at an estimated $4,939,496.

5. Proposed Facilities

The premise of the proposed facilities is to provide better local government efficiency, share services, and address certain needs around three water systems. To best consolidate services and reduce operational costs, the Springport-Fleming Water District would be connected to the Fleming Consolidated Water District and serviced by water supplied from the Owasco Water District. Maps summarizing the recommended improvements are included in Figure 2.

5.1. Springport-Fleming Water District Capital Improvements

A key driver of this project is the connection of the Springport-Fleming Water District to the Fleming Consolidated Water District for water supply through the Owasco Water District. This connection will benefit the Springport-Fleming Water District by lowering water purchase costs and securing a long-term, stable, and predictable water purchase contract. While the project may initially lead to a water rate increase, it is expected to generate long-term savings through a more favorable water purchase agreement.

The connection between the Springport-Fleming Water District and the Fleming Consolidated Water District requires several infrastructure improvements, including the installation of new water mains, the replacement of existing mains, and various system upgrades. The Springport-Fleming Water District will only be responsible for the costs associated with improvements within its own district as well as prorated share of the costs for upgrades within the Fleming Consolidated Water District that are essential to completing the interconnection. Necessary improvements are further described in the sections below.

5.1.1. Capital Improvements jointly by Fleming Consolidated Water District and Springport-Fleming Water District

The cost of improvements in this section will be shared between the Fleming Consolidated Water District and the Springport-Fleming Water District on a prorated EDU basis, reflecting the benefits to both districts. Improvements that will be included under the shared cost structure include:

- Installing a new 12-inch water main along 6,850 feet of Sand Beach Road, extending from the traffic circle to the existing 8-inch water main near Silver Street.
- Replacing approximately 1,900 feet of water main along Willowbrook Road with a 10-inch PVC water main.

5.1.2. *Capital Improvements by Springport-Fleming Water District*

The Springport-Fleming Water District will bear the full cost of improvements listed under this section, as they will be specifically completed to solely benefit this district by enabling its interconnection with the Fleming Consolidated Water District and allowing for the purchase of Owasco District Water (at a lower cost). The proposed improvements under this section include:

- Installing 11,400 feet of 10-inch PVC Water Main along Riester Road starting at Dunning Avenue to Dougall Road, down Dougall Road to Large Road to interconnect Fleming Consolidated system to Springport-Fleming System.
- Installing a master water meter pit along Riester Road – This master meter would be utilized for water billing and leakage detection purposes.
- Installing a pressure reducing valve on Ridge Road south of Large Street for system pressure differential purposes.
- Installing 3,700 feet of 8-inch PVC Water Main along Fitzpatrick from Ridge Road to Waldron Road.
- Installing a tank altitude valve on Fitzpatrick Road to Control Level in Spring Street Tank – The Spring Street Tank will be filled using the higher gradients of the Fleming Consolidated and Owasco Water Districts to gravity feed the tank. The valve will operate off pressure differentials.
- Completing minor modifications at Spring Street Tank Site and Pump Station – Minor upgrades and modifications at this site will be required, including the removal of the existing tank Spring Street Tank control valve.
- Adjust various existing PRV settings – By serving the Springport-Fleming District through Fleming, instead of Aurelius, pressures across the Springport-Fleming district will slightly change and therefore the existing pressure reducing valves will need to be adjusted.
- Close valve at CCWSA Interconnection – The valve should be closed but remain operable, as this connection could be used in the future for an emergency backup water supply source.

5.2. Other Project Capital Improvements

Additional water improvements will be carried out as part of a broader joint water project. However, the Springport-Fleming Water District will not be responsible for the costs of these improvements. A detailed list of required improvements and their associated cost responsibilities is provided below for reference.

5.2.1. Capital Improvements by Fleming Consolidated Water District

Although jointly bearing the cost of the Sand Beach Road and Willowbrook Road water main improvements, The Fleming Consolidated Water District will bear the full cost of the water service transfers associated with this water main. These improvements, which include 12 water service transfers and 400 feet of copper service tubing, will solely benefit users in the Fleming Consolidated Water District. The total estimated cost of these upgrades is capped at $60,000.

5.2.2. Capital Improvements by Owasco Water District

To supply water to the Springport-Fleming Water District, the Owasco Water District will replace approximately 4,250 feet of 8-inch asbestos cement water main with a 12-inch PVC water main. The full cost of this replacement will be borne exclusively by the Owasco Water District. The total estimated cost of these upgrades is capped at $1,274,000.

5.3. Shared Service Improvements

In addition to physical improvements, the project may involve operational improvements involving shared services. These improvements will not be accompanied by capital expenditures and therefore are not accompanied by a cost. Share service improvements may consist of the following:

- Sharing of operational staff to reduce daily labor force requirements and assist in emergency break situations
- Sharing of specialized equipment for operating and maintaining water system
- Simplifying billing and metering systems by sharing software, equipment, and services
- Likely reduction in long term water rates.

6. Plan of Finance

6.1. Project Capital Cost Estimate

The estimated capital costs for the Springport-Fleming-Owasco Joint Water Project, along with Springport-Fleming's share of the expenses, are outlined in Appendix A. The total projected cost of the joint project is $7,821,000, with the Springport-Fleming Water District's maximum expenditure estimated at $4,939,496.

6.2. Cost Breakdown

The total maximum capital expenditure for the Springport-Fleming Water District is estimated to be $4,939,496. Improvements projected to be completed within the Springport-Fleming Water District are estimated to cost $4,191,000 and will be the sole responsibility of the Springport-Fleming Water District as they are the only beneficiary. The Springport-Fleming Water District will also share in the cost of critical improvements completed with the Fleming Consolidated Water District that are necessary for system interconnection. These critical improvements include water main installation/replacement along Sand Beach Road and Willowbrook Road. Costs will be shared between the Fleming Consolidated Water District and the Springport-Fleming Water District on a prorated EDU basis, reflecting the benefits to both districts. The Fleming Consolidated Water District currently accounts for 965.5 EDUs, while the Springport-Fleming Water District has 467.3 EDUs, totaling 1,432.8 EDUs. Based on this distribution, the Fleming Consolidated Water District will cover 67.4% of the costs, while the Springport-Fleming Water District will be responsible for 32.6%. The total estimated cost of these improvements is $2,296,000, with a maximum expenditure of $1,547,504 for the Fleming Consolidated Water District and $748,496 for the Springport-Fleming Water District. Combined this totals $4,939,496 in Springport-Fleming Water District capital costs.

6.3. Plausible Funding Scenarios

Based on our understanding of the funding programs, the project scope, and census data, we believe the project could receive grants from WIIA, IMG, LGE, or congressional appropriations. The following funding scenarios may be applicable to the portion of the project that the Springport-Fleming Water District is responsible for completing:

- Scenario No. 1: NYSEFC 3.13% Loan and 60% Grant – This scenario includes the project receiving a 30-year, 3.13% interest loan through the NYSEFC DWSRF program. The project would also receive additional grants totaling 60% of the total project cost.
- Scenario No. 2: NYSEFC 4.7% Loan and 40% Grant – This scenario includes the project receiving a 30-year, 4.7% interest loan through the NYSEFC DWSRF program. The project would also receive additional grants totaling 40% of the total project cost.
- Scenario No. 3: NYSEFC 4.7% Loan and $250,000 Grant – This scenario includes the project receiving a 30-year, 4.7% interest loan through the NYSEFC DWSRF program. The project would also receive additional grants totaling $250,000.
- Scenario No. 4: USDA 3.5% Loan and No Grant– This scenario includes the project receiving a 38-year, 3.5% interest loan through the USDA RD WEP program and no grant.

6.4. Estimated Annual User Cost Impacts

User cost impacts will depend on the actual funding received.

Estimated User Annual Costs – Springport-Fleming Water District

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Total Est. Probable Project Cost Share	$4,939,496	$4,939,496	$4,939,496	$4,939,496
Plausible Funding Package	60% Grant 3.13% Interest 30-Years	40% Grant 4.7% Interest 30-Years	$250,000 Grant 4.7% Interest 30-Years	0% Grant 3.5% Interest 38-Years
Annualized Project Capital Cost	$102,505	$186,250	$294,706	$237,008
Est. Annual Cost Savings (Switching Suppliers)	$72,930	$72,930	$72,930	$72,930
Capital Cost less Cost Savings	$29,575	$113,320	$221,776	$164,078
Estimated Additional Annual Cost per User	$63.29	$242.50	$474.59	$351.12

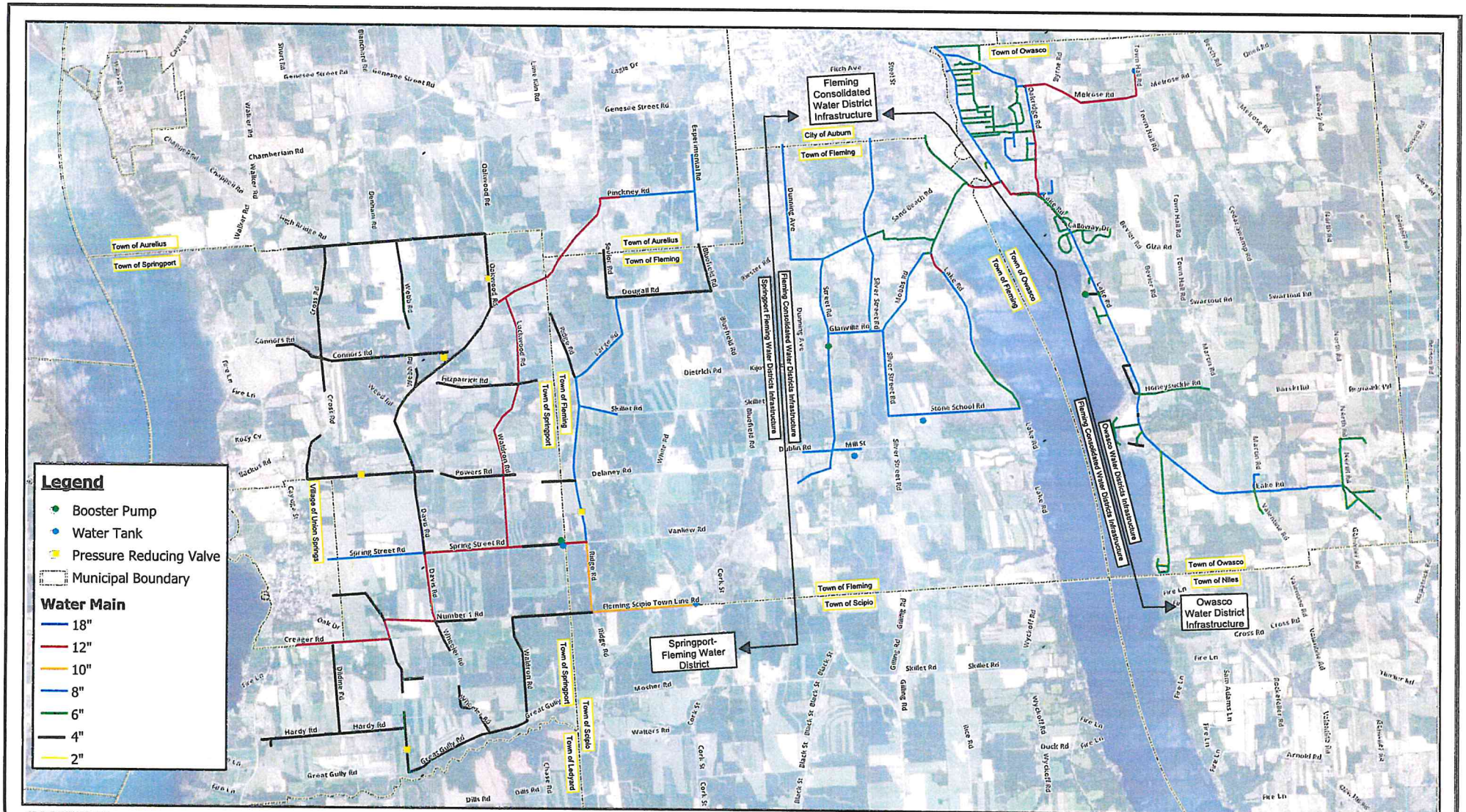
7. Next Steps

If the Springport-Fleming Water District wishes to proceed with the recommended project, it must comply with New York State Town Law regarding the Increase or Improvement of Facilities. As part of this process, the findings of this report should be publicly presented at a Board meeting. The recommended next steps include:

- Board(s) Review of the Map and Plan
- Environmental Review of the project (SEQR)
- Public Hearing to discuss Proposed Project
- Formal Acceptance of the Map and Plan by the Board(s)
- Passage of a 202-B Resolution by the Board(s)
- Adoption of a Bond Resolution(s)
- Secure Project Funding
- Completion of Engineering Design
- Obtaining Necessary Permits and Regulatory Approvals
- Project Bidding and Construction

Figure 1

Project Location & Existing Water Facilities



square engineering

Fleming-Springport-Owasco Joint Water Project

Figure 1

Project Location & Ex. Water Facilities

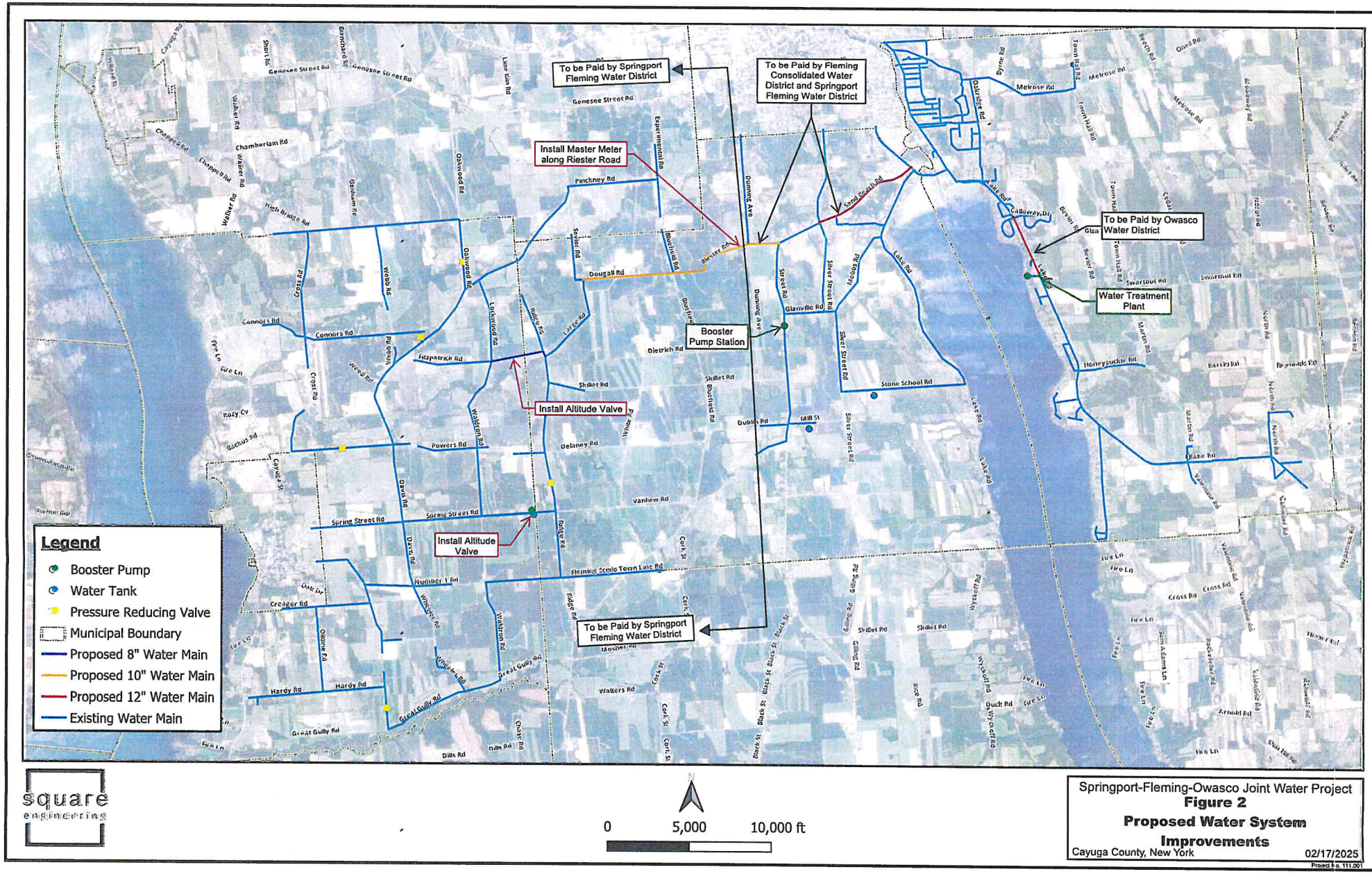
Cayuga County, New York

02/17/2025

Project No. 111.001

Figure 2

Proposed Water System Improvements



square engineering

Springport-Fleming-Owasco Joint Water Project

Figure 2

Proposed Water System Improvements

Cayuga County, New York

02/17/2025

Project No. 111.001

Appendix A

Estimate of Probable Cost

Budgetary Project Cost Estimate
Fleming - Springport - Owasco Joint Water Project
Springport-Fleming Water District

AJR
2/18/2025

Cost Estimate for Springport-Fleming Water District

Joint Improvements by Fleming Consolidated Water District and Springport-Fleming Water District Estimate						
Item	**Description**	**Cost Share**	**QTY**	**Unit**	**Unit Cost**	**Total Cost**
Sand Beach Road Main and Willowbrook Road Water Main Replacement						
1	12" PVC Water Main Installation	32.60%	6,850	LF	$140	$959,000
2	10" PVC Water Main Installation	32.60%	1,900	LF	$120	$228,000
3	Hydrants	32.60%	14	EA	$8,500	$119,000
4	Valves	32.60%	11	EA	$3,000	$33,000
5	Connection to Existing Water Mains	32.60%	4	EA	$10,000	$40,000
6	Highway Crossings	32.60%	3	EA	$20,000	$60,000
					Subtotal of Items	**$1,439,000**
					Inflation to Construction 5%	$72,000
					Contractor General Condtions 5%	$72,000
					Construction Subtotal	**$1,583,000**
					Contingency 20%	$317,000
					Engineering/Legal/Administrative 25%	$396,000
					JOINT IMPROVEMENTS - ESTIMATED TOTAL PROJECT COST	**$2,296,000**
					SPRINGPORT-FLEMING WATER DISTRICT - ESTIMATED COST SHARE (32.6%)	**$748,496**

Springport-Fleming Water District Improvements Estimate						
Item	**Description**	**Cost Share**	**QTY**	**Unit**	**Unit Cost**	**Total Cost**
Improvements in Springport-Fleming Joint District						
1	10" PVC Water Main Installation	100%	11,400	LF	$120	$1,368,000
2	8" PVC Water Main Installation	100%	3,700	LF	$110	$407,000
3	Hydrants	100%	24	EA	$8,500	$204,000
4	Valves	100%	18	EA	$3,000	$54,000
5	Connection to Existing Water Mains	100%	4	EA	$10,000	$40,000
6	Highway Crossings	100%	4	EA	$20,000	$80,000
7	Creek Crossings	100%	3	EA	$20,000	$60,000
8	Water Master Meter Pit	100%	1	EA	$50,000	$50,000
9	Control Valve	100%	1	EA	$50,000	$50,000
10	PRV Adjustments	100%	3	EA	$5,000	$15,000
11	Electrical/ Telemetry	100%	1	LS	$50,000	$50,000
12	Misc. Improvements & Adjustments	100%	1	LS	$248,000	$248,000
					Subtotal of Items	**$2,626,000**
					Inflation to Construction 5%	$132,000
					Contractor General Condtions 5%	$132,000
					Construction Subtotal	**$2,890,000**
					Contingency 20%	$578,000
					Engineering/Legal/Administrative 25%	$723,000
					SPRINGPORT-FLEMING WATER DISTRICT - ESTIMATED TOTAL PROJECT COST	**$4,191,000**

Springport-Fleming Water District Cost Breakdown	**Total Cost**
Springport-Fleming Water District Share of Joint Improvements	$748,496
Springport Fleming Water District Improvements	$4,191,000
Springport-Fleming Water District - Estimated Combined Total Project Cost	**$4,939,496**

Budgetary Project Cost Estimate
Fleming - Springport - Owasco Joint Water Project
Springport-Fleming Water District

AJR
2/18/2025

Cost Estimate for Fleming Consolidated Water District

Cost of other joint project improvement included for reference. The Springport-Fleming Water District does not share in the cost of the following:

Joint Improvements by Fleming Consolidated Water District and Springport-Fleming Water District Estimate						
Item	**Description**	**Cost Share**	**QTY**	**Unit**	**Unit Cost**	**Total Cost**
Sand Beach Road Main and Willowbrook Road Water Main Replacement						
1	12" PVC Water Main Installation	67.40%	6,850	LF	$140	$959,000
2	10" PVC Water Main Installation	67.40%	1,900	LF	$120	$228,000
3	Hydrants	67.40%	14	EA	$8,500	$119,000
4	Valves	67.40%	11	EA	$3,000	$33,000
5	Connection to Existing Water Mains	67.40%	4	EA	$10,000	$40,000
6	Highway Crossings	67.40%	3	EA	$20,000	$60,000
					Subtotal of Items	**$1,439,000**
					Inflation to Construction	5%	$72,000
					Contractor General Condtions	5%	$72,000
					Construction Subtotal	**$1,583,000**
					Contingency	20%	$317,000
					Engineering/Legal/Administrative	25%	$396,000
					JOINT IMPROVEMENTS - ESTIMATED TOTAL PROJECT COST	**$2,296,000**
					FLEMING CONSOLIDATED WATER DISTRICT - ESTIMATED COST SHARE (67.4%)	**$1,547,504**

Fleming Consolidated Water District Cost Breakdown	**Total Cost**
Fleming Consolidated Water District Share of Joint Improvements	$1,547,504
Fleming Consolidated Water District - Water Service Transfers	$60,000
Fleming Consolidated Water District - Estimated Combined Total Project Cost	**$1,607,504**

Budgetary Project Cost Estimate
Fleming - Springport - Owasco Joint Water Project
Springport-Fleming Water District

AJR
2/18/2025

Cost Estimate for Owasco Water District

Cost of other joint project improvement included for reference. The Springport-Fleming Water District does not share in the cost of the following:

Owasco Water District Improvements Estimate						
Item	**Description**	**Cost Share**	**QTY**	**Unit**	**Unit Cost**	**Total Cost**
Owasco RT38A Water Main Replacement						
1	12" PVC Water Main Installation	100%	4,250	LF	$140	$595,000
2	Hydrants	100%	9	EA	$8,500	$76,500
3	Valves	100%	5	EA	$3,000	$15,000
4	Connection to Existing Water Mains	100%	2	EA	$10,000	$20,000
5	Highway Crossings	100%	1	EA	$20,000	$20,000
6	Water Service Transfers	100%	22	EA	$2,400	$52,800
7	Water Service Piping	100%	925	LF	$20	$18,500
					Subtotal of Items	**$797,800**
					Inflation to Construction	5%	$39,890
					Contractor General Condtions	5%	$39,890
					Construction Subtotal	**$877,600**
					Contingency	20%	$176,000
					Engineering/Legal/Administrative	25%	$220,000
					OWASCO WATER DISTRICT - ESTIMATED TOTAL PROJECT COST	**$1,274,000**

Budgetary Project Cost Estimate
Fleming - Springport - Owasco Joint Water Project
Springport-Fleming Water District

AJR
2/18/2025

Project Cost Summary		
District	**EDU's**	**Total Cost**
Owasco Water District	1,720.5	$1,274,000
Fleming Consolidated Water District	965.5	$1,607,504
Springport Fleming District	467.3	$4,939,496
Total Project Cost		**$7,821,000**

**Note: This is for reference only. The Springport-Fleming Water District is not responsible for the Total Project Cost. This clarifies the portion of the project for which each district is responsible and the Total Project Cost.*