

VALPARAISO CITY SERVICES
UTILITIES WATER AND SEWER
AGING INFRASTRUCTURE PLAN ASSESSMENT



Valparaiso City Services
City Utilities
Aging Infrastructure Plan
Assessment Process

INTRODUCTION

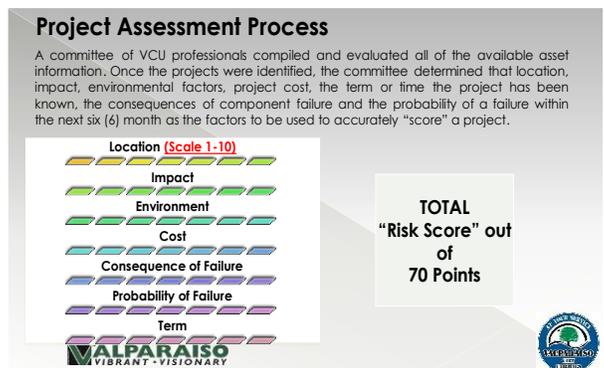
The City of Valparaiso's water and sewer mains are the critical arteries of the City's underground infrastructure network. This underground network spans over 500 miles and the essential components of the infrastructure must be protected as they are the lifelines of the community.

Every year there are a number of water main breaks or sewer line compromises identified within the City of Valparaiso that could imperil our safe water supplies, possibly cause street and property damage or may sometimes become a health, safety and environmental threat. One of the main reasons for many of these failures is due to age. Since approximately 33% of the City's water and sewer mains are greater than 50 years of age, a failure to plan to invest in maintaining or replacing the City's underground infrastructure today will lead to increasing costs to correct those problems in the future. Along with an increase in maintenance and replacement costs over time, both a higher probability of infrastructure failure and a loss in continuing the City's economic wellbeing would be inevitable.

In response to avert this potential future infrastructure crisis, the Valparaiso City Utilities (VCU) performed a detailed rate analysis for the continued financial health and serviceability of the VCU in 2013. A major component of this analysis was to have a financial mechanism put into place in order to invest in aging water and sewer mains. The rates that were approved in 2013 provided a financial mechanism to invest in identified underground aging assets. The VCU Board of Directors and the City of Valparaiso Common Council will be reviewing a proposed rate increase in 2024 to sustain the existing program. Subsequently, in order to accurately determine and responsibly prioritize aging infrastructure needs, the VCU has undertaken a risk-based assessment process.

PROJECT ASSESSMENT PROCESS

The first step when developing an infrastructure assessment plan is to determine what goals are to be achieved by instituting the plan. Improved service, regulatory compliance, ease of operation and maintenance, efficiency, environmental accountability, risk management, financial budgeting and forecasting are among the goals of a utility assessment plan. For many utilities, identification of high risk water/sewer pipes or the areas in which a catastrophic failure leads to extensive service disruptions, environmental damage or health and safety consequences are a top priority. A risk based condition assessment program would focus on specific utility pipes and areas that present these types of threats.



The VCU has been proactive in asset management and has utilized a formalized work management system (LUCITY) to track all utility assets. Without proper asset inventory and condition assessment of these assets, prioritization would be impossible. This computerized work management system tracks the age of the utility's assets, maintenance, location of water and sewer main failures, condition of the asset, videos via closed circuit televising, photographs, water loss estimates and past repair values. A committee of VCU professionals compiled and evaluated all the available asset information.

Valparaiso City Services
City Utilities
Aging Infrastructure Plan
Assessment Process

This process has allowed VCU to develop and prioritize aging infrastructure needs. Once the projects were identified, the committee determined the location, impact, environmental factors, project cost, the term or time the project has been known, the consequences of component failure and the probability of a failure within the next six (6) month as the factors to be used to accurately “score” a project. A scale of 1 through 10 was utilized with 10 being the most severe for scoring purposes.

The scores were then totalized to provide a "risk score" out of 70 possible points. This risk score determined the ranking of the projects. Based on the compiled risk scores, the projects were prioritized by the committee according to the following criteria:

Priority A - Projects that will need to be planned within the next yearly budget cycle assuming there are sufficient funds to complete the project. These projects had a risk score of 50 or above.

Priority B - Projects that should be planned within the five (5) Year Capital Improvement Plan (CIP) cycle and be reevaluated on a yearly basis. These projects had a risk score of 40 to 49.

Priority C - Projects that will remain on the list and be reevaluated on a yearly basis within the five (5) Year CIP cycle. These projects had a risk score of 39 or less.

In addition, the VCU utilized engineering services in order to determine high level cost estimates of the projects for capital budgeting purposes. The following tables outline the current aging water and sewer component needs throughout the VCU service area and the capital plan over the next five (5) years:

SEWER COLLECTION SYSTEM RESULTS (As of December 2023)

Table A – Sewer Main Cured in Place Pipe Lining (CIPP)

Valparaiso City Utilities										
Sewer Aging Infrastructure Rating System		Main (CIPP)								
Project Description	Location C: 1-10	Impact C: 1-10	Environment C: 1-10	Cost C: 1-10	Consequence of Failure C: 1-10	Probability of Failure P: 1-10	Term	Risk Score/70	Cost (2024)	Priority
George Street - All	7	8	8	3	9	8	7	50	\$195,270	A
McIntyre Ct btwn Laporte & Union	7	8	8	3	9	8	7	50	\$222,000	A
Ridgeland Ave W. of Campbell St	8	7	6	3	6	3	6	39	\$39,600	C
Easement S. of Monroe btwn University Park Ave & S. Garfield	5	5	7	3	8	5	6	39	\$76,500	C
Easement W. of Calumet btwn Glendale & Albert Sts	4	5	7	3	9	5	5	38	\$122,500	C
Axe Ave, Courtney St N. to Manhole #2923	7	4	6	3	7	6	5	38	\$65,500	C
Easement N. of Harrison btwn Washington to MH #599	6	5	6	3	8	4	5	37	\$194,500	C
Meadow Ln E. of Clover Ln	4	4	7	3	8	4	7	37	\$80,000	C
Somerset N. to Easement E. to Valparaiso St	4	4	7	3	7	5	7	37	\$63,500	C
Somerset N. to Easement E. to Dorset	4	4	7	3	7	5	7	37	\$50,500	C
Somerset N. to Easement E. of Leeds	4	4	7	3	7	5	7	37	\$32,500	C
Yellowstone Rd S. of George St	6	6	7	3	7	3	5	37	\$41,500	C
Sheffield btwn Dorset & Berkley	5	4	4	3	7	5	7	35	\$41,000	C
Rear Yard Easement btwn Campbell St & Sears S N. of John Glenn Dr	4	6	5	3	7	3	5	33	\$105,500	C
Sears St S. of High St to Appletree Ln	4	4	6	3	5	4	6	32	\$32,000	C
Randle / Franklin Sts to Valparaiso St	3	3	4	3	8	5	5	31	\$103,500	C
Bond Ave W. of Campbell St	4	3	4	3	8	4	4	30	\$63,000	C
Bond Ave E. from Madison St to MH#3186	3	3	4	3	8	4	4	29	\$79,000	C
Valparaiso St & Northview Dr E. through Easement	3	3	4	3	8	3	5	29	\$49,500	C

Valparaiso City Services
City Utilities
Ageing Infrastructure Plan
Assessment Process

Table B - Sewer Main Replacement

Valparaiso City Utilities										
Sewer Aging Infrastructure Rating System										
Main Replacements										
Project Description	Location C: 1-10	Impact C: 1-10	Environment C: 1-10	Cost C: 1-10	Consequence of Failure C: 1-10	Probability of Failure P: 1-10	Term	Risk Score/70	Cost (2024)	Priority
Alley S. of Brown St btwn Morgan & Valparaiso	4	6	6	5	7	7	7	42	\$178,000	B
Washington St & Bush St	6	6	6	4	8	6	5	41	\$60,000	B
Andover Dr btwn Bedford & Rutland	4	3	4	3	7	7	6	34	\$27,500	C
Madison St extended S. @ Jesse Pifer Park	4	4	5	3	5	4	6	31	\$111,500	C

Table C - Sewer Manhole Replacement

Valparaiso City										
Sewer Aging Infrastructure Rating System										
MH Rehab - Replacements										
Project Description	Location C: 1-10	Impact C: 1-10	Environment C: 1-10	Cost C: 1-10	Consequence of Failure C: 1-10	Probability of Failure P: 1-10	Term	Risk Score/70	Cost (2024)	Priority
Manhole Rehabilition Project QS1732	8	7	7	4	4	3	7	40	\$762,500	B
Froberg Rd @ Pepper Creek Bridge Pkwy	6	4	6	3	7	4	4	34	\$14,500	A
Main #1656-Add manhole @ pipe Size Change	4	7	3	3	6	3	7	33	\$11,600	A
MH #s 1135 & 170 - Farm & Stockyard	3	4	5	3	7	5	5	32	\$22,000	C
Insert New MH @ Napoleon St N. of Harrison	8	7	4	3	2	1	7	32	\$11,600	C

Valparaiso City Services
City Utilities
Aging Infrastructure Plan
Assessment Process

The table below is a 5-Year Capital Improvement Plan (CIP) that schedules the prioritized aging infrastructure sewer projects as outlined in Tables A-C. This plan may be amended yearly.

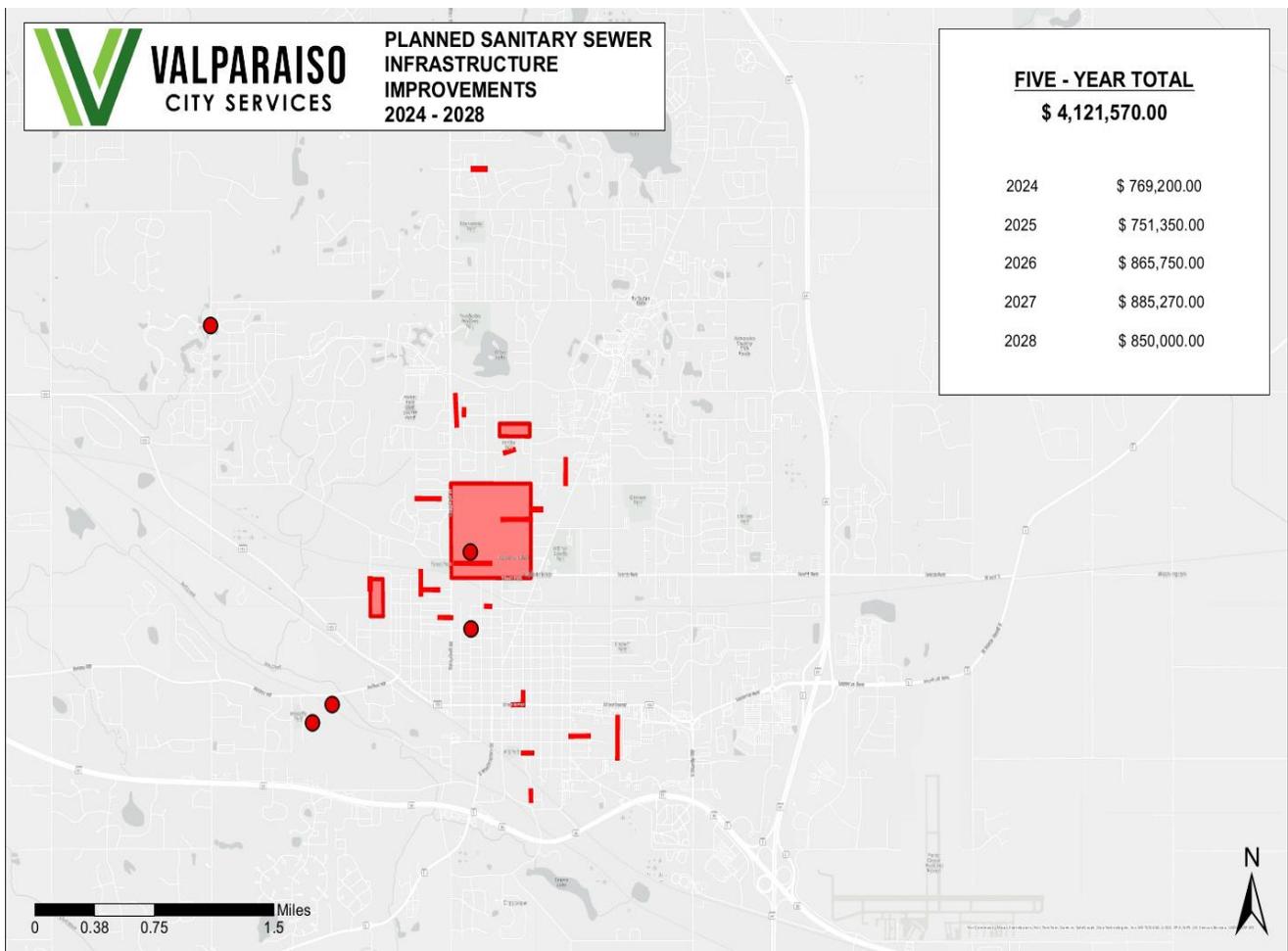
SEWER COLLECTION SYSTEM
5-YEAR AGING INFRASTRUCTURE SEWER PLAN SCHEDULE

Projects	2024 Budget	2025 Budget	2026 Budget	2027 Budget	2028 Budget
Sewer Replacement - Lincolnway - Michigan to Morgan, 12 Inch Replacement (Linc Streetscape - Added)	\$340,000				
Sewer Replacement - Morgan - Jefferson and Lincolnway, 48 Inch Replacement (Linc Streetscape - Added)	\$75,000				
Manhole Rehab - Froberg Rd @ Pepper Creek Bridge Pkwy	\$14,500				
Manhole Rehab - Main #1656-Add manhole @ pipe Size Change	\$11,600				
CIPP Lining - Somerset N. to Easement E. to Valparaiso St	\$63,500				
CIPP Lining - Somerset N. to Easement E. to Dorset	\$50,500				
CIPP Lining - Somerset N. to Easement E. of Leeds	\$32,500				
CIPP Lining - Ridgeland Ave W. of Campbell St	\$39,600				
CIPP Lining - Easement S. of Monroe btwn University Park Ave & S. Garfield	\$76,500				
CIPP Lining - Axe Ave, Courtney St N. to Manhole #2923	\$65,500				
Manhole Rehabilitation & CIPP Lining Project QS1732 (Part 1 - Moved from 2021)		\$381,250			
Manhole Rehab - MH #s 1135 & 170 - Farm & Stockyard		\$22,000			
Manhole Rehab - Insert New MH @ Napoleon St N. of Harrison		\$11,600			
CIPP Lining - Yellowstone Rd S. of George St		\$41,500			
CIPP Lining - Sheffield btwn Dorset & Berkley		\$41,000			
CIPP Lining - Sears St S. of High St to Appletree Ln		\$32,000			
CIPP Lining - McIntyre Ct btwn Laporte & Union (HOLD - Moved from 2017)		\$222,000			
Manhole Rehabilitation & CIPP Lining Project QS1732 (Part 2 - Moved from 2021)			\$381,250		
CIPP Lining - Easement N. of Harrison btwn Washington to MH #599			\$194,500		
CIPP Lining - Easement W. of Calumet btwn Glendale & Albert Sts			\$122,500		
CIPP Lining - Meadow Ln E. of Clover Ln			\$80,000		
Sewer Replacement - Andover Dr btwn Bedford & Rutland			\$27,500		
Sewer Replacement - Washington St & Bush St (Moved from 2020)			\$60,000		
CIPP Lining - George Street - All				\$195,270	
Sewer Replacement - Alley S. of Brown St btwn Morgan & Valparaiso (Moved from 2020)				\$178,000	
CIPP Lining - Rear Yard Easement btwn Campbell St & Sears S N. of John Glenn Dr				\$105,500	
CIPP Lining - Randle / Franklin Sts to Valparaiso St				\$103,500	
CIPP Lining - Bond Ave W. of Campbell St				\$63,000	
CIPP Lining - Bond Ave E. from Madison St to MH#3186				\$79,000	
CIPP Lining - Valparaiso St & Northview Dr E. through Easement				\$49,500	
Madison St extended S. @ Jesse Pifer Park				\$111,500	
Future Aging Infrastructure Improvements - (Currently Assessing Projects for 2025 Update)					\$850,000
Total	\$769,200.00	\$751,350.00	\$865,750.00	\$885,270.00	\$850,000.00
Budget	\$750,000.00	\$750,000.00	\$850,000.00	\$850,000.00	\$850,000.00

Valparaiso City Services
City Utilities
Aging Infrastructure Plan
Assessment Process

The map below provides the service locations of the 5-Year Capital Improvement Plan (CIP) that schedules the prioritized aging infrastructure sewer projects as outlined in Tables A-C.

CITY OF VALPARAISO
SEWER MAP LOCATIONS
5-YEAR CIP SCHEDULE



Valparaiso City Services
City Utilities
Aging Infrastructure Plan
Assessment Process

WATER DISTRIBUTION SYSTEM RESULTS (As of December 2023)

Table D - Water Main Replacement

Valparaiso City Utilities										
Water Aging Infrastructure Rating System										
Main Replacements										
Project Description	Location C: 1-10	Impact C: 1-10	Environment C: 1-10	Cost C: 1-10	Consequence of Failure C: 1-10	Probability of Failure P: 1-10	Term	Risk Score/70	Cost (2024)	Priority
West St-Horseprairie Ave to end	6	7	9	5	6	9	7	49	\$890,000	A
Franklin St-Evans Ave to Institute St	9	5	5	5	9	7	7	47	\$700,000	A
Sheffield Dr-Campbell St to Berkley Dr	7	6	5	7	5	8	7	45	\$755,000	B
Sherwood Dr	7	7	5	6	5	7	7	44	\$1,016,000	B
Indiana Ave-Napoleon to Campbell St	7	7	6	5	5	7	5	42	\$250,000	B
Roosevelt Rd	8	8	7	3	5	5	5	41	\$1,421,000	B
Linden Dr	6	7	5	5	4	5	7	39	\$914,000	C
Whitney Dr / Calhoun Ct	5	4	4	5	6	6	7	37	\$292,600	C
Fair St	3	5	5	3	5	8	6	35	\$689,500	C
Bond Ave	5	5	4	4	4	6	5	33	\$837,000	C
Franklin St-Glendale Blvd to McKinley St	5	5	5	4	4	5	5	33	\$682,000	C
Roane Ln	3	4	4	6	4	5	6	32	\$450,000	C
Berkley Dr-Somerset Dr to Glendale Blvd	4	5	4	4	4	5	5	31	\$448,500	C
Morgan Blvd-Elm St to Chicago St	6	5	6	3	3	3	5	31	\$730,000	C
College Ave-Elm St to Lincolnway	3	5	5	4	4	5	4	30	\$924,500	C
Meadow Lane @ Northview Dr	2	3	5	4	5	5	5	29	\$320,000	C
Green Acres Dr-Hemlock Dr east	3	4	3	5	3	5	5	28	\$448,000	C
Milton St-Hope St to Bond Ave	5	4	2	4	3	5	5	28	\$144,500	C
Coventry Cir	3	4	4	5	3	4	4	27	\$431,000	C
Summit Dr-Pineview Ln to Green Acres Dr	3	3	2	3	3	5	5	24	\$192,000	C
Lind Lane	2	5	2	3	3	3	5	23	\$582,500	C
Weston St-Park Ave to Lincolnway	2	3	5	3	3	2	5	23	\$753,500	C
Fisher St / High St area	2	2	2	3	3	5	5	22	\$680,500	C

Valparaiso City Services
City Utilities
Aging Infrastructure Plan
Assessment Process

The table below is a 5-Year Capital Improvement Plan (CIP) that schedules the prioritized aging infrastructure water system projects as outlined in Table D. This plan may be amended yearly.

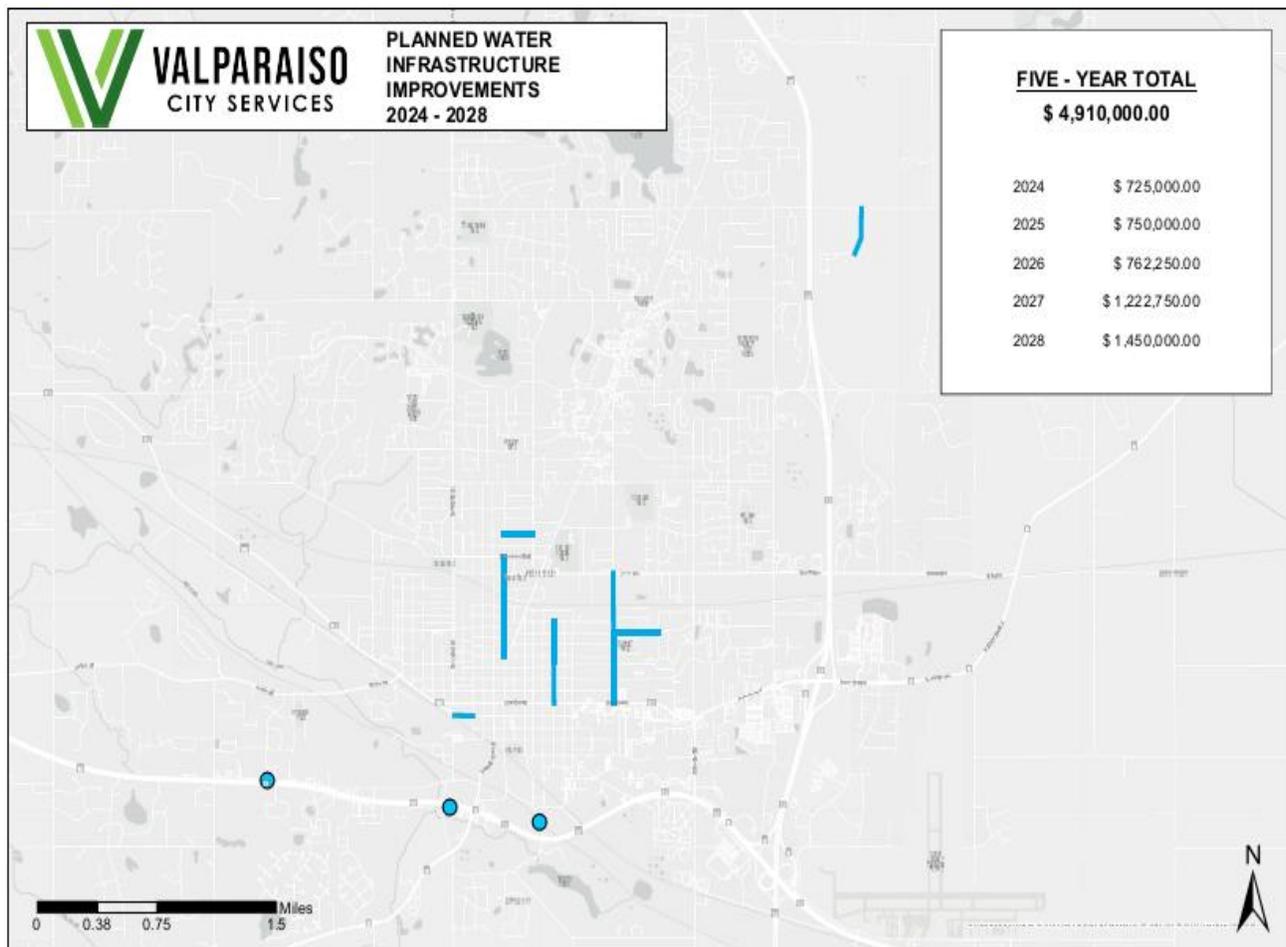
WATER DISTRIBUTION SYSTEM
5-YEAR AGING INFRASTRUCTURE PLAN SCHEDULE

Projects	2024 Budget	2025 Budget	2026 Budget	2027 Budget	2028 Budget
Beech Street (Added due to CCMG Paving List)	\$400,000.00				
EZ/Insert Valves, 16 Inch US 30	\$75,000.00				
Axe Avenue, Under RR Tracks	\$150,000.00				
Fire Hydrant Replacement	\$25,000.00				
CR 500 Loop	\$75,000.00				
Franklin St-Evans Ave to Institute St		\$700,000			
Fire Hydrant Replacement		\$50,000			
Indiana Ave-Napoleon to Campbell St			\$250,000		
College Ave-Elm St to Lincolnway (Half)			\$462,250		
Fire Hydrant Replacement			\$50,000		
College Ave-Elm St to Lincolnway (Half)				\$462,250	
Roosevelt Rd. Evans to Lincolnway (Half)				\$710,500	
Fire Hydrant Replacement				\$50,000	
Fair St					\$689,500
Roosevelt Rd. Evans to Lincolnway (Half)					\$710,500
Fire Hydrant Replacement					\$50,000
TOTAL	\$725,000.00	\$750,000.00	\$762,250.00	\$1,222,750.00	\$1,450,000.00
Budget	\$725,000.00	\$750,000.00	\$750,000.00	\$850,000.00	\$950,000.00

Valparaiso City Services
City Utilities
Aging Infrastructure Plan
Assessment Process

The map below provides the service locations of the 5-Year Capital Improvement Plan (CIP) that schedules the prioritized aging infrastructure water system projects as outlined in Table D.

CITY OF VALPARAISO
WATER MAP LOCATIONS
5-YEAR CIP SCHEDULE



Valparaiso City Services
City Utilities
Aging Infrastructure Plan
Assessment Process

PLAN IMPLEMENTATION

The initiatives as outlined within this document have been founded on a clear vision and on a disciplined approach in order to address the City of Valparaiso's aging underground infrastructure. This plan provides the Valparaiso City Utilities with the necessary guidance to replace specific aging water and sewer components over the next five (5) years so as to limit those potential threats upon the City's safe water supplies, streets, property, surrounding environment or the health and safety of our residents. The Valparaiso City Utilities will continue to reevaluate prioritization of the aging infrastructure plan on a yearly basis.

AMENDED LEAD AND COPPER RULE

The upcoming changes within the Federal Lead and Copper Rule may dictate additional requirements and capital cost therefore this plan will need to be adjusted to account for those required costs for lead service line replacement.

ESTIMATED CONSTRUCTION COSTS

Construction costs are provided by an independent engineering firm based on market conditions. Due to the recent inflationary explosion in materials and construction, the plan will need to be updated with future cost projections.

END OF DOCUMENT

APPENDIX