


**Badger Meter**
**BEACON<sup>®</sup> AMA Solution**
**ORION<sup>®</sup> Cellular Coverage Analysis (CCA)**
**Customer:** Kentucky American Water - KY

**Date Issued:** 2/15/2023

**Project:** Lexington, KY, Plant #D602

**Revision:** 1.0

## SUMMARY INFORMATION

**Endpoint Type:** **LTE-M & LTE-MS**
**Service Area (square miles):** **1,775**
**Total Endpoints:** **145,698**

## REQUEST INFORMATION

**Solution Architect:** Bruce Aquilina

**Account Manager:** Tom Watts, Mark Wright

## INFORMATION PROVIDED

	<u>FILE NAME</u>	<u>DATE RECEIVED</u>
<b>Coverage Request Form:</b>	AW KY D602 Lexington CCA 2023 02 13.pdf	2/13/2023
<b>Endpoint Locations:</b>	CCA Premise Extract 2023_02_13_KY.xlsx	2/13/2023

## ANALYSIS COVERAGE AREA

Analysis is based on GPS Coordinates provided by Kentucky American Water, KY. A map of the provided endpoint locations is shown below.



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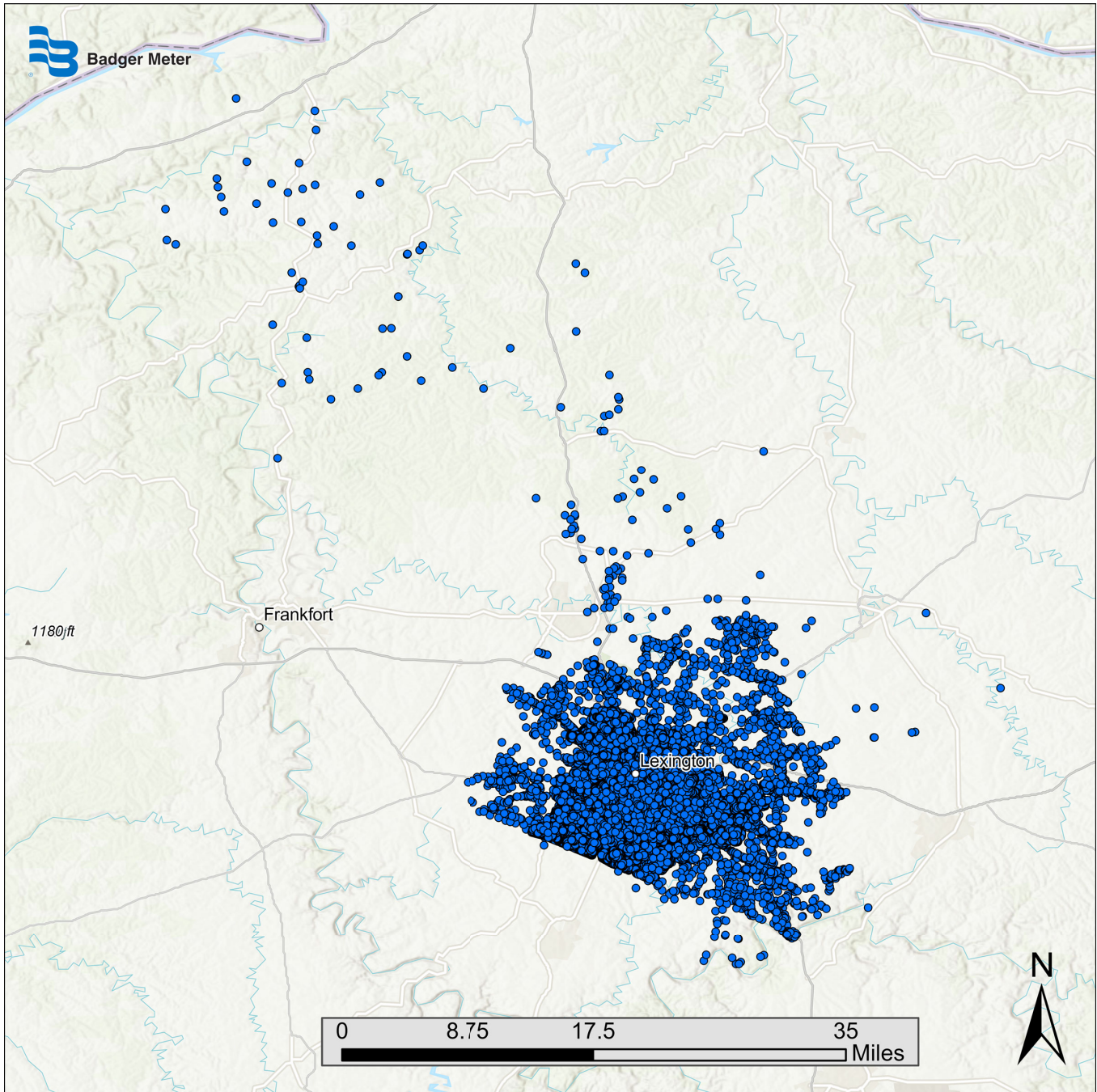
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**ENDPOINT LOCATIONS MAP**





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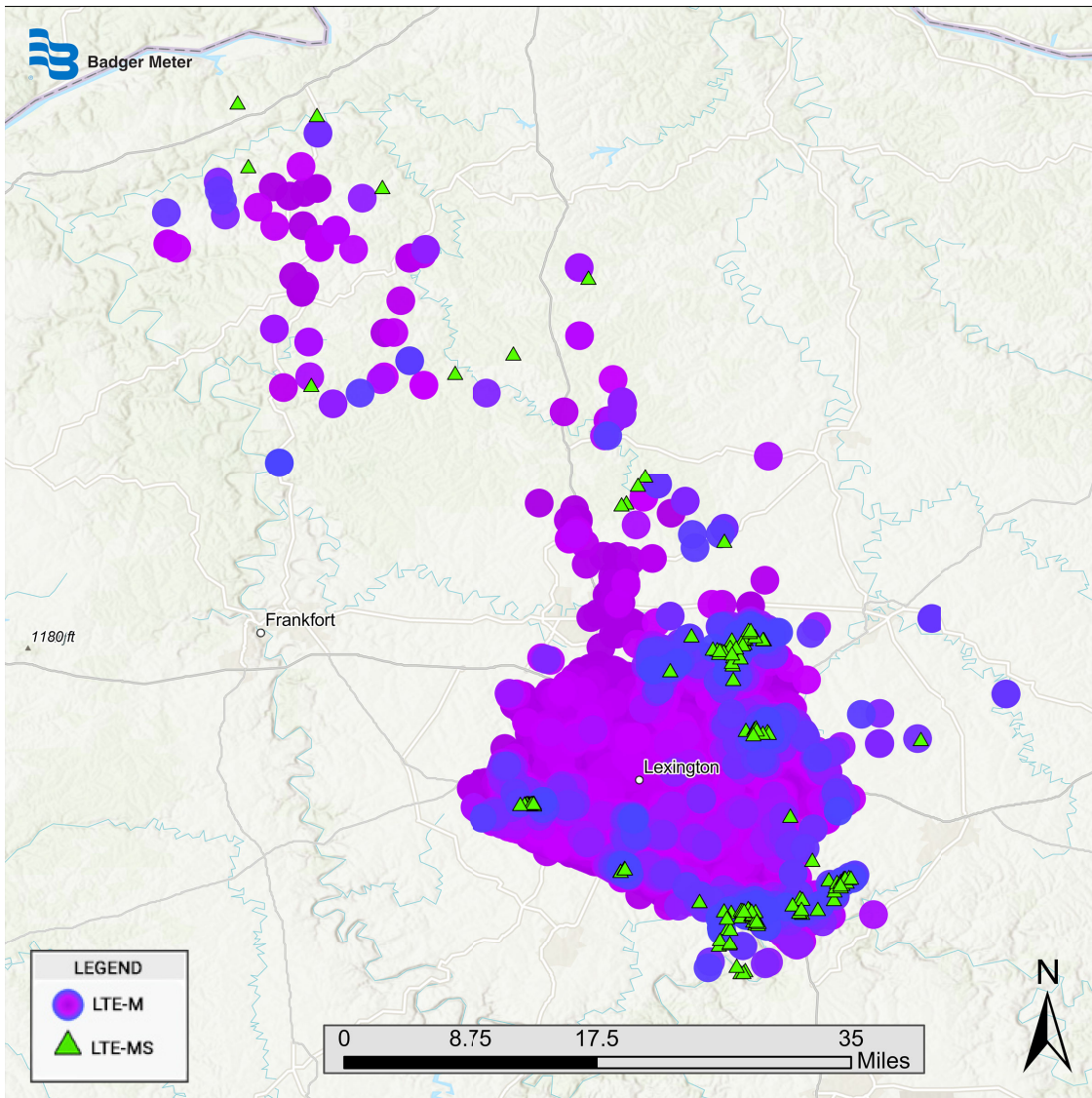
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### CELLULAR COVERAGE ANALYSIS

- A check of our cellular network providers' Machine-to-Machine (M2M) cellular coverage for the service locations provided has indicated that LTE-M and LTE-MS cellular coverage is available.
- Approximately 99.9% of locations evaluated are expected to have coverage for the ORION LTE-M endpoint, with a Field Evaluation recommended for 0.1% of the LTE-MS locations evaluated.
- The map below provides an illustration of that coverage. Further guidance as to the placement of endpoints by type will be provided as deployment plans are refined.



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## ASSUMPTIONS MADE

- Submitted information including but not limited to street addresses, service area, GPS coordinates, and meter locations are accurate.
- If GPS coordinates or a GIS shapefile are not provided for endpoint locations, street addresses are geocoded into decimal-degree latitude and longitude using ESRI's StreetMap Premium for ArcGIS North America HERE address locaters.
- Data from third party providers such as USGS National Elevation Dataset (NED), USGS National Land Cover Database (NLCD), Tele-Atlas municipal boundaries, cellular providers, and the RF propagation software used by Badger Meter is accurate.
- ORION endpoints are installed and maintained according to "ORI-UM-00025 ORION Water Endpoint Installation Manual" using a Badger Meter approved endpoint installation kit in a location that allows two-way communication between the endpoint and the cellular network.
  - Pit or vault installations are through a non-metal pit lid and the pit or vault lid is at or above grade
  - Indoor installations are mounted as high as possible in the floor joists above grade on an exterior wall

## CLARIFICATIONS

- The ORION cellular coverage analysis is subject to change for reasons which may include but are not limited to; consultation with the customer, site visit by Badger Meter authorized personnel, and the availability of new or updated information.
- Cellular coverage within the utility service area is required to deploy ORION cellular endpoints.
- Review the cellular coverage analysis with your Badger Meter representative in order to understand how it may be used by the utility as a tool to deploy the system.
- All endpoints are to be installed in compliance with the published ORION installation guidelines which can be found at [www.badgermeter.com](http://www.badgermeter.com)
- Cellular endpoint type recommended is specific to the latitude and longitude for each location.

## SMART WATER IS BADGER METER

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