GREAT LAKES WATER AUTHORITY

GLWA IN-SYSTEM STORAGE DEVICE DAM AND VALVE REMOTE EVALUATION & REHABILITATION PROJECT

Project Plan

April 26, 2021

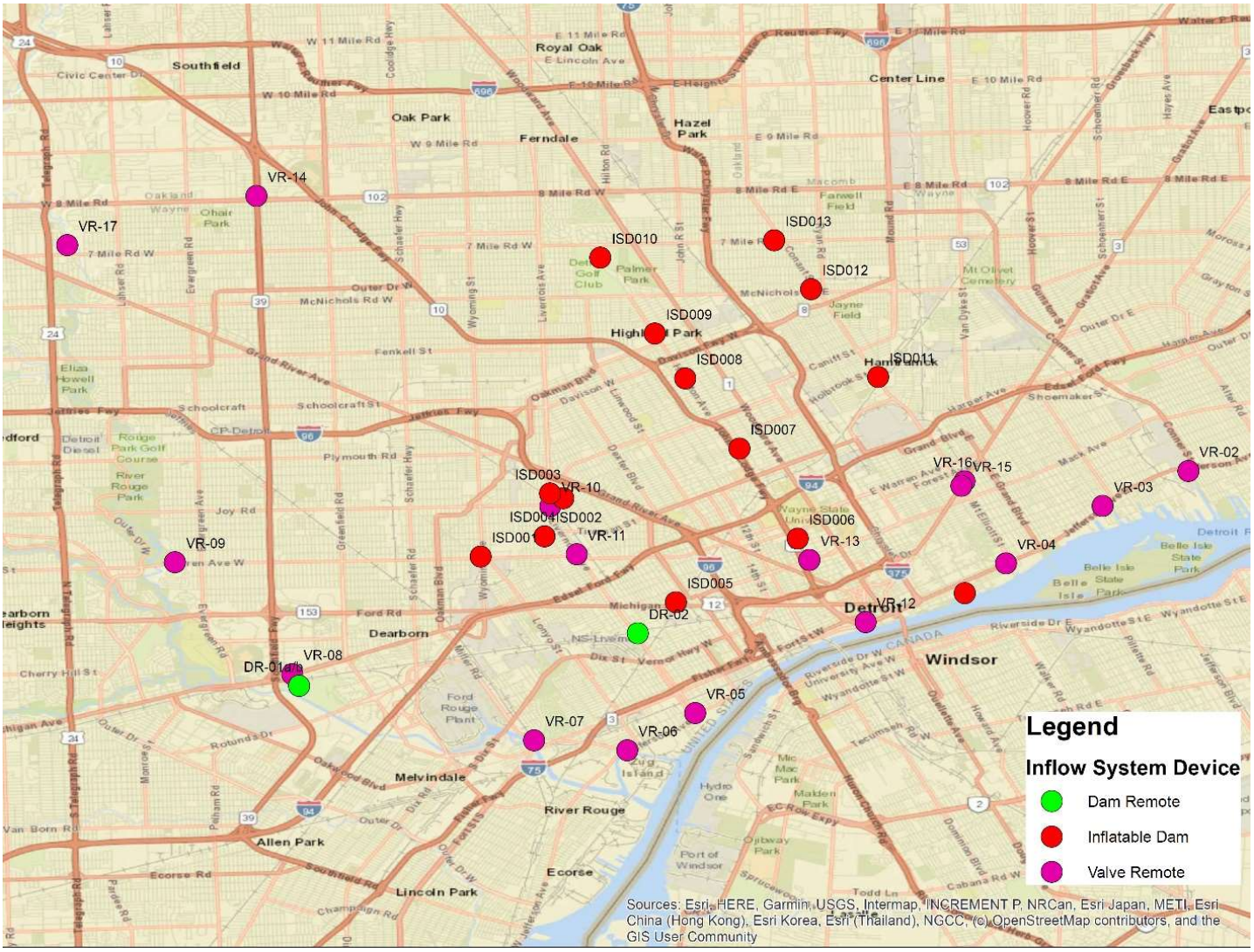
GLWA
Great Lakes Water Authority

PROPOSED IMPROVEMENTS

Averaging about 20 years in age, the In-System Storage Devices (ISDs), Dam Remote (DR), and Valve Remote (VR) sites have only seen isolated rehabilitation or corrective maintenance since construction. Previous and ongoing inspections of the ISDs, DRs, and VR Gates have revealed many aspects of these sites are in distress and nearing their end-of-life. Some of the existing equipment is original to their construction over 20 years ago. Rehabilitation of the existing sites was deemed the most cost effective to maintain operational and structural integrity. This project will address all the critical assets of these sites.

SUMMARY OF PROJECT NEED

The ISDs, DR, and VR sites are a critical component of GLWA's CSO mitigation strategy and ongoing preventative and corrective maintenance procedures. Maintaining a reliable and operational status of these sites is a key factor in GLWA's wastewater conveyance system and a major element of reducing historical problems.



The ISD, DR, and VR sites have only had isolated repairs since their construction, 20 years ago. An asset management approach to developing a five-year CIP by GLWA has deemed this project as high priority. Inspections within the last five years has revealed critical assets within these sites need rehabilitation.

ALTERNATIVES

Three alternatives were considered but two of those options do not solve for the current status of the site or were too costly for the tasks required. The selected alternative can fix the current problems of the site and is the most cost effective for the tasks at hand.

The proposed ISD, DR, and VR Rehabilitation and Replacement alternatives considered for implementation by GLWA include:

- Alternative 1: Monitor and maintain current equipment.
- Alternative 2: In-place rehabilitation - Replace broken equipment and rehabilitate existing equipment.
- Alternative 3: Remove and replace all existing equipment.

MONETARY EVALUATION

COST EFFECTIVENESS ANALYSIS FOR ALTERNATIVES 1 THROUGH 3

Item	Alternative 1	Alternative 2	Alternative 3
Construction Period (Years)	0	4	4
Capital Cost*	$0	$8,165,000	$30,866,000
Interest During Construction	$0	$302,000	$1,142,000
Salvage Value (at 20 years)	$0	$0	$0
O&M Cost (Annual)**	$129,000 ***	$129,000	$486,000
O&M Cost (Present Worth)	$2,130,000 ***	$2,130,000	$8,052,000
Present Worth of Replacement Costs	$0	$0	$0
Total Present Worth	$2,130,000	$10,597,000	$40,075,000
Equivalent Annual Cost	$129,000	$640,000	$2,421,000

** Includes construction, engineering (design and construction), plus administrative costs (numbers rounded)*

** Assume *30% of construction cost for Present Worth O&M Costs*

**** Due to there being no costs for Alternative 1, Alternative 2's O&M Costs were used for Alternative 1.*

ESTIMATED PROJECT COST

ESTIMATED COST FOR SELECTED ALTERNATIVE 2: IN-PLACE REHABILITATION - REPLACE BROKEN EQUIPMENT AND REHABILITATE EXISTING EQUIPMENT

Item	Alternative 2
Estimated Cost of Construction	$7,100,000
15% for Engineering & Administrative Costs	$1,065,000
Total	***$8,165,000***

ENVIRONMENTAL EVALUATION

- The proposed improvements will significantly improve GLWA's capacity to handle significant stormwater flows throughout the collection system and mitigate historical problems such as CSO discharges and residential basement flooding in the service area.
- Construction is not expected to have adverse effects on neighborhoods within the project area.
- This project will not adversely affect the water and air quality within the project area.
- Implementation of the improvements will create construction-related jobs. Local contractors will have an opportunity to bid contract work.

USER COST IMPACT

Item	Improvements
Total Cost of Project	$10,597,000
Annualized Cost of Project (assuming SRF interest rate of 1.875% over 20 years)	$640,000
Service Area Population (City of Detroit and surrounding communities)	1,285,672
Estimated User Cost	**~ $0.50/user/year**

IMPLEMENTATION SCHEDULE

Project Activity	Project Milestone
Post Draft SRF Project Plan and Public Hearing Notice	April 16, 2021
Public Hearing	May 26, 2021
Submit Project Plan to EGLE	June 1, 2021
Procure Design Engineering Consultant	October 22, 2019
Start of Construction Phase 1	December 2021
Complete Construction Phase 1	September 2022
Start of Construction Phase 2	March 2022
Complete Construction Phase 2	March 2023

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