Table 6-1. Review of 2011 Water Master Plan Recommend Capital Improvements

Priority	Project Number	Project	Purpose	Status
WATER MAIN IMPROVEMENTS				
1	1	24-inch water main along Nappanee between W. Lusher Ave. and Old US 33	Extend transmission from Northwest Well Field to Mishawaka Rd	Completed (2011)
1	2	24-inch water main along Pennsylvania & Okema	Extend transmission from Northwest Well Field to Mishawaka Rd	Completed (2014)
1	3	24-inch river crossing at Okema and Edgewater	Extend transmission from Northwest Well Field to Mishawaka Rd	Completed (2014)
1	4	24-inch water main along Rainbow Bend & Dorsey	Extend transmission from Northwest Well Field to Mishawaka Rd	Completed (2014)
1	5	24-inch water main along CR 13 between CR 45 and W. Hively	Close loop, improve water quality	Not completed; future need identified previously for redundancy and water quality but not critical
2	6	12-inch water main along CR 10 between Pebblestone Ln. and CR 17	Close loop, improve water quality	Partially completed from Pebblestone Ln. to CR 15 (2014); future need identified previously for redundancy and water quality but not critical
2	7	16-inch water main along Mishawaka Rd between Old US 33 and CR 3	Close loop, improve water quality	Partially completed (450 LF of 10,600 LF; 2017); future need identified previously for redundancy and water quality but not critical
WATER SUPPLY AND TREATMENT IMPROVEMENTS				
1	8	Northwest Well Field Land Acquisition	Property cost for expanding supply wells from 7.0 MGD to 10.0 MGD	City purchased land
2	9	Northwest Well Field Expansion	Increase firm capacity from 4.5 MGD to 7.0 MGD	Reduced to 750,000 gpd based on new projected demand
2	10	Northwest Well Field 2.5 MGD Treatment Expansion	Increase treatment capacity from 5.0 MGD to 7.5 MGD	Removed from CIP; capacity not required

Table 6-2. Review of 2020-2025 CIP Including Asset Management Recommendations

Year	Type	Location	Purpose	Status
2020 CIP				
2020	Replace	NMS	Generator Replacement	Substantially complete
2020	Replace	Various	SCADA RTU Project	Ongoing
2021 CIP				
2021	Rehab	NMS	High Service Pump Building	Not complete
2021	Rehab	WST	Benham Tower Repaint	Complete
2021	Inspect	WTPs	Inspection Project Structural	Not complete
2021	Replace	NMS	North Main Detention Gates	Not complete
2021	Replace	NMS	North Main Failed Air Stripper Valves and Hoist	Planned 2022
2021	Replace	NWF	Northwest Detention Pump and Instruments	Planned 2023
2021	Replace	NWF	Northwest Well 5 Pump Replacement	Inspection in progress
2021	Replace	NWF	Northwest Aerator Replacement	Planned 2023
2021	Replace	SWF	South Chlorine Replacement	Ongoing
2021	Replace	WM	Water Main: Lexington – Riverside to West	Not complete
2021	Replace	SL	3% of System Lead Service Replacements	Complete
2021	New	WM	Water Main Extension Program	Complete
2021	Replace	SL	Water Meter Replacement Final Year	Complete
2022 CIP				
2022	Rehab	WST	Riverview Tower Repaint	Compete (exterior)
2022	Replace	NWF	Northwest Filter and Media Replacement	Not complete

Year	Type	Location	Purpose	Status
2022	Replace	WM	Water Main: Jackson – Waterfall (midblock) to 3rd	Not complete; part of LTCP project
2022	New	WM	Water Main Extension Program	Ongoing
2022	Replace	SL	3% of System Lead Service Replacements	Ongoing
2023 CIP				
2023	Replace	WM	Water Main: Lexington – 5th to Bridge	Not complete
2023	Replace	WM	Water Main: Indiana – Benham to 6th	Not complete
2023	Replace	WM	Water Main: Indiana – Oakland to Thomas	Not complete
2023	Replace	WM	Water Main: North Main – Jackson to Bridge	Not complete
2023	New	WM	CR 13 24” Loop	Not complete
2023	New	WM	LaSalle, McKinley Extension & Loop	Not complete
2023	New	WM	Water Main Extension Program	Not complete
2023	Replace	SL	3% of System Lead Service Replacements	Not complete
2024 CIP				
2024	Rehab	WST	Bower Tower Repaint	Not complete
2024	Replace	SWF	South Filter and Media Replacement	Not complete
2024	Replace	WM	Water Main: Marine to Jackson Connection; Johnson – Orchard to Marine	Not complete
2024	New	WM	Liberty/Riverside Extension & Loop	Not complete
2024	New	WM	Water Main Extension Program	Not complete
2024	Replace	SL	3% of System Lead Service Replacements	Not complete

Year	Type	Location	Purpose	Status
2025 CIP				
2025	Replace	NMS	North Main Fluoride	Not complete
2025	Rehab	NMS	North Main Groundwell Concrete Rehab	Not complete
2025	Replace	NMS	North Main Phosphate	Not complete
2025	Replace	NMS	North Main Well A Pump	Not complete
2025	Replace	NWF	Northwest Chlorination	Not complete
2025	Replace	NWF	Northwest Fluoride	Not complete
2025	Rehab	NWF	Northwest Groundwell Building 1 Rehab	Not complete
2025	Replace	WST	Riverview Replacement	Not complete
2025	Replace	SWF	South Aerator Replacement	Not complete
2025	Replace	SWF	South Fluoride	Not complete
2025	Replace	WM	Water Main: S. Main – Hively to Schaffer (Bypass)	Not complete
2025	New	WM	Water Main Extension Program	Not complete
2025	New	WM	2nd St Loop – Tyler to Harrison	Not complete
2025	New	WM	Fieldhouse Loop – 6th to 7th	Not complete
2025	Replace	SL	3% of System Lead Service Replacements	Not complete

Table 6-3. Recommended Capital Improvement Projects

Priority	Need	Project	Description	Quantity	Units	Unit Cost	Subtotal	Construction Cost[1]
WATER MAIN IMPROVEMENTS								
Low	Redundancy, Water Quality	24-inch water main along CR 13 between CR 45 and W. Hively	Identified in 2011 WMP previously for redundancy (close loop) and water quality but not critical	7,700	LF	$4,330,000	$4,330,000	$4,330,000
Low	Redundancy, Water Quality	12-inch water main along CR 10 from CR 1 to CR 3	New, planned improvement to close loops for improved water quality and resiliency	8,900	LF	$2,610,000	$2,610,000	$2,610,000
Low	Water Quality	12-inch water main along N John W Weaver Parkway between two ends of Aeroplex Drive	New, planned improvement to close loops for improved water quality	3,035	LF	$880,000	$880,000	$880,000
Low	Redundancy, Water Quality	12-inch water main along CR 10 between CR 15 and CR 17	Identified in 2011 WMP previously for redundancy (close loop) and water quality but not critical	4,300	LF	$1,260,000	$1,260,000	$1,260,000
Low	Redundancy, Water Quality	16-inch water main along Mishawaka Rd between Old US 33 and CR 3	Identified in 2011 WMP previously for redundancy (close loop) and water quality but not critical	11,000	LF	$3,790,000	$3,790,000	$3,790,000
Low	Redundancy	6-inch water main along E. Beardsley Avenue	New, improves connectivity and redundancy	300	LF	$70,000	$70,000	$70,000
High	Regulatory	LCRR Compliance Assessment	New, assess City's LCRR compliance needs	1	LS	$25-50,000	$25-50,000	$25-50,000

Priority	Need	Project	Description	Quantity	Units	Unit Cost	Subtotal	Construction Cost[1]
High	Regulatory	LCRR Inventory and LSLR Plan	New, complete and submit initial LSL inventory and LSLR plan by or before October 16, 2024	1	LS	$100-150,000	$100-150,000	$100-150,000
Annual	Reliability	Annual Water Main Replacement Program	Continue, risk-based water main replacement per City's asset management program	1	LS	$1,000,000	$1,000,000	$1,000,000
Annual	Growth	Annual Water Main Extension Program	Continue, set aside for water main extension requests as needed	1	LS	$500-1,000,000	$500-1,000,000	$500-1,000,000
Annual	Reliability	Annual Water Meter Replacement/Repair	New, set aside for water meter replacement/repair	1	LS	$150-500,000	$150-500,000	$150-500,000
Annual	Reliability	Annual Motor Equipment Service	New, set aside for motor equipment service	1	LS	$50-150,000	$50-150,000	$50-150,000
Annual	Regulatory	Annual Lead Service Line Replacement Program	Continue, LSLR program per City's LSLR plan	1	LS	$750,000	$750,000	$750,000
WATER SUPPLY AND TREATMENT IMPROVEMENTS								
High	Regulatory	LCRR Desktop Corrosion Control Study	New, confirm corrosion control needs based on LCRR requirements	1	LS	$25-50,000	$25-50,000	$25-50,000
High	Regulatory	LCRR Corrosion Control Treatment Demonstration Test	New, *potential* need pending desktop corrosion control study	1	LS	$50-500,000	$50-500,000	$50-500,000
Low	Growth	New Well, 750,000 gpd at Northwest Well Field	New, required to achieve projected demand by 2028	1	LS	$750,000	$750,000	$750,000

Priority	Need	Project	Description	Quantity	Units	Unit Cost	Subtotal	Construction Cost[1]
High	Reliability	Northwest Well Field Filter, Media and Ancillary Equipment Replacement	Continue, risk-based repair and replacement	1	LS	$5,200,000	$5,200,000	$5,200,000
High	Reliability	South Well Field Filter, Media and Ancillary Equipment Replacement	Continue, risk-based repair and replacement	1	LS	$2,600,000	$2,600,000	$2,600,000
Medium	O&M, Safety	North Main Street Well Field Chemical Facilities Improvements	New and risk-based replacement - chlorine sensors, polyphosphate containment; fluoride chemical tanks and pumps, polyphosphate chemical tanks and pumps; chlorine detector, scale and HVAC; analyzers, chlorinators; chlorine hoist	1	LS	$250,000	$250,000	$250,000
Medium	O&M, Safety	Northwest Well Field Chemical Facilities Improvements	New and risk-based replacement - chlorine ventilation; chlorine flow meter, analyzer, chlorinators, controller, pump, pressure sensors, detector; fluoride control panel, chemical tanks and pumps risk-based replacement; polyphosphate chemical tanks and pumps, mixer, detector, level sensor; polyphosphate chemical tank; polyphosphate chemical tank, hoist	1	LS	$300,000	$300,000	$300,000

Priority	Need	Project	Description	Quantity	Units	Unit Cost	Subtotal	Construction Cost[1]
Medium	O&M, Safety	South Well Field Chemical Facilities Improvements	New and risk-based replacement - chlorine ventilation, fluoride containment, fluoride ventilation, polyphosphate containment; chlorinator, detector, analyzer, centrifugal pump risk-based replacement; and again in later years replacing same; fluoride chemical tanks and pumps; polyphosphate chemical pump; polyphosphate chemical pump	1	LS	$200,000	$200,000	$200,000
Medium	Process Improvement	Northwest Well Field Backwash Basin to Sewer	New, backwash basin	1	LS	$250,000	$250,000	$250,000
Medium	Reliability, Automation	SCADA Network Upgrades	New, SCADA upgrades	1	LS	$200,000	$200,000	$200,000
Medium	Capacity and Growth	South Booster Station Expansion	New, replace two pumps with larger pumps and re-evaluate VFD trigger points for more capacity	2	LS	$1,500,000	$1,500,000	$1,500,000
Annual	Reliability	Annual Water Supply & Treatment Replacement Program	Continue, risk-based water supply and treatment replacement per City's asset management program	1	LS	$1,000,000	$1,000,000	$1,000,000

[1]Estimates are consistent with AACE Class 5 conceptual estimates, which are typically accurate to -30% to +50%. Costs are presented in 2022 dollars, and do not include engineering fees or other project costs consistent with the Asset Management costing methodology as preferred by the City.