



TOWN OF CHARLTON – WATER SYSTEM IMPROVEMENT STUDY

TOWN BOARD BRIEFING SUMMARY AND RECOMMENDATIONS

COUNCILMAN J. GLAVIN, INFRASTRUCTURE LIAISON

4-24-23

CHARLTON WATER SYSTEM IMPROVEMENT STUDY

- **The Study:** Background

- **Why** did we request a Study?

- **Understand Risks** to water system users and inform Town Board to allow follow on corrective actions, to **mitigate risks**, if necessary;
 - Single source supplier to Charlton – Town of Glenville
 - Identify age related degradations and obsolescence issues. System is over 55 yrs. Old
- Conduct a conditional assessment to understand repairs and capital improvement needs for planning
- Evaluate proper system capacity
- Identify inefficiencies that could lead to cost savings
- ARPA Funds available, with potential Federal Funding Grants in future for infrastructure / water systems

CHARLTON WATER SYSTEM IMPROVEMENT STUDY

- **The Study:** Background (cont.)

- **When & Milestones**

- April 11, 2022: Town requested EDP to do a water system improvement study
- Oct 12, 2022: EDP provided a status update to the study, via letter to the Supervisor
- Dec 14, 2022: EDP provided TO Charlton the draft study
- Jan 18, 2023: TOC provided study comments to EDP
- Jan 23, Water commissioner meeting before TB Meeting
- April 6, 2023: EDP provided final study to TO Charlton
- April 10, 2023: TB Meeting, announced receipt of final study
- April 24, 2023 (Today): TB meeting briefing of study to TB and Public
- May 8, or May 22, 2023: Target Proposed Water Commissioners working meeting to define plans of action to address risks

CHARLTON WATER SYSTEM IMPROVEMENT STUDY

- **The Study:** Background (cont.)

- **Task for Town Engineer (EDP)**

- The Town of Charlton requested EDP to conduct a study of the Town Water System regarding vulnerabilities associated with and evaluate the following:
 - system age and condition,
 - inventory of critical spare parts,
 - operational issues,
 - known past material failures,
 - material or parts functional obsolescence,
 - past and current non-compliance issues, and current status

CHARLTON WATER SYSTEM IMPROVEMENT STUDY

- **The Study: Background (cont.)**


- **Task for Town Engineer (EDP) (cont.)**

- current preventative and corrective maintenance practices,
- lack of redundancy, whereby failure of a component or element of the system could prevent continuity of system operation or render the system in non-compliance with governing regulatory requirements,
- evaluation of available data, the identification of negative trends associated with the data, such as capacity issues (current or future projected) and an assessment of what the Town should be trending based on available data, such as volumetric water usage and any differences between supply volume and consumption volume
- Any other areas of vulnerability associated with the Water Systems Operations and maintenance, that EDP considers relevant

CHARLTON WATER SYSTEM IMPROVEMENT STUDY

- **The Study: Findings**

- **Infrastructure Condition and Recommendations**

- 1. Piping Age / Location: 60 Residents served by 8" pipe (Hillandale, Anthony, & Meadow Ln) in SW portion of Charlton. Consider redundant supply. Conduct engineering eval for solution (\$5-8K)**
 - 2. Pumps Age: Consider spare pump/motor assy. (\$13K)**
 - 3. New back up chlorination system controller / monitoring probes at pump house (\$8.5K)**
 - 4. New battery back-up system at water tank (level detect/control) not functioning. Replace. (\$2.5-3K)**
 - 5. Spare Parts: Piping, Valves, Hydrants and repair kits for potential pipe breaks (\$10K)**
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CHARLTON WATER SYSTEM IMPROVEMENT STUDY

- **The Study: Findings**

- **Options for Secondary Source of Water**

1. **Dawson Rd. connection: 8" East along Dawson, North East along Crane, East along Charlton Rd. to Swaggertown Rd. ~ 8K' of piping (Est \$2.5-3.7M) -TOG**
2. **Bolt Rd. connection: 12" East along Bolt, North on Swaggertown, to Crooked St. (Est \$1.9-2.7M) – TOG**
3. **Jenkins Rd. connection: 10" West along Jenkins, to Stage Rd. (Est \$2.2-3.2M) – TOB**
4. **Charlton Rd./Goode St connection 12" From Goode St. west on Charlton Rd. to Stage Rd (Est \$5-7.2M) TOB**
5. **Charlton Rd./County Water Authority connection :30" From Curtiss Industrial Park, to Rt 50 South, Charlton Rd to Stage Rd. (Est \$11.2-16.5M) SCWA**
6. **Town of Charlton Developed Well(s) and Treatment Facility: Numerous disadvantages to this option**

CHARLTON WATER SYSTEM IMPROVEMENT STUDY

• The Study: Findings

- **Estimated Costs Options 1 – 5 for Secondary Source of Water Options from Outside of Town of Charlton / Recommendations**

Description:	Length	Price (Excavated Trench)	Price (Directional Drill)	Recommended (Priority)
#1 Town of Glenville @ Dawson Rd	7,970'	\$2,520,156.00	\$3,692,880.00	3 – Need to cross Alplaus Creek / Permitting cost/time.
#2 Town of Glenville @ Bolt Road	5,600'	\$1,936,830.00	\$2,695,830.00	1 – Consider Further Eval
#3 Town of Ballston @ Jenkins Road	6,870'	\$2,179,917.00	\$3,237,480.00	2 – Consider Further Eval
#4 Town of Ballston @ Charlton Road	16,060'	\$5,008,710.00	\$7,204,290.00	4 – Too Costly
#5 County Water Authority@ Curtis Industrial	38,090'	\$11,255,970.00	\$16,554,480.00	5 – Too Costly

CHARLTON WATER SYSTEM IMPROVEMENT STUDY

- **Other Potential Improvements / Cost Savings Ideas**

- **Water System Administration**

1. **Meter Readings: Archaic method currently / Costly: Send out Cards for residents to record meter readings and mail back. Late Fees.**
2. **Water Service Billing: All mail-out of water bills.**

- **Material / Parts Storage Facility / Location**

1. **Critical Spares, Piping sections, valves, hydrants, repair kits. Currently does not exist. Need at least cold storage to be good stewards of towns assets.**

- **Proper Tools for system Ops and Maintenance**

1. **Solicit Water Superintendent for needs (ex., UG pipe locator, water test kits/materials, etc.)**

- **Develop long term Water System Capital Improvement Plan**



CHARLTON WATER SYSTEM IMPROVEMENT STUDY

- **Next Actions (Proposed)**

- 1. Hold 2023-2 Water Commissioners Meeting (Workshop) to:**

- 1. Prioritize water system risks and liabilities, using study as basis for vulnerabilities and develop plan of action to eliminate or mitigate risks**

- 1. Action Plan to include action owners and timing**

- 2. Determine source of funds necessary to address actions (budget)**

- 3. Discuss need for LT capital plan for the Town Water System**

- 2. Proposed Timing for Commissioners Meeting:**

- 1. May 8th or 22nd @ 6:15 PM before TB Meeting**

CHARLTON COMMUNITY WATER SYSTEM

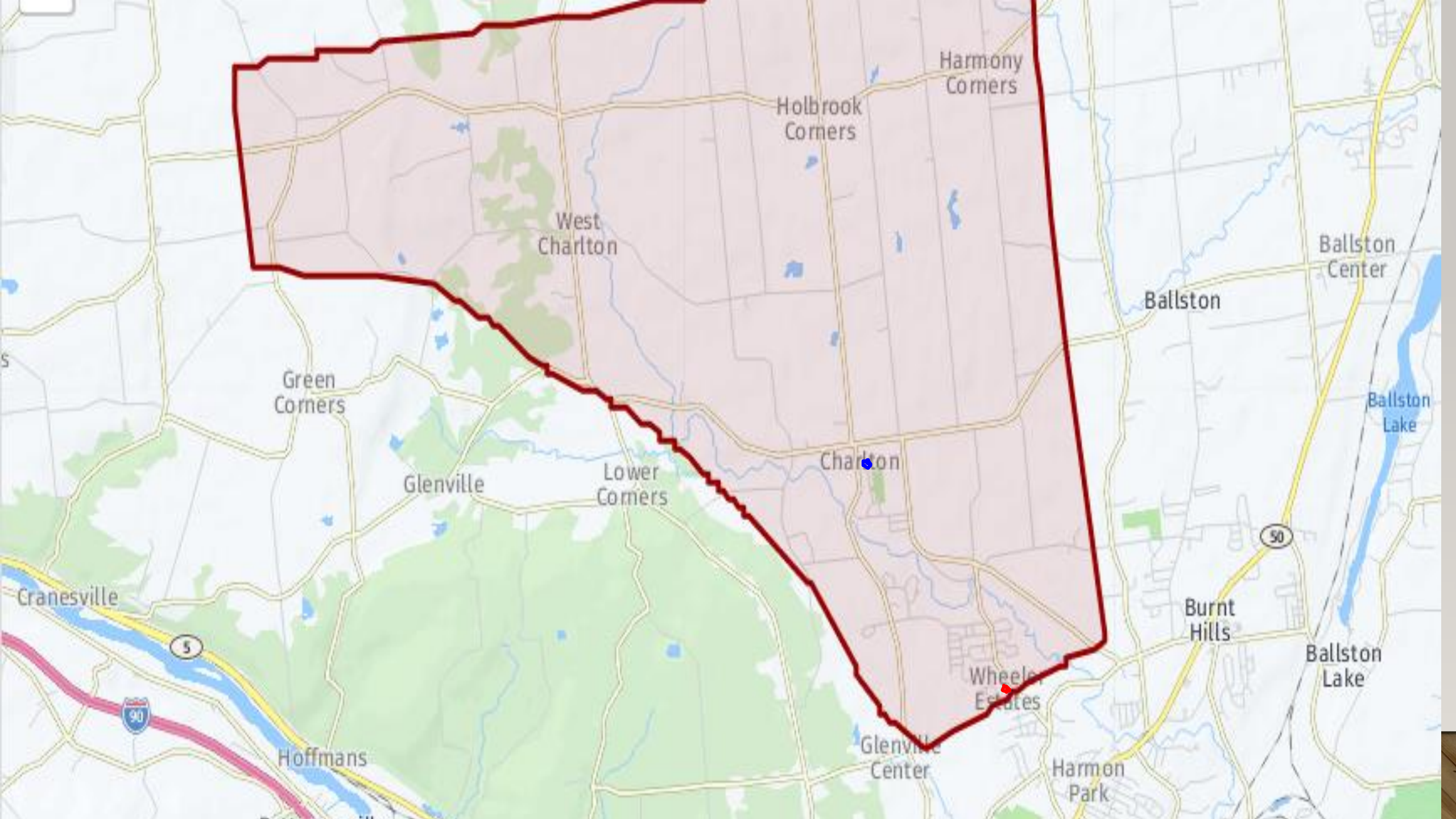
BACK-UP SLIDES

CHARLTON WATER SYSTEM IMPROVEMENT STUDY

- **Water System Facts:**

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- **Water Source:** The Town of Glenville supplies the Town of Charlton Water System:
 - The Glenville water supply comes from the **Great Flats Aquifer** (also known as the Schenectady Aquifer) through four drilled wells
 - The Great Flats Aquifer is one of the most productive in the State of New York. The aquifer is an extensive bed of sands and gravel underlying the Mohawk River channel. The Great Flats Aquifer produces clear, clean water without any major chemical constituents except the hardness
 - Charlton Water System is connected to the Glenville supply in the Southern portion of Town across from the Charlton Heights School on Stage Rd. It is a community water system and is regulated by the Department of Health - NYSDOH
 - **Customers:** The Charlton system serves ~ 2000 people, ~675 metered end user units, primarily residents, Town Facilities, Schools, several businesses, in the southern portion of town from the hamlet, in areas of higher density or cluster residences.
 - **System Components:** The booster pump house (2 pumps, valves, instrumentation, controls), and back up disinfection system is located at 163 Stage Rd. The water tower (head tank) is located on Cherry Rd. off Swaggertown Rd. about 800 feet from Charlton Rd. There are 13+ Miles of underground pipe (mains and laterals), ~ 130 Mn. line valves, and 86 Hydrants.
 - **Operations:** The town water superintendent / certified operator (D Flynn), oversees the operations, maintenance, and modifications to the system. Water Clerk (K Caron), oversees meter readings and billing and related communications.
 - **Water Testing:** The system is periodically tested to ensure compliance with safe drinking water requirements as required by NYSDOH





Harmony Corners

Holbrook Corners

West Charlton

Green Corners

Glenville

Lower Corners

Charlton

Cranesville

5

90

Hoffmans

Burnt Hills

Wheeling Estates

Glenville Center

Harmon Park

Ballston Center

Ballston

Ballston Lake

50

Ballston Lake



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