



Translating Spatial Awareness to Operational Efficiency using Web Maps

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Overview

- About EPCOR Water
- EPCOR Water's GIS Evolution
 - Phase 1: Data development
 - Phase 2: Transition
 - Phase 3: From web maps to web portal
- Lessons Learned
- Q & A



EPCOR OPERATIONS

- Electricity Distribution & Transmission
- Water Facilities

- Wastewater Facilities
- Water/Wastewater Facilities
- Industrial Wastewater Facilities



About EPCOR Water

Water Infrastructure

Hydrants	14,036
Valves	45,199
Water Mains	2,359 miles

Wastewater Infrastructure

Manholes	12,169
Cleanouts	1,533
Sewer Mains	686 miles

- Largest private utility in Arizona & New Mexico
- 198,000 customer connections
- Population served over 300,000
- 280 US based employees
- 3 GIS professionals



Water/Wastewater Facilities

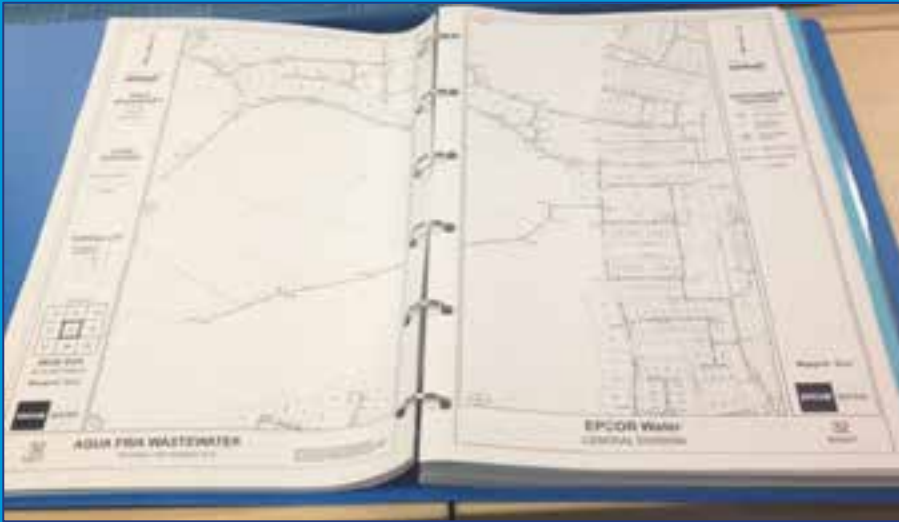


Water Facilities

13 Water Districts
5 Wastewater Districts



GIS at EPCOR



From Paper to
Web Maps



Phase 1 – Data Development

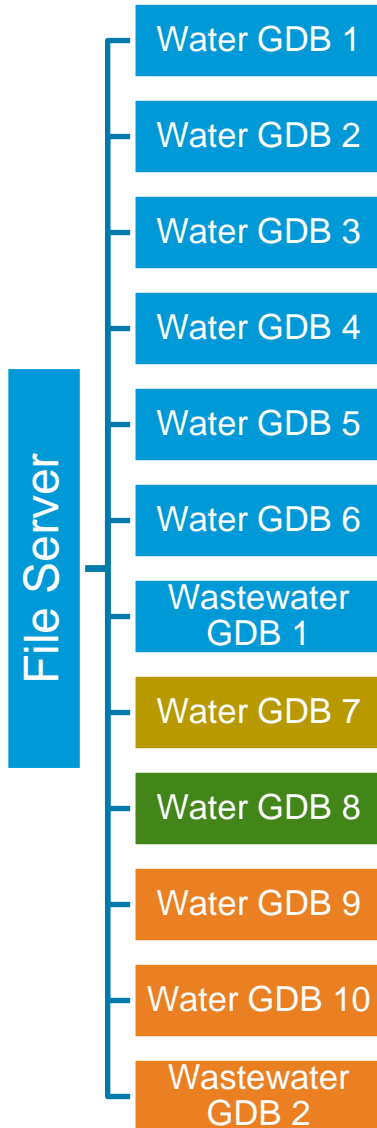
Data

Establish data models for water & wastewater

Standardize editing, mapping, and reporting templates

Data in personal geodatabases on file server

Phase 1 - Architecture



- 4 Total ArcGIS Desktop Users
 - 3 Standard
 - 1 Advanced
- 50 Desktop Map Viewer
 - Third Party
 - Map Objects Based

Phase 1 – Pros & Cons

Pros	Cons
Structured data	Data management
Thematic maps	Restricted editing
Reporting capabilities	Limited data security
Paper and PDF maps only	

Why make the switch?



- Isolation of GIS data
- Inefficiencies
- Data currency
- Distance decay from GIS staff location
- Too many geodatabases



Project Justification

Operational Excellence

Manage multi user access to GIS

Improve communication between staff in same or remote locations

Wider access to GIS data

Implementation Overview

Hardware

- 4 Virtual Machines on 16 core Physical Server
- Pre-Production
- Production

Software

- ArcGIS 10.1 Server Standard
- EDN License
- Microsoft SQL Server 2008

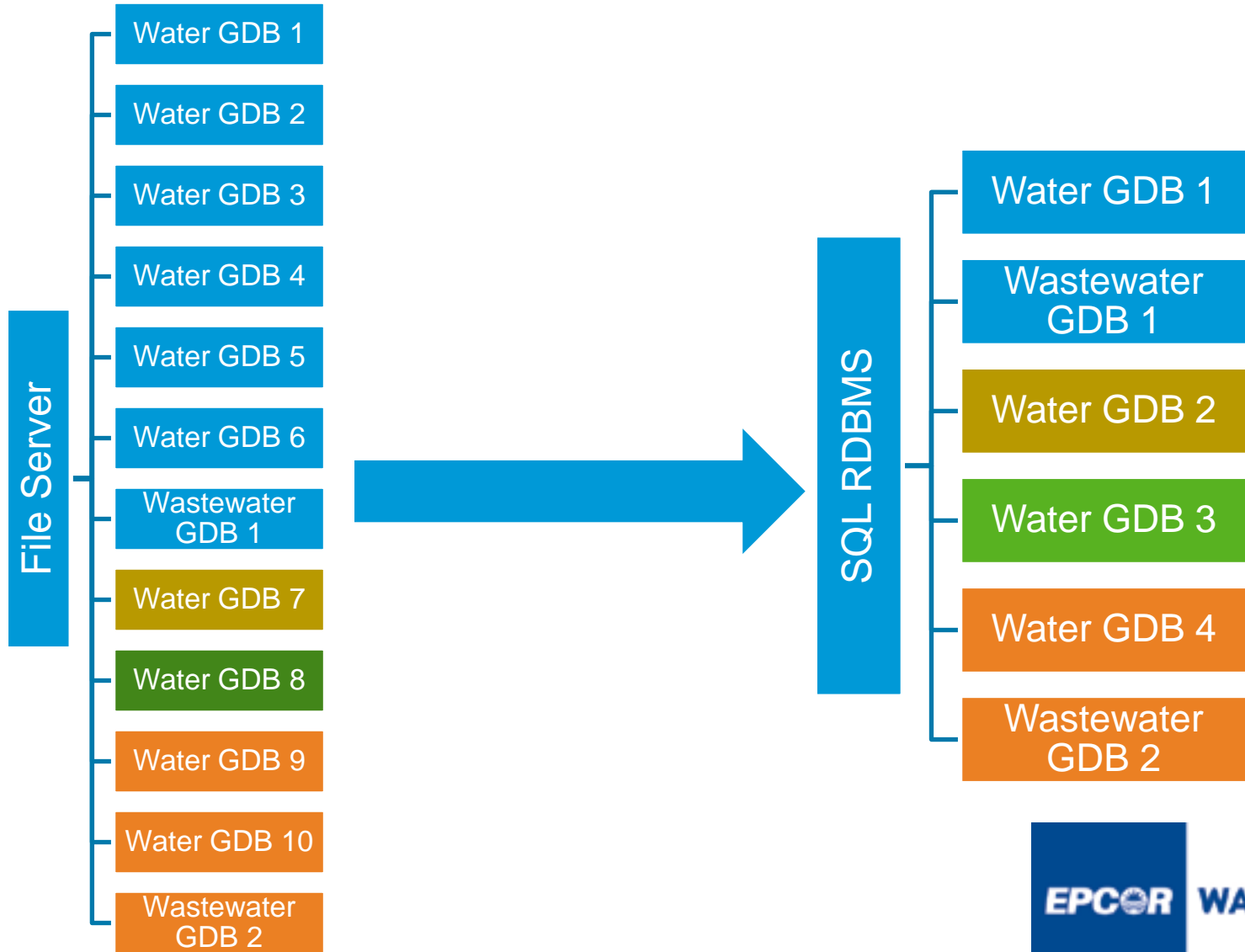
Client Tools

- 6 ArcGIS Desktop
- Silverlight Application by EMS
- ArcGIS Online

Services

- ESRI 3 Day Jump Start
- Engineering Mapping Solutions (Silverlight App)

The “GIS Professional” Result



The “Visible” Result

- All EPCOR Water employees can access Web Maps from their desktop
- GIS data has been “freed”
- Users “Thinking about GIS”

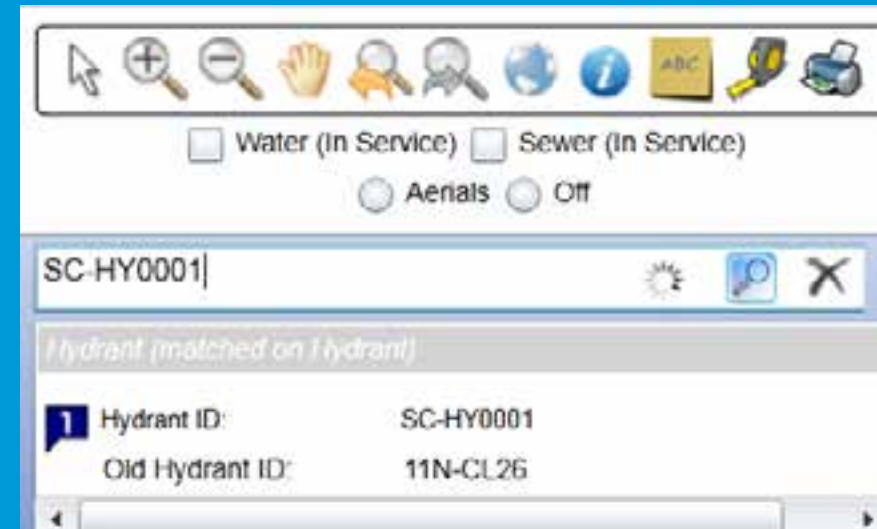
Web Map Accessibility



- Minimize barriers to use
- Get the word out
- Incorporate feedback

Web Map Functionality

- View water and sewer infrastructure
- Query data (Material = “Asbestos Cement”)
- Search by address or asset ID
- Link to digital record drawing library
- New infrastructure polygons



Operational Efficiencies



- Fewer requests for custom maps
- Data currency improved from months to days
- Data feedback loop improved
- Outlying districts have access to web map
- Field staff have access to web map

Thinking about GIS

- Can the web maps....
 - Support red lining?
 - Perform valve isolation tracing?
 - Show other layers?
 - Maintenance tasks
 - Dashboards
 - A web map “just for me”



From Web Map to Web Portal

- Leverage existing investment in ArcGIS Server
- Continue use of Silverlight Web Viewer
- Work within IT security guidelines
- Fulfill requests for additional web maps and applications



EPCOR WATER

All EPCOR New Mexico systems (Clovis & Edgewood Water)

All Phoenix area water and wastewater systems, including

Mohave Water, Fort Mohave Wastewater, and Havasu

Sewer Cleaning Status Web Viewer

EPCOR's Mission, Vision and Overarching Goal

Mission: We make life better in our communities by providing clean water and safe, reliable electricity.

Vision: Our vision is to be a premier North American essential services company, providing great tasting drinking water, clean wastewater and safe, reliable electricity; a company whose employees go home to their families safe each night.

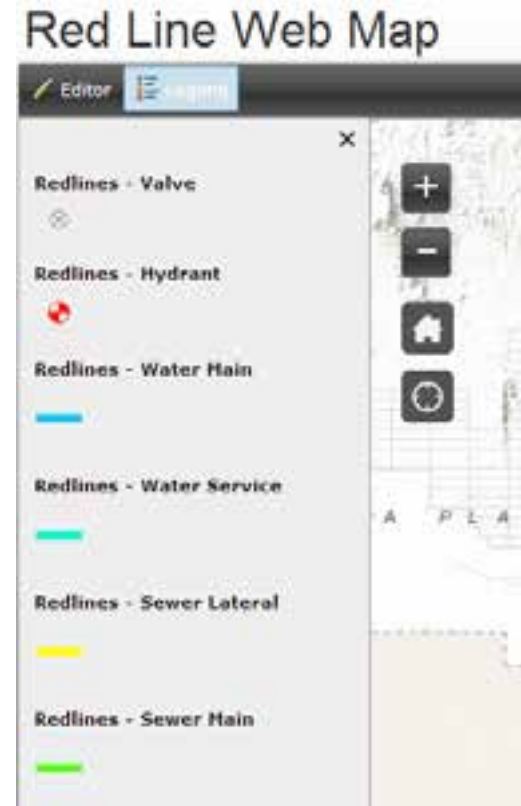
To achieve our vision, we will focus on:

- **People and Safety:** Be a place where people choose to work, known for our zero-injury culture and focus on continuous improvement.
- **Operational Excellence:** Be recognized as an expert in our business by adopting best available technology and solutions that enhance water and power quality, system reliability, and our efficiency and cost-effectiveness.
- **Environment:** Make the environment a priority in everything we do.
- **Growth:** Deliver increasing value to our shareholder.



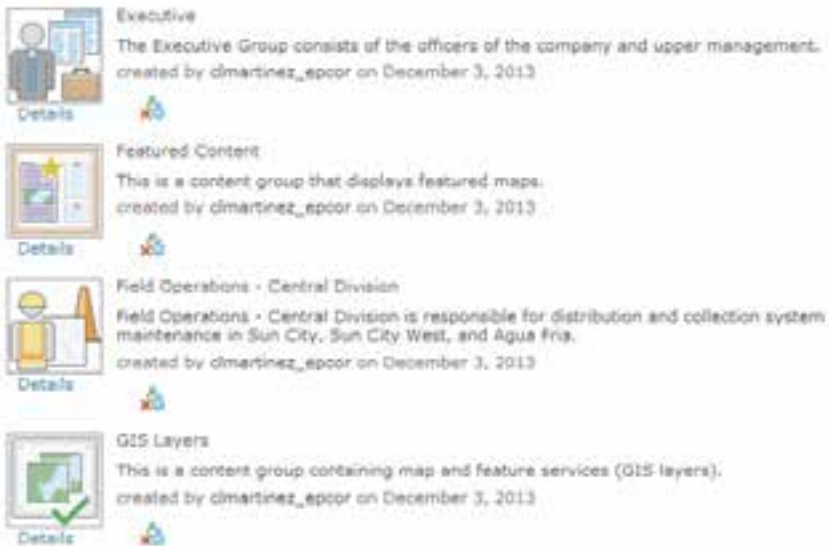
ArcGIS Online

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



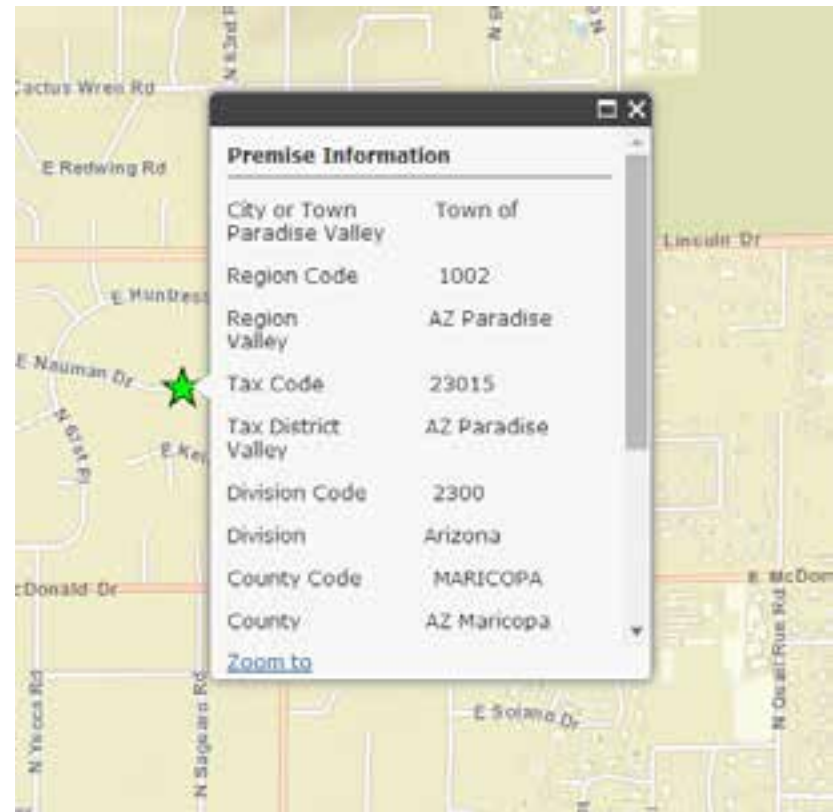
ArcGIS Online

- Opens GIS to customer service, executive team, finance & rates
- Replace or augment paper workflows with electronic workflows



Sample Applications

- Premise Lookup App
- Red Line App
- Operations Dashboard
- Developer Services Content



Takeaways

Engagement

Help

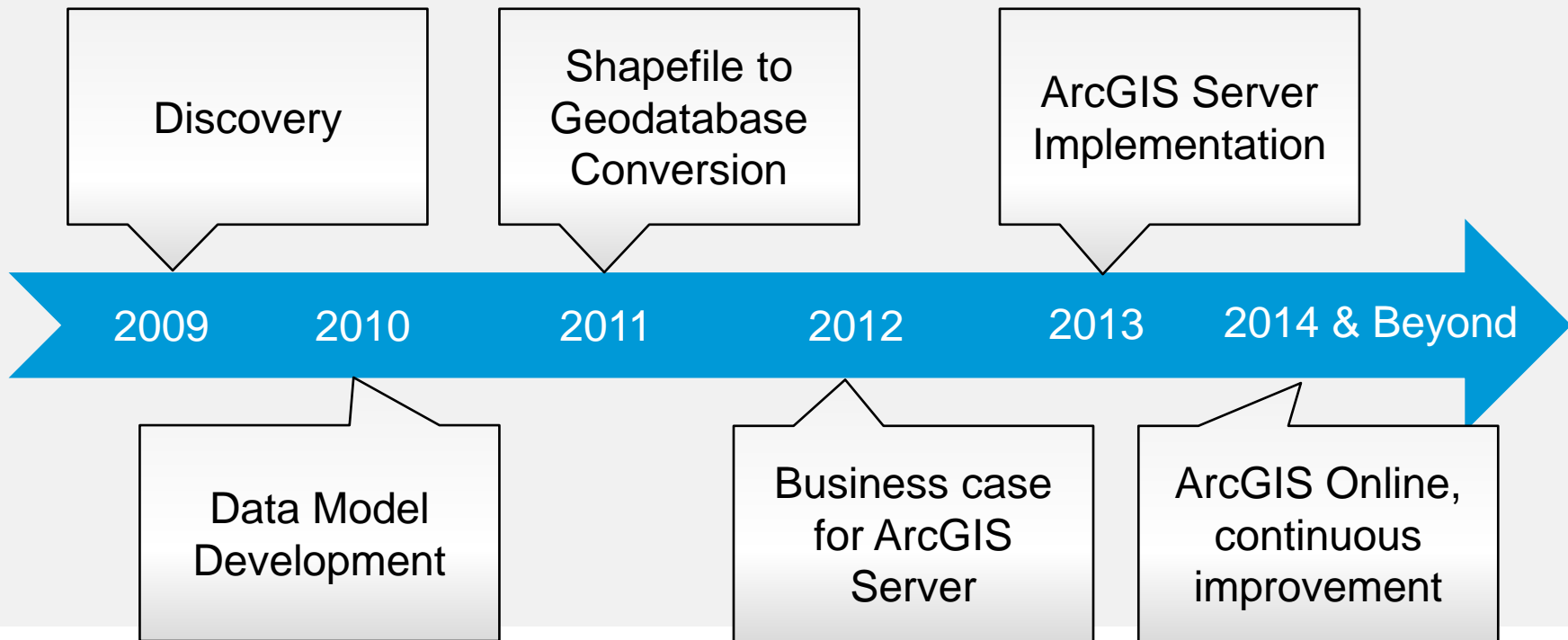
Success!

Quick Wins

Evangelization



Summary



Questions?

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