



Wednesday, June 29th



ArcGIS for Local Government

Dan Rose, GIS Analyst
WaterOne IT/GIS



Agenda / Talking Points



- What is the LGIM?
- WaterOne's GIS and LGIM background
 - Our geodatabase redesign
 - Our strategies for LGIM implementation
 - Our integration with SAP
 - Our integration into apps / templates
- How you can implement the LGIM (demo)

What is the LGIM?

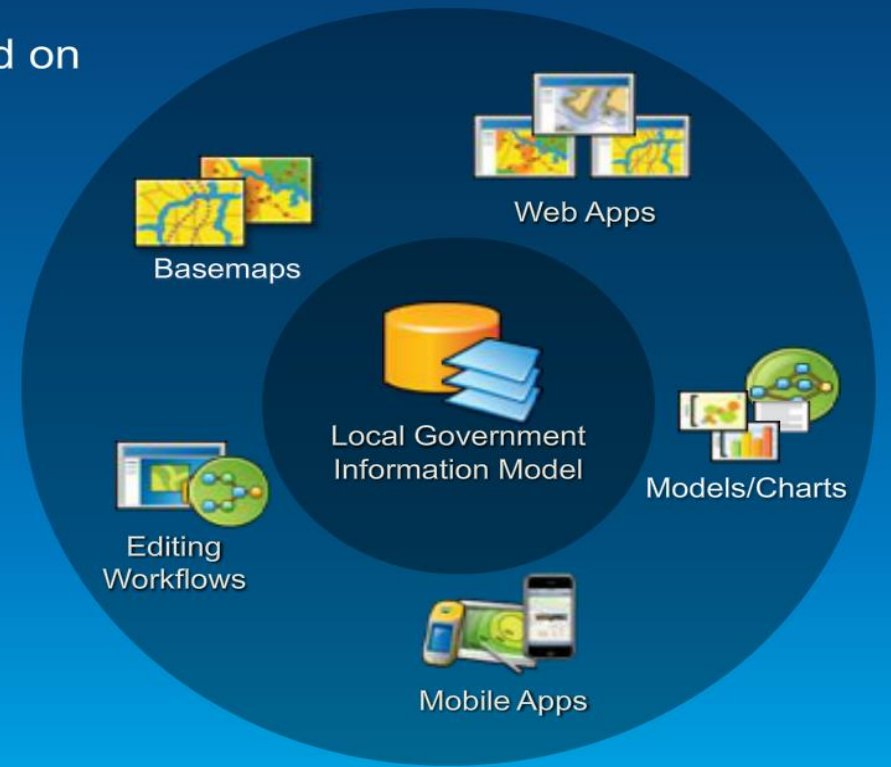
<http://solutions.arcgis.com/local-government/help/local-government-information-model>



ArcGIS for Local Government

A solution for Esri's local government customers

- A series of useful maps and apps focused on local government work
 - Organized into domains
 - Extensible, configurable
 - Freely available and fully supported
 - A foundation for Partner solutions
- An online community
 - Best Practices / Implementation Support
- A network of Professional Services and Partner offerings
 - Help users implement, sustain and enhance



What is the LGIM? (reality)

- The LGIM download comes “out-of-the-box/off-the-shelf” with a basic multi-industry-standard geodatabase structure that can be used by any city, county, state or utility company
- Fully customizable to fit your business needs
- Can be integrated with work order management software
- Directly interfaces with most (all?) AGO apps and templates
- Can be used as a personal or file geodatabase or in an SDE database using Server for ArcGIS

- **FREE**

What is the LGIM? (details)

- The Local Government Information Model requires specific technical experience, software and data management knowledge and workflows
- The LGIM is supported in ArcGIS 10.1 through 10.4
- When you download the LGIM, you get the following files:

Item	Description
DataDictionary.htm	The data dictionary for the Local Government Information Model that includes a description of the features, fields and domains in the information model.
LocalGovernment.xml	The XML workspace document used to deliver an empty schema of the Local Government Information Model.
LocalGovernmentReleaseNotes.pdf	The release notes that describe changes made to each incremental version of the Local Government Information Model.

- Address
- AdministrativeArea
- AssessmentInformation
- CadastralReference
- CapitalPlanning
- CitizenService
- Demography
- ElectionAdministration
- ElectionResults
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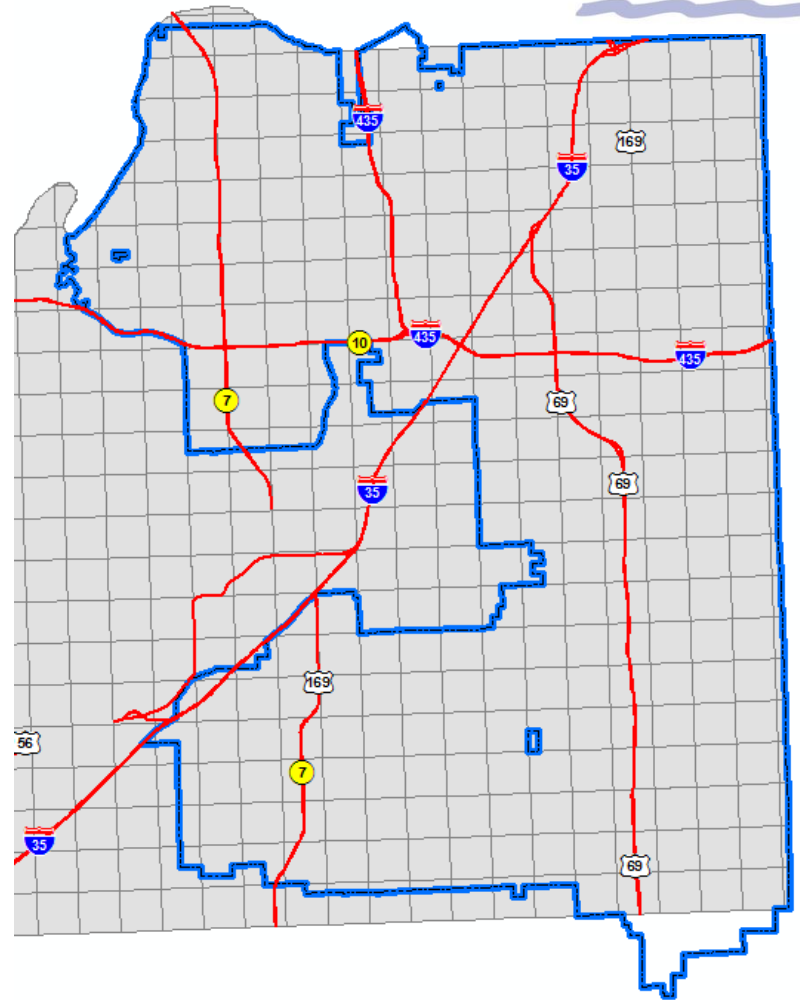
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- wPump
- wSamplingStation
- wServiceConnection
- wStructure
- wSystemValve
- wTestStation

WaterOne GIS Background

- ~272 square miles in service territory
- ~150,000 meters/425,000 customers
- ~50,000 system and control valves
- ~18,000 hydrants
- ~2640 miles of potable water mains
- ~38 miles of raw water mains from both the Missouri and Kansas Rivers
- 2 treatment plants, 11 elevated tanks and 14 pump stations, 21 production wells
- Y2000 - paper map-to-GIS conversion
- Integrated with SAP in 2005
- Teams of GIS Editors (Eng) and GIS Analysts/Programmers (IT) in a versioned workflow environment



Our Need for GDB Redesign – Known Issues:



- On ArcGIS v10.0, apprehension to move to new versions of software due to bugs and multiple interoperability issues with vendor software
- No organized GIS data structure
- Feature classes were piecemealed together
- Customized, clunky, antiquated tools and scripts were used in the editing environment
- Versioning processes were not fully utilized
- Many GIS data issues with accuracy, missing assets, duplicated assets, etc.
- Minimal procedures on GIS editing
- GPS point collection and GIS integration issues
- Software version incompatibilities

Geodatabase Redesign – Project Goals:



- Assess the company's goals and visions, not just GIS's
- Isolate essential company functions, organization, processes, data, applications and technologies
- Recognize challenges and opportunities
- Identify existing systems including data integration with other departments and applications
- Categorize requirements for GIS users, integration and process improvements
- Develop an implementation plan for both long- and short-term goals

Geodatabase Redesign – Key Findings and Vision:



- Standardize GIS data storage formats and structure
- Expand internal use and accessibility of GIS
- Improve GIS data, clean up major issues
- Create and implement GIS apps for departments beyond the our GIS sections
- Do the work in phases to not disrupt business workflows more than necessary
- Implement AGO apps to be utilized by the company
- Enhance the GPS collection capabilities (GPS directly to SDE)
- Create standard operating procedures for all editing processes in addition to app creation/manipulation and software control

Geodatabase Redesign –

Key Findings/Needs and Vision (con't): WaterOne

- Development of web maps for customer relations, company website and more
- Allow for better visual representations (aka maps)
- Improved disaster response, damage assessment and mitigation planning
- The largest part of the vision:
 - A re-developed water utility GIS will:
 - Improve planning efforts including capital improvement and maintenance planning
 - Improve the ability to integrate with our work order management system and future apps
 - Provide the ability to anticipate future demands
 - Provide the ability for spatial analysis such as hot spots (growth, leaks, etc.)

Geodatabase Redesign – Stakeholders:



- All stakeholders were interviewed on their GIS needs and priorities
- A GIS geodatabase re-development and maintenance plan was compiled to guide the WaterOne use and expansion of GIS
- IT/GIS worked with company staff and consultants to develop recommended software changes and integrations

Strategies for LGIM Implementation



- Move to ArcGIS for Desktop 10.2.1 (and only v10.1 for SDE due to interoperability issues with vendor software)
- Use the ESRI Local Government Information Model (LGIM) for the geodatabase redesign
- Use all feature classes in the LGIM water distribution feature dataset; resist adding additional feature classes
- Use all attributes and their names from the LGIM and change/add/delete fields aliases only where necessary
- Set up domains to reflect the assets in use at WaterOne, but use the LGIM domain values whenever possible
- Many existing fields and attributes in our feature classes would be deleted with minimal loss of data

Timeline for Phased Implementation of the LGIM GIS Geodatabase (2014)

Activities / Tasks	Compl.	Dates	2/20	2/24	3/3	3/10	3/17	3/24	3/31	4/7	4/14	4/21
	Status	->	2/21	2/28	3/7	3/14	3/21	3/28	4/4	4/11	4/18	4/25
	✓											
Last day of editing in GIS	✓	->										
Prepare GIS geodatabase for migration to LGIM	✓											
Migrate GIS geodatabase to LGIM format (Esri)	✓											
Implement Impress changes for LGIM	✓											
No GIS editing will occur	✓											
CyberServe Hydrant Audit application will not be available	✓											
Implement CyberTech changes for LGIM and SAP	✓											
Implement new Pipes application	✓											
Training for new Pipes application	✓											
GIS Editors begin editing in new LGIM geodatabase	✓											
New Pipes application Go Live	✓											
New Ottomapper for LGIM Go Live	✓											
Migrate Engineering ArcGIS Desktop users to LGIM												
Complete Development of ArcReader for LGIM	✓											
Test new ArcReader for LGIM												
Training for new ArcReader for LGIM												
Install new ArcReader for LGIM												
Old Pipeline, ArcReader, and Ottomapper applications will remain available but data will no longer be updated.												

WaterOne

Water District No. 1 of Johnson County

Data Mapping Matrix of Feature Classes

Data Mapping Matrix of Domain Values



Integration with SAP

- Notifications, work orders and service requests are performed against assets in SAP
- Equipment IDs link GIS to SAP and vice-versa for nightly asset and data changes via Impress
- Eliminate the duplication of data in both systems – make GIS the true asset attribute entity, SAP the true work order entity
- Important to get this right for future apps!

Partners in our Project



- WaterOne (pre-data migration)
 - Research, GDB domain and feature class field changes
- Impress (SAP-GIS interface company/program)
 - Modify field mapping between SAP and GIS databases
- Esri
 - Migration of all existing data in to the new feature classes
- WaterOne (post-data migration)
 - Regular clean-up of processes, program interfaces, reports and GIS data errors

Implementation Into Existing / Future Apps and Templates



- GIS editing template
- ArcReader app for field & office personnel (no licenses necessary)
- Valve isolation app
- Field routing app for customer relations (future for meter readers)
- Walk-up kiosk for map printing
- Pipes (internal web-based app, non-AGO)
- Hydrant and valve audit apps (external)
- Leak app (external, future)

Additional Solutions for Utilities

- solutions.arcgis.com - focused maps and apps that help leverage GIS with the LGIM platform to manage water, electric, gas, sanitary sewer and stormwater utilities
 - Each download contains add-ins and an editing template for use with the LGIM geodatabase
 - If only a specific utility geodatabase is needed, they can be downloaded separately from the LGIM

WaterOne

Water District No. 1 of Johnson County

**So, how can you
start your own
LGIM?**



Water Utility Example

- LGIM
 - Supported on ArcGIS 10.1-10.4
 - 1.75MB download (.zip):
 - LocalGovernment.xml
 - Data Dictionary.html
 - LocalGovernmentReleaseNotes.pdf
- Water Utility Network Editing solution
 - Supported on ArcGIS 10.2-10.4
 - 528MB download (.zip):
 - Attribute Assistant and toolbars Add-ins
 - WaterUtilityNetworkEditing.mxd
 - Local Government toolbox
 - Geodatabase (with Naperville, IL data)
- Water SCADA Processor solution
 - Supported on ArcGIS 10.2-10.4
 - 7MB download (.zip)
 - Contains python scripts, AGO templates, map documents and a SCADA geodatabase (with data)

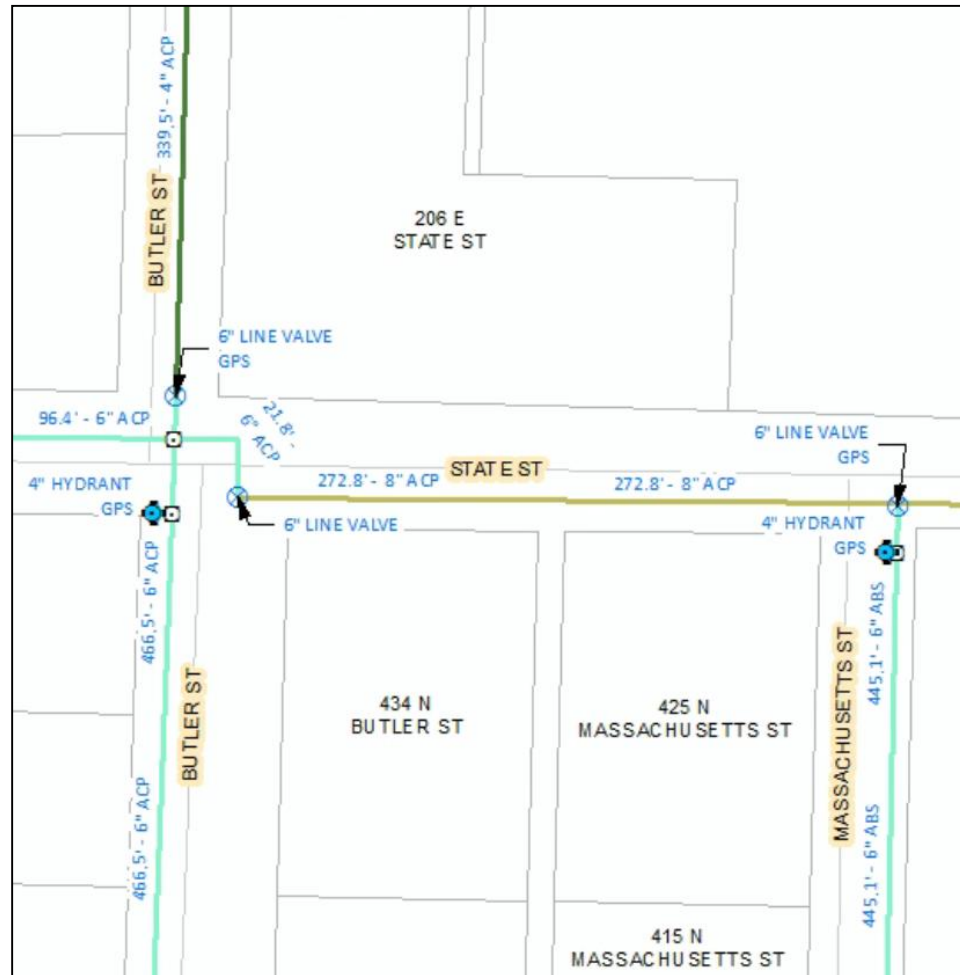
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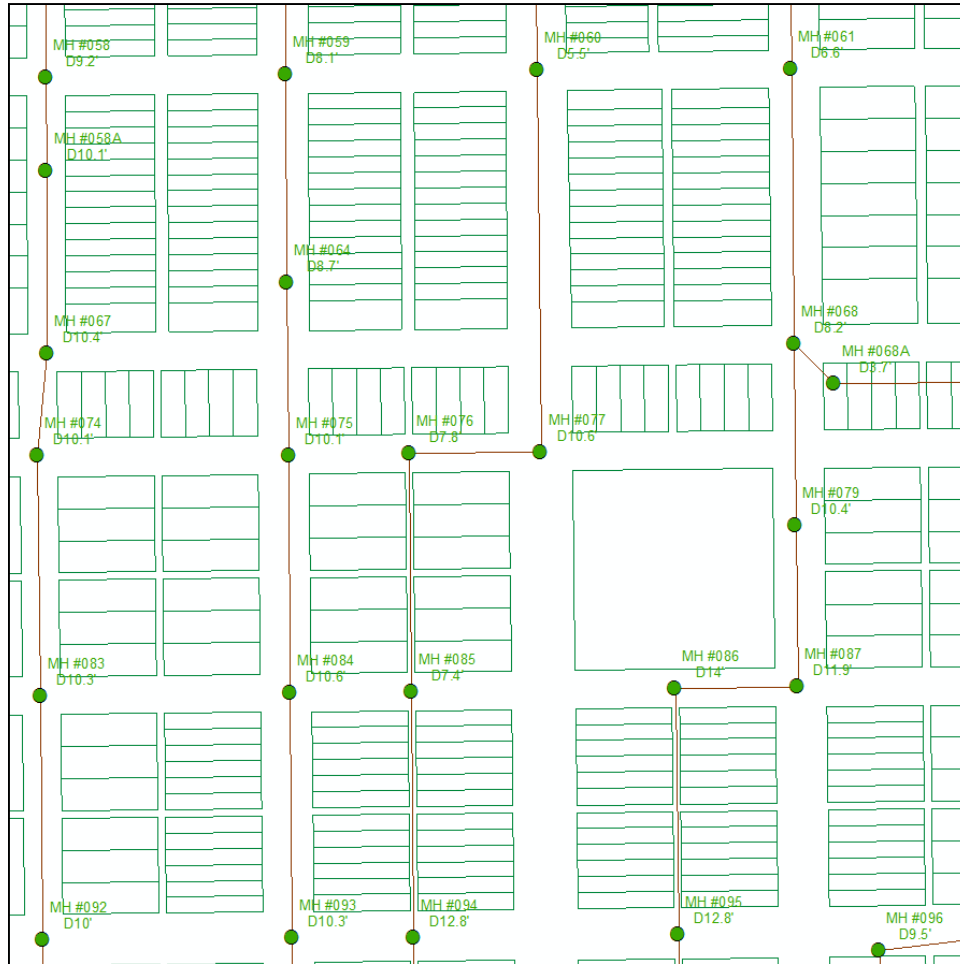
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Erie, Kansas' LGIM – Water



Erie, Kansas' LGIM – Sanitary Sewer



Questions?



Contact Info:

Dan Rose, WaterOne
913.895.5716 (office)
785.554.2250 (cell)
drose@waterone.org