



To: Village President and Board of Trustees

From: Chris Ott, P.E., CPII

Date: July 5, 2023

Re: Lake Michigan Water Main Replacement Plan

EEI Job #: MO2317-V

Background

The Village of Montgomery intends to switch their source water from shallow and deep wells to Lake Michigan through the DuPage Water Commission. As a condition to the Village's Lake Michigan permit, they are required to reduce their non-revenue water percentage to below 10% for a full year ahead of receiving Lake Michigan water. The IDNR is requiring the Village to replace water main installed prior to the 1970's in an effort to reach their 10% goal. An overall map showing all water main identified for replacement was created by EEI based on Village water main data. EEI was then tasked with creating a water main replacement plan for the approximately 145,000 feet of water main.

Goals

The goals of the water main replacement plan are as noted below:

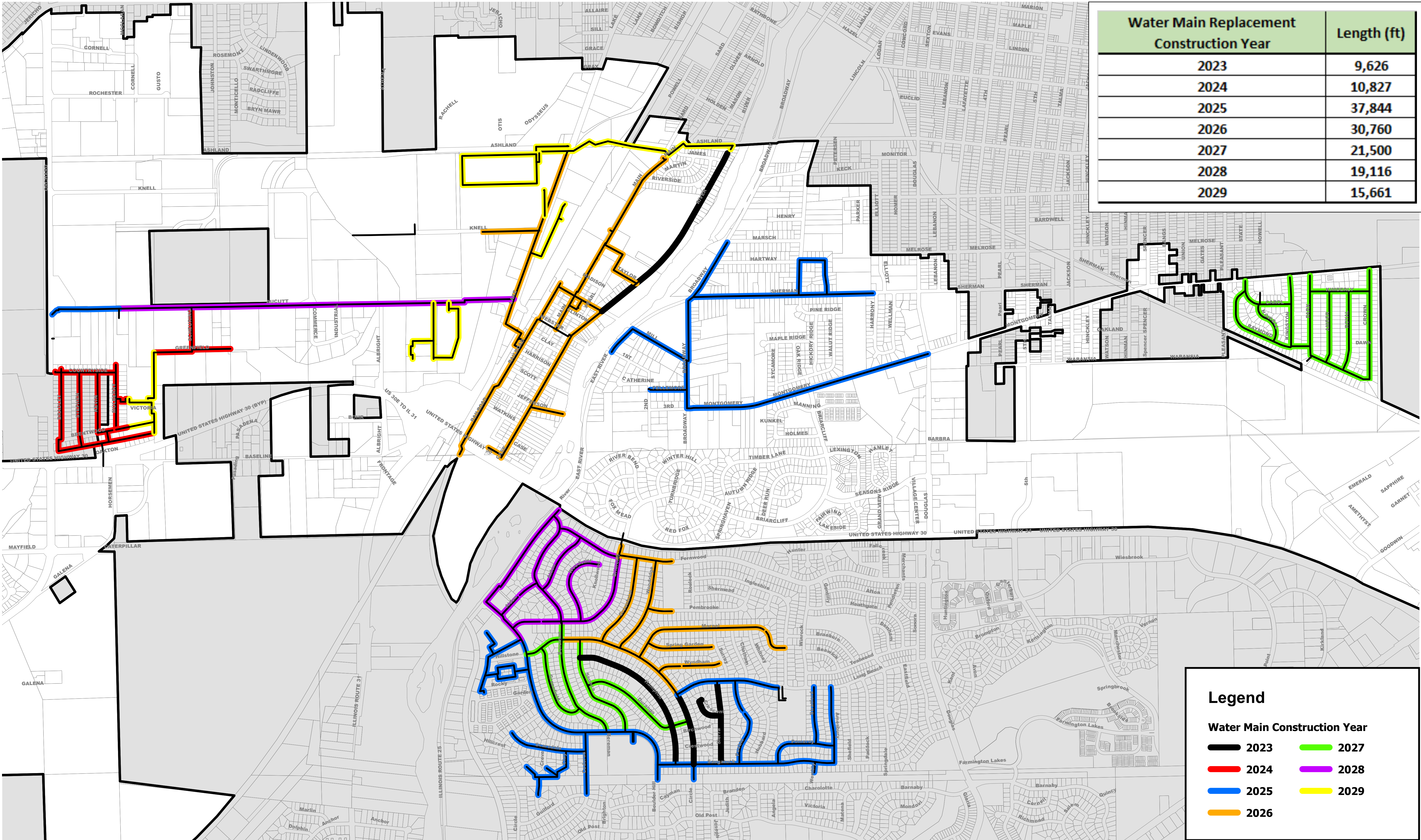
1. Identify the water main to be replaced each year from 2023 to 2029, with associated estimates for total length of replacement, value of anticipated construction costs, and values of associated design and construction engineering.
2. Create a replacement program that will optimize constructability and reduce construction costs.
3. Reflect coordination with other construction projects and jurisdictions to minimize disruption to the residents.

Methodology

The water main replacement plan was created by identifying main areas of focus based on water main break history, age and material. The Boulder Hill area was identified as a top priority, along with the Montgomery/Broadway/Sherman area and downtown Montgomery. The areas were then broken into sections based on geography and constructability. These sections were then organized by year to accommodate scheduled road program work and the budgets outlined by the Capital Improvement Program, while still prioritizing the areas in most immediate need of replacement.

Results

The water main replacement plan consists of the attached Exhibit A and Exhibit B. Exhibit A is a map identifying the water main to be replaced each year. Exhibit B is a spreadsheet showing the projected length, construction value, and design and construction engineering values per year.



Water Main Replacement Construction Year	Length (ft)
2023	9,626
2024	10,827
2025	37,844
2026	30,760
2027	21,500
2028	19,116
2029	15,661

Legend

Water Main Construction Year

2023

2024

2025

2026

2027

2028

2029

EXHIBIT B: YEARLY REPLACEMENT BREAKDOWN
LAKE MICHIGAN WATER MAIN REPLACEMENT PLAN
VILLAGE OF MONTGOMERY

Fiscal Year	2023	2024	2025	2026	2027	2028	2029	2030	Totals
Construction Year	2022	2023	2024	2025	2026	2027	2028	2029	
Proposed WM Length (feet)	3,633	5,993	10,827	37,844	30,760	21,500	19,116	15,661	145,334
Estimated Cost per Foot		\$ 390.00	\$ 405.60	\$ 421.82	\$ 438.70	\$ 456.24	\$ 474.49	\$ 493.47	
Infrastructure Value		\$ 2,438,670	\$ 4,473,362	\$ 16,065,167	\$ 13,641,721	\$ 12,418,528	\$ 6,000,459	\$ 7,824,530	
Construction Engineering		\$ 219,481	\$ 402,603	\$ 1,445,866	\$ 1,227,755	\$ 1,117,668	\$ 540,042	\$ 704,208	
Design Engineering		\$ 313,136	\$ 1,124,562	\$ 954,921	\$ 869,297	\$ 420,033	\$ 547,718	\$ -	
Contingency		\$ 243,867	\$ 447,336	\$ 1,606,517	\$ 1,364,172	\$ 1,241,853	\$ 600,046	\$ 782,453	
Total Budget	\$ 1,649,007	\$ 3,215,154	\$ 6,447,864	\$ 20,072,471	\$ 17,102,945	\$ 15,198,082	\$ 7,688,265	\$ 9,311,191	\$ 80,684,978.62
CIP Total Budget (FY)	\$ 1,649,007	\$ 2,891,000	\$ 5,772,000	\$ 18,084,000	\$ 17,988,000	\$ 12,788,000	\$ 12,817,000	\$ 9,000,000	\$ 80,989,007.00

Notes:
Estimated cost per foot assumes a \$390/foot for 2023 with a 4% cost increase each year thereafter
Construction Engineering is estimated at 9% of the Infrastructure Value
Design Engineering is estimated at 7% of the Infrastructure Value
FY 23 project was N. River Street Water Main
FY 24 project is 2023 Water Main Improvements (Boulder Hill)
FY 25 project is Scheuring, Greenfield, & Blackberry Heights
Contingency is 10% of Infrastructure Value

