Customer Premise Information Lookup Mapping With ArcGIS Online

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January 19, 2016

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Bio

- Jamie Patterson:
  - ASU M.A. in Geography, 2008
  - 10 years in the GIS industry
  - Sr. GIS Technician, worked at EPCOR Water since 2009

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Overview

- About EPCOR Water
- Customer Premise Information Lookup
  - Existing Process
  - AGOL Application: Objective & Goal
  - Implementation
  - Challenges
- ArcGIS Online
  - Other applications
  - What's next?
- Lessons Learned
- Q & A

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US Operations
14 Water Districts – 6 Wastewater Districts
British Columbia
Alberta
Fort McMurray
Shell Albian Sands-Muskeg River
Shell Albian Sands Jackpine
Imperial Oil Kea
Suncor Fireba
Suncor Borealis-Voyageur
Suncor Steepban
Rossdale
Gold Bar
E.L. Smith
Edmonton
Red Deer County
Calgary
Banff
Canmore
Kananaskis
Strathmore
Chestermere
Okotoks
Taber
Whistler Olympic Park
Britannia Mine
Vancouver
White Rock
French Creek
Sooke
Arizona
Mohave
North Mohave
Mohave Valley
Havasu
Anthem
Sun City West
Chaparral
Agua Fria
Paradise Valley
Sun City
Phoenix
Tubac
New Mexico
Albuquerque
Edgewood &
Thunder Mountain
Clovis
EPCOR OPERATIONS
Electricity Distribution & Transmission
Water Facilities
Wastewater Facilities
Water/Wastewater Facilities
Industrial Wastewater Facilities

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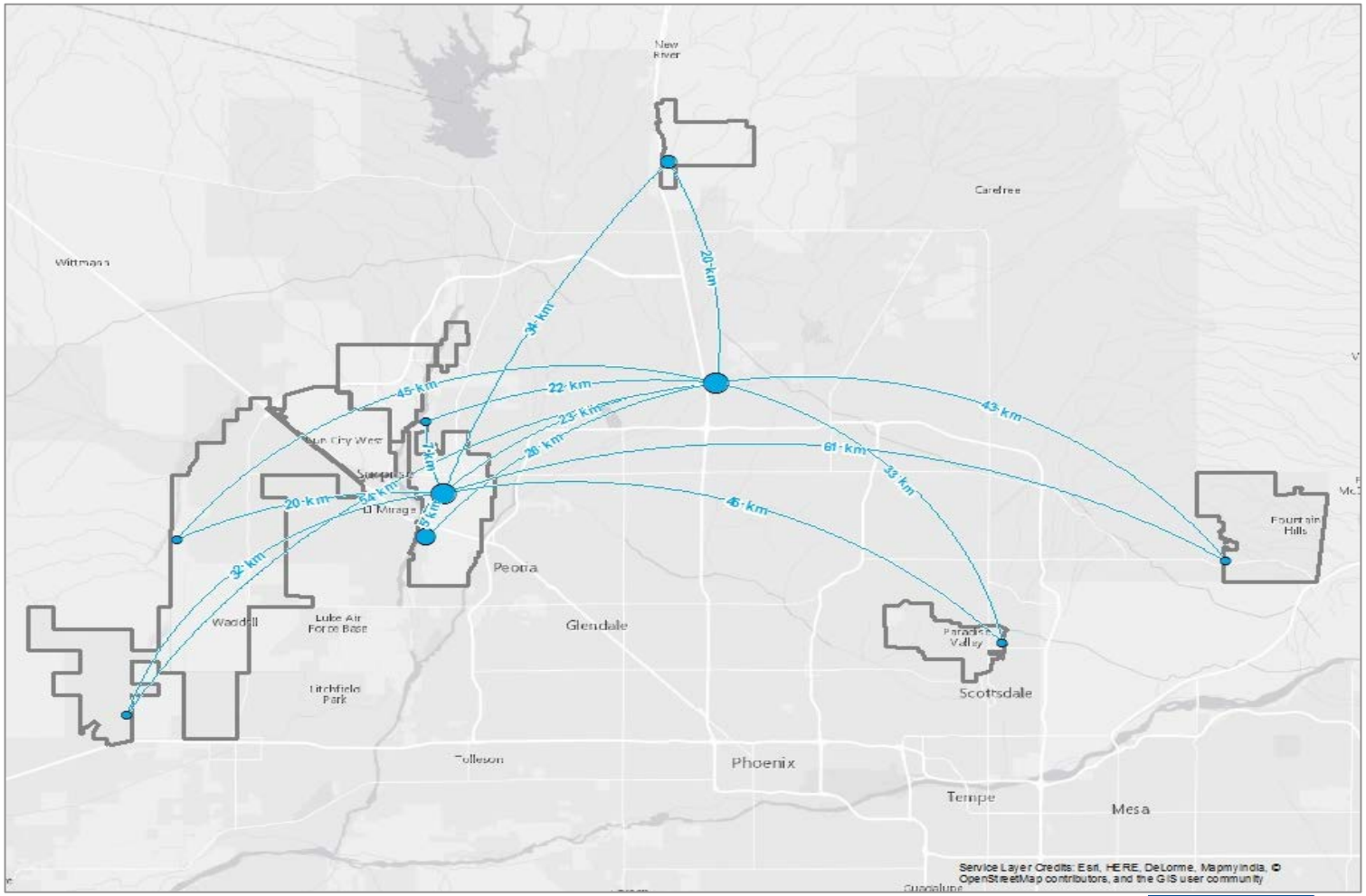
EPCOR's Facilities in Phoenix Metro



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About EPCOR Water

- Largest private water utility in Arizona & New Mexico
- 200,000+ customer connections
- Population served over 350,000
- 280 US based employees
- 3 GIS professionals

Water Infrastructure	
Hydrants	14,447
Valves	48,350
Water Mains	2,492 miles

Wastewater Infrastructure	
Manholes	12,765
Cleanouts	1,571
Sewer Mains	710 miles

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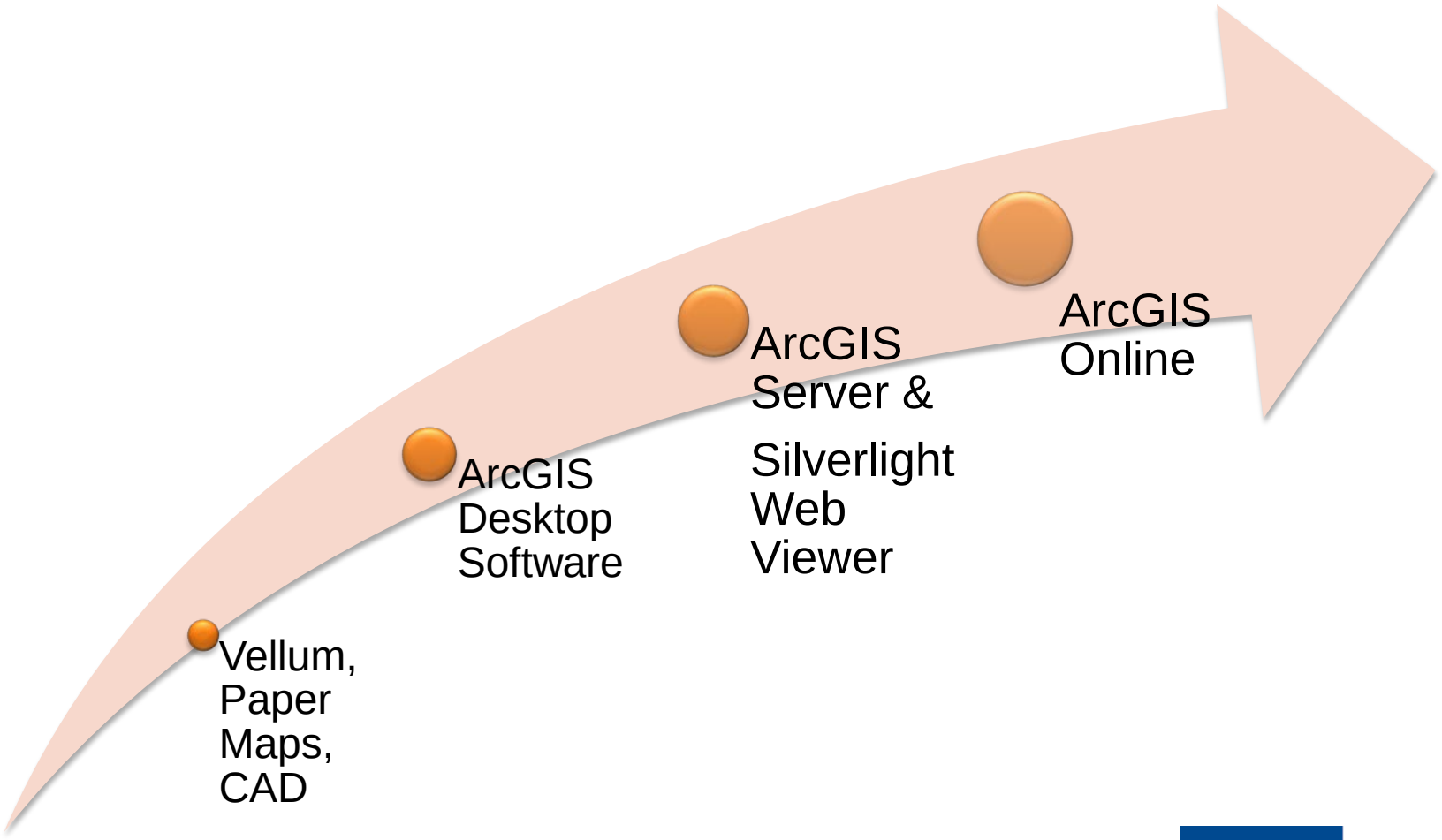
EPCOR Water's GIS Evolution



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ArcGIS Online at EPCOR

- Feature & map services hosted on ArcGIS Server
- Configurable applications hosted in AGOL
- “Cloud Hybrid” Solution
- 50 Named Users
- 12 Content & Functional Groups

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What is a Customer Premise?

- *Physical location* where EPCOR serves water, collects wastewater, or both.
- Domestic, commercial, or irrigation metering.
- *Location based* premise codes help determine how a customer is billed.

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Customer Premise Coding

- State
- County
- Water District
- Public Water System
- Wastewater District
- Area
- Region
- Tax District
- Work Zone
- Meter Route

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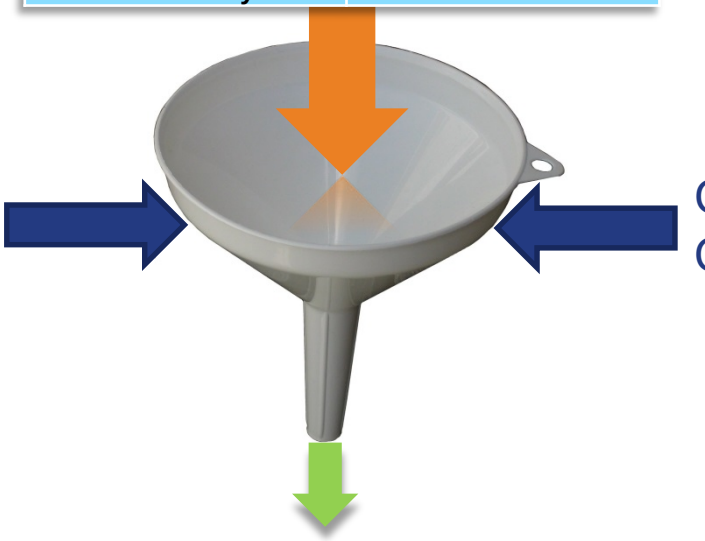
How Do We Assign Codes to a Customer Premise?

State	Area
County	Region
Water District	Tax District
Wastewater District	Work Zone
Public Water System	Meter Route

Apply Business Rules



GIS Overlay

Correct set of codes for this premise

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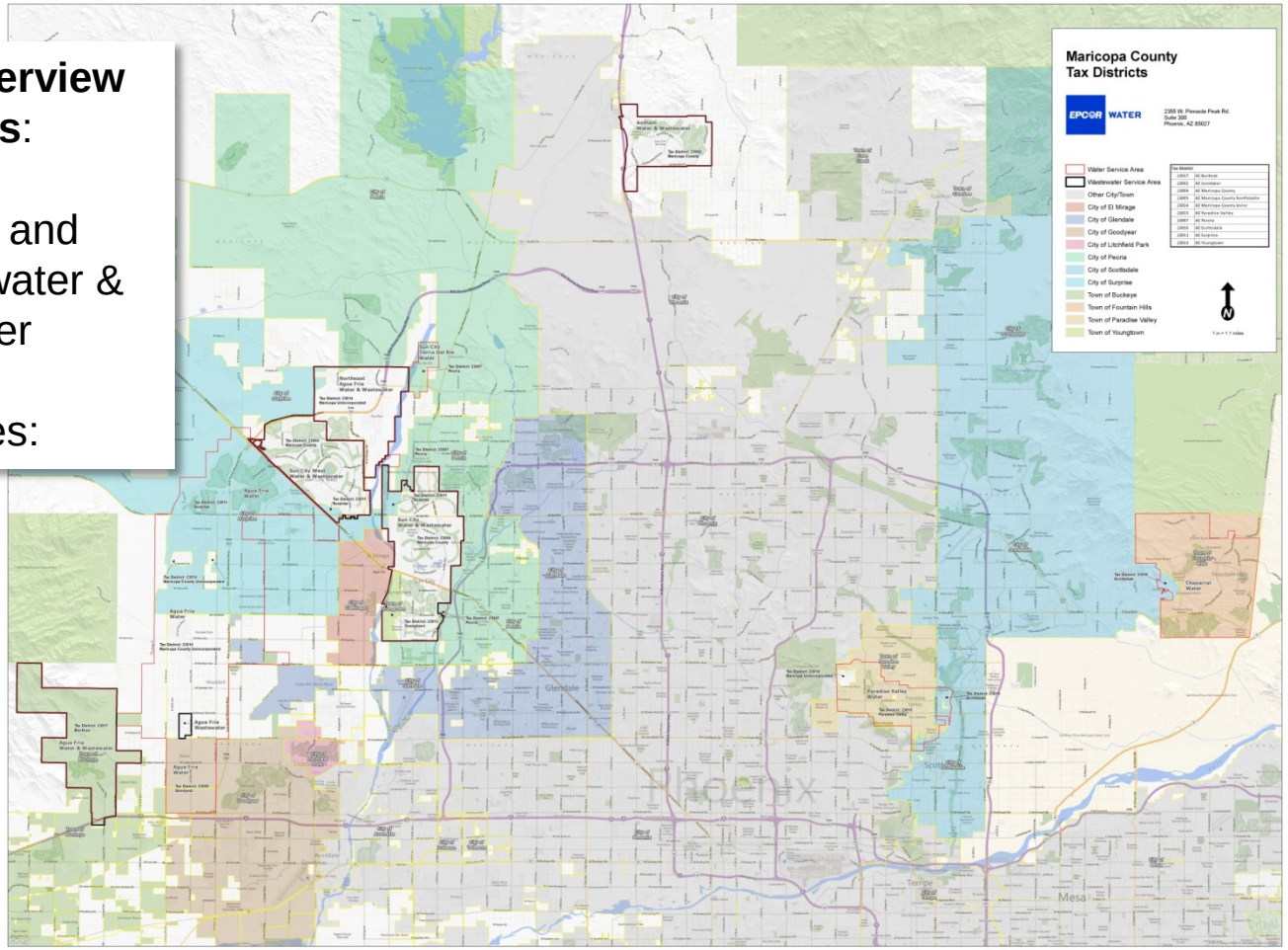
Old Premise Validation Process

Large overview wall maps: showing municipal and EPCOR water & wastewater district boundaries:



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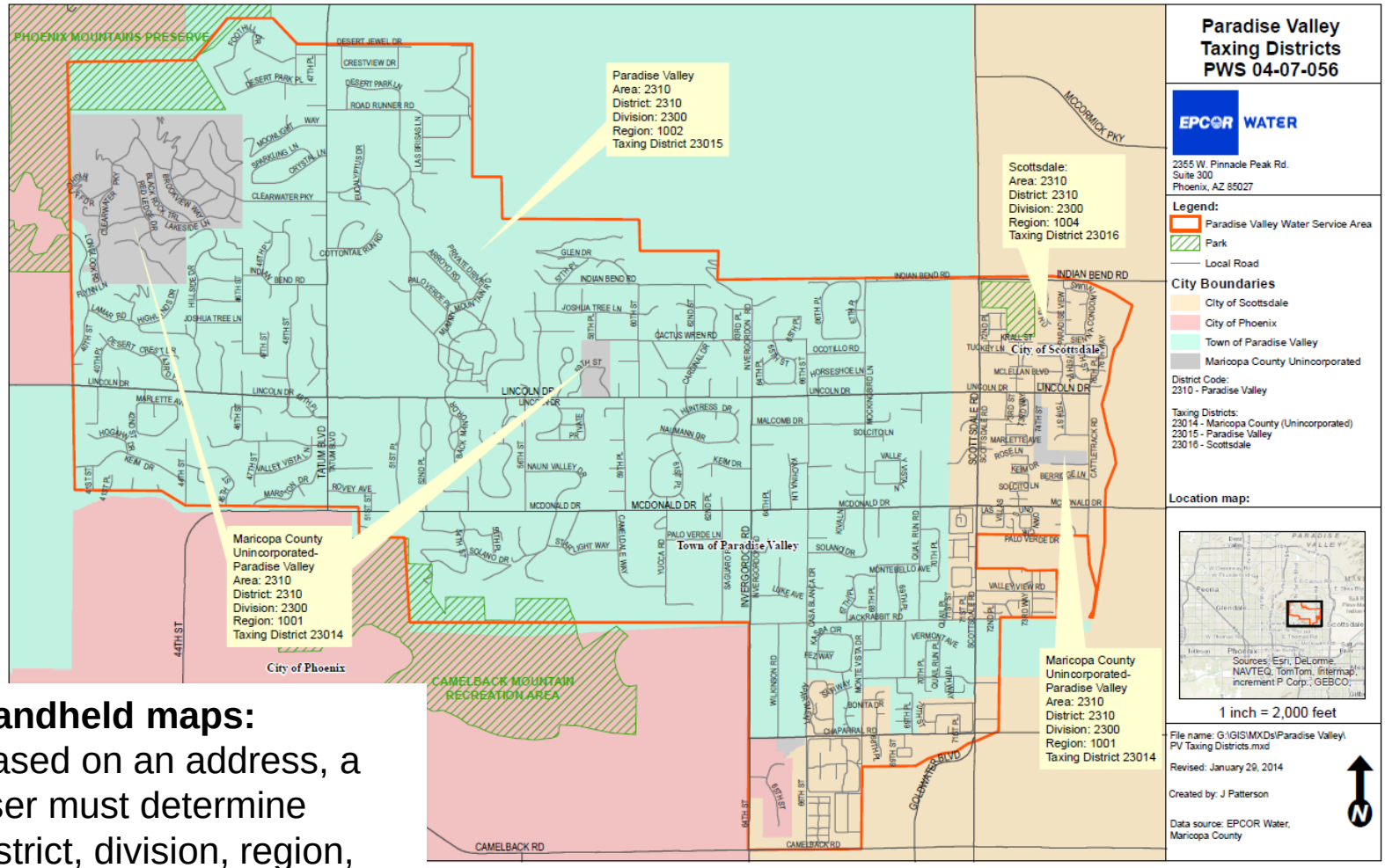
Old Premise Validation Process



Handheld maps:
Based on an address, a user must determine district, division, region, water system, tax district and more.

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Customer Premise Information Lookup Application

Objective:

Create a tool where users click on the map, search by address, or enter a meter route # and get a list of *location specific* premise codes.

Goal:

Replace paper maps with a more efficient premise code lookup tool – AGOL based application.

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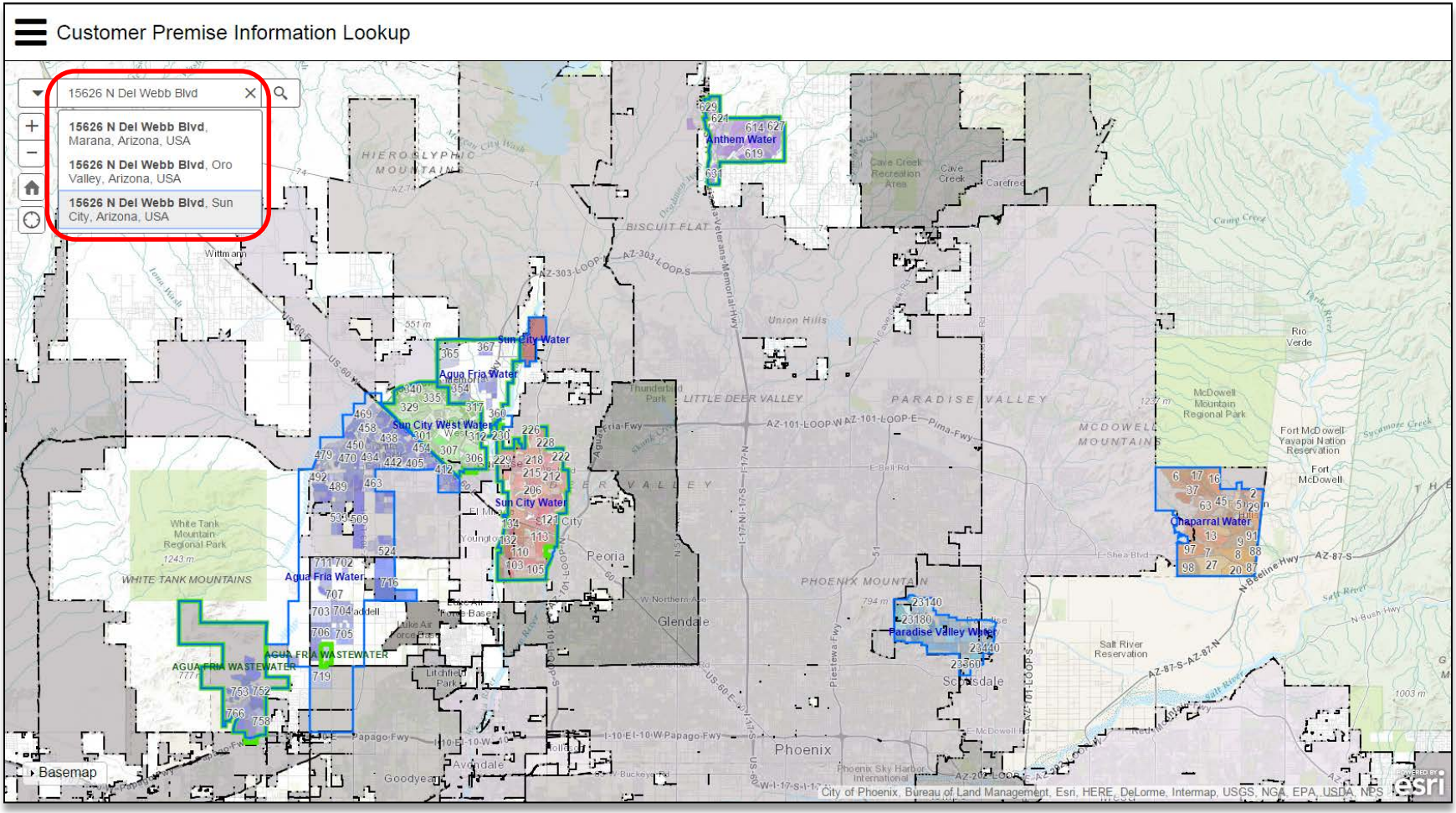
Customer Premise Information Lookup Application



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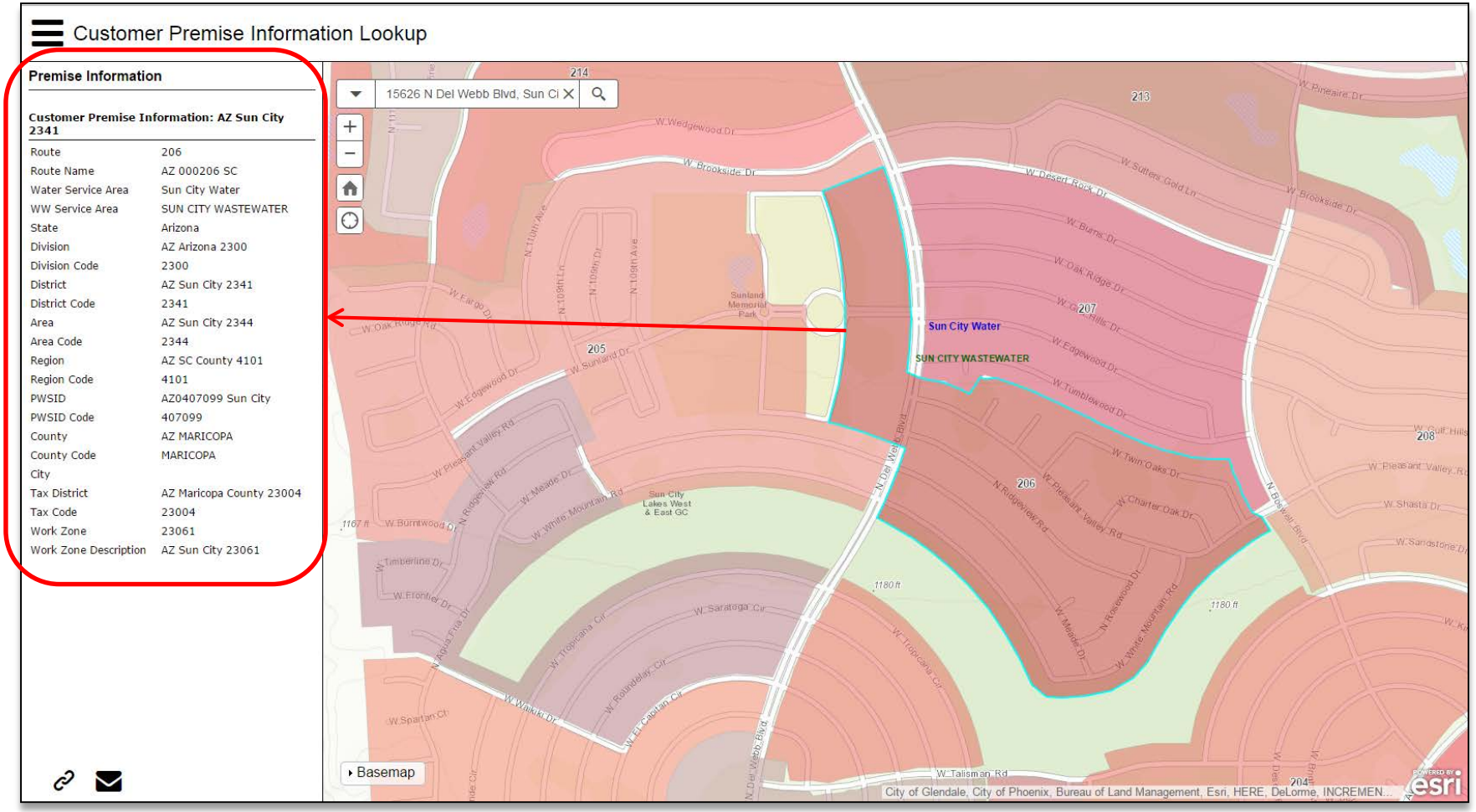
Customer Premise Information Lookup Application



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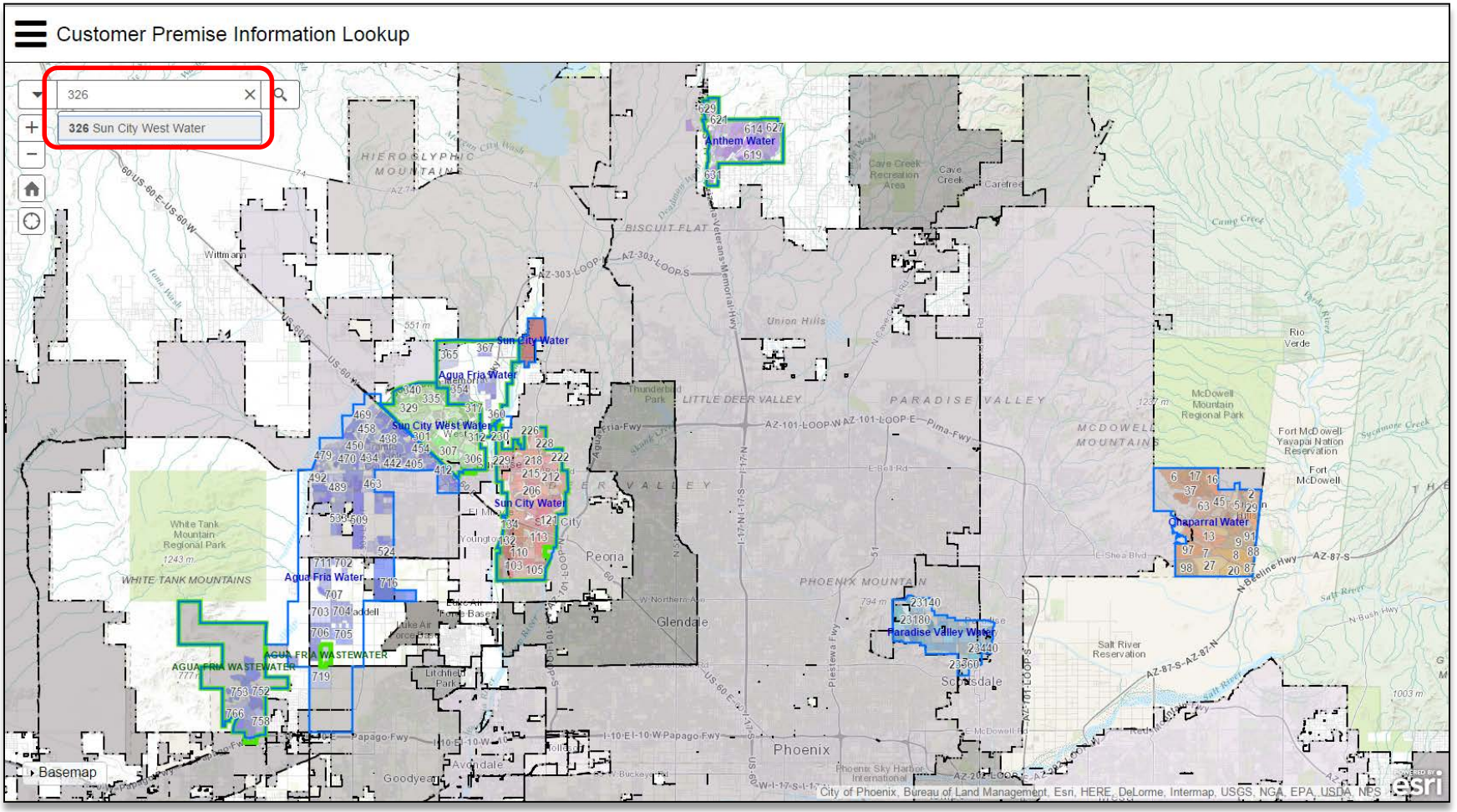
Customer Premise Information Lookup Application



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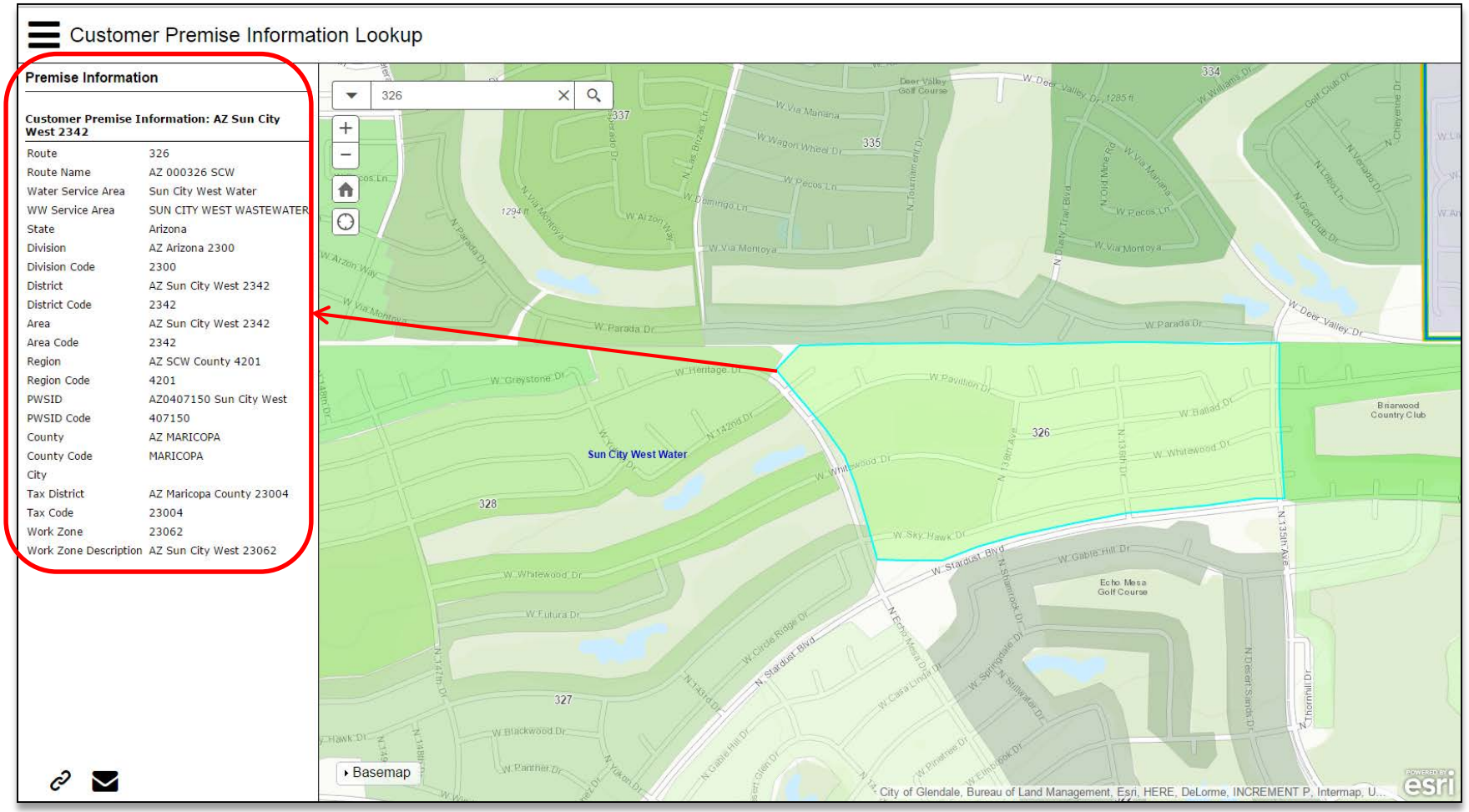
Customer Premise Information Lookup Application



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Implementation: Lookup Layer

- ArcGIS 10.2.2 for Desktop
  - Advanced License

1. Created a single GIS layer for premise information lookup.
   Geoprocessing tool: Identity of municipal and county boundaries to water and wastewater boundaries.
2. Applied if/then business rule logic to Identity layer to manually attribute all remaining premise codes.
   - For example: A location with Water District: X and Tax District: Y must be populated with Region Z.

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Implementation: Web Map Publication

1. Published Lookup Layer from ArcGIS for Desktop as a hosted AGOL feature service.
2. Created web map from Lookup Layer feature service:
   - Add meter routes layer for search purposes
   - Define symbology
   - Set extent
   - Add labels
   - Enable popups (for information lookup)

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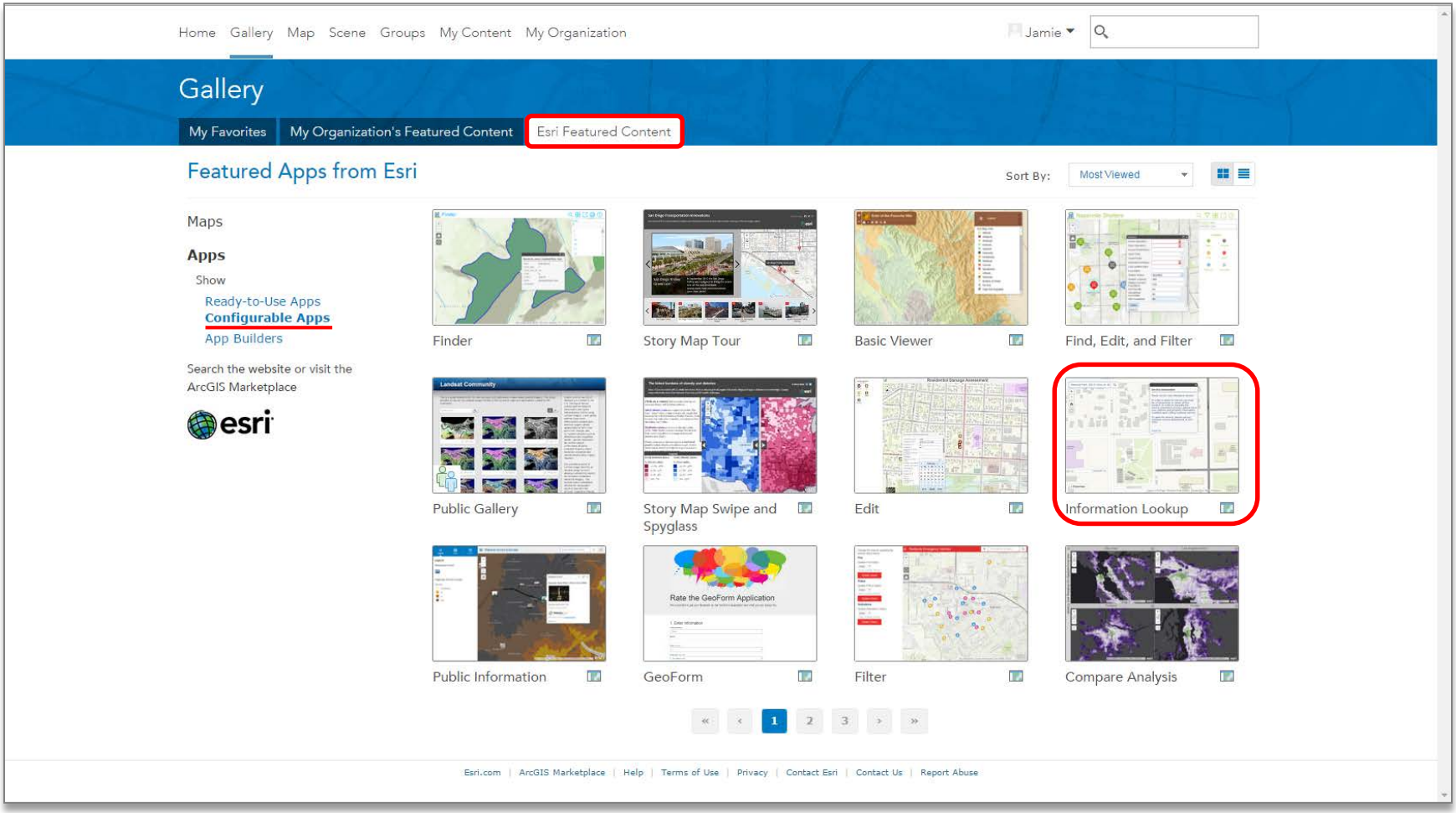
Information Lookup Template



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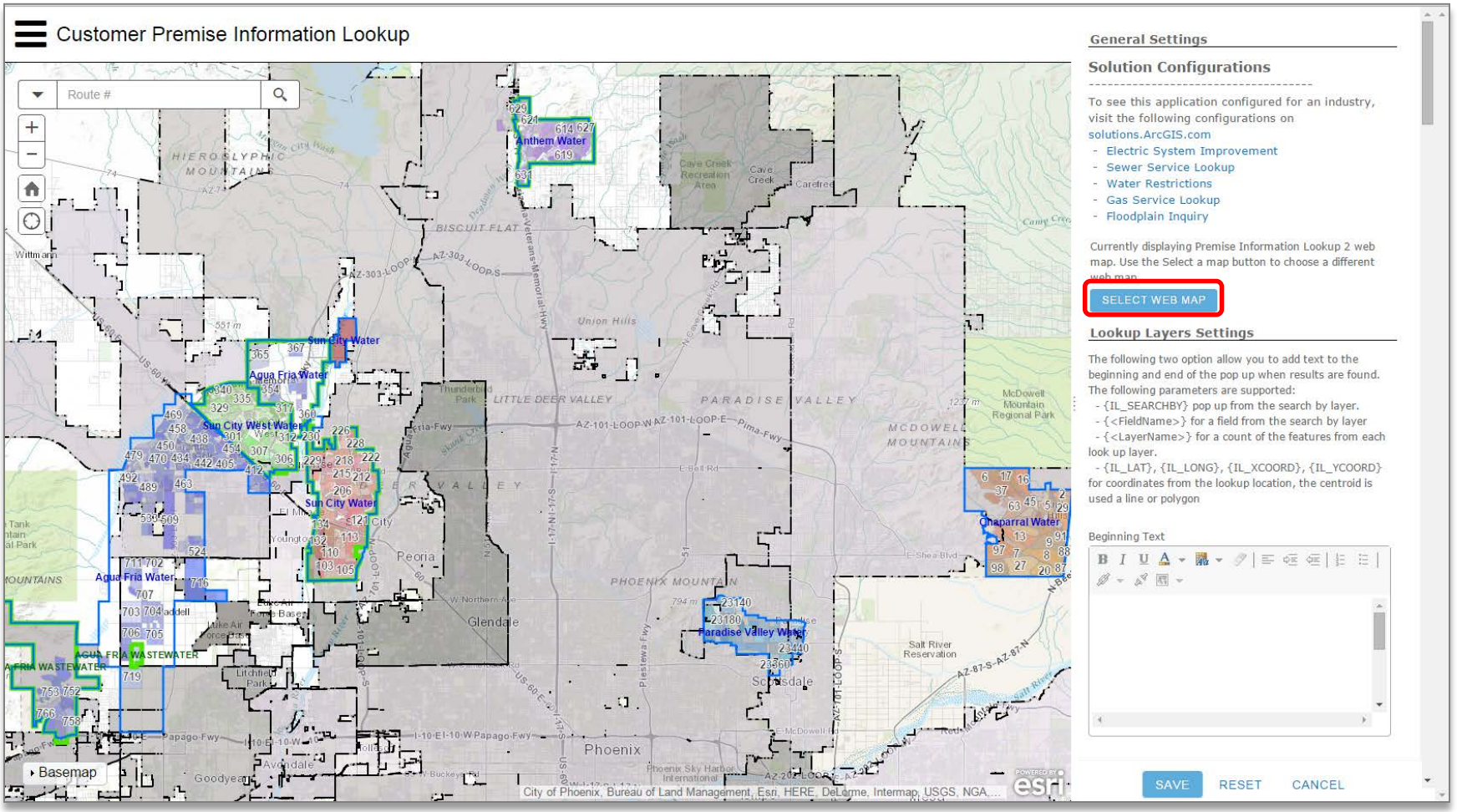
Configuration: Information Lookup Template



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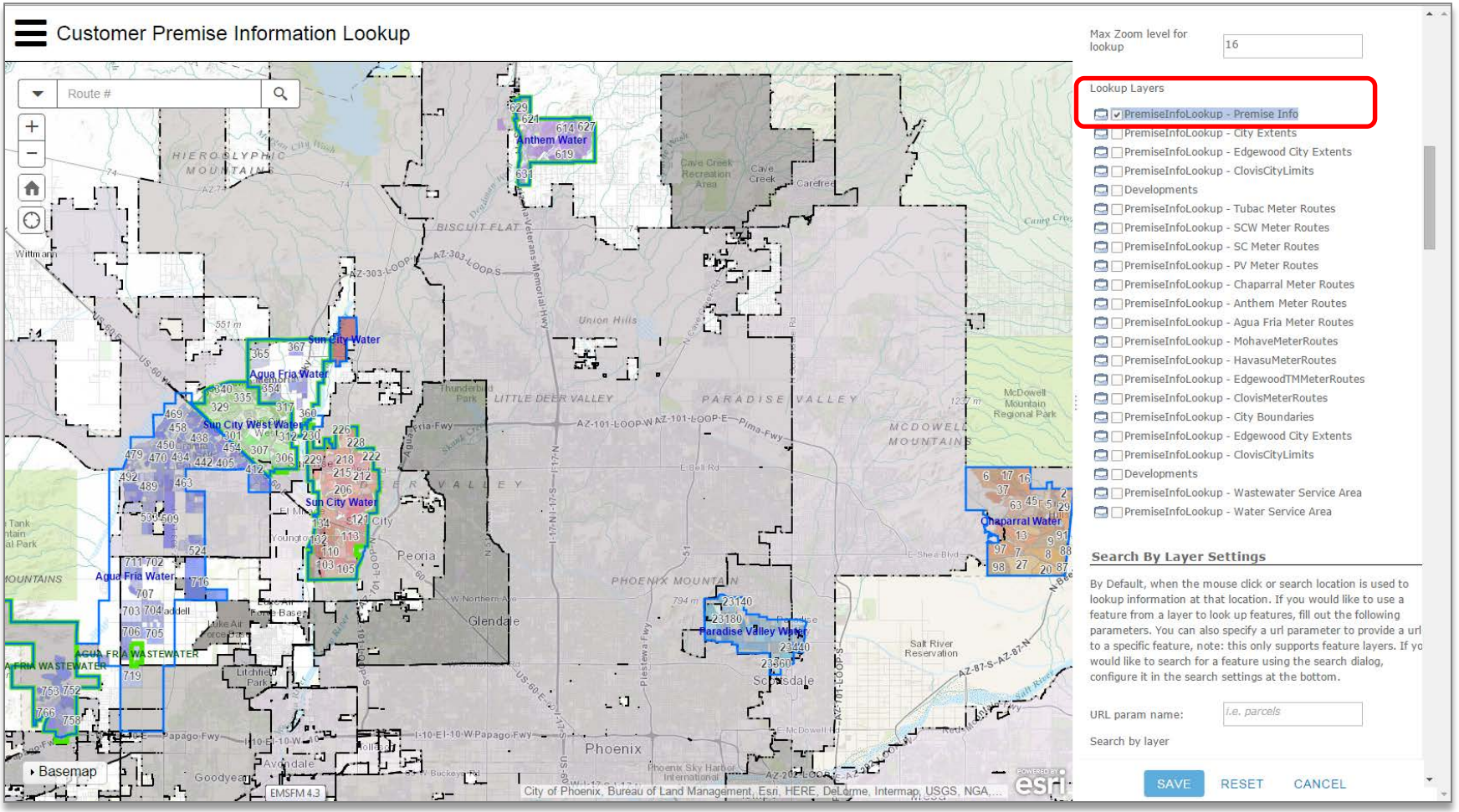

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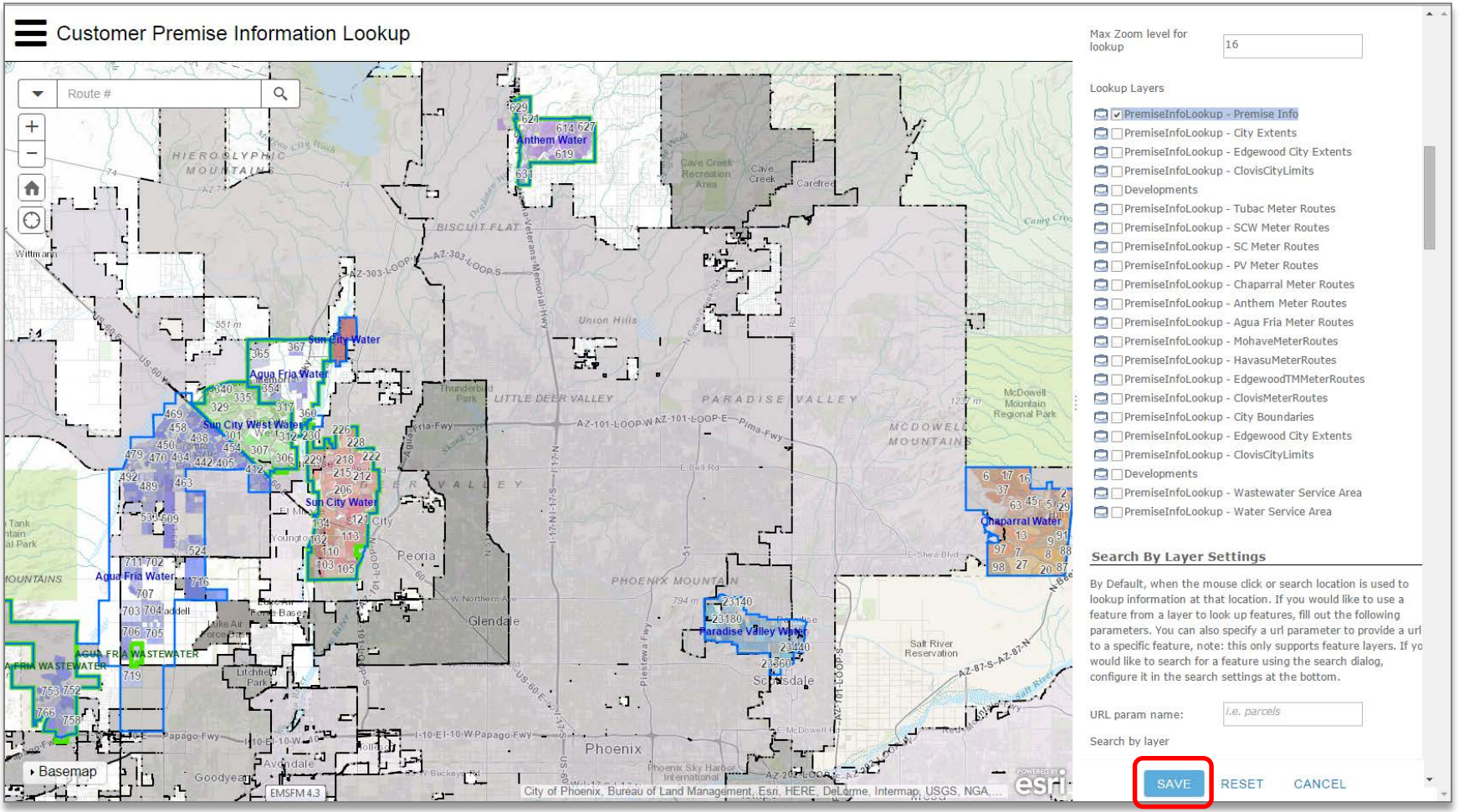

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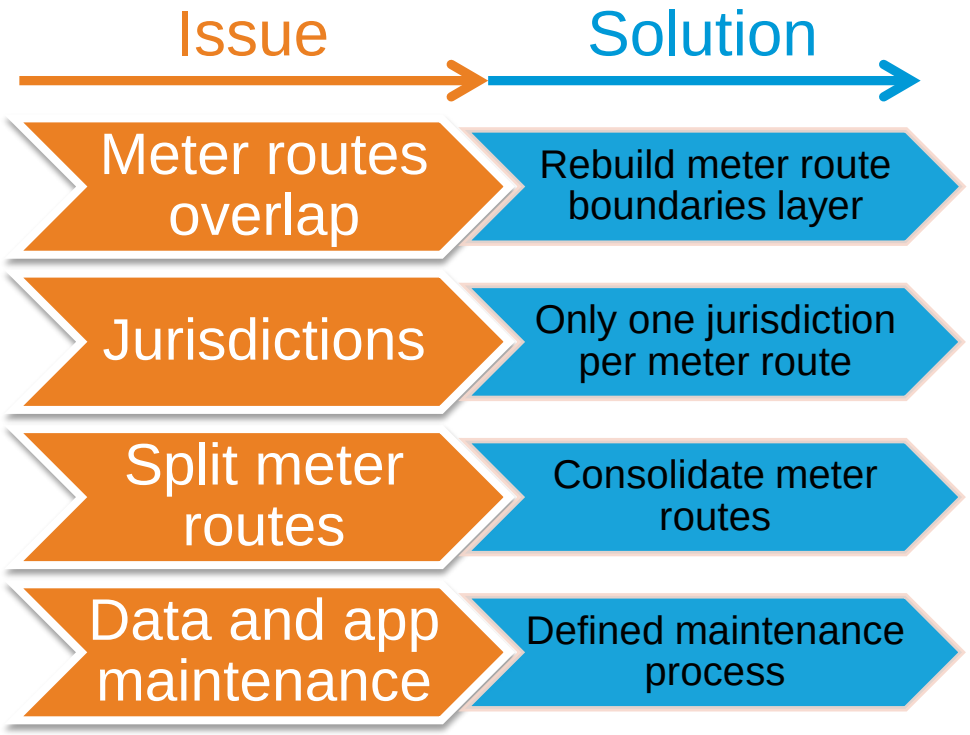
Challenges

Combining data from multiple sources with varying degrees of accuracy may not meet your current and future needs.



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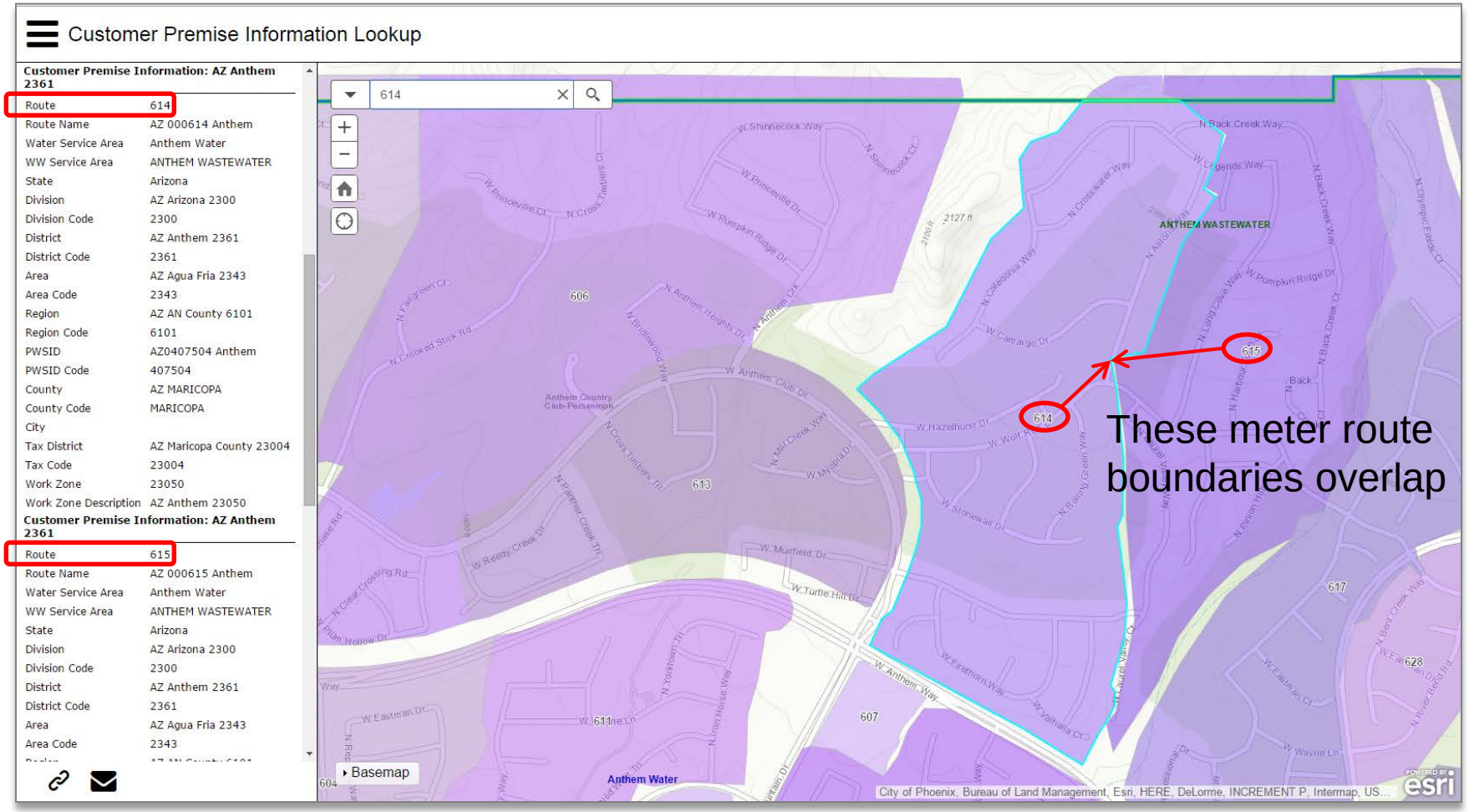
Challenge: Spatial Accuracy



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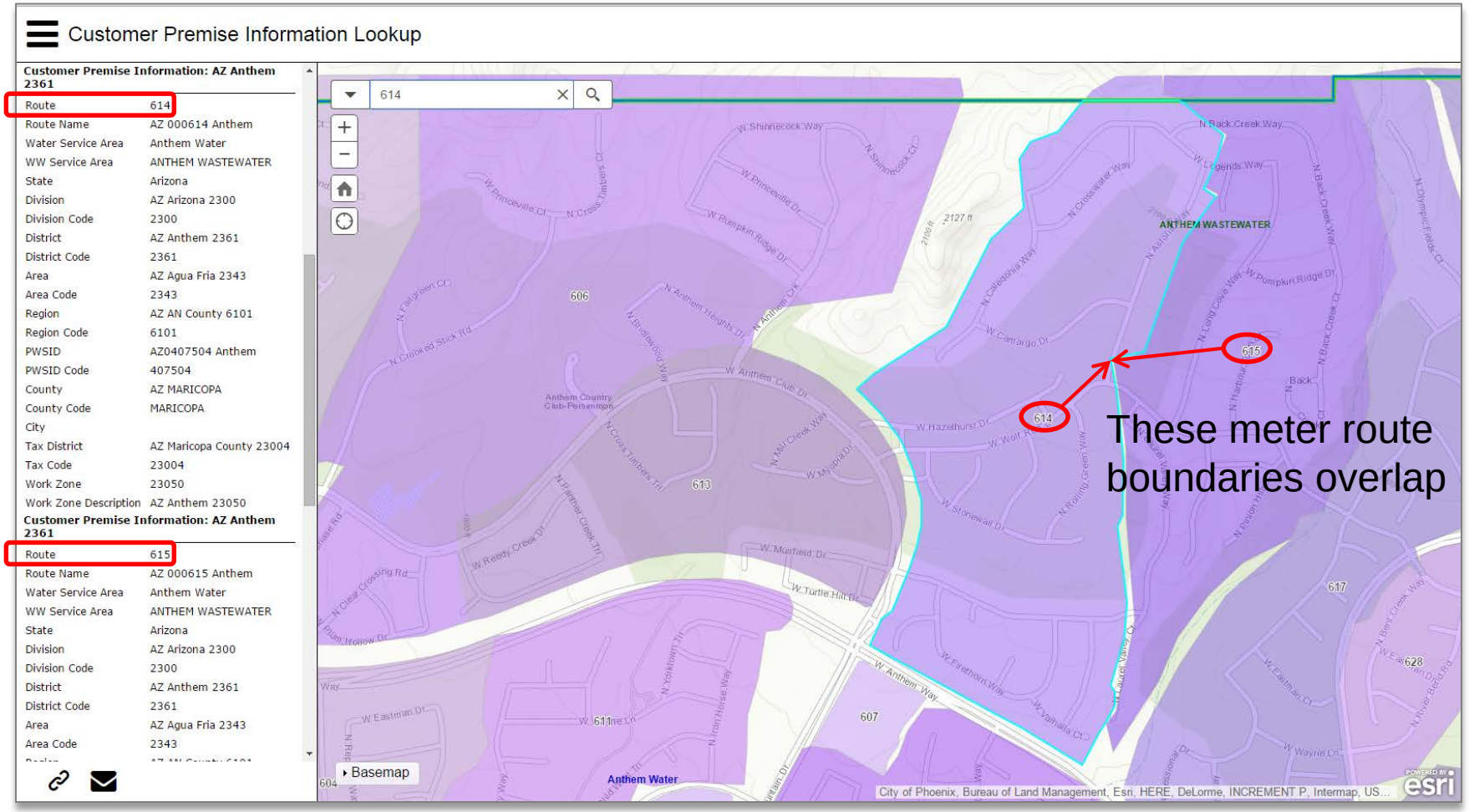
Solution: Spatial Accuracy



A. Clean up topology to ensure meter routes do not overlap or…

B. Rebuild meter route boundaries from the parcel up

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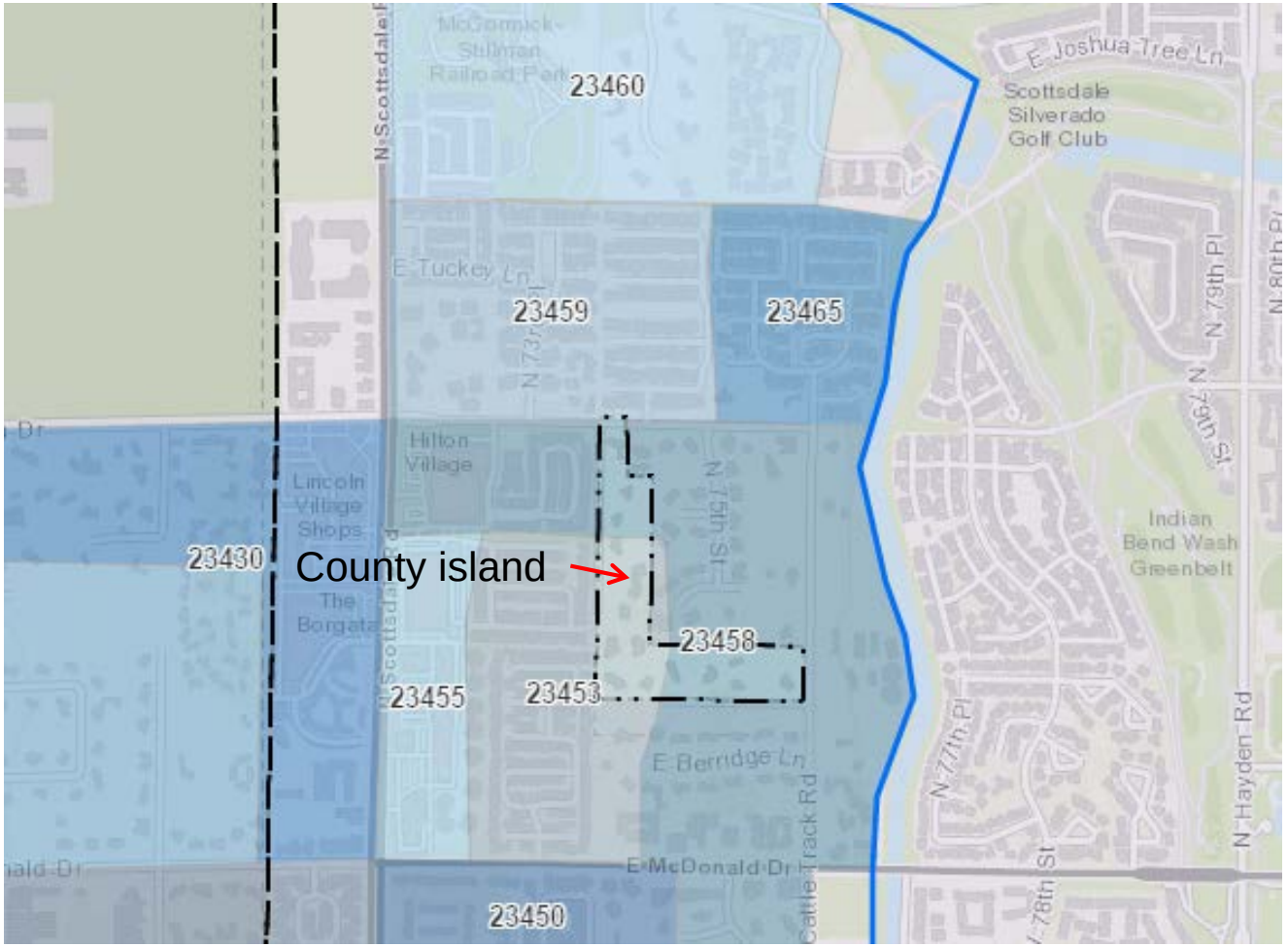
Challenge: Jurisdictions



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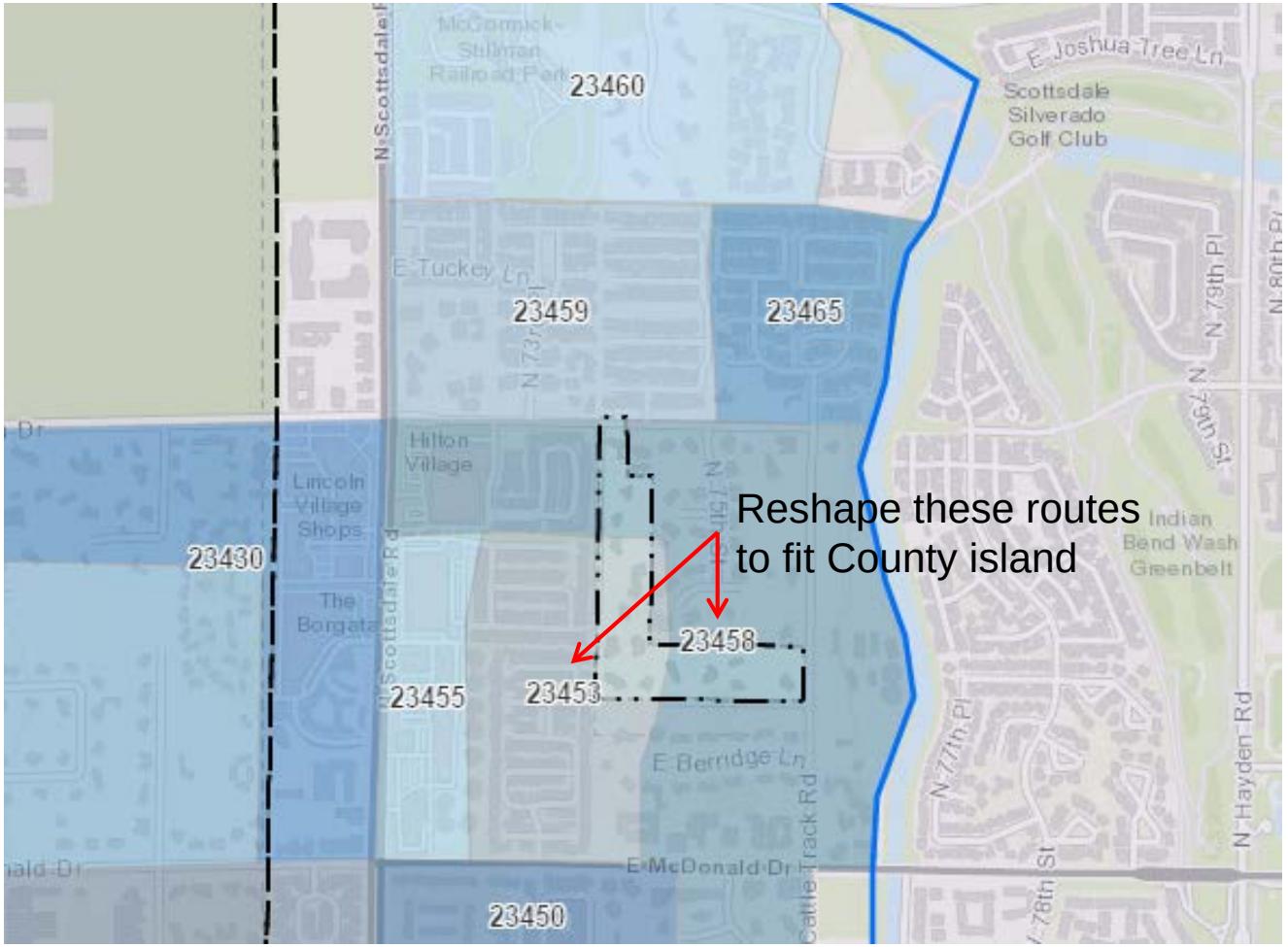
Solution: Jurisdictions



These meter route boundaries need to be reshaped:
<u>One jurisdiction per meter route</u>.

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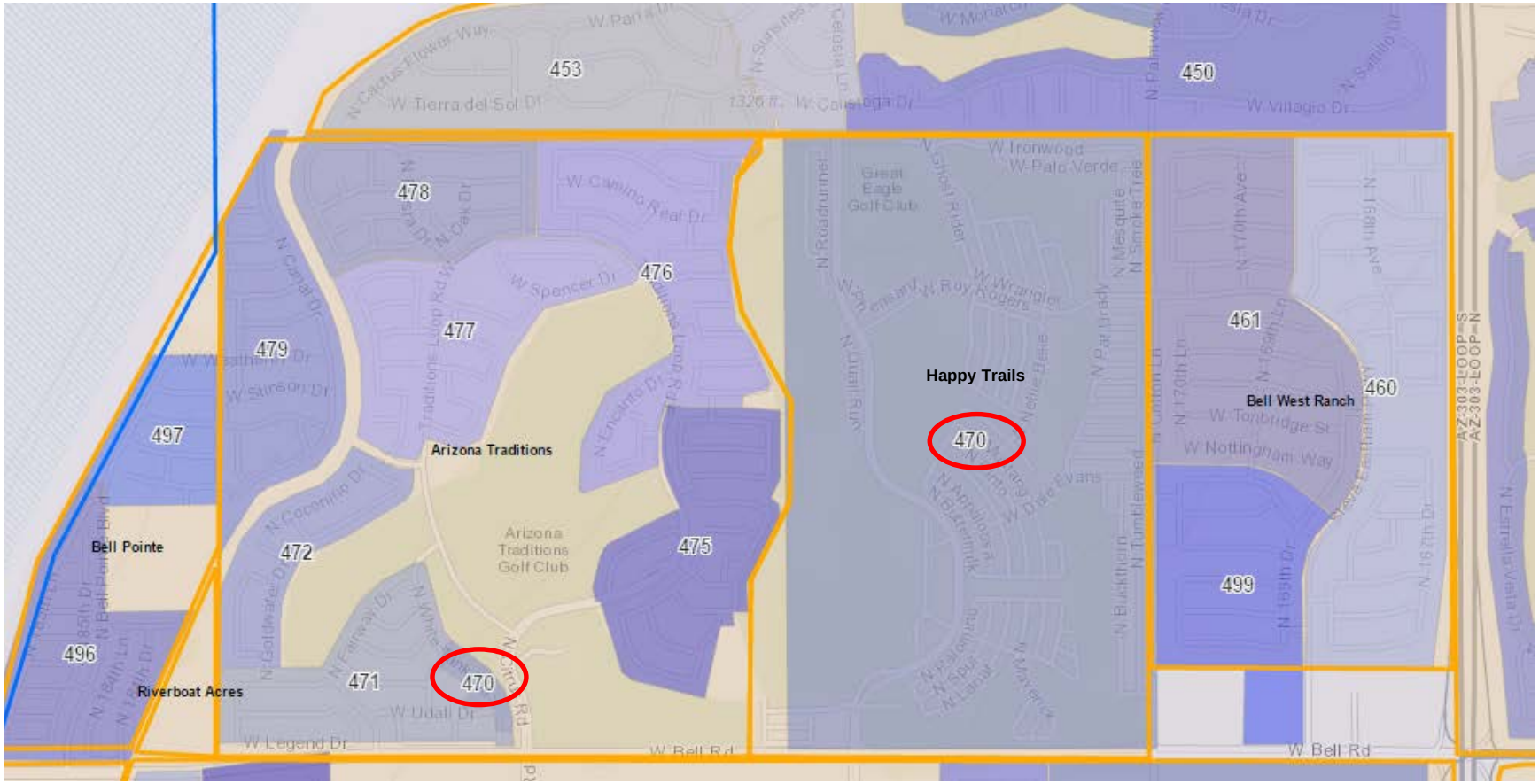
Challenge: Split Routes



Does this make sense?

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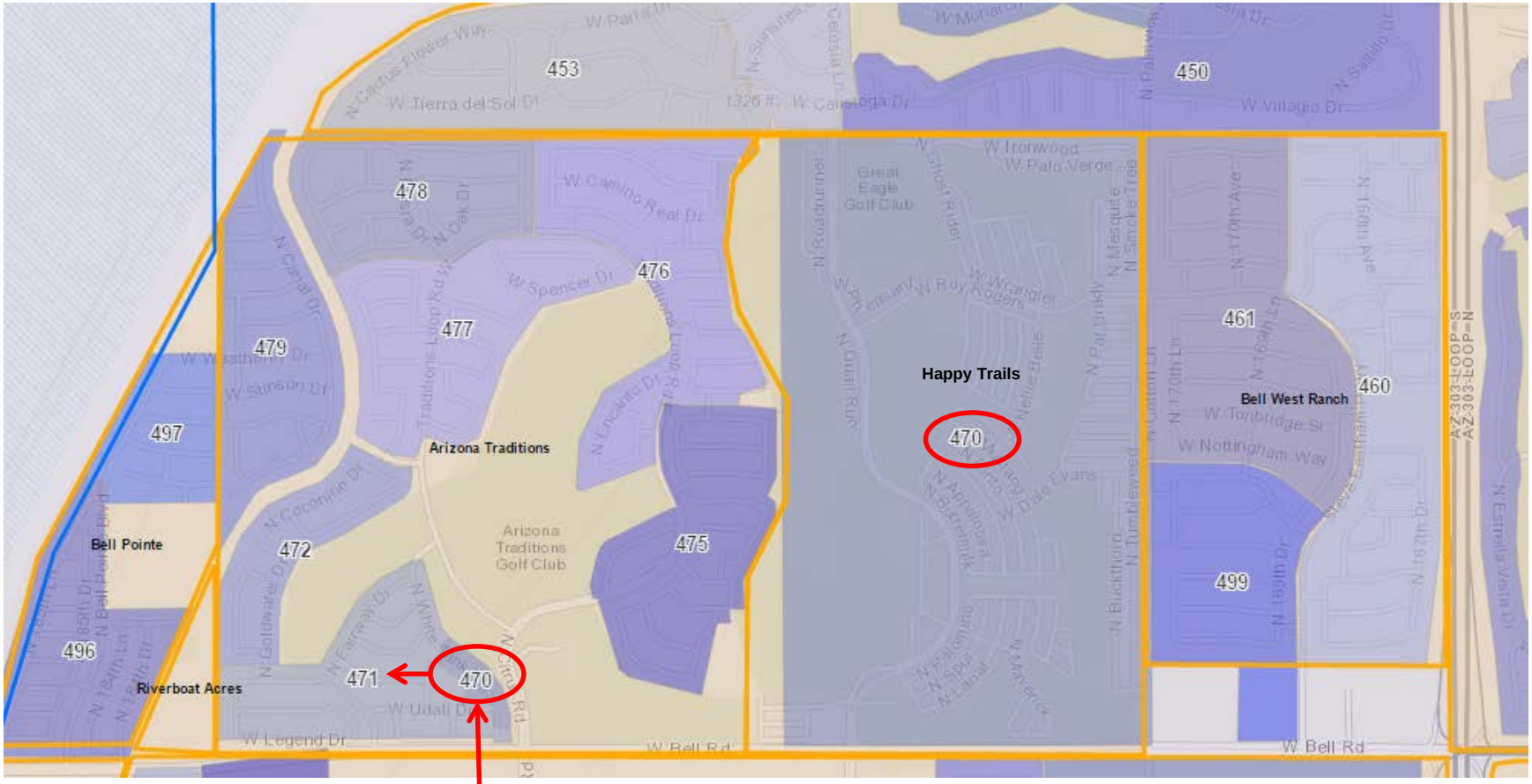
Solution: Split Routes



Consolidate these into a single route

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Paper vs AGOL

Paper Maps

- Scale limitations
- Paper intensive
- Cross-reference multiple maps

Premise Lookup App

- No scale limitations
- Easy to configure and deploy across EPCOR
- Single lookup destination

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Why ArcGIS Online?

- Configurable templates
- Agile approach: Quick wins
- Expand the reach of your GIS
- Do more with the same:
  Leverage your existing GIS
- Other AGOL applications at EPCOR…

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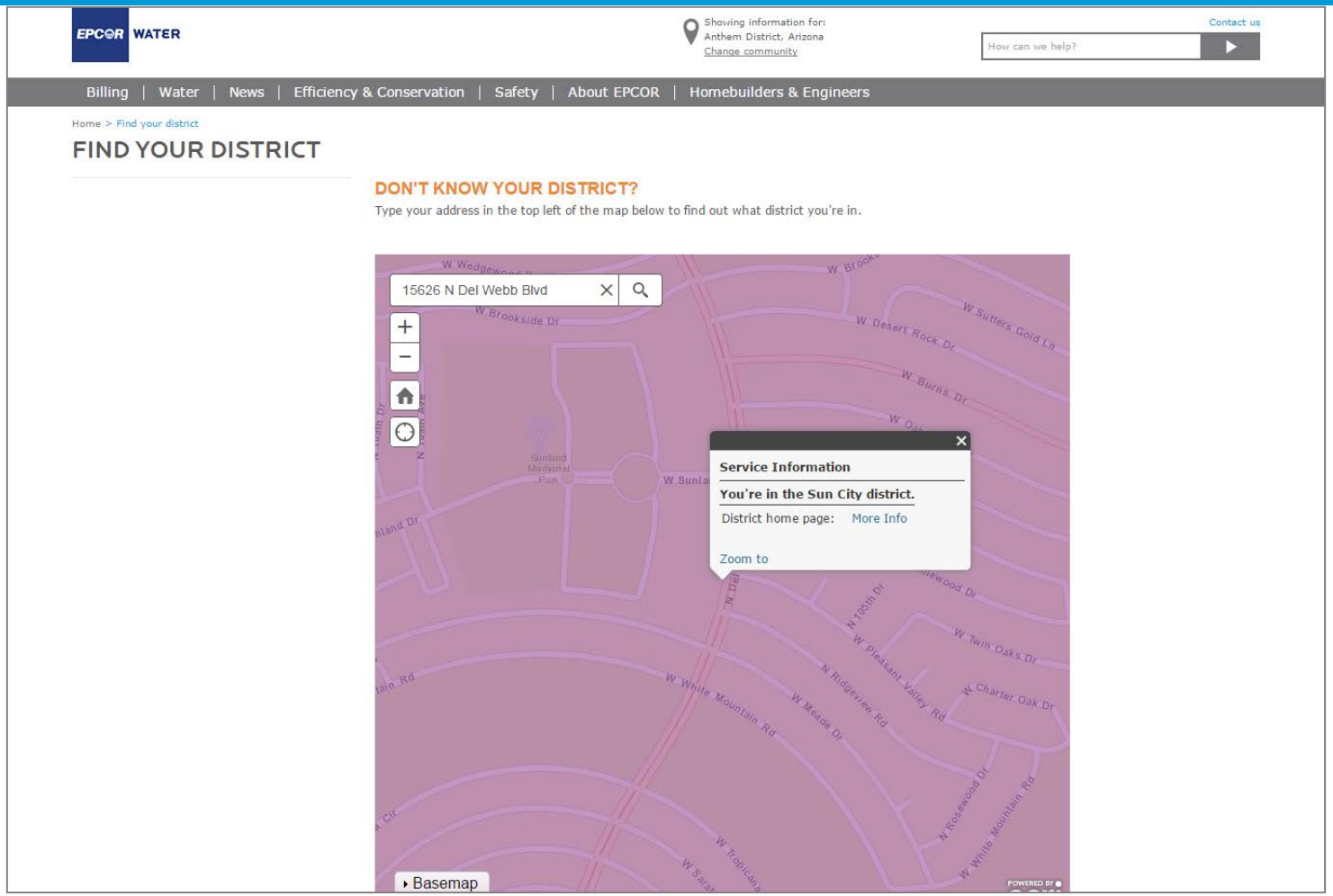
Find Your District



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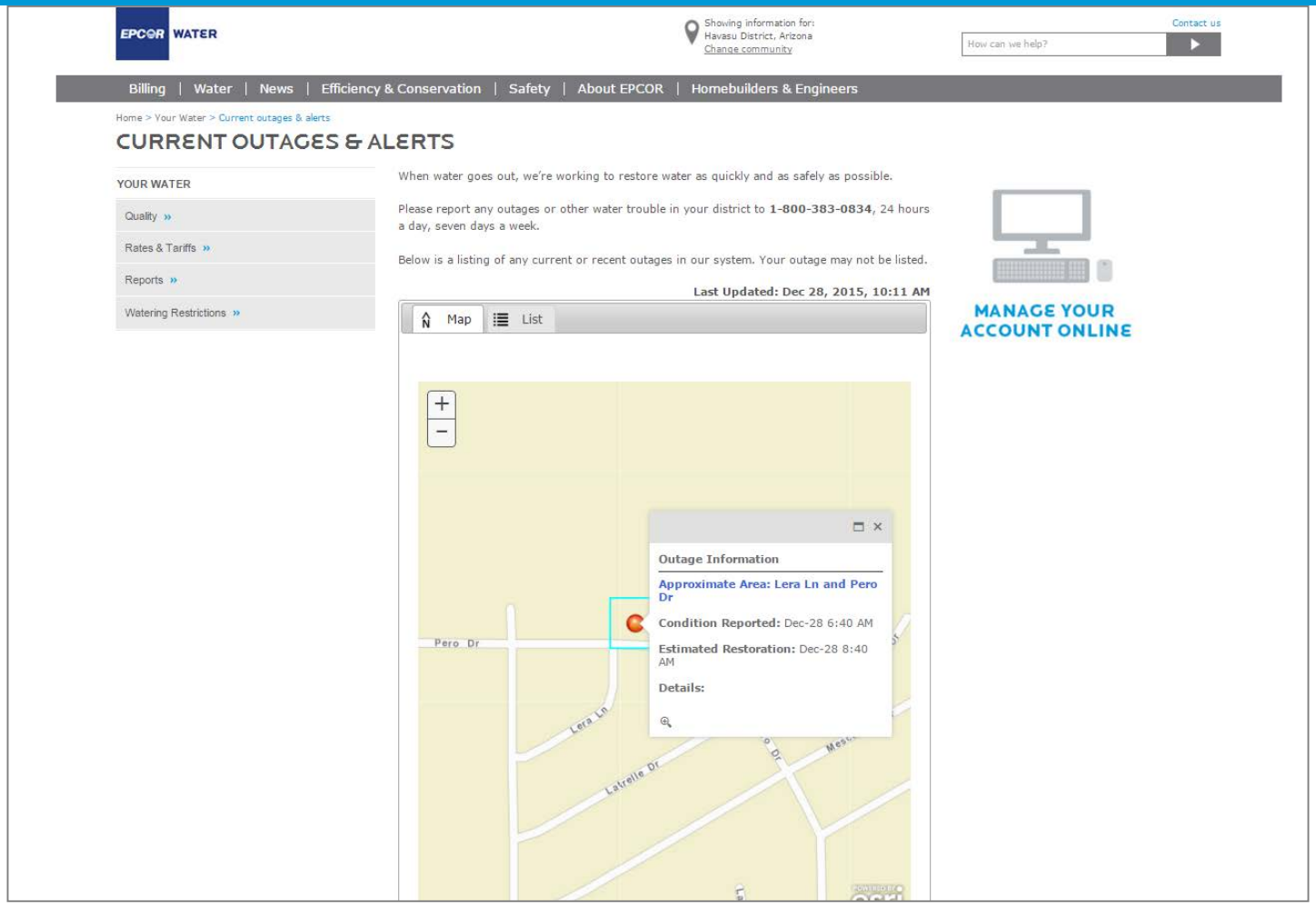
Customer Outage Map



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What's Next?

- Data cleanup:
  - Rebuild meter routes and lookup layer from the parcel up.
- Refine and extend Customer Premise Information Lookup application.
- New applications: Story Maps!

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Lessons Learned

- Be focused – select high impact maps and apps.
- Data is key – Premise App helped to identify deficiencies.
- Education/Communication

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QUESTIONS?

Contact:	
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