

Final Map, Plan, and Report

For The

Town of Bethany Water District No. 5

December 2023



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I. General

The Town of Bethany previously formed Water District No. 5 along portions of Ellicott Street Road (NYS RT 63), Bethany Center Road (C.R. 15), Broadway Road (NYS RT 20), Brown Road, Cackner Road, Clapsaddle Road, East Road (C.R. 35) East Bethany-LeRoy Road, Francis Road (C.R. 38), Fargo Road (C.R. 198), Jerico Road, Little Canada Road, Marsh Road, Mayne Road, McLernon Road, Silver Road, Paradise Road, and Paul Road as shown in Figure 1 at the end of this report. A water district is a special use district required by Town Law where a specific area of the town receives a specific benefit. The cost for receiving this benefit is borne solely by the property owners in that specific area.

The purpose of this project is to provide a safe and reliable potable water supply and fire protection to residences in the Town of Bethany Water District No. 5.

II. Project Planning Area

A. Location

The proposed Water District No. 5 will include a total of approximately 140,000 linear feet of 8-inch water main. The water main will be installed along portions of Ellicott Street Road (NYS RT 63), Bethany Center Road (C.R. 15), Broadway Road (NYS RT 20), Brown Road, Cackner Road, Clapsaddle Road, East Road (C.R. 35) East Bethany-LeRoy Road, Francis Road (C.R. 38), Fargo Road (C.R. 198), Jerico Road, Little Canada Road, Marsh Road, Mayne Road, McLernon Road, Silver Road, Paradise Road, and Paul Road. Note, portions of the project will be installed in the Town of Batavia, as that will be the primary water supply for the project.

B. Environmental Resources Present

There are farmlands present in the project area. All construction will be taking place in existing road rights-of-way or easements, and proper construction mitigation and restoration efforts will be implemented based on standard practices common to the industry.

There are Federally and State regulated wetlands, but they will not be impacted by the project as the water main will either be installed in the road right-of-way or directional drilled. In addition, several Class C streams will be crossed as part of the project either under a cross culvert or drilled.

There are no known endangered species in the project area, but the area does have the potential for Northern Long-eared bats. Tree removal, if any, will be limited between April and September.

Historical properties and cultural resources will be further evaluated during design when the precise location of the proposed main can be identified. Construction will not proceed until SHPO is consulted and their approval is obtained.

C. Growth Areas and Population Trends

According to the United States Census, the Town of Bethany had a population of 1,765 in 2010 and 1,740 in 2023. This number reflects a population decrease of less than 1.0%.

III. Existing Facilities

A. Location Map

The proposed facilities will connect to existing water mains in the Towns of Bethany and Batavia. Refer to the project location map on Figure No. 1 at the end of this report.

B. Existing Water Supply

The entire area of the proposed water district is presently served by private wells. The Town of Bethany has received many complaints about the quality and quantity of the water in the area. Residents in this area have experienced the following problems:

1. **Insufficient quantity of water is available for residential and commercial wells.** Recent drought conditions have resulted in approximately 100 wells that have gone dry, including 8 major farm operations.
2. **Poor water quality is predominant in the existing well supplies.** The water quality requires some residents to either boil water for consumption or purchase bottled water for cooking and consumption.
3. **High cost to operate and maintain existing well supplies.** Several residents must purchase chemicals for softening and treatment systems, and must frequently replace their plumbing systems due to corrosion of their fixtures. Several residents currently pay over \$2,000 per year to operate and maintain their water system, which provides them with poor quality water and insufficient quantities at times.
4. **Fire Protection:** Currently, there is no water system to provide fire protection in the proposed water district. Likewise, there are no significant bodies of water in the vicinity that provide an adequate supply of water for fire protection.

C. Water Demands

The existing demands for the proposed service area are as follows:

Average Day	134,300 gpd
Maximum Day	268,600 gpd

The future demands for the proposed service area will utilize a 1% increase per year. This increase takes into account population projections and the land use of the area.

IV. Need for Project

A. Health and Safety

The proposed water main will provide safe potable water to the residents of the Town of Bethany Water District No. 5 and will eliminate the public health risks associated with the quality and quantity of ground water in the area.

B. System O & M

A water distribution network will replace highly expensive individual water treatment units; this will reduce the operation and maintenance costs borne by the residents at this time. The Town of Bethany will contract with the Town of Batavia to provide retail service and operation and maintenance of the proposed service area.

C. Growth

While economic development is viewed as a project benefit, balancing economic development and land protection is necessary, critical, and has been considered for this project. Agriculture is important to the Town of Bethany, functioning as a part of the Town's economic base as well as being the foundation for the rural character that the Town wishes to maintain. As a part of the Genesee County Water Supply Program, the County had developed an "Agricultural Land Protection/Smart Growth" plan, which identified a mechanism to direct development toward appropriate areas and away from inappropriate areas including Agricultural Districts. The Town intends to follow the "Smart Growth Plan" and limit future water service connections within the boundaries of Agricultural Districts to only agricultural structures or land and structures that have already been approved for development. Thus, there are no anticipated long-term impacts to the Agricultural Districts as a result of the proposed action including no change in use of agricultural/residential lands within any Agricultural Districts.

V. Alternatives Considered

A. Description

1. Alternative 1 – Null Alternative

Estimated Capital Cost: \$ 0

This alternative proposes to "do nothing". The residents of the Town of Bethany Water District No. 5 would continue to struggle with the lack of well water or would continue using their existing well treatment systems, some whose annual costs exceed \$2,000. Costs for the purchase of bottled

water and off-site laundry services add an estimated \$500 to \$1,000 per year to the cost of a private well. This could mean escalating health problems and water shortages for the residents of the Town of Bethany Water District No. 5.

2. Alternative 2 – New Water Treatment Plant and Distribution System

There are no available local sources that would be able to meet the demands of the proposed District, therefore this option will not be considered.

3. Alternative 3 – New Water Distribution System

Estimated Capital Cost: \$21,680,000

The proposed action includes the installation of approximately 140,000 linear feet of 8-inch water main in the Town of Bethany Water District No. 5 service area to provide potable water and fire service.

In addition, the project will require the installation of two (2) pump stations and two (2) elevated water storage tanks. They are required due to the elevation increase in the Town from north to south, requiring new hydraulic grade zones.

The estimated cost for Alternative 3 is detailed in Appendix B.

B. Design Criteria

The Town of Bethany Proposed Water District No. 5 has been designed to provide safe potable water and fire protection to the residents within the proposed service area.

C. Map

The proposed Town of Bethany Water District No. 5 map and description are included in Appendix A.

D. Environmental Impacts

There are no anticipated negative environmental impacts associated with the project. However, an environmental review will be done for the project. All construction will be done in existing road Right-of-Ways or easements, and proper construction mitigation and restoration efforts will be implemented.

E. Advantages/Disadvantages

Although there are significant costs associated with Alternative 3, it is the most viable alternative as it is consistent with the goals and meets the needs of the Town of Bethany and Genesee County Water Supply Program more effectively than the other alternatives. The advantages of Alternative 3 are as follows:

1. It will eliminate the ongoing health risks associated with the quality and quantity of ground water in the area.
2. It is consistent with the goals of Genesee County to develop a countywide water distribution network.
3. Combined with other proposed water districts, it will be a step towards creating redundancy in the existing system increasing the reliability of potable water supply and fire flow.

VI. Recommended Alternative

The recommended alternative is Alternative 3: New Distribution System for the proposed Town of Bethany Water District No. 5.

A. Project Design

1. Water Supply

The Town of Bethany water main will receive water from the Town of Batavia, which utilizes the MCWA and the City of Batavia as a source.

2. Treatment

Treated water will be supplied by the MCWA and the City of Batavia. The treated water will meet all the state and federal drinking water standards.

3. Storage

Two (2) 1.5-million-gallon water storage tanks located in the Town of Stafford provide storage provide the primary storage for the supply to the Town of Bethany. Two (2) additional storage tanks will be required for this service immediate area as the project will create two higher hydraulic grade zones. The new tanks will have capacities of 200,000 gallons and 250,000 gallons.

4. Pumping Stations

The project will require the installation of two (2) new pump stations.

5. Distribution Layout

The entire district is shown in Figure 1 at the end of this report. The Town of Batavia will be responsible for system operation and maintenance. The distribution system will be sized for the needs of the service area.

The project will require water main to be installed in the Town of Batavia, which will be transmission main serving Bethany District No. 5. The main will be owned by Bethany District No. 5.

6. Water Services

The portion of the water service from the right-of-way to the main line will be the responsibility of the District, which includes a meter pit and meter. The portion from the right-of-way to the home will be the responsibility of the homeowner.

7. Hydraulic Analysis

The hydraulic conditions of the proposed system were calculated using the WaterCad® hydraulic modeling software. The hydraulic analysis of the system includes the evaluation of available pressures and flows for the proposed water main extensions. The results of the modeling are discussed below.

Hydraulic analysis of the system with a connection to the Town of Batavia included the evaluation of available pressures and flows during various demand conditions.

Using the WaterGEMS software it was determined that the static pressures in the area would be between 50 and 114 psi. Fire flow will be above 750 gpm.

Due to the Town's "Smart Growth Plan", it is not anticipated that demands within the water district will increase by more than 1% in the near future.

B. Proposed Water District Unit Costs

The residents of the Town of Bethany will assume the cost for the project. The estimated project unit costs are based on financing through USDA Rural Development at a 1.25% interest rate for a 38-year term.

The estimated average annual water cost was estimated based on a retail rate of \$6.48/1,000 gallons from the Town of Batavia and an average usage of 60,000 gallons/unit/year.

Genesee County will be responsible for paying a portion of the annual debt service estimated to be \$174,405 per year. The actual amount will be based on the final project costs and loan interest rate at the time of closing. An agreement has recently been approved by the Town and Genesee County.

1. The estimated costs for the proposed project are detailed in Appendix B and summarized as follows:

Total Estimated Capital Cost	\$21,680,000
WIIA Grant	\$5,000,000
Net Project Costs	\$16,680,000
Annual Debt Service (38 years, 1.25%)	\$554,107
Genesee County Share	\$174,405
Local Share	\$379,702
Estimated Debt Service/Unit (461 units)	\$839.45
Estimated Yearly Water Cost	\$388.80
Total Estimated Unit Cost (Rounded)	\$1,220

2. Equivalent Dwelling Units

Any facility will be considered as a minimum of one (1) unit.

Each single-family residential dwelling shall be considered to be one (1) unit and will typically have a 1-inch or less service line and a ¾-inch or less meter. Included in this category will be single family houses and mobile homes.

Multiple single-family dwellings on the same parcel of land will each be considered an individual unit.

Multifamily homes will be based on one (1) unit for the first apartment and an additional one-half (0.5) units for each additional apartment.

Vacant developable land not within the certified agricultural district will be assessed one-half (0.5) of a unit.

Non-residential, commercial, and industrial facilities will be assigned an equivalent number of units based following method:

The average daily usage divided by 300 gpd (Average Daily Usage ÷ 300 gpd = number of units). This will be recalculated every year based on the previous year's usage.

The Average Daily Use for year 1 will be based on the Design Standards for Wastewater Treatment Works – Intermediate Sized Sewerage Facilities (New York State Department of Environmental Conservation, 1988), Table 3 – Expected Hydraulic Loading Rates.

Campground facilities will use a similar formula to non-residential described above, except the usage will be based over a 180-day period. Example, assuming an annual usage of 630,000 gallons divided by 180 days, equals 3,500 gpd. $3,500 \text{ gpd} \div 300 \text{ gpd} = 12 \text{ units}$ (rounded up).

Agricultural properties with livestock usage will be based on the daily usage divided by 1,000 gpd. (Average Daily Usage ÷ 1,000 gpd = number of units).

	<u>Number</u>	<u>Total Number of Units</u>
Single Family Residential	327	327 units
Two Family Residential	4	6 units
Three Family Residential	4	8 units
Vacant Developable Parcel	40	20 units
Campground ¹	1	12 units
Farms ²	3	70 units
Commercial ³	13	18 units
		Total = 461 units

Footnotes

1. Property SBL 4.-1-15.1 will be assessed 12 units for the first year.
2. The farm (livestock) property assumptions are as follows:
 - a. Property SBL 5.-1-54 will be assessed 14 units for the first year.
 - b. Property SBL 2.-1-3.1 will be assessed 15 units for the first year.
 - c. Property SBL 9.-1-3 will be assessed 41 units for the first year.
3. The commercial property assumptions are as follows:
 - a. Property SBL 6.-1-61.1 will be assessed 5 units for the first year.
 - b. Property SBL 6.-1-16.2 will be assessed 2 units for the first year.
 - c. All other commercial properties will be assessed 1 unit for the first year.

3. Other One Time Costs

Service Line	\$15/LF (\$1,000 Average)
Well Separation/ Plumbing Modifications	\$500
Backflow Prevention (non-residential)	\$2,000 to \$10,000

VII. Miscellaneous Information

A. Options for property owner's well

1. Abandon the well.
2. Keep well but separate it from public water plumbing.
3. Keep well and install backflow prevention.

B. Service Line Information

1. A service line will be installed to all residences, from the water main to the road Right-of-Way, for connection to the public water system. The project will also include the installation of a meter pit with water meter for residential customers.

C. Optional Water District Enhancements with Remaining Funds

1. Upsize water main diameters to allow for future growth of the water system and maintain above average fire flows.
2. Extend water mains to the District Boundaries and through road intersections.

D. Short Lived Assets

The water main, fire hydrants, valves, and water services should have a useful life of approximately 50 years with routine maintenance. Hydrants and valves may require replacement earlier if they are struck by a snowplow or damaged in an automobile accident.

There will be short lived assets associated with the two (2) new pump stations and the two (2) new water storage tanks.

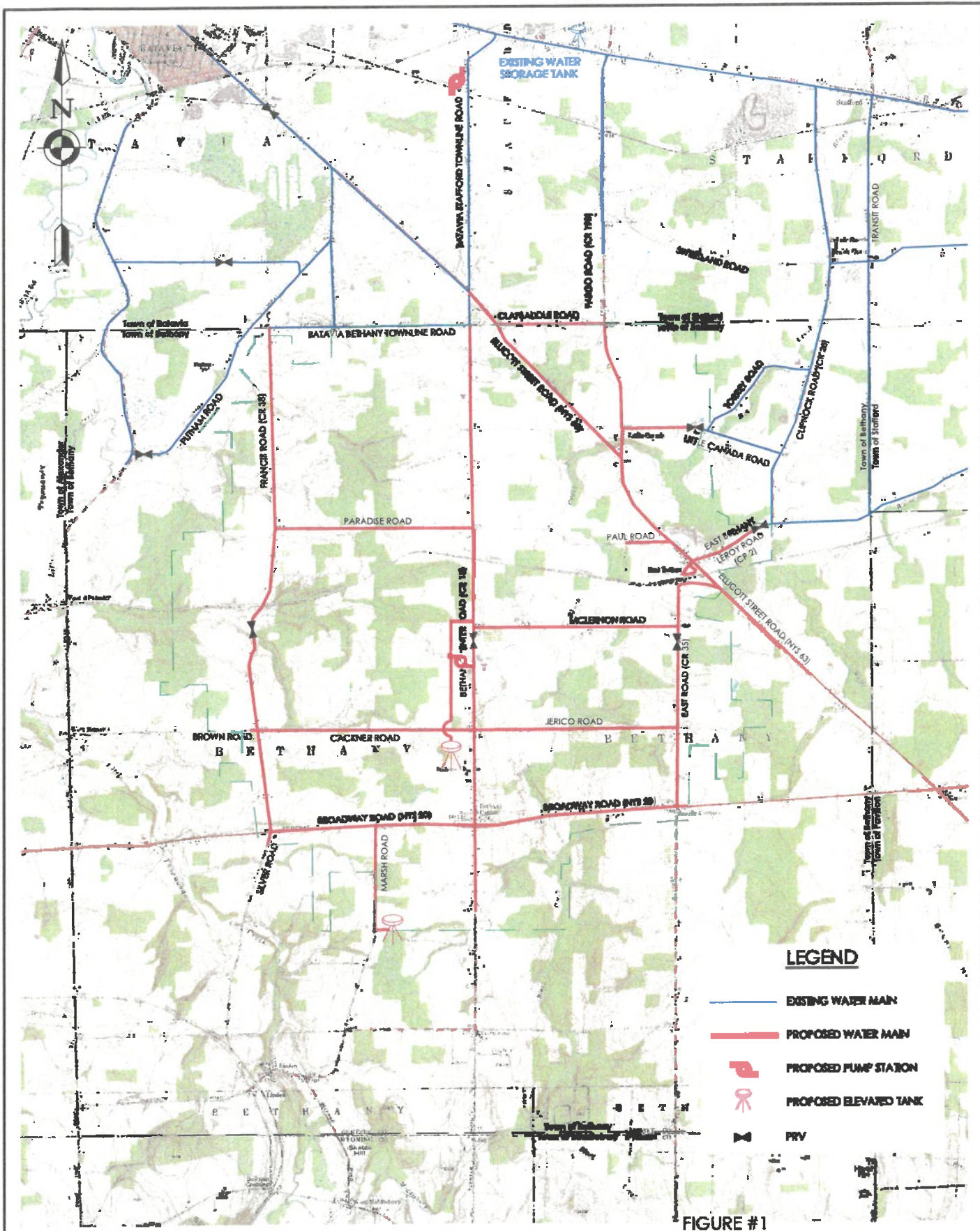
VIII. Conclusions

The Town of Bethany is committed to providing safe and reliable potable water supply and fire protection to its residents. This specific project will be instrumental in achieving that goal.

Figure 1

Project Location Map

Referenced Drawings: None
 Drawing Name: X:\PROJECTS\Bethany_T\Water\A\CAD\Location Map WD 5_1 2 2024.dwg
 Date last accessed: 1/2/2024 2:23 PM
 Date last plotted: 1/2/2024 2:25 PM
 Plotted By: Simon Luc



- LEGEND**
- EXISTING WATER MAIN
 - PROPOSED WATER MAIN
 - PROPOSED PUMP STATION
 - PROPOSED ELEVATED TANK
 - ▲ PRV

FIGURE #1

LOCATION MAP

TOWN OF BETHANY WATER DISTRICT NO. 5

TOWN OF BETHANY GENESEE COUNTY NEW YORK



265 WOODCLIFF DRIVE, SUITE 300
 FAIRPORT, NEW YORK 14480
 TEL: (800) 274-9800
 FAX: (800) 232-8834

CPLteam.com

ARCHITECTURE • ENGINEERING • PLANNING

DATE: 5/18/2022
 DRAWN: BMW
 CHECKED: ECW
 SCALE: 1" = 500'
 PROJ. #: 14639.00

Appendix A
Water District Boundary Map
and
Legal Description

**TOWN OF BETHANY
WATER DISTRICT No. 5**

All that tract or parcel of land situate in the Town of Bethany, County of Genesee, State of New York, being described as follows:

Beginning at a point on the center line of Francis Road (49.5 feet wide right-of-way) at the intersection of the center line of Batavia Bethany Townline Road (66 feet right-of-way), along the northerly Municipal Boundary Line of the Town of Bethany, and a northwesterly corner of the Existing Water District No. 1; thence,

1. Southerly, along the center line of Francis Road, and the Existing Water District No. 1, a distance of 333 feet, more or less, to the westerly extension of the northerly line of tax account number 1.-1-39, and the Existing Water District No. 1; thence,
2. Easterly, along the northerly line of tax account number 1.-1-39, and the Existing Water District No. 1, a distance of 835 feet, more or less, to the northeasterly corner of said tax account, and the Existing Water District No. 1; thence,
3. Southeasterly, along the northeasterly line of tax account number 1.-1-39, and the Existing Water District No. 1, a distance of 16 feet, more or less, to an angle point, and the Existing Water District No. 1; thence,
4. Southerly, along the easterly lines of tax account numbers 1.-1-39 and 1.-1-41, and the Existing Water District No. 1, a distance of 1,092 feet, more or less, to the southeasterly corner of tax account number 1.-1-41, and the Existing Water District No. 1; thence,
5. Easterly, along the northerly line of tax account number 1.-1-42.221 and the Existing Water District No. 1, a distance of 1,534 feet, more or less, to the northeasterly corner of said tax account, and the Existing Water District No. 1; thence,
6. Northerly, along the westerly line of tax account number 1.-1-43, the northerly extension of the westerly line of tax account number 1.-1-43, and the Existing Water District No. 1, a distance of 1,400 feet, more or less, to the northerly Municipal Boundary Line of the Town of Bethany, the center line of Batavia Bethany Townline Road, and the Existing Water District No. 1; thence,
7. Easterly, along the northerly Municipal Boundary Line of the Town of Bethany, and along the center line of Batavia Bethany Townline Road, the northerly lines of tax account numbers 2.-1-9 and 2.-1-94, the center line of Clapsaddle Road (49.5 feet wide right-of-way), and along the northerly lines of tax account numbers 2.-1-36.12, 2.-1-36.113, and 3.-1-1, a distance of 14,206 feet, more or less, to a northeasterly corner of tax account number 3.-1-1; thence,
8. Southerly, along an easterly line of tax account number 3.-1-1, a distance of 1,984 feet, more or less, to a northwesterly corner of said tax account number, and the Existing Water District No. 2; thence,
9. Easterly, along a northerly line of tax account number 3.-1-1, and the Existing Water District No. 2, a distance of 516 feet, more or less, to a northeasterly corner of said tax account number, and the Existing Water District No. 2; thence,

10. Southerly, along an easterly line of tax account number 3.-1-1 and a southerly extension of the easterly line of tax account number 3.-1-1, and the Existing Water District No. 2, a distance of 2,117 feet, more or less, to the center line on Torrey Road (66 feet wide right-of-way), and the Existing Water District No. 2; thence,
11. Southwesterly, along the center line of Torrey Road, and the Existing Water District No. 2, a distance of 248 feet, more or less, to the center line of Little Canada Road (49.5 feet wide right-of-way), and the Existing Water District No. 2; thence,
12. Northwesterly, along the center line of Little Canada Road, and the Existing Water District No. 2, a distance of 138 feet, more or less, to the northeasterly extension of an easterly line of tax account number 3.-1-44.2, and the Existing Water District No. 2; thence,
13. Southwesterly, along an easterly line of tax account number 3.-1-44.2, and the Existing Water District No. 2, a distance of 702 feet, more or less, to an angle point, and the Existing Water District No. 2; thence,
14. Southeasterly, along a northerly line of tax account number 3.-1-44.2, and the Existing Water District No. 2, a distance of 583 feet, more or less, to an easterly line of said tax account number, and the Existing Water District No. 2; thence,
15. Southerly, along an easterly line of tax account number 3.-1-44.2, and the Existing Water District No. 2, a distance of 2,260 feet, more or less, to the northwesterly corner of tax account number 3.-1-43, and the Existing Water District No. 2; thence,
16. Southeasterly, along the northerly line of tax account number 3.-1-43, and the Existing Water District No. 2, a distance of 683 feet, more or less, to the northeasterly corner of said tax account number, and the Existing Water District No. 2; thence,
17. Southerly, along the easterly line of tax account number 3.-1-43, and the Existing Water District No. 2, a distance of 314 feet, more or less, to the southeasterly corner of said tax account number, and the Existing Water District No. 2; thence,
18. Easterly, along the northerly lines of tax account numbers 6.-1-21.2 and 6.-1-22, and the Existing Water District No. 2, a distance of 1,437 feet, more or less, to the northeasterly corner of tax account number 6.-1-22, and the Existing Water District No. 2; thence,
19. Southerly, along the easterly line of tax account number 6.-1-22 and the southerly extension of the easterly line of tax account number 6.-1-22, and the Existing Water District No. 2, a distance of 82 feet, more or less to the center line of East Bethany-Leroy Road (66 feet wide right-of-way), and the Existing Water District No. 2; thence,
20. Easterly, along the center line of East Bethany-Leroy Road, and the Existing Water District No. 2, a distance of 256 feet, more or less, to the northerly extension of the easterly line of tax account number 6.-1-24.1, and the Existing Water District No. 2; thence,
21. Southerly, along the northerly extension of the easterly line of tax account number 6.-1-24.1 and the easterly lines of tax account numbers 6.-1-24.1 and 6.-1-25.11, and the Existing Water District No. 2, a distance of 1,448 feet, more or less, to a southeasterly corner of tax account 6.-1-25.11, and the Existing Water District No. 2; thence,

22. Westerly, through the lands of tax account number 6.-1-25.11, and along the southerly lines of tax account numbers 6.-1-19.1 and 6.-1-16.2, a distance of 1,699 feet, more or less to the easterly line of tax account number 6.-1-76.1; thence,
23. Southerly, along the easterly lines of tax account numbers 6.-1-76.1 and 6.-1-65, a distance of 815 feet, more or less, to a northeasterly corner of tax account number 6.-1-65; thence,
24. Easterly, along northerly lines of tax account numbers 6.-1-65, 6.-1-66, and 6.-1-67, a distance of 1,683 feet, more or less, to a northeasterly corner of tax account number 6.-1-67; thence,
25. Southerly, along the easterly lines of tax account numbers 6.-1-67 and 6.-1-41, a distance of 1,557 feet, more or less, to the northwesterly corner of tax account number 6.-1-40; thence,
26. Southeasterly, along a northerly line of tax account number 6.-1-40, a distance of 757 feet, more or less, to an angle point of said tax account number; thence,
27. Northeasterly, along a northerly line of tax account number 6.-1-40, a distance of 284 feet, more or less, to the northeasterly corner of said tax account number; thence,
28. Southwestery, along an easterly line of tax account number 6.-1-40, a distance of 504 feet, more or less, to an angle point of said tax account number; thence,
29. Southwestery, along the easterly line of tax account number 6.-1-40, and the southwestery extension of the easterly line of tax account number 6.-1-40, crossing Ellicott Street Road (66 feet wide right-of-way), and through the lands of tax account number 6.-1-33.11, a distance of 844 feet, more or less, to a point, 500 feet southwestery of and parallel to the center line of Ellicott Street Road; thence,
30. Northwestery, through the lands of tax account number 6.-1-33.11, along a line 500 feet southwestery of and parallel to the center line of Ellicott Street Road, a distance of 520 feet, more or less, to a point on the easterly line of tax account number 6.-1-44.2; thence,
31. Southerly, along the easterly lines of tax account numbers 6.-1-44.2, 6.-1-44.1 and 6.-1-46, a distance of 2,893 feet, more or less, to the southeasterly corner of tax account number 6.-1-46; thence,
32. Westerly, along the southerly line of tax account number 6.-1-46, a distance of 1,114 feet, more or less, to the northeasterly corner of tax account number 9.-1-2.11; thence,
33. Southerly, along the easterly line of tax account number 9.-1-2.11, a distance of 1,996 feet, more or less, to a southeasterly corner of said tax account number; thence,
34. Westerly, along a southerly line of tax account number 9.-1-2.11, a distance of 1,095 feet, more or less, to a southwestery corner of said tax account number; thence,
35. Northerly, along a westerly line of tax account number 9.-1-2.11, a distance of 1,311 feet, more or less, to a southwestery corner of said tax account number; thence,
36. Westerly, along a southerly line of tax account number 9.-1-2.11, a distance of 1,036 feet, more or less, to a point 500 feet easterly of and parallel to the center line of East Road (49.5 feet wide right-of-way); thence,

37. Southerly, through the lands of tax account number 9.-1-3, along a line 500 feet easterly of and parallel to the center line of East Road, a distance of 2,953 feet, more or less, to a point 500 feet southerly of and parallel to the center line of Broadway Road (66 feet wide right-of-way); thence,
38. Westerly, through the lands of tax account numbers 9.-1-19 and 8.-1-44.214, along a line 500 feet southerly and parallel to the center line of Broadway Road, a distance of 3,063 feet, more or less, to a point on the southeasterly line of tax account number 8.-1-43.11; thence,
39. Southwesterly, along a southeasterly line of tax account number 8.-1-43.11, a distance of 116 feet, more or less, to a southeasterly corner of said tax account number; thence,
40. Westerly, along the southerly line of tax account number 8.-1-43.11, a distance of 1,581 feet, more or less, to a southwesterly corner of said tax account number; thence,
41. Southerly, along an easterly line of tax account number 8.-1-51.114, a distance of 1,182 feet, more or less, to a southeasterly corner of said tax account number; thence,
42. Westerly, along the southerly line of tax account number 8.-1-51.114, a distance of 333 feet, more or less, to the northeasterly corner of tax account number 8.-1-50; thence,
43. Southerly, along the easterly line of tax account number 8.-1-50, a distance of 655 feet, more or less, to the southeasterly corner of said tax account number; thence,
44. Easterly, along the northerly line of tax account number 8.-1-49.21, a distance of 333 feet, more or less, to the northeasterly corner of said tax account number; thence,
45. Southerly, along the easterly lines of tax account numbers 8.-1-49.21 and 8.-1-48.1, a distance of 1,968 feet, more or less, to the southeasterly corner of tax account number 8.-1-48.1; thence,
46. Westerly, along the southerly lines of tax account numbers 8.-1-48.1 and 8.-1-72.1, and crossing Bethany Center Road (66 feet wide right-of-way), a distance of 6,081 feet, more or less, to a point; thence,
47. Northerly, through the lands of tax account number 8.-1-72.1 and 8.-1-70, a distance of 2,619 feet, more or less, to the midpoint of the northerly line of tax account number 8.-1-70; thence,
48. Westerly, along the southerly lines of tax account numbers 8.-1-68, 8.-1-73, 8.-1-75.2, and along the westerly extension of the southerly line of tax account number 8.-1-75.2, crossing Marsh Road (49.5 feet wide right-of-way), and through the lands of tax account number 7.-1-32, a distance of 3,699 feet, to a westerly line of tax account number 7.-1-32; thence,
49. Southerly, along the easterly line of tax account number 7.-1-34, a distance of 2,636 feet, more or less, to the southeasterly corner of said tax account number; thence,
50. Westerly, along the southerly line of tax account number 7.-1-34, a distance of 687 feet, more or less, to the southwesterly corner of said tax account number; thence,
51. Northerly, along the westerly line of tax account number 7.-1-34, a distance of 3,487 feet, more or less, to a point 500 feet southerly of and parallel to the center line of Broadway Road; thence,

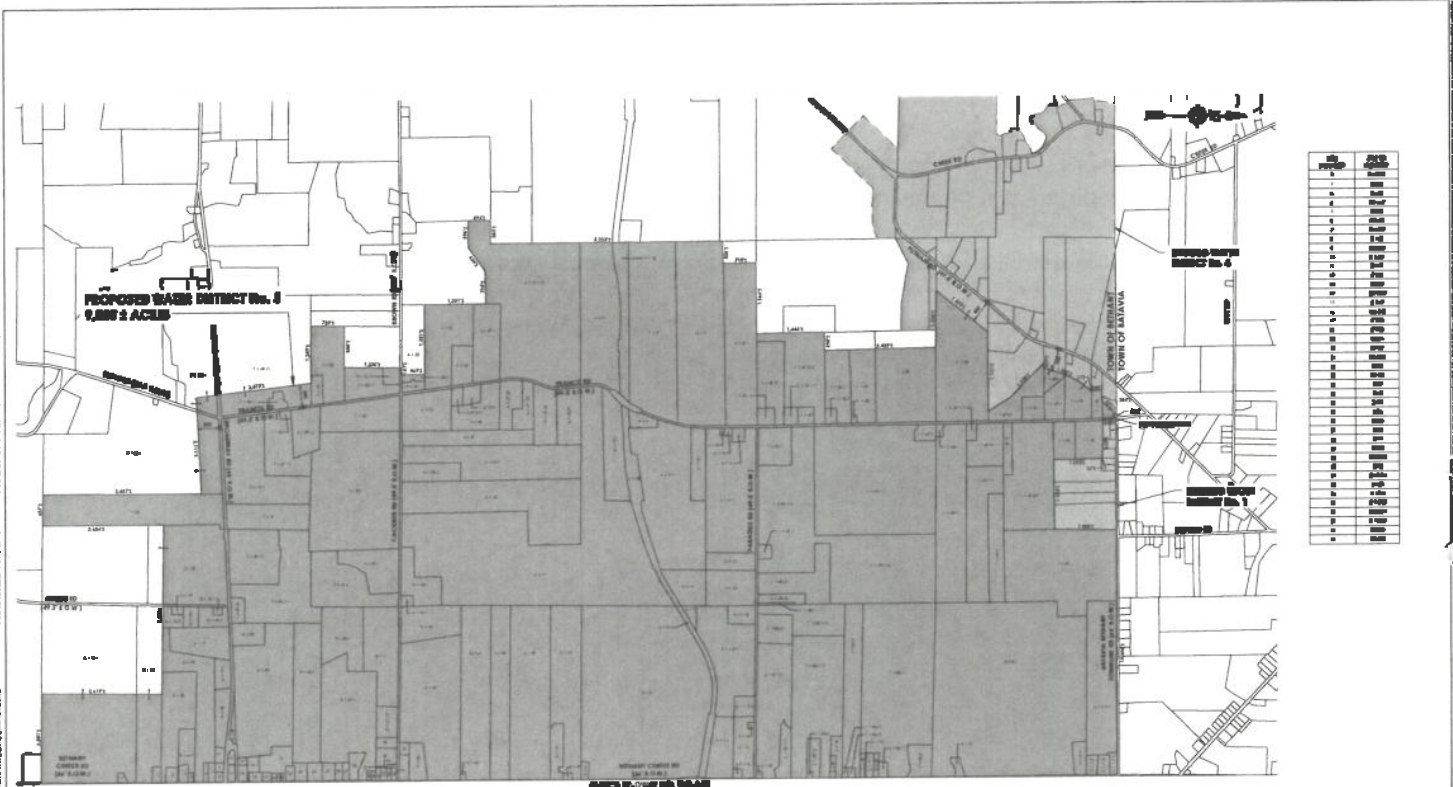
52. Westerly, through the lands of tax account numbers 7.-1-35.1 and 7.-1-39.11, crossing Silver Road (49.5 feet wide right-of-way), along a line 500 feet southerly and parallel to the center line of Broadway Road, a distance of 2,111 feet, more or less, to a point 500 feet westerly of and parallel to Francis Road (49.5 feet wide right-of-way); thence,
53. Northerly, through the lands of tax account numbers 7.-1-39.11 and 7.-1-40.11, along a line 500 feet westerly of and parallel to the center line of Francis Road, a distance of 2,572 feet, more or less, to the southerly line of tax account number 7.-1-24; thence,
54. Westerly, along the southerly lines of tax account numbers 7.-1-24 and 7.-1-23, a distance of 1,249 feet, more or less, to the southwesterly corner of tax account number 7.-1-23; thence,
55. Northerly, along the westerly line of tax account number 7.-1-23, a distance of 722 feet, more or less, to the northwesterly corner of said tax account number; thence,
56. Easterly, along the northerly line of tax account number 7.-1-23, a distance of 888 feet, more or less, to the southwesterly corner of tax account number 7.-1-22.11; thence,
57. Northerly, along the westerly lines of tax account numbers 7.-1-22.11 and 7.-1-22.12, and the northerly extension of the westerly line of tax account number 7.-1-22.12, a distance of 1,235 feet, more or less, to the center line of Brown Road (49.5 feet wide right-of-way); thence,
58. Easterly, along the center line of Brown Road, a distance of 147 feet, more or less, to the southerly extension of the westerly line of tax account number 4.-1-24.2; thence,
59. Northerly, along the southerly extension of the westerly line of tax account number 4.-1-24.2 and the westerly line of tax account number 4.-1-24.2, a distance of 469 feet, more or less to the northwesterly corner of said tax account number; thence,
60. Westerly, along the southerly line of tax account numbers 4.-1-26, a distance of 1,501 feet, more or less to the southwesterly corner of said tax account number; thence,
61. Northerly, along the westerly lines of tax account numbers 4.-1-26, and 4.-1-37.1, a distance of 1,301 feet, more or less, to a southerly line of tax account number 4.-1-27.112; thence,
62. Westerly, along a southerly line of tax account number 4.-1-27.112, a distance of 734 feet, more or less, to an angle point; thence,
63. Southwesterly, along a southerly line of tax account number 4.-1-27.112, a distance of 634 feet, more or less, to an angle point; thence,
64. Westerly, along a southerly line of tax account number 4.-1-27.112, a distance of 596 feet, more or less, to a westerly line of said tax account number; thence,
65. Northerly, along a westerly line of tax account number 4.-1-27.112, a distance of 496 feet, more or less, to a northerly line of said tax account number; thence,
66. Easterly, along a northerly line of tax account number 4.-1-27.112, a distance of 503 feet, more or less, to a westerly line of said tax account number; thence,

67. Northerly, along the westerly lines of tax account numbers 4.-1-27.112, 4.-1-4, 4.-1-35, 4.-1-5, and 4.-1-7, a distance of 5,233 feet, more or less, to the northwesterly corner of tax account number 4.-1-7; thence,
68. Easterly, along the northerly line of tax account number 4.-1-7, a distance of 486 feet, more or less, to the southwesterly corner of tax account number 4.-1-8.1; thence,
69. Northerly, along the westerly line of tax account number 4.-1-8.1, a distance of 715 feet, more or less, to the northwesterly corner of said tax account number; thence,
70. Easterly, along the northerly line of tax account number 4.-1-8.1, a distance of 1,566 feet, more or less, to a southwesterly corner of tax account number 1.-1-51.113; thence,
71. Northerly, along the westerly line of tax account number 1.-1-51.113, a distance of 1,445 feet, more or less, to the northwesterly corner of said tax account number; thence,
72. Easterly, along the northerly line of tax account number 1.-1-51.113, a distance of 395 feet, more or less, to a southwesterly corner of tax account number 1.-1-52.2; thence,
73. Northerly, along the westerly lines of tax account numbers 1.-1-52.2, 1.-1-54, and 1.-1-55, a distance of 2,429 feet, more or less, to the northwesterly corner of tax account number 1.-1-55; thence,
74. Westerly, along the southerly line of tax account number 1.-1-25 and the Existing Water District No. 4, a distance of 1,323 feet, more or less, to a point 500 feet southeasterly of and parallel to the center line Putnam Road (49.5 feet wide right-of-way), and the Existing Water District No. 4; thence,
75. Northeasterly, through the lands of tax account number 1.-1-25, along a line 500 feet southeasterly of and parallel to the center line of Putnam Road, and the Existing Water District No. 4, a distance of 1,475 feet, more or less, to the northerly line of said tax account, and the Existing Water District No. 4; thence,
76. Easterly, along the northerly line of tax account number 1.-1-25, and the Existing Water District No. 4, a distance of 1,731 feet, more or less, to a southwesterly corner of tax account number 1.-1-27.22, and the Existing Water District No. 4; thence,
77. Northwesterly, along a westerly line of tax account number 1.-1-27.22, and the Existing Water District No. 4, a distance of 1,638 feet, more or less, to the northerly line of said tax account number, and the Existing Water District No. 4; thence,
78. Easterly, along the northerly line of tax account number 1.-1-27.22, and the Existing Water District No. 4, a distance of 101 feet, more or less, to a point 500 feet easterly of and parallel to the center line of Putnam Road, and the Existing Water District No. 4; thence,
79. Northeasterly, through the lands of tax account numbers 1.-1-28.1 and 1.-1-30, along a line 500 feet easterly of and parallel to the center line of Putnam Road, and the Existing Water District No. 4, a distance of 1,205 feet, more or less, to the southerly line of tax account number 1.-1-33, and the Existing Water District No. 4; thence,
80. Westerly, along the southerly line of tax account number 1.-1-33, and the Existing Water District No. 4, a distance of 21 feet, more or less, to the southwesterly corner of said tax account number, and the Existing Water District No. 4; thence,

81. Northerly, along the westerly line of tax account number 1.-1-33, and the Existing Water District No. 4, a distance of 240 feet, more or less, to the southerly line of tax account number 1.-1-34, and the Existing Water District No. 4; thence,
82. Easterly, along the northerly line of tax account number 1.-1-33, and the Existing Water District No. 4, a distance of 254 feet, more or less, to a point 500 feet easterly of and parallel to the center line of Putnam Road, and the Existing Water District No. 4; thence,
83. Northeasterly, through the lands of tax account number 1.-1-34, along a line 500 feet easterly of and parallel to the center line of Putnam Road, and the Existing Water District No. 4, a distance of 427 feet, more or less, to the northerly line of said tax account number, the northerly Municipal Boundary Line of the Town of Bethany, and the Existing Water District No. 4; thence,
84. Easterly, along the northerly line of tax account number 1.-1-34 and the easterly extension of the northerly line of tax account number 1.-1-34, and the northerly Municipal Boundary Line of the Town of Bethany, a distance of 86 feet, more or less, to the point of beginning.

Town of Bethany Water District No. 5, as described above contains approximately 9,885 acres of land.

All as shown on a map prepared by CPL, "Water District No. 5 – Water District Map", Drawing Numbers WD-05A, WD-05B, and WD-05C, dated September 24, 2019.



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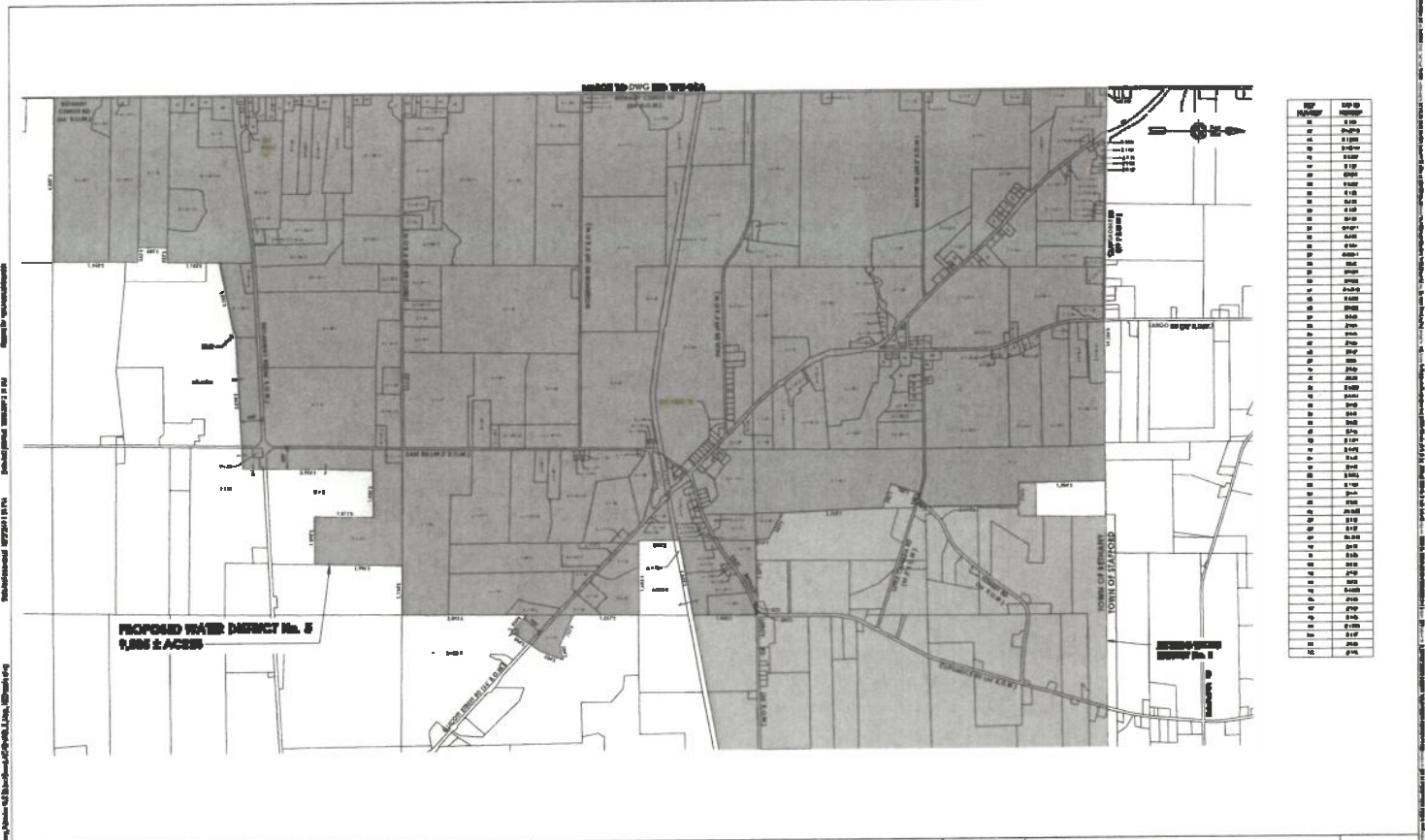


TOWN OF BETHANY
 TOWN OF BETHANY, CLATSOP COUNTY, OREGON

WATER DISTRICT NO. 4
WATER DISTRICT MAP

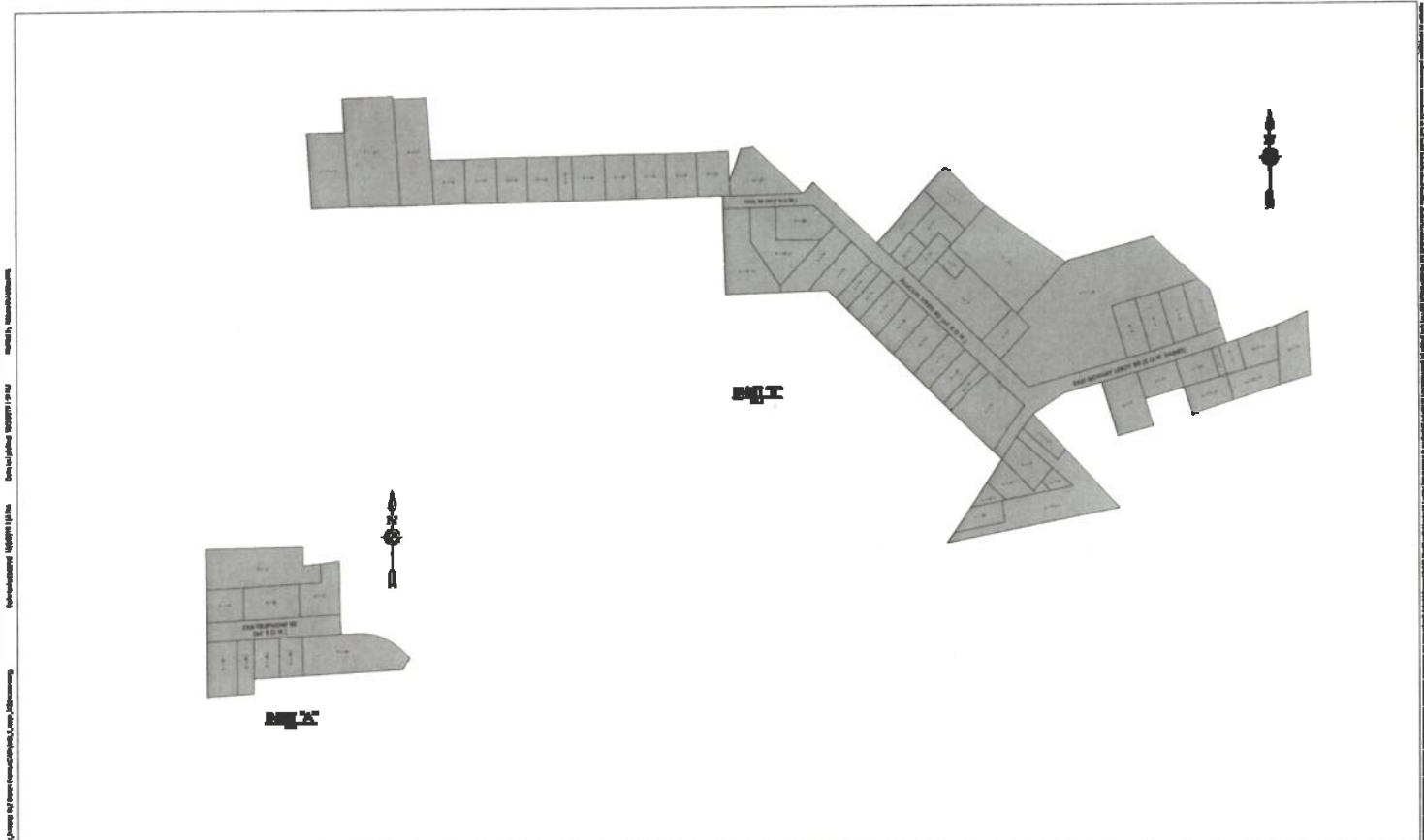
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WATER DISTRICT NO. 4
 W.D. 06A



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NO	REV	DATE	DESCRIPTION									



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Appendix B
Opinion of Probable Costs

**TOWN OF BETHANY
PROPOSED WATER DISTRICT NO. 5
OPINION OF PROBABLE COST - TOWN OF BATAVIA O&M**

ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ESTIMATED UNIT PRICE	ESTIMATED TOTAL
1A	Furnish and Install 8" Diameter PVC Water Main	LF	135,000	\$ 60.00	\$ 8,100,000.00
1B	Furnish and Install 8" Diameter HDPE Water Main	LF	6,000	\$ 145.00	\$ 725,000.00
2	Furnish and Install 8" In-Line Gate Valves Complete	EA	175	\$ 3,000.00	\$ 525,000.00
3	Furnish and Install Short Side Water Service With Meter Pit	EA	176	\$ 5,500.00	\$ 968,000.00
4	Furnish and Install Long Side Water Service With Meter Pit	EA	176	\$ 7,500.00	\$ 1,320,000.00
5	Furnish and Install Hydrant Assemblies	EA	250	\$ 6,550.00	\$ 1,637,500.00
6	200,000 Gallon Water Tank - Aquastore Glass Lined Steel	LS	1	\$ 900,000.00	\$ 900,000.00
7	250,000 Gallon Water Tank - Aquastore Glass Lined Steel	LS	1	\$ 1,000,000.00	\$ 1,000,000.00
8	Pump Stations	EA	2	\$ 500,000.00	\$ 1,000,000.00
9	Rock Excavation	CY	2,900	\$ 75.00	\$ 217,500.00
10	Maintenance & Protection of Traffic Including Signs	LS	1	\$ 327,900.00	\$ 327,900.00
11	Mobilization	LS	1	\$ 491,800.00	\$ 491,800.00

SUBTOTAL = \$ 17,212,700.00
CONTINGENCY (10%) = \$ 1,721,270.00
LEGAL, ENGINEERING, & ADMINISTRATION = \$ 2,744,150.00
TOTAL (ROUNDED) = \$ 21,680,000.00

WIA Grant = \$ 5,000,000.00
Net Local Project Cost = \$ 16,680,000.00
Estimated Total Debt Service = \$ 654,107.00
County Payment = \$ 174,405.00
Estimated Local Debt Service = \$ 379,702.00

Total EDU's = 481.0
ANNUAL DEBT SERVICE PER UNIT = \$ 823.65

Annual Town of Batavia Water Cost (\$6.48/1,000 gallons, 60,000 gallons/year) = \$ 388.80
Estimated Yearly Water Cost = \$ 388.80

TOTAL ANNUAL UNIT COST (ROUNDED) = \$ 1,220.00