

Town of Palm Beach Water Supply Feasibility Study

Meeting
December 2022

Overview

- City of West Palm Beach – As Is, Current Water Treatment Process Remains
- City of West Palm Beach – Membrane Upgrade, Plant to have 32 MGD Nanofiltration and 16 MGD of Brackish Water Reverse Osmosis
- City of Lake Worth Beach – Plant to have 4.5 MGD Nanofiltration and 15 MGD Brackish Water Reverse Osmosis

Cost Analysis – City of West Palm Beach – As-Is Treatment Process Does Not Change

Item	Item of Work	Subtotal
1	Current Franchise Agreement Pipeline Improvements	\$13M
2	Current Critical Pipeline Improvements per Masterplan	\$15M
Subtotal Pipeline Capital Improvements:		\$29M
Engineering/Administration (20%)		\$6M
Subtotal Capital, Engineering and Administration:		\$35M
Contingency (35%)		\$12M
Subtotal Capital, Engineering and Administration, and Contingency:		\$47M
Level 5 Engineers Opinion of Probable Cost (0% -+ 50%):		\$47M - \$70M

Cost Analysis – City of West Palm Beach – 48 MGD Membrane Upgrade

Item	Item of Work	Subtotal
1	16 MGD BWRO and 32 MGD NF Treatment	\$423M
2	Current Franchise Agreement Pipeline Improvements	\$10M
3	Current Critical Pipeline Improvements per Masterplan	\$3M
Subtotal Capital Improvements:		\$436M
Engineering/Administration (20%)		\$87M
Subtotal Capital, Engineering and Administration:		\$523M
Contingency (35%)		\$183M
Subtotal Capital, Engineering and Administration, and Contingency:		\$706M
Level 5 Engineers Opinion of Probable Cost (0% -+ 50%):		\$706M - \$1.05B

Cost Analysis – City of Lake Worth Beach

Item	Item of Work	Subtotal
1	10.5 MGD RO Treatment Addition 4.5 MGD NF Treatment Treatment Building Addition	\$110M
2	Lake Worth Beach Pipeline Interconnection 1 – C-51 Connection	\$17M
3	Lake Worth Beach Pipeline Interconnection 2 – Lake Worth Road	\$11M
4	Town Pipeline Distribution Improvements	\$40M
5	Current Franchise Agreement Pipeline Replacements	\$10M
6	Critical Pipeline Improvements Per Masterplan	\$3M
Subtotal Capital Improvements:		\$191M
Engineering/Administration (20%)		\$38M
Subtotal Capital, Engineering and Administration:		\$229M
Contingency (35%)		\$80M
Subtotal Capital, Engineering and Administration, and Contingency:		\$310M
Level 5 Engineers Opinion of Probable Cost (0% -+ 50%):		\$310M - \$465M

Cost Analysis Summary

Alternative Description	Cost	Included in Cost
City of West Palm Beach – As Is	\$47M - \$70M	Pipeline Infrastructure
City of West Palm Beach – 48 MGD Membrane Upgrade	\$706M - \$1.05B (20% of capacity represents \$141M - \$211M)	Pipeline and Treatment Infrastructure
City of Lake Worth Beach	\$310M - \$465M	Pipeline and Treatment Infrastructure

**Town required capacity is 10 MGD which
is 20% of 48 MGD planned capacity**

Timeline and Complexity

Alternative Description	Cost	Town Developed Utility Required	Water Supply Security	Water Supply Permitting Complexity	Construction Complexity	Operational Complexity and System Reliability	Land Acquisition	Program Permitting Complexity	Stakeholder Coordination
City of West Palm Beach – As Is	\$47M - \$70M	No	Moderate	None – Already Permitted	Low	Low / High	None	Low	Low
City of West Palm Beach – 48 MGD Membrane Upgrade	\$706M - \$1.05B (\$141M - \$211M)	No	High	Moderate	High	High / High	None	Low	Low
City of Lake Worth Beach	\$310M - \$465M	Retail – No	Moderate - High	Moderate	High	Low / Moderate	Low	High	High

City of Lake Worth Beach – Proposed Pipeline Improvements

Legend

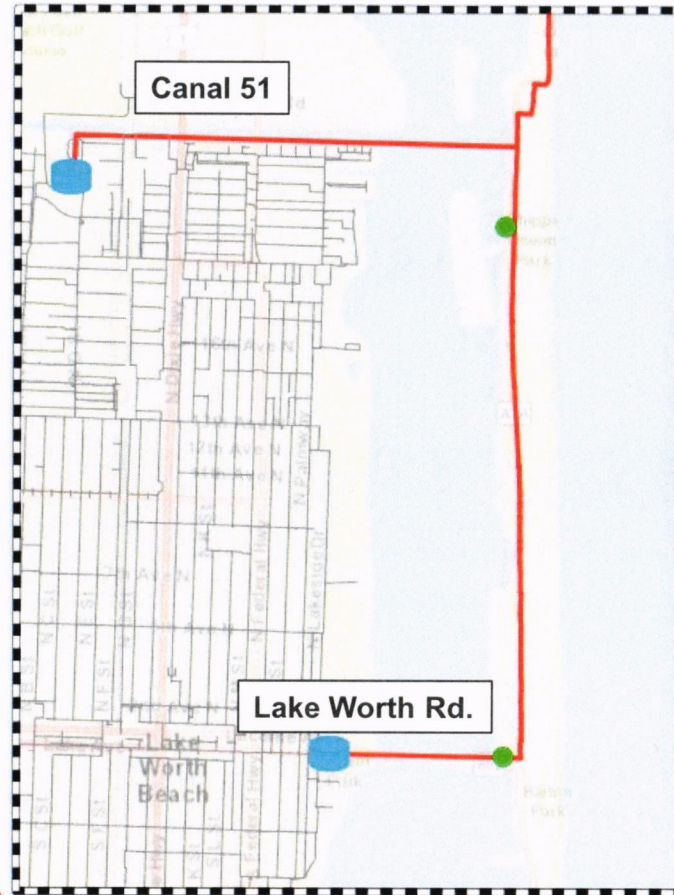
BOOSTER PUMPS

- PROPOSED
- EXISTING

PROPOSED STORAGE TANK

WATER MAIN

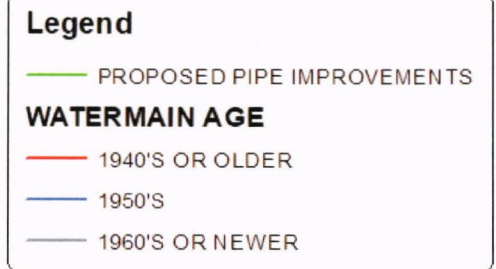
- TOWN OF PALM BEACH
- WEST PALM BEACH
- FRANCHISE AGREEMENT WATER MAIN
- CRITICAL WATER MAIN
- PROPOSED PIPE IMPROVEMENTS
- LAKE WORTH BEACH



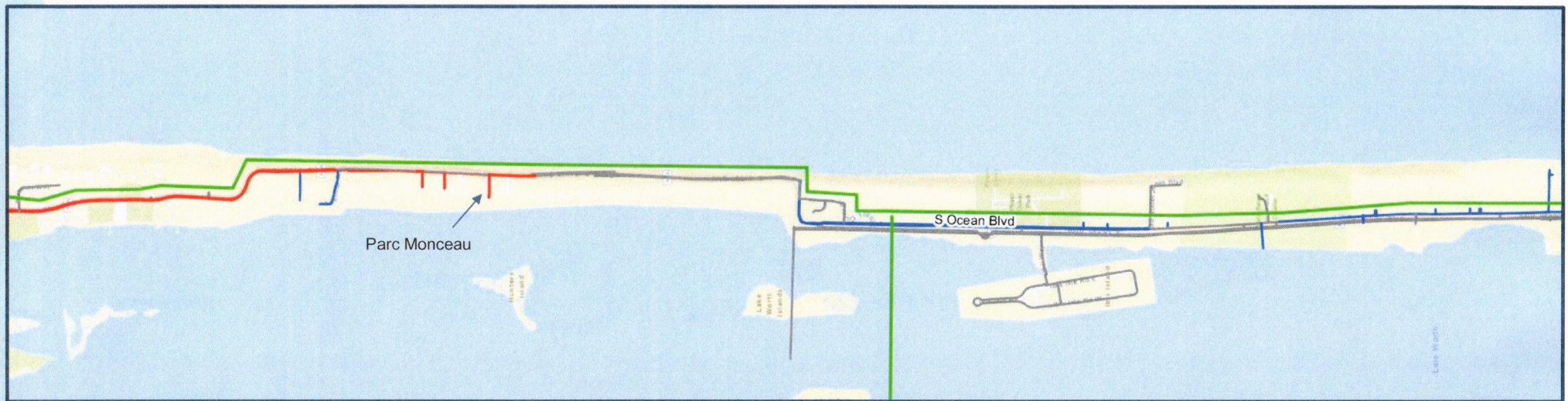
Pipe



South Portion of Town



City of Lake Worth Beach – Proposed Pipeline Improvements



South Middle Portion of Town

Legend

— PROPOSED PIPE IMPROVEMENTS

WATERMAIN AGE

— 1940'S OR OLDER

— 1950'S

— 1960'S OR NEWER

City of Lake Worth Beach – Proposed Pipeline Improvements



North Middle Portion of Town

Legend

— PROPOSED PIPE IMPROVEMENTS

WATERMAIN AGE

— 1940'S OR OLDER

— 1950'S

— 1960'S OR NEWER

City of Lake Worth Beach – Proposed Pipeline Improvements



North Portion of Town

Legend

— PROPOSED PIPE IMPROVEMENTS

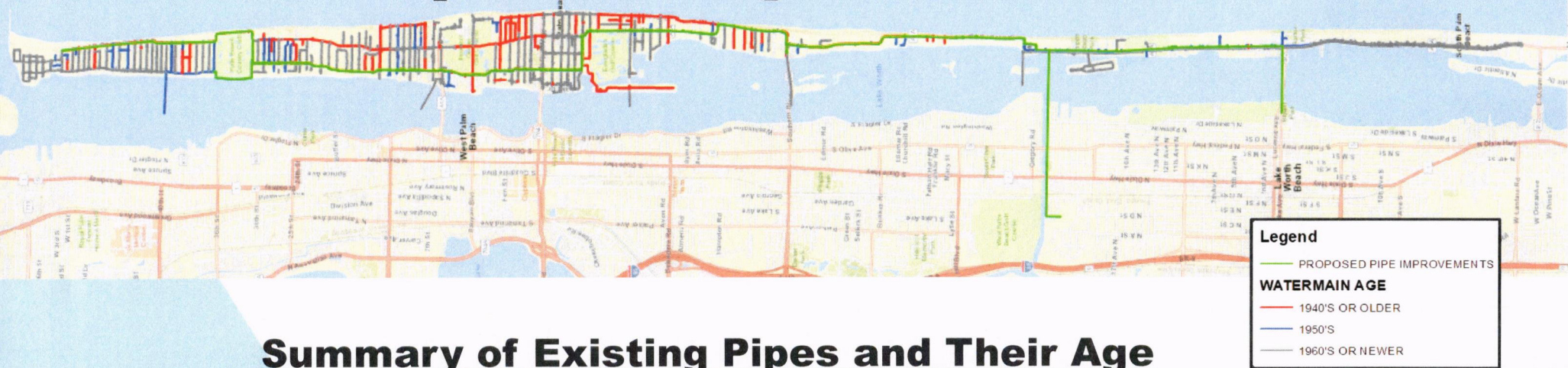
WATERMAIN AGE

— 1940'S OR OLDER

— 1950'S

— 1960'S OR NEWER

City of Lake Worth Beach – Proposed Pipeline Improvements



Summary of Existing Pipes and Their Age That Will Be Replaced

Age	Length (LF)	% of Improvements
1940's or Older	20,126	33%
1950's	11,257	19%
1960's or Newer	28,805	48%
Total Pipe Improvements	60,187	