COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF KENTUCKY-	**)**	
AMERICAN WATER COMPANY FOR AN	**)**	
ADJUSTMENT OF RATES, A CERTIFICATE	**)**	
OF PUBLIC CONVENIENCE AND NECESSITY	**)**	**CASE NO. 2023-00191**
FOR INSTALLATION OF ADVANCED METERING	**)**	
INFRASTRUCTURE, APPROVAL OF CERTAIN	**)**	
REGULATORY AND ACCOUNTING	**)**	
TREATMENTS, AND TARIFF REVISIONS	**)**	

APPLICATION, STATEMENT, AND NOTICE

Kentucky-American Water Company ("Kentucky American Water" or "Company"), pursuant to KRS Chapter 278 and the applicable sections of 807 KAR Chapter 5, hereby applies to the Kentucky Public Service Commission ("Commission") for authority to adjust its water rates, a Certification of Public Convenience and Necessity ("CPCN") for the deployment of Advanced Metering Infrastructure ("AMI"), proposed modifications to the Qualified Infrastructure Program ("QIP"), approval of certain regulatory and accounting treatments, and proposed tariff revisions. In support of its Application, Kentucky American Water states the following:

1. Kentucky American Water is a corporation organized and existing under the laws of the Commonwealth of Kentucky with its principal office and place of business at 2300 Richmond Road, Lexington, Kentucky 40502. Kentucky American Water can be contacted by e-mail via the e-mail addresses of its counsel set forth below. Kentucky American Water was incorporated on February 27, 1882 and is currently in good standing in the Commonwealth of Kentucky.

2. Kentucky American Water is a wholly-owned subsidiary of American Water Works Company, Inc. ("American Water") and is engaged in the distribution and sale of water in its Central Division, consisting of Bourbon, Clark, Fayette, Harrison, Jessamine, Nicholas, Scott, and Woodford Counties; its Northern Division, consisting of Gallatin, Owen, Grant, and Franklin Counties; and the Southern Division, consisting of Rockcastle and Jackson Counties. It currently owns, operates, and maintains potable water production, treatment, storage, transmission, and distribution systems for the purpose of furnishing potable water for residential, commercial, industrial, and governmental users in its service territory.

Adjustment of Water Rates

3. To continue to provide safe and reliable service, Kentucky American Water has continued to invest substantial capital to maintain and upgrade its facilities since its last rate case (Case No. 2018-00358).

4. Pursuant to KRS 278.180, KRS 278.190 and 807 KAR 5:001, Section 16(1)(b)(1), Kentucky American Water is requesting an increase in rates because its existing rates for water service do not afford Kentucky American Water the opportunity to recover its reasonable operating costs or to earn a just and reasonable rate of return on the investments made since the rates approved in the Company's last rate case. Kentucky American Water must be granted a rate increase at this time in order to maintain its facilities and provide service commensurate with its customers' reasonable expectations and the Public Service Commission's requirements, as well as attract capital at reasonable rates.

5. As authorized by KRS 278.192(1) and for the purpose of justifying the reasonableness of the proposed increase in rates, Kentucky American Water has utilized a forward-looking test period corresponding to the first twelve (12) consecutive calendar months the

proposed rates will be in effect after the six-month suspension of the proposed rates. The forward-looking test period is the twelve months ending January 31, 2025 (February 1, 2024 – January 31, 2025).

6. Kentucky American Water has used, in the attached exhibits, a base period consisting of the twelve (12) months ending September 30, 2023 (October 1, 2022 – September 30, 2023). This base period begins not more than nine (9) months prior to the date of the filing of this Application, and is a period consisting of not less than six (6) months of actual historical data and not more than six (6) months of estimated data, all as authorized by KRS 278.192(2)(a).

7. Within forty-five (45) days after the last day of the base period, Kentucky American Water will file the actual results for the estimated months of the base period as required by KRS 278.192(2)(b).

8. Kentucky American Water's annual reports, including the annual reports for 2022, are on file with the Public Service Commission as required by 807 KAR 5:006, Section 4.

9. In accordance with KRS 278.180, Kentucky American Water hereby gives notice to the Public Service Commission of the adjustment of its rates from those set forth in Exhibit 1 in the filing requirements to those rates set forth in Exhibit 2 in the filing requirements in order to eliminate a revenue deficiency of $26.1 million on an annual basis. This will result in a 22.7% increase in water service revenues, net of QIP revenues. A comparison of the current and proposed rates is set forth in attached Exhibit 3. Exhibits 1, 2 and 3 are also provided in accordance with 807 KAR 5:001, Section 16(1)(b)(3)-(4).

10. In Case No. 2007-00143, the Public Service Commission approved the implementation of single-tariff pricing for Kentucky American Water. Accordingly, the proposed rates for each customer class are and will be uniform throughout each customer class without

regard to the Kentucky American Water division. The estimated amount of increase per customer class in both dollars and as a percentage is: residential, $14,130,047, 22.8%; commercial, $6,986,508, 23.4%; industrial, $683,834, other public authority, $1,760,344, 23.6%; sales for resale, $267,017, 20.8%; private fire service and hydrants, $851,837, 24.1%; public fire hydrants, $1,159,966, 23.6%; and miscellaneous (bulk sales of water through loading stations), $23,616, 22.2%.

11. The effect upon the average bill for each customer class that the proposed rate change will apply is in the following dollar and percentage amounts: residential increase of $8.96, 22%; commercial increase of $50.26, 23%; industrial increase of $2,025.27, 23%; other public authority increase of $183.98, 22%; sales for resale increase of $1,437.41, 23%; private fire hydrant increase of $19.64, 23%; private fire line increase of $20.14, 23%; public fire hydrant increase of $12.15, 23%; and miscellaneous increase of $18.67, 22%.

12. Kentucky American Water is a Kentucky corporation and a certified copy of its Amended and Restated Articles of Incorporation is attached as Exhibit 4.

13. Kentucky American Water is a corporation in good standing with the Secretary of State of the Commonwealth of Kentucky. A certificate to that effect, dated within sixty (60) days of June 30, 2023, is attached as Exhibit 5.

14. The legal name of the applicant is Kentucky-American Water Company. It does business under an assumed name and has filed a Certificate of Assumed Name as required by KRS 365.015. A certified copy of the Certificate of Assumed Name as required by 807 KAR 5:001, Section 16(1)(b)(2) is attached as Exhibit 6.

15. Kentucky American Water has complied with 807 KAR Section 5:001, Section 17(1)(a)-(b)(2) by: (1) posting at its place of business a copy of the Customer Notice no later than

the date this Application is submitted to the Commission; and (2) within five (5) business days of the date this Application is submitted to the Commission, posting on its website a copy of the public notice and a hyperlink to the location on the Commission's website where the case documents are available. In accordance with 807 KAR 5:001, Section 17(2)(b)(3), Kentucky American Water published customer notice once a week for three (3) consecutive weeks in newspapers of general circulation in its service area with the first publication made no later than the date of this Application. A copy of the Customer Notice is attached as Exhibit 7.

16. Pursuant to 807 KAR Section 16(2), Kentucky American Water has filed with the Executive Director of the Public Service Commission a written notice of its intention to file this rate application. The notice stated that the application would be supported by a fully forecasted test period and was delivered to the Executive Director's office on May 31, 2023. On the same day, a copy was provided to the Office of Rate Intervention of the Attorney General's office of the Commonwealth of Kentucky as required by 807 KAR 5:001, Section 16(2)(c). A copy of the notice is attached as Exhibit 8.

17. In support of its application for a general adjustment of rates supported by a fully forecasted test year, Kentucky American Water has presented its financial data for the forecasted period in the form of pro forma adjustments to the base period. Kentucky American Water has limited the forecasted adjustments to the twelve (12) calendar months immediately following the suspension period, and has based capitalization and net investment rate base on a thirteen (13) month average for the forecasted period, all as set forth in 807 KAR 5:001, Section 16(6)(a)(b) and (c) and as shown in Exhibits 37B, 37D and 37J.

18. In further support of its application for a general adjustment of rates supported by a fully forecasted test year, Kentucky American Water attaches the following documents or explains their absence:

Filing Requirements	Abbreviated Document Description	Location or Absence Reason
807 KAR 5:001 Section 16(6)(f)	Rate base/capital reconciliation	Exhibit 9
807 KAR 5:001 Section 16(7)(a)	Testimony of Witnesses, including chief officer in charge of Kentucky operations - Pat Baryenbruch - Ann Bulkley - Krista Citron - Nicholas Furia - Larry Kennedy - William Lewis - Robert Mustich - Kathryn Nash - Jeffrey Newcomb - Thomas O'Drain - Shelly Porter - Chuck Rea - Melissa Schwarzell - Wesley Sellinger - Harold Walker - John Watkins	Exhibit 10
807 KAR 5:001 Section 16(7)(b)	Capital construction budget with a 3-year forecast	Exhibit 11
807 KAR 5:001 Section 16(7)(c)	Description of forecast factors	Exhibit 12
807 KAR 5:001 Section 16(7)(d)	Annual and monthly budget for 12 months preceding the filing date, the base period and the forecasted period	Exhibit 13

807 KAR 5:001 Section 16(7)(e)	Kathryn Nash's statement of attestation	Exhibit 14
807 KAR 5:001 Section 16(7)(f)	Information about major construction projects	Exhibit 15
807 KAR 5:001 Section 16(7)(g)	Information about other construction projects	Exhibit 16
807 KAR 5:001 Section 16(7)(h)1	Financial forecast for the capital construction forecasted years - operating income statement	Exhibit 17
807 KAR 5:001 Section 16(7)(h)2	Financial forecast for the capital construction forecasted years - balance sheet	Exhibit 18
807 KAR 5:001 Section 16(7)(h)3	Financial forecast for the capital construction forecasted years - cash flow statement	Exhibit 19
807 KAR 5:001 Section 16(7)(h)4	Financial forecast for the capital construction forecasted years - revenue requirement	Exhibit 20
807 KAR 5:001 Section 16(7)(h)5	Financial forecast - energy and demand load forecast	Inapplicable to a water company
807 KAR 5:001 Section 16(7)(h)6	Financial forecast - access line forecast	Inapplicable to a water company
807 KAR 5:001 Section 16(7)(h)7	Financial forecast - generation mix	Inapplicable to a water company
807 KAR 5:001 Section 16(7)(h)8	Financial forecast - gas supply mix	Inapplicable to a water company
807 KAR 5:001 Section 16(7)(h)9	Financial forecast for the capital construction forecasted years - employee level	Exhibit 21

807 KAR 5:001 Section 16(7)(h)10	Financial forecast for the capital construction forecasted years - labor cost changes	Exhibit 22
807 KAR 5:001 Section 16(7)(h)11	Financial forecast for the capital construction forecasted years - capital structure requirements	Exhibit 23
807 KAR 5:001 Section 16(7)(h)12	Financial forecast for the capital construction forecasted years - rate base	Exhibit 24
807 KAR 5:001 Section 16(7)(h)13	Financial forecast for the capital construction forecasted years - water sales (gallons)	Exhibit 25
807 KAR 5:001 Section 16(7)(h)14	Financial forecast for the capital construction forecasted years - customer forecast	Exhibit 26
807 KAR 5:001 Section 16(7)(h)15	Financial forecast - gas sales forecast	Inapplicable to a water company
807 KAR 5:001 Section 16(7)(h)16	Financial forecast - toll and access forecast	Inapplicable to a water company
807 KAR 5:001 Section 16(7)(i)	FERC or FCC audit reports	Inapplicable to a water company
807 KAR 5:001 Section 16(7)(j)	Most recent stock or bond prospectus	Exhibit 27
807 KAR 5:001 Section 16(7)(k)	FERC Form 1, FERC Form 2, or PSC Form T	Inapplicable to a water company
807 KAR 5:001 Section 16(7)(l)	Annual reports to shareholders, most recent available two years	Exhibit 28
807 KAR 5:001 Section 16(7)(m)	Current chart of accounts	Exhibit 29
807 KAR 5:001 Section 16(7)(n)	Latest 12 monthly managerial reports	Exhibit 30
807 KAR 5:001 Section 16(7)(o)	Monthly budget variance reports for 12 months pre-base period, for base period, and subsequent months as available	Exhibit 31

807 KAR 5:001 Section 16(7)(p)	SEC 10-Ks, 8-Ks and 10-Qs as available	Exhibit 28
807 KAR 5:001 Section 16(7)(q)	Independent auditor's annual opinion report and any written findings of material weaknesses in internal controls	Exhibit 32 There is no finding of material weaknesses.
807 KAR 5:001 Section 16(7)(r)	Quarterly reports to shareholders for most recent five (5) quarters as available	Exhibit 28
807 KAR 5:001 Section 16(7)(s)	Summary of last depreciation study	Exhibit 33
807 KAR 5:001 Section 16(7)(t)	List of software, programs and models used	Exhibit 34
807 KAR 5:001 Section 16(7)(u)	Affiliate, general or home office allocations	Exhibit 35
807 KAR 5:001 Section 16(7)(v)	Cost of service study	Exhibit 36
807 KAR 5:001 Section 16(7)(w)	Cost of service study for local exchange carriers	Inapplicable to a water company
807 KAR 5:001 Section 16(8)(a)	Jurisdictional financial summary for the base and forecasted period	Exhibit 37, Schedule A
807 KAR 5:001 Section 16(8)(b)	Jurisdictional rate base summary for the base and forecasted period	Exhibit 37, Schedule B
807 KAR 5:001 Section 16(8)(c)	Jurisdictional operating income summary for base and forecasted period	Exhibit 37, Schedule C
807 KAR 5:001 Section 16(8)(d)	Jurisdictional adjustment to operating income	Exhibit 37, Schedule D
807 KAR 5:001 Section 16(8)(e)	Jurisdictional federal and state income tax summary for base and forecasted period	Exhibit 37, Schedule E
807 KAR 5:001 Section 16(8)(f)	Organization membership dues, initiation fees, country club expenditures, charitable contributions, marketing expenses, sales expenses, advertising expenses, professional service expenses, civic and political activity expenses, employee parties and outings expenses, employee gift expenses, and rate case expenses for the base and forecasted periods	Exhibit 37, Schedule F

807 KAR 5:001 Section 16(8)(g)	Payroll costs analysis	Exhibit 37, Schedule G
807 KAR 5:001 Section 16(8)(h)	Computation of gross revenue conversation factor	Exhibit 37, Schedule H
807 KAR 5:001 Section 16(8)(i)	Comparative income statements, revenue statistics and sales statistics for five most recent calendar years, the base period, forecasted period and two calendar years beyond the forecast period	Exhibit 37, Schedule I
807 KAR 5:001 Section 16(8)(j)	Cost of capital summary for base period and forecasted period	Exhibit 37, Schedule J
807 KAR 5:001 Section 16(8)(k)	Comparative financial data and earning measures for the ten most recent calendar years, base period and forecasted period	Exhibit 37, Schedule K
807 KAR 5:001 Section 16(8)(l)	Narrative description and explanation of all proposed tariff changes	Exhibit 37, Schedule L
807 KAR 5:001 Section 16(8)(m)	Revenue summary for base period and forecasted period with detailed billing analysis for all customer classes	Exhibit 37, Schedule M
807 KAR 5:001 Section 16(8)(n)	Typical bill comparison under present and proposed rates for all customer classes	Exhibit 37, Schedule N

19. This Application, Statement, and Notice is filed under the provisions of KRS 278.180 and 278.190, and the Public Service Commission is requested to find the proposed rates to be fair, just and reasonable under KRS 278.030(1).

CPCN for AMI Deployment

20. Pursuant to KRS 278.020(1) and 807 KAR 5:001, Section 15(2), Kentucky American Water requests a CPCN to deploy AMI infrastructure throughout its service territory. As support for this request, Kentucky American Water is providing as Exhibit A its AMI

deployment plan. Kentucky American Water is also proposing a tariff provision to allow customers to opt out of an AMI meter for a $28 monthly fee.

21. To comply with statutory and regulatory requirements, Kentucky American Water further states as follows:

22. Facts Relied Upon to Show that the Project is Required by Public Convenience or Necessity. 807 KAR 5:001, Section 15(2)(a). See Exhibit A. Implementing AMI will benefit customers and improve operational efficiency. As further explained in the Direct Testimony of Melissa Schwarzell, the cost-benefit analysis supports the deployment of AMI.

23. Copies of Required Permits. 807 KAR 5:001, Section 15(2)(b). Kentucky American Water is not aware of any permits or franchises it must seek for the AMI meter deployment.

24. A Full Description of the Proposed Route, Manner of Construction, and Impacted Utilities. 807 KAR 5:001, Section 15(2)(c). See Exhibit A, Appendix A, Figures 14-18 for maps depicting the proposed locations and deployment timeframes. The deployment will not compete with the facilities of any other utility.

25. Three Copies of Maps of Suitable Scale Showing the Location of the Project. 807 KAR 5:001, Section 15(2)(d)(1). See Exhibit A, Appendix A, Figures 14-18 for maps depicting the proposed locations and deployment timeframes.

26. Plans and Specifications and Drawings of the Project. 807 KAR 5:001, Section 15(2)(d)(2). See Exhibit A, Appendix B for specifications of the selected AMI technology Kentucky American Water proposes deploying.

27. The Manner in Which KAW Plans to Finance the Project. 807 KAR 5:001, Section 15(2)(e). Kentucky American Water will fund the AMI project in the ordinary course of business,

using the same mix of debt and equity it uses to fund the remainder of its capital investment program.

28. Estimated Annual Cost of Operation. 807 KAR 5:001, Section 15(2)(f). In year 10, after nearly one full replacement cycle, the cost for AMI is forecasted to be $3,873,858. In year 20, the cost for AMI is forecasted to be $5,590,216. The costs net of benefits for AMI, for the same years respectively, are $2,408,761 and $3,073,234. Once meter reading benefits fully begin in year 11, the AMI cost net of benefits becomes and stays a least cost solution.

29. Plans, Specifications, Plats, and Reports Sealed by a Professional Engineer. KRS 322.340. The technical specifications for the proposed deployment are attached in Exhibit A and are stamped and sealed as required.

Modification to QIP

30. A concern that must be addressed by many water service providers, including Kentucky American Water, is its aging infrastructure and the need to replace and/or upgrade its facilities in order to fulfill its obligations of providing safe, adequate, and reliable water service. Through the Commission-approved QIP, Kentucky American Water has been able to address that concern. However, as explained in Krista Citron's Direct Testimony, more needs to be done. Therefore, Kentucky American Water proposes to increase the miles of pipe replaced annually from the current 10-13 miles to 27-34 miles.

31. Kentucky American Water also proposes the following changes and clarifications to QIP that are discussed further in Jeffrey Newcomb's Direct Testimony:

(a) Qualified Investments: The Company is proposing updates to what should be considered qualified investments.

(b) QIP Test Periods and Annual QIP filings: The QIP surcharge will continue to be established on a prospective basis through an annual QIP filing ("Annual Filing"), but the Company proposes that the first post-case QIP test period ("QIP Period") be the full eleven months following the forecasted test year in this case, which would be February 2025 to December 2025.

(c) Calculation of the QIP Rider: The Company proposes that, going forward, the return on net-QIP eligible plant in-service, at the overall rate of return on capital authorized in the Company's latest base water rate case, be grossed up by applying the gross revenue conversion factor authorized in the Company's latest base water rate case.

(d) QIP Percentage: The Company proposes changes to the method of calculating the QIP percentage.

(e) Balancing Adjustment Filings and Timing: The Company proposes that the Balancing Adjustment Filings be made contemporaneously with the Annual Filing going forward for each completed QIP Period.

Deferral Accounting

32. Kentucky American Water also requests approval to establish regulatory assets or liabilities for (1) production expenses, (2) pension and OPEB expenses, and (3) taxes other than income (excluding sales tax) and income taxes. This deferral accounting will ensure that Kentucky American Water may collect, or will return to customers, through future base rates any amounts that are above or below the amounts embedded in the revenue requirement in this proceeding.

33. In his testimony, Mr. Jeffrey Newcomb describes why deferral accounting is appropriate for these three categories.

Alternative Level of Unaccounted For Water Loss

34. Pursuant to 807 KAR 5:066, Section 6(3), Kentucky American Water requests an alternative level of reasonable unaccounted-for water loss of 20% be established by the Commission for rate-making purposes.

35. Mr. Andy Lewis describes in his testimony why an unaccounted-for water loss rate of 20% is more reasonable than the 15% proscribed in 807 KAR 5:066, Section 6(3).

Universal Affordability Tariff

36. Kentucky American Water proposes a Universal Affordability Tariff designed so that participating customers have an opportunity to receive basic water service at a level of approximately 2% of annual household income or less.

37. Mr. Chuck Rea discusses the Universal Affordability Tariff in his testimony and explains why the rate is justified from the perspective of cost of service and cost causation.

Tariff Revisions

38. Kentucky American Water also seeks approval of various proposed tariff revisions set forth in the proposed tariff at Exhibit 2.

WHEREFORE, Kentucky-American Water Company respectfully requests the Kentucky Public Service Commission enter an order:

1. Approving the proposed rates for water service;

2. Granting a CPCN for the deployment and implementation of AMI;

3. Approving the proposed modifications to the QIP;

4. Approving the establishment of regulatory assets and liabilities for (1) production expenses, (2) pension and OPEB expenses, and (3) taxes other than income (excluding sales tax) and income taxes;

5. Establishing an alternative level of unaccounted for water loss;

6. Approving the proposed Universal Affordability Tariff;

7. Approving the proposed tariff revisions set forth in the proposed tariff at Exhibit 2; and

8. Granting all other relief to which Kentucky American Water may be entitled.

Lindsey W. Ingram III
L.Ingram@skofirm.com
Monica H. Braun
Monica.braun@skofirm.com
Mary Ellen Wimberly
MaryEllen.Wimberly@skofirm.com
STOLL KEENON OGDEN PLLC
300 West Vine Street, Suite 2100
Lexington, Kentucky 40507-1801
Telephone: (859) 231-3000
Fax: (859) 259-3503

BY: 

Attorneys for Kentucky-American Water Company

CERTIFICATE

In accordance with the Commission's Order of July 22, 2021 in Case No. 2020-00085 (Electronic Emergency Docket Related to the Novel Coronavirus COVID-19), this is to certify that the electronic filing has been transmitted to the Commission on June 30, 2023; and that there are currently no parties in this proceeding that the Commission has excused from participation by electronic means.

BY: 

Attorneys for Kentucky-American Water Company

CONFIDENTIAL INFORMATION REDACTED

EXHIBIT A

KENTUCKY AMERICAN WATER

ADVANCED METERING INFRASTRUCTURE DEPLOYMENT PLAN

KENTUCKY-AMERICAN WATER COMPANY

ADVANCED METERING INFRASTRUCTURE DEPLOYMENT PLAN

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Summary of Plan

Kentucky-American Water Company ("KAWC" or the "Company") plans to deploy cellular Advanced Metering Infrastructure ("AMI") technology over the course of the next decade, as it completes normal, scheduled, periodic replacement of its existing Automated Meter Reading ("AMR") equipment throughout its service territory. Unlike some other proposed AMI deployments in the state, KAWC is not planning to accelerate the replacement of its entire meter reading system regardless of its age or condition. Rather, KAWC will transition to an updated technology for meter reading equipment as it completes meter and endpoint replacements in the normal course of business.

The Company's transition to AMI will provide both operational benefits and efficiencies and provide enhanced customer service to customers. The transition to an AMI program will enable strategic and permanent improvements in safety, customer experience, operational efficiencies, and environmental benefits. The Company looks forward to leveraging AMI to empower customers with timely consumption data to enable smart water use choices, enhance customer communication regarding customer water consumption patterns and unusually high-water use, and improve water system operations and management. Implementation of AMI will allow KAWC to realign its business processes and redeploy personnel previously focused on meter reading to other work, as discussed below. To best take advantages of these benefits and efficiencies, it is important that the Company begin deploying AMI as soon as possible, given the portion of the Company's metering infrastructure that is scheduled for normal periodic replacement between 2024 and 2026.

Overview of AMI Technology

AMI is not a single technology or piece of equipment, but rather an integration of many technologies that will provide KAWC an intelligent connection with its customers. AMI technology creates a network between customer meters and a utility's information system, with data capable of flowing bi-directionally, facilitating automated meter readings and the capture of interval consumption data.

As depicted below, a key difference between an AMI system and an AMR system is in the frequency that customer meters are read. AMI technology automates meter readings, so readings can occur multiple times per day rather than once a month. Because of the frequency of readings, AMI provides customers and customer service representatives the ability to view water consumption data within 48 hours of use and enables more timely detection of leaks and meter malfunctions.

Components of an AMI System

There are three primary components to an AMI system – meters, communication modules, and collectors and head end systems. A brief description of each component is provided below:

- Meters

AMI uses water meters that include technologies integrated into the meter register. How a specific meter functions to measure the amount of water going through the meter can vary depending on the metering application and the preferred technology of the utility. However, independent of the type of measurement technology used, the meters measure and record volume through electronic means and are capable of communicating daily or hourly data. Meters used for AMI may also include technologies that provide backwards flow indicators, tamper alerts and no flow alerts, but as technologies change more alerts will likely be available in the future. Meters used for AMI cannot only communicate outward but can also execute command signals sent to the meter from the utility back office systems. This can be useful when upgrading meter firmware versions or executing functions the meter can execute such as an on-demand meter read.

- Communication Modules/Endpoints

Communication modules or "Endpoints" go by several industry terms, but most are specific to a vendor's technology and marketing literature. Essentially, endpoints are two-way radios that are physically attached to the meter and which send and receive data from the head end system. The two most dominant technologies used across vendor platforms are a fixed-network based system and a cellular-network based system (described below).

- Collectors and Head End Systems

In an AMI fixed-network system, data is transmitted from the meter's endpoint to a network data collector ("collector"), which is typically mounted on an elevated structure. A single collector can collect data from upwards of 10,000 meters, with each meter reporting one read every 15 minutes, but the number of collectors required to support an AMI fixed-network system can be impacted by the size and topography of the utility's service territory.

Typically, the number of collectors needed is determined by conducting a propagation study performed by the vendor of the AMI equipment. This propagation study takes into account signal strength and the acceptable range of endpoints reporting to any collector. Topography and permanent structures can all have a negative effect on signal strength. A cloud-based "Head End System" can aggregate vast amounts of reads from multiple collectors deployed regionally.

In an AMI cellular system, collectors are not required, and data travels from the endpoints directly to the head end system. In this case, the network is operated by cellular network providers like AT&T or Verizon. A utility's meter data management system then aggregates meter reads from the head end system/vendor platforms and will normalize and act as the key interface between meter reading and a utility's business transactional systems, such as billing.

As noted above, there are two types of AMI systems:

- **Fixed-Network System** – With fixed-network systems, meter reading is accomplished by endpoints installed on each meter. The endpoints collect real-time water use readings from the meter and transmit them via radio signals to collectors that are owned by the utility. The collectors are physically installed throughout the service area. The collectors relay the collected data to a central location, where the data is organized within a vendor's head end system, then transferred to the utility. Fixed-network systems require the utility to purchase, build and maintain the infrastructure to support the data collection process.

- **Cellular-Network Systems** – With cellular-network systems, cellular endpoints are installed on each meter to transmit the meter data via an existing cellular infrastructure to a central location, where the data is organized within a vendor's head-end system, then transferred to the utility. Cellular networks do not require the use of collectors, so unlike a fixed-network system, no new infrastructure needs to be purchased, built or maintained by the utility to support the data collection process in the field.

Cellular AMI as the Preferred AMI Technology

The key differentiator of a cellular-network system is the ability to leverage an existing communications network that regularly evolves its technology without increased capital costs.

Cellular networks are regularly updated to keep up with the latest technologies and provide greater coverage, reliability and security than fixed-network systems. A fixed-network system requires that a utility maintain and periodically update the system, leading to increased and ongoing capital costs. A cellular-network system also provides the following advantages over a fixed-network system

- gaps in coverage are addressed by the cellular provider;
- ability to leverage robust security programs and cellular connectivity;
- access to the same disaster recovery systems used by emergency services;
- limited ongoing maintenance related to security reviews, hardware refreshers and changes in technology; and
- protections from liabilities related to the physical structure, such as damage caused by storms, security patches, and equipment failures.

Benefits of AMI Technology

The principal objectives for considering transitioning to an AMI system include improving the effectiveness of KAWC's operations and customer service, meeting customers' expectations, as well as increased water conservation. A critical pathway to changing customers' water use behaviors is informing customers about their water in a way that empowers them to make changes.

Improved Operations and Customer Service

The implementation of an AMI system can achieve great benefits for the customer and utility operations.

Key Operational and Customer Service Benefits of AMI include, but are not limited to:

- ✓ Safety Improvement: Having employees in the field reading meters creates an exposure to potential injuries and accidents due to potentially unsafe environments, inclement weather, and exposure to vehicular traffic, animals, and the like. Being able to read meters remotely through AMI reduces this potential risk, both for injuries to our employees and injuries and damage to third parties.

- ✓ Customer Service: The implementation of AMI will enhance the Company's existing efforts to increase billing accuracy and reduce the likelihood of estimated bills (e.g., due to weather events, or temporary obstructions of endpoint signals) by automatically providing timely, frequent, accurate reads through the network. In addition, manual re-reads will be reduced through access to real time meter data. In addition, an AMI enabled account will assist customers with identifying leaks in a more timely manner, which can save customers significant money. AMI technology would also improve the customer experience by identifying issues early, allowing customers to address potential issues on their end in a timely manner, likely reducing the number of high bill complaints and leak adjustments as a result, and generally avoiding customer frustration associated with such challenges.

- ✓ Operational Efficiency: AMI data can be used to uncover irregularities that may signal a leak, meter issues or tampering or water theft. By doing so, the Company can more timely address those issues to further improve its meter reading and bill accuracy, as well as leak detection and non-revenue water reduction efforts. In addition, as AMI technology is deployed, KAWC anticipates reductions in service orders associated with estimated bills and move-in/move-outs that will free up some of the work currently

performed by field service representatives. Further, as AMI is deployed, the need to do drive by periodic meter reading will decline and be nearly eliminated altogether upon full deployment, ultimately allowing for the redeployment of meter reading resources to higher value work as well.

Increased Water Conservation

For customers, understanding the scale of individual water use activities can be difficult, especially when provided with only monthly billing statements. This limited insight creates barriers for customers trying to identify inefficiencies or excessive use in their behavior. By providing customers with more granular water usage data (daily, hourly, etc.), customers are empowered to understand and make changes in their habits and behaviors.

Customers' Expectations

Today, people live in a world dominated by speed and access to information. For example, if you want to check your checking account balance and transfer funds to your savings account, you can do so immediately using an App on your phone or by logging into your bank account via the internet. If you want to pay your utility bill, again, you can quickly do so by logging into your account or calling the utility directly to make payment. Quick access to information is now an expectation, and information related to water service should not be an exception. The AMI technologies described above will enable KAWC to provide its customers with timely access to their water usage.

Redeployment of Resources

While some of the above benefits present opportunities for labor-related efficiencies, these efficiencies are not necessarily anticipated to result in a workforce reduction. Rather, AMI presents an opportunity for KAWC to have affected labor resources refocus their efforts on other high value work, such as achieving meter reading and other service order targets in the near term, accommodating the demands of a growing customer base in the long term, and on a continual basis, seeking operational and customer service improvements.

KAWC's Current Metering Infrastructure

KAWC has almost 142,000 meters and endpoints in service as of May 2023. As shown in Figure 1 below, the vast majority of these are smaller than 2". Additionally, more than 99% of these are "outside" set meters.

Figure 1

Meter Size	Population	% of Total
5/8"	133,218	94.0%
1"	5,343	3.8%
1.5"	239	0.2%
2"	2,726	1.9%
3"	30	0.0%
4"	96	0.1%
6"	49	0.0%
8"	23	0.0%
Total	141,724	100.0%
2" and smaller	141,526	99.9%

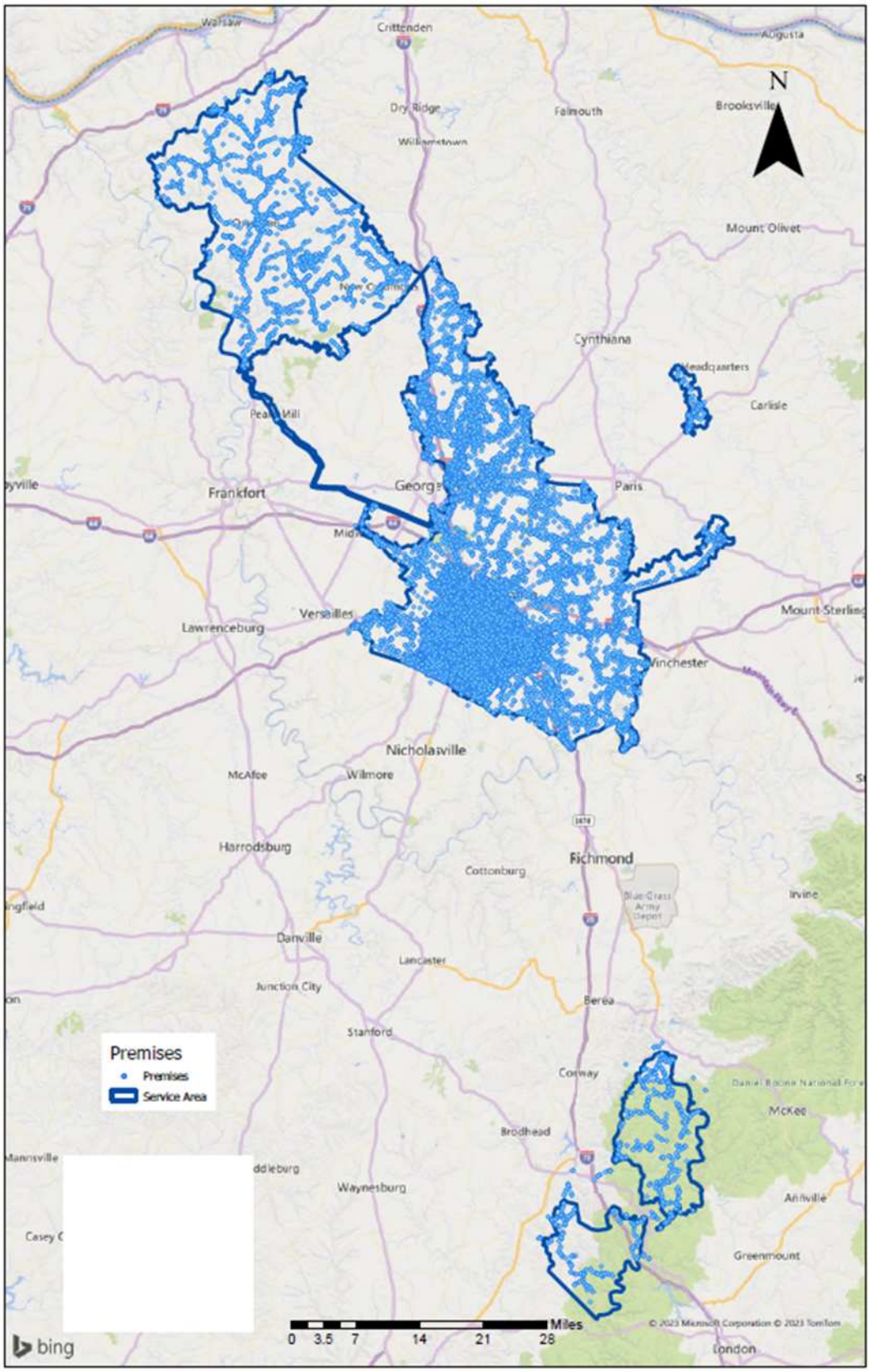
Almost all of KAWC's meters are equipped with AMR endpoints. AMR endpoints enable automated meter reading when the Company's personnel bring a data receiver within proximity of the endpoint, typically by driving by with a receiver-equipped vehicle. The exception is approximately 248 meters which are equipped with [redacted] cellular AMI endpoints. These endpoints were installed to provide enhanced customer service capabilities to major accounts.

Prior to 2017, the AMR endpoints were generally hardwired to the installed meters, making the meter and endpoint particularly difficult to separate and resplice successfully. Approximately 82,000 of the Company's 142,000 meters were installed prior to 2017, including almost all of the meters which would be scheduled for replacement in the near term. Additionally, a portion of the meters installed since 2017 were integrated units, where the AMR endpoint and meter are "all-in-one" and not at all separable.

The AMR endpoints generally have antennas that protrude through the Company's current cast iron meter pit lids. However, approximately 35,000 of KAWC's 5/8-inch meters are Hersey / Mueller brand meters with AMR endpoints that sit below the meter pit lids.

Figure 2 provide a visual depiction of meter installations across the Company's service territory.

Figure 2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Waynesburg
Greenmount
London
Falmouth
Dry Ridge
Crittenden
Brooksville
Augusta
Cottonburg
Lancaster
Conway
Broadhead
McAfee
Wilmore

KAWC's Scheduled Periodic Meter Replacement Program

Background and Upcoming Schedule

KAWC follows a periodic meter replacement program, as part of its normal course of business, in order to renew aging meters and endpoints. The schedule is in part informed by meter testing regulations found in 807 KAR 5:066 Section 16(1). Since late 2011, the schedule has also been informed by the deviation granted in Case No. 2009-00253, permitting the Company to keep its 5/8-inch meters in service for 15 years without testing for accuracy.[1] To respond to these regulations and operate efficiently, KAWC has varying practices for meter testing and replacement depending on the frequency of required testing, as well as the size and cost of the meters. These are shown in Figure 3 below.

Figure 3 – KAWC Practices for Scheduled Meter Testing and Replacement

Meter Size	2023 Price of Meter Material Alone (Confidential)[2]	Frequency of Required Testing	KAWC Operational Practice for Scheduled Testing and Replacement
3" and larger	[redacted][3]	1-2 years	KAWC tests and maintains the meters in the field, and conducts meter and endpoint replacements on a case-by-case basis.
1.5" – 2"	[redacted]	4 years	KAWC replaces the meters when testing is required, tests the removed product in the lab, and will reuse these meters and their endpoints if they pass testing and are in good working order.
1"	[redacted]	10 years	KAWC replaces the meters and their endpoints as they reach their testing limit.
5/8"	[redacted]	15 years per approved deviation	KAWC replaces the meters and their endpoints as they reach their testing limit.

In an effort to optimize efficiency, KAWC had been targeting replacement of 5/8-inch meters and their hardwired endpoints based on a 15-year maximum field life, at least since the deviation was granted in Case No. 2009-00253. However, KAWC has observed an increase in meter reading challenges and an increase in corresponding unscheduled meter and endpoint replacements, triggered by equipment that was no longer performing well. As part of the Company's efforts to address and prevent meter reading challenges, KAWC plans to move back to a 10-year target for 5/8-inch meter and endpoint replacement.

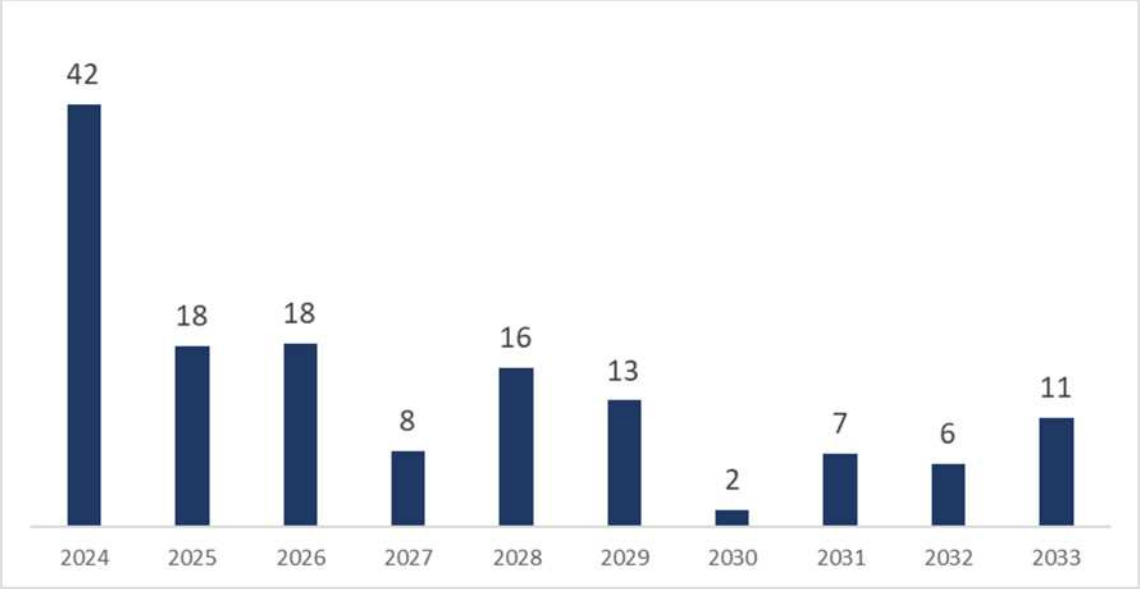
[1] *In the Matter of Kentucky-American Water Company's Request for Permission to Deviate from 807 KAR 5:066, Section 16(1)*, Case No. 2009-00253, Order October 5, 2011.
[2] Prices are estimates based on currently available data.
[3] Figures are approximate. Larger meters vary substantially in price depending on functionality and purpose.

For at least the meters installed prior to 2017 (meters more than 6 years old), as well as for any integrated all-in-one units, the endpoint generally can't be replaced on a different cycle than the meter, due to the hardwired or embedded nature of the endpoint. For newer products, the meter and endpoint are typically attached by a plug, allowing the meter and endpoint to be more easily separated. The Company has found it important to keep the brand of the meter and endpoint aligned, and most efficient to keep the replacement of both units on the same cycle. However, with some of the more modern meters, there is at least the practical possibility in the future of changing only the meter or the endpoint if it would be efficient to do so.

As of May 2023, KAWC assesses that more than 71,000 of its 5/8-inch meters are now at or past the 10-year mark. Due to the operational infeasibility of replacing all of these at once, KAWC has developed a plan to replace these meters, along with other meters coming due for replacement, over the next three years. The planned schedule would include replacing approximately 42,000 in 2024, 18,000 in 2025, and 18,000 in 2026. KAWC will target replacing the remaining 5/8-inch meter stock as the existing meters reach year 10. For meters other than 5/8-inch meters, KAWC will continue to test and replace in accordance with the schedule shown in Figure 3.

Figure 4, below, shows the quantity of 2" and smaller meters planned for periodic scheduled replacement over the next 10 years.[4]

Figure 4 - Upcoming Forecast for 2" and Smaller Meter Replacements, in 000s



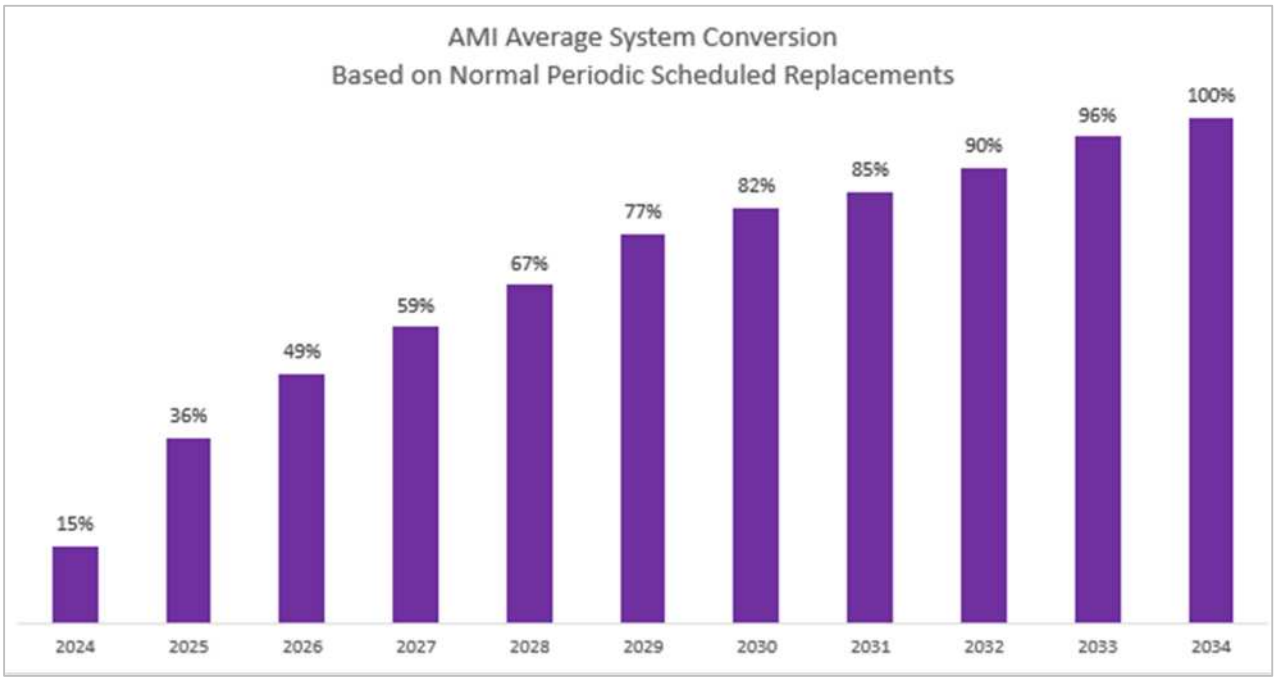
*Meters/endpoints replaced by thousand, per year over the next 10 years.

In addition to replacing meters and endpoints, other parts are also sometimes replaced at this time as needed. One upcoming example is meter pit lids. The 35,000 5/8-inch Mueller meters with hardwired endpoints do not have holes in the lids for antennas. If these meters were replaced with AMR technology, new lids would be required for the antennas. Likewise, regardless of current brand, if KAWC installs AMI endpoints as it completes meter replacements, new composite lids will be installed on all meters, to replace the current cast iron lids. Composite lids are transparent to radio and cellular signals, reduce battery usage, and optimize coverage.

[4] For purposes of a simplified presentation, 1.5-inch and 2-inch meters are shown as replaced at the 4-year mark. However, these meters and endpoints may in fact be reused if they are found to be in good working order, as noted in Figure 3.

The resulting pace of transition to AMI would look approximately as shown below in Figure 5:

Figure 5



Geographic Distribution

Because the Company's scheduled meter replacement program is based on length of service, and not location, the distribution of meter replacements over time is scattered geographically.

Some benefits of AMI will not be sensitive to this geographic distribution and will happen gradually throughout the 10-year meter replacement schedule as the number of AMI meters/endpoints increases. For example, each AMI meter installed will increase the number of customers who have access to timely usage data. Likewise, the Company will have increasing access to timely data to enhance customer service and increase work force efficiency as fewer resources are consumed for meter reading related field service work.

Some benefits however, will be sensitive to the geographic dispersion of meter replacements. KAWC expects that monthly meter reading benefits may not fully begin until the system is nearly completely converted to AMI, sometime between 2033 and 2034.

The appendix to this exhibit features maps to help visualize the geographic dispersion of the periodic meter replacement program. Figure 14, shown in Appendix A, represents meter replacements by year of completion. Note the distribution of colors across the geography. Likewise, Figures 15-18 (Appendix A) illustrate the anticipated transition to AMI technology under a scheduled meter replacement approach and show a snapshot of AMI saturation in 2023, 2026, 2029, and 2033.

Other Potential Replacements

In addition to scheduled periodic meter replacement, the Company also sometimes replaces meters and endpoints off-cycle, when metering equipment is no longer performing well, thus unexpectedly reaching the end

of its useful life. The Company would use the same AMI enabled equipment and technology for these replacements as it would for the scheduled periodic program.

Metering Technology Considered & Selected

Alternative Metering Technology Considered

As the Company considered the potential transition to AMI, KAWC evaluated a variety of metering technologies in terms of functionality and costs. These alternative technologies included continuing with AMR technology, deploying AMI cellular technology, and deploying a blend of AMI cellular and AMI Fixed-Network technology.

Alternative 1: Continuing with AMR Technology

As KAWC currently uses AMR technology, this alternative consists of replacing KAWC's existing AMR equipment with new AMR equipment. Under this alternative, KAWC would replace all existing meters and endpoints with new AMR meters and endpoints over the course of the next 10 years, and replace approximately 35,000 meter pit lids in 2024. As this alternative essentially maintains the status quo, customers would not gain the incremental benefits discussed above. Under this alternative, KAWC has identified two preferred vendors, [redacted] and [redacted], that provide the AMR components necessary to replace the existing AMR system with new AMR components.[5]

Alternative 2: Deploying AMI Cellular Technology

This alternative consists of replacing KAWC's existing AMR equipment with new AMI equipment. Under this alternative, KAWC would replace all existing meters and endpoints with new AMI meters, lids, and endpoints over the course of the next 10 years. KAWC identified two preferred vendors that provide both meters and AMI cellular components: [redacted] and [redacted].

Alternative 3: Deploying AMI-Hybrid Technology

This alternative consists of deploying cellular AMI, along with a near-term supplemental fixed-network. The solution would entail replacement of meters 2" and smaller, as they come due for testing, with [redacted] meters and cellular AMI endpoints. New composite meter pit lids would be installed for all affected meter pits. Some supplemental [redacted] fixed-network collectors would also be installed in the near-term on Company assets, to pick up reads from existing [redacted] AMR endpoints.

Alternative 4: Deploying AMI Fixed-Network Technology

This alternative consists of full deployment of AMI technology, but instead of utilizing cellular, meter reading is accomplished by meter endpoints transmitting radio signals to collectors that are permanently located strategically across the service area. The collectors relay the collected data to a central location, where it is organized within a vendor's head-end system. From there the data is transferred to the utility.

[5] The other vendors initially considered only offered end points. As functionality is best when the meter and endpoint is from the same vendor, KAWC determined to move forward with evaluating the functions and costs of the two vendors that could provide both meters and endpoints.

Upon consideration of the potential of ongoing and increasing capital costs associated with building out and maintaining a fixed-network, without any corresponding benefit beyond what AMI Cellular technology provides, KAWC rejected this alternative as a potential option for replacing its existing meter reading system.

KAWC prepared a cost benefit analysis for [redacted] cellular AMI, [redacted] cellular AMI, [redacted] AMR, [redacted] AMR, and [redacted] AMI-hybrid, which is discussed below in the Cost Benefit Analysis section.

Metering Technology Selected

KAWC has considered the differences between cellular and fixed-network AMI technology and determined that using cellular technology is the preferred approach. As explained above, an AMI cellular system avoids ongoing and increasing costs associated with installing, owning and maintaining the additional infrastructure required to operate an AMI fixed-network system. AMI cellular technology also provides the added benefits of being routinely updated to keep up with the latest technologies, provides greater coverage and security over fixed-network systems. AMI cellular technology also protects KAWC from liabilities related to damage to the physical structures caused by storms, security patches vulnerabilities, and/or equipment failures.

The [redacted] AMI cellular system also has functional advantages over [redacted], such as more options related to cellular carriers and can provide superior coverage in key areas. KAWC also has had a favorable experience with [redacted] cellular AMI, as it has approximately 248 endpoints in the system currently, deployed primarily to provide improved customer service to major accounts. [redacted] AMI cellular is also less costly then [redacted] AMI cellular. Based on both cost and functionality, KAWC selected the [redacted] AMI cellular system as the replacement for its existing AMR system.[6]

Cost Benefit Analysis ("CBA")

KAWC analyzed the costs and benefits of the various potential meter reading technologies and associated meter, endpoint, and lid replacements for a period of twenty years. The time period is adequate to observe two, ten-year cycles of meter replacement, and to realize the benefit of initial lid investments, which are expected to create value beyond the 10-year mark. A customer type view of the costs and benefits was compared for various potential technology solutions in both nominal dollars by year as well as in net present value.

Scenarios Modeled for Cost and Benefit

The potential investment scenarios modeled include the following:

1) **"[redacted] AMI"**- This scenarios considers replacement of meters 2" and smaller, as they come due for testing (but no more than once in a 10-year period). [redacted] cellular AMI endpoints would be installed, along with [redacted] ultrasonic meters for sizes 1.5" and above and [redacted] nutating disc mechanical dial meters for 5/8"-1" meters. New composite meter pit lids would be installed for all affected meter pits.
2) **"[redacted] AMI"** – This scenario considers replacement of meters 2" and smaller, as they come due for testing (but no more than once in a 10-year period). [redacted] cellular AMI endpoints would be installed,

[6] Specification sheets for the [redacted] AMI cellular equipment selected are attached as Appendix B.

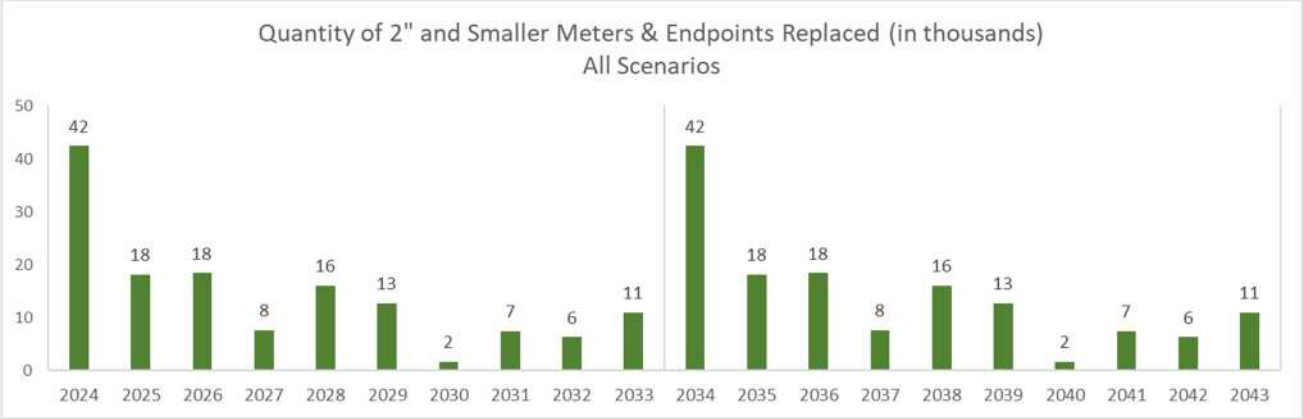
along with [redacted] ultrasonic meters for sizes 1.5" and above, and [redacted] nutating disc LCD meters for 5/8" – 1" meters. New composite meter pit lids would be installed for all affected meter pits.

3) **"[redacted] Hybrid AMI": cellular AMI with near-term supplemental fixed network** – This scenario is the same as option 2, but with the additional of some supplemental [redacted] fixed network collectors installed in the near-term on company assets, to pick up reads from existing [redacted] AMR endpoints.
4) **"[redacted] AMR" or "[redacted] Existing Tech"**[7]- This scenario considers replacement of meters 2" and smaller, as they come due for testing (but no more than once in a 10-year period). [redacted] AMR endpoints would be installed, along with [redacted] ultrasonic meters for sizes 1.5" and above and [redacted] nutating disc mechanical dial meters for 5/8"-1" meters. New composite meter pit lids would be installed in instances where Mueller / Hersey meters are being replaced (approximately 35k meters in 2024).
5) **"[redacted] AMR" or "[redacted] Existing Tech"** – This scenario considers replacement of meters 2" and smaller, as they come due for testing (but no more than once in a 10-year period). [redacted] AMR endpoints would be installed, along with [redacted] ultrasonic meters for sizes 1.5" and above, and [redacted] nutating disc LCD meters for 5/8" – 1" meters. New composite meter pit lids would be installed in instances where Mueller / Hersey meters are being replaced (approximately 35k meters in 2024).

Cost Drivers

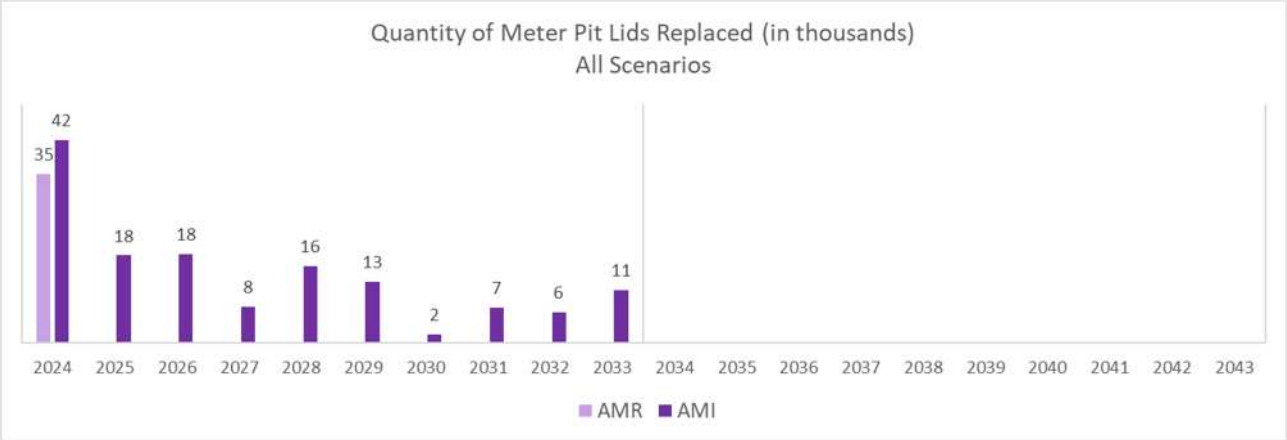
The quantities of meters and endpoints to be replaced, by year, is shown below in Figure 6 and the quantity of lids to be replaced is shown in Figure 7, by year and technology type. The quantities shown below for meters, endpoints and lids were used to prepare the cost / benefit scenarios.

Figure 6



[7] In the "Existing Tech" scenarios (scenarios 4 and 5), equipment was replaced with like. For 99% plus of the 2" and smaller meters, this means replacing AMR with AMR. For the 136, 2" and smaller meters with an existing AMI endpoints, however, the like replacement was AMI, and this immaterial nuance exists in the model.

Figure 7[8]



Starting 2024 prices for materials and installation are shown below. These were increased by 2.6% annually starting in 2025. This 2.6% annual increase is equal to the ten-year CAGR for the Bureau of Labor Statistics all-goods Consumer Price Index as of December 2022.[9]

Figure 8 – 2024 Material and Installation Prices (CONFIDENTIAL)

[redacted]

The capital expenditures associated with each scenario, based on these quantities and prices, were forecasted for the 20 year period in nominal dollars by year. The totals vary primarily due to different pricing for meters and endpoints, as well as the varying quantities of lids. In the case of [redacted] Hybrid AMI, there is also some initial investment in fixed network receivers.

For the purposes of comparing costs and benefits over time, revenue requirement type calculations were used to reflect the cost of the capital expenditures. The annual cost recognition for each program reflects depreciation,

[8] For the purposes of cost / benefit modeling, a conservative assumption is made that lids are replaced 1 to 1 with applicable meter replacements. In reality, many meter pits in Kentucky are dual set, meaning there are two meters in one pit. In these instances, only one lid would need to be purchased.
[9] The Series ID is CUUR0000SA0.

property taxes, pre-tax rate of return, and in the case of [redacted] Hybrid, the expense associated with the fixed network. Key capital-related cost assumptions are shown in Figure 9 below.

Figure 9

Common Assumptions for All Scenarios	
Annual inflation for meter materials[10]	2.6%
Depreciation Rate[11]	10%
Property Tax Rate	1.39% of net plant
Pre-Tax Rate of Return	Debt ratio, equity ratio and equity cost based on the forecasted values requested in this proceeding. Equity gross-up based on federal tax rate of 21% and state tax rate of 5%
Uncollectible expense and utility regulatory assessment fees	0.75%

Benefit drivers

The largest and most readily measurable financial benefits of AMI (new technology) relative to AMR (existing technology) were modeled to include:

- Field service representative ("FSR") labor and related benefits:
  - Reduced demand for approximately 27.5k field service orders, or approximately 12.7k annual hours of meter reading related work outside of the periodic read cycle, once AMI is fully installed.
  - Benefits modeled to increase over time with increasing concentration of AMI meters.
- Meter reading labor and related benefits:
  - Eventual eliminated need for periodic meter reading labor, once AMI is fully installed.
  - Benefits modeled to begin when the system is nearly fully converted to AMI after a full 10-year normal periodic replacement cycle.
- Vehicle benefits associated with labor benefits
  - Reduced demand for vehicles and associated fuel, fleet and rate base return, corresponding to reduced field service and meter reading labor demand.

Key quantity and price related assumptions related to meter reading, and field service labor are shown below in Figure 10.

Figure 10

Labor Related Price and Quantity Assumptions	AMI	AMR
Meter Reading		
Meter reading full time employees (current)	7	7
Meter reading full time employees (after full replacement cycle)	0	7
Meter reading hourly wage 2023	$28.65	$28.65

[10] 10-year CAGR for CPI all goods, as of December 2022.

[11] To avoid undue refinement, the capital investment was not broken out into the portion charged to Utility Plant in Service "UPIS" and the portion charged to Accumulated Cost of Removal "ACOR". Rather, all capital expenditure is recorded as UPIS and the depreciation reflects a 10-year life.

Labor Related Price and Quantity Assumptions	AMI	AMR
Quantity of benefit recognized	Begins when AMI saturation averages 95% of system (year 10)	
Field Service Work		
FSR orders completed 2022	79k	79k
Reduction in FSR order demand	(27.5k)	-
Field service work hourly wage 2023	$31.61	
Quantity of benefit recognized	% of benefit achieved aligns with average % of AMI saturation achieved	
Common Labor Assumptions for Meter Reading and Field Service Work		
Annual union wage increase assumption (3-year CAGR for average FSR and meter reader wage changes, 2020-2023)	2.5%	
Overhead/overtime rate (overtime, group insurance, retirement, and other benefits as a % of wages)	53% + 3% union APP	

Key vehicle-related benefit assumptions are shown in Figure 11 below. Vehicle-related benefits were calculated in line with labor benefits, with the assumption that one vehicle is needed for a full-time equivalent quantity of labor, using 2088 hours as a basis.

Figure 11

Vehicle Related Price and Quantity Assumptions	Amount for 2024
Annual mileage & mpg for vehicle	13,155 miles / 12.2 mpg
Fuel cost per gallon 2023 (remaining years as forecasted by Energy Information Administration)	$2.78 /gallon
Annual maintenance per light truck	$2,669
Average net book value per light truck (as of Mar. 2023)	$30,380
Current annual depreciation per vehicle	$3,320

The benefits are recognized over time, as AMI is deployed eventually throughout the system. The twenty-year nominal totals were forecasted based on the pace of AMI deployment.

Cost Net of Benefits

When annual capital related expenses are netted against annual operating expense benefits, AMI [redacted] is the least cost solution in the long term. For the first 10 years, when meter reading benefits are not yet accrued, Existing Technology for [redacted] has the most favorable annual figure. Once meter reading benefits fully begin in year 11, the [redacted] AMI cost net of benefits line becomes and stays a least cost solution for all the years that follow. Please see figure 12 below.

Figure 12 (CONFIDENTIAL)

The annual costs net of benefits can also be discounted to a net present value ("NPV") for the twenty-year period.[12] Please see Figure 13 below. Existing technology for [redacted] has the least cost NPV and AMI [redacted] has the second least cost. The gap between these is $3.1mm over 20 years, or approximately $150k / year in 2024 NPV. For context, this is just over 1/10 of a percent of the Company's annual February 2024 - January 2025 revenue requirement of $142mm, as shown in Exhibit 37A of the rate case.

Figure 13 (CONFIDENTIAL)

[12] A discount factor equal to Kentucky American's requested rate of return in this case, or 7.87% is used for the purpose of calculating net present value.

Summary of Findings

Based on all of the foregoing, the Company believes that deployment of AMI technology utilizing a cellular network is in the long-term best interest of customers. AMI provides significant benefits to customers through improved metering, operational efficiencies and enhanced customer service, among others. While many of these benefits may not be explicitly quantifiable, they still provide tangible benefits to customers. [redacted] AMI does so while delivering a solution that is among the least cost of the reasonable alternatives evaluated by KAWC.

Unlike other AMI deployments in the state, KAWC is not planning a discreet project to accelerate the replacement of its existing metering equipment. Rather, KAWC is merely planning to transition to an updated technology for meter reading equipment as it completes meter and endpoint replacements in the normal course of business. As such, it is clear that, whereby cellular AMI will be installed for normal, scheduled, periodic replacements or in instances of damaged or broken equipment, that there is a need for the investment and no wasteful duplication.

It is critical that the Company begin AMI implementation as soon as possible in order to maximize the benefits and cost effectiveness of AMI implementation, and KAWC plans to begin doing so upon approval of this Plan.

CPCN Filing Requirements

Below are a list of the CPCN specific filing requirements set forth in 807 KAR 5:001 Section 15 (2):

(a)	The facts relied upon to show that the proposed construction or extension is or will be required by public convenience or necessity.	See Exhibit A.
(b)	Copies of franchises or permits, if any, from the proper public authority for the proposed construction or extension, if not previously filed with the commission.	Not applicable. No new franchises or permits are required for the deployment of cellular AMI technology.
(c)	A full description of the proposed location, route, or routes of the proposed construction or extension, including a description of the manner in which same will be constructed, and the names of all public utilities, corporations, or persons with whom the proposed construction or extension is likely to compete.	KAWC plans to install AMI at all premises in KAWC's service territory. See Exhibit A, Appendix A, Figure 15 through Figure 18, for maps depicting the proposed locations and deployment timeframes.
(d)(1)	Three (3) copies (one (1) in portable document format on electronic storage medium and two (2) in paper medium) of maps to suitable scale showing the location or route of the proposed construction or extension, as well as the location to scale of like facilities owned by others located anywhere within the map area with adequate identification as to the ownership of the other facilities.	See Exhibit A, Appendix A, Figure 15 through Figure 18, for maps depicting the proposed locations and deployment timeframes.

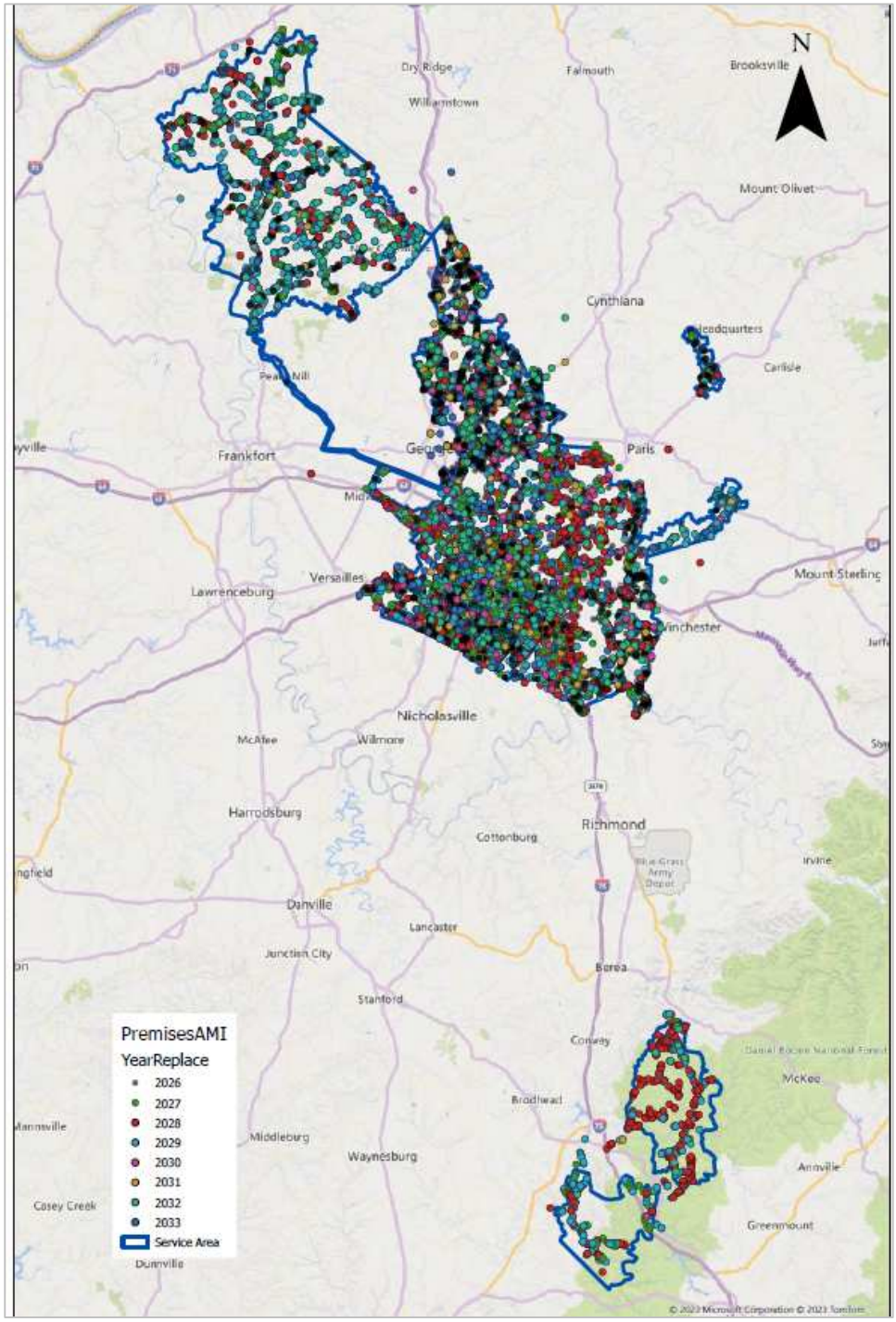
(d)(1)	Plans and specifications and drawings of the proposed plant, equipment, and facilities.	See Appendix B for the selected metering option's equipment specification sheets.
(e)	The manner in detail in which the applicant proposes to finance the proposed construction or extension.	This construction will be funded in the ordinary course of business, using the same mix of debt and equity as utilized to fund the remainder of its capital investment program.
(f)	An estimated annual cost of operation after the proposed facilities are placed into service.	In year 10, after nearly 1 full replacement cycle, the cost for selected metering option is forecasted to be $3,873,858. In year 20, the cost for the selected metering option is forecasted to be $5,590,216. The costs net of benefits for the selected metering option, for the same years respectively, are $2,408,761 and $3,073,234.
	Engineering plans, specifications, drawings, plats and reports for the proposed construction or extension prepared by a registered engineer, must be signed, sealed, and dated by an engineer registered in Kentucky.	See Cover Page of Exhibit A containing the sign and seal of an engineer registered in Kentucky

Conclusion

KAWC's implementation of cellular AMI technology over the course of the next decade is in the long-term best interests of customers. The investments will be made as part of the normal periodic meter equipment replacement cycle, when meters and endpoints would normally be replaced anyway; thus, there will be no wasteful duplication. Further, replacing equipment with AMI as this replacement cycle goes forward will enable significant enhancements in customer service, employee safety, and operational efficiency. A variety of alternatives for meter reading technology were considered, with costs and benefits measured across brands and solutions. [redacted] cellular AMI is the proposed solution due to both its customer service advantages as well as its favorable proposition for costs net of benefits.

Appendix A

Figure 14 – Meter Replacements by Year of Completion[13]



[13] Dots shown as 2026 refer to all meters replaced between 2024 and 2026.

Figure 15 – May 2023 (248 premises)

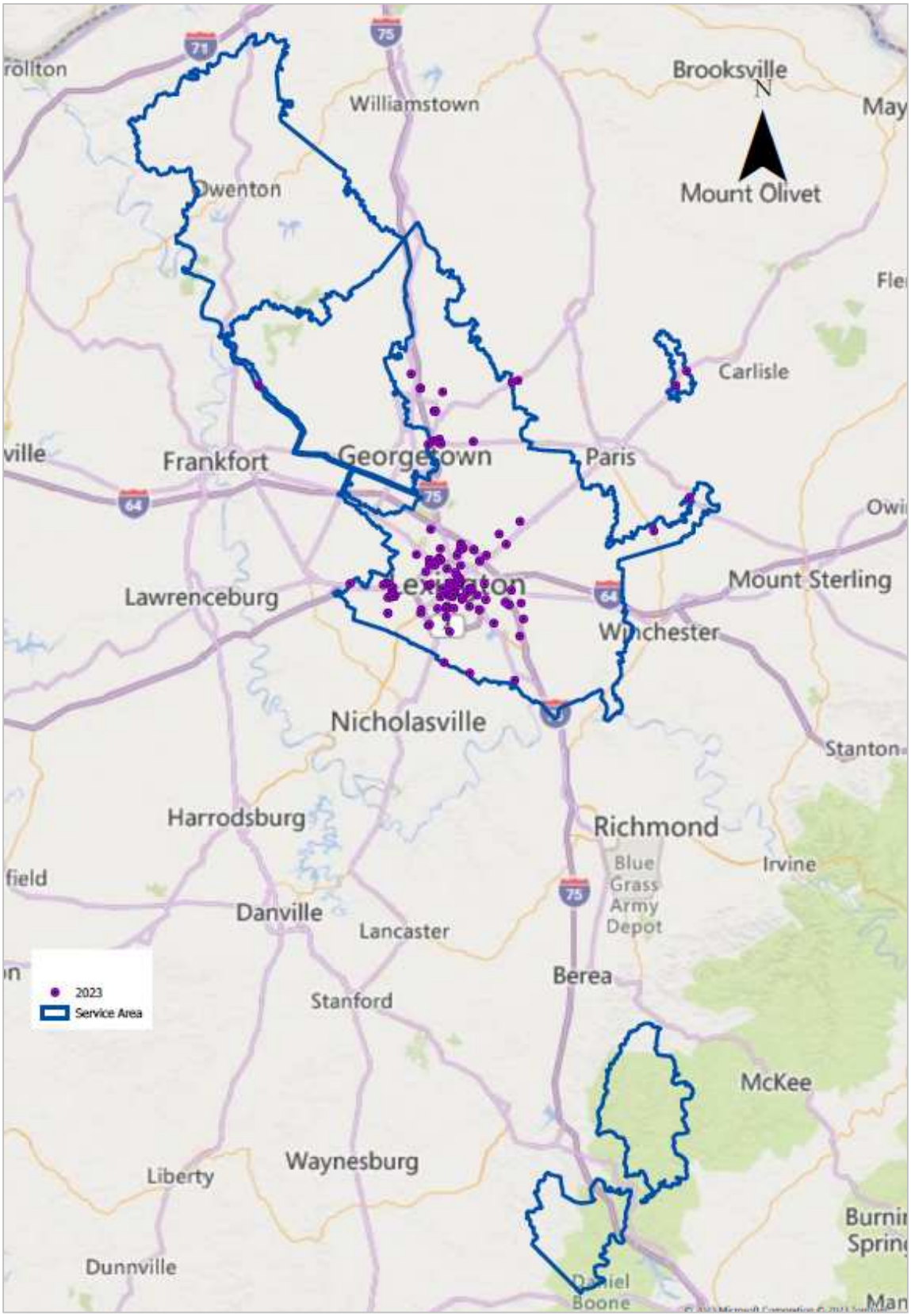


Figure 16 – End of 2026 (~81k premises)

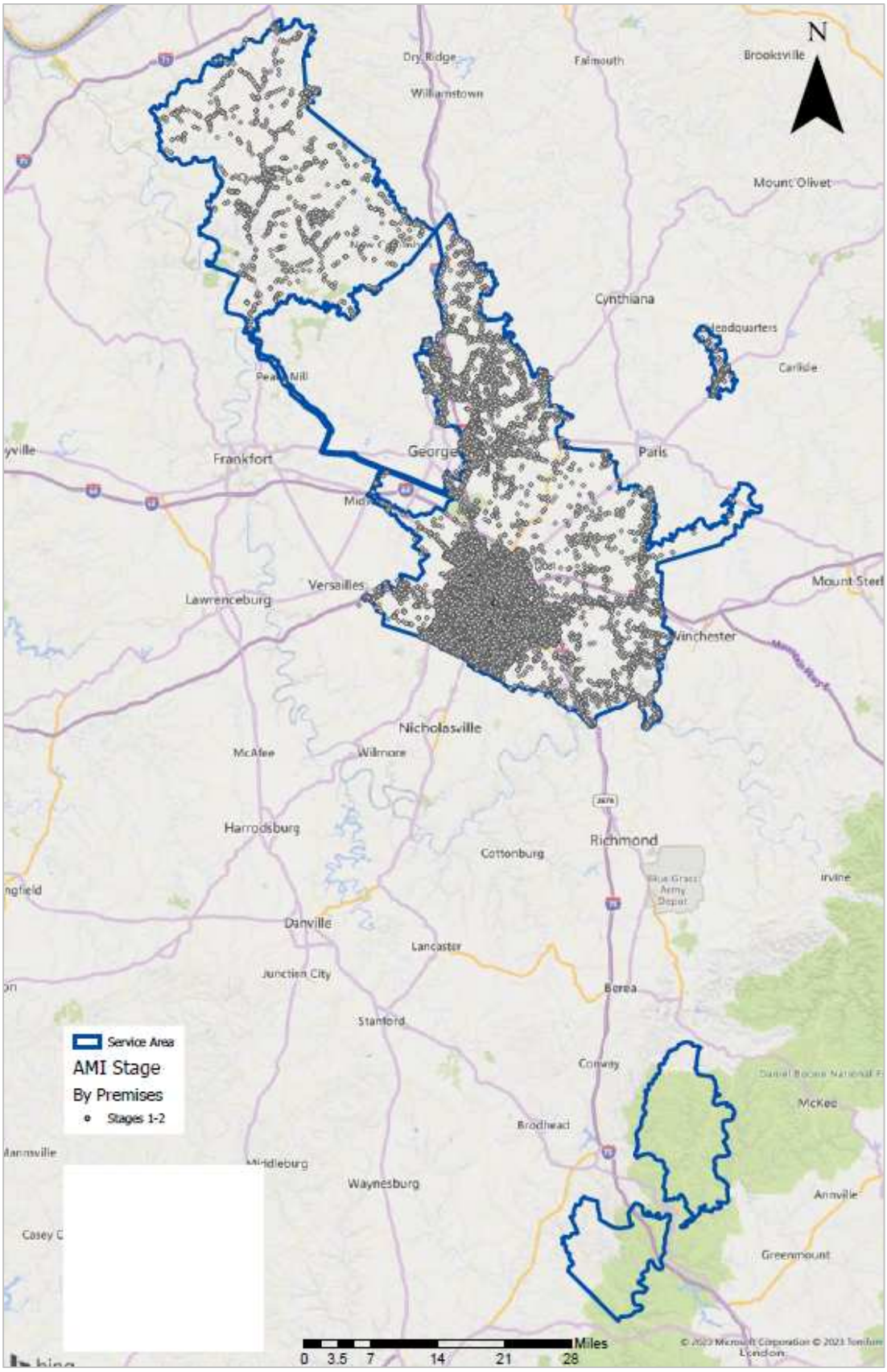


Figure 17 – End of 2029 (~117k premises)

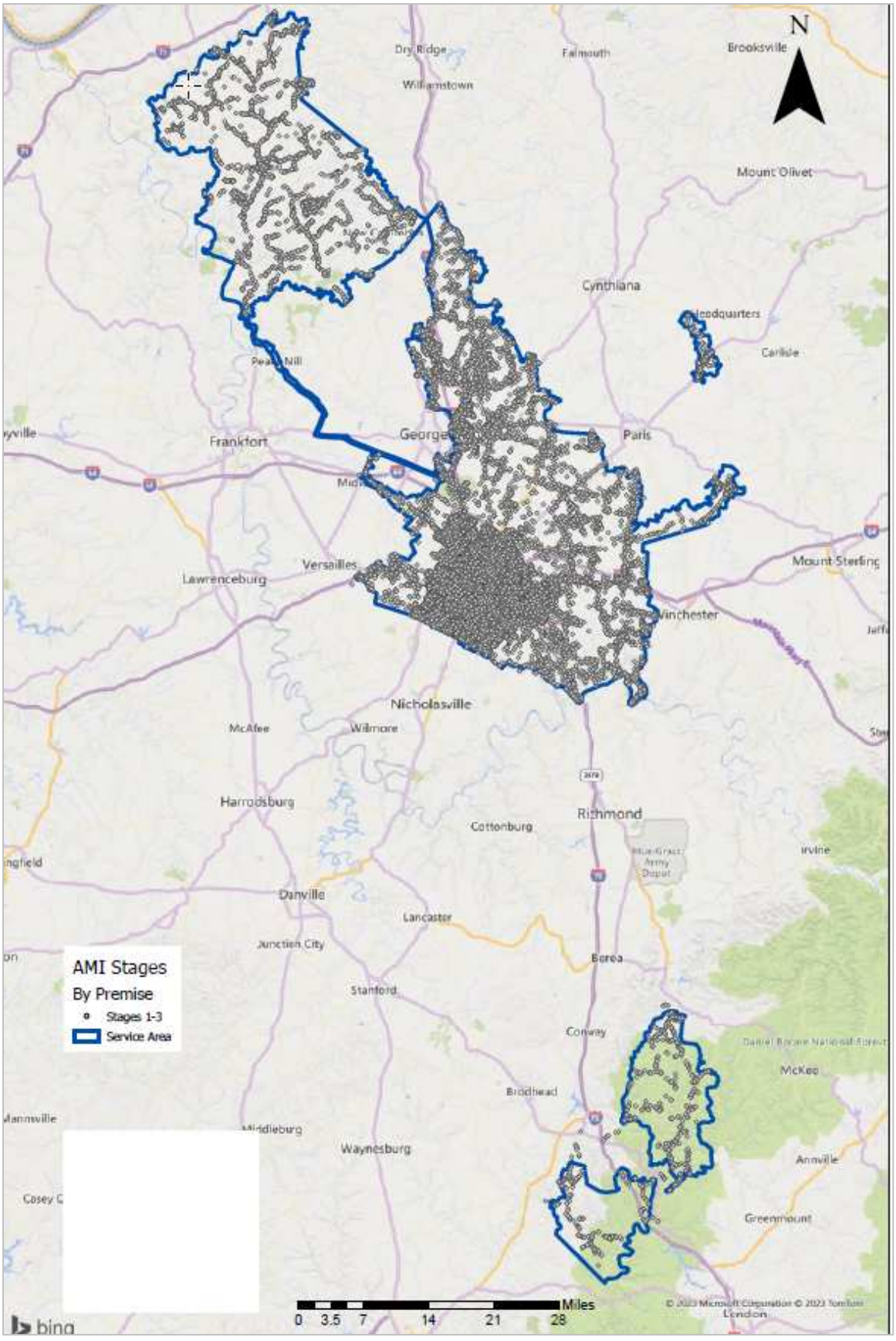
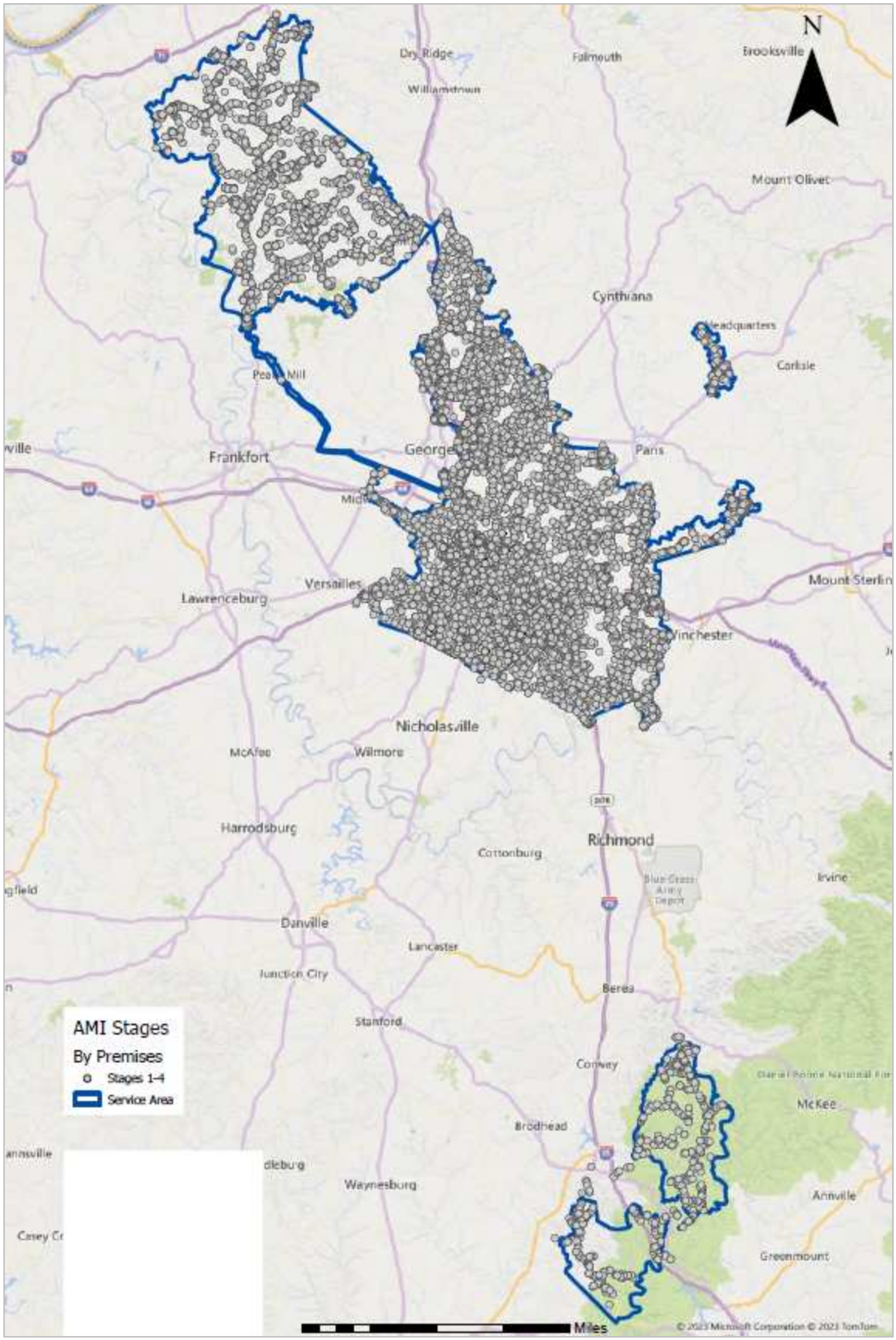


Figure 18 – End of 2033 (142k premises)



Appendix B ***(CONFIDENTIAL)***