



April 21, 2022

KUB Long Range Plan



FY 2022 – The Year in Review

- Significant challenges
 - Covid impacts continue...but moderating
 - Inflation/supply chain pressures increase
 - Two significant, preventable safety incidents
- Significant accomplishments
 - Eliminated WW rate increase for a second year
 - Reduced Water rate increase
 - Continued strong operational performance
 - Fiber Division established
 - Completion of BEHRC
- Overall, a strong foundation to build on for FY 2023



Our Vision:

KUB exists to serve its customers, improving their quality of life by providing utility services that are safe, reliable and affordable.



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Organizational Goals

Financial

- O&M
- Cash Generated
- Debt Service Coverage
- Bond Ratings

Safety

Rate Competitiveness

Electric Reliability

Century II Infrastructure

Environmental

Stewardship

Workforce Development

Customer Growth

Customer Experience

Customer Affordability



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Launch Fiber Division

Major Construction

Major construction of fiber network in Phase I areas

Build Support Processes

Develop processes to support services to customers

Marketing Plan

Develop a marketing plan to support fiber rollout

Develop Low-Income Program

Working with partners, develop a plan to provide low-income students free/low-cost internet

Connect Customers

Connect the first broadband customers by the end of 2022



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Continue Century II Investments

Begin MBW Filter project

Begin construction of the next – and largest – component of the water supply master plan

Implement a post-consent decree infrastructure plan for the wastewater division

As Consent Decree requirements are completed, refocus planning on long-term WW system needs

Pursue federal, state and local infrastructure funding

Seek funding from American Recovery Program and Federal Infrastructure program as guidelines become available



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Implement Diversity, Equity and Inclusion Strategy

Education/Skills Development

Equip all employees with the tools to create an inclusive culture, through comprehensive training for employees at all levels of the company

Community Partnerships

Build and nurture partnerships to promote KUB’s commitment to serve as a trusted partner providing valuable careers, resources and services to the community

Talent Management

Develop recruiting strategies to build a rich pipeline of diverse applicants, and provide opportunities for current employees to develop in their careers

FY 2023 Long Range Plan Highlights

- First KUB budget to exceed \$1 billion
- Continued investments in Century II
 - \$2.3B Capital plan over next 10 years
- Continued cost management efforts
- Rate increases minimized
 - Electric increases previously adopted
 - No Gas increase needed
 - Water increase lower than expected
 - Wastewater increase as expected

Long-Range Plans – Actual/Proposed Rate Increases *					
	FY21	FY22	FY23	FY24	FY25
Electric	-	3%	3%	3%	-
Natural Gas	-	-	-	-	-
Water	5%	5% → 2%	5%	5%	5%
Wastewater	3%	3%	4%	4%	4%

Today's Agenda

- Fiber update – Jamie Davis
 - Implementation update
 - Student Internet Access Program update
- Century II – Derwin Hagood/Brooke Sinclair
 - Water system long range plan
 - Wastewater system long range plan – post-consent decree
 - Other Century II/infrastructure needs
- Funding plan – Mark Walker

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April 21, 2022

Fiber Long Range Plan



Fiber Division FY23 LRP

- The first Fiber Division 10-year LRP
- Transition from Fiber-to-the-Home business case
- Business case model remains valid
- Update on fiber network for the electric system
- Update on construction and Phase One availability
- Next steps and service availability

Fiber-to-the-Home Overview

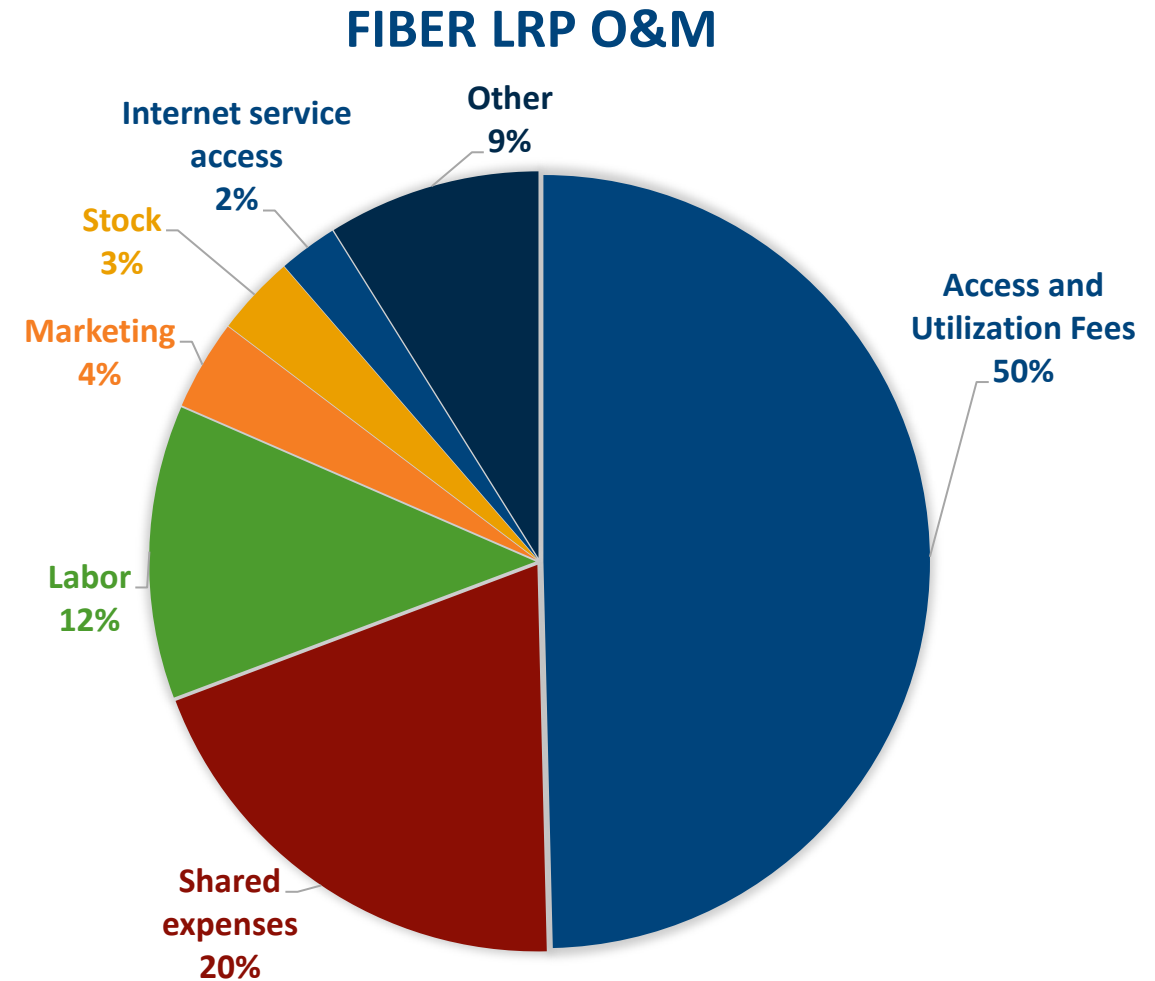
- Electric
 - \$97.4M Operations and Maintenance
 - \$523.8M Capital
- Fiber
 - \$451.1M Operations and Maintenance
 - \$36.2M Capital
- LRP is consistent with previously approved plan
- Inflation impacts are contained within the LRP

Fiber-to-the-Home and the Electric Division

- Fiber network will be fully constructed by FY29
 - Total Capital: \$523.8M
 - Network construction: \$265.6M
 - Smart switches: \$42.4M
 - Electronic equipment: \$28.1M
 - Service connections: \$187.7M (at 35% subscription rate)
 - Total Operations and Maintenance: \$97.4M
 - Network operations labor, fiber maintenance, and warehousing
- 300 miles of fiber a year planned in initial stages; peaks at 800 miles per year
- Average of 30,000 customers made eligible for service each year

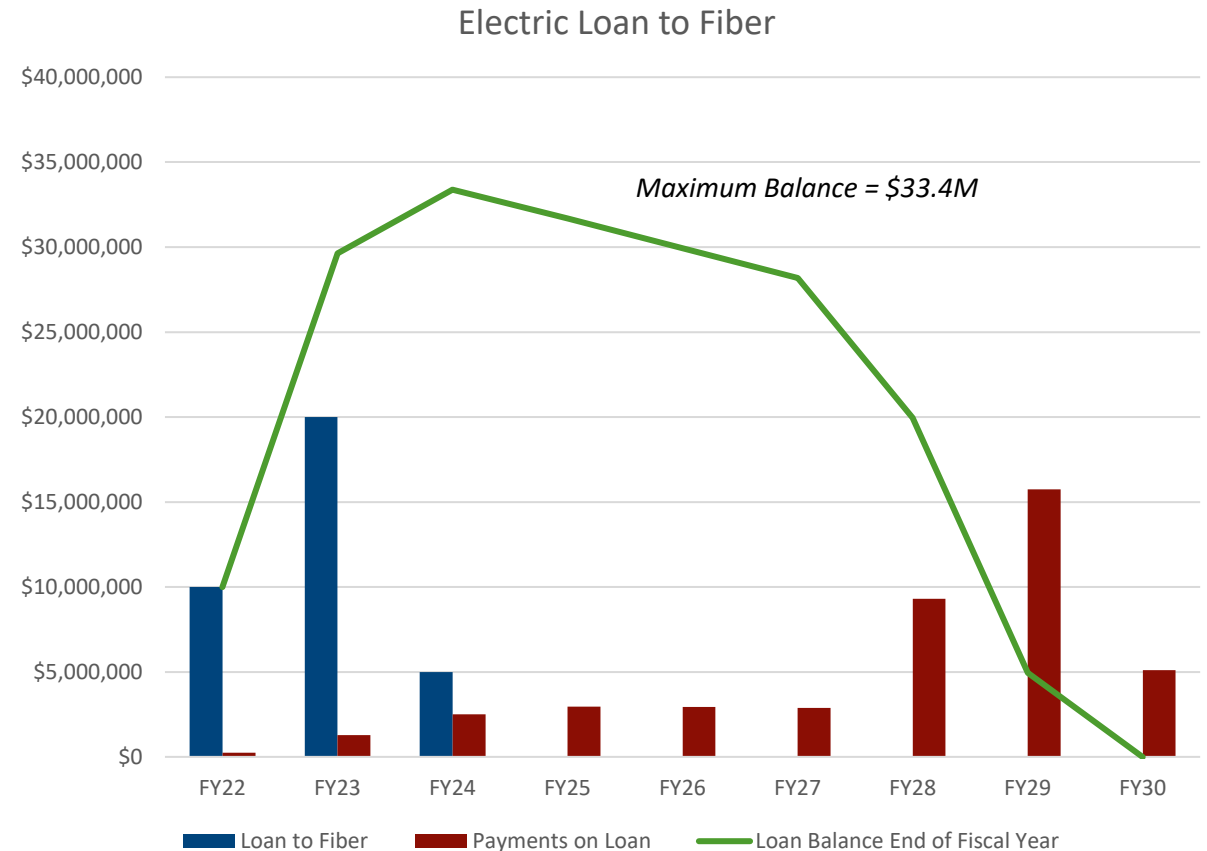
Fiber Division LRP Details

- Fiber services will be available to all electric customers by FY29
 - Total capital: \$36.2M
 - Facilities: \$13.5M
 - Internet service infrastructure: \$8M
 - Information technology investments: \$7M
 - Vehicles: \$4.7M
 - Total operations and maintenance: \$451.1M
 - Access and Utilization Fees: \$223.8M
 - Shared expenses: \$88.7M
 - Labor: \$55.3M
 - Marketing and advertising: \$17.0M
 - Stock: \$15.1M
 - Internet service access: \$11.1M



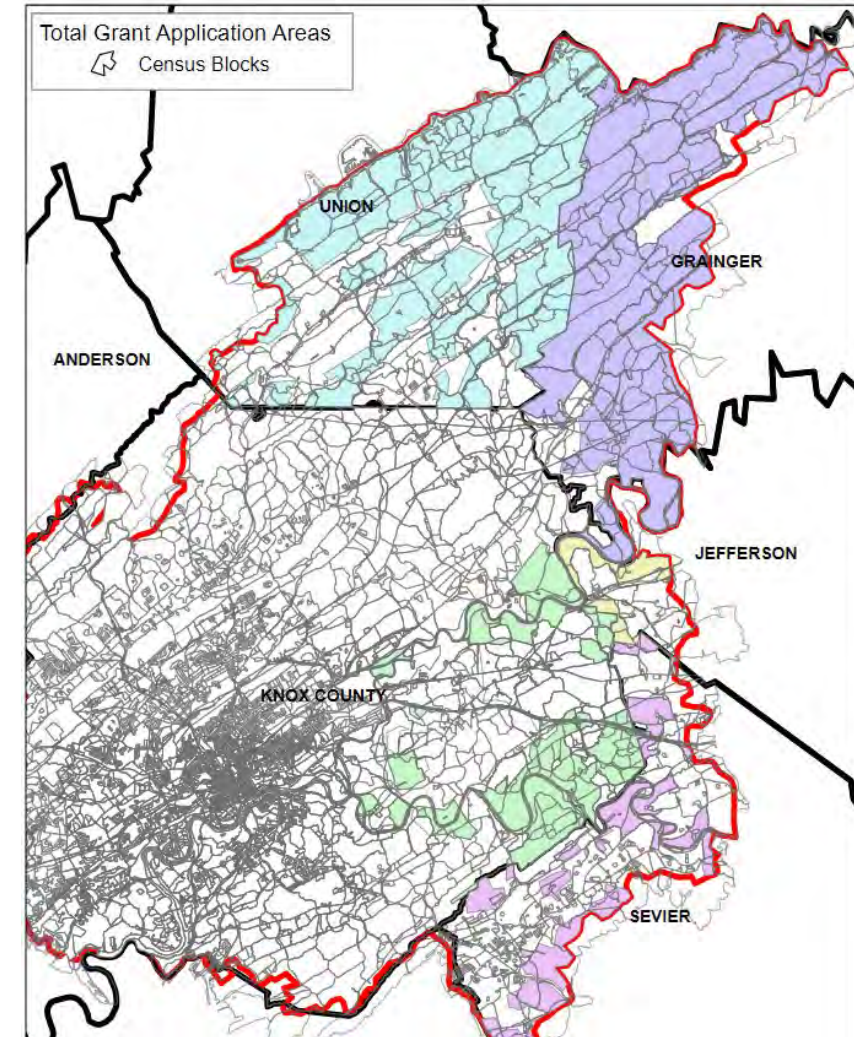
Loan from the Electric Division

- Total loan amount of \$35M to be repaid by FY30
- FY23 loan draw of \$20M
- \$8M in interest paid over the life of the loan
- Final payment of \$5M in FY30



American Rescue Plan Grant from the State

County	Households	Total Project	Grant Request	Local Match (Amount varies)
Knox	791	\$5,795,500	\$4,056,850	No
Union	2619	\$9,317,300	\$6,522,110	Yes
Grainger	2115	\$8,143,500	\$5,700,450	No
Sevier	1494	\$4,547,000	\$3,182,900	No
Jefferson	175	\$1,337,500	\$936,250	Yes
Total	7,194	\$29,140,800	\$20,398,560	



Grant Funding Outlook

Agency	Funding	Purpose	Timeline
TN Dept of Economic & Community Development (ARP)	\$400M	Infrastructure deployment in unserved areas	Awards to be announced late summer 2022
	\$100M	Digital inclusion, adoption	TBD
Federal Communications Commission	\$30/month per qualifying household	Affordability Connectivity Program and customer subsidy for broadband service	Expected to be available by launch
National Telecommunications & Information Administration	\$42B total \$100M min for TN	IIJA broadband funding for infrastructure deployment and digital inclusion	Awaiting guidelines and expecting an application by summer 2022

Community Access and Connectivity

- Offering affordable access to quality internet
- Programs
 - FCC Affordable Connectivity Program (ACP)
 - \$30/month subsidy for qualifying households in KUB service area
 - 200% of federal poverty guidelines, or \$53k for a 4-person household
 - Student Internet Access Program
 - Free 1G symmetrical internet for Knox County customers qualifying for ACP and who have children enrolled in K-12 education
 - Seeking financial commitments from City of Knoxville and Knox County governments
 - Will pursue federal and state grants for additional funding



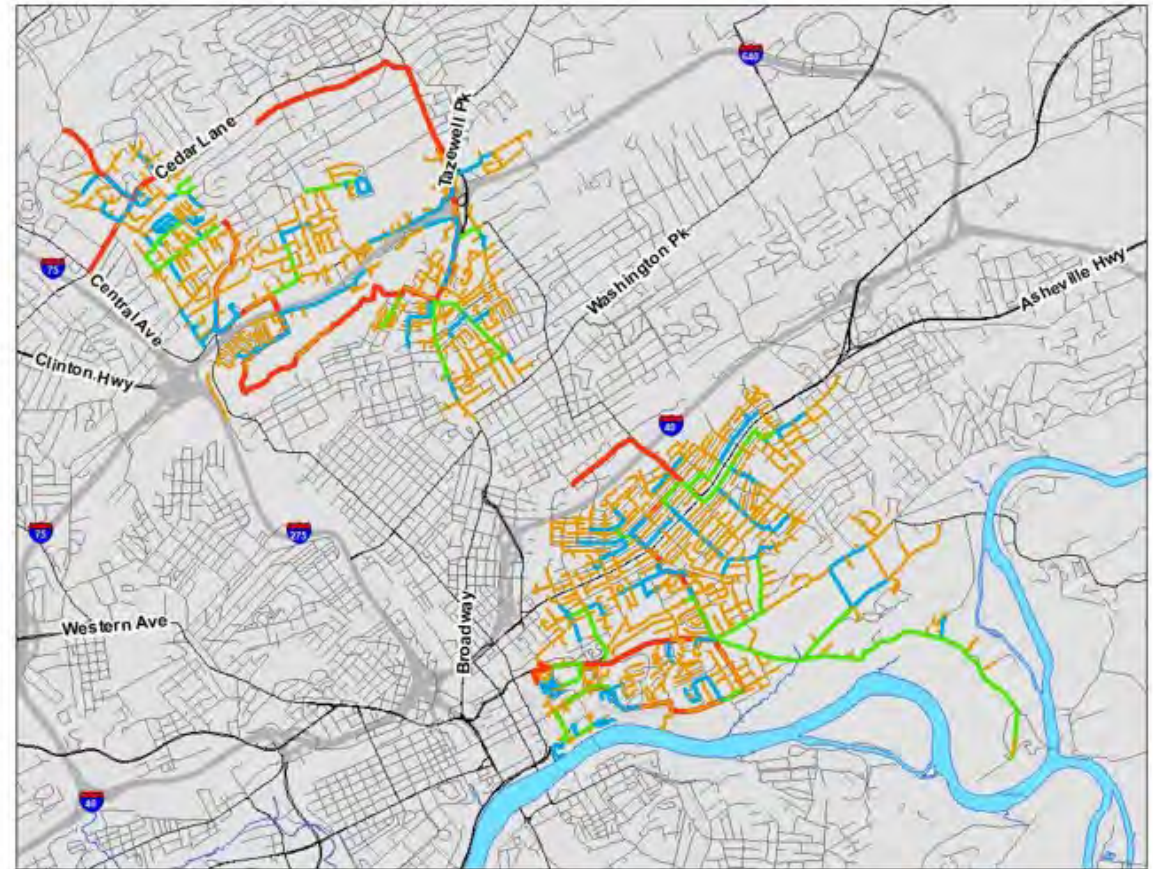
Phase One of Network Construction

- Construction progressing as planned
- Support systems are being developed
- New employees are joining the team
- Products and marketing strategies being developed
- Global supply chain issues are apparent in some areas



Network Construction Progress

- 100 miles of the planned 290 miles completed for FY22
 - 60 of 60 miles completed for Mohawk/Park City area
 - 40 of 125 miles completed for Arlington/Fair Drive area
 - 0 of 105 miles completed for Dolltown area



Mohawk/Park City and Arlington/Fair Drive areas

Network Construction Progress

- Various construction methods have been utilized
- Global Communication is the primary contractor
- Piloting modified customer outreach
 - Targeted communication
 - Option to stay connected and express interest
 - Preparing construction crews to serve as brand ambassadors



Network Construction Progress

- Three of four huts planned for FY22 are installed
 - Remaining hut to be installed in May
- Four huts planned in FY23
- 20 total huts planned for the network



A Closer Look at Fiber Huts



Staffing the Fiber Division

- 29 of 45 planned hires made for FY22
- 38 hires planned for FY23
- Positions in several areas of expertise have been filled



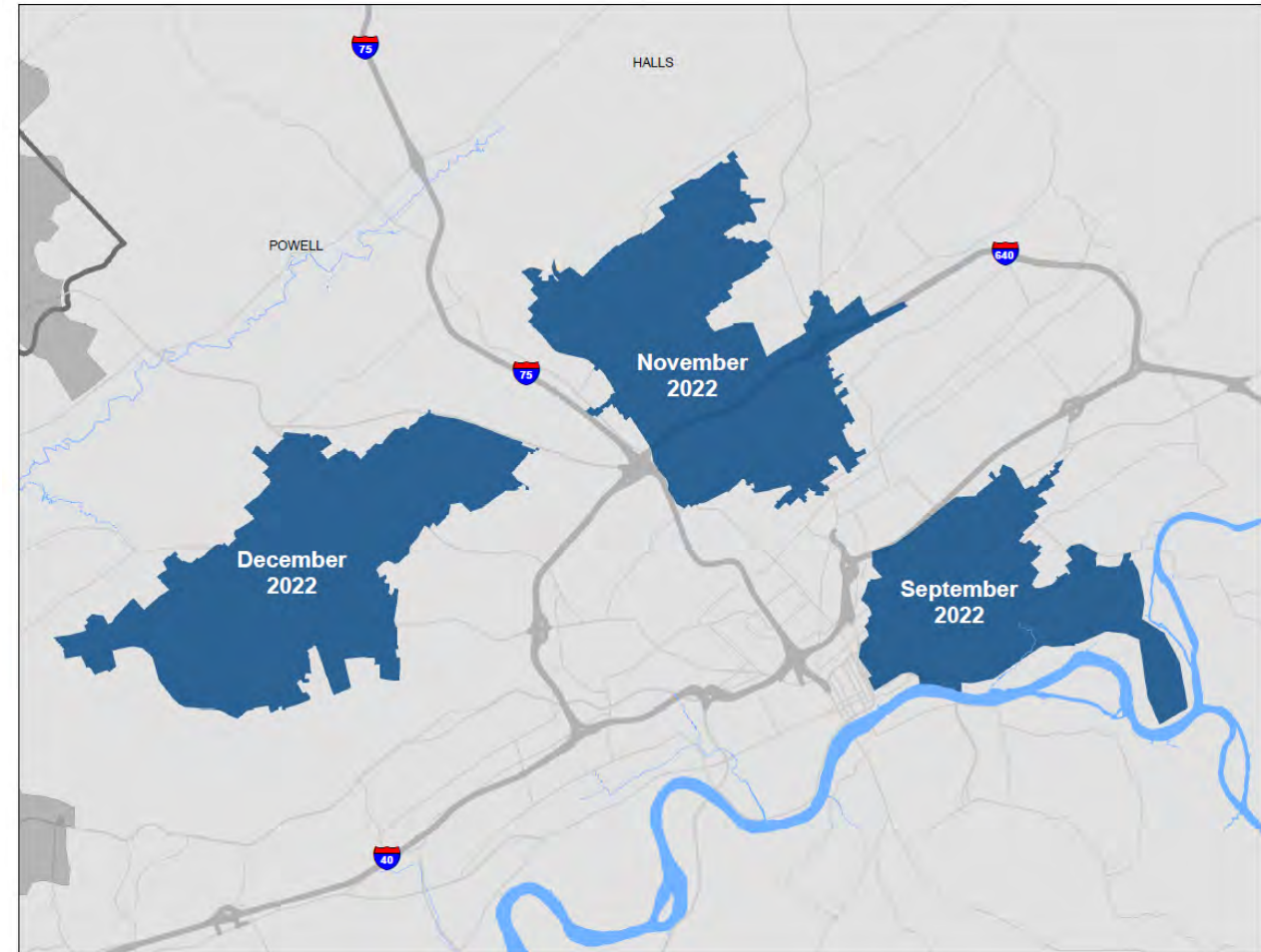
New Fiber Customer Portal

- Allows online order and service requests and availability finder
- Customers will have access to all account information in portal
- Fiber bill is designed to be simple and transparent
- Customers will be billed separately for fiber services
- Paperless billing is the preferred and default method

The screenshot displays the New Fiber Customer Portal interface. At the top, three icons represent key features: a document with a slash for 'No Contracts', a server rack for 'Unlimited Data', and a person with a headset for 'Local Tech Support'. Below these icons, the text 'The Gig' is prominently displayed, with 'Sign Up Now' underneath. To the right, the pricing is listed as '1 Gbps \$65 per month', followed by the description 'Great for multiple users streaming and sharing files.' The bottom section features the heading 'Find fiber in your area' in a large, bold font, with a map showing fiber infrastructure locations. Below the heading, it states 'Fiber infrastructure is being installed in your area.'

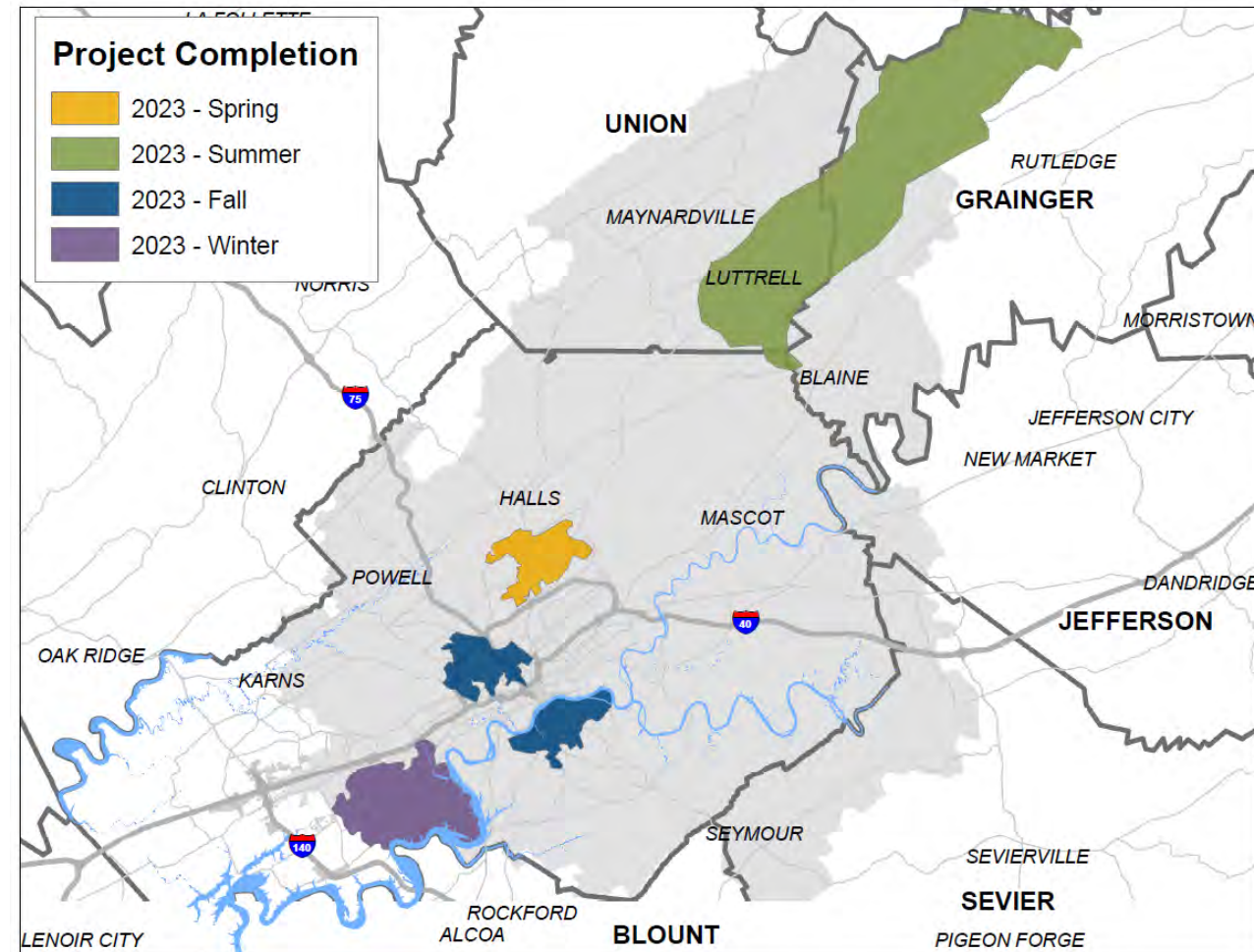
Phase One Service Availability

- Incremental availability in all three zones
- Outreach will target eligible and soon-to-be eligible customers
- 25,000 customers will have access to KUB Fiber services by the end of 2022



Phase One Service Availability

- Timelines could change with grant funding
- 60,000 customers will have access to KUB Fiber products by December 2023 (approximately 25% of KUB's electric customers)



Brand Development for KUB Fiber

- Focused on values and product differentiation in the market
- Tracking brand awareness through research
- Planned product launch to focus on building community awareness
- Marketing efforts will target neighborhoods with access
- Information about availability timeline coming soon to kub.org



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April 2022

Water Long Range Plan



Water System



Customers: 80,096

Service Territory:
188 square miles

Treatment Plant: 1

Pump Stations: 27

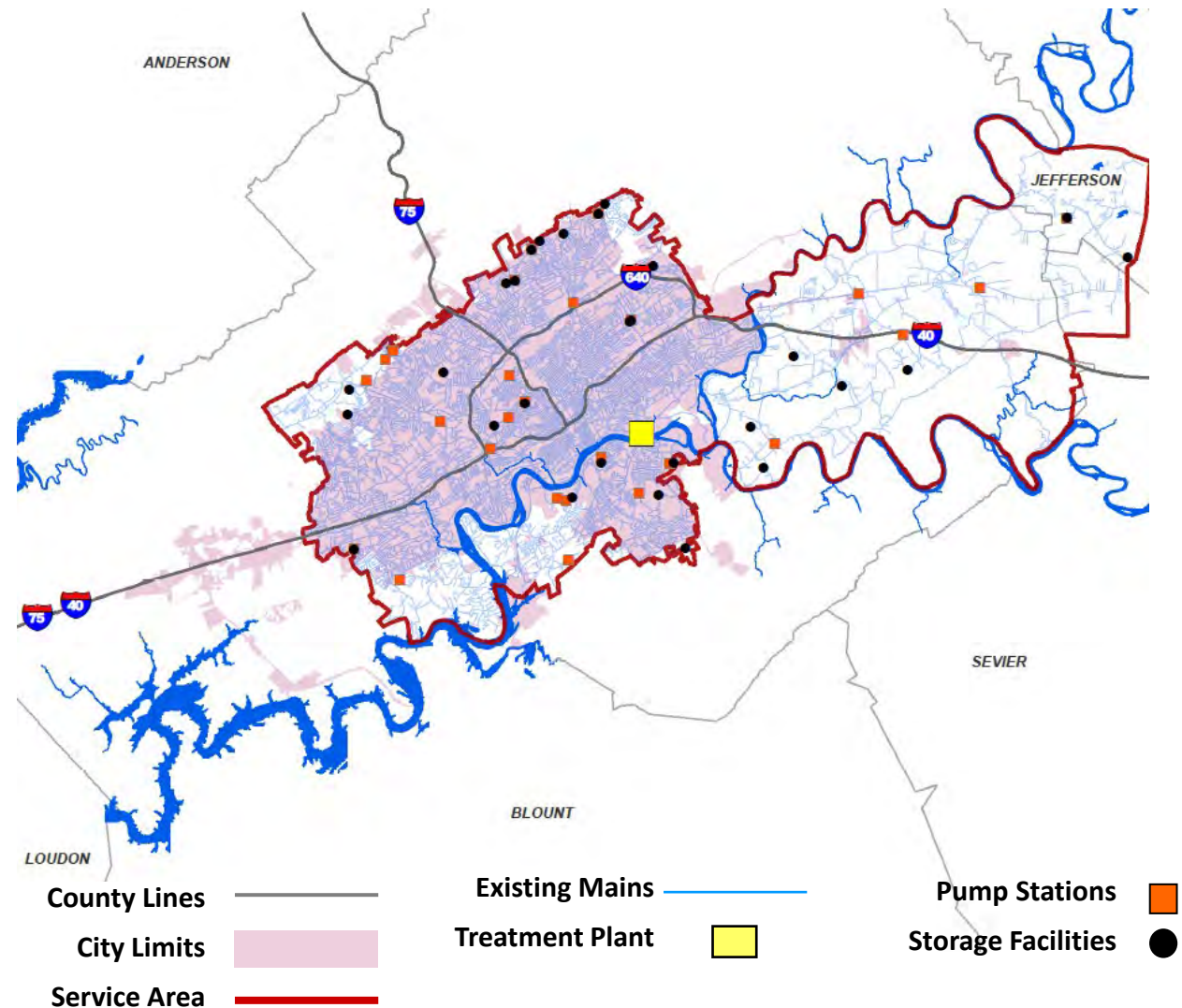
Storage Facilities: 28

Distribution Mains: 1,415 miles

Plant Capacity:
62.9 million gallons/day (MGD)

Reservoir Capacity: 36.9 million gallons (MG)

Treated Water: 12.0 billion gallons annually



Century II for Water

- Operations & Maintenance - \$371M
- Capital - \$387M
- Improving resiliency of water treatment plant
- Transmission line improvements for distribution system resiliency
- Leveraging technology/analysis for pipe replacement
- O&M programs ensure quality and reliability
- In-house laboratory ensures water quality



Water Treatment Resiliency

Phase	Project	Timeframe	Cost
<u>Phase 1</u> Complete	High Service Main	FY17 – FY18	\$2.2M
	Ph 1 Electrical Upgrades	FY17 – FY18	\$2.3M
	Generators	FY19 – FY21	\$12.9M
<u>Phase 2</u> Underway	Filters	FY22 – FY25	\$50M
<u>Phase 3</u> Future	Raw Water Distribution Box & Ph 2 Electrical	FY26 – FY27	\$12M
	Low Pressure Pump Station & Intake	FY28 – FY30	\$20M
	High Service Pump Station & Clearwell	FY30 – FY32	\$30M

MBW Filters Project

- Largest construction project in KUB history
 - Cornerstone project of Water Supply Master Plan
 - Postponed two years due to pandemic
 - Six new filters, 38 MGD capacity
 - \$20M ARPA funding - City of Knoxville and Knox Co.
- Procurement process accommodates pandemic related challenges
- Construction Schedule: ~ FY23 – FY25
(May vary depending on proposal chosen.)



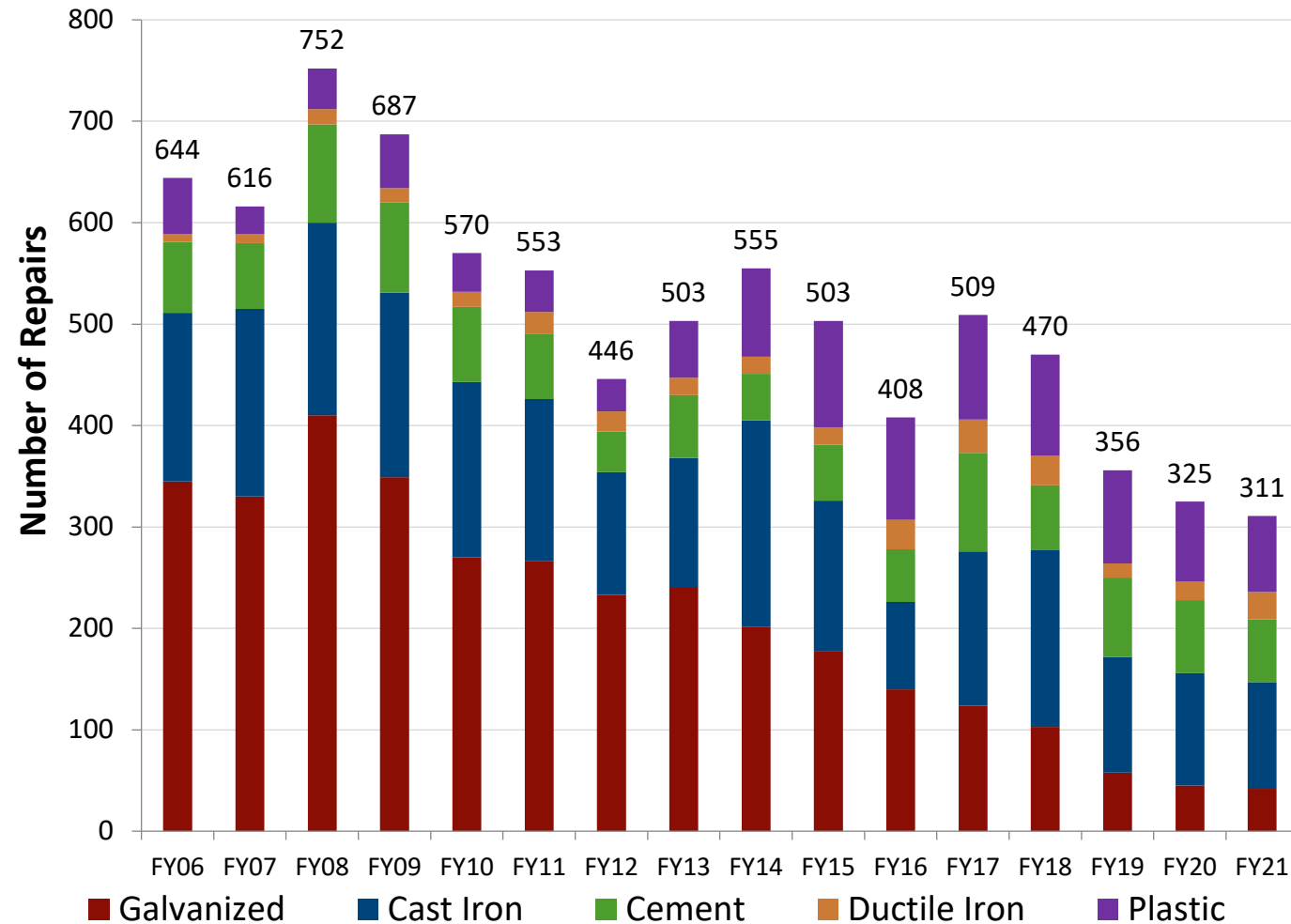
Water Plant Maintenance/Improvements

- Nearly 100-year-old plant requires maintenance and upgrades
 - Brick turret repairs – \$0.5M
 - Roof deck repairs – \$1.5M
 - Roof truss repairs – \$0.6M
 - Repointing of brick façade – \$4M
- Equipment improvements
 - Pipe coating inspection
 - Valve maintenance
 - Pump inspections/upgrades
 - Electrical upgrades



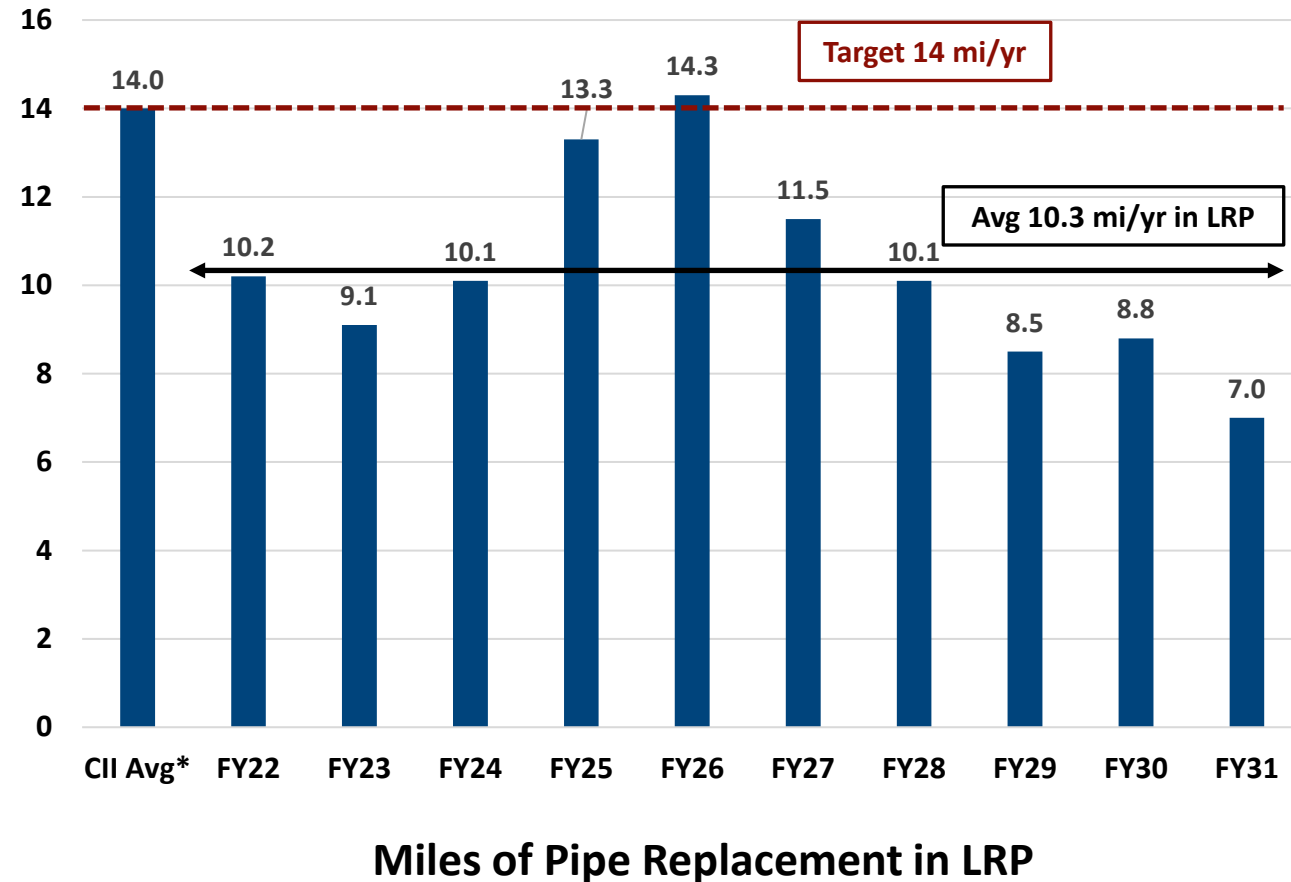
Reduction in Pipe Repairs

- Century II for water in 2006
- Over 50% reduction in repairs since 2008
- Eliminate 20 miles of galvanized pipe by 2027
 - Pipe type needing most repairs
 - 2-inch size – least costly replacement
- 480 miles of cast iron and cement pipe remain
 - Older pipe types
 - 6- to 30-inch pipe
 - More costly to replace



Pipe Replacement Pace Reduced

- Target – 14 miles/year
 - Achieved rate of 1% of system per year
 - 100-year pipe life expectancy pace
- Reducing pace to 10.3 miles/year in LRP
 - \$150M for treatment and transmission system resiliency
 - \$111M for water main replacement
- Increase pace outside LRP
 - Nearly 500 miles older pipe types remain
 - Maintain target pace long-term
 - Match pace to life expectancy



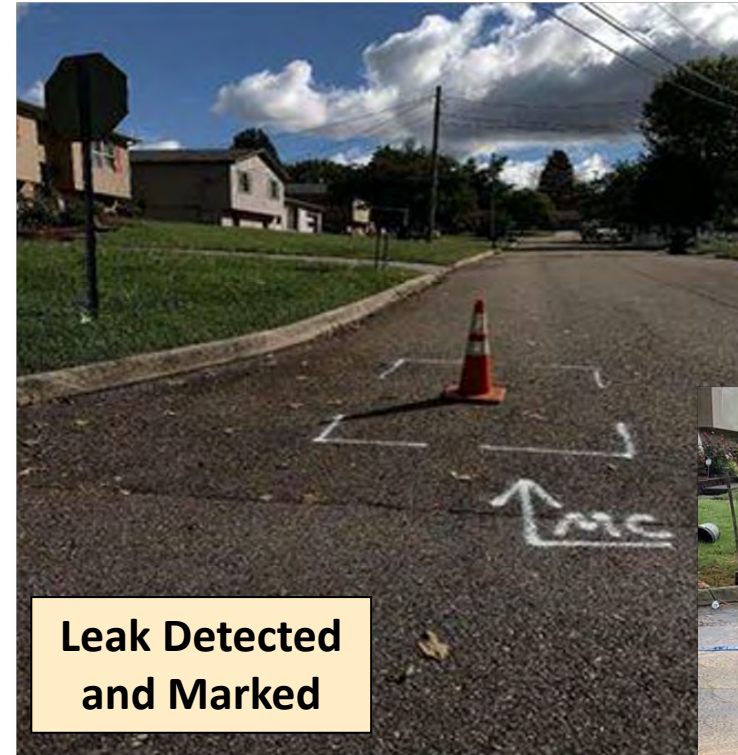
Maintenance Programs Ensure System Performance

- Transmission & distribution valve inspection
 - Confirm accessibility and operability
 - Repair or replace as needed
 - 5-year cycle for distribution, 2-year cycle for transmission
- Test hydrants for fire flow requirements
 - Ensure hydrant performance
 - Evaluate system conditions
 - Repair or replace as needed
 - 3-year cycle



Leak Prevention, Detection, and Repair

- Leak prevention program is key
 - Pressure reduction program
 - Soft start/stop pump equipment
- Leak detection reduces breaks
 - District metering for automated data collection
 - Analysis detects potential areas for leaks
- “Find and Fix” proves effective
 - Technology pinpoints leaks
 - Repairs made before breaks occur
 - Cost - \$1M per year



Laboratory and Water Quality Assurance

- State-certified laboratory
 - Over 100K tests annually
 - 150 parameters
- Water quality programs and continuous monitoring
 - Daily analysis at plant and distribution system
 - Customer WQ program
 - Cross connection prevention
 - Routine flushing



Century II for Water is Evolving

- Projects for MBW resiliency continue
- Transmission system improvements provide growth and resiliency
- Pipe replacement pace is a long-term approach
- Programs evolve for improved results
- Technology and data continue to drive priorities





April 2022

Wastewater Long Range Plan



Wastewater System

Customers: 73,017

Service Territory:
243 square miles

Treatment Plants:

Lift Stations: 63

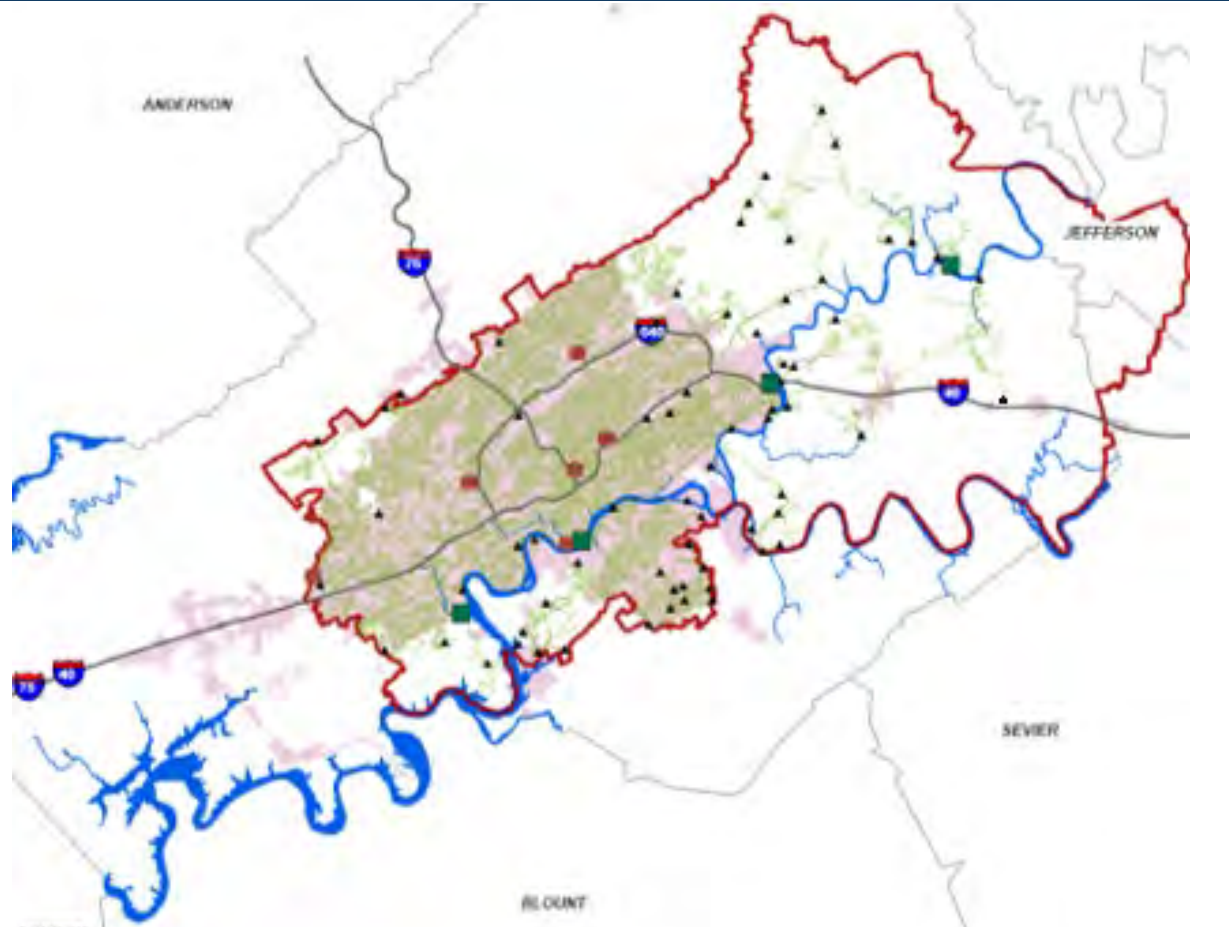
Collection Mains: 1,327 miles

Storage Capacity: 34 MG in 6 Tanks

Plant Maximum Capacity: 173 MGD

Average Flow: 37.75 MGD

Consent Decree: 2005 – 2022



County Lines ———
City Limits ■■■
Service Area ———

Existing Mains ———
Treatment Plants ■■■

Pump Stations ▲
Storage Tanks ■■■

Century II for Wastewater

- Operations & Maintenance - \$457M
- Capital - \$396M
- Continued investment in treatment plants
- Pump station upgrades for reliability/growth
- Preventing/reducing repeating overflows
- Employing technology for pipe replacement prioritization
- O&M programs ensure quality and reliability
- Laboratory monitors pretreatment and quality



Major Century II Plants Projects

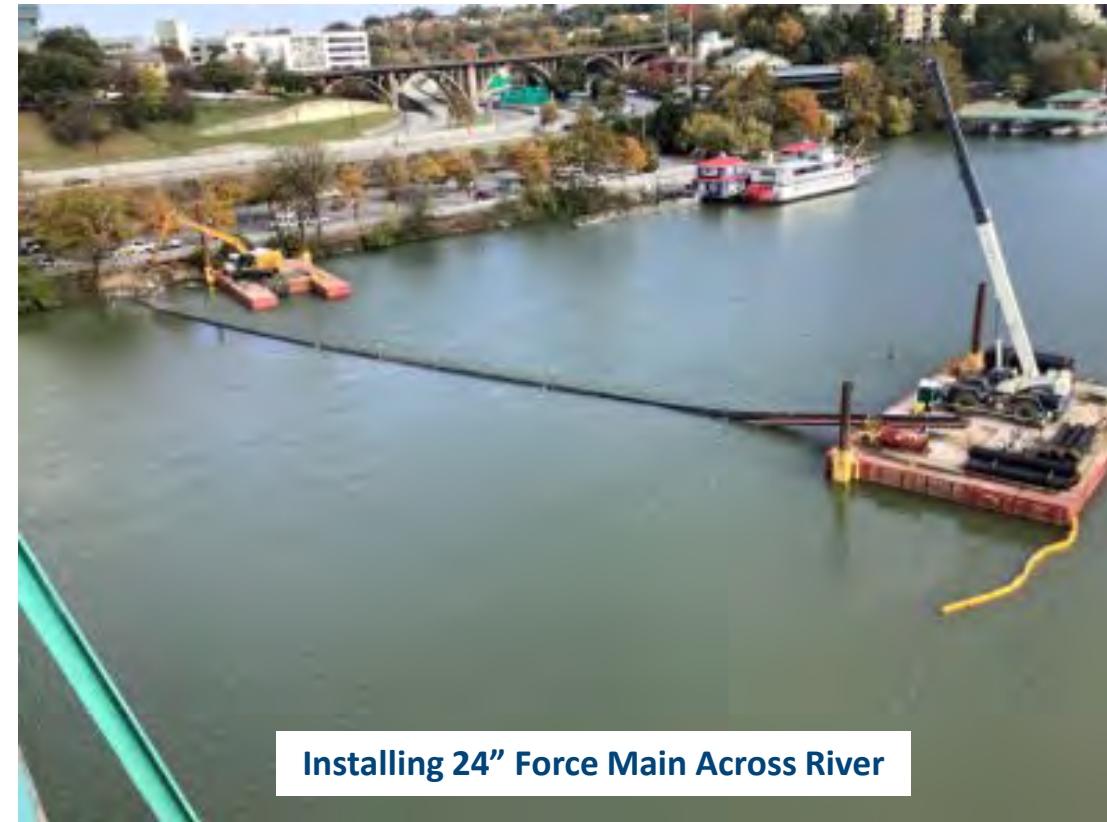
WWTP	Project	Year	Cost
Kuwahee	Disinfection	FY24 – FY27	\$7.4M
Kuwahee	Digester Cover Replacements	FY26 – FY29	\$8M
Kuwahee	Nitrification Blowers	FY28 – FY30	\$6M
Fourth Creek	Aeration Flow Distribution	FY27 – FY28	\$1.6M
Fourth Creek	Grit System Replacement	FY29 – FY31	\$3.3M
Loves Creek	Preliminary Treatment Upgrades	FY28 – FY30	\$3.9M
Loves Creek	Waste Force Main Replacement	FY30 – FY32	\$5.5M
Eastbridge	Generator Upgrades	FY26 – FY27	\$1.3M



**Recently Completed \$45M
BEHRC Project at Kuwahee**

Jones St. Pump Station and Force Main

- Existing pump station and force main – 1950's vintage, oldest on system
- Increases capacity from 9 MGD to 15 MGD
 - Addresses growth and reduces overflows
 - New force main across river now in place
- Total cost of \$16.7M, complete FY23

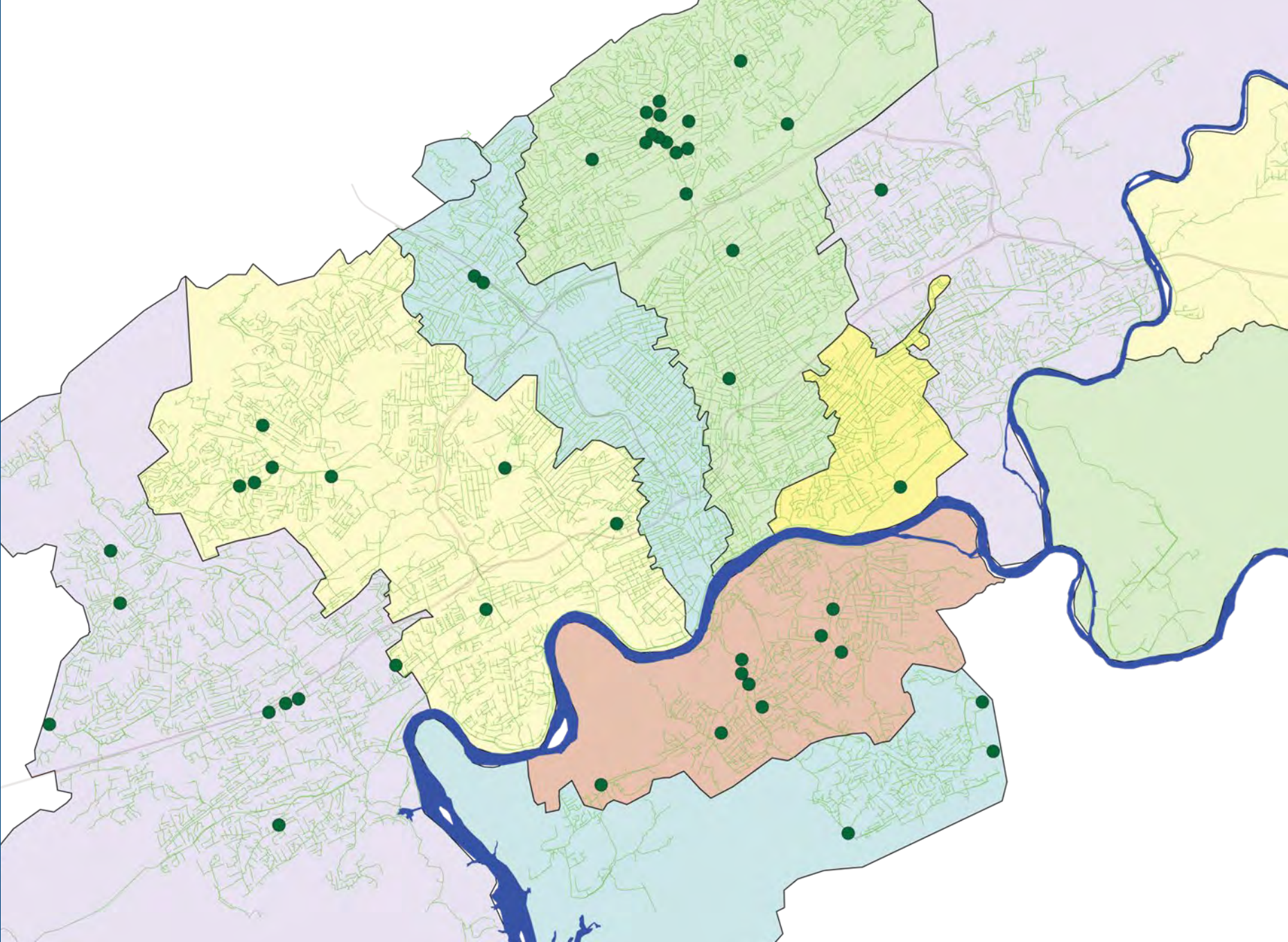


Walker Springs Pump Station and Force Main

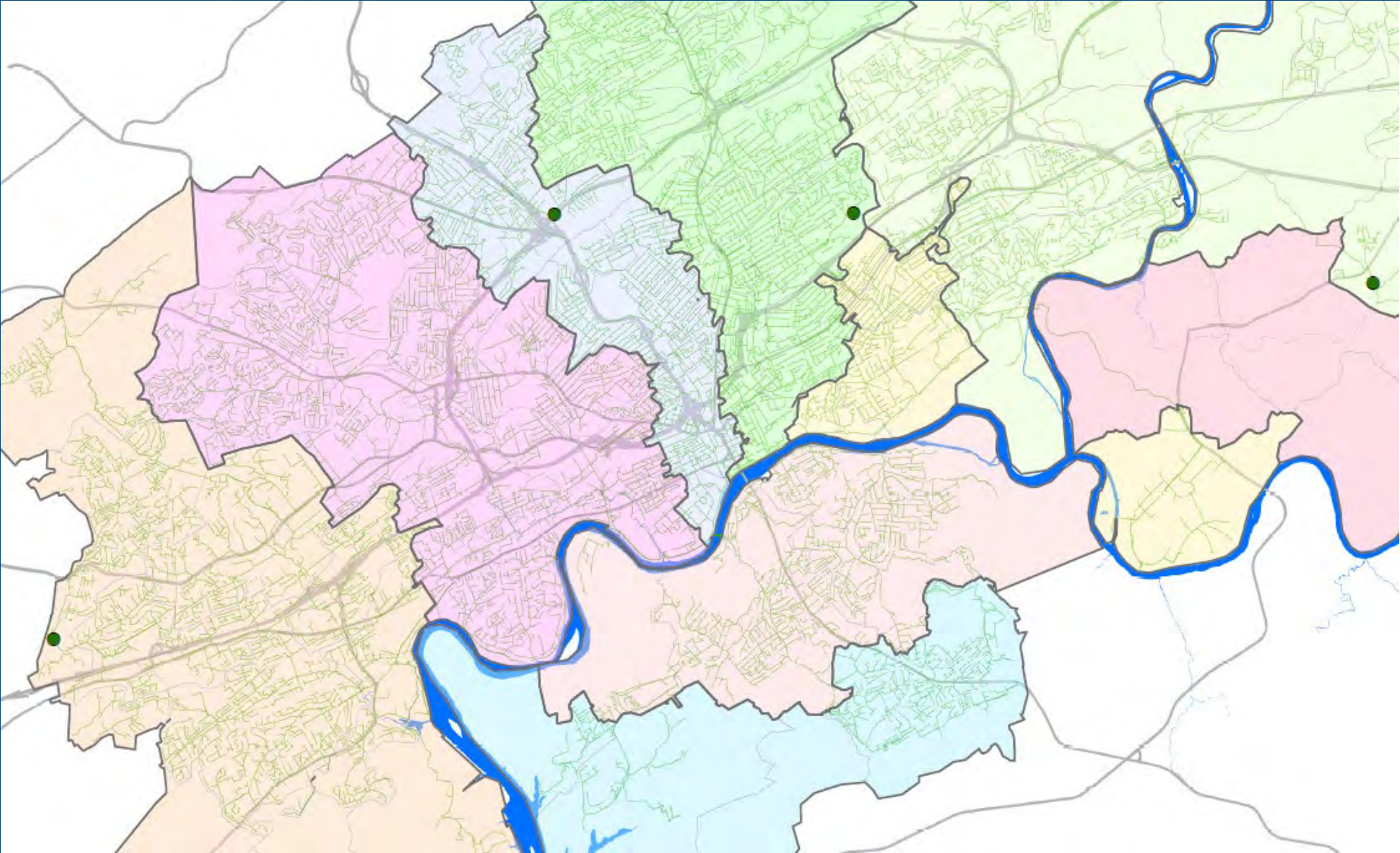
- Existing pump station and force main - 1970s vintage
- Increasing capacity from 4.3 to 6.6 MGD
 - Addresses largest repeating overflow
 - Designing new pump station instead of upgrades to existing building
- Construction phase
 - Force main FY23: \$3.2M
 - Pump Station FY24 – FY25: \$8M



2004 Repeating Overflows

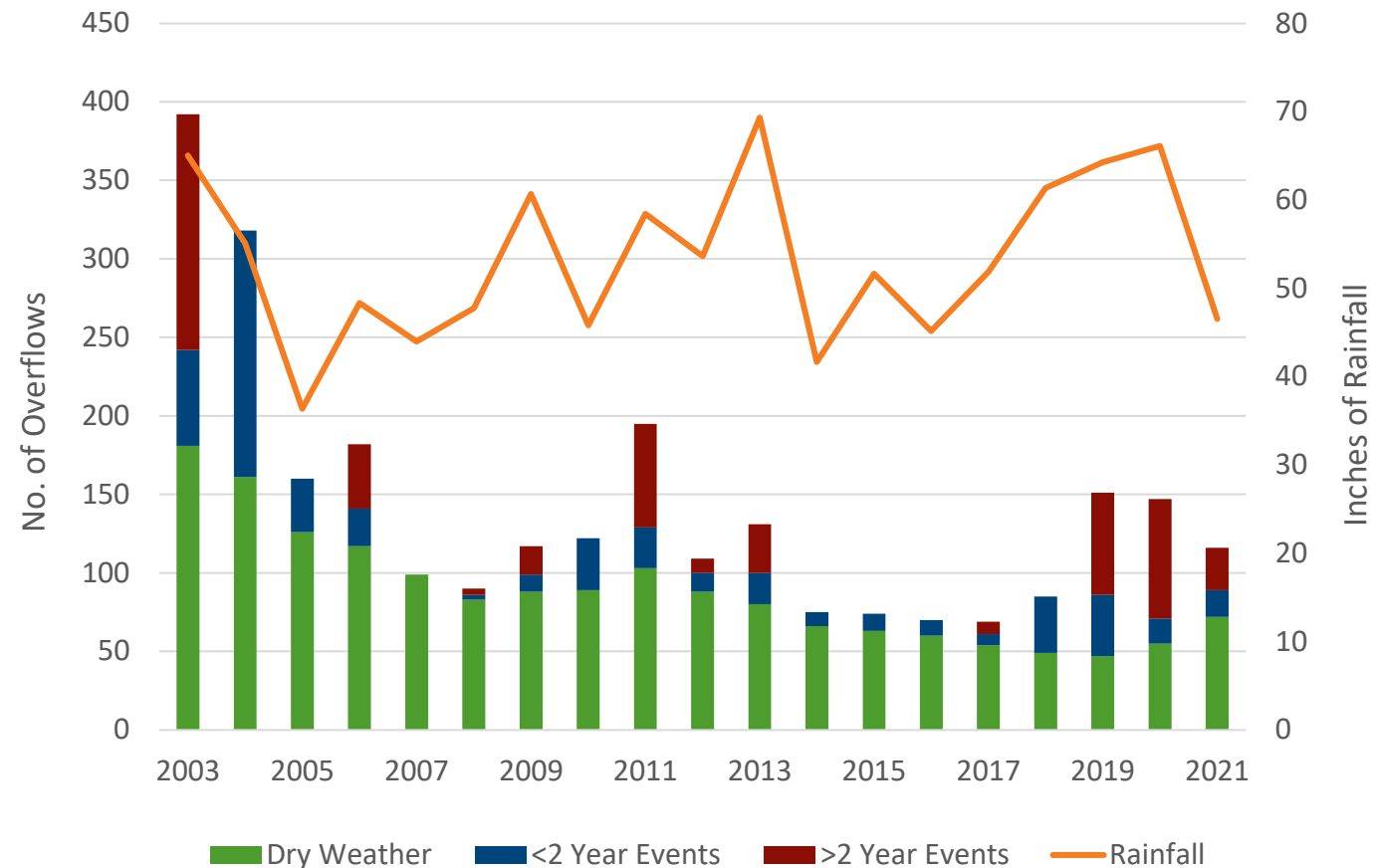


2004 Repeating Overflows



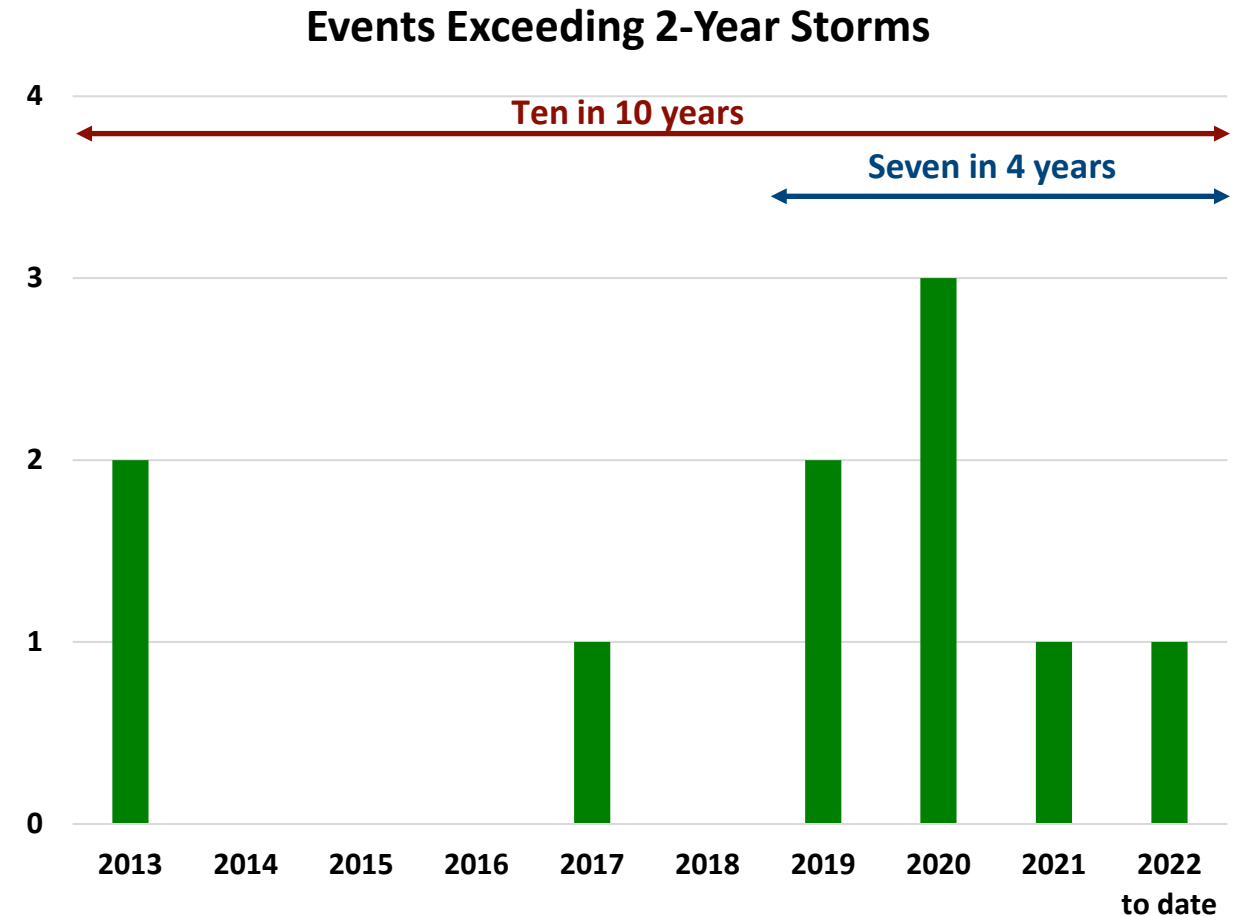
Reduction in Overflows

- Overflow reduction from 2003
- Rainfall impacts system performance
 - Intensity and duration
 - Ground saturation level
 - Flooding
- 450 miles of older pipe remain
 - Clay and concrete pipe
 - Increased rainfall impacting overflows



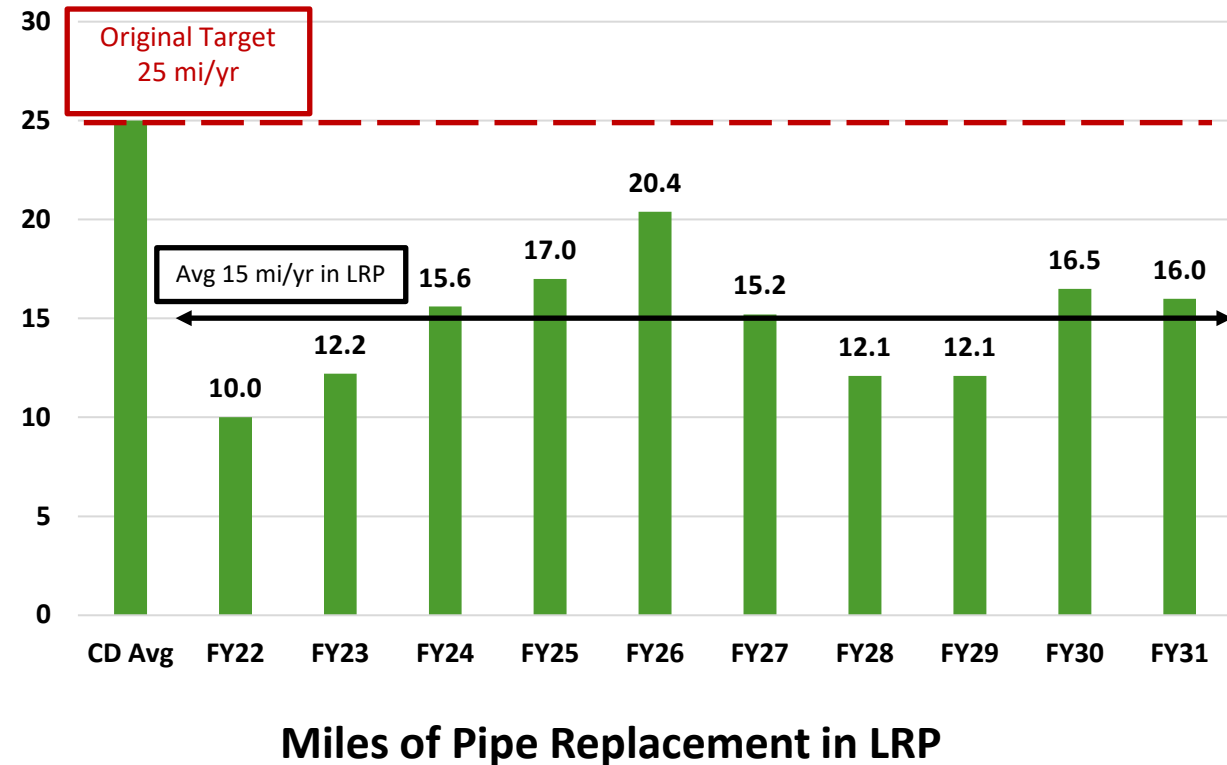
Impact of Increased Rainfall

- Increased overall overflows due to excessive 2-year storm events
- Abnormal “2-year” storm frequencies
 - Expect five 2-year storms in 10 years
 - Expect two 2-year storms in 4 years
 - Averaged 1 per year past 10 years



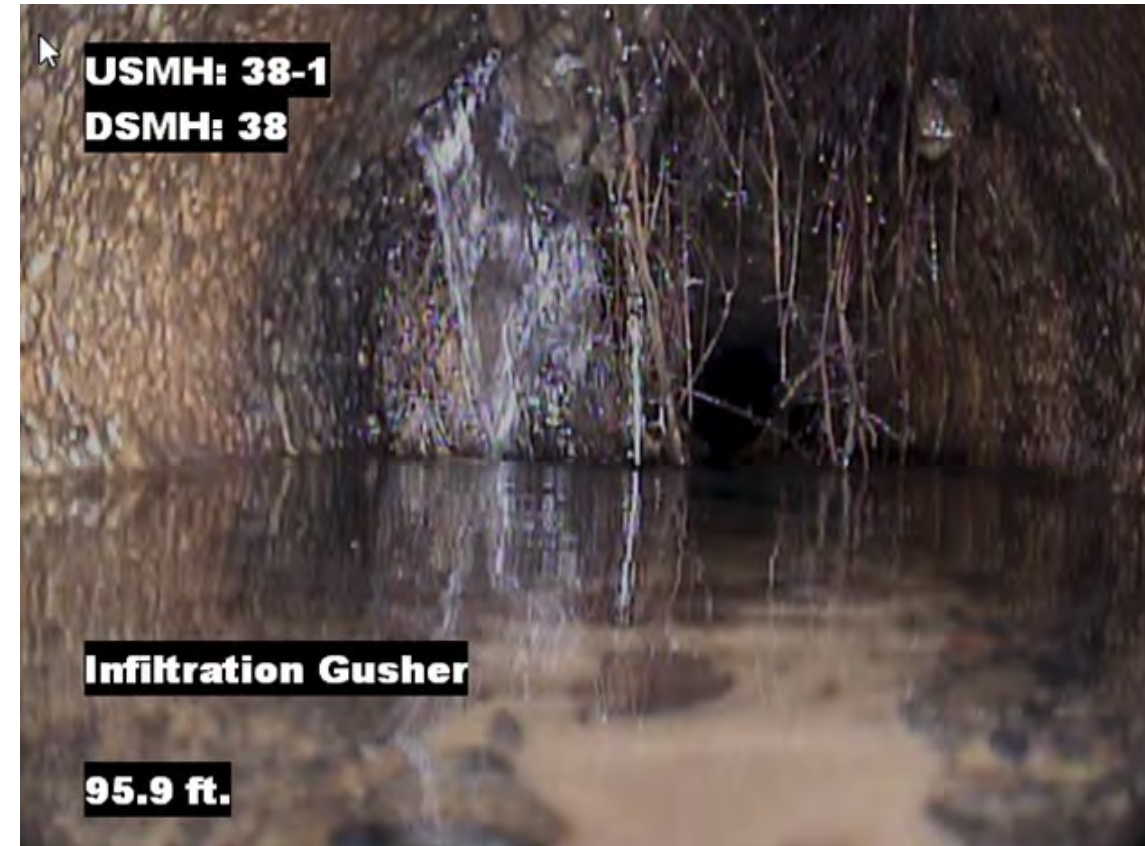
Pipe Replacement Pace Reduced

- Consent Decree avg 25 miles/year
 - Achieved rate of 2% of system per year
 - 50-year pipe life expectancy pace
- Reducing pace to 15 miles/year in LRP
 - Funding pump stations and plants
 - \$257M for sewer rehab and replacement
- Increase pace outside LRP
 - 450 miles of older pipe types remain
 - Maintain target pace long-term
 - Match pace to life expectancy



System Inspections and Cleaning Improve Performance

- \$2.5M/year for inspections and cleaning
- Video inspections assess pipe condition
- Manhole inspections detect defects
- Smoke testing locates potential sources of inflow/infiltration
- Blockage abatement clears pipelines from root intrusions/blockages
- Programs work together to reduce overflows



Pretreatment and Protection

- **Industrial Pretreatment Program**
 - Prevention of industrial discharges that interfere with plant operation
 - Inspect and monitor 23 permitted industries
- **Grease Control Program**
 - Prevention of grease entering the system
 - Compliance achieved by capturing grease
 - Inspect over 900 food service facilities
 - Public awareness program for all customers



Century II Continues to Evolve

- Utilize monitoring and modeling for prioritization and cost-effective solutions
- Match sewer rehabilitation projects to system needs
 - Focus on reducing SSOs (especially repeat locations)
 - Continue to remove older clay and concrete pipe
- Monitor overflows and adjust rehabilitation and maintenance as needed
- Optimize O&M programs to extend asset life



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Electric Long Range Plan



Electric System

Customers: 213,008

Service Territory:

688 square miles

Electric Lines: 5,466 miles

Distribution Overhead: 4,068 miles

Distribution Underground: 1,132 miles

Transmission: 266 miles

Infeed Substations: 9

Substations: 63

System Capacity: 3,030 MVA

Peak Hourly Demands:

Winter: 1,332 MW (Feb. 2015)

Summer: 1,235 MW (Aug. 2007)



County Lines



City Limits



Service Area



Existing Lines

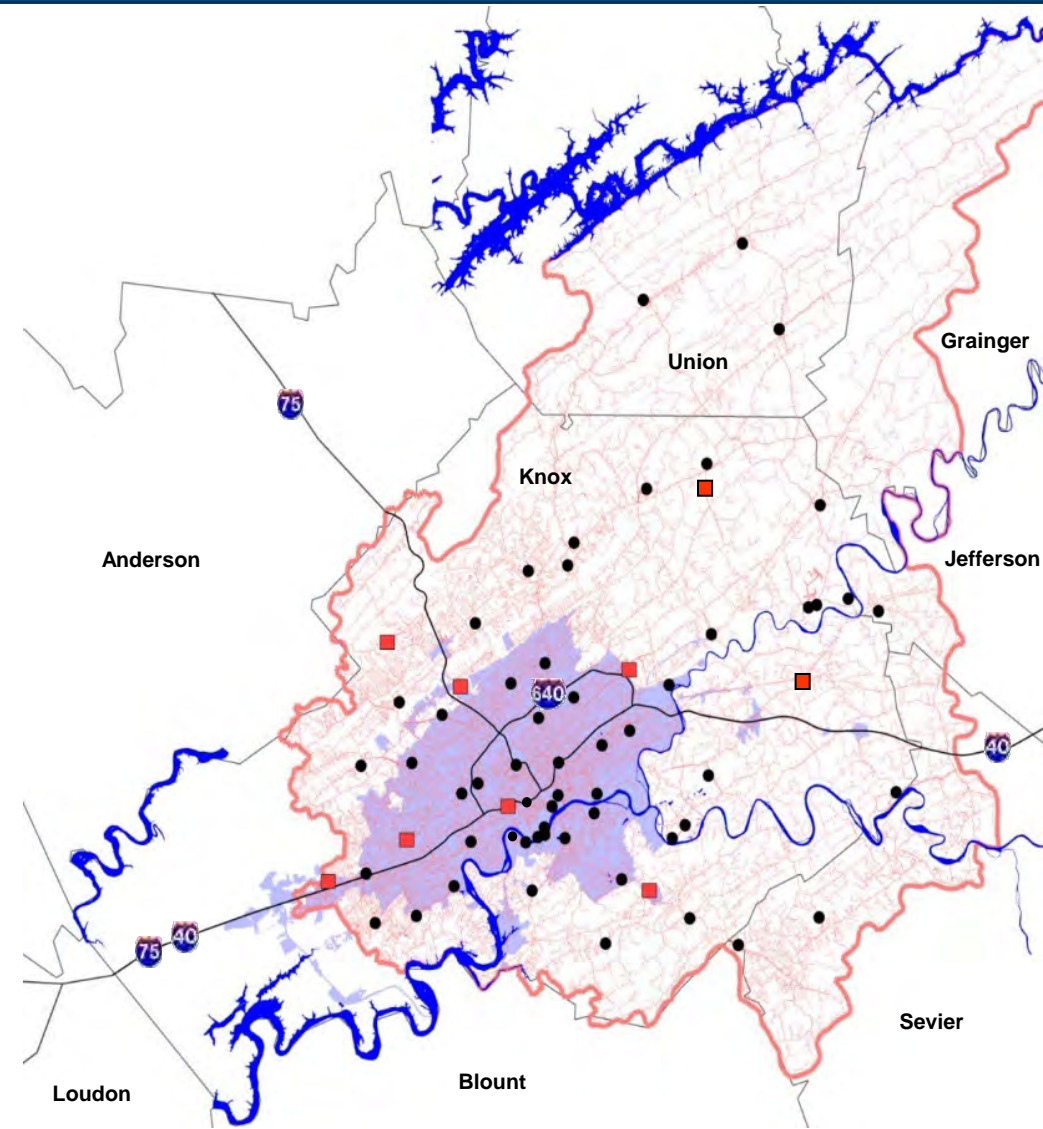


Infeed Stations



Distribution

Stations



Century II for Electric

- Operations & Maintenance - \$864.6M
- Capital - \$281.3M
- Redundancy, resiliency, and contingency planning is key to electric reliability
- Substations
 - Adding new stations and building capacity in existing stations
- Transmission system
 - Pole, wire, and component replacement
- Distribution system
 - Pole and cable replacement with vegetation management
- Fiber enables further automation



Reliability Takes a Multi-faceted Approach

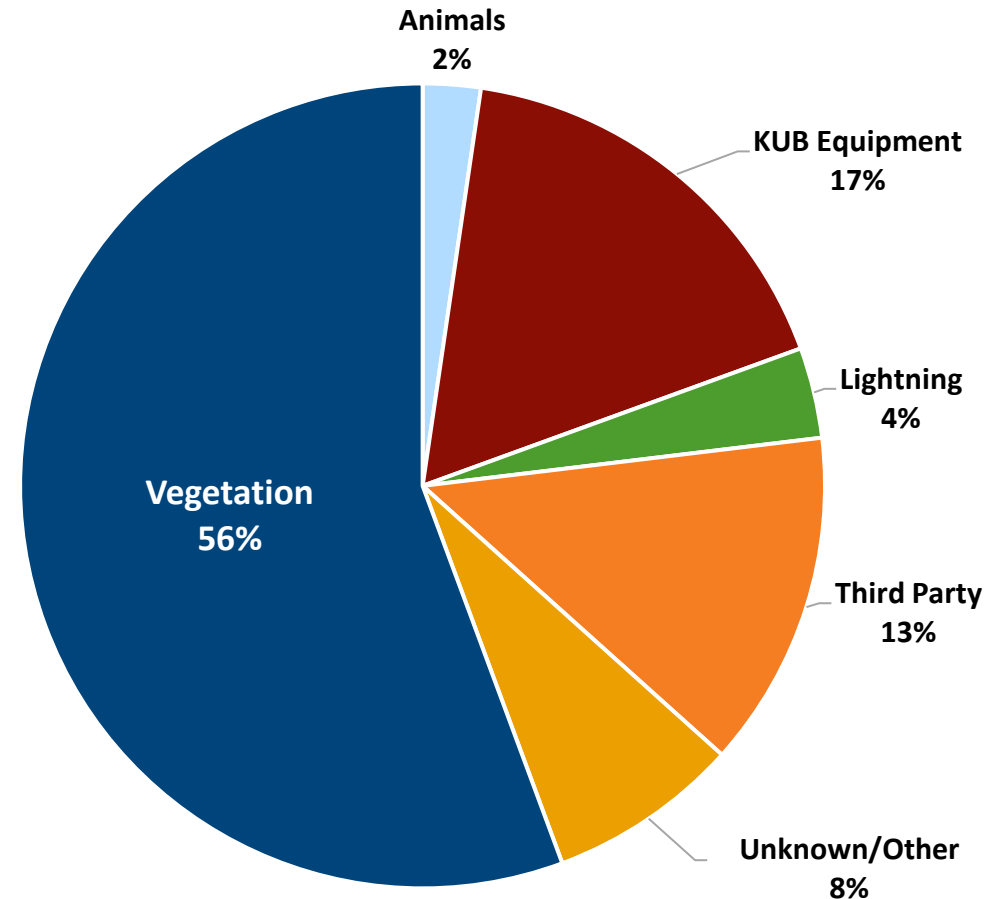
- Redundancy
 - Having additional or spare equipment or lines in case of a single point of failure
- Resiliency
 - Having the equipment, capacity, resources, and automation to recover quickly
- Contingency
 - Having options for back up circuits and capacity



Significant Influencers to Reliability

- Vegetation
 - 65% out of ROW vs. 35% inside ROW
- KUB equipment
 - 30% drop in customer outage minutes vs. FY20
- Third party
 - Increased MVAs on system starting in FY21
- Unknown
 - Most likely unconfirmed vegetation

FY21 Customer Minutes Out



Building Redundancy and Contingency within Substations

- New Infeed Substation (\$21.3M) - Western Ave. (FY22-23)
- New distribution substations (\$34.1M)
 - Rays Gap (FY25)
 - Halls (FY28)
 - Greenway (FY30)
- Upgrading 16 existing substations (\$42.6M)
- Increasing capacity in 3 substations (\$7.3M)



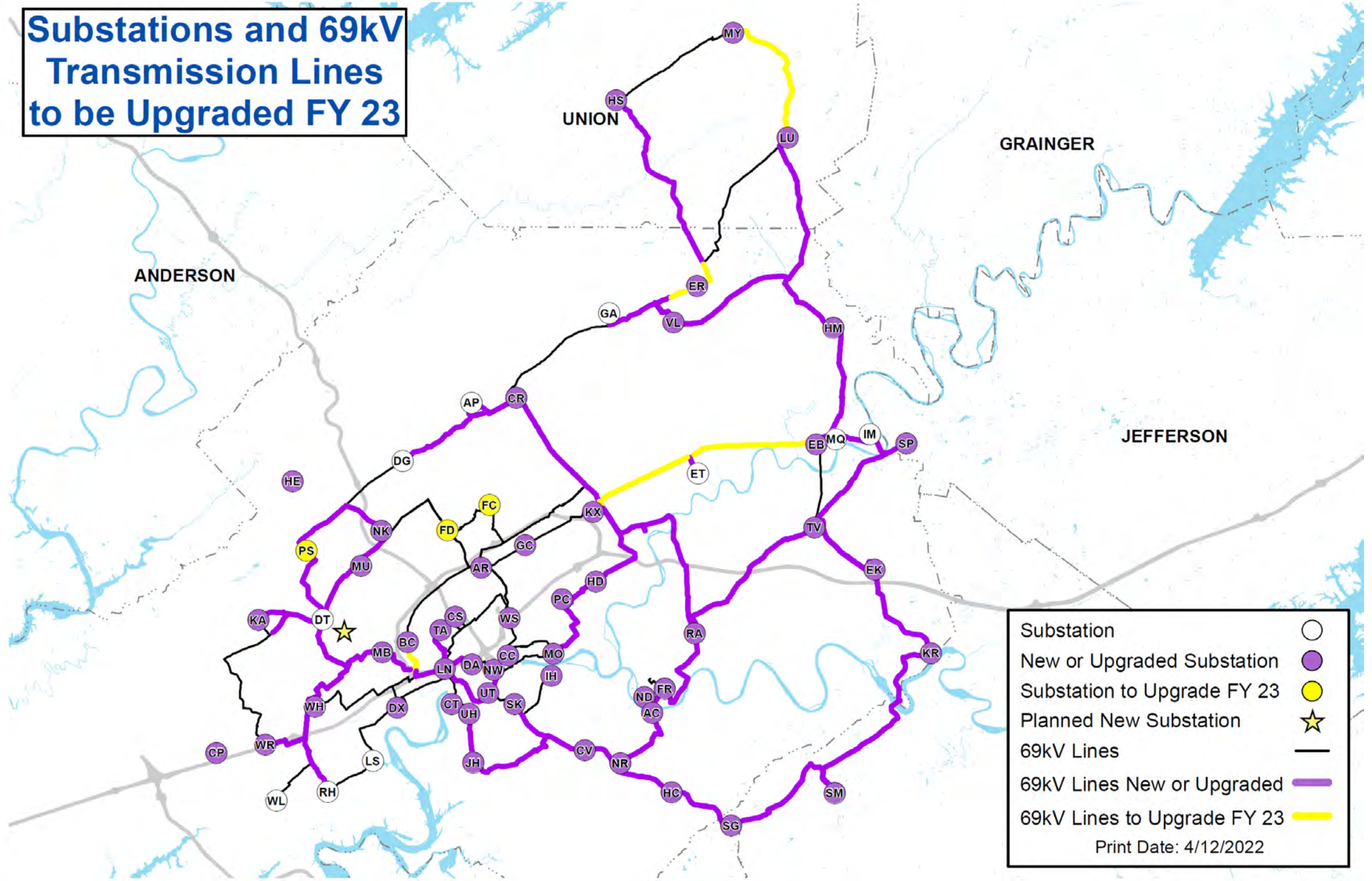
Western Ave. Substation Site Development – March 23

Resilient Transmission System Is Key

- Line upgrades (\$107.8M)
 - 155 of 266 miles complete
 - Averaged 10 miles/year of rebuild
 - Fiber installation in parallel
- Extended rebuild completion
 - Moved from FY30 to FY32
 - Due to cost impacts of poles and wire
- Maintaining vegetation clearance (\$13M)
 - Average ~50 miles/year
 - Defined 5-year trim cycle



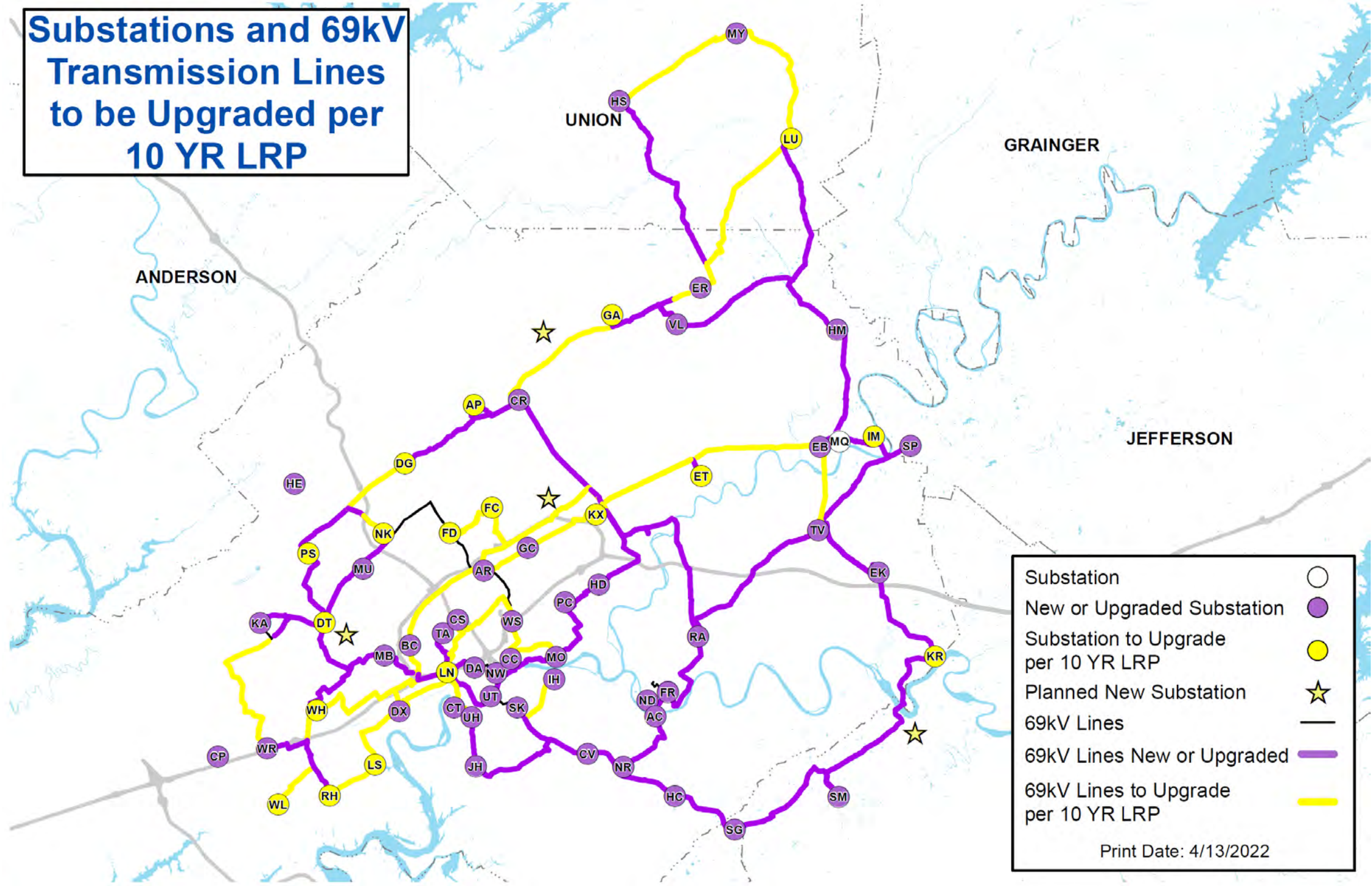
Substations and 69kV Transmission Lines to be Upgraded FY 23



Substation	○
New or Upgraded Substation	●
Substation to Upgrade FY 23	●
Planned New Substation	★
69kV Lines	—
69kV Lines New or Upgraded	—
69kV Lines to Upgrade FY 23	—

Print Date: 4/12/2022

Substations and 69kV Transmission Lines to be Upgraded per 10 YR LRP



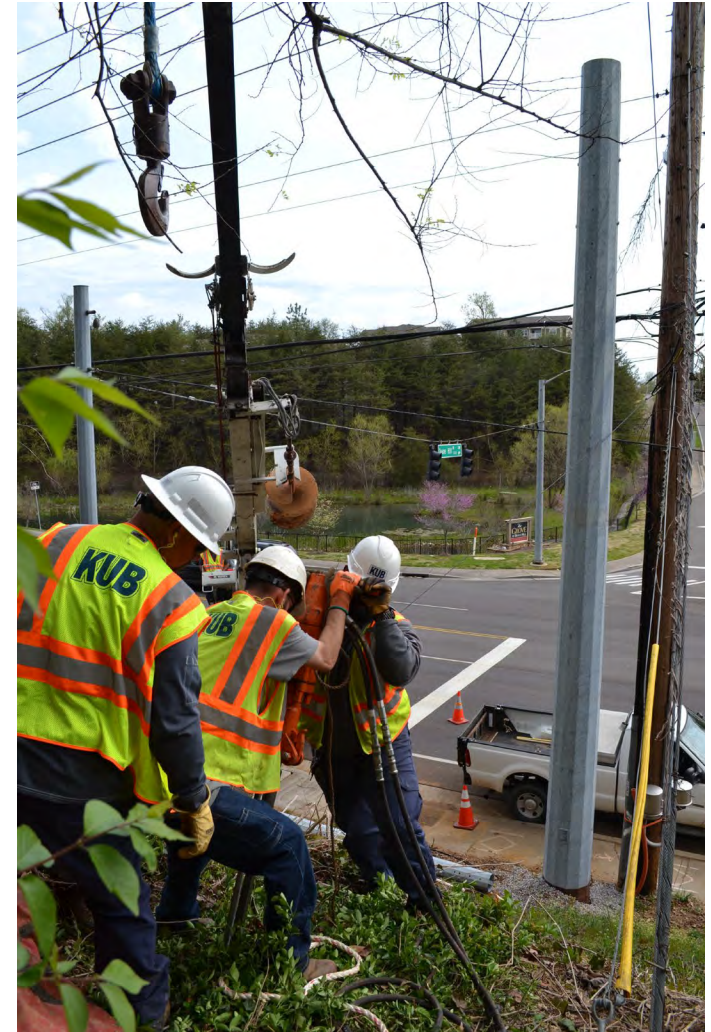
Mitigating Distribution Impacts Through Vegetation Management

- Accounts for 56% of outages minutes annually
- Vegetation Management Program (\$163.1M)
- Proactively addressing hazardous trees
- Ramping up in FY24 to a 4-year trim cycle
- Monitoring cost impacts



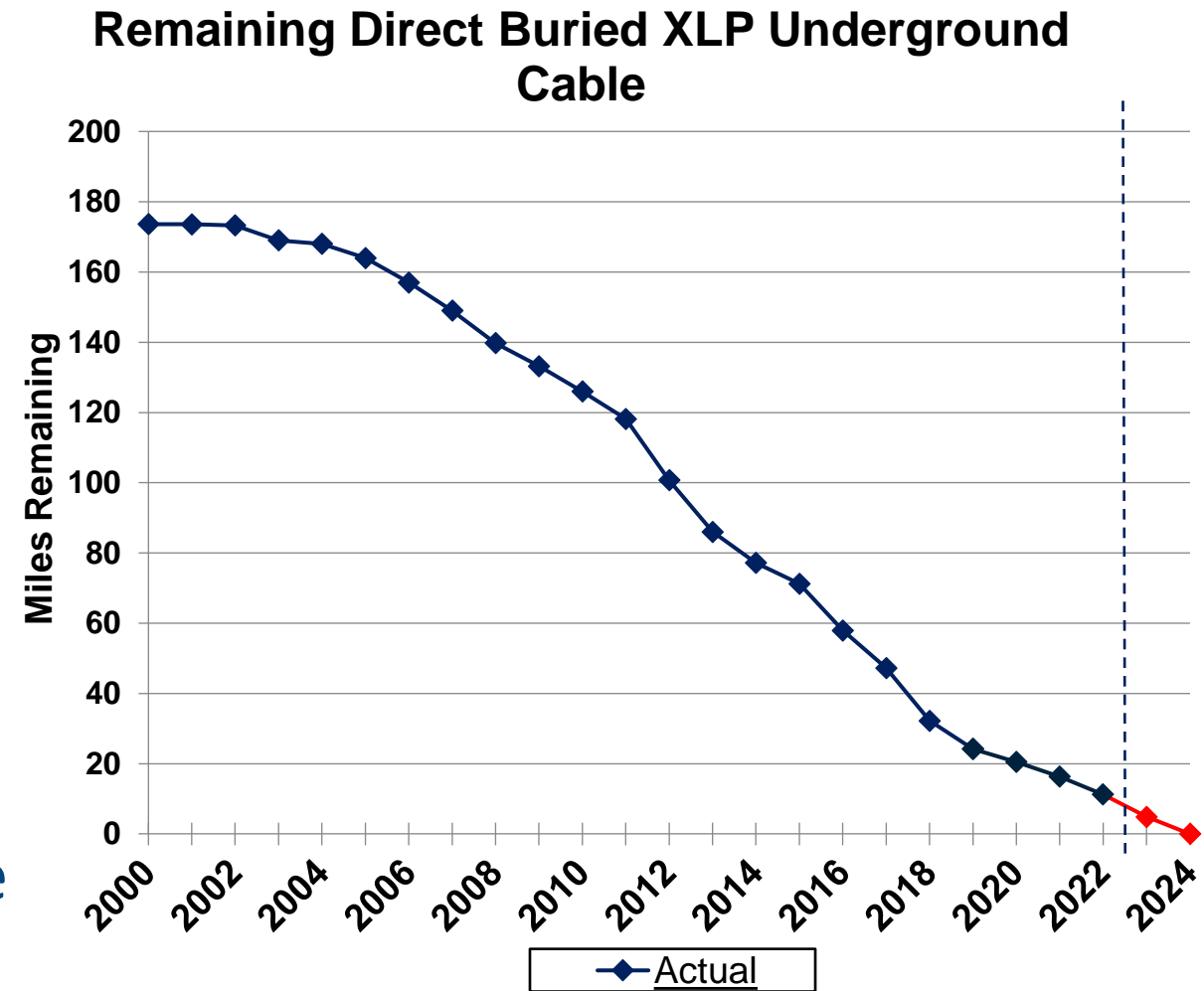
Pole Replacement Hardens Distribution System

- Critical system component
- Detailed pole assessment (FY23-27)
 - Move to 5-year cycle
 - Condition assessment
 - Replacement priorities
- Plan – 1,400 poles/year
 - 50-year life expectancy
 - Evaluate after Year 1 of condition assessment results



Distribution Cable Replacement Plan

- Targeted direct-buried XLP cable (\$4.0M)
 - Completion in FY24
 - Failures significantly decreased
- Move to direct-buried EPR cable (\$15.8M)
 - Failures are minimal currently
 - 30-year life expectancy
 - Begin replacements in FY25
- Developing plan for life cycle replacements of conduit-installed cable



Fiber Is Catalyst for Reliability Gains

- Existing FLISR reclosers (~100)
 - Operating as standalone devices
 - Covers 27 of 398 feeder circuits
 - Over 7.75M outage minutes since FY18
- Deploying ~1,200 FLISR reclosers (\$42M)
 - Fiber allows team automation
 - Will cover all feeders
 - Expect exponential outage minute savings
- Development of Grid Modernization Roadmap (FY22-23)



Consistent Reliability Improvements

- Balancing affordability with reliability
- Holistic plan to increase reliability
- Ramping up vegetation management
- Automation offers significant outage minute savings

2016	2018	2020	2022	2024	2026	2028	2030	2032
Advanced Meters								
	Automated Restoration							
					Distributed Energy Resources			

KUB



April 21, 2022

Natural Gas Long Range Plan



Natural Gas System

Services: 108,092

Service Territory:
297 square miles

Mains: 2,542 miles
Distribution

Steel: 151 miles

Plastic (MDPE): 2,315 miles

Ductile: ~1 mile

Higher pressure

Steel: 69 miles

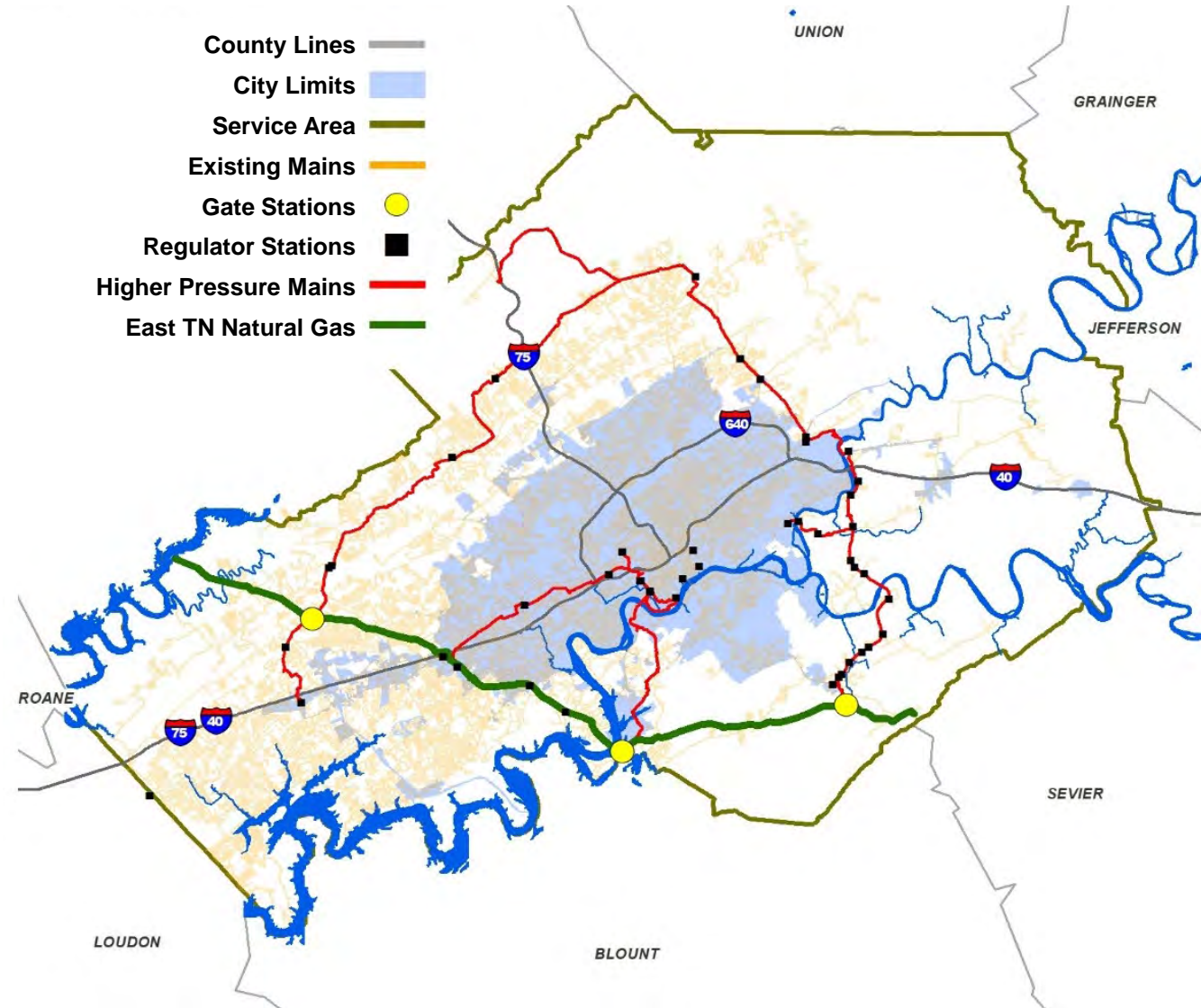
Plastic (HDPE): 6 miles

Gate Stations: 3

Regulator Stations: 48

System Capacity: 157,381 dth

Peak Demand: 140,204 dth (Jan. 2018)

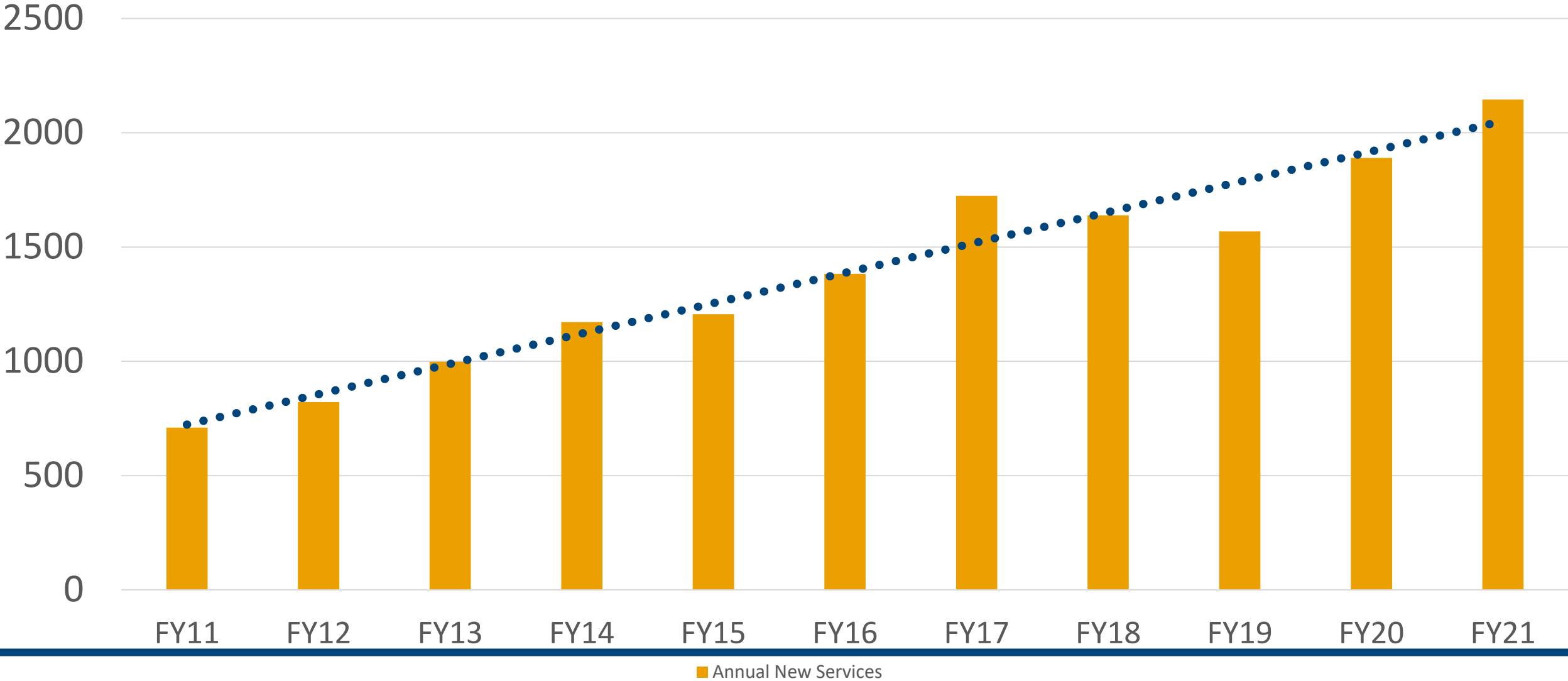


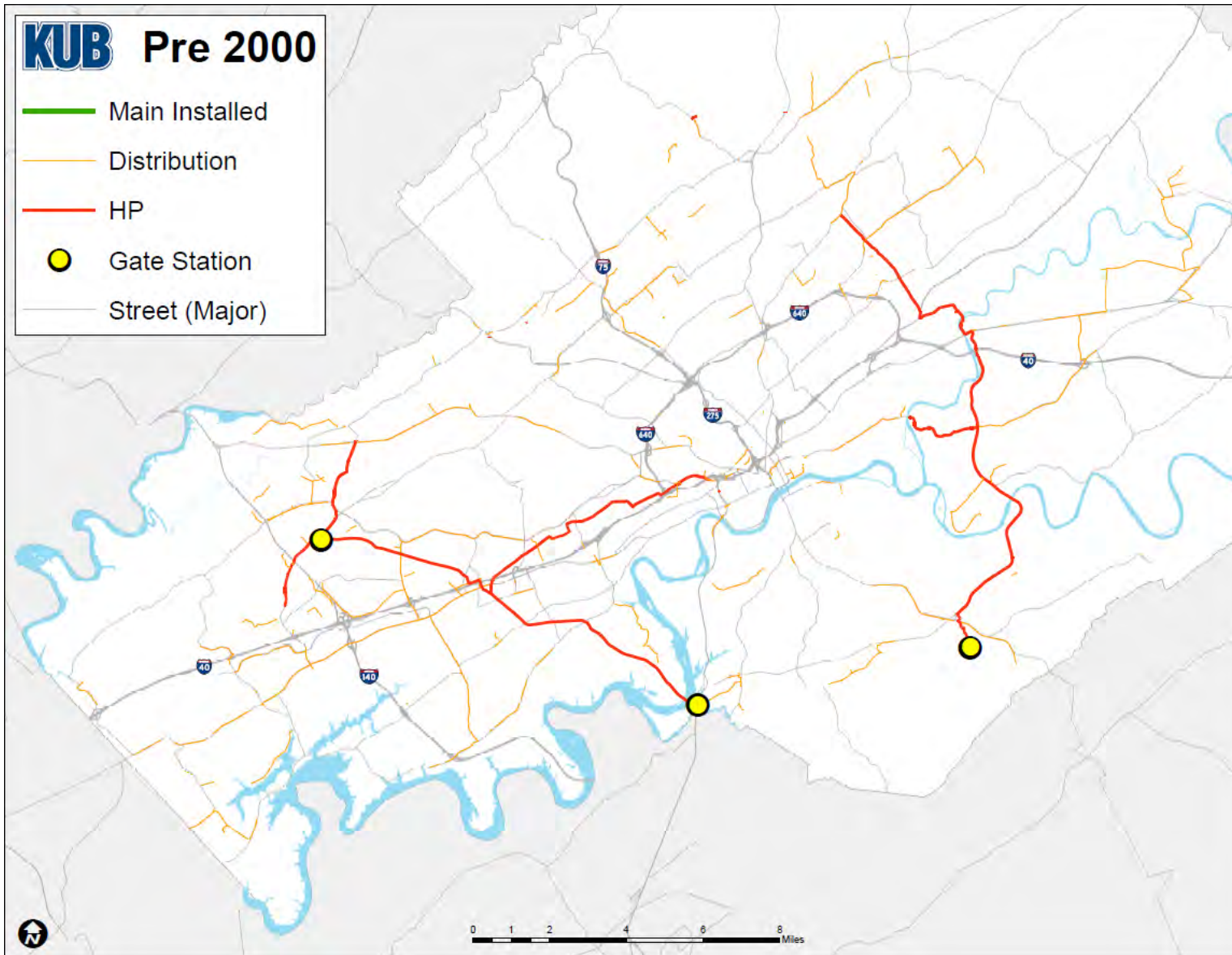
Century II for Natural Gas

- Operations and Maintenance - \$265.3M
- Capital - \$281.3M
- Expansion driven by customer growth
- Focused on building a resilient system for now and the future
- Assuring a modern, tight system
- Continuing to ensure regulatory compliance, environmental stewardship, and safety



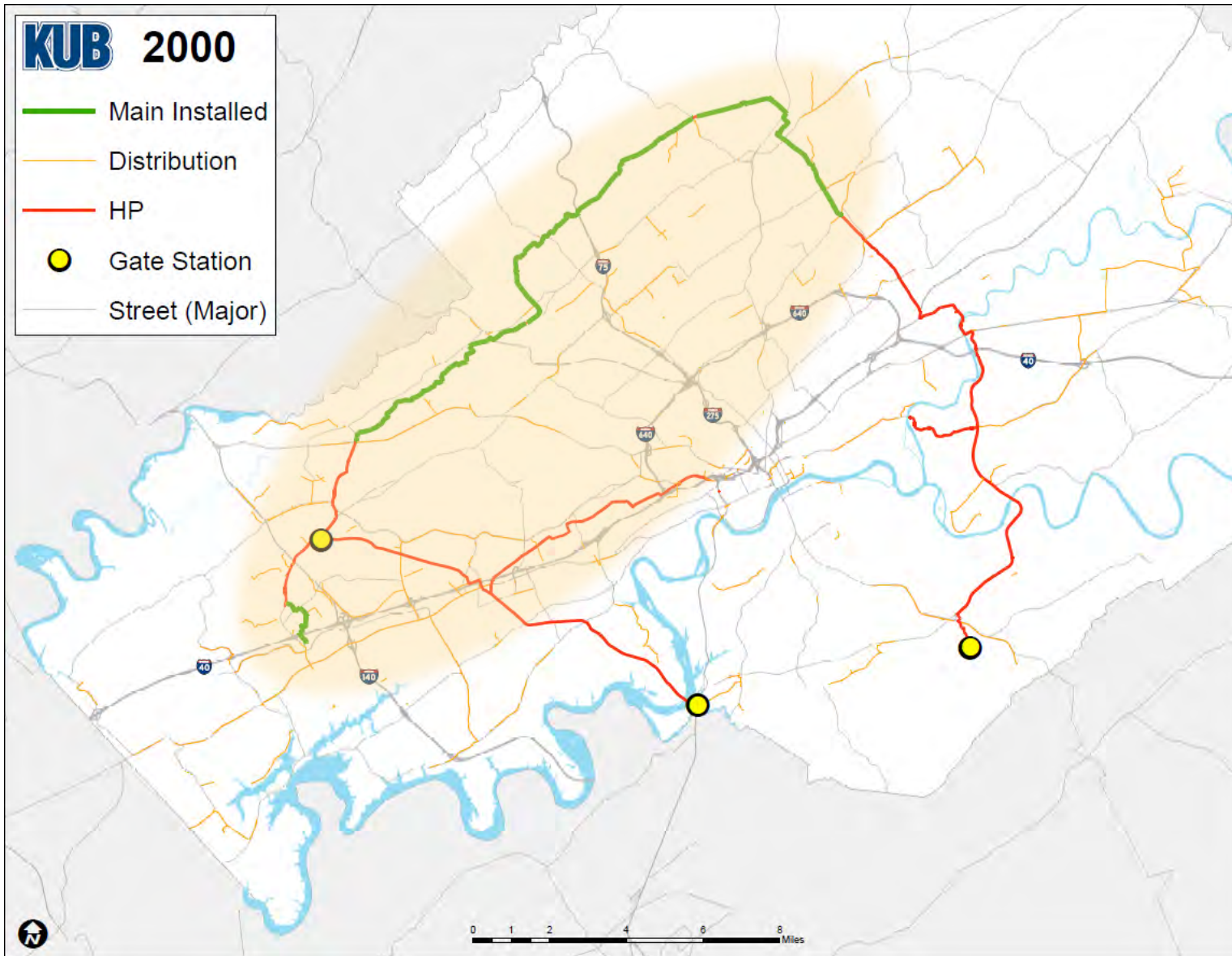
Customer Requests Propel Growth





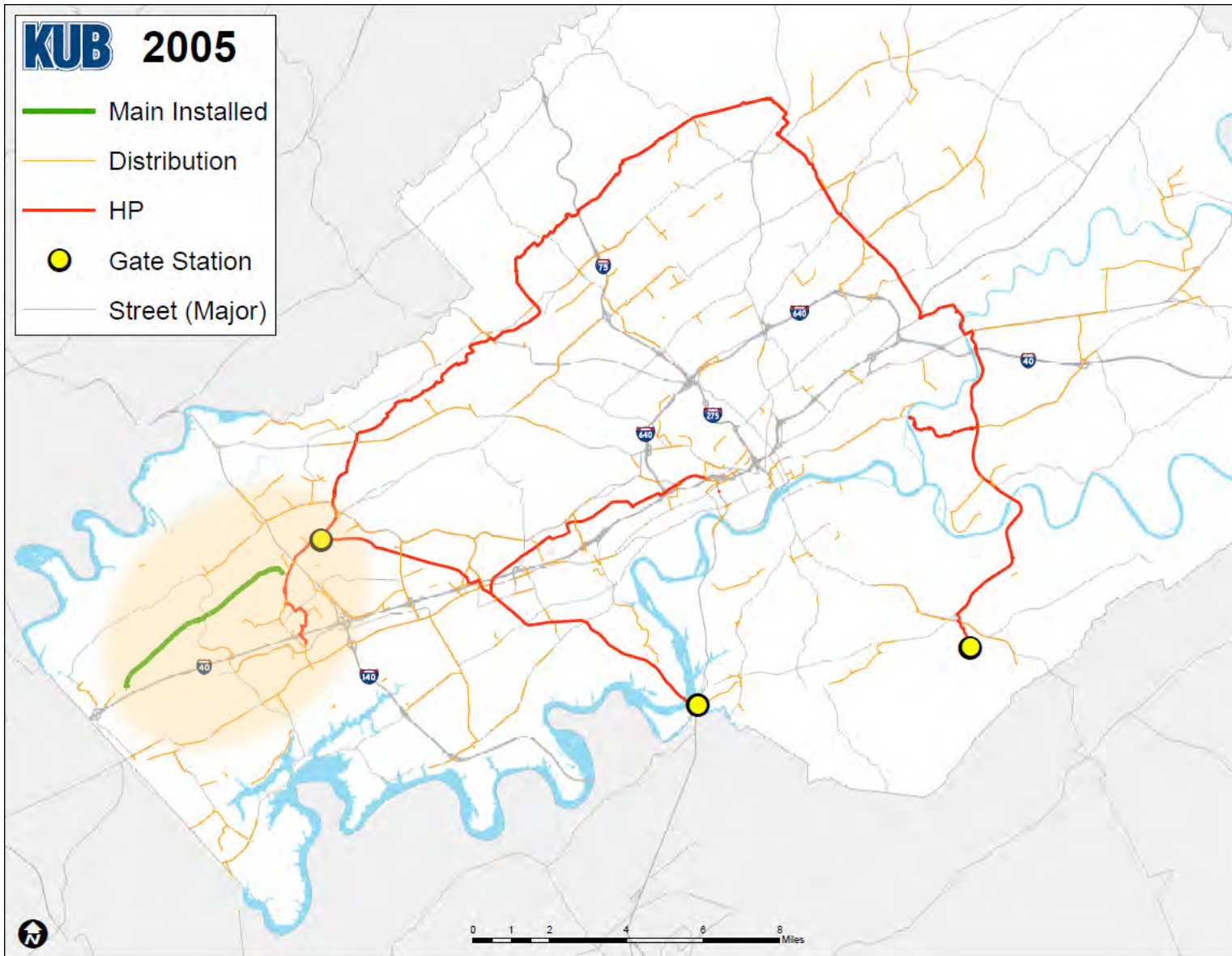
Pre-2000 System

- Three primary gate stations to move natural gas from the pipeline to and around the system
- Limited ability to move natural gas
- Limited resiliency and operational flexibility



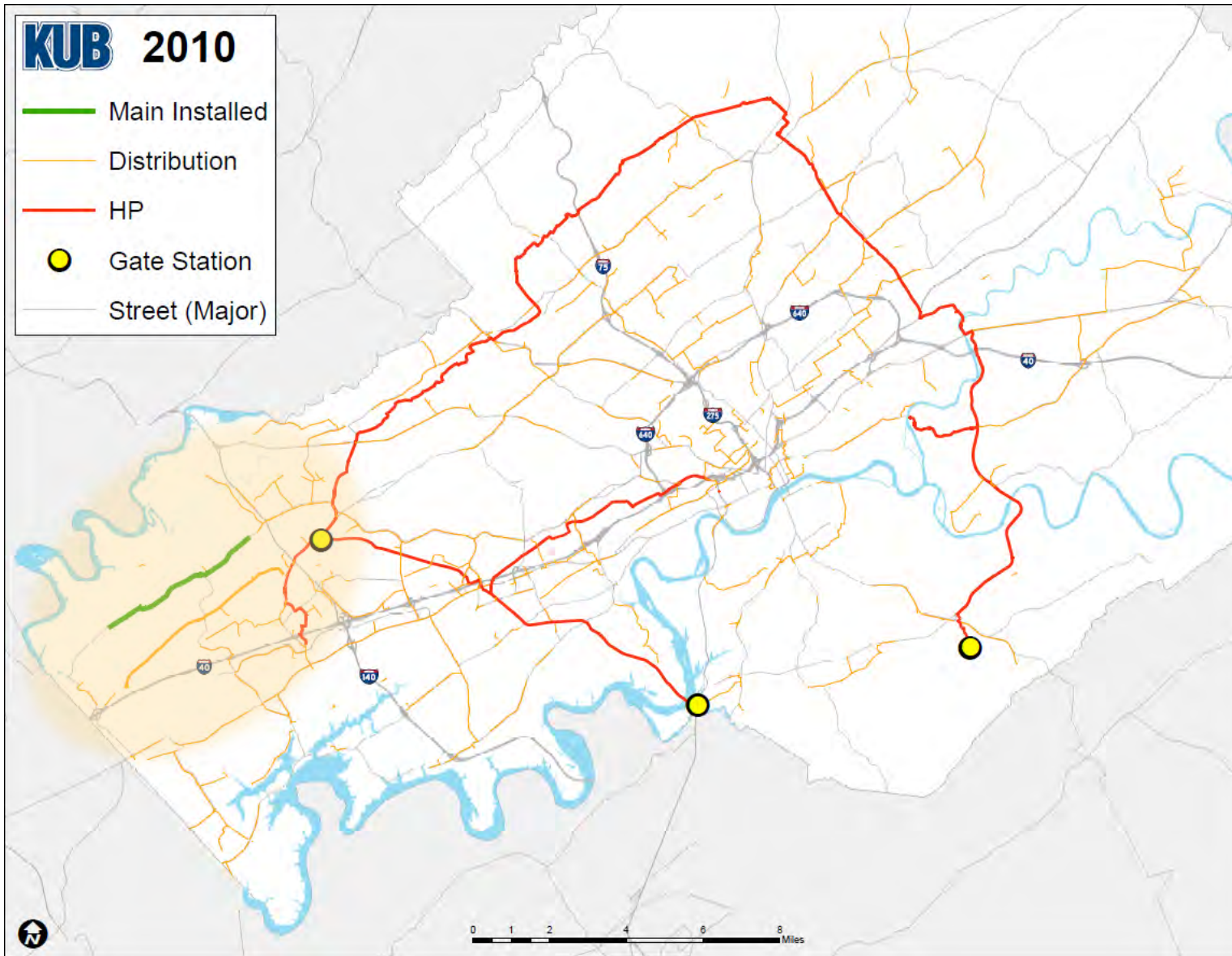
System Changes - 2000

- Three gate stations to take natural gas from the pipeline
- Focus was on resiliency
- North Loop provided the ability to move natural gas
- Impacts 50,000 customers



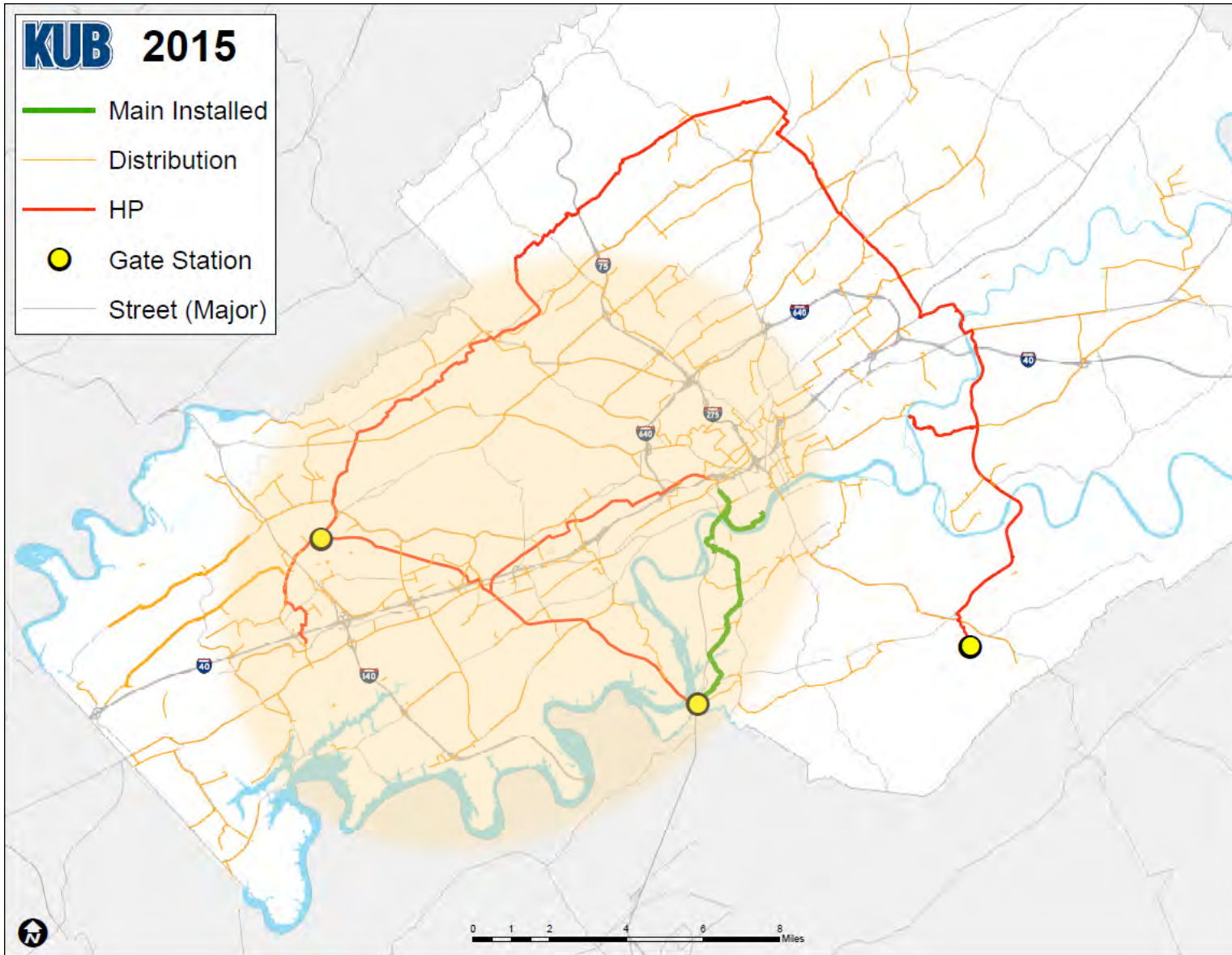
System Changes - 2005

- Yarnell Rd. Extension
- Growth drove expansion to the west
- Impacts 15,000 customers



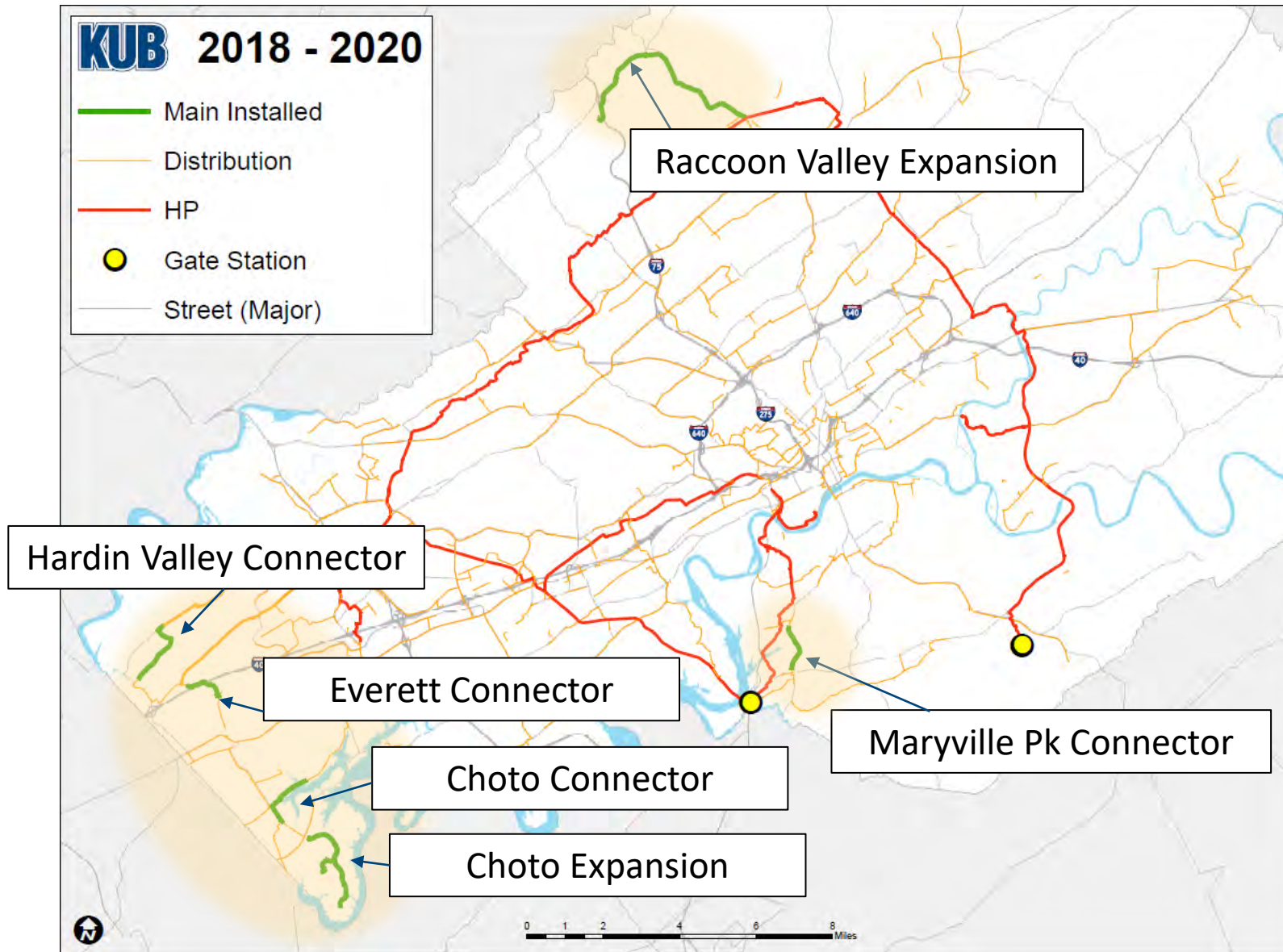
System Changes - 2010

- Hardin Valley Extension
- Growth continues in the west
- Impacts 15,000 customers



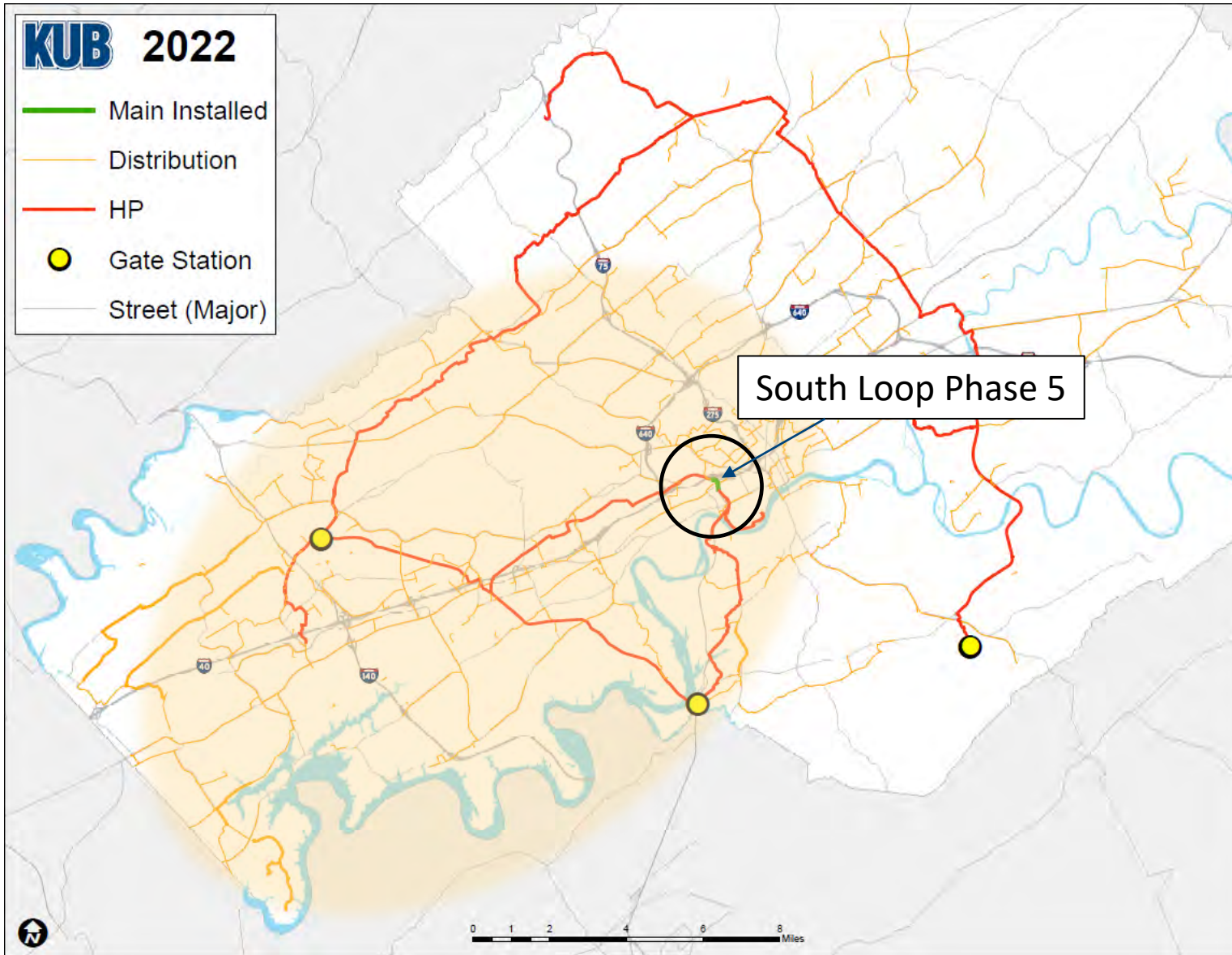
System Changes - 2015

- Extension of higher pressure pipe to University of Tennessee, Knoxville
- Increased capacity at Toppide Road Gate Station
- Expansion allows UTK to eliminate use of coal
- Impacts 45,000 customers



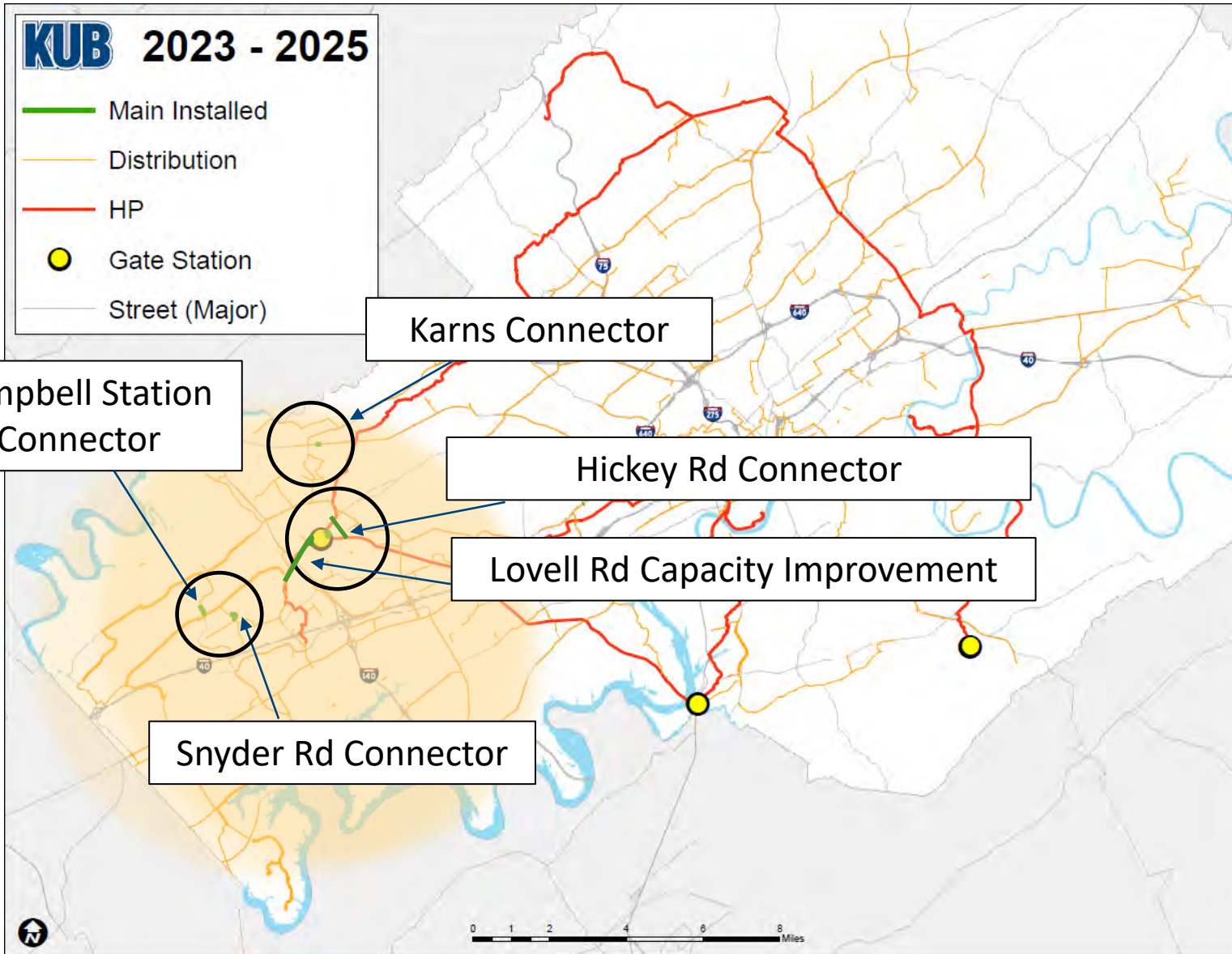
System Changes - 2020

- Connectors tie the system together
 - Yarnell and Hardin Valley (2018)
 - Maryville Pike and Everett (2019)
- Increased resiliency to ensure reliability
- Expansion into Raccoon Valley offers additional industrial growth
- Impacts 20,000 customers



System Changes - 2022

- Connectors tie the system together
 - South Loop Ph 5 (March 2022)
- Increased capacity by 10X
- Increased resiliency to ensure reliability
- Impacts 70,000 customers

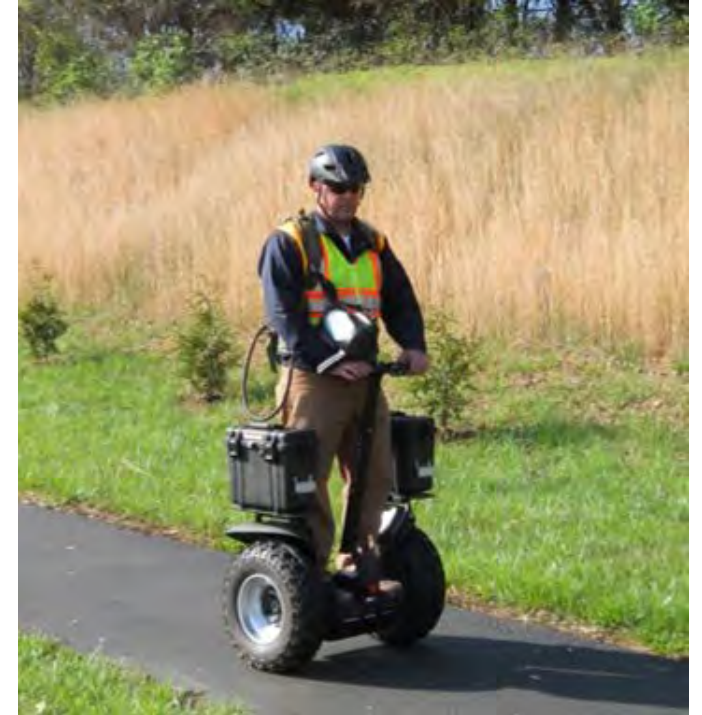


Future System Changes – 2023-2025

- Lovell Rd. Capacity Improvement and Road Project (\$10.5M)
- Hickey Rd. Connector (\$250k)
- Karns Connector (\$500K)
- Campbell Station Connector (\$500k)
- Snyder Rd. Connector (\$500K)
- Impacts 45,000 customers

KUB's Natural Gas System Is Modern, Tight

- Distribution system make-up
 - Plastic: 92%
 - Steel: 8%
- Aggressive, proactive safety surveys (\$600K)
- Effective maintenance programs (\$700K)
- Systematic replacement programs (\$9M)
- Strategic connector installation (\$11M)
- Highly qualified staff



Natural Gas Offers Economic and Environmental Benefits

- Residential
 - Preferred in new construction
 - Rolling out EasyConnect program
- Industrial
 - Cleaner alternative fuel to diesel and heating oil
 - Heating
 - Processing
 - Vehicle fueling



KUB Is an Industry Leader

- Environmentally focused

- Founding Partner
EPA Methane Challenge
- Lowering GHG emissions



- Safety-focused

- 2021 APGA Gold SOAR Award
- 0 Violations in last 10 years

- Forward thinking-focused

- Best in class replacement and maintenance programs
- Leader in industry committees, initiatives, and best practices

“KUB’s commitment to being best-in-class is evident by their recognition as a Gold SOAR winner, participation and leadership on industry boards and committees. KUB is frequently asked to share their policies and practices by other Operators.”

- Dave Schryver, APGA President

“Appreciation is expressed to KUB staff for their preparation, participation, and cooperation during this inspection. Their passion for their duties and commitment to safety at KUB was displayed in their efforts to make this inspection process as smooth as possible.”

- Regina Brown, TPUC

KUB



April 21, 2022

Long-Range Financial Plan, FY 23 Budget, and Funding Recommendations



Long-Range Financial Plan Update

- Ten-year capital investment program \$2.3B
- Proposed FY23 budget of \$1.1B
- Inflation impacts plans
- Interest rate projections adjusted for future bond issues
- Proposed rate increases in Water and Wastewater support funding for Water Plant Resiliency and Century II
- ARPA grant funding from City/County for water filter project
- Stadium-related utility infrastructure costs and revenues
- Fiber begins adding customers

Proposed Rate Increases

Long-Range Plans – Actual/Proposed Rate Increases *

	FY21	FY22	FY23	FY24	FY25
Electric	-	3%	3%	3%	-
Natural Gas	-	-	-	-	-
Water	5%	5% ⇒ 2%	5%	5%	5%
Wastewater	3%	3%	4%	4%	4%

Average Residential Monthly Bill Impacts

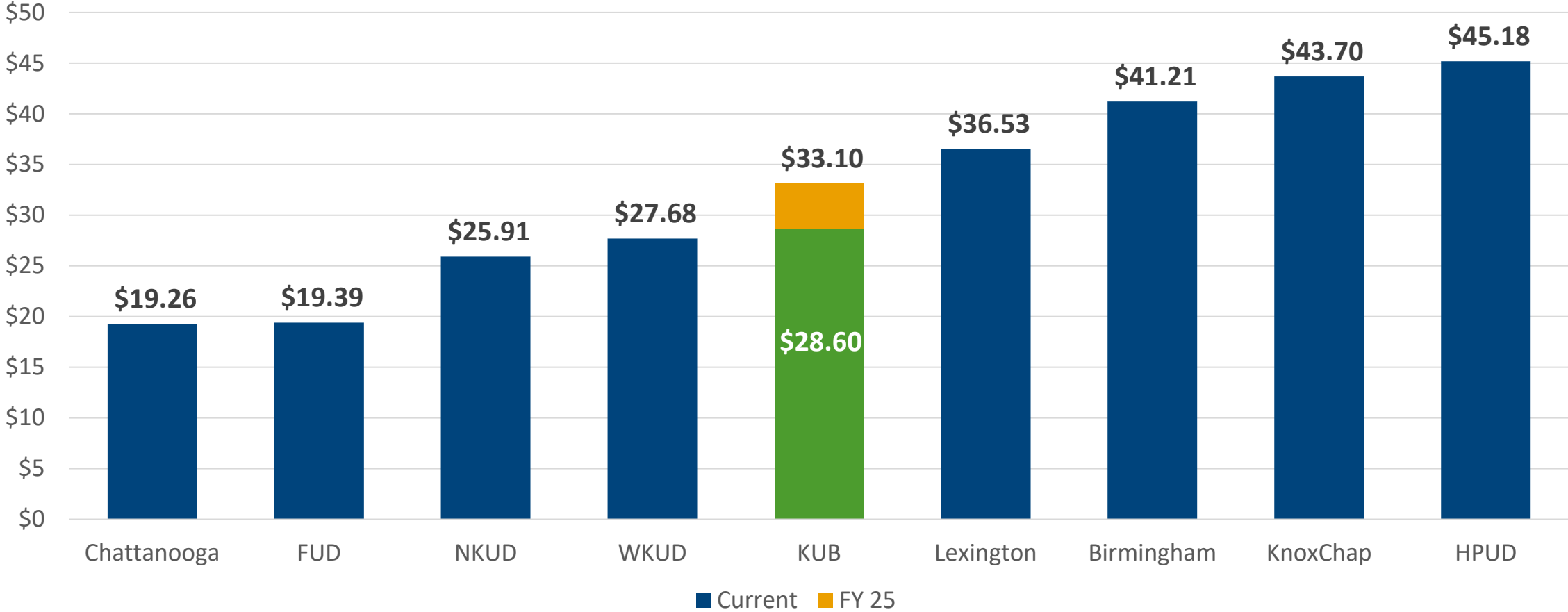
	FY21	FY22	FY23	FY24	FY25
Electric	-	\$3.60	\$3.60	\$3.60	-
Natural Gas	-	-	-	-	-
Water	-	\$0.65	\$1.40	\$1.50	\$1.60
Wastewater	-	-	\$2.60	\$2.70	\$2.75

- Electric rate increases already approved by KUB Board
- Proposing three years of water and wastewater rate increases
- Water rate increases lowered 1% per year from prior long-range plan
- Three-year increase for average water customer is \$4.50
- Three-year increase for average wastewater customer is \$8.05
- Initial rate increases reflected on August 2022 bills

* Residential increases applied only to commodity costs

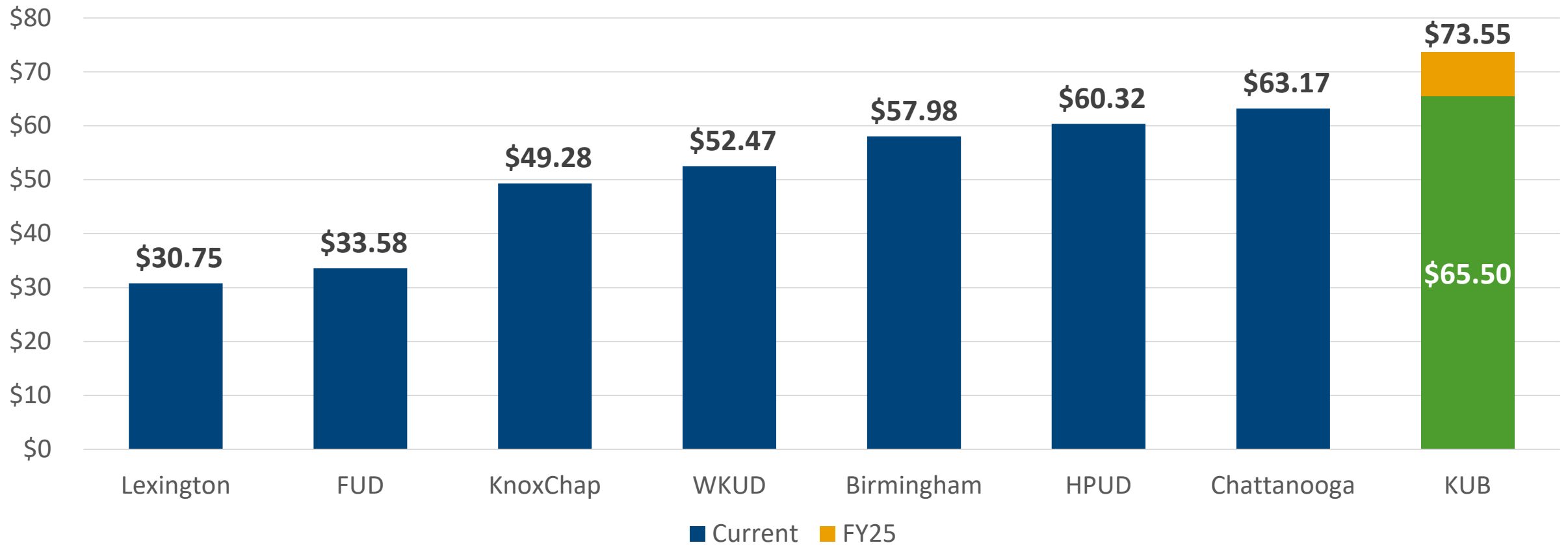
Water Residential Bill Comparison

Water Residential Monthly Bills (\$) with Rate Increases



Wastewater Residential Bill Comparison

Wastewater Residential Monthly Bills (\$) with Rate Increases



Electric Long-Range Plan Summary

Year	Capital	Bonds	Total Bonds Outstanding	Debt Ratio	Debt Coverage	Rate Increase
2023	\$155M	\$79M	\$372M	42%	3.66	3%
2024	\$141M	\$70M	\$424M	44%	3.71	3%
2025	\$148M	\$52M	\$456M	44%	3.93	---
2026	\$143M	\$49M	\$486M	43%	3.94	---
2027	\$139M	\$47M	\$512M	43%	3.77	---
2028	\$142M	\$42M	\$532M	43%	3.61	---
2029	\$98M	---	\$512M	41%	3.85	---
2030	\$83M	---	\$491M	40%	3.62	---
2031	\$89M	---	\$474M	39%	3.98	---
2032	\$90M	\$4M	\$461M	38%	3.95	---
Total FY23-32	\$1,228M	\$343M				

Natural Gas Long-Range Plan Summary

Year	Capital	Bonds	Total Bonds Outstanding	Debt Ratio	Debt Coverage	Rate Increase
2023	\$30M	---	\$78M	21%	3.81	---
2024	\$27M	---	\$71M	19%	3.93	---
2025	\$24M	---	\$65M	18%	4.18	---
2026	\$23M	---	\$58M	16%	4.42	2%
2027	\$29M	---	\$52M	14%	4.90	2%
2028	\$26M	---	\$45M	12%	5.57	2%
2029	\$28M	---	\$39M	10%	6.03	1%
2030	\$30M	---	\$33M	8%	6.47	1%
2031	\$32M	---	\$28M	7%	7.45	1%
2032	\$33M	---	\$23M	6%	8.34	1%
Total FY23-32	\$282M	---				

Water Long-Range Plan Summary

Year	Capital	Bonds	Total Bonds Outstanding	Debt Ratio	Debt Coverage	Rate Increase
2021	\$45M	\$17M	\$217M	50%	2.17	5% ➡ 0%
2022	\$27M	---	\$192M	46%	2.19	5% ➡ 2%
2023	\$47M	\$11M	\$195M	45%	2.32	6% ➡ 5%
2024	\$50M	\$18M	\$205M	44%	2.24	6% ➡ 5%
2025	\$36M	\$18M	\$215M	44%	2.25	6% ➡ 5%
2026	\$36M	\$16M	\$222M	44%	2.32	6%
2027	\$39M	\$17M	\$229M	43%	2.43	6%
2028	\$28M	---	\$219M	41%	2.63	6%
2029	\$32M	\$5M	\$214M	39%	2.78	6%
2030	\$35M	---	\$203M	36%	2.99	6%
2031	\$44M	\$8M	\$200M	34%	3.14	6%
2032	\$41M	---	\$188M	31%	3.36	6%
Total FY23-32	\$388M	\$93M				

Wastewater Long-Range Plan Summary

Year	Capital	Bonds	Total Bonds Outstanding	Debt Ratio	Debt Coverage	Rate Increase
2021	\$59M	\$30M	\$477M	57%	1.87	3% ➡ 0%
2022	\$47M	\$12M	\$474M	56%	1.75	3% ➡ 0%
2023	\$45M	\$13M	\$472M	55%	1.82	4%
2024	\$30M	\$6M	\$463M	53%	1.84	4%
2025	\$29M	---	\$448M	51%	2.03	4%
2026	\$36M	---	\$433M	49%	2.04	2%
2027	\$39M	\$8M	\$426M	48%	2.02	2%
2028	\$44M	\$13M	\$422M	47%	1.99	2%
2029	\$46M	\$17M	\$421M	46%	1.95	1%
2030	\$39M	\$11M	\$414M	45%	1.92	1%
2031	\$44M	\$17M	\$412M	44%	1.84	1%
2032	\$43M	\$19M	\$410M	43%	1.76	1%
Total FY23-32	\$395M	\$104M				

Fiber Long-Range Plan Summary

Year	Capital	Loan from Electric	Total Loan Outstanding
2023	\$1M	\$20M	\$30M
2024	\$2M	\$5M	\$33M
2025	\$5M	---	\$32M
2026	\$10M	---	\$30M
2027	\$6M	---	\$28M
2028	\$2M	---	\$20M
2029	\$2M	---	\$5M
2030	\$2M	---	---
2031	\$3M	---	---
2032	\$3M	---	---
Total FY23-32	\$36M	\$25M	---

Proposed FY23 Budget: \$1.1B

	Electric	Gas	Water	Wastewater	Fiber	Total
Energy Cost	\$425.4	\$ 68.0	\$ ---	\$ ---	\$ ---	\$ 493.4
O&M	\$ 73.0	\$ 24.1	\$ 32.3	\$ 40.1	\$18.5	\$ 188.0
Capital	\$154.6	\$ 29.7	\$ 47.1	\$ 45.3	\$ 1.3	\$ 278.0
Debt Service	\$ 30.1	\$ 10.0	\$ 14.6	\$ 33.8	\$ 1.3	\$ 89.8
Taxes and Equivalents	\$ 21.7	\$ 8.6	\$ 5.0	\$ 6.5	\$ 0.3	\$ 42.1
Loan to Fiber	\$ 20.0					\$ 20.0
\$ in Millions	\$724.8	\$140.4	\$ 99.0	\$125.7	\$21.4	\$1,111.3

Proposed FY23 Budget Reflects Fiber Rollout

	FY 23	FY 22	Increase	
	Proposed	Amended Budget	(Decrease)	
Energy Cost	\$493.4	\$463.6	\$29.8	Higher wholesale energy costs
O&M	\$188.0	\$174.4	\$13.6	Fiber-related labor
Capital	\$278.0	\$206.3	\$71.7	Fiber infrastructure; MBW filter project
Debt Service	\$89.8	\$84.0	\$5.8	Additional Electric debt
Taxes and Equivalentents	\$42.1	\$41.7	\$0.4	Increased plant values
Loan to Fiber	\$20.0	\$10.0	\$10.0	Supports Fiber rollout
	\$1,111.3	\$980.0	\$131.3	

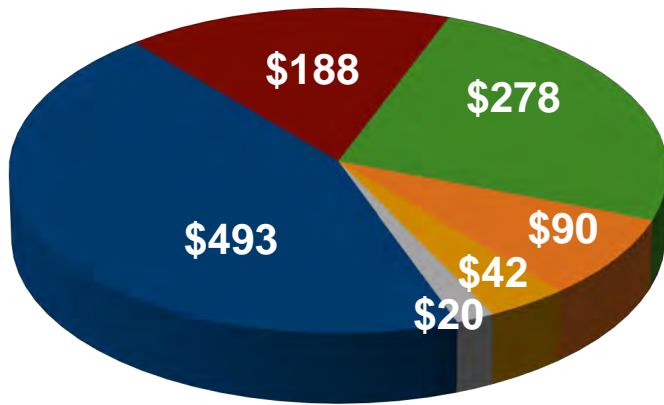
\$ in Millions

FY 23 Key Programs and Projects

Program/Project	FY 23 Appropriations
Fiber Network and Services	\$79.2M
MBW Water Filter Project	\$28.6M
Western Avenue Electric Substation	\$15.2M
Stadium-Related Utility Infrastructure	\$13.2M
Vegetation Management	\$12.9M
Customer Assistance Programs	\$ 8.6M
TDOT – Lovell Rd. High Pressure Gas	\$ 7.2M
Jones Street WW Pump Station	\$ 6.5M

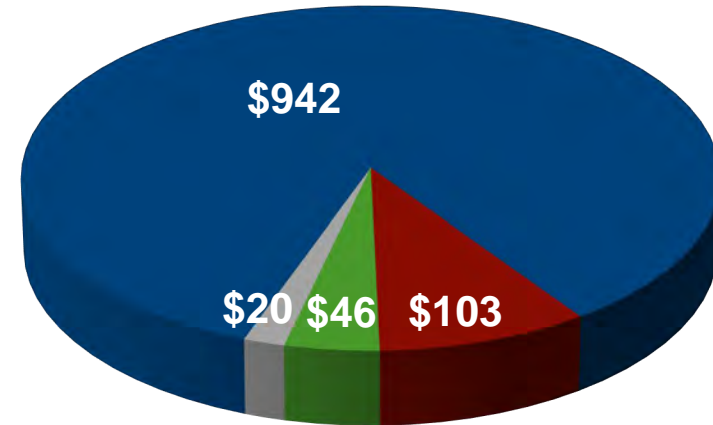
Funding FY 23 Budget

Budget = \$1.111B



- Wholesale Energy = 44%
- O&M = 17%
- Capital = 25%
- Debt Service = 8%
- Taxes and Equivalentents = 4%
- I/D Loan to Fiber = 2%

Funding = \$1.111B



- System Revenues = 85%
- Bonds = 9%
- Cash on Hand = 4%
- I/D Loan = 2%

May 2022 Board Meeting: Official Action

- FY 22 additional budget appropriations
- FY 23 budget appropriations
- FY 23 commitment appropriations
- New Bonds
 - \$79M Electric bonds
 - \$11M Water bonds
 - \$13M Wastewater bonds
- Rate increases – first readings
 - 5% Water
 - 4% Wastewater

KUB