

Lessons Learned: Water System GIS Creation & Development

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Presentation by: Mathew George



architects + engineers
practical approach. *creative results.*

Main Points



- Providing GIS Services for Small/Medium-Sized Water Suppliers
- Lessons Learned in Creating and Developing GIS for Water Suppliers

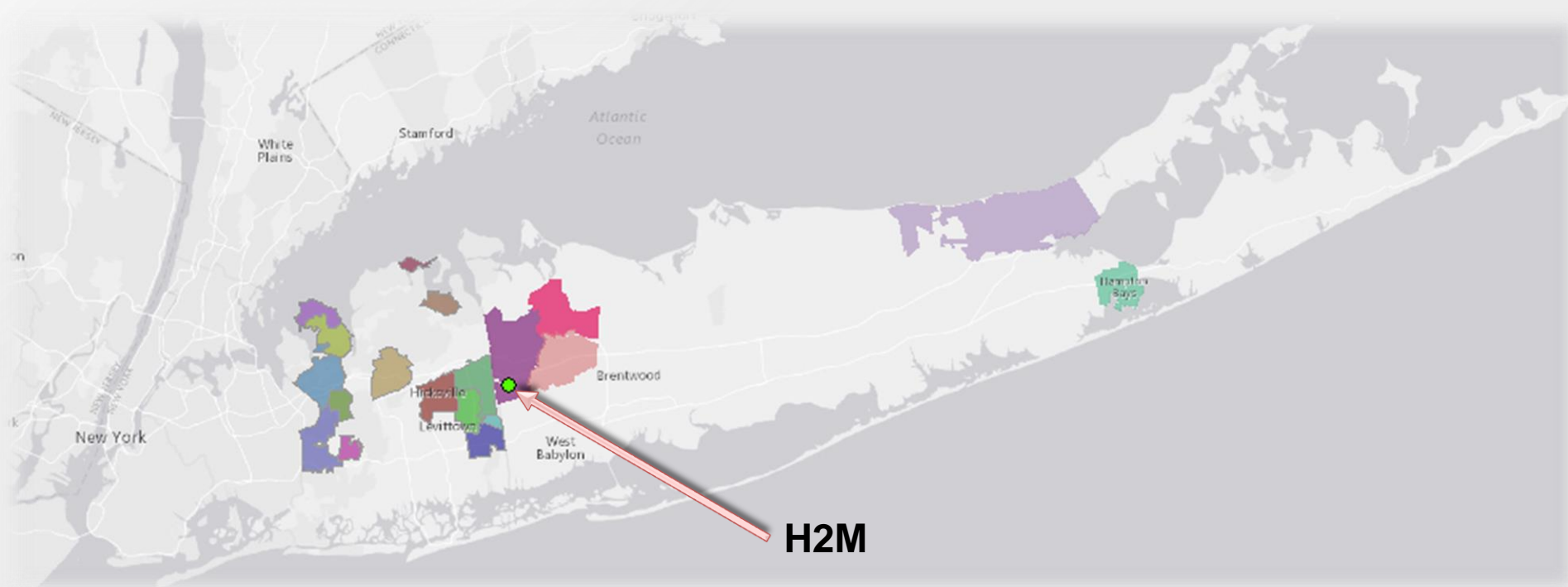
H2M History

- 80+ years in the Water Engineering business
- Current staff of over 230 employees with diverse skills including engineers, architects, surveyors, scientists, planners, inspectors, etc.
- One-stop shop for our clients

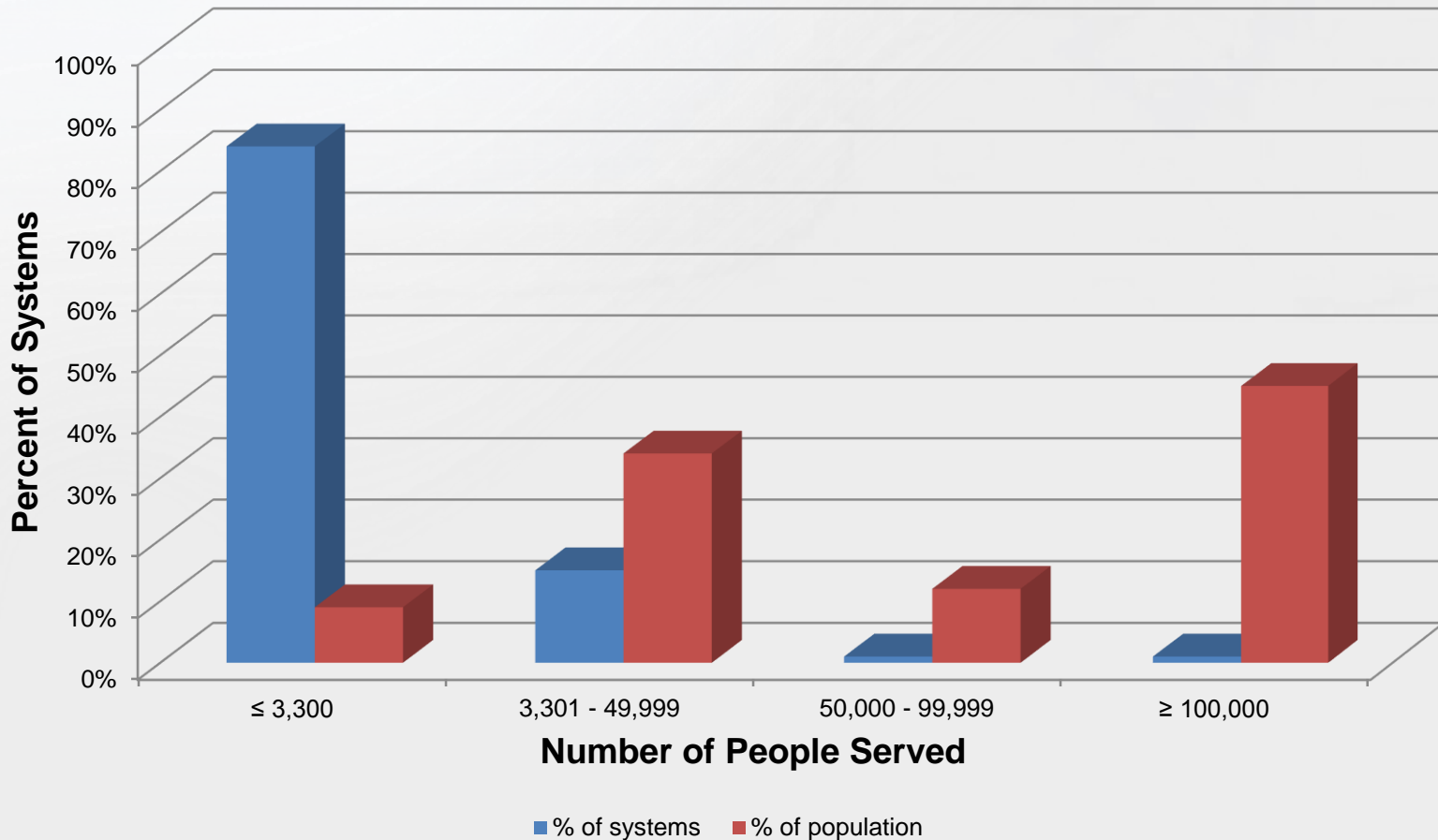


Water Suppliers Served

- H2M is the Engineer for dozens of water suppliers, mostly on Long Island, NY
- H2M provides GIS services to many of these water suppliers as well



Public Water Suppliers in the US



Total Number of Active Community Water Systems = 53,363

Total including Transient and Non-Transient Non-Community Systems = 161,201

Resource Limitations for Smaller Utilities

- Engineering
- IT
- Training / Experience
- Time
- \$\$\$

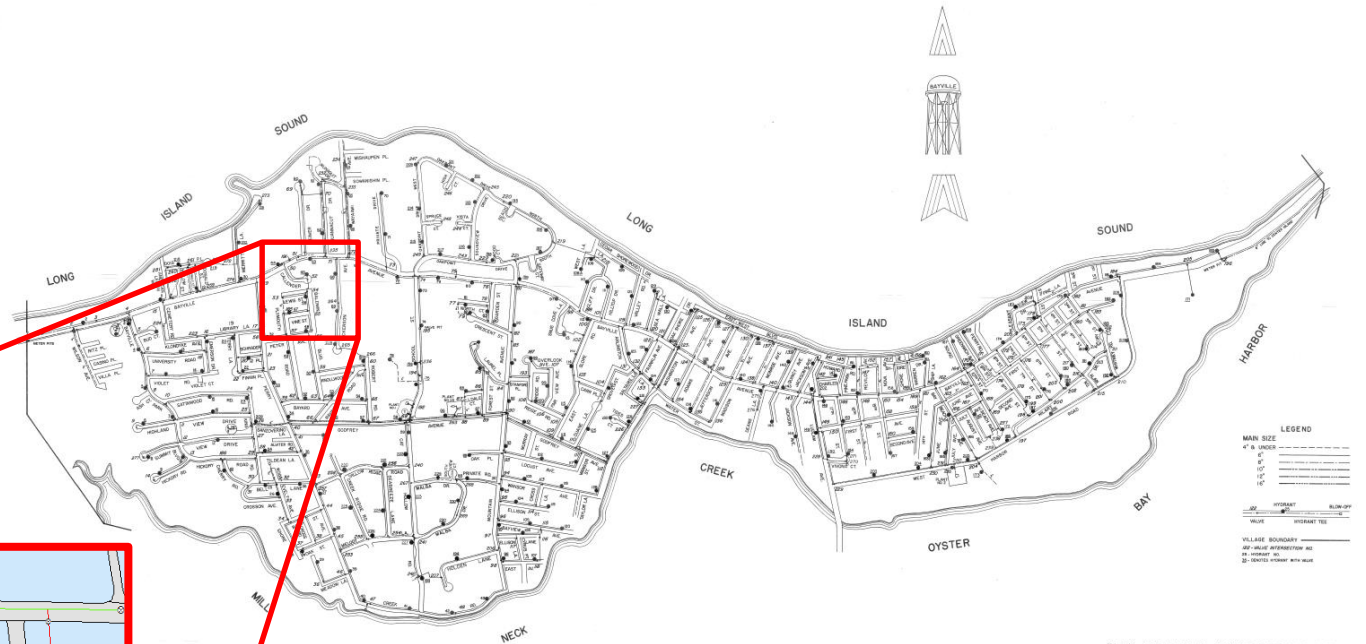


Combined Services



- H2M has been providing mapping services to Water Suppliers since before GIS existed
- Evolved by integrating GIS into workflow to streamline processes and save money

Paper Maps Converted to GIS



PLAN OF WATER DISTRIBUTION SYSTEM
 INC. VILLAGE OF BAYVILLE
 TOWN OF OYSTER BAY, NASSAU COUNTY, N. Y.
 SCALE: 1" = 300'

REV. JAN. 28, 1991
H2M GROUP
 HOLZMACHER, McLENDON & MURRELL, P.C.
 CONSULTING ENGINEERS
 MELVILLE, N.Y.

GIS Development Challenges

- Geometric Networks
- Domains
- Feature Datasets
- Hide Unused Fields (i.e. OBJECTID, FID, etc.)
- Unique Asset Identifiers
- Editor Tracking
- Color/Symbol Standards
- Layer Scale Range
- Integrating Third-Party Software

- ESRI Water Utility Network Editing Template!

GIS Uses for Smaller-Sized Water Utilities

- Distribution System Mapping
- Water Main Break Tracking
- Hydrant Maintenance
- Valve Exercising Planning
- Flushing Program
- Customer Complaint Tracking
- Fire Flow Data Logging
- GPS Data Collection
- Work Order Management
- Asset Management

- The list goes on and on...

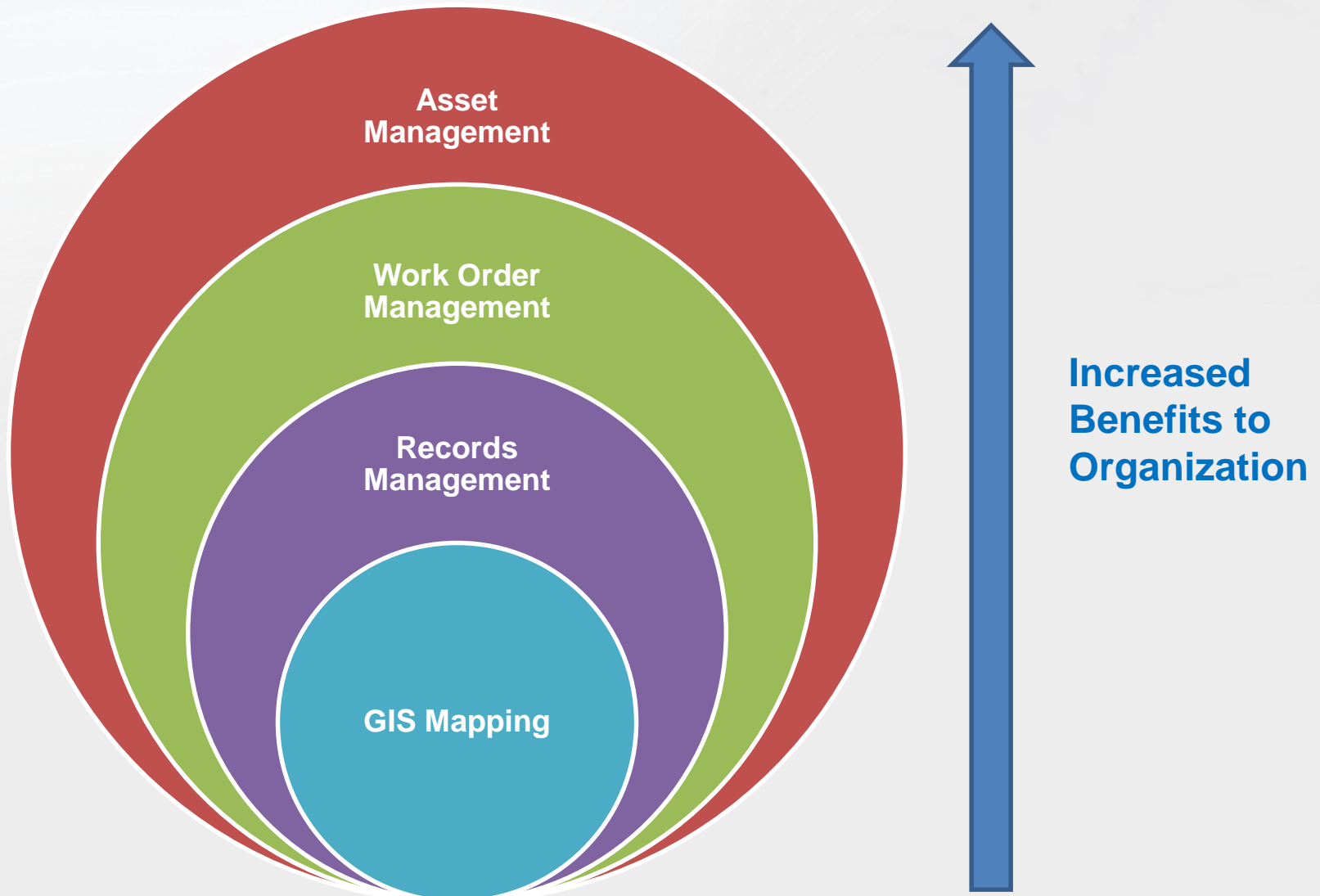


Records Management

- Valve Sketches
- Field Notes
- Spur Maps
- As-Built Drawings
- Photos
- Maintenance Data



GIS & Asset Management



Resistance from Water Suppliers

- Aging Workforce
- Status Quo Preferred
 - “If it ain’t broke, don’t fix it”
- Technological Complications
- Taking Someone’s Job Tasks Away
- Benefits Not Realized Immediately
- Perceived High Costs



GIS Implementation Process



Engage People

Determine
Requirements

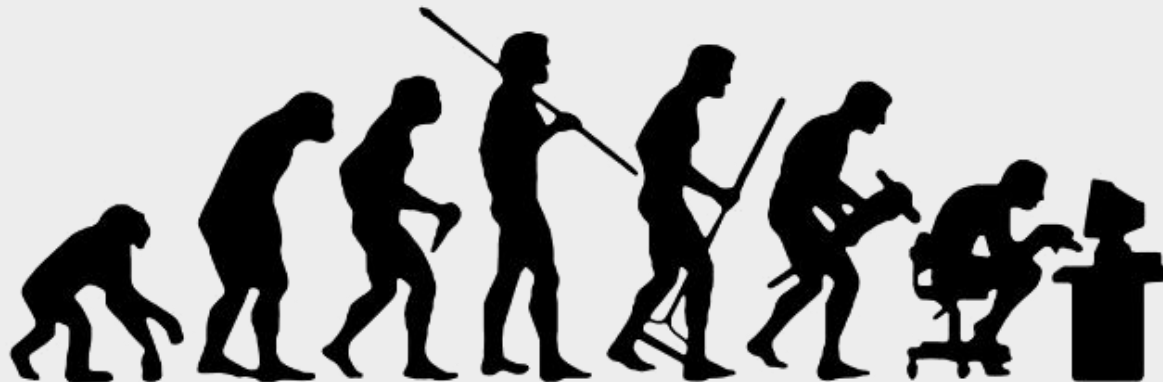
Design & Build GIS

Deploy

Train

Engagement Tactics

- “Walk Before You Run” Approach
- Involve Younger Staff
- Mobile Devices and Apps
- “If it’s easy, they’ll use it”



Explain GIS Benefits

- Increases access to information
- Builds relationships
- Improves efficiency
- Simplifies complex information
- Facilitates planning
- Engages stakeholders
- Better record-keeping
- Improves communication
- Better decision-making



Questions?

Lessons Learned: Water System GIS Creation & Development

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