

2024 Budget and the Reliability & Resiliency Roadmap



**MLGW Committee
Memphis City Council
November 7, 2023**

** All dollars in thousands unless otherwise noted.*

*** Numbers presented exclude all non-cash Pension and OPEB expense related to GASB 68 and GASB 75.*

2024 Budget Context

- Inflation eroding buying power, upward pressure on wages and cost of materials. Ex: tree trimming \$100M now \$228M
- Industry trend – Utilities are answering demand from electrification, moving to grid modernization, making investments paid for by rate hikes to be future ready
 - PG&E 22% in 1 year, Georgia Power 12% in 1 year, FPL 11% in 1 year, Duke 18% over 3 years
 - TVA Peers: North Georgia – Electric 7% in 1 year, Chattanooga – Electric 4% in 1 year
- MLGW Needs:
 - More people to do the work
 - Permanent and contracted
 - More funding to do the work – capital and O&M

Rates

- We will deliver what we forecast to you last year, making only two adjustments despite significant economic headwinds.

- Adding 1.5 percentage points to increase, bringing forward by 1 year
 - Forecast last year: 10.5% over 3 years 2025-2027
 - Proposed this year: 12.0% over 3 years 2024-2026

	FY24	FY25	FY26	FY27
Water Division				
FY23 Forecast	0%			
FY24 Proposed	0%			
Gas Division				
FY23 Forecast	0%			
FY24 Proposed	0%			
Electric Division				
FY23 Forecast	0%	4.0%	3.5%	3.0%
FY24 Proposed	4.0%	4.0%	4.0%	



2024 Electric Overview

FY 24 Electric Division Overview

- The MLGW reliability and resilience roadmap anticipates expenditure of \$1.2B through FY28 to build an electric distribution system that is more reliable today and can meet the challenges of tomorrow
- To date, MLGW has expended \$172M toward that goal
- In the FY24 Budget, you will see that MLGW will invest an additional \$229M to advance the reliability and resilience roadmap.
- Some of the significant improvements and initiatives that are proposed to be funded by this budget in FY24 include:
 - Continued replacement of aging Substation Transformers and Circuit Breakers, \$7.7 million
 - Continued replacement of wooden poles, \$5.0 million,
 - Continued replacement of underground cable, \$9.0 million
 - Continued installation of Distribution Automation Switches, \$11.3 million
 - Build out of PLTE infrastructure, \$10.0 million
 - Build out of ADMS w/FLISR, \$4.0 million
 - Build out of new SCADA/SysOps/USC, \$11.0 million
 - Architectural and engineering and procurement for Generation/Storage initiatives (Solar, Batteries Aeroderivatives), \$120.5 million **No impact on, and NOT FUNDED by, the Rate Increase**

Electric Reliability & Resiliency Budget Roadmap								
Action		Description	Outcome	2020-2022	2023 Projected	2024	2025-2028	Total
				\$ in Millions				
1. Tree Trimming		Trees are the leading cause of MLGW outages.	Reduced Vegetation/Tree limb-caused outages.	\$25.4	\$13.0	\$32.0	\$196.0	\$266.4
2. Replace Outdated Infrastructure	Add Manpower	MLGW Staff	More engineers to design the work			\$3.4	\$13.5	\$16.9
		Contracted Capacity	More crews to complete the work			\$15.5	\$62.0	\$77.5
	Replace Substation Transformers	Substation equipment needs to be maintained and components need to be replaced periodically to extend asset life.	Preventing long duration outages because of transformer failures.	\$20.6	\$6.7	\$4.9	\$34.1	\$66.3
	Replace Substation Circuit Breakers	Substation equipment needs to be maintained and components need to be replaced periodically to extend asset life.	Preventing long duration outages because of circuit breaker failures.	\$10.1	\$3.9	\$2.8	\$12.9	\$29.7
	Wood pole replacement	Inspect, rate and replace rotted or end of life poles	Less outages because of pole failures	\$10.6	\$4.5	\$5.0	\$15.0	\$35.1
	Replace Underground cable	Replace 1960-1980 vintage UG cable.	Prevent long duration outages because of cable failures.	\$12.4	\$6.2	\$9.0	\$36.0	\$63.6
3. Grid Modernization	Install DA Switches & Other Related	Enable distribution automation and segment the system	Distribution automation reduces customers impacted by each outage, speeds up restoration time after an outage, and gives more options for balancing the system.	\$21.6	\$10.0	\$11.3	\$179.9	\$222.8
	PLTE	Radio spectrum and radio system equipment to control modern grid systems	Enables Communications with all DA Switches, crews, dispatch, comms systems		\$27.0	\$10.0	\$21.0	\$58.0
	ADMS w/FLISR	Advanced system operations hardware and software to manage modern grid	Automatic load balancing, switch operation, power rerouting and fault location and isolation			\$4.0	\$12.0	\$16.0
	Upgrade SysOps/USC	Modernize system operations to incorporate capability for ADMS, DES and generation	Supports modern Grid operation, back up capability			\$11.0		\$11.0
	Batteries/Storage	Distribution level energy storage assets	Peak shaving capability, resilience, continued economic development			\$0.5	\$105.0	\$105.5
	Generation: Solar, AD	Electric Generation assets to meet short and long term energy demands	Continued economic and community development, resilience			\$120.0	\$85.5	\$205.5
Value	Significantly improved reliability, clean energy, peak shaving, resilience in the face of increased demand			\$100.8	\$71.3	\$229.3	\$772.9	\$1,174.4

Grid Modernization

- Four Components – significant investments in all areas needed
 - Distribution Automation and other devices installed throughout the distribution system – approximately 3000 total at full build out
 - A communications system to control the devices – hardware, software and spectrum make up the system
 - An advanced distribution management system (ADMS) - the software platform that supports the full suite of distribution management and optimization. An ADMS includes functions that automate outage restoration and optimize the performance of the distribution grid.
 - A modern supervisory control and data acquisition (SCADA) - a control system architecture comprising computers, networked data communications and graphical user interfaces for high-level supervision of machines and processes.

Capacity and Load Growth Challenge

- Accelerated economic growth challenges the BES ability to balance supply with pace of demand
- On shoring of manufacturing and electrification are demand drivers
- Decarbonization, supply chain and pace of new generation are supply side drivers
- Peak reserve margins are challenged
- TVA has 3800MW of new generation under construction (in service in 2024) and their board recently approved investing another \$15 Billion over the next 3 years for additional generation and upgrades to their existing system. One of those projects is in Memphis involving a \$350 Million investment to install cleaner more efficient aeroderivative generation in place of combustion turbines that are more than 40 years old.
- TVA's Reliable Growth Provision - new projects larger than 5MW will be subject to interruption through 2031 when additional generation comes online.
- MLGW is proactively in discussion with TVA and other Local Power Companies for solutions.

Aero Derivatives

- MLGW Proposed Solution: Add AeroDerivative Turbine Generators as Bridge to 2031
- MLGW must be in position to catalyze Economic development
 - Proposing to acquire and deploy LM/TM2500 AeroDerivative turbines that generate 30MW of peak load power
 - Individually or together with other local power companies explore other options for a power pool.
 - Working with TVA on a plan that allows MLGW to own and install generation that can be provided to the TVA system as a backup to these new loads so they will not be subject to interruptions.
 - Each 5MW of new generation allows for new >5MW large electric loads without the RGP
 - Synchronous Condensing function – unlocks ability to add significant intermittent/renewables even in an unfired state
 - We have allocated \$120M in FY24 budget for the purpose. Will be funded with bond proceeds.
 - *Bonds will be paid with revenues from AD operation or capacity...* **No impact on, and NOT FUNDED by, the Rate Increase**

Battery Storage

- MLGW Proposed Solution: Add 100MW Battery Storage
- MLGW must be in position to catalyze Economic development
 - Proposing to acquire and install up to 100MW of Battery Storage
 - Will be charged and discharged daily during peak demand as a “peak shaving” asset
 - Will provide 4-6 hrs of additional power during peaks
 - Potentially each 5MW of new Battery Storage allows for new >5MW large electric loads without the RGP
 - We have allocated \$500K in FY24 budget for engineering necessary to integrate batteries
 - Expect first capital expenditure in FY25
 - Pursuing Federal Funding to complement MLGW’s investment in Battery Storage

Solar

- MLGW has as a priority to add additional renewable energy for our customers
 - Utility scale solar, community solar uses
 - We have allocated \$500K in FY24 budget for engineering necessary to integrate solar into the system
 - Expect first capital expenditure in FY25
 - Pursuing Federal funding to complement MLGW investment in Solar

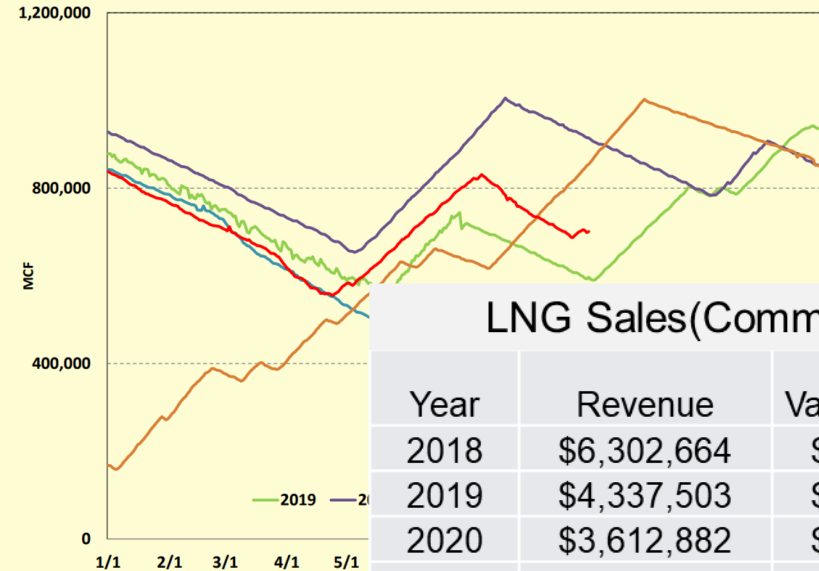


2024 Gas Overview

How we are positioned in the Gas Division

- No rate increase proposed for FY24
- MLGW Bulk Storage and LNG storage on target to be full by December 2023 ensuring continued access to gas for the winter
- Hedges and Call Options in place to bring some predictability to winter gas prices and reduce to reduce customer gas bill volatility
- In 2022, Gas Purchase strategy yielded **\$44M** in value for MLGW. ~**\$32M** was used in Winter 22/23 to reduce gas costs passed on to customers. ~**\$12M** will be used in winter 23/24 to reduce gas costs passed on to customers.
- LNG Plant continues to provide gas system resilience and produces value for gas customers

LNG Storage Tank Level



LNG Sales(Commercial Truckloads)

Year	Revenue	Variable Costs	Margin
2018	\$6,302,664	\$3,096,863	\$3,205,801
2019	\$4,337,503	\$2,164,645	\$2,172,858
2020	\$3,612,882	\$1,742,855	\$1,870,027
2021	\$4,864,610	\$2,209,770	\$2,654,841
2022	\$5,257,028	\$3,661,678	\$1,595,350
2023	\$3,767,897	\$3,332,529	\$435,368
Total	\$28,142,586	\$16,208,339	\$11,934,246

Average margin (profit) \$2.3M per year

Value for residential and commercial natural gas customers

FY 24 Gas Division Overview

- **Gas highlights:** In the FY24 Budget, you will see that MLGW will invest an additional \$47.1M to advance system improvements and compliance of the MLGW Gas System. These investments add value for our customers and are focused on reliability and continuous safe delivery of gas to MLGW customers.
- Some of the significant improvements and initiatives that are proposed to be funded by this budget in FY24 include:
 - Regulatory Compliance, \$9.2 M
 - Distribution Integrity Management (DIMP) \$7.7 M
 - Gas Main/Steel Tap Replacements
 - Casing Mitigation
 - Corrosion Control
 - Risk Assessment
 - Transmission Integrity Management (TIMP) \$1.5 M
 - Pressure Testing
 - Reclassification of Pipeline
 - System Improvements & Reliability, \$4.3 M
 - System & Planning - \$0.3 M
 - LNG Plant - \$2.4 M (*Fire Hazard Panel; VFD Replacement; Re-Gen Heater Installation; Gas Chromatograph, MRL Compressor Replacement*)
 - Regulator Stations - \$0.7 M
 - Gate Stations - \$1.0 M



2024 Water Overview

How we are positioned in the Water Division

- **MLGW produces the cleanest drinking water** of 70 large American Cities (June 2023 study)
- MLGW received a score of ninety-eight percent (98%) following TDEC's biennial sanitary survey of the MLGW Water System
- All 10 Pumping stations online, 12 new production wells and 4 new VFD controllers online
- Phase I of Aquifer Study complete. Public report out Thursday Sept 21, Central Library, 5PM.



MLGW @MLGW · Sep 6

Memphis is THE PLACE for water, and that's according to the @EPA. The agency ranks Memphis as the #1 City in the U.S. for clean drinking water. Read more: bit.ly/45XuZCp. #MLGW #MLGWNews #ServingYouIsWhatWeDo



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FY 24 Water Division Overview

- **Water highlights:** In the FY24 Budget, you will see that MLGW will invest an additional \$59.6M to advance the reliability and continuous safe drinking water of the MLGW Water System.
- These investments add value for our customers and are focused on reliability and continuous safe drinking water.
- Some of the significant improvements and initiatives that are proposed to be funded by this budget in FY24 include:
 - Pumping Station Upgrades, \$21.2 M
 - American Rescue Plan Filter Rehabilitations and Station Rehabilitations - \$15.8M (Allen PS - \$8.2 M)
 - Variable Frequency Drive & Transformer Replacements - \$2.3 M
 - Other Pumping Facilities Projects - \$1.8 M
 - Aerator Rehabilitation & Distributed Processing Control Systems Installations - \$1.M
 - Medium Voltage Breaker & Switchgear Replacements for Underground Reservoirs - \$0.3M
 - Production Well Construction, \$7.8 M
 - Well Replacements - \$5.2 M
 - Well Abandonments - \$0.3 M
 - Well Failure Prevention - \$1.7 M
 - Well Generators - \$0.5 M



2024 Budget Details

Budget Overview

- Focus on improving reliability and resiliency:
 - Tree trimming additional cost (\$228M vs \$100M over 5 years).
 - Continued replacement of infrastructure
 - Moving to a modernization of the electric grid
- Wage increases of 5.0% and 3.5% for Non-Bargaining Unit and Bargaining Unit respectively to maintain a competitive workforce, \$11.5 million
- Addition of 116 new Positions (114.5 FTE) to accomplish goals and initiatives set forth in the plan, \$10.8 million
- Modest multi-year electric rate increases proposed
- No rate increases proposed for gas and water for FY24.

Total Regular Labor increases to last year's Budget

- Total Regular Labor increase of \$22.3 million over the 2023 Budget or ~10%.
 - Wage and premium increases, \$11.5 million
 - Net new positions, \$10.8 million

All Divisions Summary

Category (\$ in Thousands)	Electric	Gas	Water	Total
Operating Revenue	\$1,498,390	\$287,586	\$129,424	\$1,915,400
Purchased Power and Gas	\$1,105,352	\$141,602	\$0	\$1,246,954
O&M Expense	\$318,127	\$129,797	\$116,246	\$564,170
Depreciation & Amortization	\$60,842	\$24,228	\$11,954	\$97,024
PILOT & Taxes	\$44,889	\$17,486	\$5,212	\$67,587
Total Operating Expense	\$1,529,210	\$313,113	\$133,412	\$1,975,735
Total Capital Expenditures	\$272,762	\$35,994	\$27,463	\$336,219
Total Operating & Capital Budgets	\$1,801,972	\$349,107	\$160,875	\$2,311,954
Change in Net Position	\$10,779	(\$19,699)	(\$1,598)	(\$10,517)

Electric Division Summary

Operating margin is \$51.1 million higher than last year's budget due primarily to the proposed 4% rate action.

Power costs are projected to be flat due to decreasing TVA fuel cost offset by TVA rate increase actions.

The Change in Net Position Variance (net income) is \$1.6 million lower than last year's budget primarily driven by higher operating expense relative to the increase in operating margin offset by higher other income .

Capital Expenditures are \$41 million higher than last year.

Category	2022 Actual	2023 Proj	2023 Budget	2024 Budget
Operating Revenue	\$1,491,580	\$1,411,000	\$1,438,242	\$1,498,390
Power Cost	\$1,151,829	\$1,090,000	\$1,096,347	\$1,105,352
Operating Margin	\$339,752	\$321,000	\$341,895	\$393,038
Operating Margin Variance			\$51,143	Increase
O&M	\$222,522	\$247,000	\$254,001	\$318,127
Depreciation & Amortization	\$60,294	\$62,000	\$62,437	\$60,842
PILOT & Taxes	\$49,007	\$41,000	\$47,031	\$44,889
Total Operating Expense	\$331,822	\$350,000	\$363,468	\$423,858
Expense Variance			\$60,390	Increase
Other Income	\$42,548	\$53,000	\$42,608	\$53,823
Debt Expense	\$9,476	\$8,700	\$8,634	\$12,224
Change in Net Position	\$41,001	\$15,300	\$12,401	\$10,779
Change in Net Position Variance			(\$1,622)	Decrease
Capital Expenditures	\$92,811	\$175,000	\$231,923	\$272,762
Total Operating & Capital	\$1,576,462	\$1,615,000	\$1,691,738	\$1,801,972

Gas Division Summary

Operating margin is \$1.2 million higher than last year's budget. There are no MLGW rate increases proposed for 2024.

The Change in Net Position Variance (net income) is \$12.0 million lower than last year's budget due primarily to the increase in operating expenses relative to the increase in operating margin and offset by higher other income.

Capital Expenditures are \$11.7 million higher than last year's budget.

Category	2022 Actual	2023 Proj	2023 Budget	2024 Budget
Operating Revenue	\$346,264	\$307,000	\$341,481	\$287,586
Gas Cost	\$197,956	\$166,000	\$196,719	\$141,602
Operating Margin	\$148,308	\$141,000	\$144,762	\$145,984
Operating Margin Variance			\$1,222	Increase
O&M	\$96,253	\$103,000	\$104,717	\$129,797
Depreciation & Amortization	\$23,511	\$24,000	\$23,930	\$24,228
PILOT & Taxes	\$19,424	\$18,000	\$19,969	\$17,486
Total Operating Expense	\$139,189	\$145,000	\$148,616	\$171,511
Expense Variance			\$22,895	Increase
Other Income	(\$1,293)	\$9,000	(\$32)	\$9,476
Debt Expense	\$3,921	\$3,800	\$3,798	\$3,648
Change in Net Position	\$3,905	\$1,200	(\$7,684)	(\$19,699)
Change in Net Position Variance			(\$12,015)	Decrease
Capital Expenditures	\$17,998	\$51,100	\$24,281	\$35,994
Total Operating & Capital	\$355,143	\$362,100	\$369,616	\$349,107

Water Division Summary

Operating margin is \$1.2 million lower than last year's budget.

The Change in Net Position Variance (net income) is \$17.5 million lower than last year's budget primarily due to the higher operating expenses, lower operating revenue offset by higher other income.

Capital Expenditures are \$15.1 million lower than last year's budget.

Category	2022 Actual	2023 Proj	2023 Budget	2024 Budget
Operating Revenue	\$134,854	\$130,000	\$130,626	\$129,424
Operating Revenue Variance			(\$1,202)	Decrease
O&M	\$86,975	\$94,000	\$95,597	\$116,246
Depreciation & Amortization	\$11,583	\$12,000	\$11,649	\$11,954
PILOT & Taxes	\$5,047	\$5,100	\$5,115	\$5,212
Total Operating Expense	\$103,606	\$111,100	\$112,361	\$133,412
Expense Variance			\$21,051	Increase
Other Income	\$1,803	\$5,000	\$1,094	\$5,696
Debt Expense	\$3,555	\$3,500	\$3,450	\$3,306
Change in Net Position	\$29,497	\$20,400	\$15,909	(\$1,598)
Change in Net Position Variance			(\$17,507)	Decrease
Capital Expenditures	\$27,239	\$28,000	\$42,532	\$27,463
Total Operating & Capital	\$130,845	\$139,100	\$154,893	\$160,875

Total Capital Expenditures By Division

Electric Division

2023 Budget	\$231,923
2024 Budget	\$272,762
\$ Change	\$40,839
% Change	17.6%

Gas Division

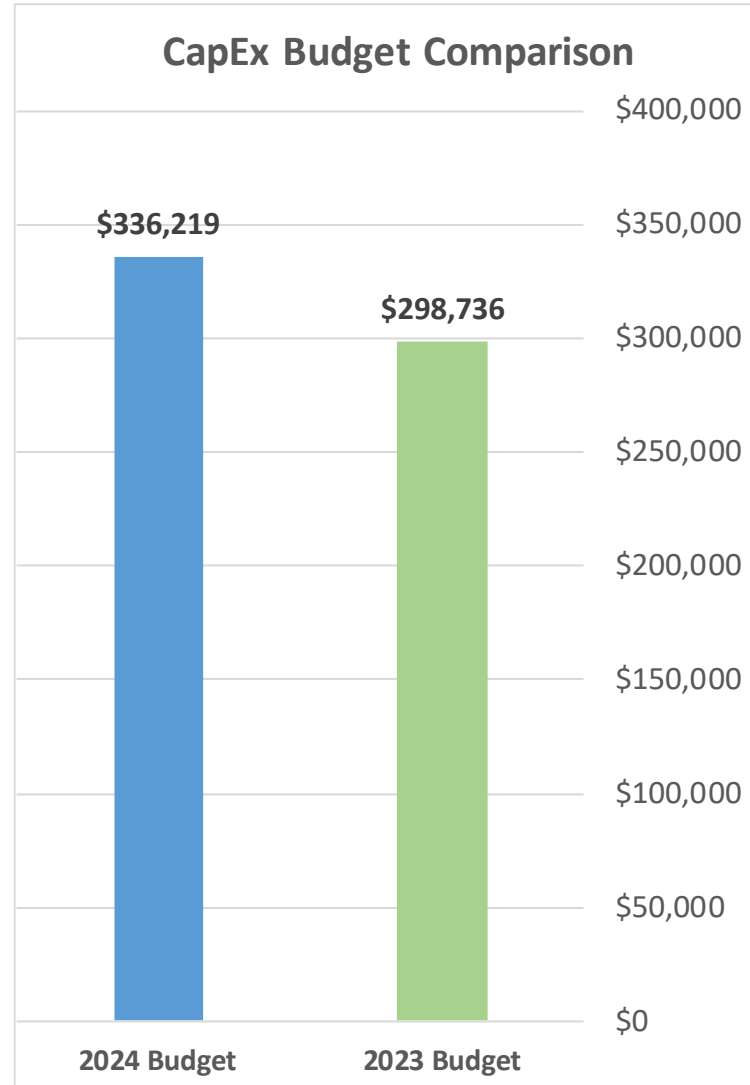
2023 Budget	\$24,281
2024 Budget	\$35,994
\$ Change	\$11,713
% Change	48.2%

Water Division

2023 Budget	\$42,532
2024 Budget	\$27,463
\$ Change	(\$15,069)
% Change	-35.4%

All Divisions

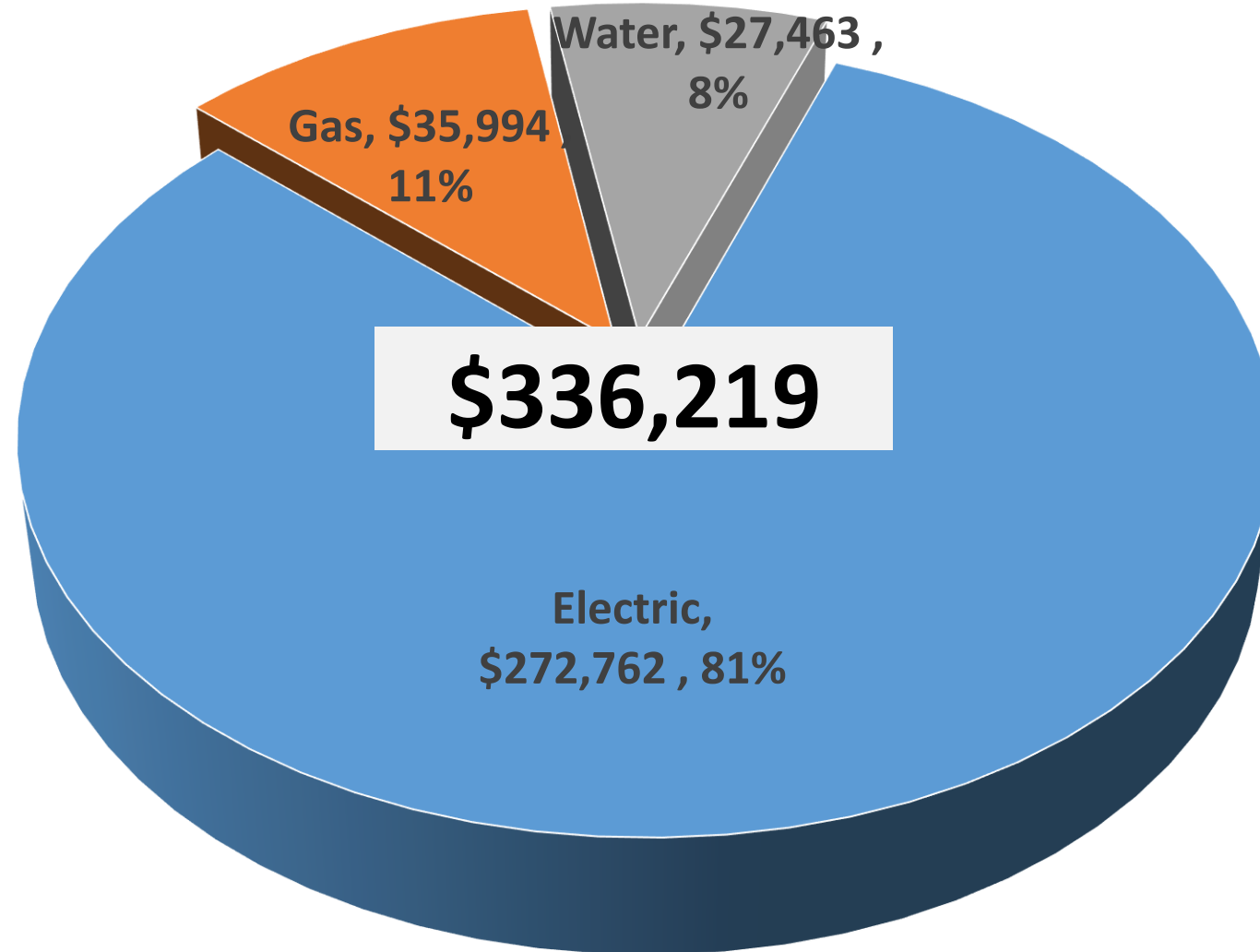
2023 Budget	\$298,736
2024 Budget	\$336,219
\$ Change	\$37,483
% Change	12.5%



This 2024 Budget includes anticipated Grant Contributions of:

- Electric, \$21.8 million
- Gas, \$7.7 million
- Water, \$11.8 million

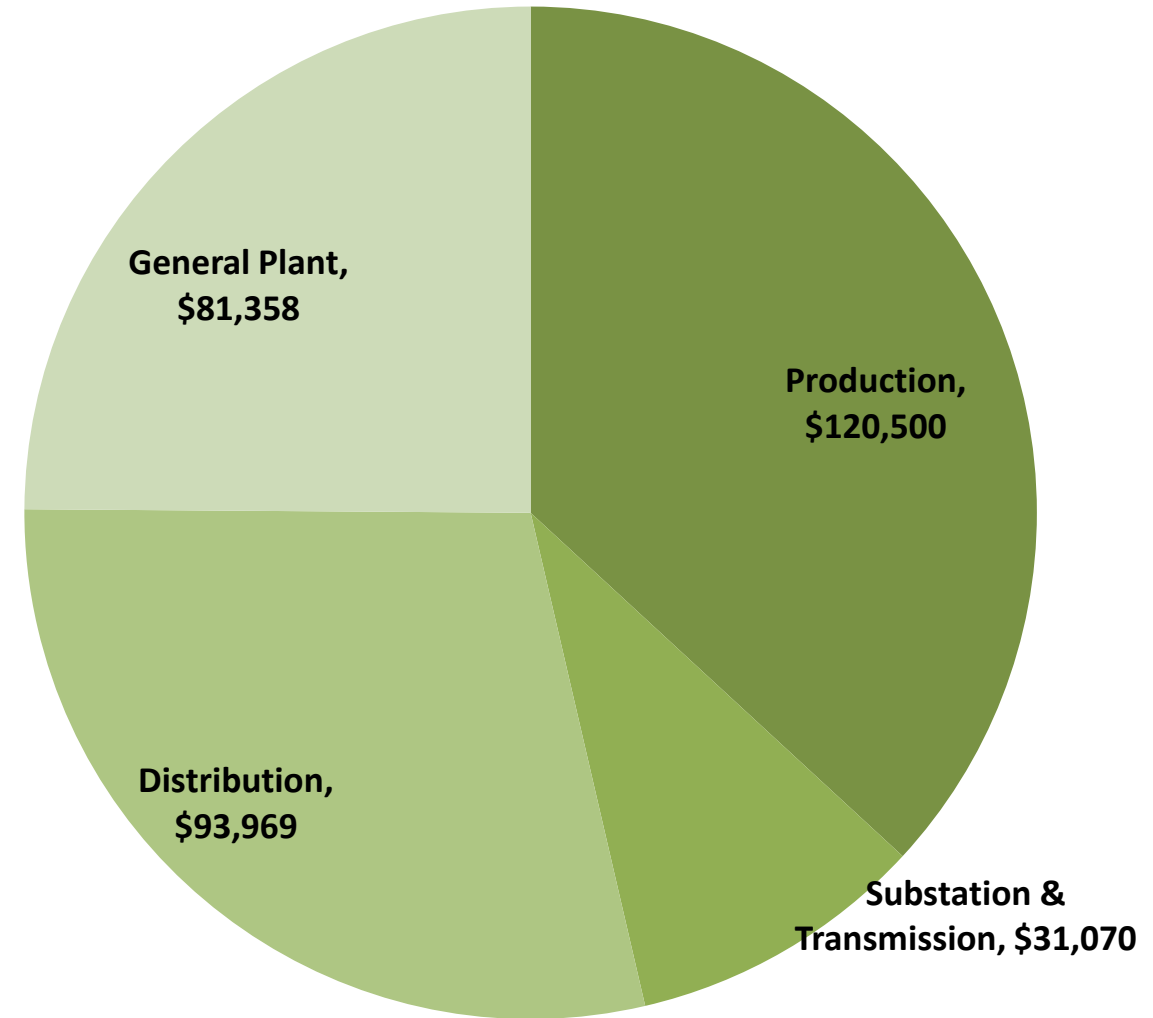
Total 2024 Budgeted Capital By Division



Electric Capital Highlights

Electric Capital Highlights

Generation/Solar/Aeroderivative	\$120,000
Information Systems and Technology Upgrades	\$31,509
Extensions to Serve New Customers - UG Apts. & Commercial	\$30,932
Substation Upgrades	\$25,096
New Electric Circuits	\$15,300
Purchase of Trans. & Power Operated Equipment	\$15,188
Communication Towers & Telecommunication Network	\$14,197
Replacement of Distribution Transformers	\$11,000
Replacement of Feeder Circuit & Defective Cable	\$10,800
Distribution Automation	\$10,500
Distribution Automation Management System	\$6,135
Replacement of Defective Poles	\$5,000

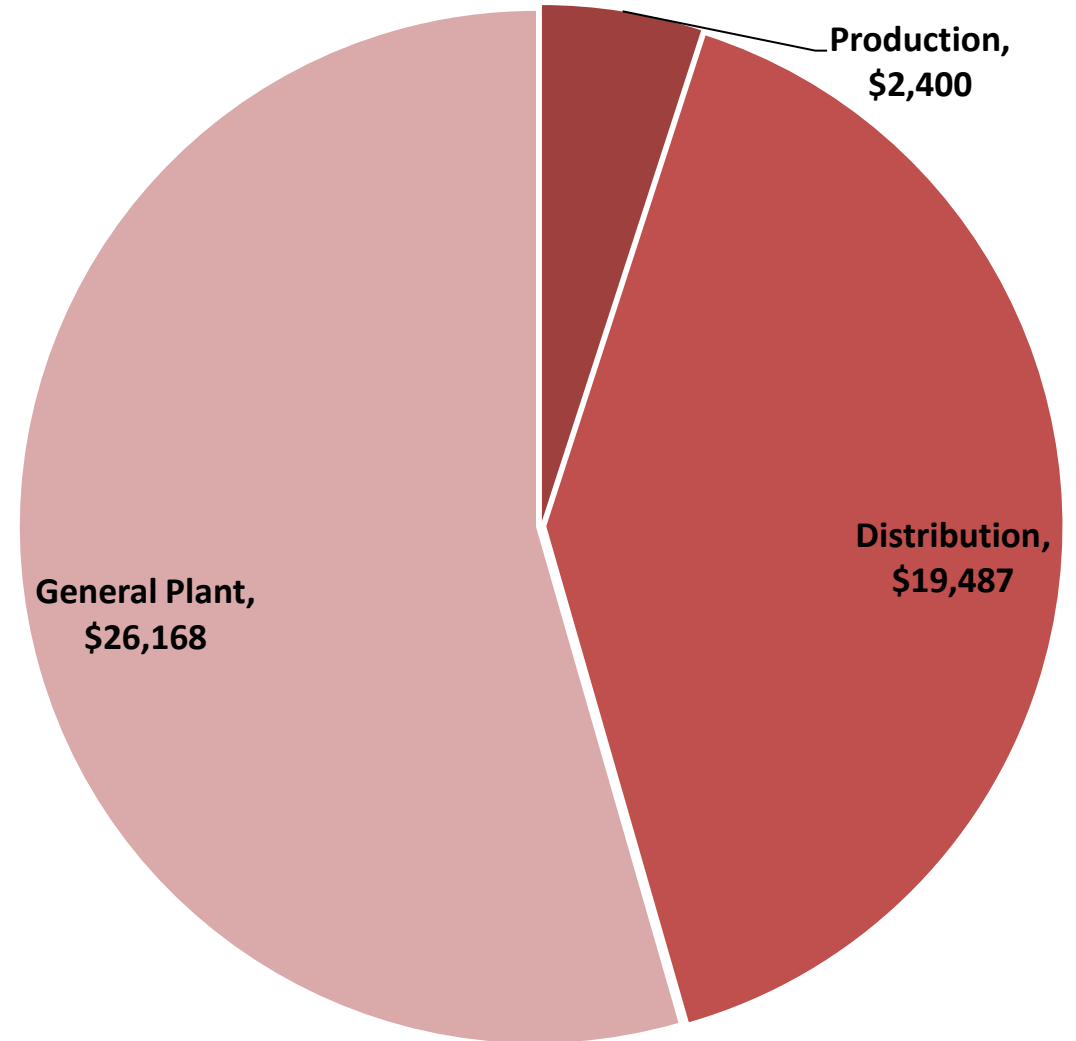


** Excludes reductions for delays or anticipated carryovers.*

Gas Capital Highlights

Gas Capital Highlights

New Gas Main & Gas Main Service Replacement	\$8,979
Purch. of Trans. Equip. & Power Operated	\$8,626
Extensions to Serve New Customers	\$8,386
Building Upgrades	\$6,080
Relocations of Mains - Street Improvements	\$4,694
LNG Processing Facilities	\$2,400
Pipeline Integrity Management	\$2,000
Purchase of Meters & Metering Equipment	\$1,664

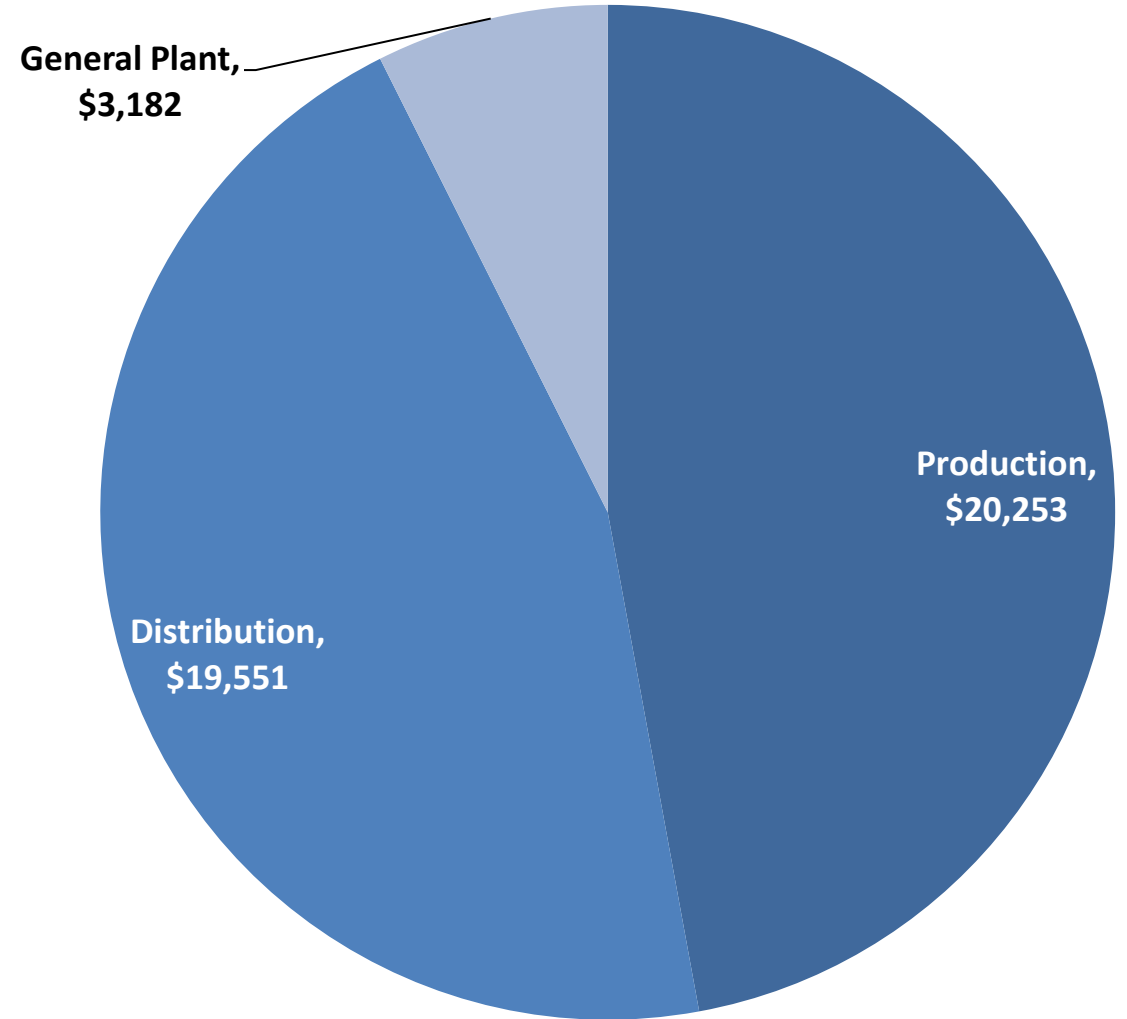


** Excludes reductions for delays or anticipated carryovers.*

Water Capital Highlights

Water Capital Highlights

Various Pumping Station Upgrades	\$21,195
Various Production Well Upgrades	\$7,789
Extensions to Serve New Customers	\$5,259
Relocations of Mains - Street Improvements	\$4,250
Purch. of Trans. Equip. & Power Operated	\$2,938
Water Main Replacement	\$2,800
Purchase of Meters	\$2,641
New Water Main	\$2,469
Various Underground Storage Reservoir Upgrades	\$300



** Excludes reductions for delays or anticipated carryovers.*

5 Year Capex Plan Summary

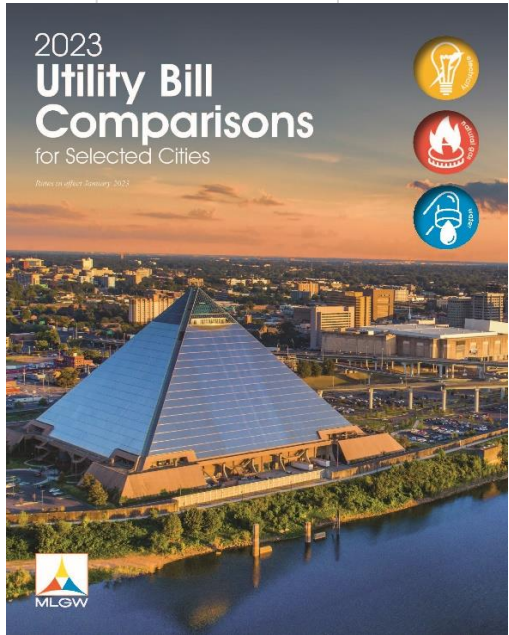
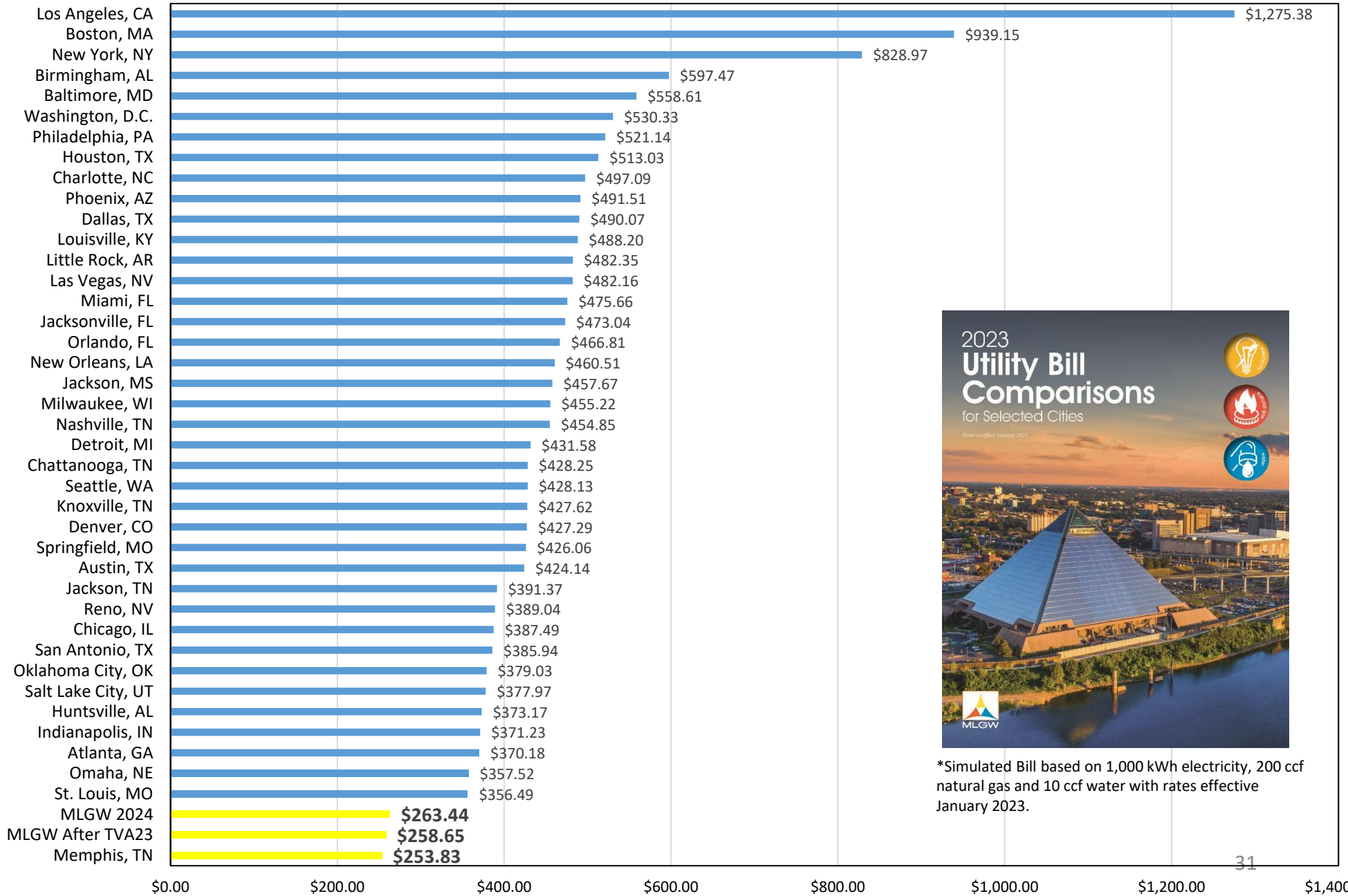
- MLGW plans to invest significant capital into each division.
- The total projected five-year investment for 2024 through 2028 is \$1.5 billion.

<i>Dollars in Thousands</i>								
	2023	2023		2025	2026	2027	2028	2024-2028
Electric	Estimate	Budget	2024 Budget	Projection	Projection	Projection	Projection	Total
Production	\$ -	\$ -	\$ 120,500	\$ 47,625	\$ 47,625	\$ 47,625	\$ 47,625	\$ 311,000
Substation/Transmission	\$ 29,920	\$ 33,679	\$ 31,070	\$ 56,187	\$ 43,971	\$ 30,495	\$ 28,230	\$ 189,953
Distribution	\$ 177,780	\$ 165,459	\$ 93,969	\$ 81,432	\$ 102,762	\$ 91,866	\$ 92,866	\$ 462,895
General Plant	\$ 35,967	\$ 90,766	\$ 81,358	\$ 90,546	\$ 71,533	\$ 44,179	\$ 39,679	\$ 327,294
Sub-total	\$ 243,667	\$ 289,904	\$ 326,897	\$ 275,790	\$ 265,891	\$ 214,164	\$ 208,400	\$ 1,291,142
<i>Allowance for Late Deliveries (Transportation)</i>			\$ (10,873)	\$ (11,352)	\$ (11,844)	\$ (12,346)	\$ (12,856)	\$ (59,271)
<i>Street Improvements Adjustment</i>			\$ (1,983)	\$ (1,314)	\$ (270)	\$ (365)	\$ (270)	\$ (4,202)
<i>Delayed Cost Allocations</i>		\$ (57,981)	\$ (41,279)	\$ (45,633)	\$ (43,653)	\$ (33,308)	\$ (32,155)	\$ (196,028)
Total Electric	\$ 243,667	\$ 231,923	\$ 272,762	\$ 217,491	\$ 210,124	\$ 168,146	\$ 163,118	\$ 1,031,641
	2023	2023		2025	2026	2027	2028	2024-2028
Gas	Estimate	Budget	2024 Budget	Projection	Projection	Projection	Projection	Total
Production	\$ 273	\$ 894	\$ 2,400	\$ 2,650	\$ 8,550	\$ 380	\$ 500	\$ 14,480
Distribution	\$ 16,421	\$ 13,673	\$ 19,487	\$ 42,026	\$ 12,786	\$ 10,987	\$ 11,021	\$ 96,308
General Plant	\$ 6,200	\$ 15,796	\$ 26,168	\$ 14,716	\$ 13,316	\$ 11,175	\$ 11,162	\$ 76,537
Sub-total	\$ 22,894	\$ 30,363	\$ 48,055	\$ 59,392	\$ 34,652	\$ 22,543	\$ 22,683	\$ 187,324
<i>Allowance for Late Deliveries (Transportation)</i>	\$ -	\$ -	\$ (4,000)	\$ (4,055)	\$ (4,095)	\$ (4,117)	\$ (4,117)	\$ (20,384)
<i>Street Improvements Adjustment</i>	\$ -	\$ -	\$ (1,666)	\$ (738)	\$ (336)	\$ (336)	\$ (336)	\$ (3,411)
<i>Delayed Cost Allocations</i>	\$ -	\$ (6,082)	\$ (6,396)	\$ (8,544)	\$ (4,658)	\$ (2,716)	\$ (2,739)	\$ (25,053)
Total Gas	\$ 22,894	\$ 24,281	\$ 35,994	\$ 46,055	\$ 25,563	\$ 15,374	\$ 15,491	\$ 138,477
	2023	2023		2025	2026	2027	2028	2024-2028
Water	Estimate	Budget	2024 Budget	Projection	Projection	Projection	Projection	Total
Production	\$ 1,471	\$ 29,805	\$ 20,253	\$ 73,586	\$ 67,636	\$ 55,223	\$ 66,989	\$ 283,688
Distribution	\$ 13,631	\$ 21,036	\$ 19,551	\$ 20,533	\$ 18,037	\$ 20,378	\$ 20,644	\$ 99,144
General Plant	\$ 788	\$ 2,578	\$ 3,182	\$ 4,326	\$ 3,601	\$ 4,149	\$ 3,909	\$ 19,169
Sub-total	\$ 15,890	\$ 53,419	\$ 42,987	\$ 98,446	\$ 89,275	\$ 79,751	\$ 91,543	\$ 402,000
<i>Allowance for Late Deliveries (Transportation)</i>	\$ -	\$ -	\$ (2,071)	\$ (2,161)	\$ (2,252)	\$ (2,345)	\$ (2,440)	\$ (11,269)
<i>Street Improvements Adjustment</i>	\$ -	\$ -	\$ (1,947)	\$ (1,200)	\$ (990)	\$ (994)	\$ (998)	\$ (6,128)
<i>Delayed Cost Allocations</i>	\$ -	\$ (10,886)	\$ (11,507)	\$ (21,140)	\$ (19,135)	\$ (14,819)	\$ (17,130)	\$ (83,731)
Total Water	\$ 15,890	\$ 42,533	\$ 27,463	\$ 73,944	\$ 66,898	\$ 61,592	\$ 70,976	\$ 300,873

National Residential Combined Bill Comparison*

Even with the FY24 increase as proposed, MLGW would still maintain the lowest total combined utility bill in our survey

MLGW would still be \$93 lower than the next lowest.



*Simulated Bill based on 1,000 kWh electricity, 200 ccf natural gas and 10 ccf water with rates effective January 2023.



Cash Flows

Financial Metric Targets

- Days of cash
 - Target minimum of 45 days
 - Government Finance Officers Association (GFOA) best practice recommendation target minimum is 90 days
- Change in net position
 - Target is to have positive change in net position
 - State law prohibits two consecutive years of negative net position for both the gas and water divisions
- Debt Service Coverage
 - Minimum per debt covenants for senior lien is 1.2x
 - Both S&P and Moody's have developed a more stringent coverage calculation when evaluating utilities

Electric Division Cash Flow Projection

	Electric Division - Budget 2024	2022	2023	2024	2025	2026
22	Ending Cash & Investments	334,366	257,749	249,976	303,373	231,458
23	Days Cash of OpExp	86	68	62	75	59
24	Debt Service Coverage	6.75	5.38	4.17	4.11	4.92
25	Change in Net Assets (Net Income)	41,002	15,355	10,779	41,828	86,550
26	Capital Expenditures	\$92,811	\$175,000	\$251,233	\$210,500	\$203,022
27	O&M Expenditures	\$224,453	\$248,801	\$320,015	\$332,861	\$348,612
28	Rate Increase %	1.5%		4.0%	4.0%	4.0%
29	Rate Increase Revenue	\$20,073		\$56,712	\$59,256	\$61,914
30	Debt Issuance			\$180,000	\$180,000	
31	Average Residential Bill Impact	\$1.92		\$4.83	\$5.03	\$5.23

Gas Division Cash Flow Projection

	Gas Division - Budget 2024	2022	2023	2024	2025	2026
21	Ending Cash & Investments	157,664	184,728	171,509	144,983	131,634
22	Days Cash of OpExp	183	263	235	194	171
23	Debt Service Coverage	5.15	7.89	4.84	4.56	4.00
24	Change in Net Assets (Net Income)	3,907	1,218	(19,698)	(24,106)	(31,543)
25	Capital Expenditures	\$17,999	\$48,400	\$33,911	\$43,679	\$24,177
26	O&M Expenditures	\$96,993	\$103,817	\$130,597	\$135,844	\$142,488
27	Rate Increase %	2.0%				
28	Rate Increase Revenue	\$4,354				
29	Debt Issuance					
30	Average Residential Bill Impact	\$0.74				

Water Division Cash Flow Projection

	Water Division - Budget 2024	2022	2023	2024	2025	2026
21	Ending Cash & Investments	106,954	124,089	101,636	22,506	30,954
22	Days Cash of OpExp	424	457	305	65	86
23	Debt Service Coverage	5.64	4.64	2.10	1.20	1.78
24	Change in Net Assets (Net Income)	29,497	20,386	(1,598)	(9,968)	3,276
25	Capital Expenditures	\$27,240	\$28,000	\$27,463	\$76,068	\$68,826
26	O&M Expenditures	\$79,006	\$86,097	\$109,346	\$113,735	\$119,087
27	Rate Increase %	5.0%				19.0%
28	Rate Increase Revenue	\$5,790				\$24,033
29	Debt Issuance					\$135,000
30	Average Residential Bill Impact (W1)	\$0.91				\$3.64
		\$19.17	\$19.17	\$19.17	\$19.17	\$22.82

Budget Schedule

- Preliminary presentation to MLGW Board, 10/4
- MLGW Board approval, 10/18
- MLGW City Council Committee, 11/7
- Full Council Meetings remaining for 2023 thereafter:
 - 11/21
 - 12/5
 - 12/19

Budget Summary

- Affordable, necessary electric rate increase plan proposed to support the Reliability and Resiliency Roadmap
 - Tree Trimming, Replacing Infrastructure and Modernizing the Grid
- Adding personnel in strategic areas to support the plan
 - Adding engineering and technical personnel to execute the plan
 - Adding customer service personnel
- No proposed rate increases for Gas or Water Divisions for FY2024



Questions

Reliability & Resiliency Improvements Update



Data as of October 18, 2023

Infrastructure Improvements

Planned Electric Reliability Related Projects – System Wide

Asset Affiliation	Description	Consequence	5 Year Target	Progress through August 2023	% Complete
Substation Transformers	Substation equipment needs to be maintained and components need to be replaced periodically to extend asset life.	Depending on the equipment that fails, a long duration outage could occur.	20	15	75.0%
Substation Circuit Breakers	Substation equipment needs to be maintained and components need to be replaced periodically to extend asset life.	Depending on the equipment that fails, a long duration outage could occur.	60	61	101.7%
Wood poles	Wood poles have been inspected and rated.	Rotted, end of life poles can be weak point and be less resilient to severe weather	2,600	2432	93.5%
Underground cable	1960-1980 vintage UG cable failures.	Cable segment failures lead to long duration outages.	392,400 FT	247,295 FT	63.0%
*Distribution Automation	Technology to enable Smart Grid and to segment system	Without DA, more customers impacted by each outage, slower restoration time after an outage, less options for balancing the system	1,100	419	38%
Vegetation management	Vegetation-caused outages.	Vegetation is the leading cause of MLGW outages.	7,000 miles	1,878 miles	26.8%

*DA Note: Increasing project to 2000 switches, adding new comms system and other new hardware necessary for more capability. Developing new Smart Grid timeline and milestones. On pause until spectrum purchase complete.

New Vegetation Management Contracts

- Board and Council approved 3 vendor contracts totaling \$227 million over 5 years.
- Service area split into 3 sectors
- Approximately 90 crews (both bucket work and manual climbing crews)
- Dashboard for tracking progress

Kendall Vegetation Services

532

Miles per Year

Lewis Tree Service, Inc.

453

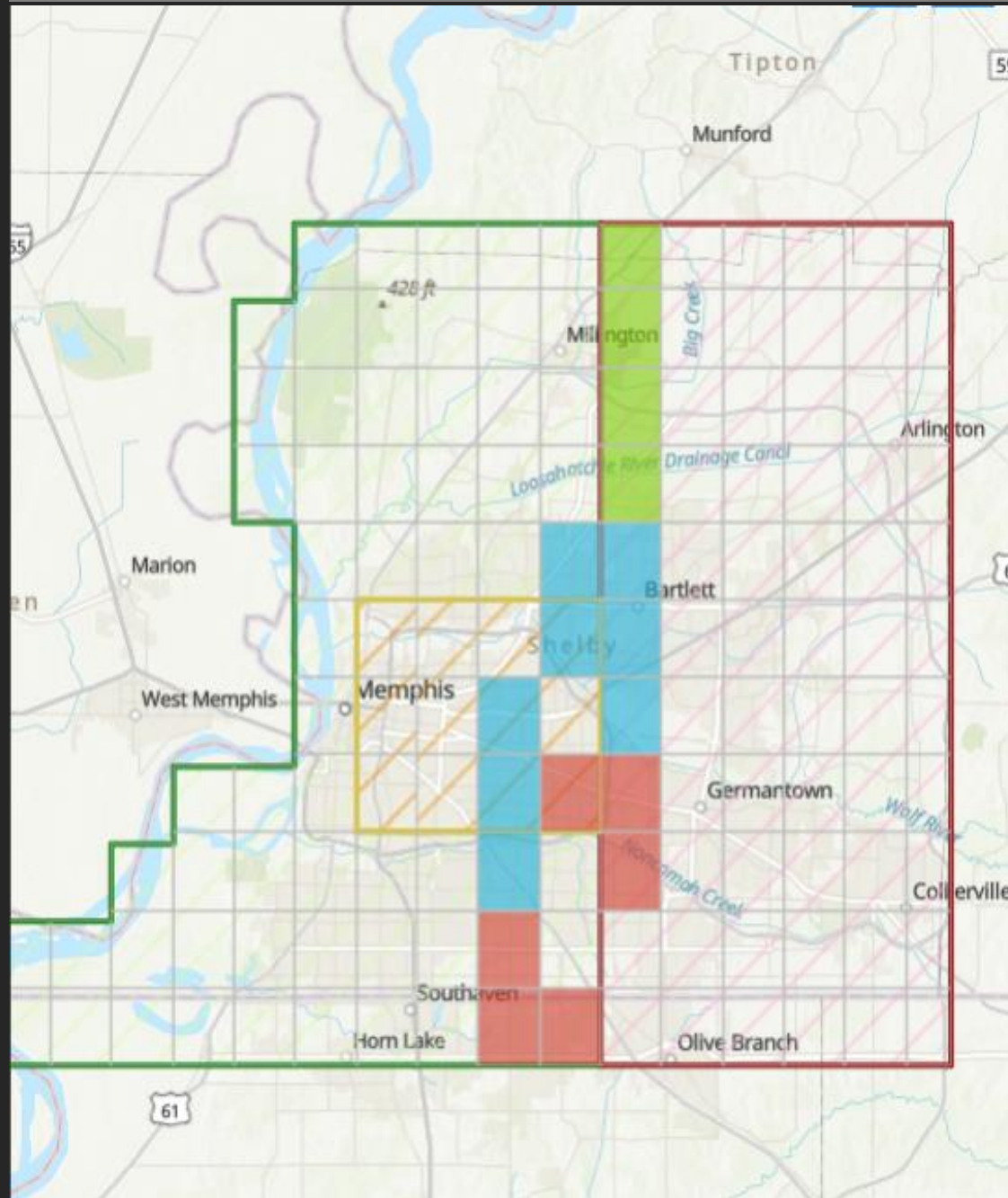
Miles per Year

ABC Professional Tree Services

413

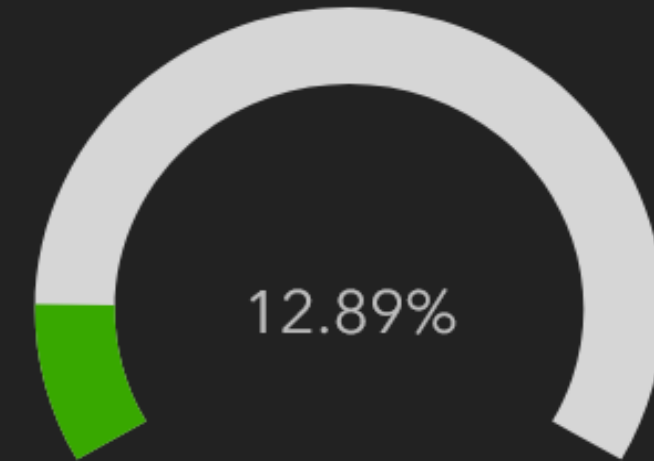
Miles per Year

<http://www.mlgw.com/TreeProgress>



September 1st, 2023 - August 31st, 2024

Total Miles Completed







181.1 Miles Completed

Last Updated Date: 11/1/2023

Tree Trimming Status 2023

Status 2023

-  Work Planned, Not Started
-  Work in Progress
-  Work Completed
-  No Work Planned in 2023

Planned Gas Infrastructure Investment Projects – System Wide

Asset Affiliation	Description	Consequence	5 Year Target	Progress through July 2023	% Complete
Regulatory, System Reliability & Integrity	Cast Iron Retrofit of Mains	Regulatory mandate to eliminate this type of pipe	5.5 miles	5.5 miles	100%
Regulatory, System Reliability & Integrity	Steel Tap Replacements	Regulatory work for prevention of system leaks	3,722	2,703	72.6%
System Reliability & Integrity	Regulator Stations	Adequate and accurate system pressures	12	8	66.7%

Planned Water Infrastructure Projects

Asset Affiliation	Description	Consequence	5 Year Target	Progress through July 2023	% Complete
System Reliability & Integrity	Production Wells	Not having adequate pumping station source capacity	14	12	85.7%
System Reliability & Integrity	Lead Service Line Replacements	Eliminating possibility of lead lines on the MLGW side of the meter	5,000	4,260	85.2%
System Reliability & Integrity	Digital Process Control Systems	Potential loss of process control at the pumping stations	9	6	66.7%
System Reliability & Integrity	Pumping Stations Rehabilitations	Station component failures could lead to system failures and water supply problems	Engineering Reports Completed	Engineering Reports Completed New pumping station design underway	Completed. Will add new pumping station to ongoing 5-year plan

Strategies to Address Growing Electric Demand – “All/And”

- Accelerated growth of electric demand challenges the Bulk Electric System’s (BES) ability to balance supply with pace of demand
 - Everyone has a role in ensuring our energy future
 - This is a permanent change to the way we think about energy going forward
 - How do we face this new reality?
- Strategies
 - Implement Demand Response (DR) Programs
 - Take advantage of Distributed Energy Resources (DER)
 - Scale energy efficiency programs and policies
 - Build more generation
- Local utilities like MLGW have a range of maturities, timelines and ability to enact these strategies

Demand Response Programs

- What are Demand Response Programs?
 - The ability to control load remotely or through economic incentives.
- What does MLGW have in place now?
 - MLGW and our customers participate in TVA's programs with limited historical success
- What, and on what timeline, can we expect new DR programs?
 - MLGW - Voltage Optimization: 5 years, part of grid modernization, ability to shave 3-4% of peak load
 - MLGW – 100MW Battery Storage, 2 years, ability to shave afternoon peak by ~3%
 - Customer DR – 2-5 years
 - direct load control
 - time-of-use pricing
 - critical peak pricing
 - peak time rebates
 - demand bidding
- How much peak load can we impact with DR?

Distributed Energy Resources

- What are Distributed Energy Resources?
 - Customer or MLGW owned generation or storage solutions
 - Batteries
 - Solar
 - Co generation
- What does MLGW have in place now?
 - Many of our water plants have back up generation that could be activated if needed.
 - Change in air permitting would be required.
- What and on what timeline might we expect for DER in the future?
 - MLGW would need to develop contracts so that companies that can co gen can partner with us.
 - Air permitting for our own generation. Customers would also need the necessary air permits.

Energy Efficiency

- What is energy efficiency?
 - A better utilization of the energy that is consumed. E.g. Using less to heat and cool your homes and to provide illumination.
- What EE programs does MLGW have in place now?
 - Energy doctor
 - LED lights
 - MAX Impact
 - Share the pennies
- MLGW also participates in TVA's Energy Right program.
- What and on what timeline might we expect additional EE programs in the future? Energy efficient efforts are hampered by high penetration of rental property in the service area. Some estimates say 56% in Memphis.
- What can customers do? better insulation, better windows, newer more efficient equipment,
- How much peak can we save through energy efficiency?

New Generation

- What kinds of generation can we do locally?
 - Gas and solar are most mature technologies appropriate for our region
 - Wind, hydro, geothermal, nuclear are not feasible for climate or seismic considerations
 - Biomass is emerging, but unknown.
- What does MLGW have in place now?
 - Proposing Solar which is about a 5-year design and build out timeline
 - Proposing Gas/Hydrogen fired modular or portable AeroDerivatives turbines that are available within 12 months. Would be acquired and deployed only as demand materializes
- What and on what timeline might we expect for generation in the future?
 - Modern AD can use 75%/25% hydrogen/natural gas mix, next gen proposed to be capable of 100% hydrogen as fuel source. The generation of the hydrogen and its distribution for this purpose is not a mature technology.