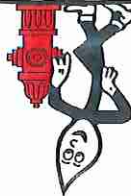


January 2019



CAPITAL IMPROVEMENTS PLAN Fiscal Years 2018-2027

McCreary County
Water District



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Summary

What is a Capital Improvement Plan? Capital Improvement Plans contain all the individual capital projects, equipment purchases, and major studies for a local government, in conjunction with construction and completion schedules and in consort with financing plans. The plan provides a working blueprint for sustaining and improving the community's infrastructure. It coordinates strategic planning financial capacity, and physical development. The Capital Improvement Plan is at the epicenter of a government's Planning, Public Works, and Finance departments.

A Capital Improvement Plan consists of two parts—a capital budget and a capital program. The capital budget is the upcoming year's spending plan for capital items. The capital program is a plan for capital expenditures that extends typically five to ten years beyond the capital budget. Why have a Capital Improvement Plan? It is important for water and wastewater utilities to create, maintain and follow a plan to invest in their capital assets; whether to rehabilitate, replace or install new assets. Capital infrastructure costs account for a very large portion of utilities' total costs. Without proper long-term planning, utilities run the risk of not being able to pay for capital costs when they need to, leading to deteriorating service and, ultimately, public health risks.

There are many benefits of developing a Capital Improvement Plan. A complete, properly developed plan synchronizes capital and operating budgets, systematically evaluates competing demands for resources based on a prioritization matrix reflecting the entity's long-term goals and objectives, identifies, prioritizes, and optimizes the financing of capital projects (Pay-Go, Federal and State grants, and/or Debt financing), links strategic and comprehensive plans with fiscal capacity, and it informs the public about the government's investment in infrastructure. Lack of planning and accountability leads to inadequate or improper operation and little programmed maintenance. There have been many studies on the capital needs of drinking water and wastewater infrastructure in the United States, and invariably these needs amount to dozens of billions of dollars. External funding (loans, grants, bonds, etc.) can only cover a portion of these capital needs. Ultimately, the customers of the systems will be covering the rest (if not all) of the capital needs of their systems. Long-term planning is required to schedule major infrastructure improvements and spread the capital costs over many years in order to avoid having to raise rates significantly in any one year to pay for a capital project that was unplanned.

Capital Improvement Plans characterize the physical plant, finances, and management of the system. It identifies areas where immediate and long-term extension of public water service is indicated, together with estimated costs and any improvements to existing systems to accommodate expansion.

The Capital Improvements Plan focuses on providing the facilities, technology, and maintenance that will allow water services to be provided to the citizens of McCreary County, along with some citizens of Whitley County and Scott County, Tennessee efficiently and effectively. To meet these objectives, the plan contains a series of policy and project recommendations.

McCreary County Water District provides water to approximately 6200 active customers with 3 wholesale water customers serving portions of Whitley County monthly and Scott County Tennessee occasionally. We have treatment capacity of 4.5 million gallons per day (MGD) for drinking water and 900,000 gallons per day (MGD) for wastewater with two water treatment plants and one wastewater treatment plant.

The District includes over 360 miles of PVC Distribution Pipeline, A/C and Ductile Iron in the water distribution system and over 50 miles of pipeline in the wastewater collection system. The system utilizes 13 elevated storage tanks and two stand pipe tanks, five booster pump stations and maintains adequate pressure (35-120 PSI) throughout the distribution system. We have a wide-ranging assembly of pump stations, lift stations, and storage facilities to serve our customers. Current maps of the distribution system, depicting line location, line size, and the location of all valves and flushing hydrants are maintained at the McCreary County Water District office located at 19 Crit King Road in Whitley City, Kentucky.

For some utilities, lack of financial planning results in costly replacement and eventually, complete system breakdown. With more than \$39 million in fixed assets, the District relies on capital improvements to maintain our above and below ground infrastructure. We are responsible for providing safe and reliable water and wastewater service with environmental integrity. Continued investment in the utility system helps us ensure the health and safety of the community we serve, as well as aide in their economic growth and prosperity. The Capital Improvement Plan (CIP), for fiscal years 2018-2027 totals \$ and provides the needed funds required to ensure continued system reliability and allows us to comply with regulatory requirements.

Revenue is a major factor impacting capital planning. All budgets are constrained by available revenues and that is no different for McCreary County Water District. Capital projects are prioritized so that available funds are allocated based on need and their impact on our customers.

A total of \$ in capital projects has been identified for the fiscal year 2018. A list of all first-year projects and additional project detail is available on the following pages.

Categories

- Stearns to Smithtown waterline replacement (0-5 years)
- Marsh Creek to Hwy 92 (0-5 years)
- AMR (0-10 years)
- Water Tank Maintenance
 - Prison Tank (1,000,000 gallons)
 - Stearns Tank (200,000 gallons)
 - Parkers Lake Tank (150,000 gallons)
 - Strunk Tank (250,000 gallons)
 - Wolf Ridge Tank (100,000 gallons)
 - Flat Rock Tank (500,000 gallons)
 - Rattlesnake Ridge Tank (50,000 gallons)
 - West Highway 92 Tank (50,000 gallons)
 - Holly Hill Tank (50,000 gallons)
 - Marshes Siding Tank (150,000 gallons)
 - Pine Knot Tank (150,000 gallons)
 - Sawyer Tank (100,000 gallons) (Dismantle)
- Sludge Basin Upgrade
- County Wide Phase II
 - Stearns to Smithtown Sewer Installation (0-2 years)
 - 1651 East Appletree (0-2 years)
 - Pine Knot 1651 to 92 (0-2 years)
 - Sewer Improvement and Upgrade (0-2 years)
 - Lighthouse, Northtown, Red Roof Inn (0-2 years)
 - Headwork upgrade to flow paced (0-2 years)

The Stearns to Smithtown waterline replacement project entails the construction of approximately 16,700 linear feet of 8-inch PVC, 5,100 linear feet of 4-inch PVC, and 1,600 linear feet of 2-inch PVC water main and appurtenances to replace an existing 6-inch and 4-inch water line to serve approximately 150 existing underserved customers.



Marsh Creek Road to Hwy 92 waterline replacement project will consist of approximately 33,000 linear feet of 6-inch SDR 17 waterline to replace existing 2-inch and 4-inch waterline along Marsh Creek Road in Strunk, Kentucky. The project will begin near US 27 to the west and will end at KY 92 to the east. This project will improve reliability and residual pressure for approximately 450 underserved customers and one wholesale customer.



Automated Meter Reading (AMR) is a radio read meter reading system where we plan to replace approximately 6,200 water meters with radio read meters. This project includes the system setup with software and interfacing into our billing software program.



Water tank maintenance is another major issue. The first tank in need of maintenance is the 1,000,000 gallon Prison Tank. On April 24, 2017, Utility Service Co. Inc, conducted a Washout inspection of the tank and determined that the EXTERIOR of the tank was in FAIR condition. The protective coating system shows clear signs of deterioration indicative of a system near the end of its useful life. Proper tool cleaning, priming, and over-coating of the structure is recommended for the VERY NEAR future. It is also recommended to replace the existing vent which is in POOR condition and add two (2) new vents on the top of the tank.

The INTERIOR of the tank is in POOR condition with signs of delamination on the roof with flash rust on the support beams and coating of panels. Sediment staining is visual on sidewalls. Coating failure and spreading corrosion affects almost half of the interior structure. Conditions indicates the coating system is BEYOND its useful lifecycle. The interior ladder shows signs of corrosion and needs to be replaced. The target and float assembly is in POOR condition and needs to be replaced. Recommendations include blasting of interior and coating to be installed to protect the interior and prolong life of tank; mud valve needs replaced and reconnected to the drain line; and expansion joint on the riser pipe needs repaired and mud valve coupling replaced. Also, all corroded nuts and bolts need to be replaced with SST.

In summary, this water storage tank is in POOR condition. A MAJOR renovation and possible repairs should be planned as soon as feasible.

The replacement cost of this tank is estimated at \$2,500,000.



The second tank in need of maintenance is the 200,000 gallon Stearns Tank. On April 24, 2017, Utility Service Co. Inc, conducted a Washout inspection of the tank and determined that the EXTERIOR of the tank was in FAIR condition. The protective coating system shows clear signs of deterioration indicative of a system near the end of its useful life. Proper tool cleaning, priming, and over-coating of the structure is recommended for the very near future. It is also recommended to replace overflow zinc plated bolts with SST.

The INTERIOR of the tank is in POOR condition with signs of delamination on roof with flash rust on the support beams and coating of panels. Sediment staining is also visible on sidewalls. Coating failure and spreading corrosion affects almost half of the interior structure. Conditions indicates the coating system is beyond its useful lifecycle. Recommendations include blasting of interior and coating to be installed to protect the interior and prolong life of tank and repairing the float system.

In summary, this water storage tank is in POOR condition. A MAJOR renovation and possible repairs should be planned as soon as feasible.

The replacement cost of this storage vessel is estimated at \$750,000.





The third tank in need of maintenance is the 150,000 gallon Parkers Lake Tank. On April 24, 2017, Utility Service Co. Inc, conducted a Washout inspection of the tank and determined that the EXTERIOR of the tank was in FAIR condition. The protective coating system shows clear signs of deterioration indicative of a system near the end of its useful life. Proper tool cleaning, priming, and over-coating of the structure is recommended for the very near future. Ladder wheels need to be removed and secured to the tank bowl. The safety climb system needs to be either repaired or replaced.

The INTERIOR of the tank is in POOR condition with signs of delamination on roof with flash rust on the support beams and coating of panels. Sediment staining is visual on sidewalls. Coating failure and spreading corrosion affects almost half of the interior structure. Conditions indicates the coating system is beyond its useful lifecycle. Recommendations include blasting of interior and coating to be installed to protect the interior and prolong life of tank; repair/replace the float system; repair/replace sections of interior ladder; and remove spider rods.

In summary, this water storage tank is in POOR condition. A MAJOR renovation and possible repairs should be planned as soon as feasible.

Replacement cost of this tank is estimated at \$500,000.

The Strunk tank is a 250,000 gallon elevated tank and is 4th on the list of needed maintenance. On April 24, 2017, Utility Service Co. Inc, conducted a Washout inspection of the tank and determined that the EXTERIOR of the tank was in FAIR condition. The protective coating system shows clear signs of deterioration indicative of a system near the end of its useful life. Proper tool cleaning, priming, and over-coating of the structure is recommended for the very near future.

The INTERIOR is in FAIR condition with signs of delamination on roof with flash rust on the support beams and coating of panels. Some sediment staining is visual on sidewalls. The protective coating system shows clear signs of deterioration indicative of a system near the end of its useful life. Proper tool cleaning, priming and over-coating of the structure is recommended for the very near future. Recommendations include tool blast and prime interior corroded areas, removing cathodic protection, and replacing the tide-flex mixing system.

In summary, this water storage tank is in FAIR condition.

Replacement cost of the Strunk tank is estimated at \$900,000.



The fifth tank in need of maintenance is the Wolf Ridge tank. This tank holds 100,000 gallons.



Ranked number 6 on the list to be repaired is the 500,000 gallon Flat Rock tank. On April 24, 2017, Utility Service Co, Inc. conducted a Washout inspection of the tank and deemed the EXTERIOR was in FAIR condition. The protective coating system shows clear signs of deterioration indicative of a system near the end of its useful life. Proper tool cleaning, priming, and over-coating of the structure is recommended for the very near future.

The INTERIOR is in POOR condition with signs of delamination on roof with flash rust on the support beams and coating of panels. Sediment staining was visual on sidewalls. The extent of coating failure and spreading corrosion affects more than 40% of the interior structure. Conditions indicate the coating system is beyond its useful lifecycle. Recommendations of the interior include blasting of interior and coating to be installed to protect the interior and prolong life of tank, prime and re-coat interior ladder where corrosion exists, repair the float system, and repair/replace sections of interior ladder. A MAJOR renovation and possible repairs should be planned as soon as feasible.

In summary, this water storage tank is in POOR condition. The estimated replacement cost of this tank is \$1,500,000.

Next on the list is the Rattlesnake Ridge Tank which is a 50,000 gallon elevated tank.

Number 8 on the tank repair list is the 50,000 gallon West 92 storage vessel. On April 24, 2017, Utility Service Co., Inc conducted a Washout inspection of the elevated tank and deemed the EXTERIOR of the tank was in GOOD condition. The protective coating system has random cosmetic deficiencies with signs of normal weathering and color fading. The exterior does not need over-coating at this time but some minor maintenance may be needed in the near future. It is only recommended that we power wash the exterior of the tank to extend the coating life. The INTERIOR is in FAIR condition with signs of delamination on roof with flash rust on the support beams and coating of panels. Some sediment staining is visual on sidewalls. The protective coating system shows clear signs of deterioration indicative of a system near the end of its useful life. Proper tool cleaning, priming, and over-coating of the structure is recommended for the very near future.

In summary, this water tank is in FAIR condition.

Estimated replacement cost of this water storage tank is \$175,000.





Holly Hill tank is next on the list of water storage tanks to be repaired. On April 24, 2017, Utility Service Co., Inc conducted a Washout inspection of the 50,000 gallon elevated tank. The findings concluded that the EXTERIOR was in GOOD condition. The protective coating system has random cosmetic deficiencies with signs of normal weathering and color fading. The structure does not need over-coating at this time but some minor maintenance may be needed in the near future. However, it is recommended to power wash the exterior of the tank to extend the coating life.

INTERIOR of the Holly Hill tank is in FAIR condition with signs of delamination on roof with flash rust on the support beams and coating of panels. Some sediment staining was visual on sidewalls. The protective coating system shows clear signs of deterioration indicative of a system near the end of its useful life. Proper tool cleaning, priming and over-coating of the structure is recommended for the very near future.

In conclusion, this water tank is in GOOD condition.

Estimated replacement cost for the Holly Hill tank is \$175,000.

Marshes Siding

Pine Knot

Sawyer

Sludge Basin Upgrade

				<u>Prison (Meadows Grove)</u>									
					<u>Flat Rock</u>								
Capacity	<u>Parkers Lake</u> 150,000	<u>Stearns</u> 200,000	<u>Strunk</u> 250,000	1,000,000	500,000	<u>West 92</u> 50,000	<u>Holly Hill</u> 50,000	<u>Wolf Ridge</u> 100,000					
Inspection Date	4/24/2017	4/24/2017	4/24/2017	4/24/2017	4/24/2017	4/24/2017	4/24/2017	4/24/2017					
Construction Style	Elevated Steel	Elevated Steel	Elevated Steel	Composite Fluted Column	Elevated Steel	Elevated Steel	Elevated Steel	Elevated Steel					
Builder	Caldwell	Brown Steel Contractors, Inc	Caldwell*	Caldwell	Caldwell	Phoenix	Phoenix	Phoenix					
Ladder Gate	Safety Gate	Safety Gate	Safety Gate	Safety Gate	Safety Gate	Safety Gate	Safety Gate	Safety Gate					
Exterior Coating	Urethane	Urethane	Urethane	Urethane	Urethane	Urethane	Urethane	Urethane					
Interior Coating	Epoxy	Epoxy	Epoxy	Epoxy	Epoxy	Epoxy	Epoxy	Epoxy					
Design	Elevated	Elevated	Elevated	Elevated	Elevated	Elevated	Elevated	Elevated					
Inspector	Gene Holder	Gene Holder	Gene Holder	Gene Holder	Gene Holder	Gene Holder	Gene Holder	Gene Holder					Standpipe
Construction Date	1978	1993	1998	2002	2001*	2004*	2008*	2008*					1996
Height/Dimension	120'	142'	138'	156' 8"	170'	116'	69'						
Safety Climb Equipment	Notch Rail	Notch Rail	Notch Rail	Notch Rail	Notch Rail	Notch Rail	Notch Rail	Notch Rail					
Exterior Lead/Chromium Presence	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Interior Lead/Chromium Presence	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					

