



City Council Study Session Agenda
October 9, 2023 - 5:30 PM
City Council Chambers, City Hall, 3rd Floor,
1528 Third Avenue, Rock Island, IL

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- 1. Call to Order**
- 2. Roll Call**
- 3. Public Comment**
- 4. Presentations**
 - a. Presentation from the Public Works Department regarding an update on the Reservoir Domes.
 - b. Presentation from the Community & Economic Development Department regarding the Consolidation of Boards and Commissions.
- 5. Adjourn**
 - a. Motion to Adjourn.

Motion:	Motion whether or not to adjourn.
RC	Voice Vote is needed.

This agenda may be obtained in accessible formats by qualified persons with a disability by making appropriate arrangements from 8:00 am to 5:00 pm, Monday through Friday, by contacting the City Clerk's Office at (309) 732-2010 or visiting in person at: 1528 Third Avenue, Rock Island, IL 61201.

Water Treatment Plant Finished/Potable Water Storage and Pump Station

Brandon Diffenderfer,
PE, SE
Amrou Atassi, PE,
BCEE

October 9, 2023



**CDM
Smith**

Agenda

Background

Finished Water Storage Tanks Sizing

High Service Pump Station Sizing

Estimated Project Cost and Funding

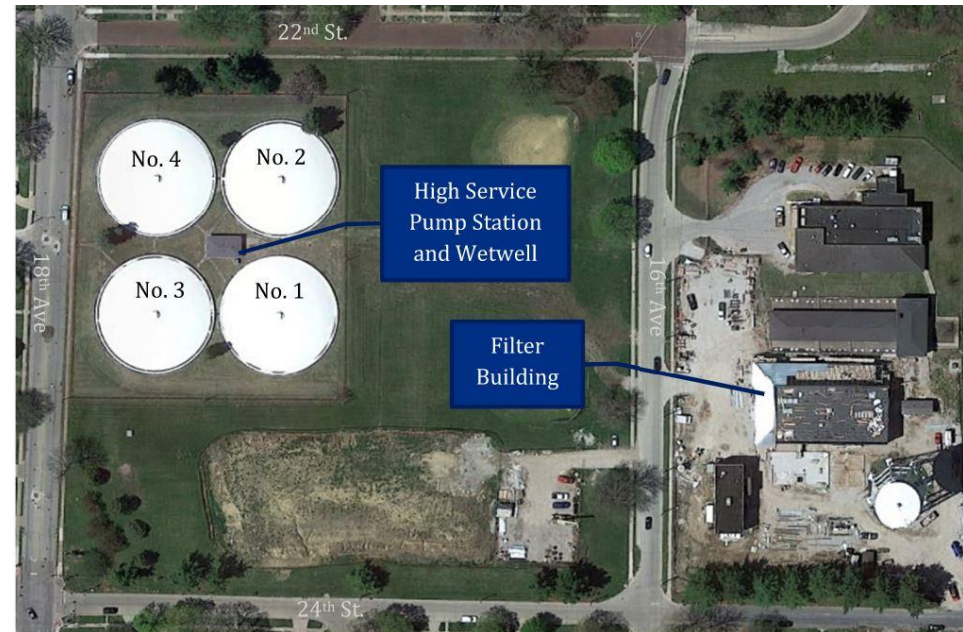
Next Steps and Proposed Timeline



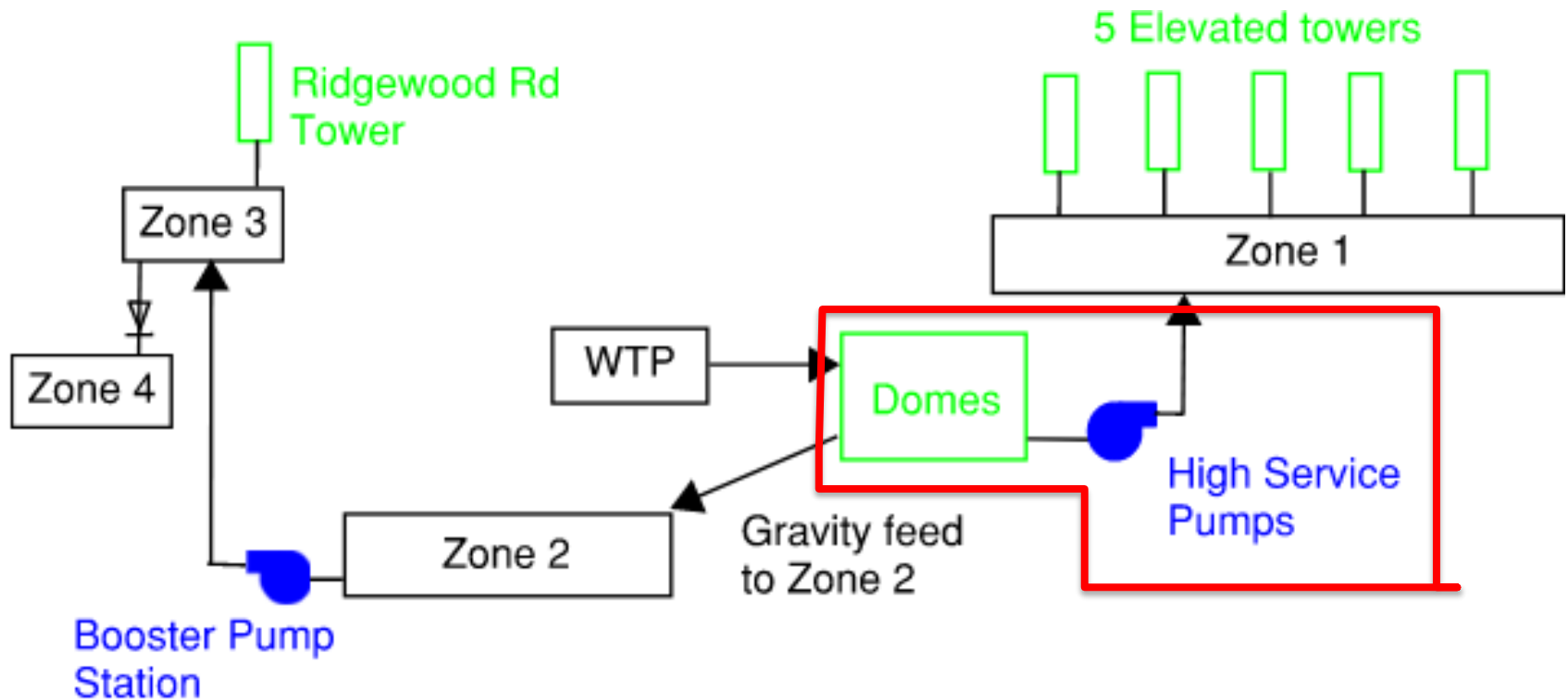
Background

Existing Potable Water Storage Overview

- Four Domes constructed in 1938
 - 2 MG capacity each
 - Receive finished water from new filter building
- Domes distribute water to Low Pressure Zone by gravity
- High Service Pump Station pumps water to High Pressure Zone
 - 3.4 MGD Total Avg Flow



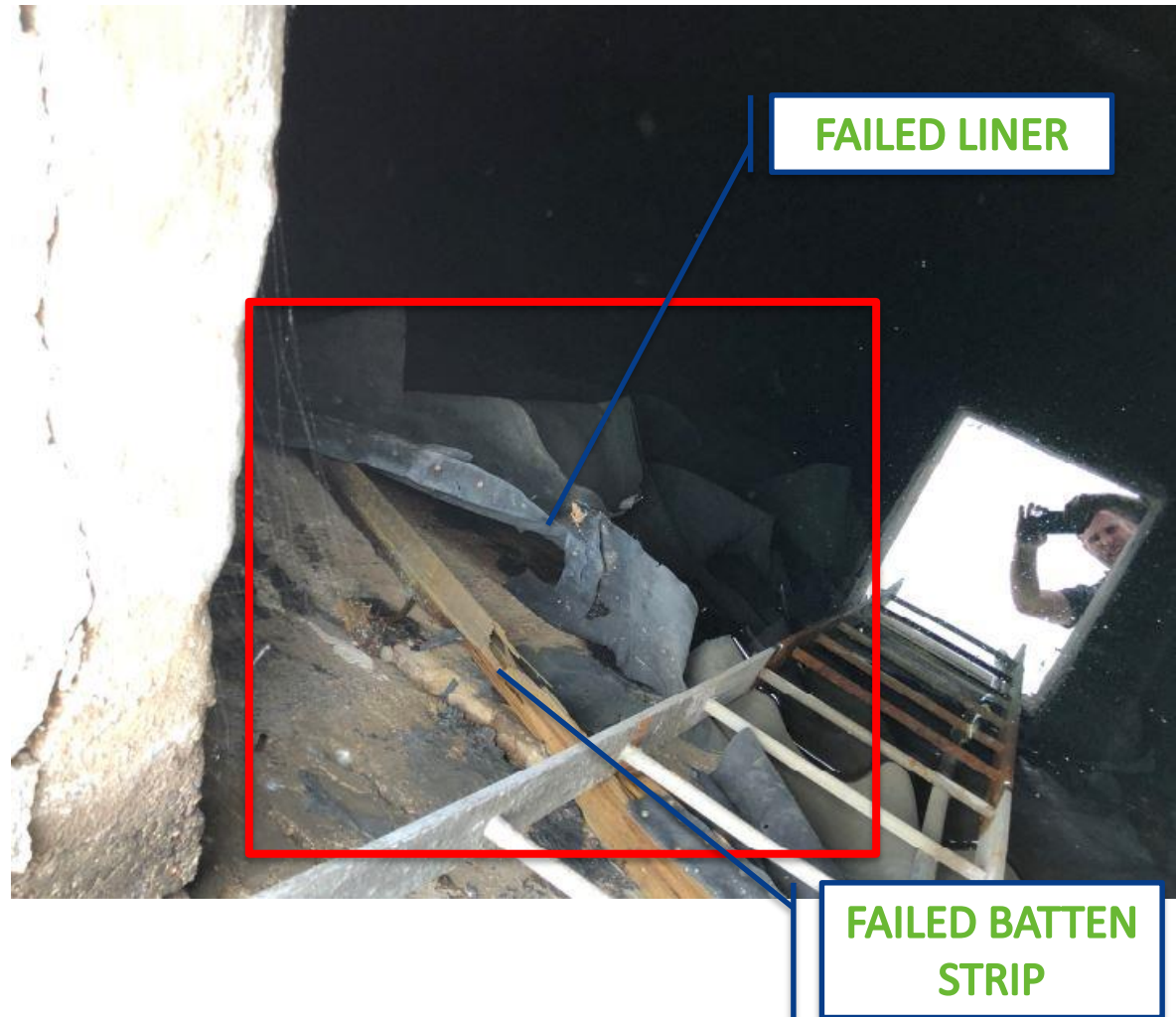
Overview of Water Distribution Network



- Treated water from the WTP flows into the Domes.
- High Service Pump Station pumps water into Zone 1.
- Zone 2 is fed by gravity directly from the Domes.

Condition Assessment Portable Water Storage and High Service Pump Station

- Domes and PS Facilities in poor condition
- Pump station does not meet current design standards.
- Recommended to be replaced

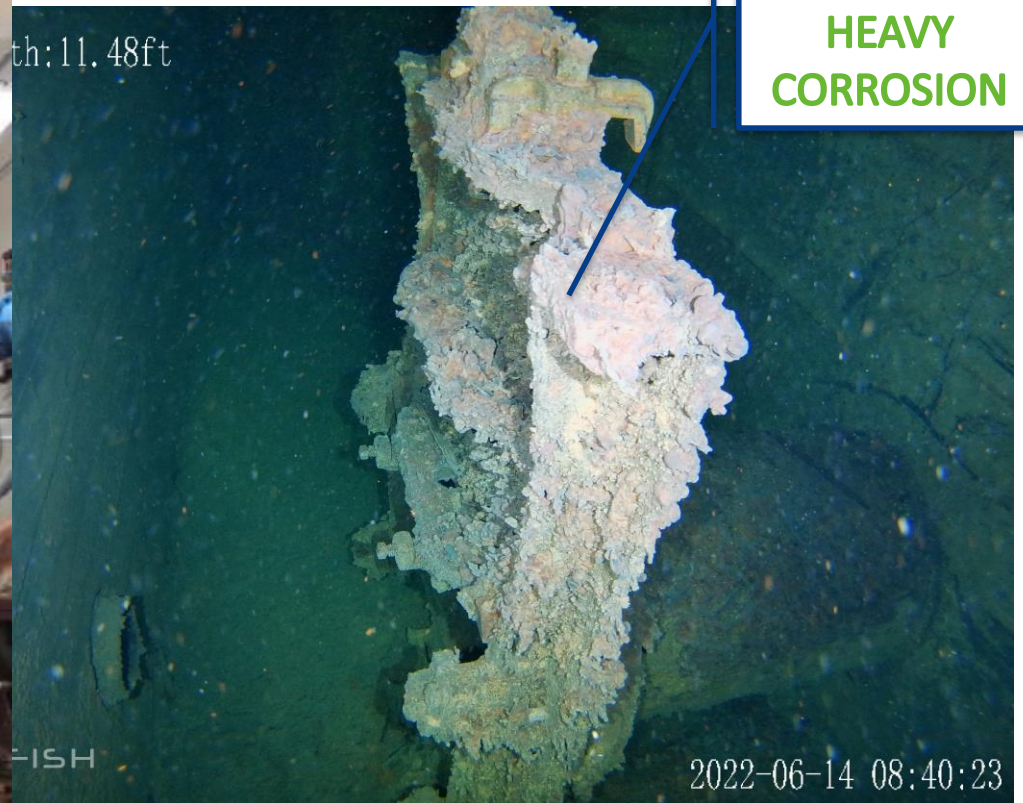


Storage Domes

- No baffling in existing domes which impacts chlorine contact requirements by EPA
- No emergency overflow
- Do not meet EPA and AWWA standards for potable water storage design
- Domes are over 80 years and near end of useful life
- Illinois EPA required liner to be replaced but agreed with recommendation to replace domes with new storage tanks



Existing Pump Station



**HEAVY
CORROSION**

Action Items from December Board Meeting

- Met with Illinois EPA to present recommendation and not replace failed liner
- City staff and CDM Smith collected data, analyzed system hydraulics and sized new recommended facilities
- Developed an updated cost estimate for improvements

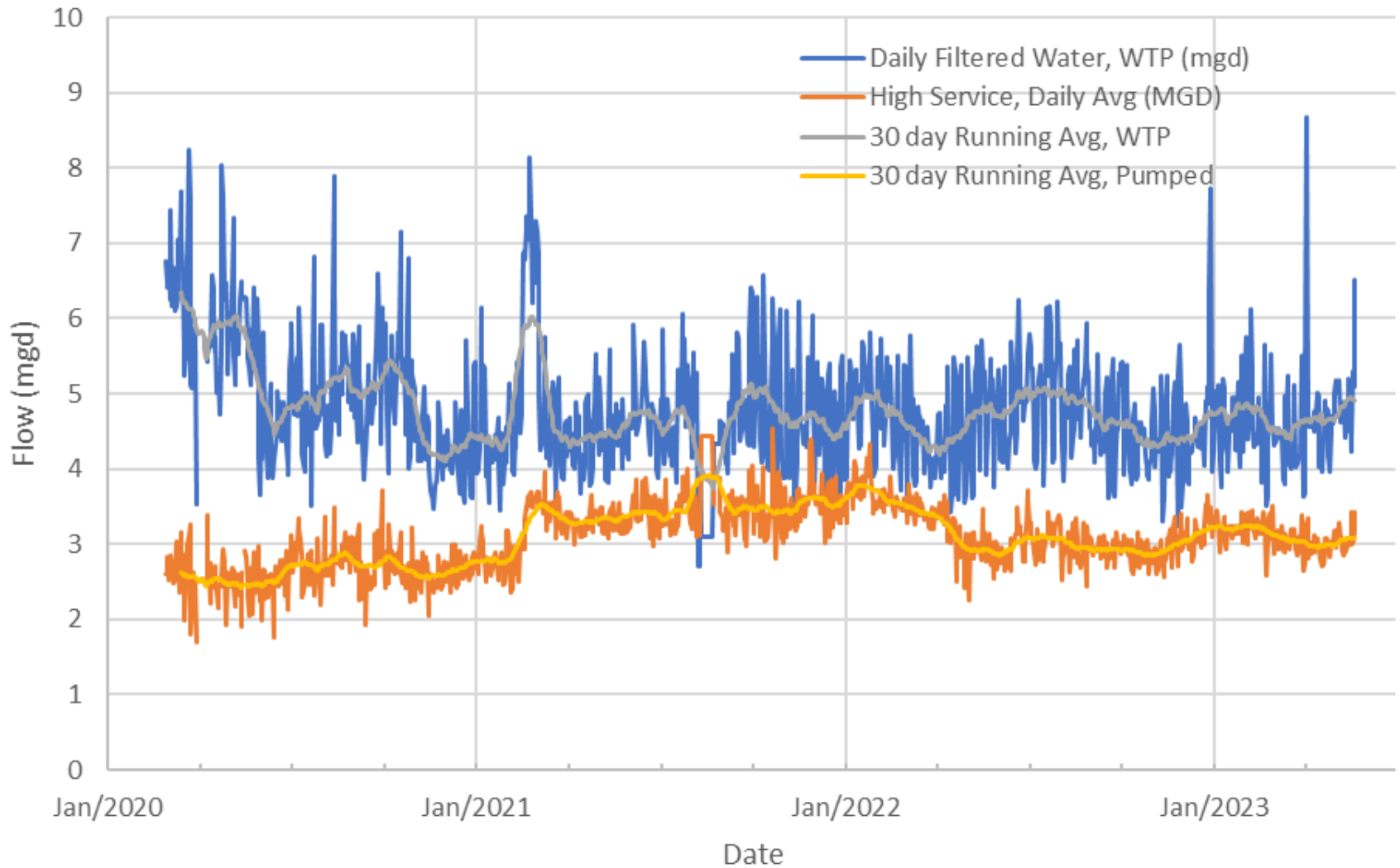


Storage and Pump Station Sizing

Existing Storage

Existing Storage	Volume (MG)
Domes (4 tanks)	8
Zone 1 Elevated Towers (5 total)	2.60
Ridgewood Road Tower (Zone 3)	0.25
Total Storage with Domes	10.85
Total Storage without Domes	2.85

Average Daily WTP Production and High Service Pump Station Flows



Existing Demands

Historical WTP Production (Based on Data from 2020 to 2023)	Flow (MGD)
Average Day WTP Production	4.8
WTP Hydraulic Capacity	12
Maximum Daily Average WTP Production	8.7
99 th Percentile Daily Average WTP Production (Considered to be MDD for Rock Island)	7.3



Finished Water Storage Tanks Sizing

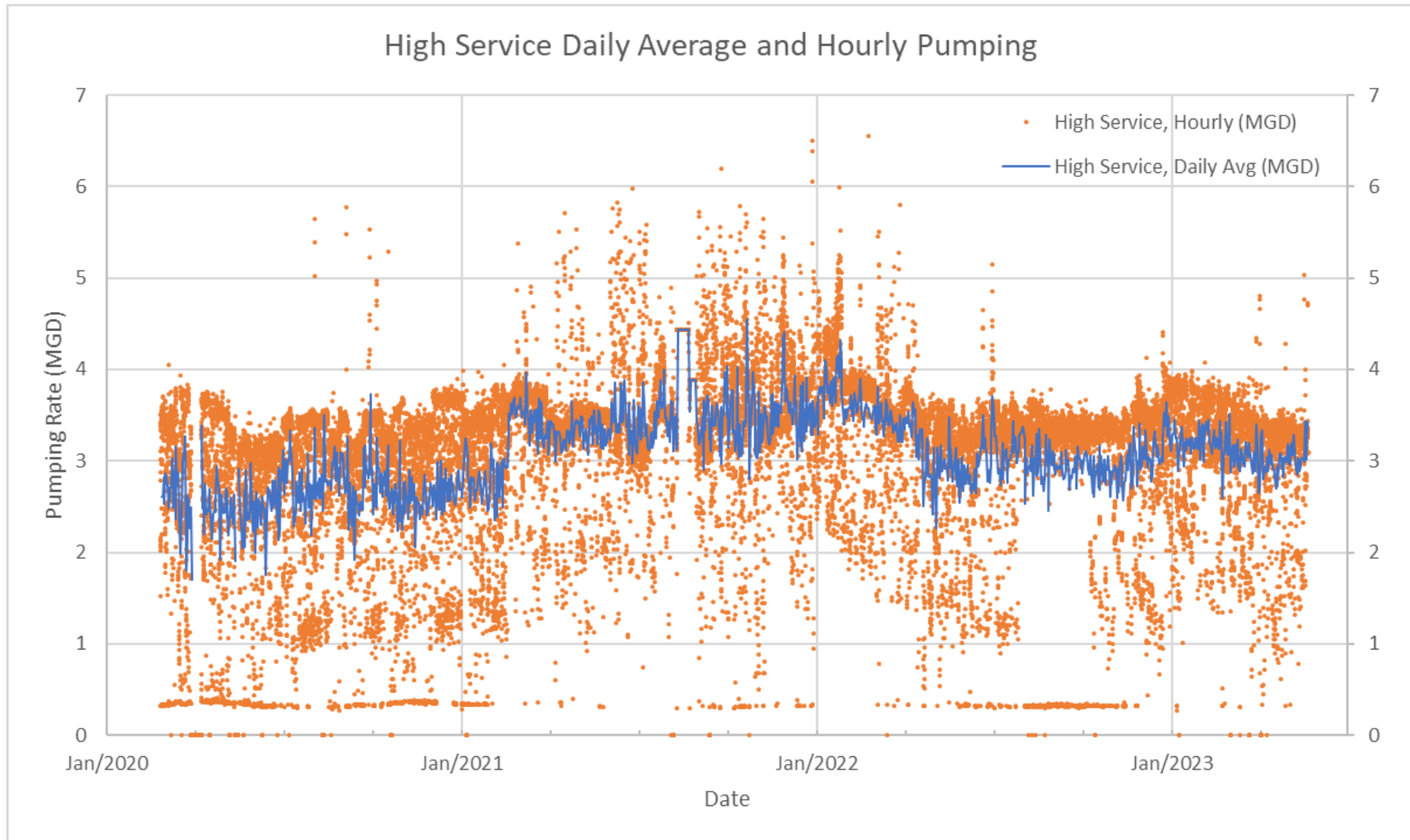
Volume Needed in New Domes

	Volume (MG)
Average Demand (last three years)	4.8
Maximum Demand (last three years)	7.3
Required Storage (Emergency + Fire + Operational)	7.6
Total Storage Excluding Existing Domes	2.9
Total Storage Needed in New Domes	4.7
Total Storage Needed in New Domes (rounded up)	5.0



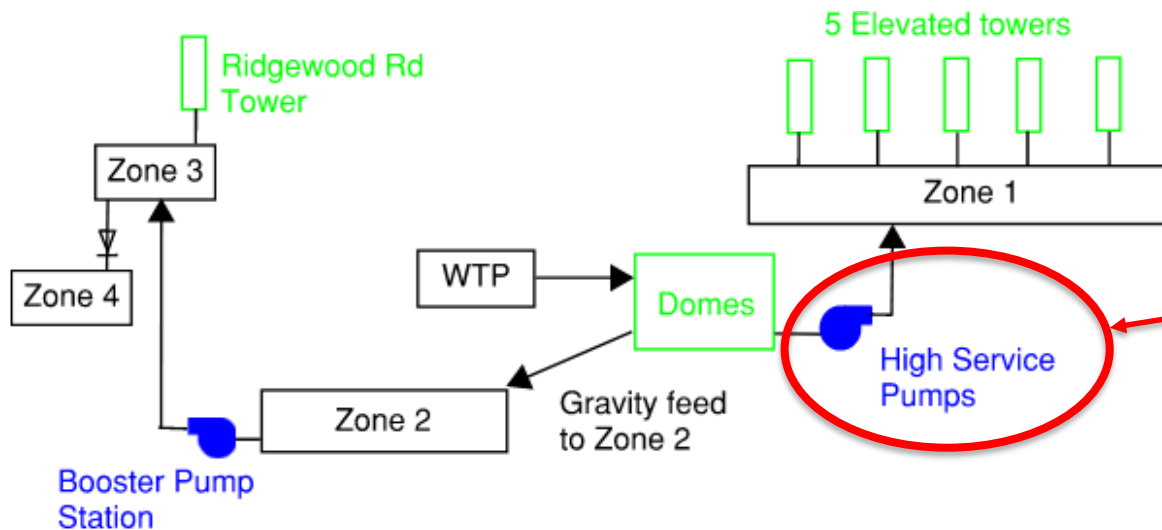
High Service Pump Station Sizing

High Service Pumping Records 2020 - 2023



High Service Pumping Statistics 2020 - 2023

	Flowrate (MGD)
Average Hourly Pumping	3.1
Median Hourly Pumping	3.3
Peak Hour Pumping	6.6



Recommended High Service Pumps

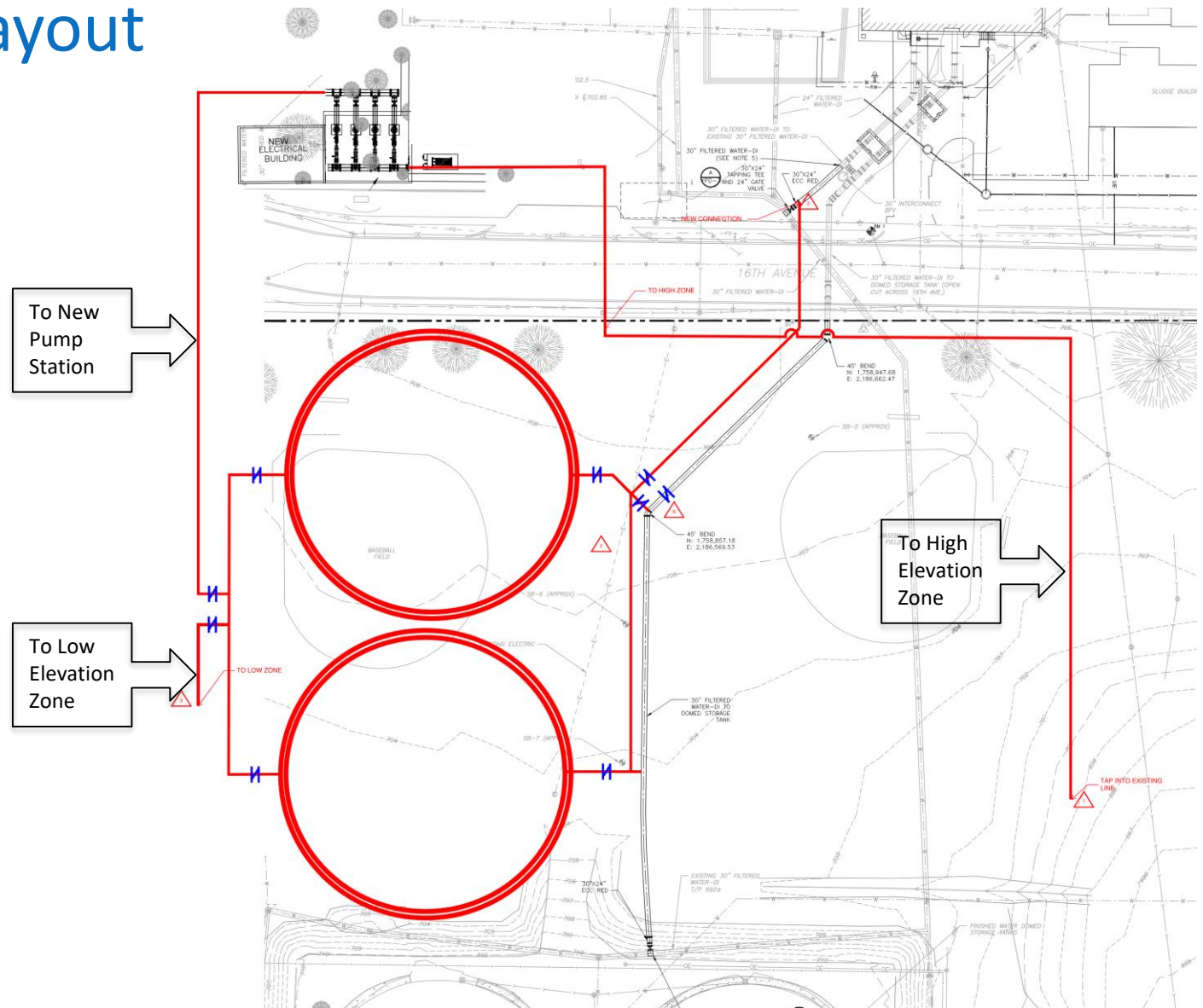
	TDH (ft)	Flow (gpm)	Flow (mgd)	Speed Control
Pump 1	185	2,430	3.5	VFD
Pump 2	185	2,430	3.5	VFD
Pump 3	185	2,430	3.5	VFD
Total Capacity		7,290	10.5	
Firm Capacity		4,860	7.0	

Historical Peak Hour Pumping = 6.6 mgd => met with 2 duty pumps

Median Hourly Pumping = 3.3 mgd => met with 1 duty pump

*Pumping capacity above does not reflect or impact plant capacity. Additional WTP flows to gravity section in low elevation zone and not through pump station.

Preliminary Project Layout





Estimated Project Cost

Estimated (concept-level) Project Cost in Today's Dollars

Cost Component	Estimated Cost
New 5 MG Water Storage Tanks	\$10,000,000
New High Service Pump Station and Electrical Room	\$10,000,000
Piping, Restoration, and Misc Ancillary Items	\$3,500,000
Contingency – 30%	\$6,750,000
Engineering (Design, Construction & Administration Services) – 20%	\$5,750,000
Total Estimated Cost (October 2023)	\$35,000,000

Estimated High Service Pumping Energy Savings

		Existing Pumps	New Pumps
Average High Service PS Flow	mgd	3.1	3.1
Efficiency	-	0.50	0.85
Average Total Head	ft	146	146
Power (horsepower)	HP	159	93
Power (kW)	kW	118	70
Energy Rate	\$/kWhr	0.10	0.10
Run time per year	hr	8,760	8,760
Annual cost	\$	\$104,000	\$62,000
Savings per year		\$42,000	

Estimated savings from replacing old pumps with new more efficient pumps
\$42,000 per year

Additional Savings/Benefits from Project

- Eliminates water loss/leakage from existing storage/pump facilities
- Reduced maintenance time to address aging equipment
- New above grade pump station is on secured WTP site, which will be safer and more accessible to staff
- New controls/monitoring that will improve operations and reduce downtime.

Funding

- Illinois EPA SRF Loan Program
 - Meeting being scheduled in October/November with IEPA to discuss funding opportunities
- Look for grants related to energy savings
- Federal Earmarks
- Will continue to evaluate other funding options



Next Steps and Proposed Timeline

Recommended Next Steps

- Meet with IEPA to review funding options
- Evaluate other funding options, including grants given the energy savings.
- Proceed with detailed design
 - Plan to present engineering design agreement at December Board meeting

Proposed Timeline

- Finalize concept design – by October 2023
- Meet with IEPA and review funding options by December 2023
- Detailed Design: December 2023 – December 2024
 - Design Engineering Agreement: December 2023
- Bidding – December – Spring 2025
- Construction: Spring 2025 – Spring 2027



Questions

Consolidating Commissions

The Effort to Create Better Public Bodies

What's a Commission?

- Commissions are one or both of the following.
 - Advisory bodies focused on specific subject areas that assist with policy development.
 - Quasi-adjudicative bodies that hold hearings and make rulings on certain matters.
- Members are citizen volunteers with relevant personal or professional knowledge.
- All commissions are public bodies subject to the Open Meetings Act (OMA) and should be using Robert's Rules of Order (or similar).

What's CED Got To Do With It?

The CED Department is responsible for the largest number of commissions and the most active.

1. Arts Commission
2. Beautification Commission
3. Board of Zoning Appeals
4. CIRLF Committee
5. Community Development Commission
6. Historic Preservation Commission
7. Inspections Commission
8. Planning Commission

Previously Approved Changes

- **Arts Commission:** Previously the Arts Advisory Committee, this body existed in City code but had not had members in decades. The 9 committee members were moved onto it.
- **Beautification Commission:** Previously this body had 15 members, but it was later reduced to the standard 9.
- **Planning Commission:** Previously had 11 members, now has the standard nine 9.

Previously Approved Changes

- **Community Development Commission:** Previously the Citizens Advisory Committee, it was reimagined with expanded purpose and has been helpful to staff with CDBG matters.
- **Inspections Commission:** Previously six individual boards of appeal for the different building codes that never met, this new body will help advise on a wide range of topics.

New Proposed Changes

- **Arts & Beautification Commission:** This new body would take on the best of the two existing bodies focusing on livability and improving community appearance.
- **Planning & Zoning Commission:** This new body would advise on community planning efforts as well as review applications for zoning actions in a quasi-adjudicative capacity.

Arts & Beautification Commission

- There is significant overlap in the subject matter handled by the two existing bodies.
- Collaboration between members on livability efforts that help make the City a nicer, more attractive place to live would be helpful.
- Gardening, landscaping, neighborhood clean-ups, gateway signage, public art programming, tourism, and so much more.

Planning & Zoning Commission

- Many cities have combined bodies like this to improve efficiency and timeliness.
- It would both review plans and serve as an appeals board. It would also help staff develop and evaluate relevant programs.
- Moline has a Plan Commission that only advises on plans and codes. Zoning actions are processed by staff whose decisions may be appealed to their City Council. There is not a board of zoning appeals or similar body at all.

Do More With Less

- Rock Island has more boards, commissions, committees, and task forces than many other cities do. Larger cities can even have fewer.
- It is increasingly difficult to find volunteers and many meetings are failing to meet quorum.
- Organizing these bodies and making sure they are complying with the law and applicable rules takes a lot of time and effort.
- Citizens and businesses should have clear understandings of what these bodies are for and how to work with them.

Public Service is Important

- Serving on a city commission should be about positive and productive public service.
- Commissions should have meaningful work to do that keeps members engaged year-round.
- Commissions should serve as a public service talent development pipeline where members get ready for other opportunities like future elected office. Commission → Council.

The Goal

Efficient bodies with uniform structure working productively with staff and the City Council.

1. Arts & Beautification Commission
2. Historic Preservation Commission
3. Planning & Zoning Commission
4. Inspections Commission
5. Community Development Commission
6. CIRLF Committee (possible future Economic Development Commission, TBD)

Questions?