

MODERNIZING A RURAL WATER AUTHORITY USING ARCGIS

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Experience. Expertise. Execution.



ArcGIS for
Local Government
Specialty

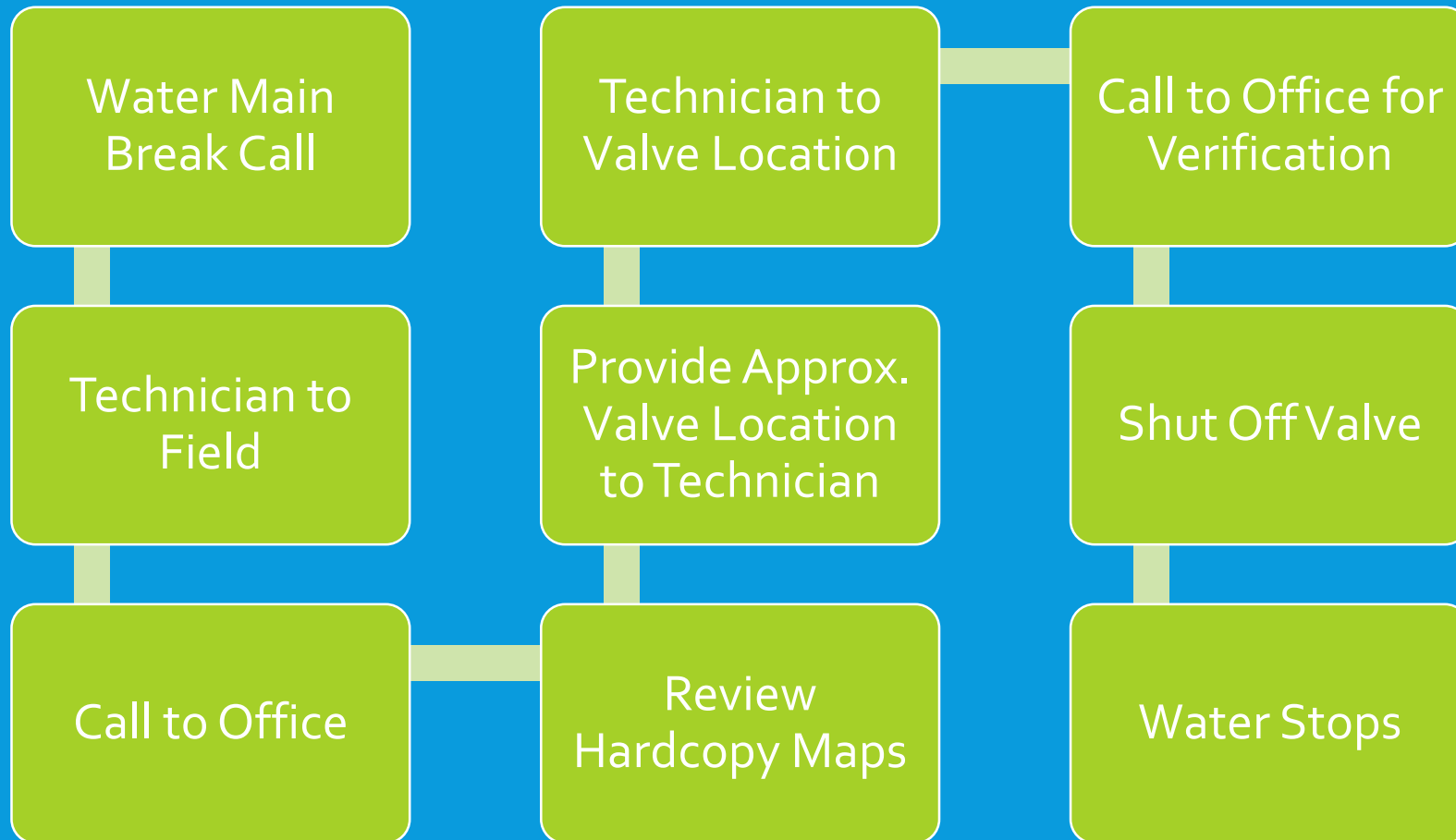
OVERVIEW

- Ottawa County, Ohio
 - Population 42,000
 - Water & Sewer Customers – 5,643
 - Water Only Customers – 1,618
 - Sewer Only Customers – 2,183
 - 185 miles of water main
 - 175 miles of sewer main
 - 1,000 water valves
 - 750 hydrants
 - 600 manholes
 - 90 pump stations
 - 1,000 grinder pumps

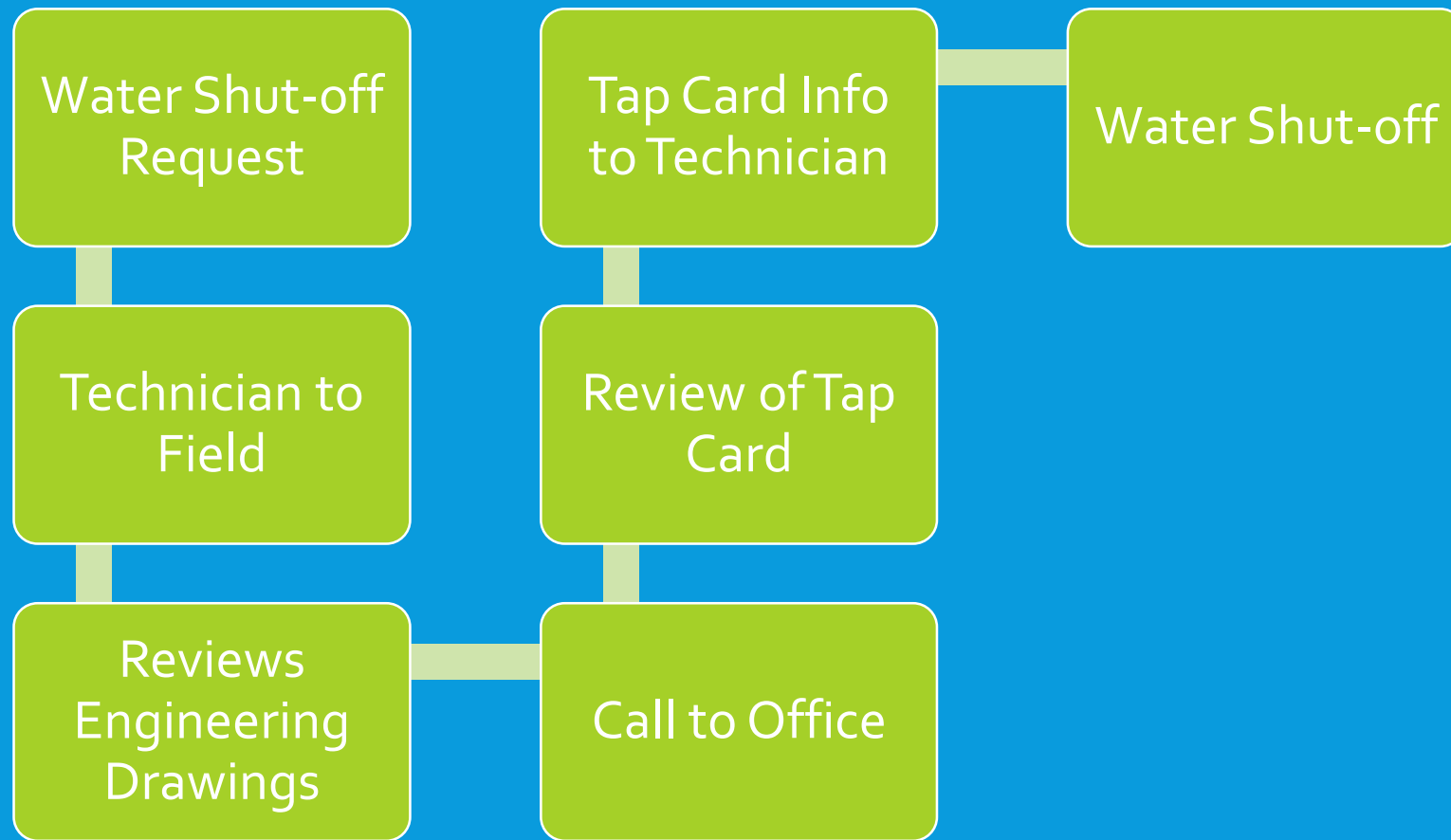
PRE-IMPLEMENTATION

- 265 square miles of service area
- Digital parcels and street centerline data available for the past 15+ years
- Digital aerial imagery available for the past 15+ years
- Water and sewer data available in:
 - Hardcopy as-built drawings
 - Tap cards
 - Maintenance forms
 - Plan & profile sheets
 - Subdivision maps
 - Customer billing database

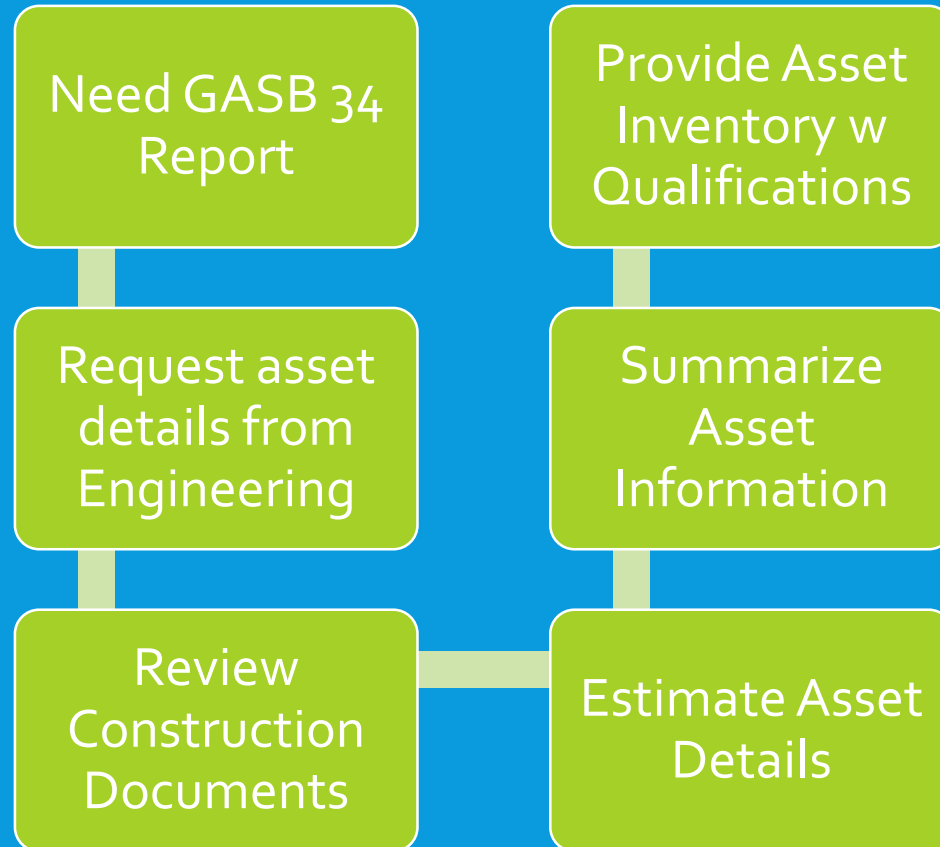
PROBLEM



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MODERNIZING EFFORT

- Decision to modernize from Executive Management
- Increase efficiency
- Better support to field staff
- Integration with customer billing system
- Improve maintenance effort
- Effective process workflow
- Better reporting capabilities
- GASB compliance

MODERNIZING GOALS

- Inventory every available infrastructure asset
- Create digital map book available in the field
- Create easy to use tools for data edits in the office
- Create a seamless integrated environment with customer billing system
- Create automated reports for GASB compliance
- Link all as-built drawings, tap cards, sub division maps and other images to GIS
- Create a digital data retrieval system that allows end user to retrieve any document based on certain fields

MODERNIZATION PROCESS

- Requirement Analysis
- Software Platform Selection
- Geodatabase Design
- Data Conversion / Migration
- Application Development
- System Integration
- User Training

REQUIREMENT ANALYSIS

- Interview every division
- Review current hardware and software environment
- Inventory available source documents
 - 1,000 24 x 26 sub division sheets
 - 1,500 24 x 36 plan & profile sheets
 - 6,000 tap cards
 - 3,000 scanned building connection drawings
 - 2,000 scanned water distribution maintenance forms
- Recommend software platform
 - ArcGIS for Desktop
 - ArcGIS for Server

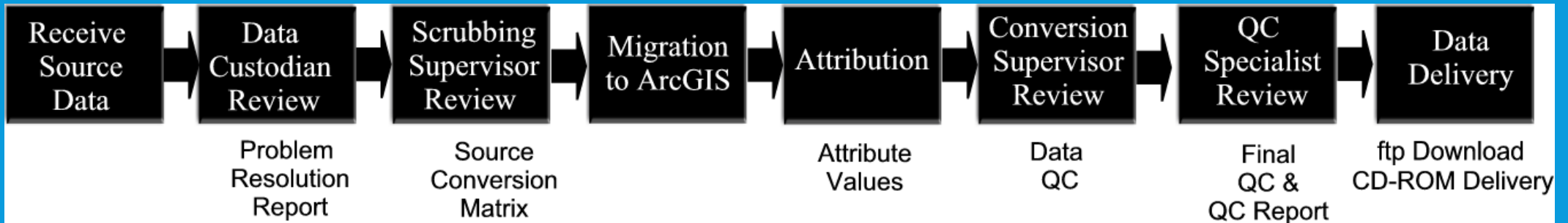
GEODATABASE DESIGN

- Design with future in mind
- Collaborative process with end users
- Include input from Application Developers as well as System Integration team
- Include relationship classes, network topology rules, feature linked annotations, sub types, domains, and other geodatabase elements



DATA CONVERSION

- Convert data from source maps
- Use digital ortho, parcels and street centerline as base map reference
- Create Problem Resolution Reports for questions / end user verification
- Precise placement approach
- Field verification of selected data



APPLICATION DEVELOPMENT

- Customized ArcGIS for Desktop Application for Data Maintenance
 - Enterprise Identification Management
 - Unique to the entire geodatabase
 - Maintained using EID Module
 - Auto Attribute
 - Automatically generate attribute values as end user places a feature based on
 - Specific geographic location (within a certain pressure zone, within a certain operations boundary, etc.)
 - Specific attribute value (either incremental or default) based on feature type
 - Email Notify
 - Send email to different stake holders based on change in attribute value of a specific feature
 - Customized Export
 - Export data to Personal and File geodatabases while preserving relationship classes and feature linked annotations

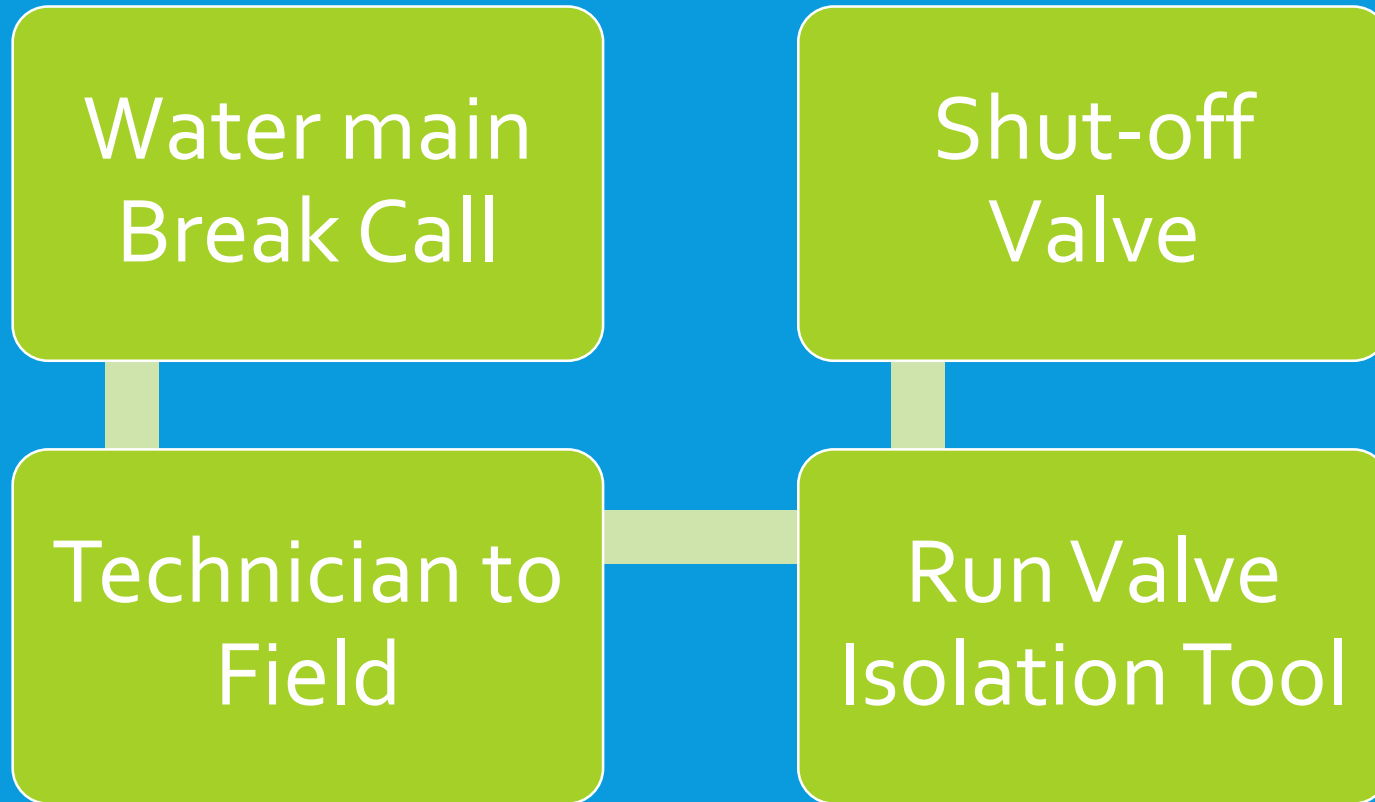
APPLICATION DEVELOPMENT

- Web Application for Field Staff
 - ArcGIS for Server based application
 - Allows for network tracing for valve isolation
 - Instant access to customer data through web integration
 - Locate assets in the field
 - Asset detailed inventory available in the field
 - Access to original source material (scanned images) in the field
- Web Application for Management
 - ArcGIS for Server based application
 - Customer usage reports
 - Comparable usage reports
 - Asset reports for GASB compliance

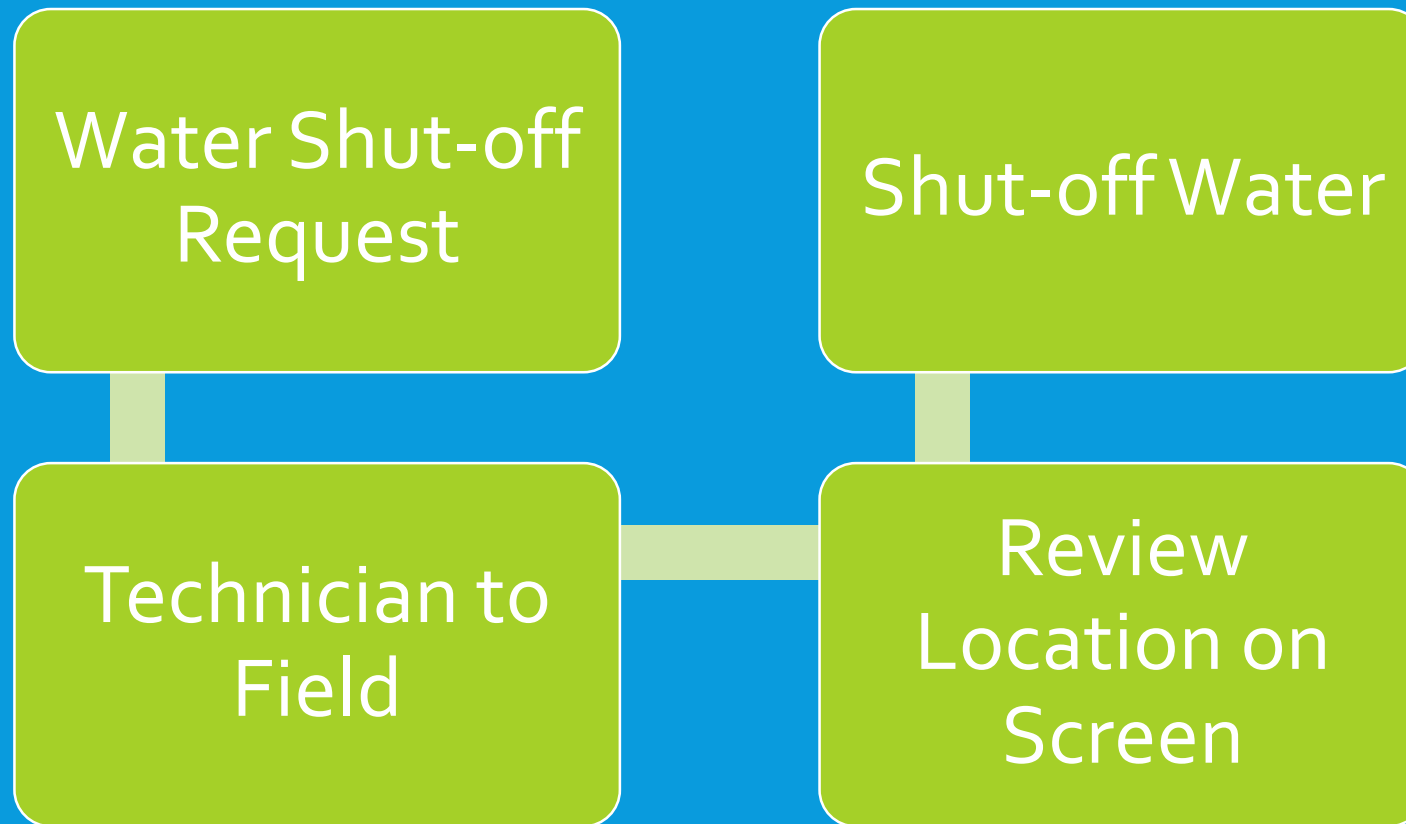
SYSTEM INTEGRATION & TRAINING

- System Integration
 - Proprietary customer database application
 - Creation of web-services to access customer data in real time
 - Normalization of customer data upon import into geodatabase
- Training
 - End user training for web based application
 - End user training for desktop application
 - System administrator training for ArcSDE
 - System administration training for ArcGIS Server
 - Data maintenance training for data editors

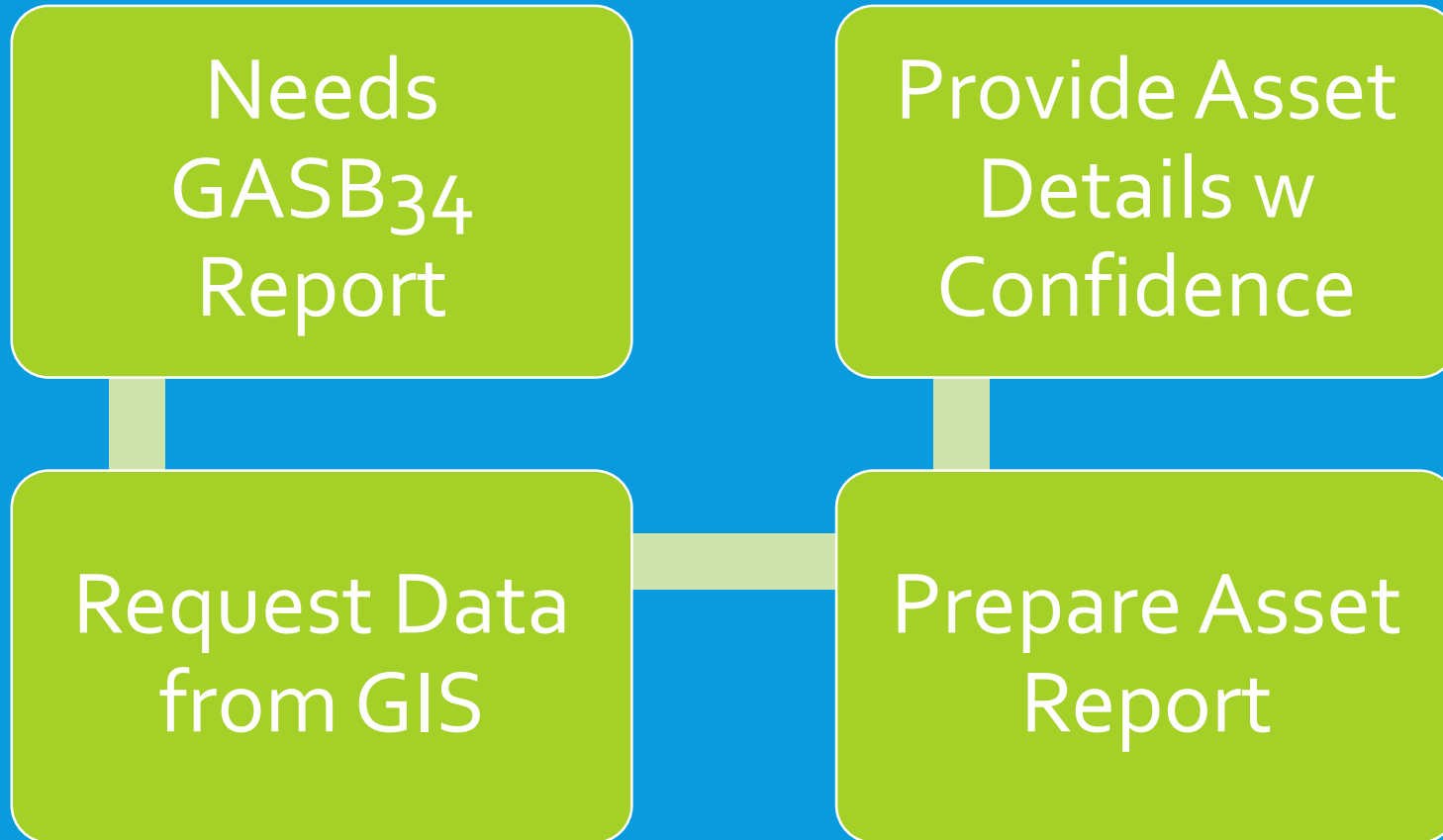
POST IMPLEMENTATION WORKFLOW



POST IMPLEMENTATION WORKFLOW



POST IMPLEMENTATION WORK FLOW



CONCLUSION

- ArcGIS based modernization resulted in:
 - Better data allows for better decision making
 - Instant access of assets in the field
 - Reduced response time for field personnel
 - More accurate GASB reporting
 - Easy access to consumption reports
 - Integration between customer database and mapping data
 - Estimated return on investment in less than 4.31 years

QUESTIONS?

- Thank you!
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