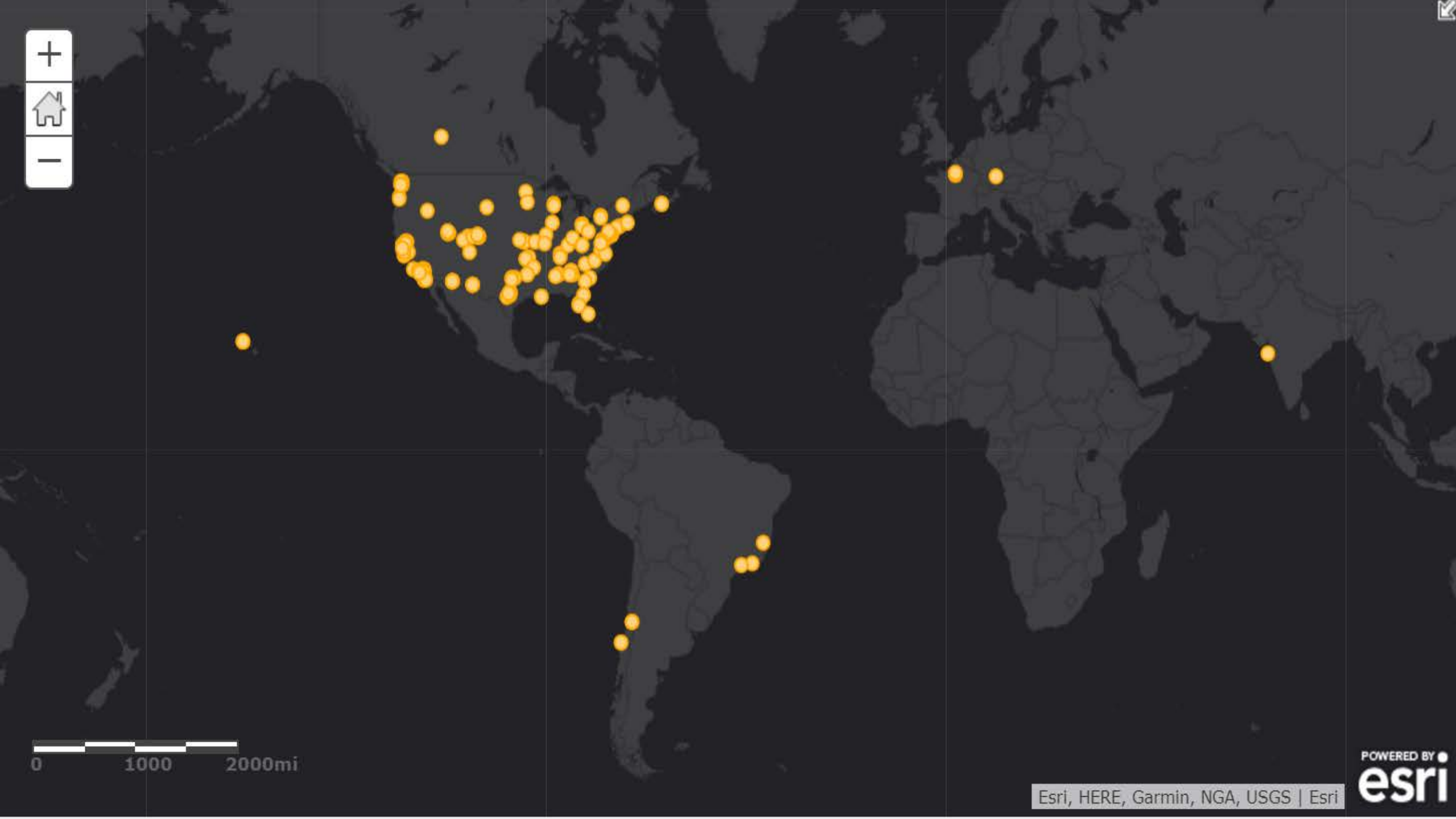
# 2017 Esri Water UC Meeting

July 9, 2017 • San Diego Convention Center

# WELCOME!

# WHERE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1000
2000mi
Esri, HERE, Garmin, NGA, USGS | Esri
POWERED BY esri

# Agenda

- **Opening Session** (29 A/B)
  - Esri's One Water
  - Solutions Roadmap for Water
  - Water Technology Update
- **Breakout Sessions**
  - Water Utilities (29 A/B)
  - Water Resources (29 C)
- **Closing** (29 A/B)
- **Water Social** (Plaza Terrace – Upper Level)

## Thank you to our sponsors:

Platinum

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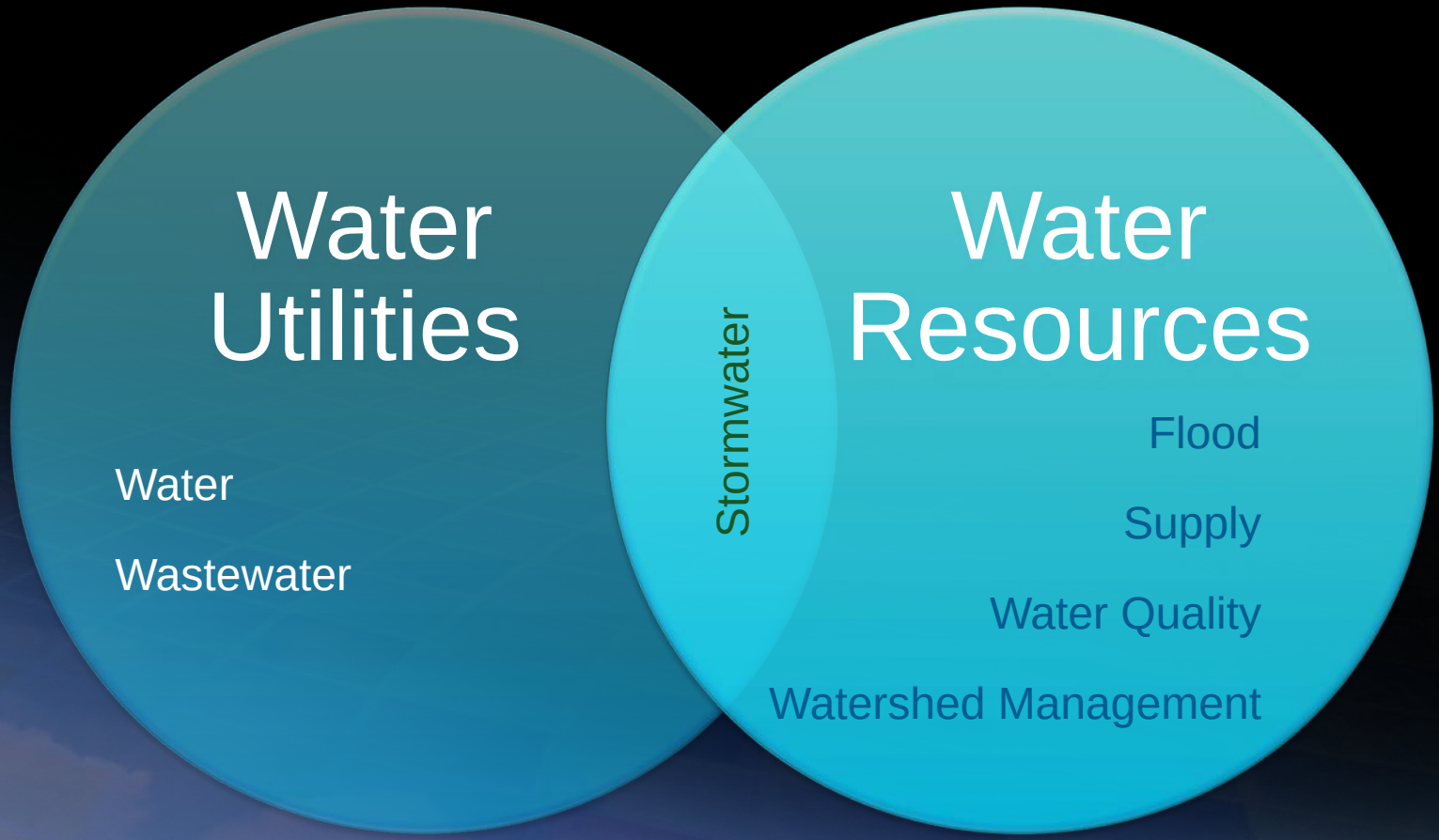
FUTURA SYSTEMS, INC.

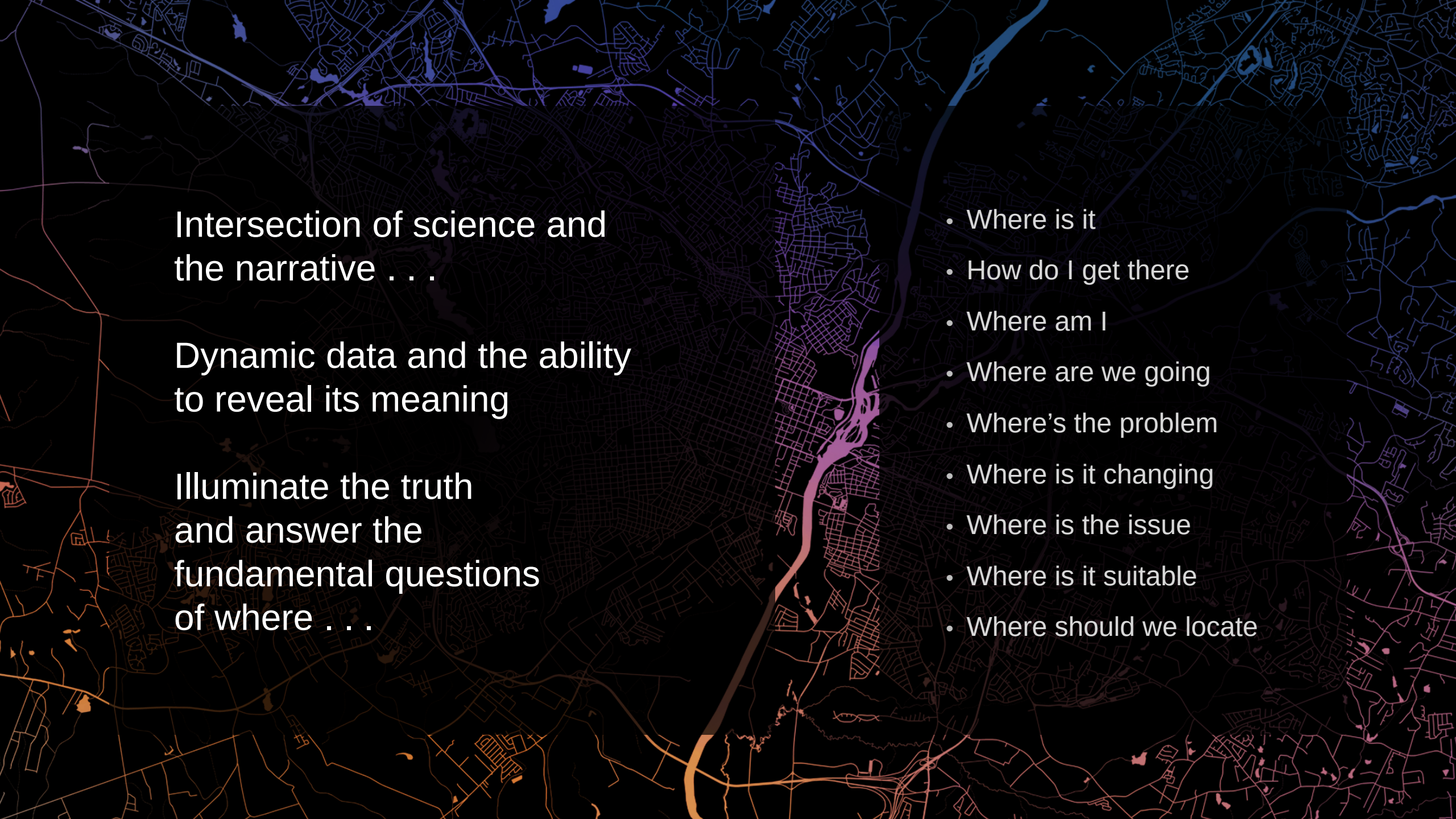
lucity™

# One Water Initiative



# WHERE

THE
SCIENCE
OF
WHERE



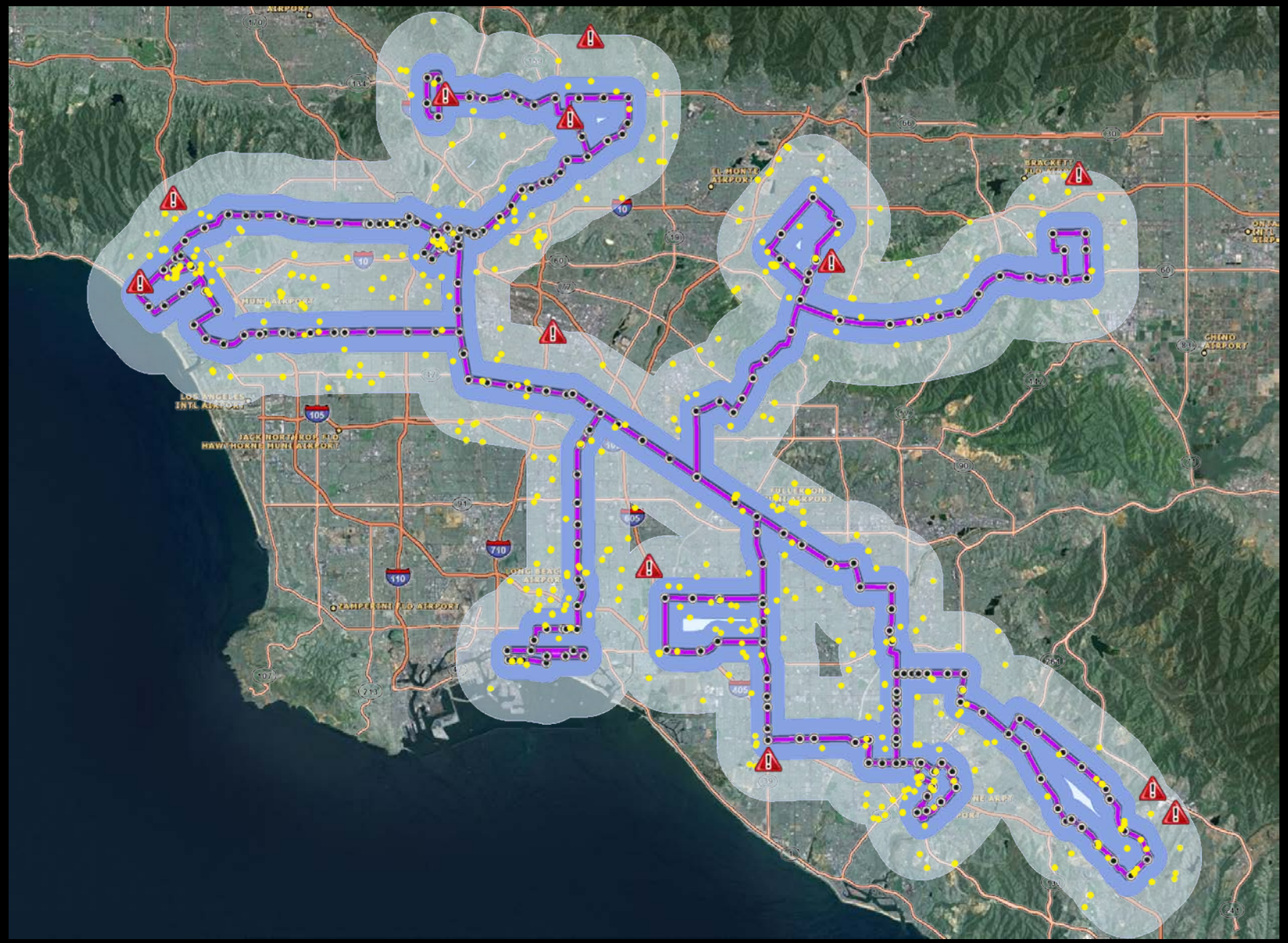
Intersection of science and the narrative . . .

Dynamic data and the ability to reveal its meaning

Illuminate the truth and answer the fundamental questions of where . . .

- Where is it
- How do I get there
- Where am I
- Where are we going
- Where’s the problem
- Where is it changing
- Where is the issue
- Where is it suitable
- Where should we locate

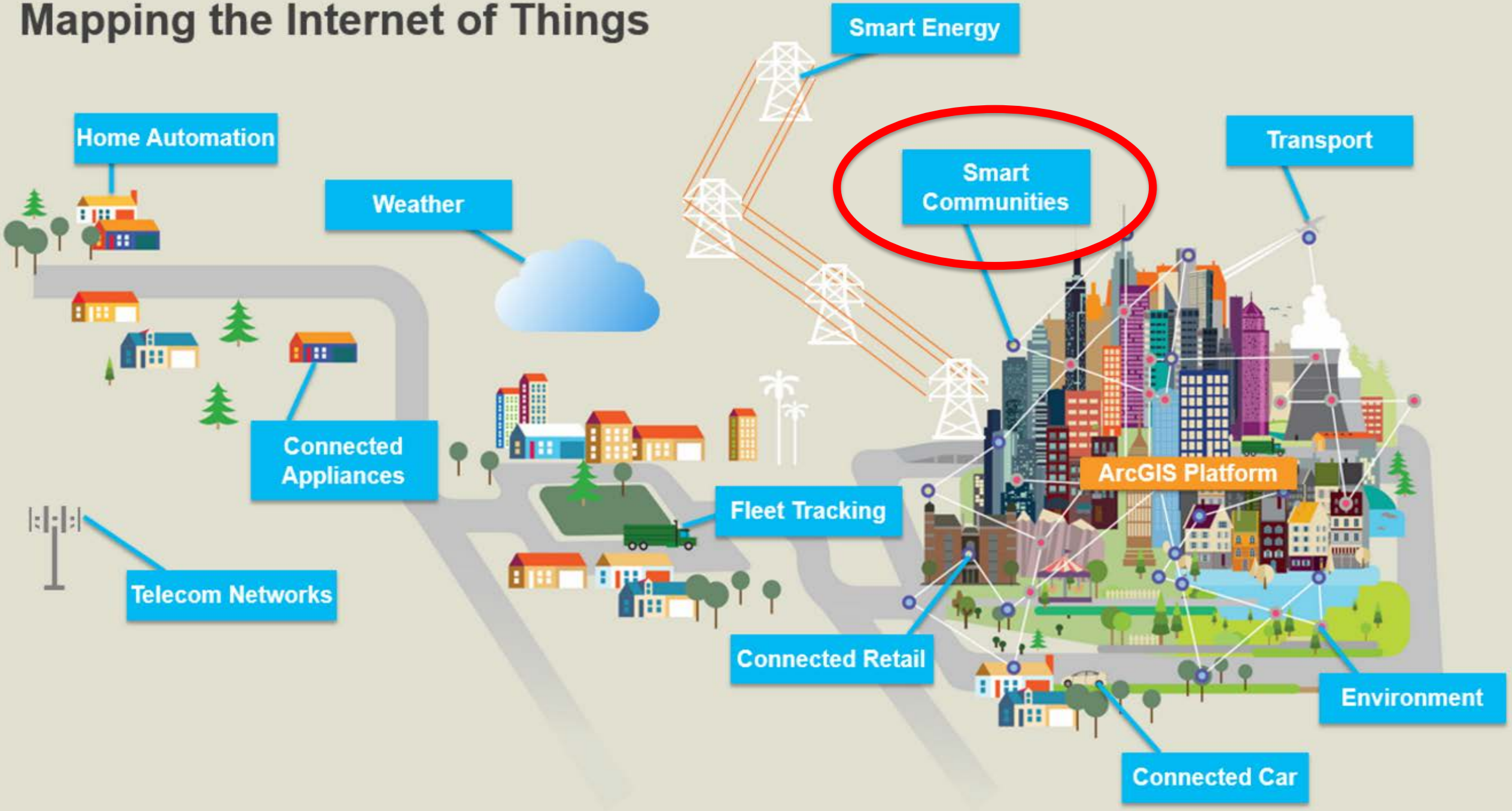
# LOCATION



EL MONTE AIRPORT
BRACKETT FLD AIRPORT
CHINO AIRPORT
LOS ANGELES INTL AIRPORT
JACK NORTHROP FLD HAWTHORNE MUNI AIRPORT
LONG BEACH AIRPORT
ZAMPERINI FLD AIRPORT

# SMART

# Mapping the Internet of Things



- Smart Infrastructure
- ~~Smart Water~~

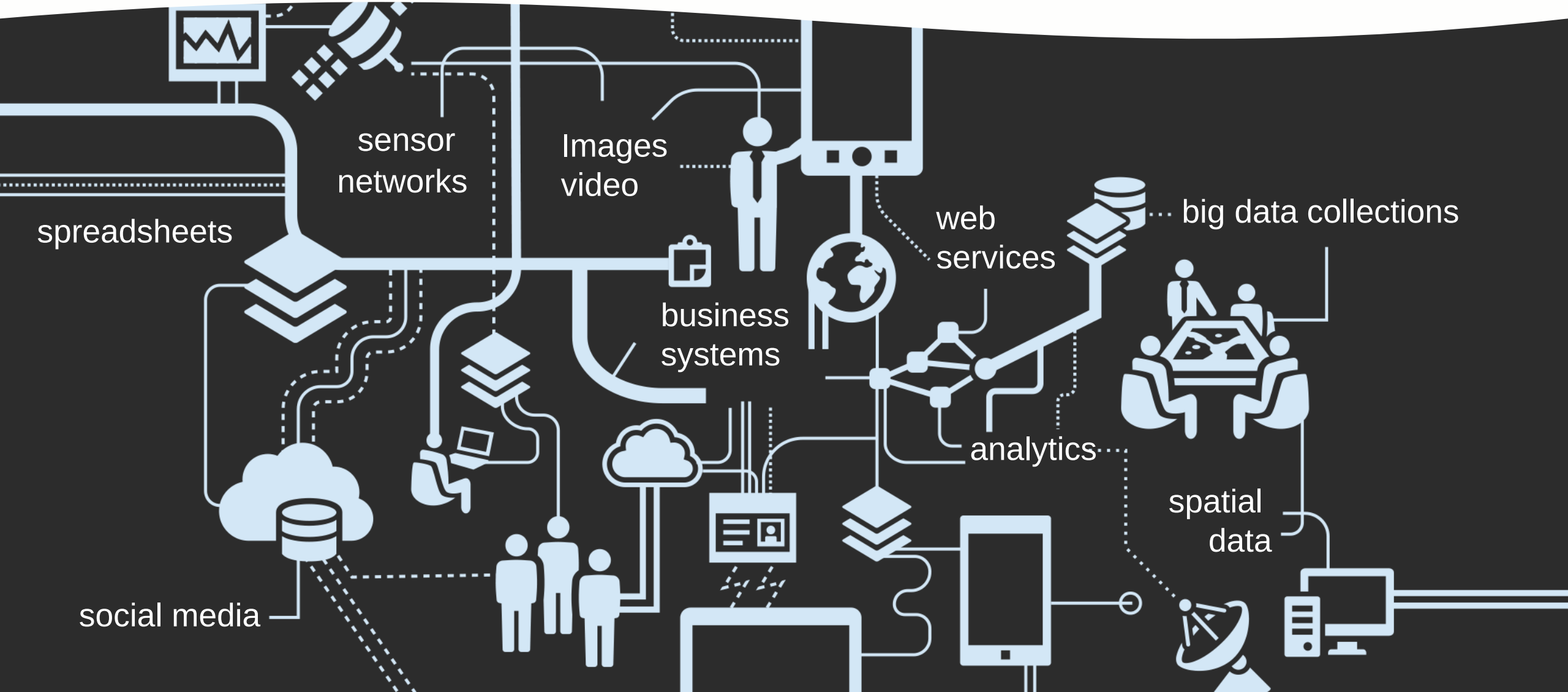
- Intelligent Water Systems

# Smart Communities implement Intelligent Water Systems based on the IoT

# Location Platform for IoT

- IoT / Real-time
- Mobility
- Analytics
- Situational Awareness
- Community Engagement

# Maps at Work ▶ Integrate, display, analyze, and enrich information from many sources



# Water Loss

# Water Loss

# Non-Revenue Water

<table>
<tr><td rowspan="8">System Input Volume</td><td rowspan="4">Authorized Consumption</td><td rowspan="2">Billed Authorized Consumption</td><td>Billed Metered Consumption</td><td>Revenue Water</td></tr>
<tr><td>Billed Un-metered Consumption</td><td rowspan="6">Non Revenue Water (NRW)</td></tr>
<tr><td rowspan="2">Unbilled Authorized Consumption</td><td>Unbilled Metered Consumption</td></tr>
<tr><td>Unbilled Un-metered Consumption</td></tr>
<tr><td rowspan="4">Water Losses</td><td rowspan="2">Apparent Losses (Commercial Losses)</td><td>Unauthorized Consumption</td></tr>
<tr><td>Customer Meter Inaccuracies and Data Handling Errors</td></tr>
<tr><td rowspan="3">Real Losses (Physical Losses)</td><td>Leakage in Transmission and Distribution Mains</td></tr>
<tr><td>Storage Leaks and Overflows from Water Storage Tanks</td></tr>
<tr><td>Service Connections Leaks up to the Meter</td></tr>
</table>

# Water Quality

# Water Quality

$H_2O$

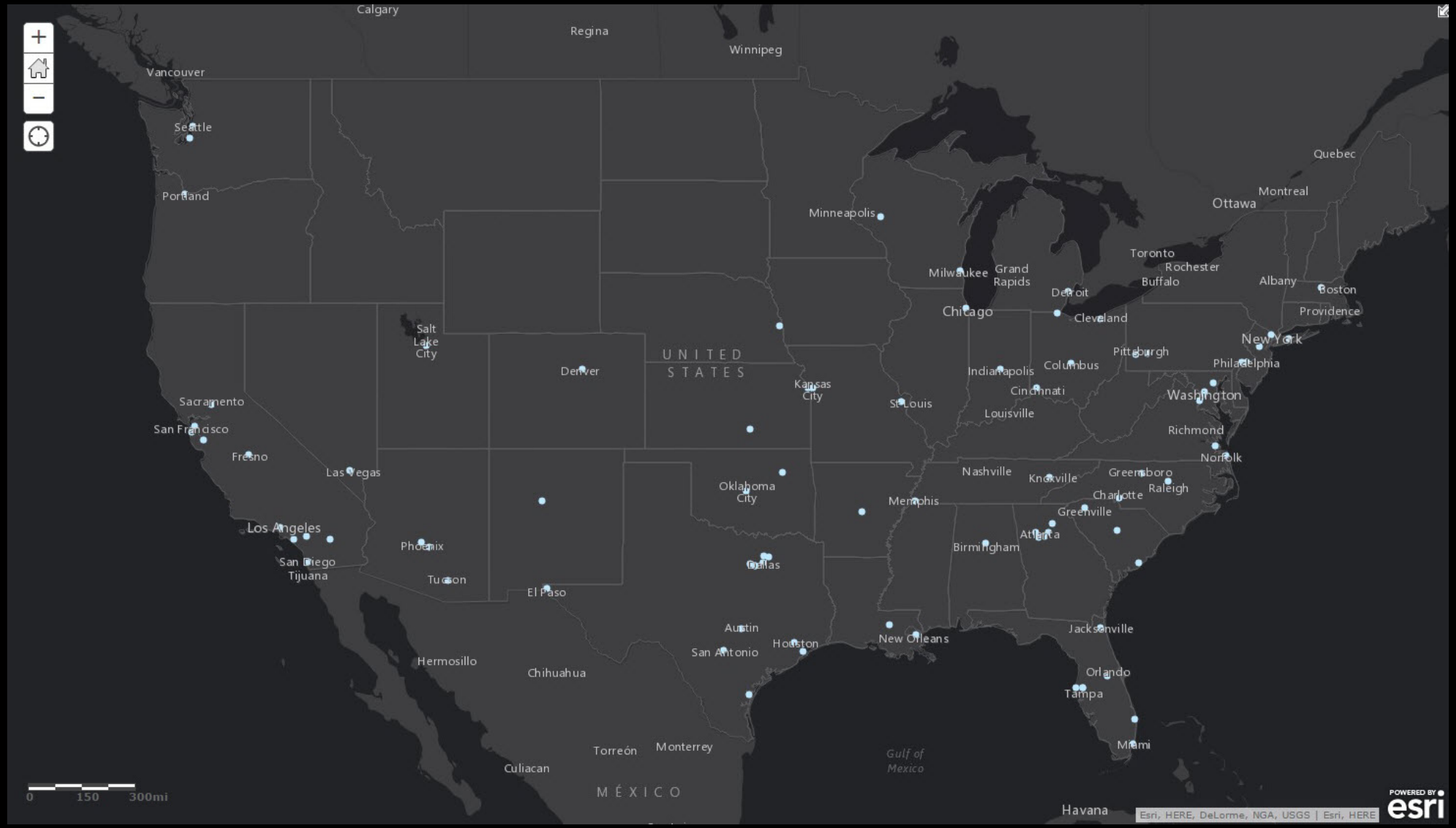
## Water Quality

$CHF_3$, $CHClF_2$, $CHCl_3$, $CHBrCl_2$, $CHBr_2Cl$, $CHBr_3$, $CHI_3$

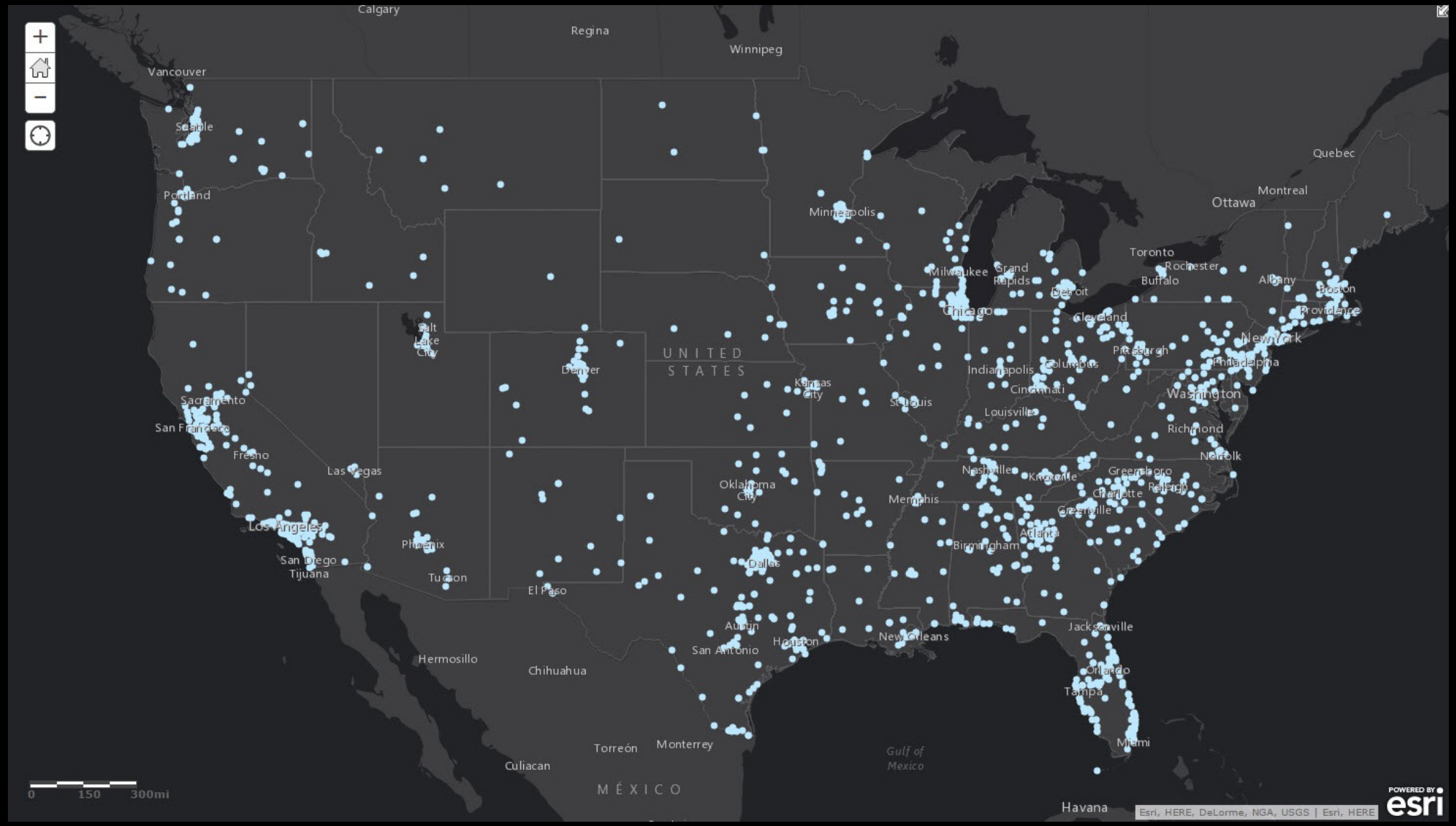
# RESILIENT

# Water Systems

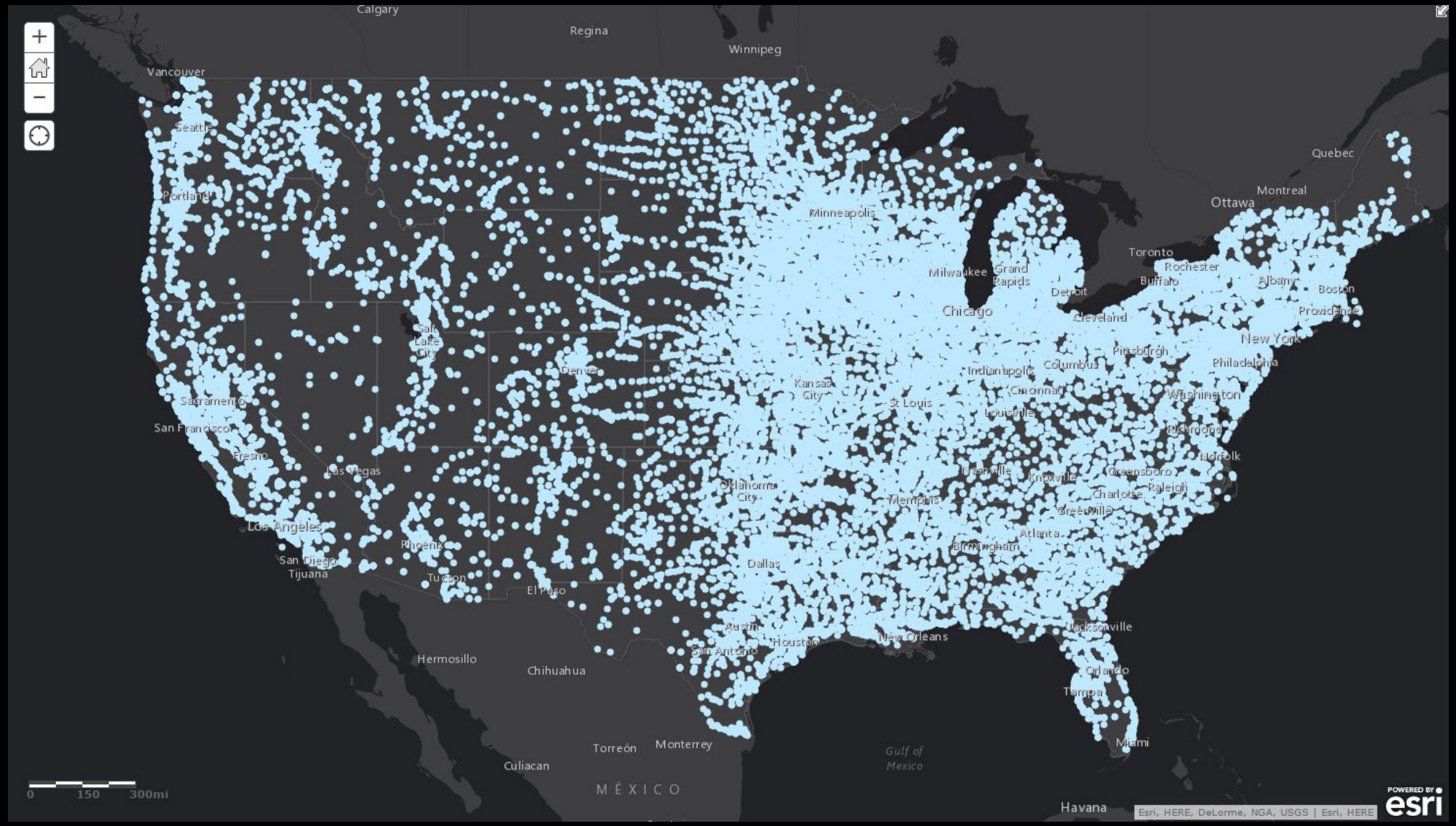
# Water Systems: > 100,000 served



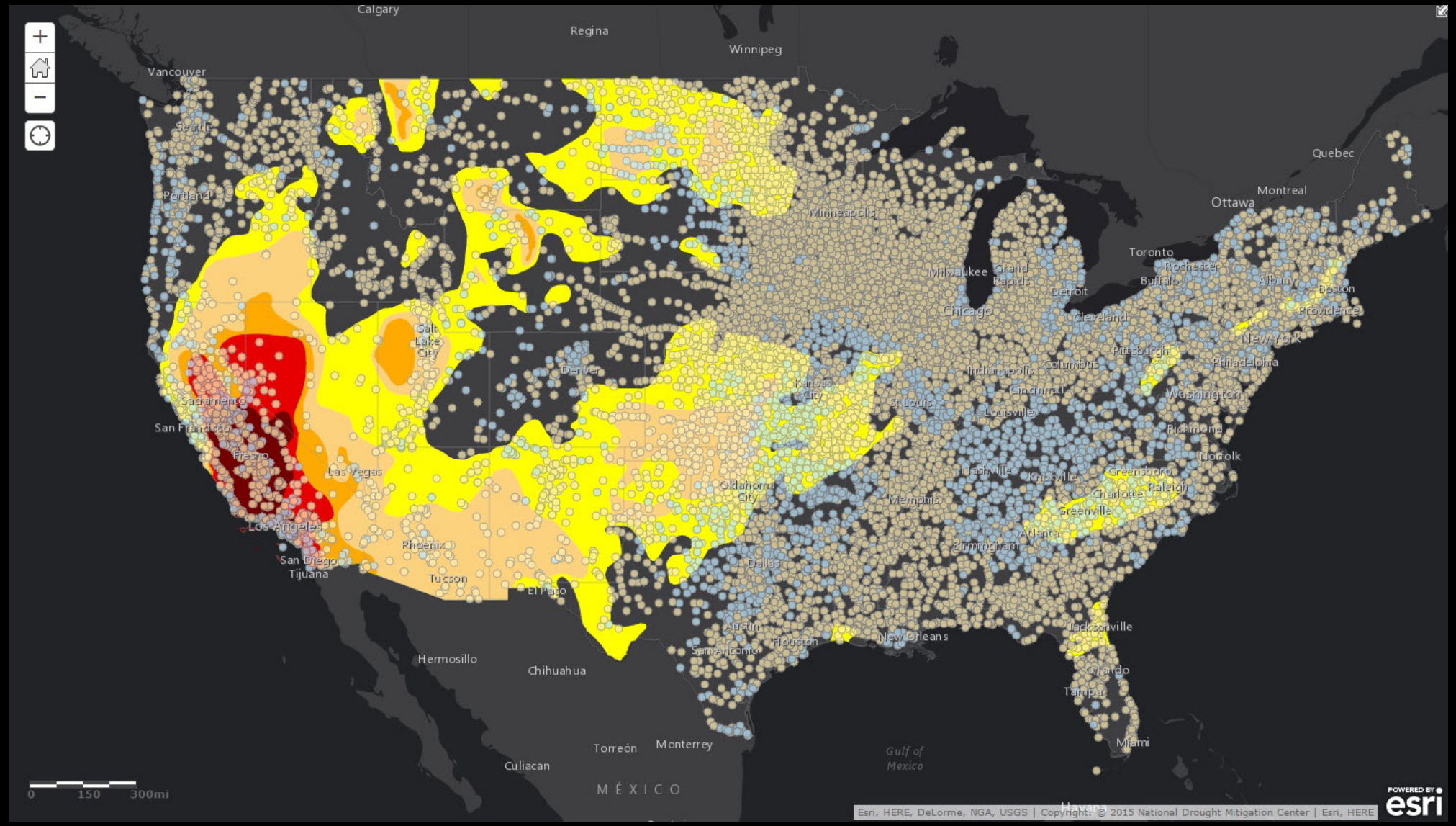
# Water Systems: > 10,000 served



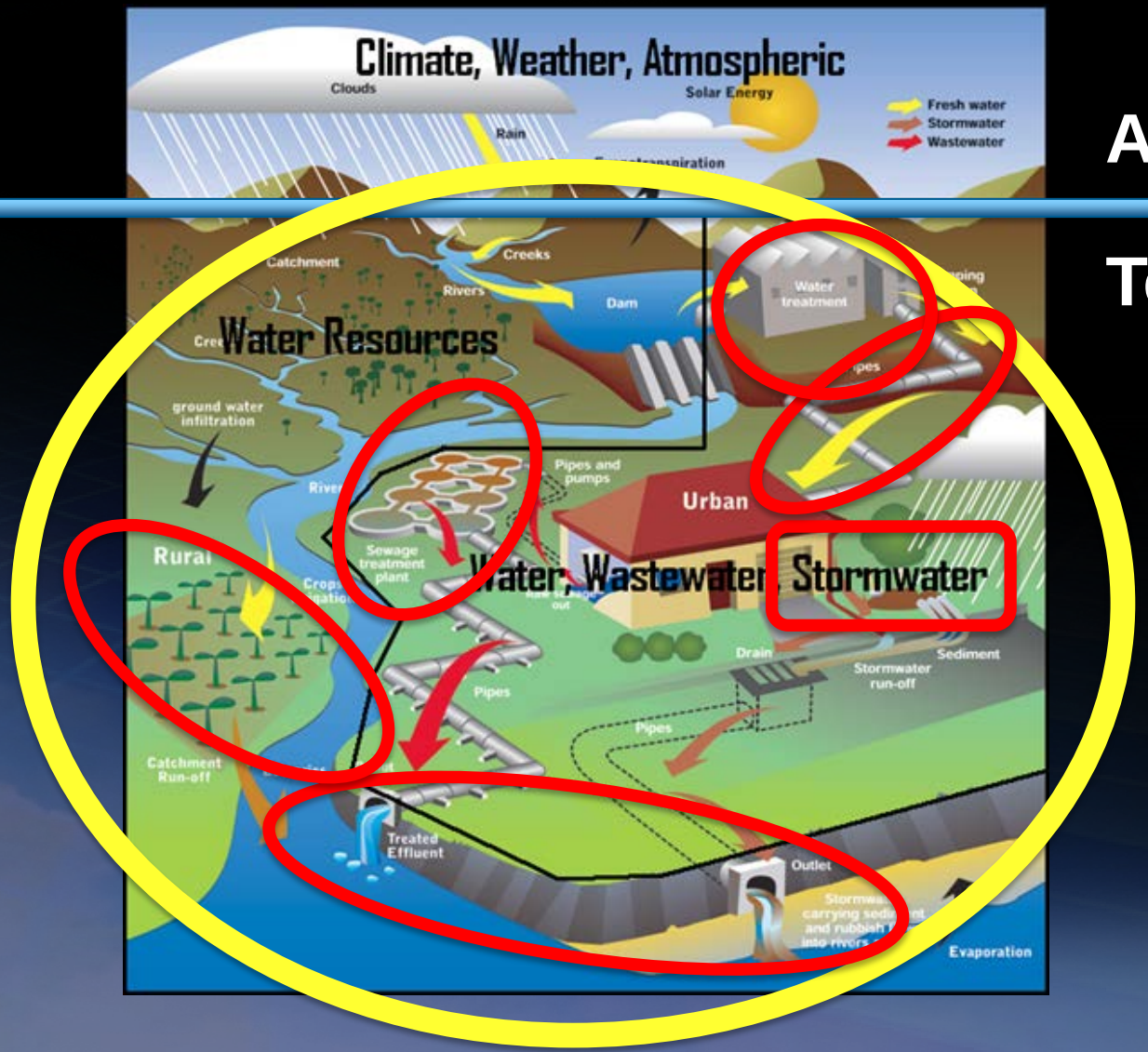
# Water Systems: ≤ 10,000 served



# The Challenge



# Hydrologic Cycle




Atmospheric

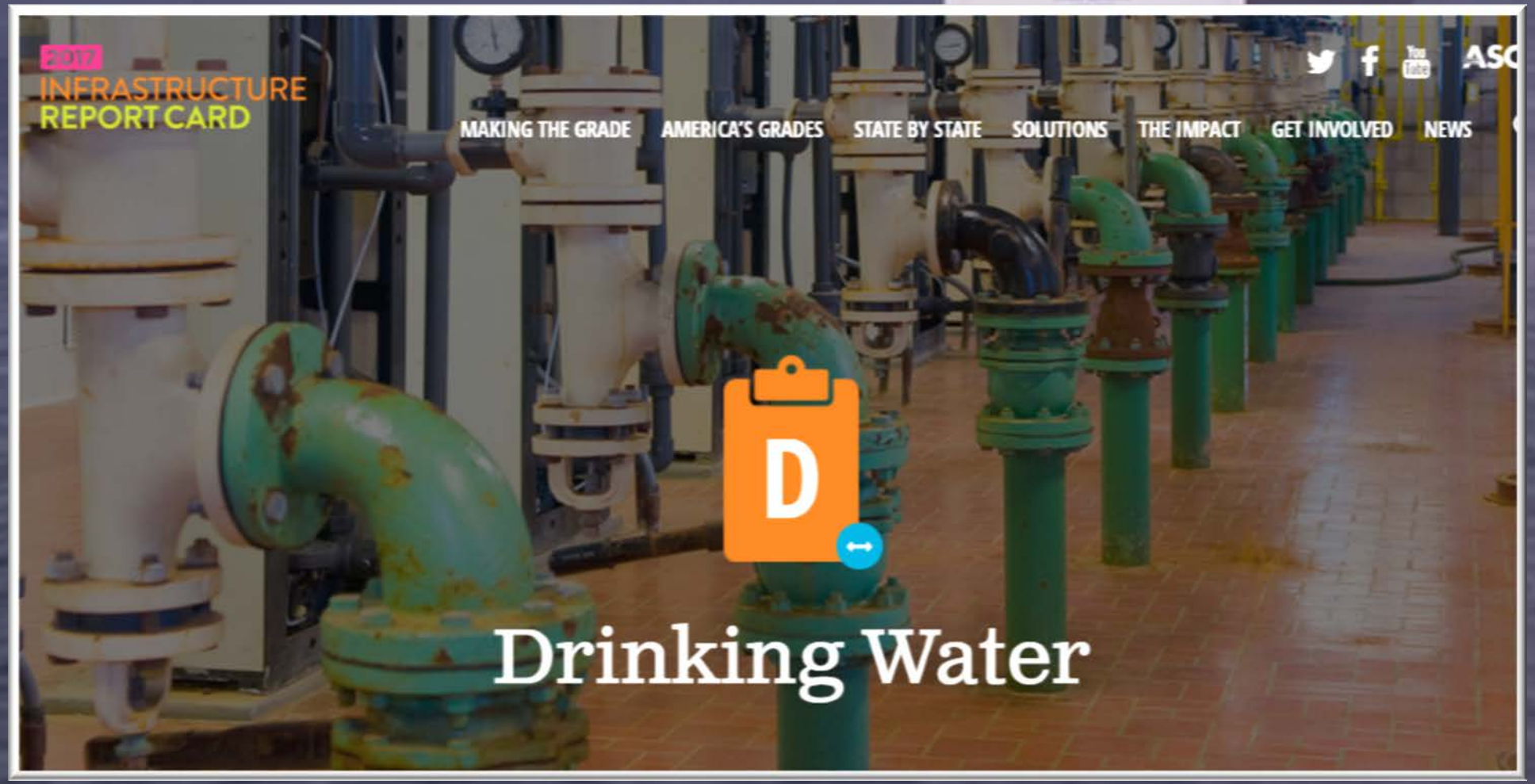
Terrestrial

# Mega Trends Driving Our Industry

- Water Supply Sustainability (quantity and quality)
- Rising Costs
- Revenue Reduction
- Technology Adoption and Replacement
- Aging Infrastructure
- Drought and Water Conservation
- Increased Global Flood Events

2017 INFRASTRUCTURE REPORT CARD

MAKING THE GRADE | AMERICA'S GRADES | STATE BY STATE | SOLUTIONS | THE IMPACT | GET INVOLVED | NEWS




D+

# The Esri Water Team

David Totman
Christa Campbell
Maria Lamas

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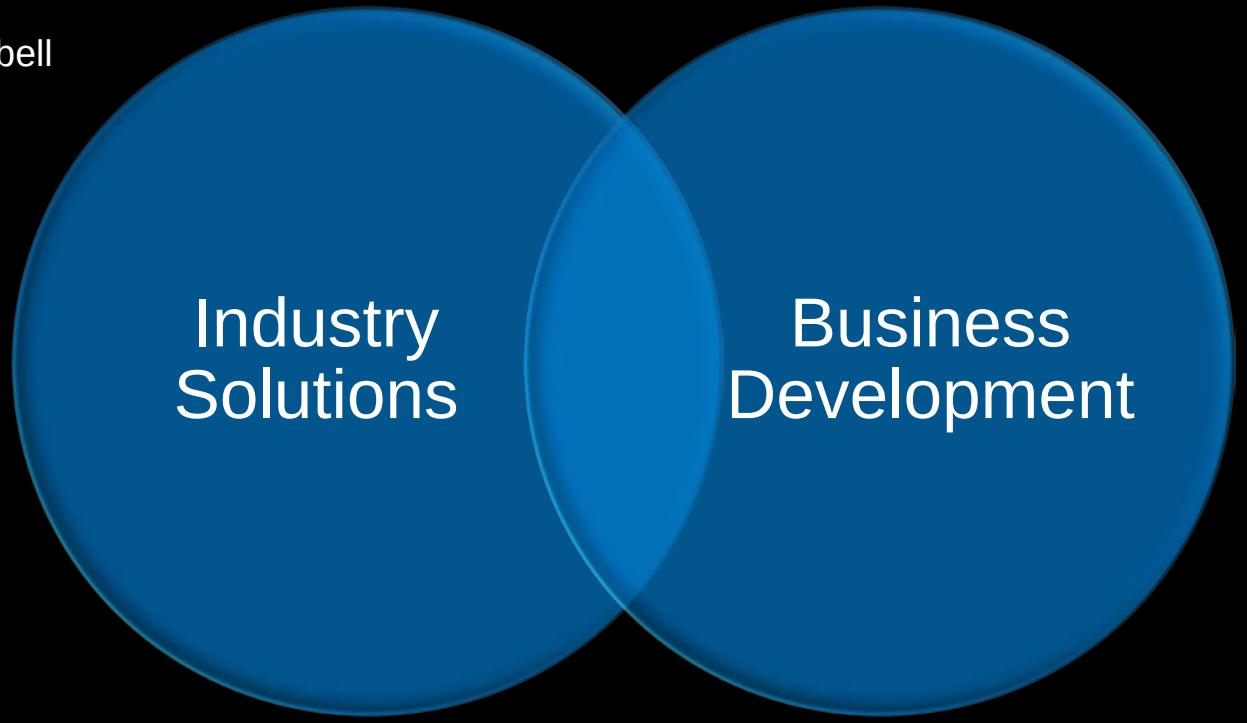
Christa Campbell
Maria Lamas

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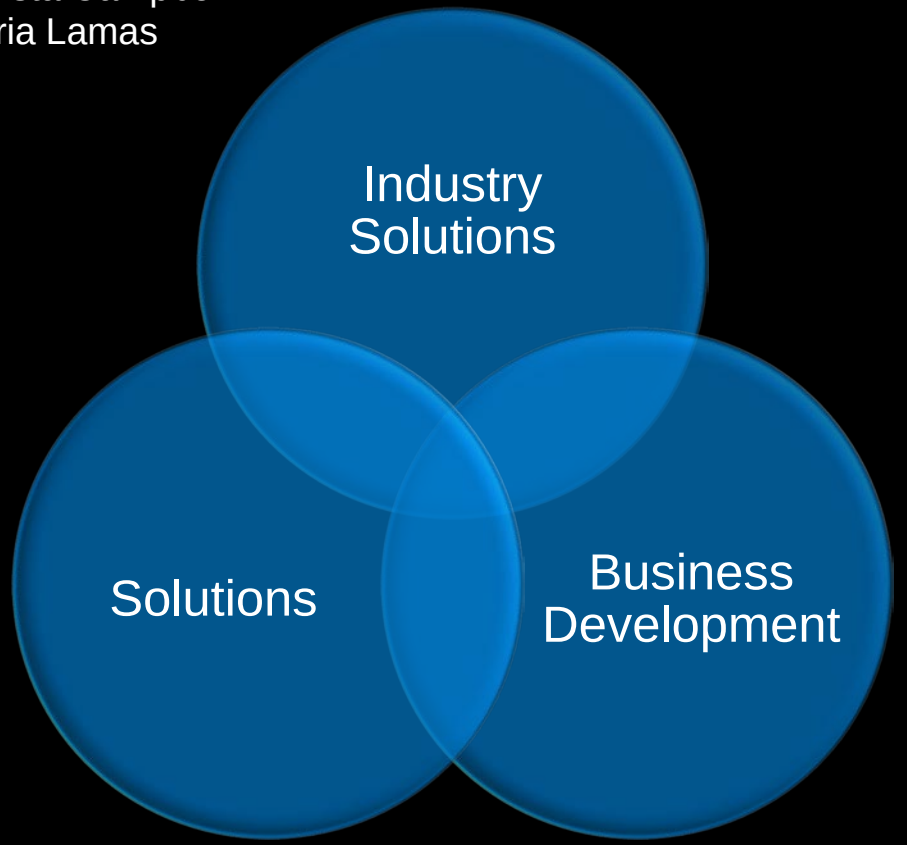


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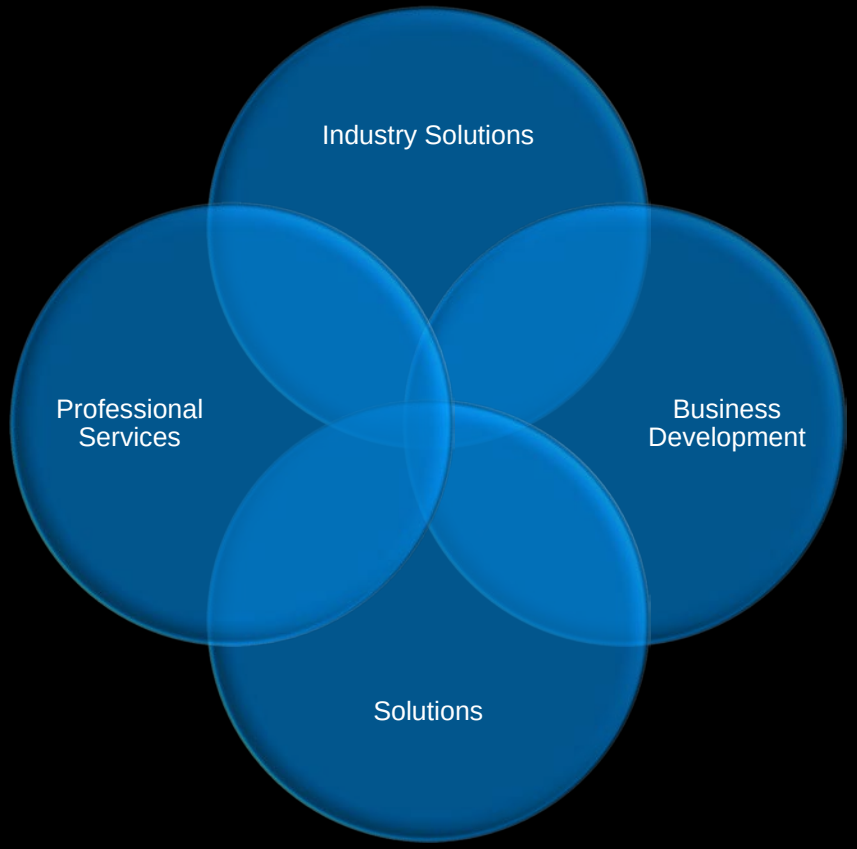


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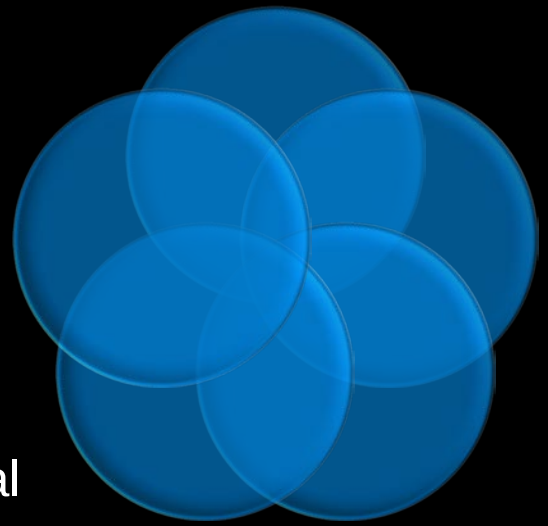

Business Development

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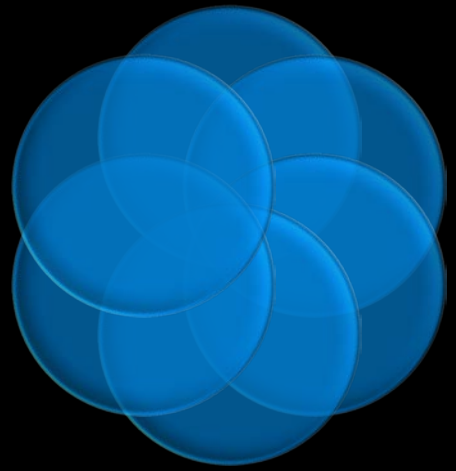
Training



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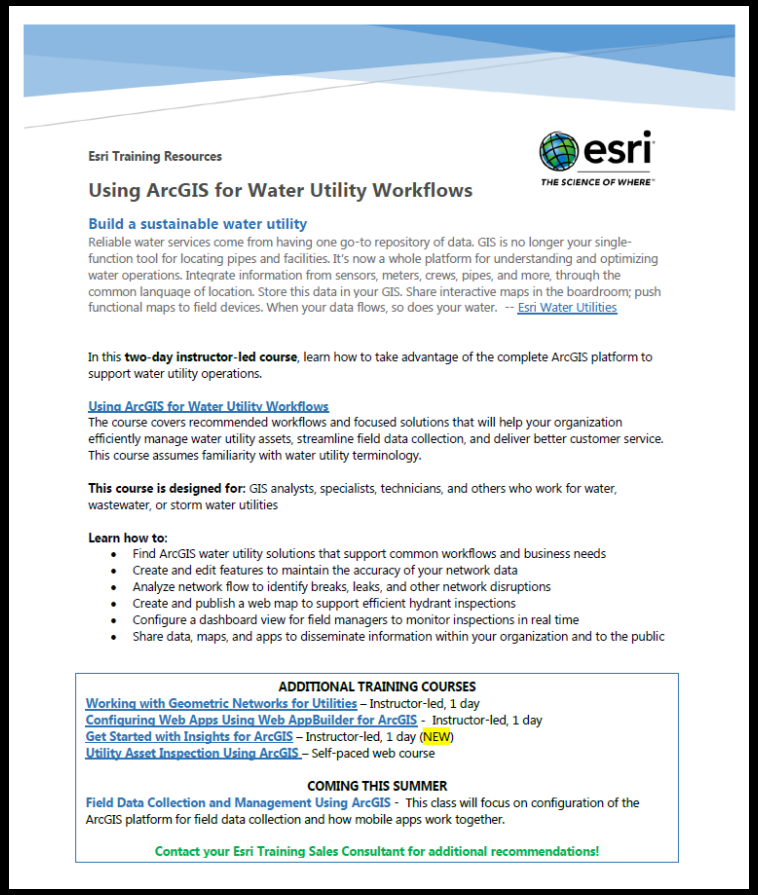
# Training

## Using ArcGIS for Water Utility Workflows Instructor-Led Course



Esri Training Resources

### Using ArcGIS for Water Utility Workflows

**Build a sustainable water utility**

Reliable water services come from having one go-to repository of data. GIS is no longer your single-function tool for locating pipes and facilities. It's now a whole platform for understanding and optimizing water operations. Integrate information from sensors, meters, crews, pipes, and more, through the common language of location. Store this data in your GIS. Share interactive maps in the boardroom; push functional maps to field devices. When your data flows, so does your water. -- Esri Water Utilities

In this **two-day instructor-led course**, learn how to take advantage of the complete ArcGIS platform to support water utility operations.

Using ArcGIS for Water Utility Workflows
The course covers recommended workflows and focused solutions that will help your organization efficiently manage water utility assets, streamline field data collection, and deliver better customer service. This course assumes familiarity with water utility terminology.

**This course is designed for:** GIS analysts, specialists, technicians, and others who work for water, wastewater, or storm water utilities

**Learn how to:**

- Find ArcGIS water utility solutions that support common workflows and business needs
- Create and edit features to maintain the accuracy of your network data
- Analyze network flow to identify breaks, leaks, and other network disruptions
- Create and publish a web map to support efficient hydrant inspections
- Configure a dashboard view for field managers to monitor inspections in real time
- Share data, maps, and apps to disseminate information within your organization and to the public

**ADDITIONAL TRAINING COURSES**

Working with Geometric Networks for Utilities – Instructor-led, 1 day
Configuring Web Apps Using Web AppBuilder for ArcGIS - Instructor-led, 1 day
Get Started with Insights for ArcGIS – Instructor-led, 1 day (NEW)
Utility Asset Inspection Using ArcGIS – Self-paced web course

**COMING THIS SUMMER**

Field Data Collection and Management Using ArcGIS - This class will focus on configuration of the ArcGIS platform for field data collection and how mobile apps work together.

**Contact your Esri Training Sales Consultant for additional recommendations!**

Need Help? Contract Esri Training at GISTraining@esri.com

David Totman
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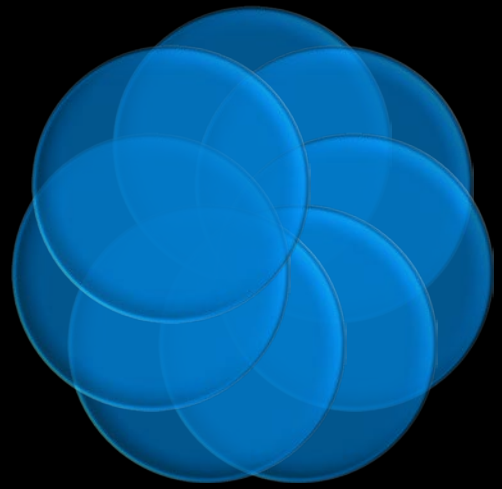
## Industry Solutions

Dawn Caravallo
Frank Martin

## Partners / Distributors

Chrystelle Ourzik
Dave Byers
Joao Canais



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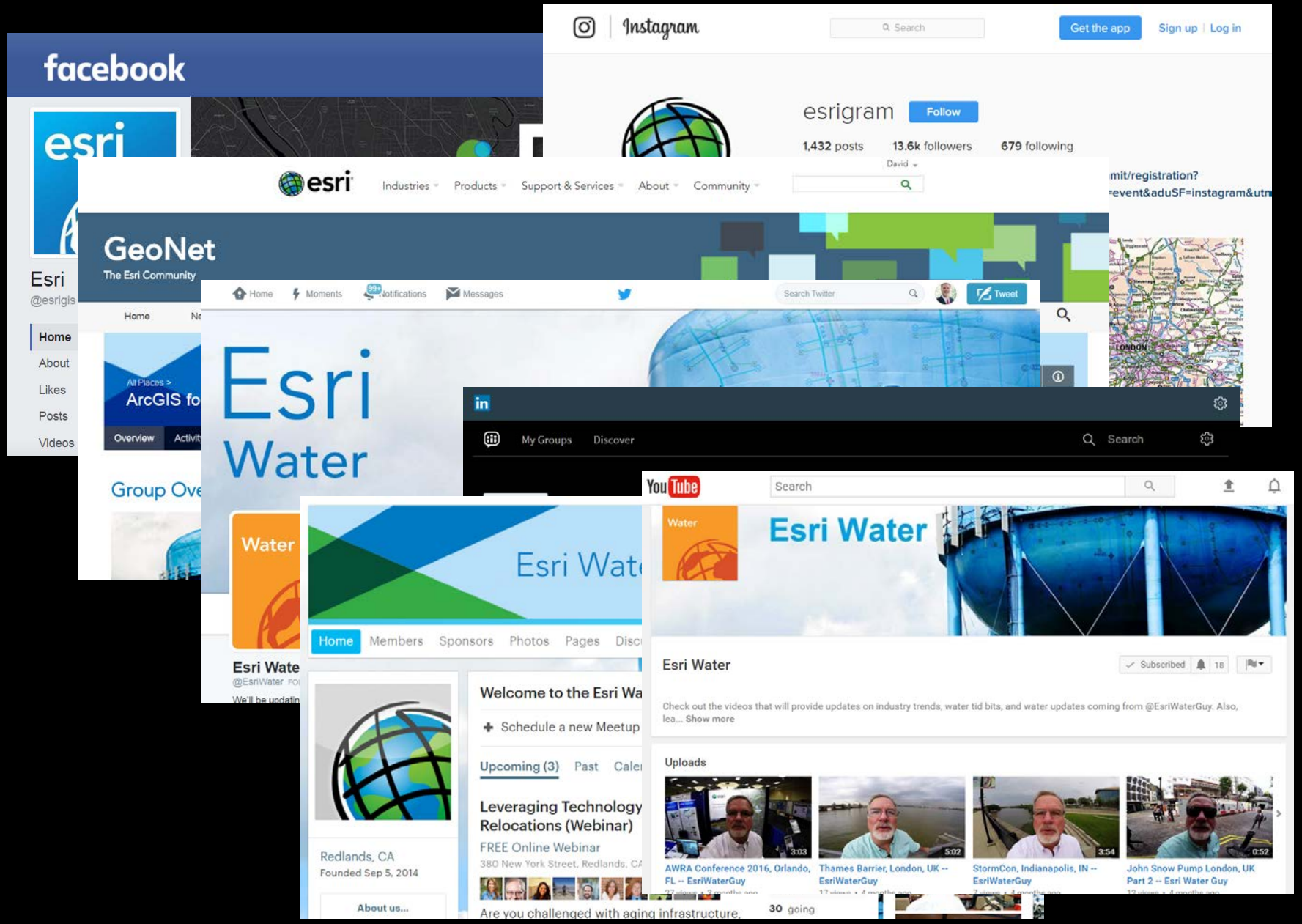
# Industry Solutions Marketing

# Traditional Marketing Tools

- Industry web pages
- Newsletter
- Case studies
- Video spotlights
- Publication articles
- White papers

# Social Media

- Esri
  - Facebook
  - Instagram
- Water
  - GeoNet
  - Twitter
  - LinkedIn
  - Meetup
  - YouTube

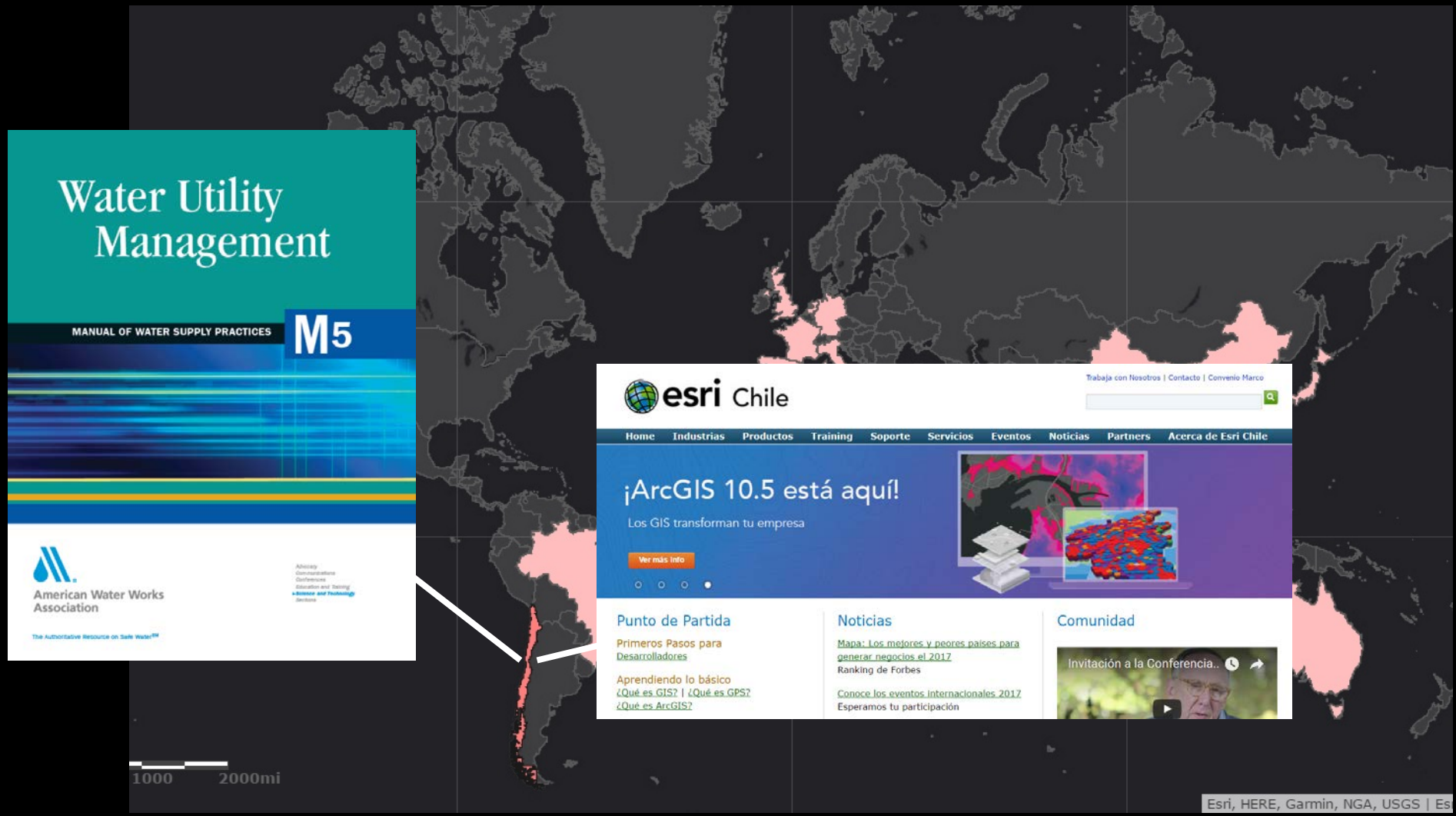


# 2018 Esri Water Conference
# January 29 – February 01
# Hilton Bayfront
# San Diego, CA

# Trade Associations

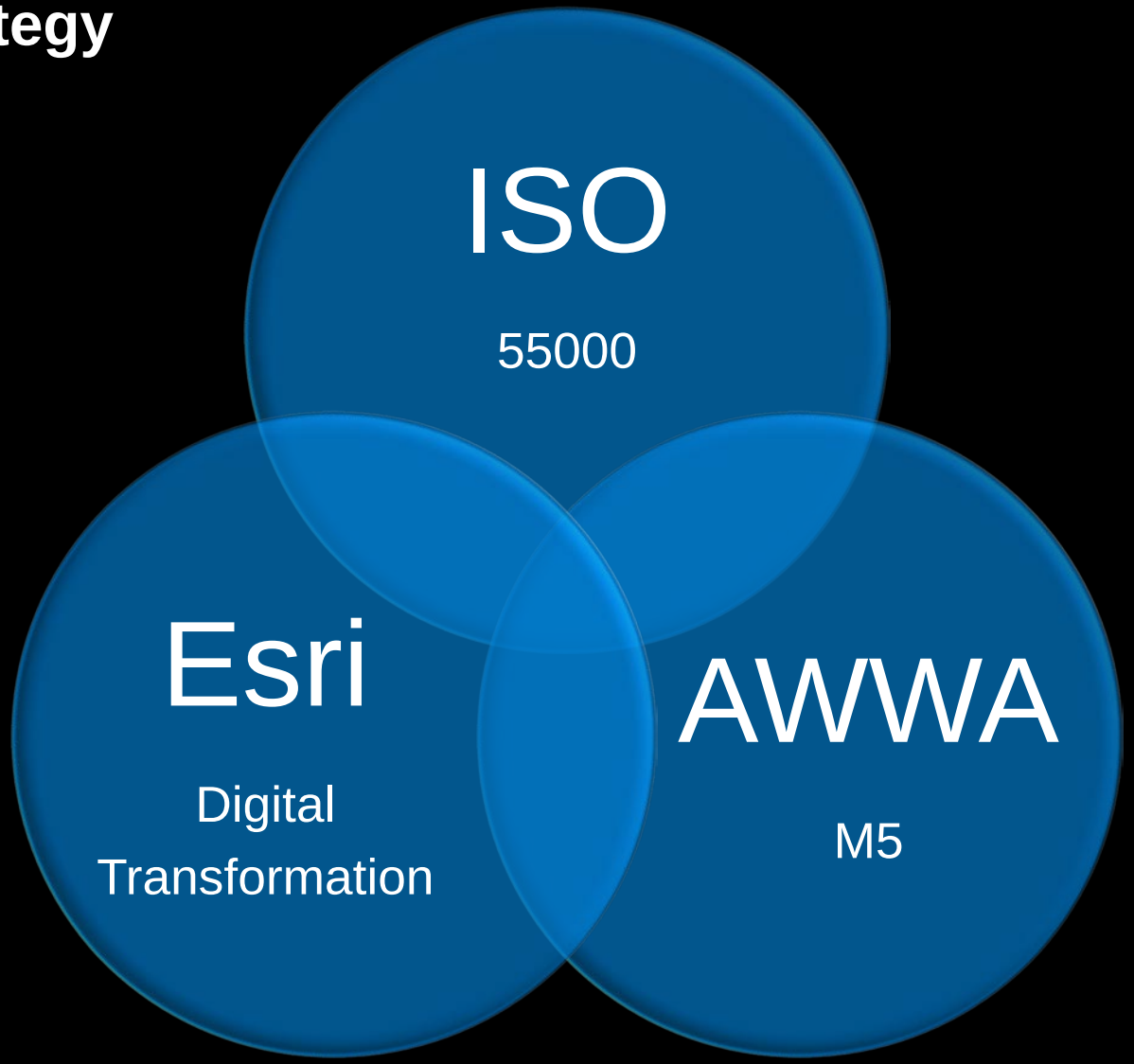
- American Water Works Association (AWWA)
- Water Environment Federation (WEF)
- National Rural Water Association (NRWA)
- America Water Resources Association (AWRA)
- Florida Floodplain Managers Association (FFMA)
- @qua
- American Society of Civil Engineers (ASCE)
- International Standards Organization (ISO) TC 251 – ISO 55000 asset management

# AWWA International Efforts



# ISO 55000 – Asset Management

# International Strategy



# Things to see this week

Includes, but not limited to:

- ArcGIS Pro & Utility Network: Envisioning Theater
- Insights: the Opelika dead meter story
- Cost Estimator: LGIM w/current RS-Means data

## ArcGIS Pro

- *Too many things to list…*

# Utility Network

- **Why develop new network management functionality?**
  - **Higher performance, greater scalability, more complex modeling, cross-platform**
  - **Industry models**

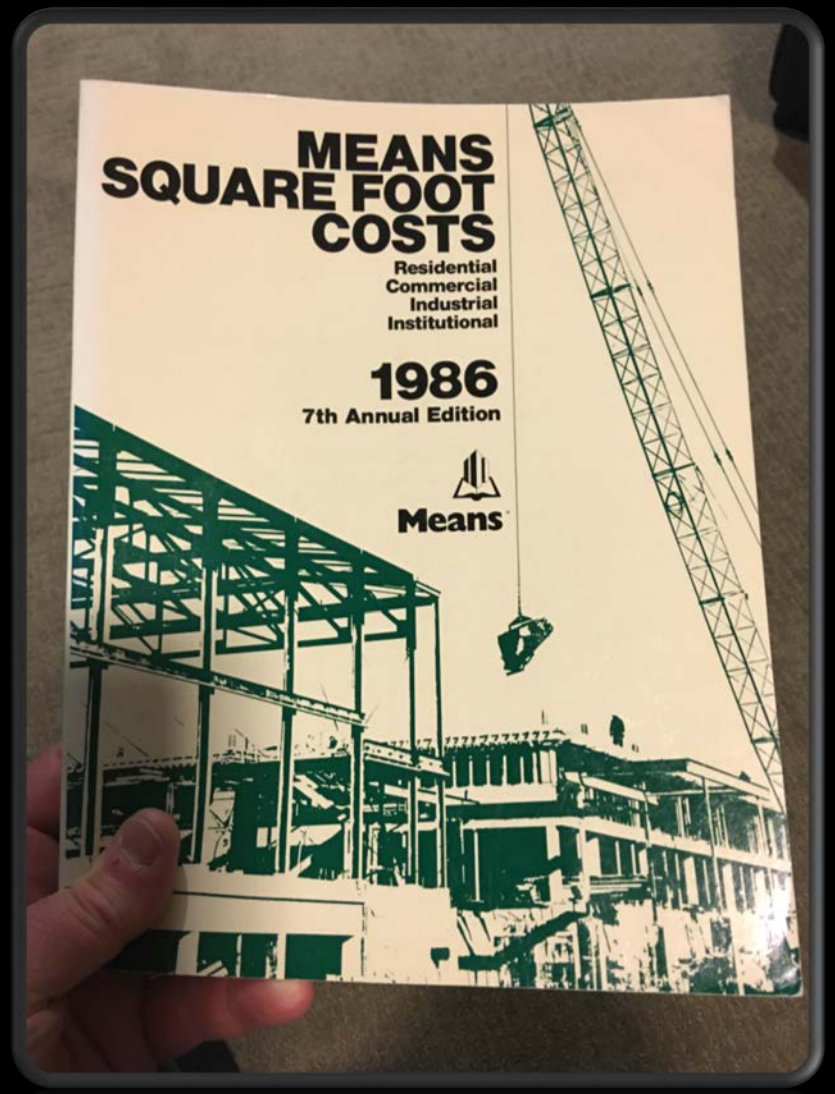
- **What does this mean to Water?**
  - **Any device, anytime, anywhere full platform functionality for network features**
  - **Non-coincident connectivity: master meters to apartment complexes, inlets**
  - **Attachments: thrust blocks, rain guards**
  - **Containment: PRVs, lift stations, plants**
  - **Parametric tracing: VCP tracing for root saws, Cathodic Protection, % slope**
  - **Life cycle management: preliminary pipe, abandoned pipe**
  - *NHD Hi-Res*

# What is the Utility Network?

- new network management functionality
- data model(s)
- storage framework
- rules
- workflows
- api
- 100% full platform compliance
- any network: natural and built

# Insights: the Opelika dead meter story

# Cost Estimator: LGIM w/current RS-Means data



# Cost Estimator: LGIM w/current RS-Means data

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