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The Importance of Data Quality within Your Enterprise

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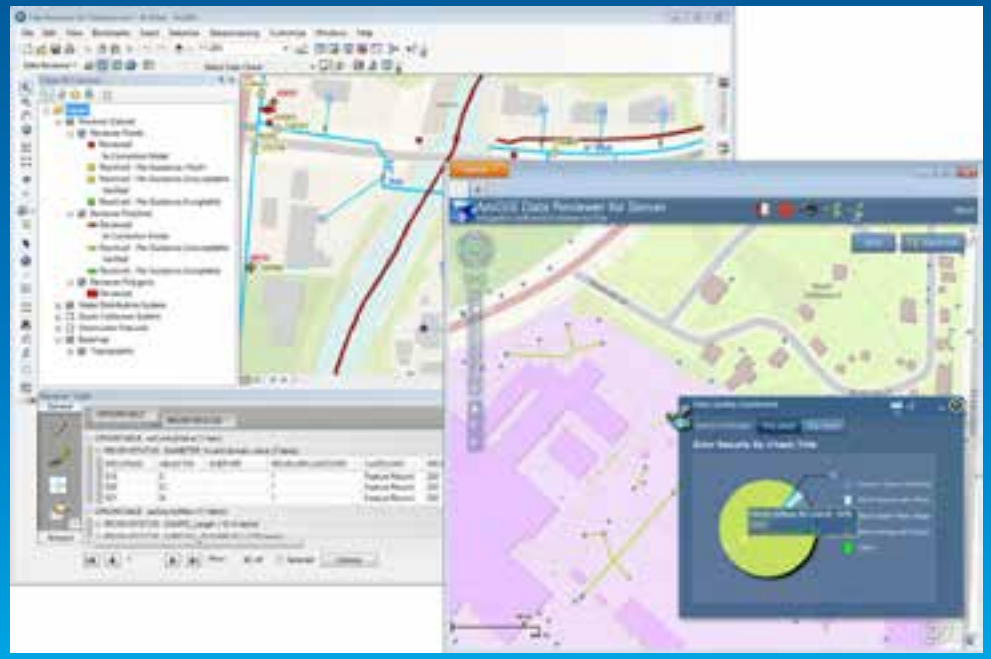
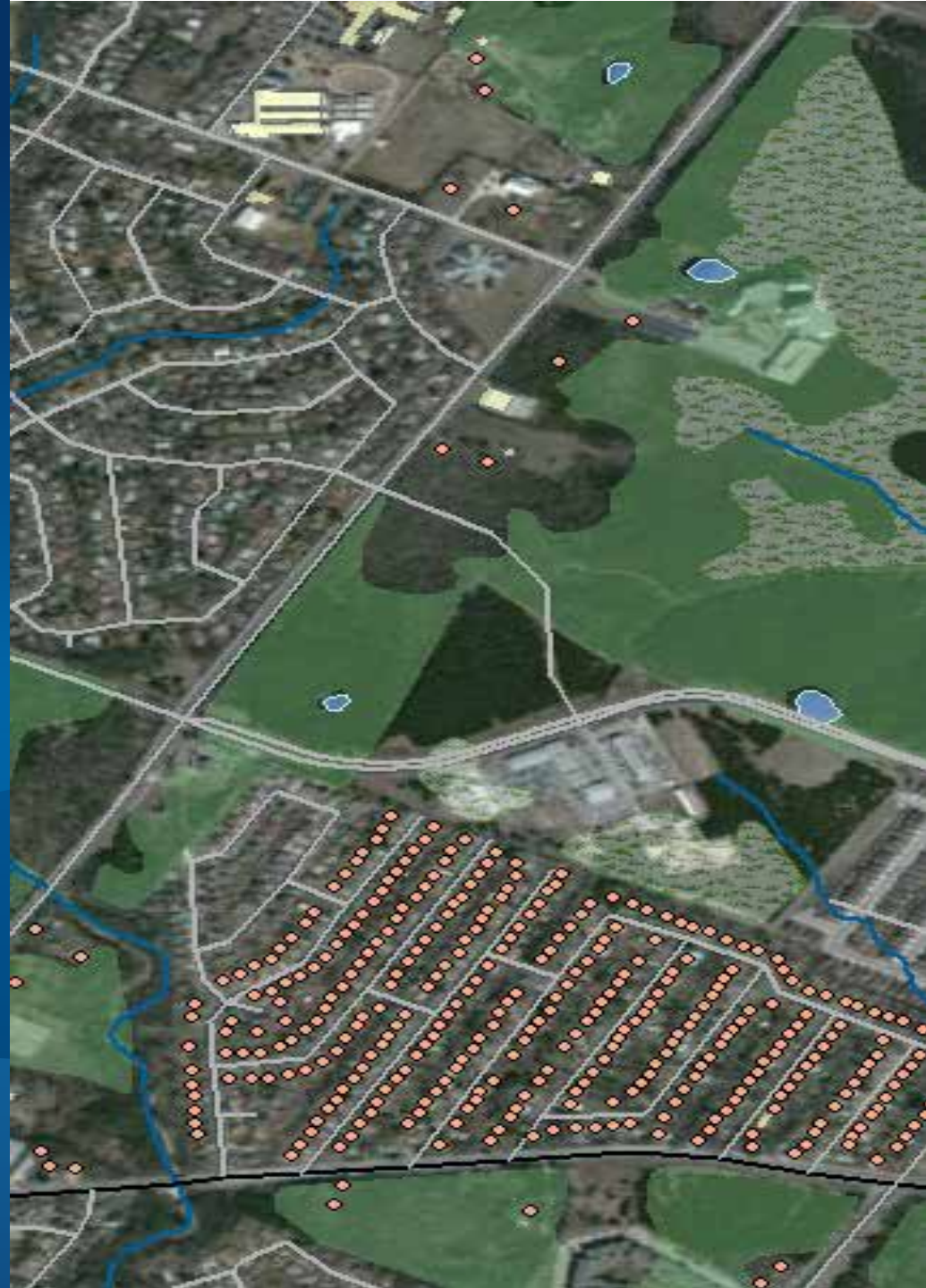
Presentation Agenda

- Importance of Data Quality
- Introduction to ArcGIS Data Reviewer
- Value of ArcGIS Data Reviewer as a solution
  - Automated Review
  - Visual Review
  - Reporting
- Air Combat Command



ArcGIS Data Reviewer

Improving Data Quality



Defining Quality

A Business Perspective

- **Executive**
  - Confidently make decisions
  - Reduce financial risk
  - Optimize organizational performance
- **Manager**
  - Effective data stewardship
  - Maximize productivity
  - Drive increased usage
- **Knowledge Worker**
  - Increased efficiencies
  - Confidence in GIS

Data Validation

From the technical perspective

(ISO-19157 (DRAFT), 2010)

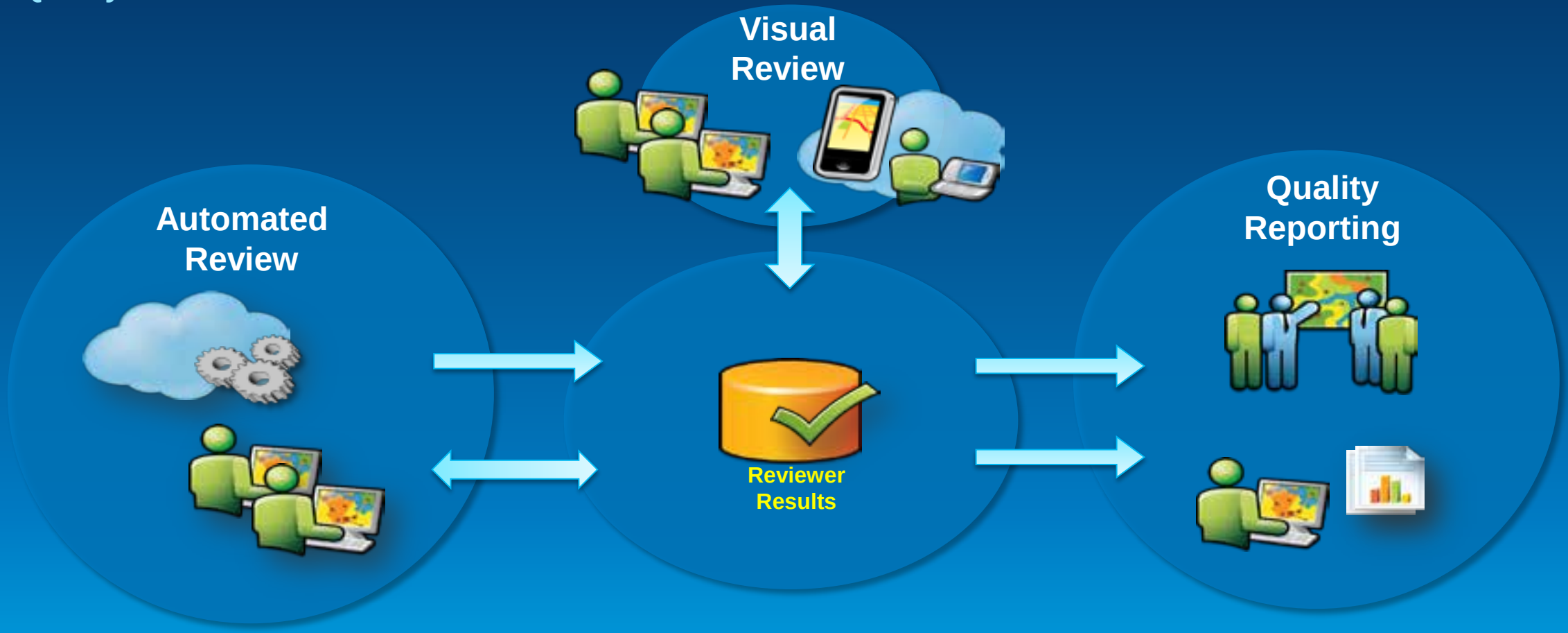
What is ArcGIS Data Reviewer?

Data Quality Management for ArcGIS

- Provides
  - Rule-based validation
  - Interactive tools
  - Track errors
- For individuals and enterprise
  - Saves time/money
  - Less rework
- Standard extension
  - ArcGIS for Desktop
  - ArcGIS for Server

Managing Quality Control

Quality Control Processes



Automated Data Review

When to perform quality control

- Before data loading
  - QC the data in the source
- Receiving data from contractor/co-producer
  - QC the data upon arrival
  - Notify sender of errors
- Extracting or editing data
  - QC edits for accuracy
- Hard copy map review

Defining Quality

Sources of Data Quality Requirements

- **Subject Matter Experts**
- **Industry Standards/Specifications**
- **Training and experience**
- **Quality Assurance Plans**

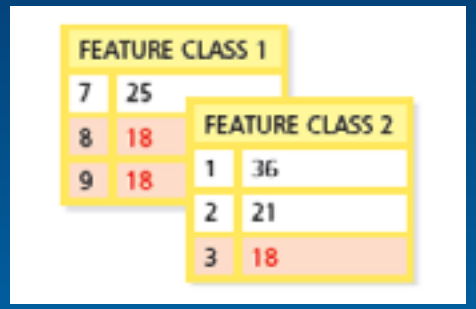
Business Rules

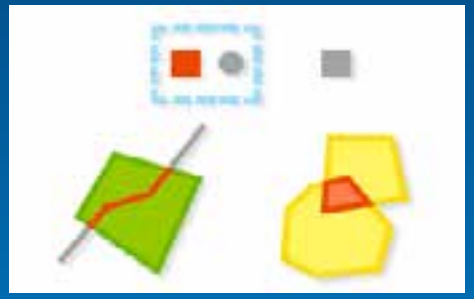
Attribute rules
1. Name cannot be NULL
2. Road width must be greater than 15

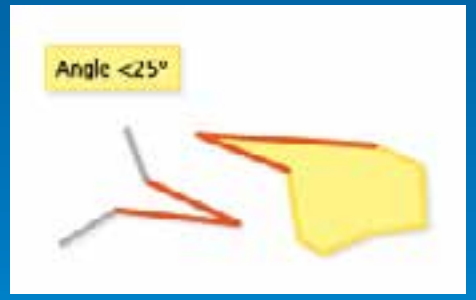
Spatial Rules
1. Water Mains should not have sharp angles
2. Hydrant must be connected to hydrant lateral

Rule-based automated error detection

- 40+ configurable checks
- Attribute
  - Feature and Table values
- Spatial
  - Spatial relationships
- Feature integrity
  - Collection rules
- Metadata check
  - Completeness







Authoring Batch Jobs

- **Multiple checks stored in a single file**
- **Encapsulate specification**
- **Reusable and Shareable**
- **Industry QC Templates**

Business Rules

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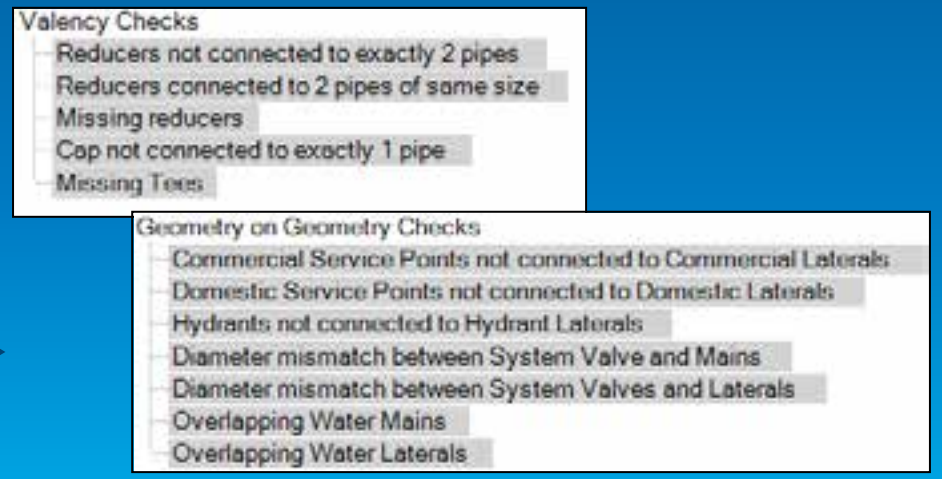
Translated to automated checks

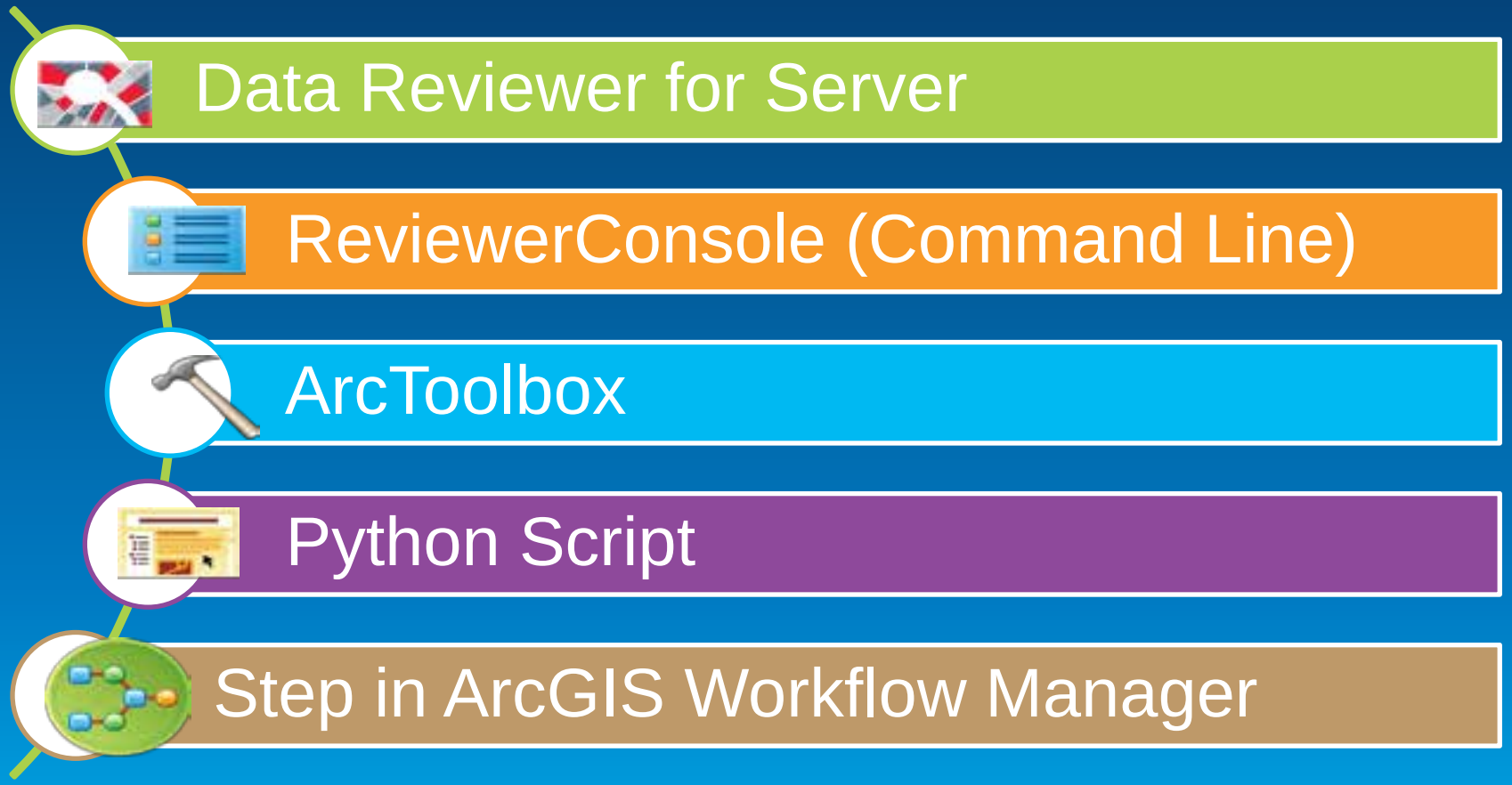


Authoring Batch Jobs

Demo: Automated Data Review

Eric Ray

Other Batch Validation Options



Visual Data Review

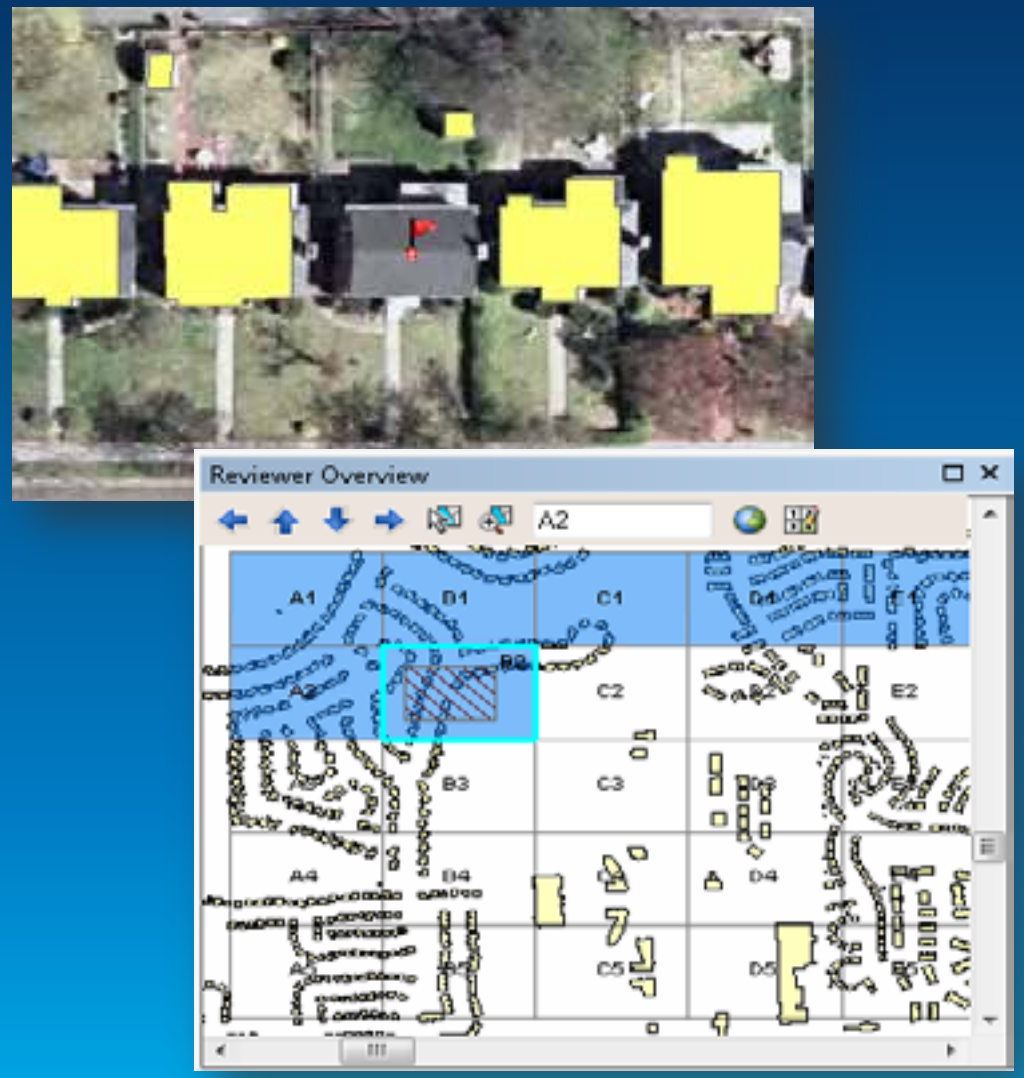
Value of Performing Visual Review

- Find Missing Features
- Discover Patterns
- Compare to Trusted sources

Visual Review

Leveraging ArcGIS for Desktop

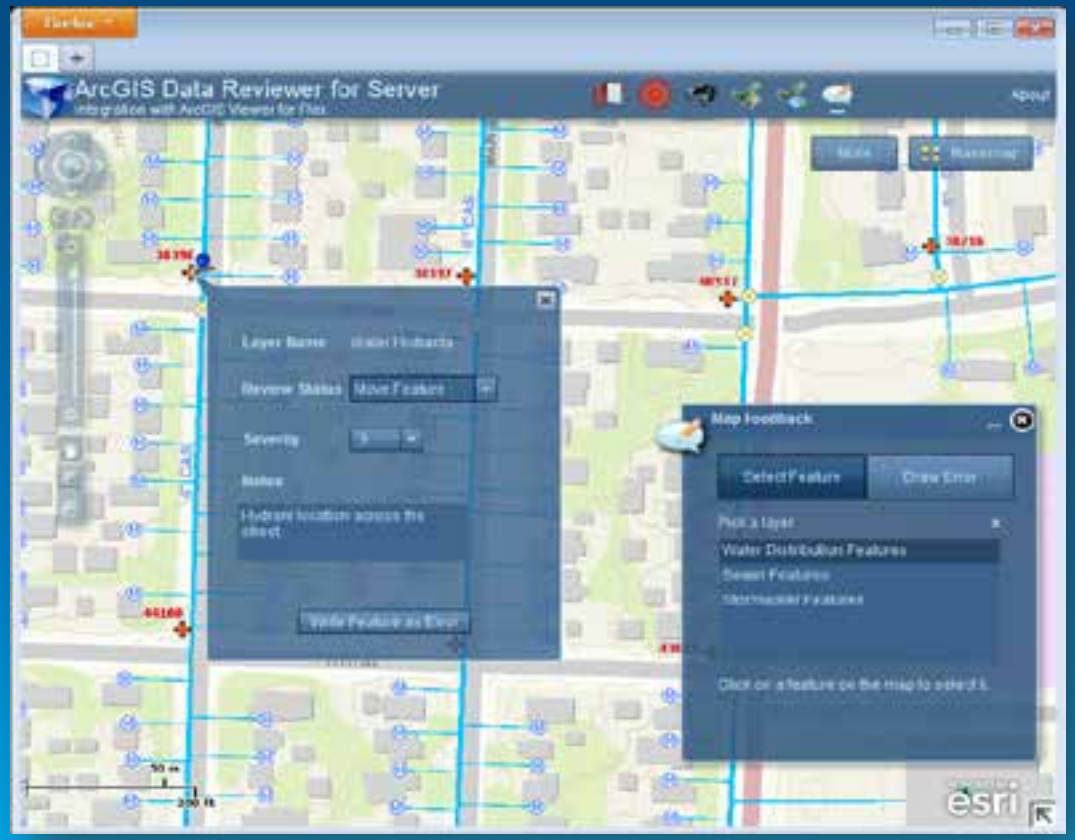
- Tools supporting
  - Feature Selection
  - Browsing
  - Flagging features
- Reviewer Overview window
- Random Sampling



Visual Review on the Server

Expanding the dialog on quality data management

- **Extending quality control workflows into other communities**
  - **QC review across ArcGIS platform**
  - **Simple to use tools for error identification**
  - **Manual QC workflow “automation”**

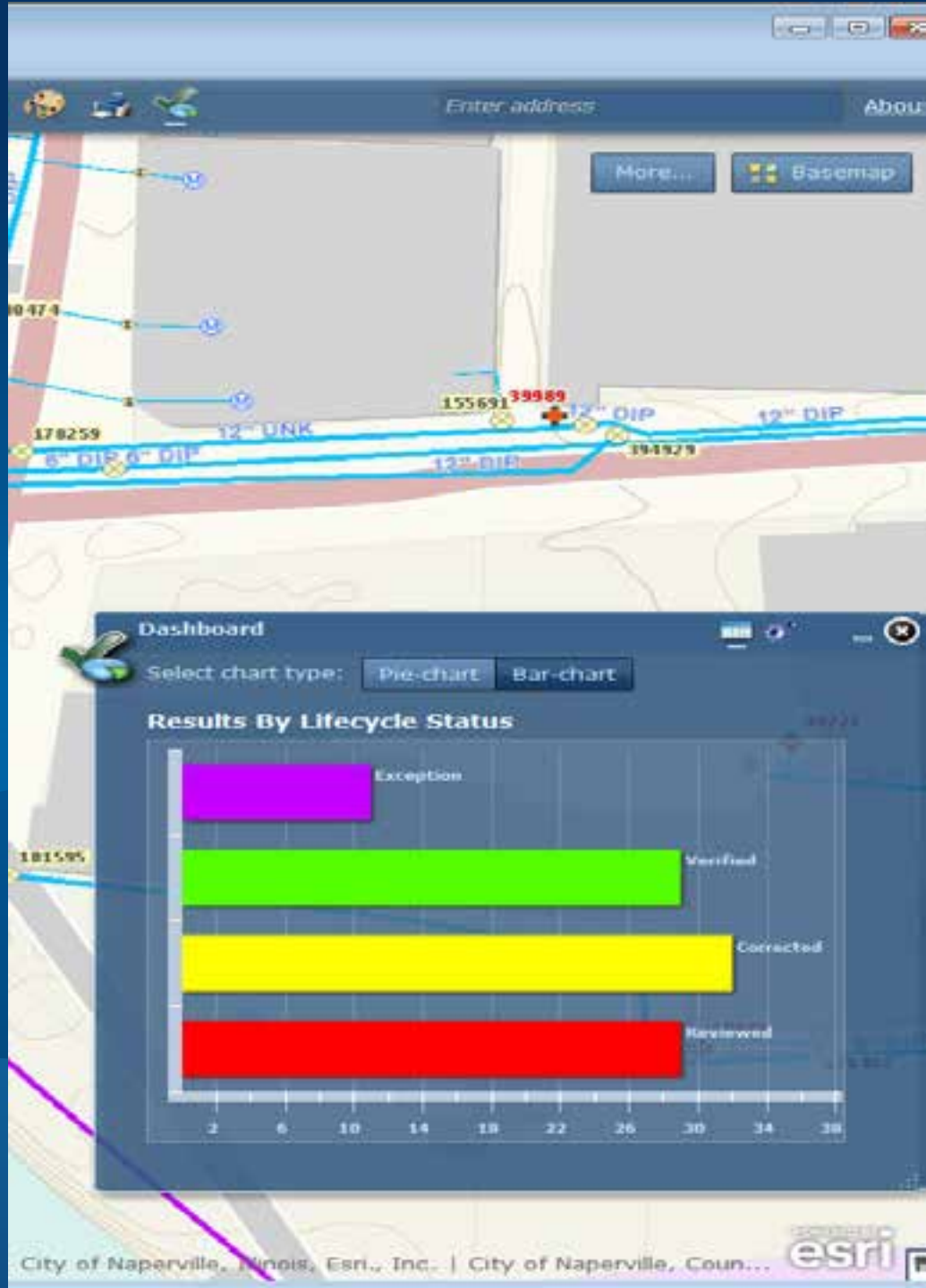


Server: FLEX Viewer

Demo:

Visual Review

Managing and Reporting Quality



Managing Quality Control

QC lifecycle management

Find &
Record Errors

Perform Edits
or
Note Exceptions

Acceptable
or
Unacceptable

Reviewer Reporting

- **Automated reporting of quality control results**
- **Many ways to organize report**
- **Total Record Count**

Auto Calculate Sampling Report

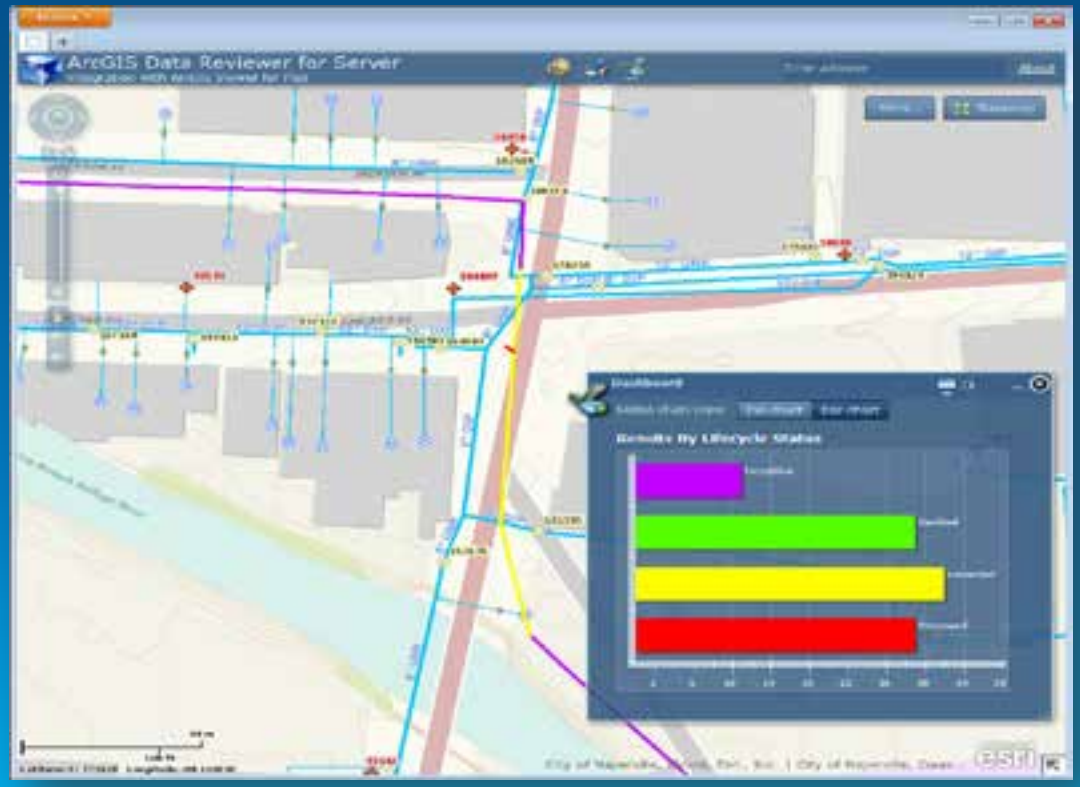
Report generated on 2/21/2013 11:42 AM by sher6312
Reviewer Workspace Location: C:\Demo\FedGIS\DATA\DATA_Workspace_Contractor.gdb
Session(s): Session 2 : Sampling

Check Title	Date/Time	Origin Table	Subtype	Total Records	Confidence Level	Margin of Error	Sampling Number	Acceptable Error Percentage	Acceptable Error	Number of Errors	Pass/Fail	QC Complete
Auto calculate (BldgPts, roads and hydro)	2/21/2013 4:31:01 PM											
		BuildingP		3609	98%	3%	704	2%	21	8	Pass	No
			Building				704			8		
		HydroL		505	98%	3%	99	2%	4	0	Pass	No
			Non-Earthen Shoreline				6			0		
			River/Stream				52			0		
			Shoreline				41			0		
		RoadL		2057	90%	3%	401	2%	10	0	Pass	No
			Class 2				6			0		
			Class 3				365			0		
			Class 4				30			0		
Total							1204			8		

Reporting

ArcGIS for Server

- **Better decision making by communicating data quality across stakeholders**
  - **Open quality reporting**
  - **Shared across ArcGIS system**
  - **New tools and methods to communicate quality**



QC Llifecycle

Correct, Verify & Generate Reports

Take-Aways

Perform QC before, during and after a project

Ask questions. Think about your process. What do you want to achieve?

ArcGIS Data Reviewer provides data quality management for ArcGIS

Off-load data validation using ArcGIS Data Reviewer for Server

Data Reviewer Resources

- External Product page www.esri.com/datareviewer
  - 60-day Free Evaluation
  - Data Reviewer Checks poster
  - Customer Success Stories
  - Demos

- Training www.esri.com/training

- Data Reviewer Resource Center
  http://resources.arcgis.com/en/communities/data-reviewer

- Email questions and comments datareviewer@esri.com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Understanding our world.