

2021 Capital Improvements Plan

For the

East Logan Water District

Russellville, Kentucky

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Introduction

East Logan Water District (ELWD) is committed to providing excellent water services for all our customers in a county that continues to grow and evolve. Water is a necessary component of county expansion, economic growth, adaptable technologies, and enhanced public health and safety.

Authority

East Logan Water District was created by Logan County Court order on November 8, 1972, and has been in continuous existence since that time. ELWD is responsible for providing water service to the unincorporated areas of Logan County. User fees from customers provide all income.

Service Area

The East Logan Water District (ELWD) is comprised of roughly 300 miles of water line and serves approximately 3,200 customers, which are almost entirely rural residences. The District purchases all of its treated water from the Logan Todd Regional Water Commission. Average daily usage is currently just above 500,000 gpd. The ELWD is the largest water system in Logan County both in terms of customers and geographic area covering over a third of Logan County. Almost all roads within the District boundary have water service, with only short extensions needed from time to time to accommodate a new development.

Services

The East Logan Water District is a member of and purchases all of its water from the Logan Todd Regional Water Commission (LTRWC). LTRWC will continue to be the exclusive source of treated water for the entire project. The LTRWC plant in Guthrie is rated at 10.0 MGD, and it is currently operating at 70% capacity. An expansion is in progress that will increase the plant capacity to 12 MGD. Raw Water is obtained from the Cumberland River in Clarksville, Tennessee. Sufficient treatment capacity exists at the Guthrie plant for the proposed improvements.

District Goals

In recent years, the East Logan Water District has focused on retiring system debt. This effort has been successful, with only \$920,000 remaining in long-term debt. Because of this focus, the District has been reluctant to take on new debt for projects. As a result, there are no new capital projects in the funding “pipeline”.

Capital Improvements Plan

The Capital Improvements Plan (CIP) is a multi-year planning tool used to identify community infrastructure needs and sources of financing. The purpose of a CIP is to facilitate the planning of infrastructure improvements, to maintain East Logan Water District's (ELWD) existing distribution system, and to provide for acquisition or replacement of equipment to ensure expedient delivery of services to the community.

A CIP is an essential tool for maintaining the well-being of the system. The plan is necessary to strengthen the quality of both facilities and services, and to set community goals into action while also informing residents and stakeholders of how the municipality plans to address significant needs over the next 10 years.

The projects outlined in the CIP represent the District's current plan to both serve residents and anticipate maintenance and replacement needs. Since things change continuously, a CIP should not be a static document. At least each year, all projects should be reviewed, completed projects removed, new projects added, and adjustments to existing projects made depending on circumstances.

Budgeting

The CIP provides a link between planning and budgeting for capital projects. ELWD acknowledges that these projects represent a reasonable interpretation of the upcoming needs for the community and that projects contained in the first year of the plan are suitable for inclusion in the upcoming budget.

Prioritization & Criteria

The East Logan Water District is a relatively large water system covering most the eastern and northern part of Logan County. Nearly all roads within the ELWD boundary have water service.

Presently, the District's biggest problems or needs are in four parts: 1) cutting water losses in the distribution system; 2) filling out the distribution system with short, small-diameter waterline extensions & upgrades to fulfill a small list of new service requests; 3) replacing selected aging and/or undersized primary transmission lines, and 4) installing strategic interconnections to improve system hydraulics and provide redundant feeds within the system.

All capital projects are evaluated and scored from 1 – 5, with 5 being the most critical. The scoring committee comprised of the ELWD Water Board Commissioners, the System Manager, and the Operations Manager meet monthly to discuss system needs, project necessity, and budgetary obligations.

Funding

Availability of funding is an important factor in determining the scope and timing of any infrastructure improvements. Ordinarily, funding for rural public water projects is available from public sources such as USDA Rural Development, Kentucky Infrastructure Authority, and other more specialized programs like the Community Development Block Grant program and the Delta Regional Authority. Private funding is available from bond pooling programs such as operated by the Kentucky Rural Water Association and others.

The public programs have limited funds, a long and complicated application and approval process, and an uncertain timeline for funding availability. The private programs are generally quicker and simpler to secure, but often have higher rates and shorter terms. Public programs often have some grant component to their funding while private programs do not.

Determining which program or combination of programs is best for a given project is difficult. Even with today's historically low interest rates, the governing boards often want a substantial portion of the funding in grant before being willing to undertake a project.

Right now, there are at least two new funding sources being discussed that may infuse substantial new grant dollars into infrastructure in general, and water systems in particular. The first is the American Rescue Plan that was enacted by Congress earlier this year. Logan County is set to receive \$5,264,246.00 in grant funding from this program. How much of this money, if any, that ELWD will receive remains to be determined.

There is also the specter of a federal infrastructure bill that has the potential to infuse historic levels of funding into utility systems.

With these uncertainties, governing boards are reluctant to take on new debt for projects when the potential for these projects to be funded by grants appears to be so close on the horizon.

For the purposes of this plan, the new funding sources are largely ignored, and the established sources emphasized. Should these new sources come to fruition, the funding and timing of these improvements would likely change significantly.

System-Wide Meter/Service Replacement Project

The proposed project involves replacement of all meters, setters, boxes, and service tubing for approximately 3,200 active meter sets plus 200 inactive locations. The District's operators have identified aging and leaking service tubing to be a significant source to the District's water loss issue, which measured at 25.3% in 2020. The project has an estimated cost of \$5,800,000 and would be expected to take a full year for completion if undertaken as a contracted project. Funding would need to be secured from one or more of the infrastructure financing agencies such as USDA Rural Development or the Kentucky Infrastructure Authority,

Preliminary Project Budget

	Item	Quantity	Unit	Total
Construction - System-wide Meter & Tubing Replacement Project				
①	Meter & Service Replacement: 3/4" Services (Radio-Read)	3,200	EA	\$ 4,480,000
②	Meter & Service Replacement: 1" Services (Radio-Read)	12	EA	\$ 24,000
③	Meter & Service Replacement: 2" Services (Radio-Read)	3	EA	\$ 15,000
④	Meter & Service Replacement: 6" Meter Register Retrofit (P	1	EA	\$ 1,000
⑤	Meter & Service Replacement: 3/4" Inactive Services	200	EA	\$ 240,000
⑥	Radio-Read Software & Hardware System	1	LS	\$ 40,000
				\$ 4,800,000
Non-Construction Items				
	Administrative Expenses			\$ 5,000
	Legal Costs			\$ 30,000
	Preliminary Engineering, Environmental & Permitting			\$ 20,000
	Design Engineering			\$ 230,000
	Construction Phase Engineering Services			\$ 95,000
	Construction Inspection			\$ 170,000
	SUBTOTAL - Non-Construction			\$ 550,000
	Contingency			\$ 450,000
	TOTAL ESTIMATED PROJECT COST			\$ 5,800,000

The more likely approach is to complete the replacement in phases over several years with smaller contracts or with ELWD purchasing the supplies and self-performing the work. This would be financed by a combination of District funds plus American Rescue Plan (ARP) funds of loan/grant funds from RD/KIA.

The first step will likely be a complete replacement of all meters and service lines in the Montgomery Road area of ELWD. This area appears to have higher water loss and is relatively easy to isolate to see if the proposed improvements have a worthwhile impact. If performed by a contractor, this portion of the project is estimated to cost \$350,000.

Billing Computers and Software Upgrade

The current billing software and computers are obsolete and in need of replacement. ELWD is in the process of updating both. The expected cost of this upgrade is \$15,000. District reserve funds are available for this upgrade, however there is the possibility that ARP funds will be used depending on the amount received.

System-Wide SCADA Improvements Project

The Project involves new construction and/or retrofitting of multiple metering vaults or other above-ground structures; all to monitor hydraulic performance and parameters within the East Logan Water distribution system. The project will include the addition of a new and complete system-wide SCADA system plus various other piping, valves, accessories and associated electrical components. The completed project will assist operators with quick identification of leaks or problems plus general monitoring of their system; all in effort to reduce water losses. The project is 'shovel ready' with plans completed in 2018. The project has an estimated cost of \$1,600,000, and it is expected to take 180 days for completion.

\$500,000 was committed to the project by USDA Rural Development in 2017 and the project was designed and bid. Scope additions and higher than anticipated prices pushed the project cost well above available funding. Attempts to reduce the scope to within the available funds while retaining a functional project were unsuccessful and the project was put on hold. The RD funding must be used within 5 years of its commitment, so it is unlikely that the present funding remains viable.

Funding for the project would now require re-application to RD or another funding agency, use of American Rescue Plan funds, use of District reserve funds, or some combination.

Preliminary Project Budget

	Item	Quantity	Unit		Total
Construction - System-wide SCADA Improvements Project					
①	New Master Meter/SCADA Site	4	EA		\$ 550,000
②	Retro/Modify Existing ELWD Master Meter Sites for SCADA	11	EA		\$ 500,000
③	Retro/Modify Existing LTRWC Master Meter Sites for SCADA	4	EA		\$ 100,000
④	Modifications at ELWD Water Office for SCADA Addition	1	LS		\$ 100,000
					\$ 1,250,000
Non-Construction Items					
	Administrative Expenses				\$ 5,000
	Legal Costs				\$ 15,000
	Preliminary Engineering, Environmental, & Permitting				\$ 15,000
	Design Engineering				\$ 75,000
	Construction Phase Engineering Services				\$ 30,000
	Construction Inspection				\$ 65,000
	SUBTOTAL - Non-Construction				\$ 205,000
	Contingency				\$ 145,000
	TOTAL ESTIMATED PROJECT COST				\$ 1,600,000

New Service Extension Project

The proposed project involves construction of nearly 8 miles of water line to address the small diameter extensions and line looping needs mentioned above. The extensions are expected to provide or improve service to approximately 25 residences, and each road is illustrated on the referenced exhibit. The project has an estimated cost of \$625,000, and it is expected to take 180 days for completion.

The most likely scenario is for ELWD to apply to RD or KIA for funding and undertake the work as a contracted project.

Preliminary Project Budget

Exhibit	Item	Length	Size		Total
Construction - System-wide Waterline Extensions					
①	Happy Hollows Lane	3,700	3"		\$ 35,000
②	Lack Road	9,000	3"		\$ 90,000
③	Ashby Road	5,000	3"		\$ 50,000
④	Costelow Road	4,300	3"		\$ 45,000
⑤	Brown Lane	6,900	3"		\$ 70,000
⑥	Watson Road	2,700	3"		\$ 30,000
⑦	Union Grove Road	9,000	4"		\$ 125,000
⑧	Howlett Drive	1,100	4"		\$ 20,000
		TOTAL - All Construction			\$ 465,000
Non-Construction Items					
Administrative Expenses					\$ 5,000
Legal Costs					\$ 15,000
Preliminary Engineering, Environmental & Permitting					\$ 10,000
Design Engineering					\$ 34,000
Construction Phase Engineering Services					\$ 14,500
Construction Inspection					\$ 35,500
SUBTOTAL - Non-Construction					\$ 114,000
Contingency					\$ 46,000
TOTAL ESTIMATED PROJECT COST					\$ 625,000

Main Line Upgrade & Replacement Project

The proposed project involves construction of over 16 miles of water line to replace aging and under-sized transmission lines plus replace two problematic road crossings (Russellville Bypass and Motts Creek). Each road is illustrated on the referenced exhibit. The project has an estimated cost of \$2,800,000, and it is expected to take 270 days for completion.

The most likely scenario is for ELWD to apply to RD or KIA for funding and undertake the work as a contracted project.

Preliminary Project Budget

Exhibit	Item	Length	Size		Total
Construction - System-wide Waterline Upgrades & Replacements					
9	Woodland Acres Replacement	6,700	4"/6"		\$ 160,000
10	Echo Valley Road Replacement	19,500	10"		\$ 490,000
11	KY Highway 100 Replacement	57,300	10"		\$ 1,435,000
12	Russellville Bypass Bore Replacement	400	8"		\$ 125,000
13	Motts Creek Crossing Replacement	200	6"		\$ 40,000
		TOTAL - All Construction			\$ 2,250,000
Non-Construction Items					
	Administrative Expenses				\$ 5,000
	Legal Costs				\$ 20,000
	Preliminary Engineering, Environmental & Permitting				\$ 20,000
	Design Engineering				\$ 120,000
	Construction Phase Engineering Services				\$ 50,000
	Construction Inspection				\$ 100,000
	SUBTOTAL - Non-Construction				\$ 315,000
	Contingency				\$ 235,000
	TOTAL ESTIMATED PROJECT COST				\$ 2,800,000

Summary Table and Ranking

Project		Projected Cost	Time Frame	Priority	Status
1	System-Wide Meter/Service Replacement	\$5,350,000	1-5 YR	H	Pursuing 1 st phase
1a	Montgomery Road Meter/Service Repl.	\$350,000	1 YR	H	1 st phase – in design
2	Billing Computers and Software Upgrade	\$15,000	1 YR	C	In Progress
3	System-Wide SCADA Improvements Project	\$1,600,000	1-2 YR	M	Funding dependent
4	New Service Extension Project	\$625,000	5-10 YR	L	Demand/Funding Dependent
5	Main Line Upgrade and Replacement Project	\$2,800,000	3-5 YR	M	Funding Dependent

Priority: C = Critical, H = High, M = Medium, L = Low.