



# Death to the PDF: How ArcGIS Online is Shredding Paper Maps at EPCOR Water

Christina Martinez, GIS Manager

Jamie Patterson, Senior GIS Technician

12 July, 2014

# Overview

- About EPCOR Water
- EPCOR Water's GIS Evolution
  - Phase 1: Paper & Vellum
  - Phase 2: Desktop GIS Software
  - Phase 3: ArcGIS Server
  - Phase 4: ArcGIS Online
- Live Demo
- Lessons Learned
- Q & A



## EPCOR OPERATIONS

- Electricity Distribution & Transmission
- Water Facilities

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





- Water/Wastewater Facilities
- Water Facilities

13 Water Districts  
 5 Wastewater Districts



# About EPCOR Water

## Water Infrastructure

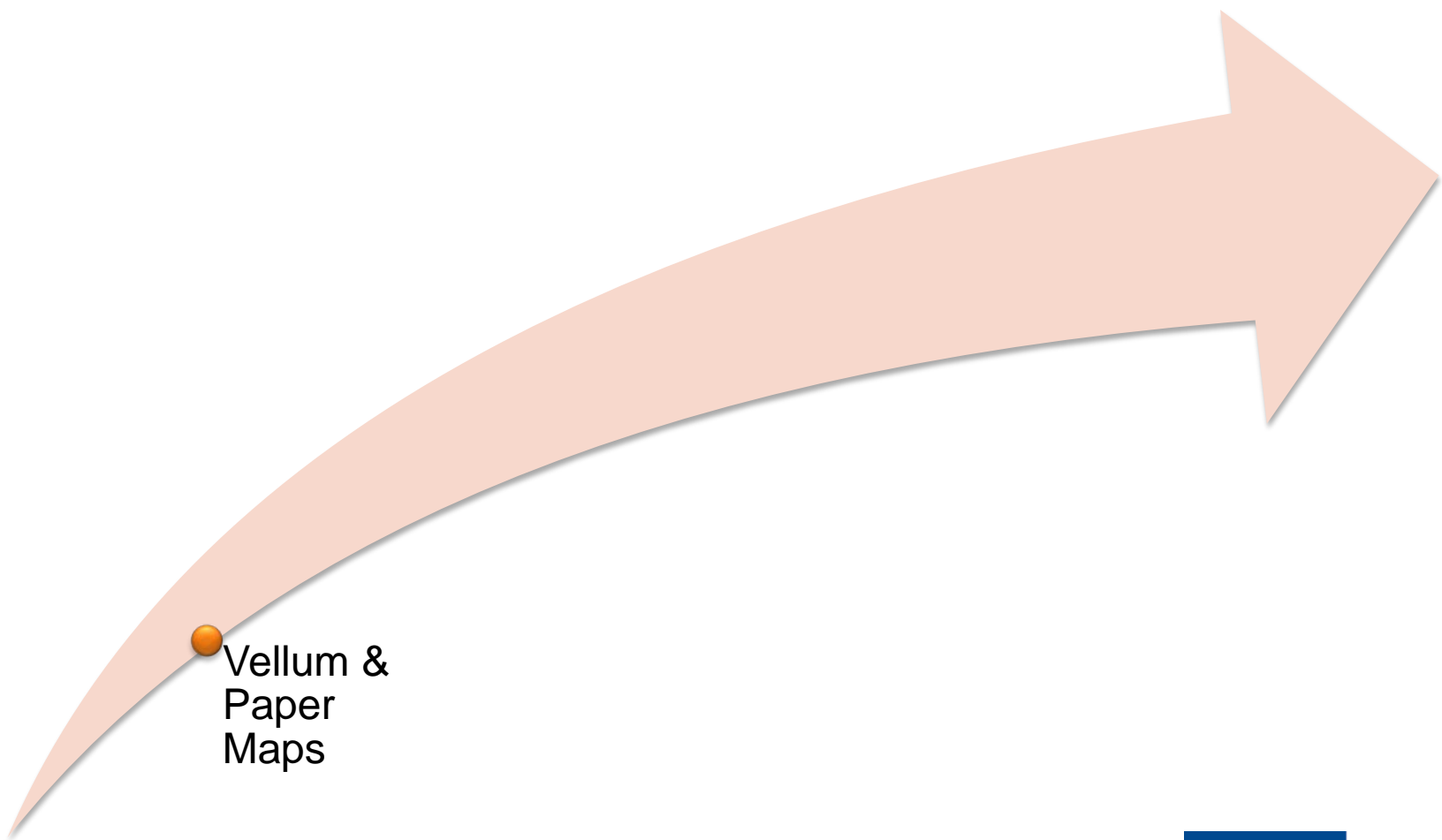
Hydrants	14,036
Valves	45,199
Water Mains	2,359 miles

## 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

# EPCOR Water's GIS Evolution

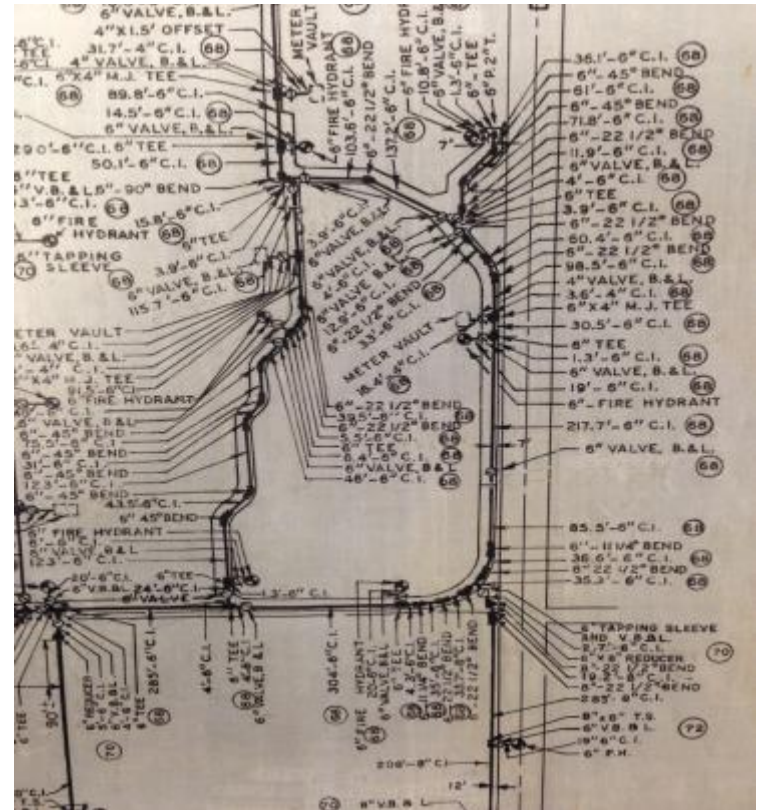


Vellum &  
Paper  
Maps



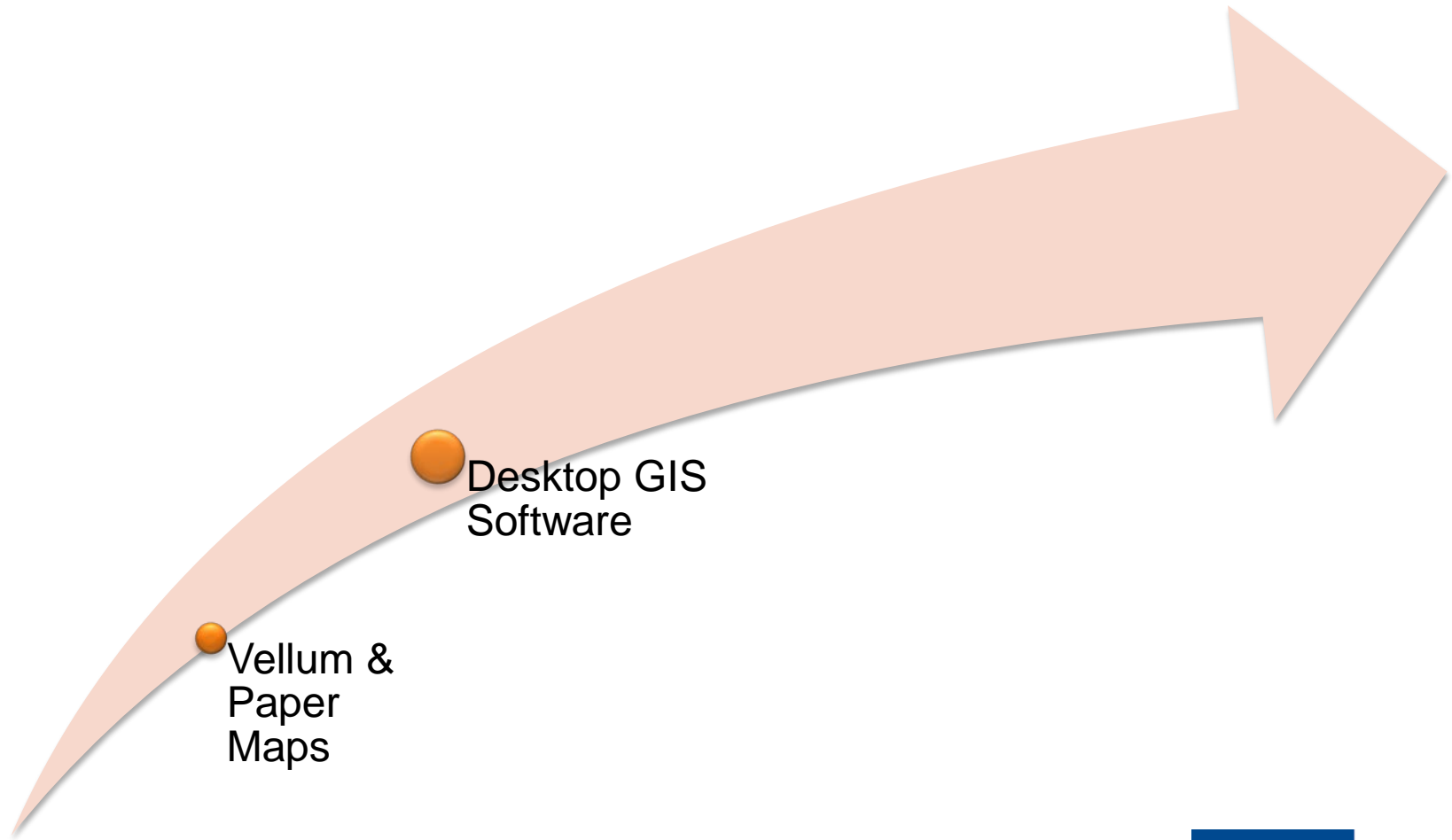
# Vellum & Paper

- Quarter section maps on vellum
- Paper map books
- Electronic files in CAD
- Limited GIS data
- Attribution through annotation layers



*Pre-GIS program; maps, not GIS*

# EPCOR Water's GIS Evolution





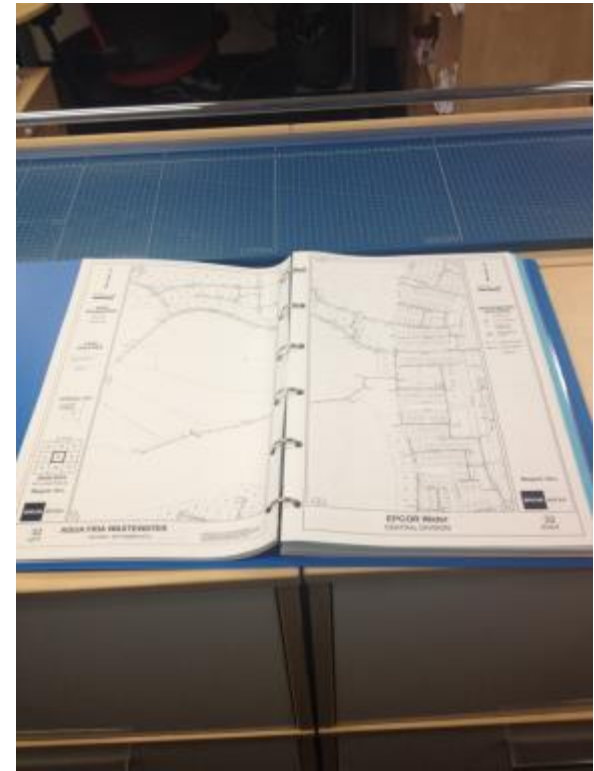
# Desktop GIS Software

## GIS Software

- ArcGIS Desktop
- Third party GIS and record plan viewer

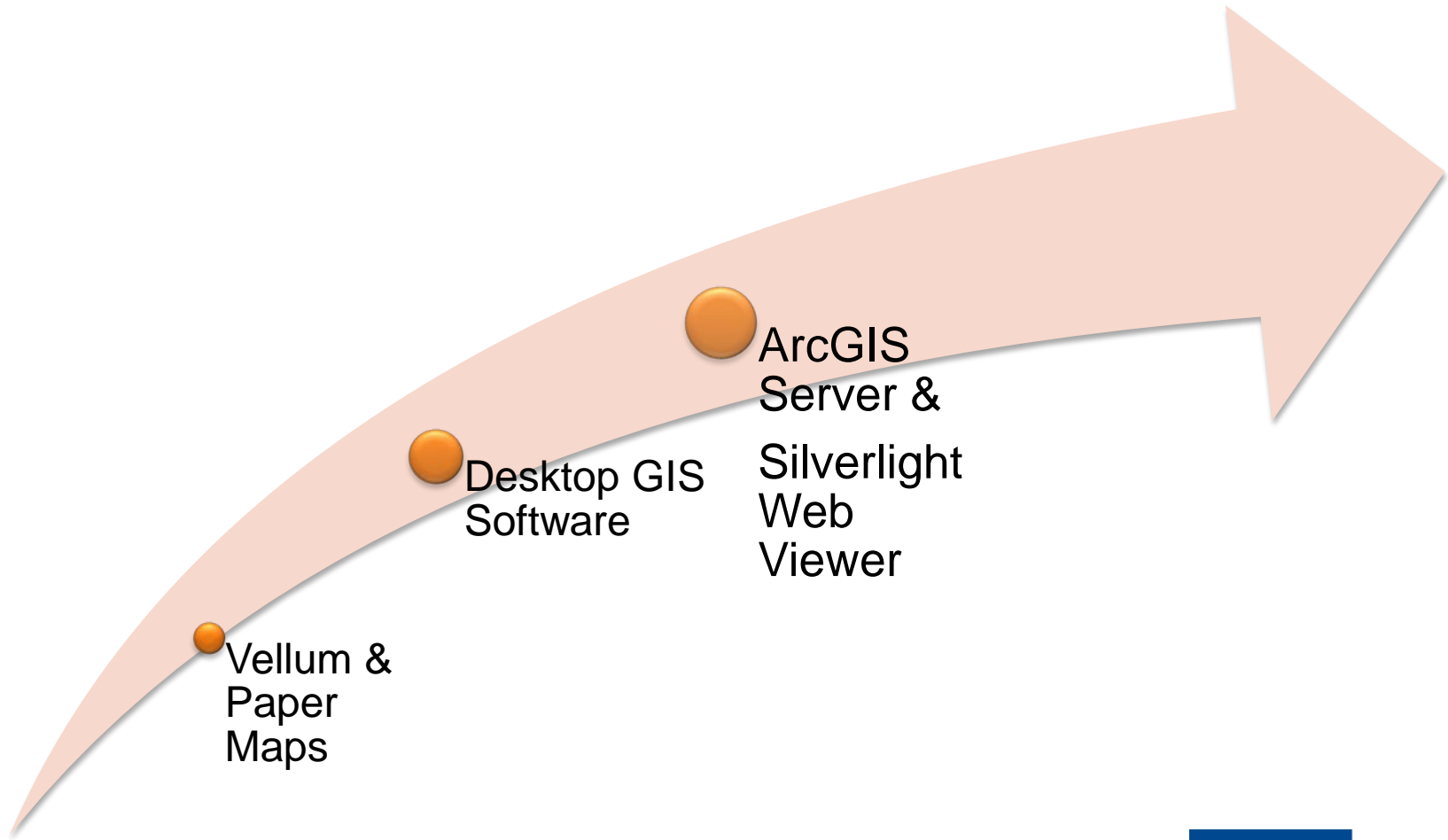
## Projects

- Data model implementation
- CAD/SHP to Geodatabase
- Map book development (GIS)
- Standardized custom maps



*Benefits of a GIS program are seen*

# EPCOR Water's GIS Evolution



# Why ArcGIS Server?



# ArcGIS Server Justification

## Data editing

- Editing limitations
- Data storage/security

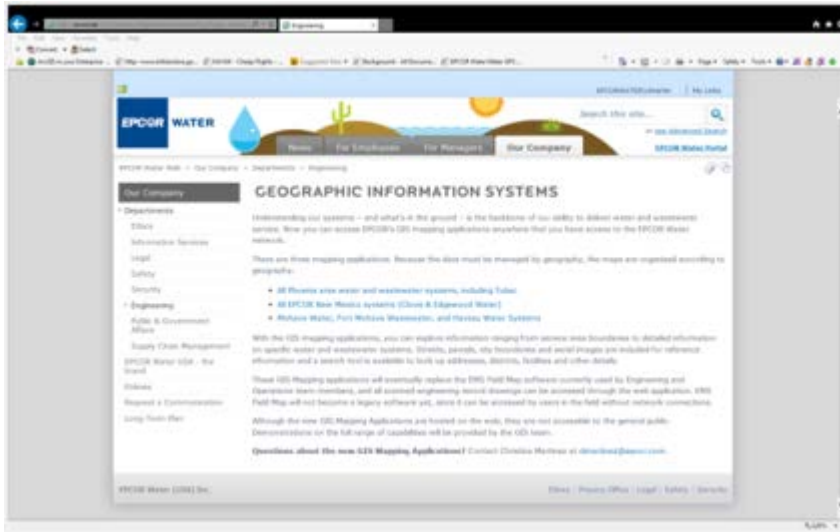
## Data display

- Map content and scale limitation
- Information currency

## Data sharing

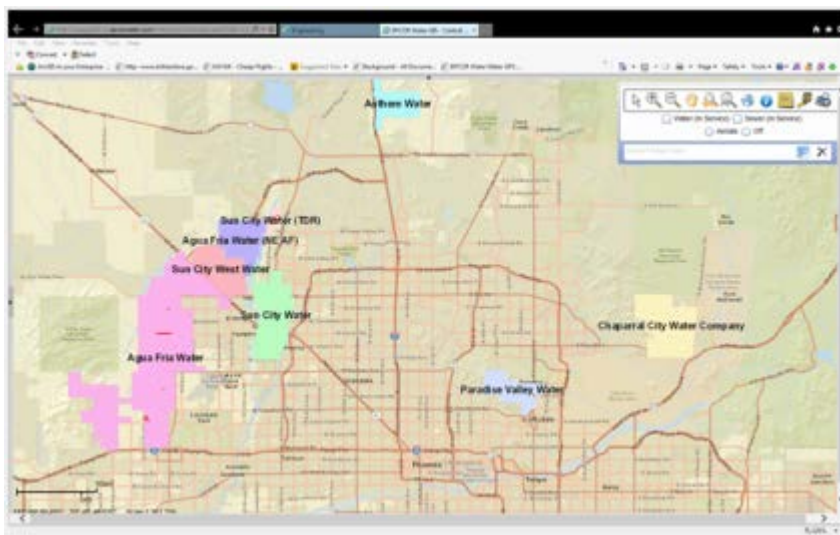
- Engagement and feedback
- GIS operational efficiency

# Silverlight Web Viewer by EMS



- Highly accessible
- Unlocked GIS data
- Requests for apps

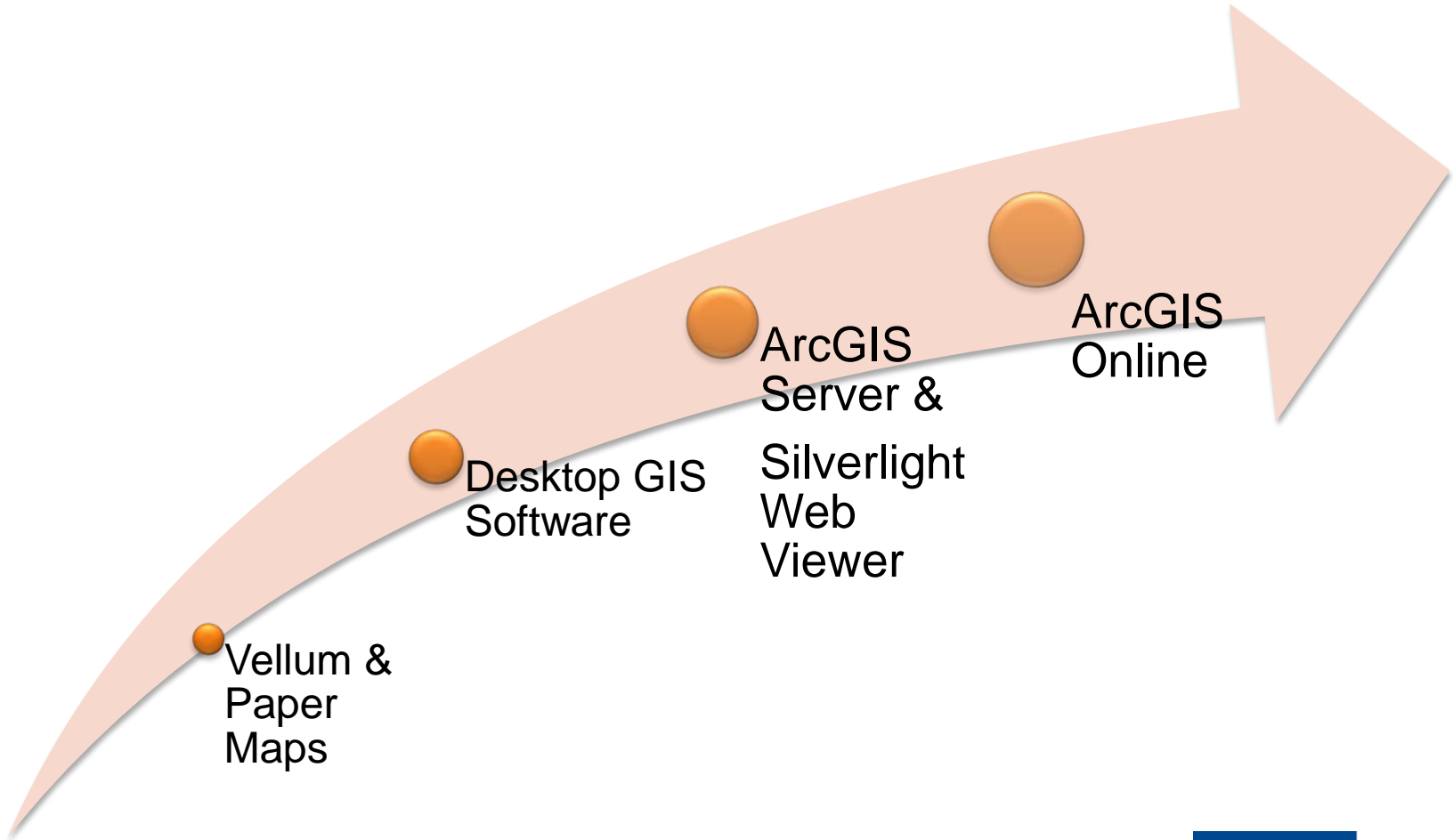
*Users "Thinking about GIS"*



# ArcGIS Server Project Result

- GIS available to wider audience
- Requests for access on mobile devices
- GIS seen as dynamic, not a “drawing”
- More requests for “maps and apps”
- Self service maps
- Evolving role of GIS staff

# EPCOR Water's GIS Evolution





How do we meet  
evolving needs?



*Not sustainable!*

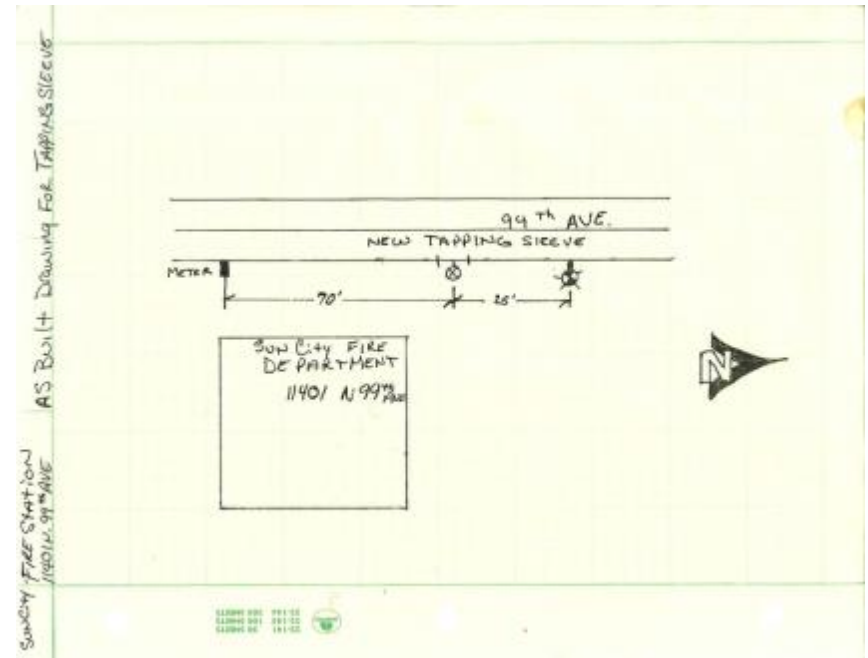
# Selling AGOL

- IT
- Executives
- Everyone else...



# Why ArcGIS Online?

- Operational efficiency
- Less paper
- Secure
- Leverage ArcGIS Server
- More with same



# The Solution

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

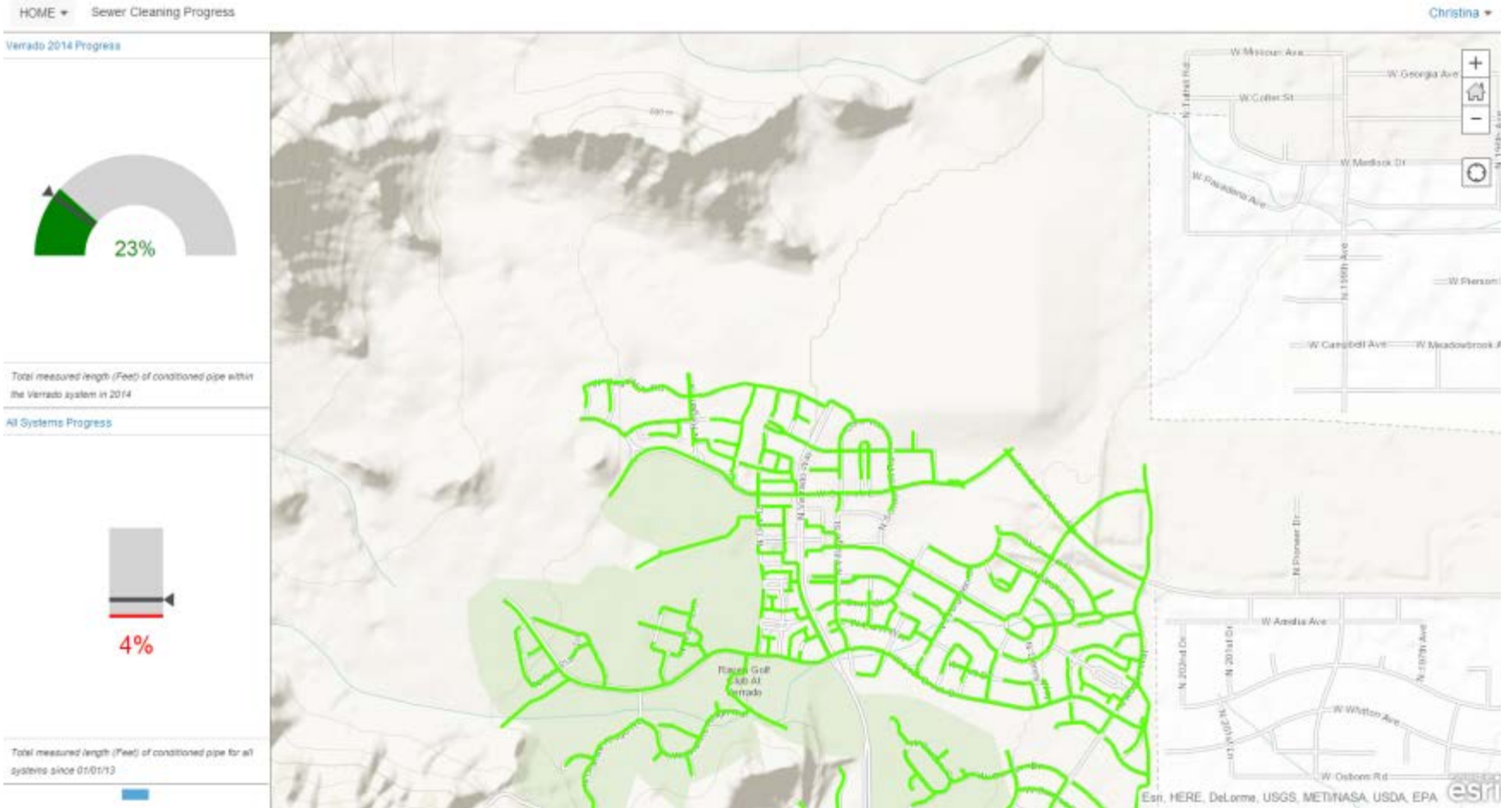
- Opens GIS to customer service, executive team, finance & rates
  - Replace or augment paper workflows with electronic workflows
  - Targeted maps and apps for quick wins
1. *Operations dashboard*
  2. *Red line/map feedback*
  3. *Information lookup*

# “Dashboard” or...

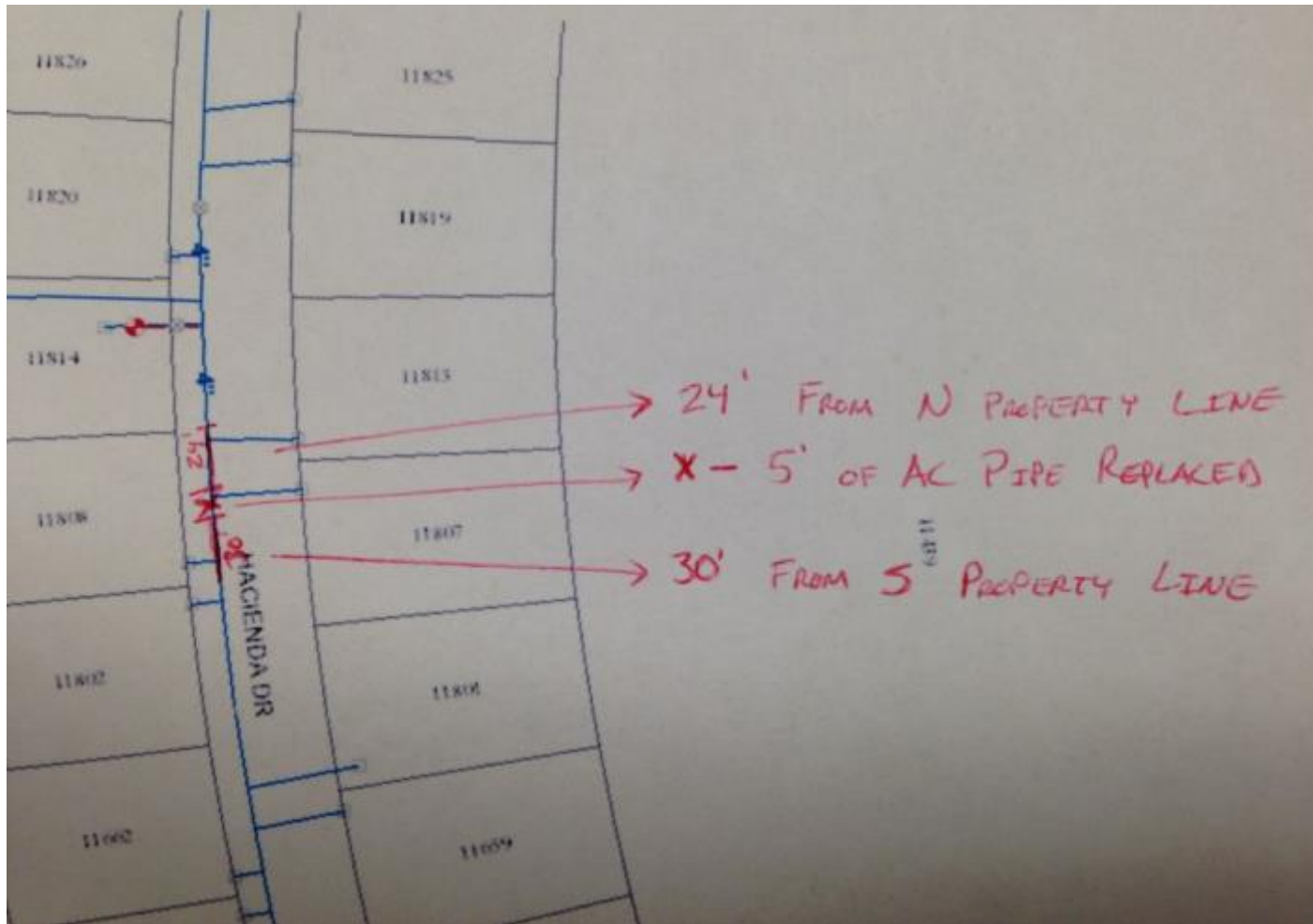




# Operations Dashboard

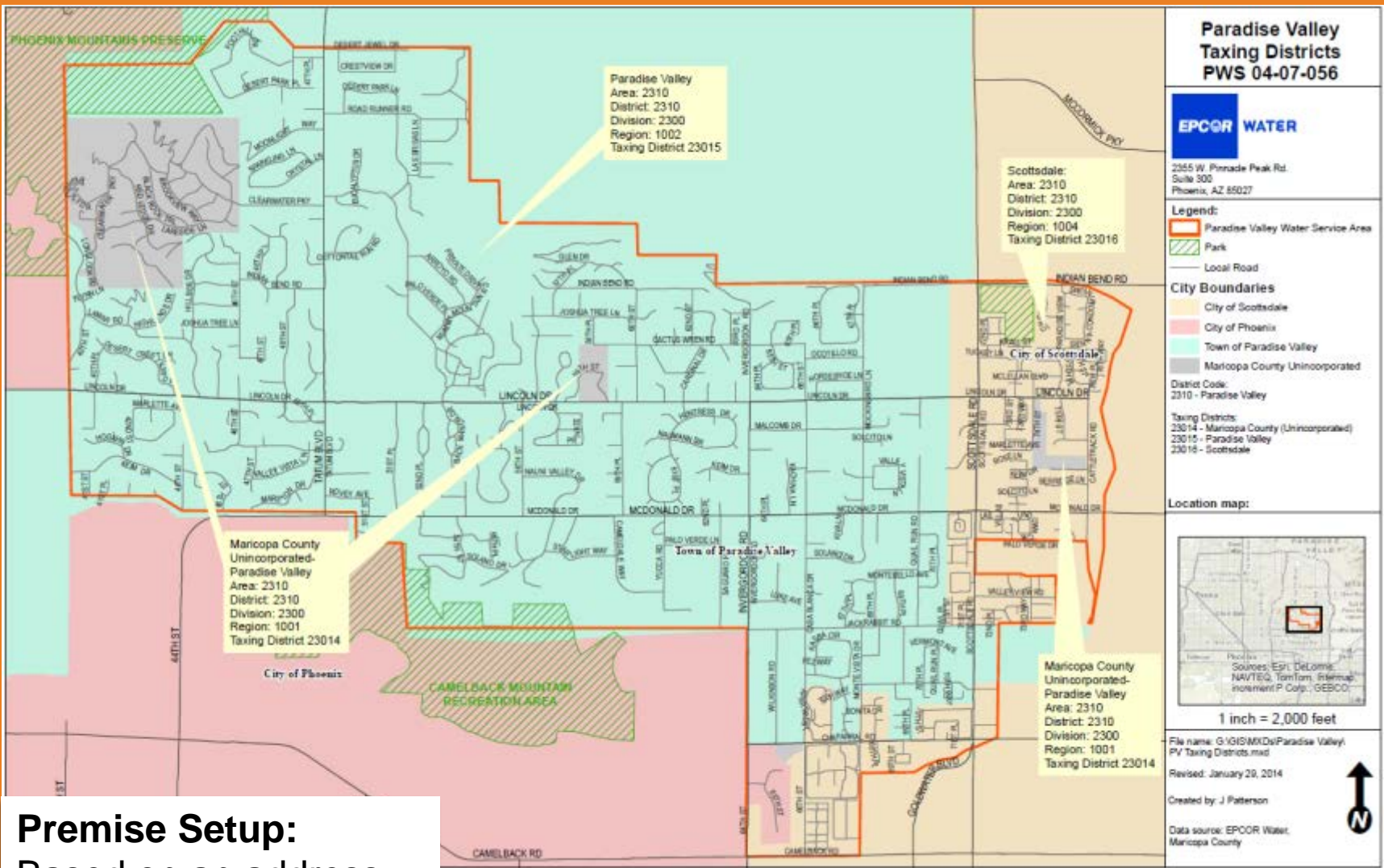


# “Red line tool” or...



# Live Demo

Red Line Tool



## Premise Setup:

Based on an address, a user must determine district, division, region, water system, tax district.

# Live Demo

## Information Lookup

# The Future Holds More

*Maps and apps*

*End user training*

*Selling*

*Mobile devices*

*Ideas from user community*

*Public engagement*

# Lesson Learned

- Education/Communication
- Information Security concerns
- ArcGIS for Water Utilities – Use it!
- Be focused – select high impact maps and apps
- Ask for help



# Is this the end of paper maps?



# QUESTIONS?

Christina Martinez  
clmartinez@epcor.com

Jamie Patterson  
jbpaterson@epcor.com

