No Standards
With Standards
Data and Map Production

- Workflows
- Quality Control
- Cartography

...Focused on Quality, User Needs, and Innovation
Data and Map Production

ArcGIS Workflow Manager

ArcGIS Data Reviewer

Quality Control

Cartography

Esri Production Mapping

…Focused on Quality, User Needs, and Innovation
Managing Production Work

ArcGIS Workflow Manager
What is a workflow?

• A workflow is a sequence of steps that a unit of work has to pass from initiation to completion.
Street Light Damage Report Received
Workflows - Example

Street Light Damage Report Received → Dispatch Alerted
Workflows - Example

- **Street Light Damage Report Received**
- **Dispatch Alerted**
- **Technician Notified**
Workflows - Example

- Street Light Damage Report Received
- Dispatch Alerted
- Technician Notified
- Repair Completed?
Workflows - Example

- Street Light Damage Report Received
- Dispatch Notified
- Technician Notified
- Repair Completed?
  - Yes: Status Updated
  - No: Enter Reason for Non-Repair
Workflows - Example

- Street Light Damage Report Received
- Dispatch Notified
- Technician Notified
- Repair Completed?
  - YES: Status Updated
  - NO: Enter Reason for Non-Repair
Centralized Workflows

Configure & Create

Execute & Manage

Evaluate and Improve

Supporting GIS professionals and the entire organization
Configure and Create

- Configure Repeatable Steps
- Create Units of Work based on Workflows
Execute and Manage

- Manage Due Dates/Priorities
- Execute Workflow
Evaluate and Improve

- Measure Performance
- Refine Workflows
- Adapt
ArcGIS Workflow Manager Server

Knowledge Workers

Executive Access

Public Engagement

Work Anywhere

Enterprise Integration

GIS Professionals

Web GIS

ArcGIS - Workflow management

Expose workflow capabilities to your entire Organization
Demo
ArcGIS Workflow Manager
Workflow Manager in ArcGIS Pro

- Currently working on equivalency
ArcGIS Workflow Manager in ArcGIS Pro
Improving Data Quality
ArcGIS Data Reviewer
Defining Quality
A business perspective

• **Executive**
  - Confidently make decisions
  - Reduce financial risk
  - Optimize organizational performance

• **Manager**
  - Effective data stewardship
  - Drive increased usage
  - Maximize productivity

• **Knowledge worker**
  - Increased efficiencies
  - Confidence in GIS
Defining Quality

- Spatial Accuracy
- Thematic Accuracy
- Completeness
- Logical Consistency
- Temporal Quality
- Usability

ISO-19157:2013 Geographic information – Data quality
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

• For multiple domains
  - Configurable
  - Extendable
Automate data validation

- Data quality checks
  - 42 configurable checks
    - Attributes
    - Spatial relationships
    - Feature integrity
    - Metadata
Automate data validation

- Define and encapsulate quality requirements
- Configure automated checks
- Design once and execute many times

Industry standards / Specifications

Subject matter experts

Quality assurance plans

ArcGIS Data Reviewer Checks

Batch Jobs

- Invalid Geometry Check (StructureFln)
- Invalid Geometry Check (StructureGrf)
- Invalid Geometry Check (TransportationGroundCrv)
- Attribute Checks
  - SQL Check: Controlling Authority Can't be No Information - Building_S
  - SQL Check: Feature Function Can't be No Information - Building_S
  - SQL Check: Roof Shape is not defined - Building_S
- Spatial Checks
  - Multipart Polygon Check - Buildings must not be multipart - Building_S
  - Multipart Line Check - Road segments cannot be multipart - Road_C
  - Cutbacks Check - Angle is too sharp - Building_S
  - Cutbacks Check - Angle is too sharp - Road_C
  - Geometry on Geometry Check - Buildings must not overlap - Building_S
  - Buildings and roads must not overlap - Buildings_S and Road_C
  - Duplicate Geometry Check - Duplicate building surfaces - Building_S
  - Duplicate Geometry Check - Duplicate building points - Building_P
Quality control life cycle

1. Review
2. Correct
3. Verify
What is ArcGIS Data Reviewer for Server?

- Support data quality management
- Automate
- Measure data quality
Data Quality Reporting

Enabling transparency in data quality

• Better decision making by communicating data quality across stakeholders
• Open quality reporting
• Shared across ArcGIS system
• Tools and methods to communicate quality
Where to start
Leveraging templates

- Data Reviewer Templates
  - Electrical utilities
  - Gas utilities
  - Local government
  - Topographic mapping
  - Water resources
  - Water utilities
- Based on Esri industry models
- Use as starting point
ArcGIS Data Reviewer in ArcGIS Pro

What’s Next?

- Adding New Configurable Checks Each Release
Creating and Managing Specification Driven Maps

Esri Production Mapping
Your organization’s processes

- Collect
- Manage
- Produce
- Share
Your organization’s needs

- Standardization
- Centralization
- Automation
- Repeatability
Esri Production Mapping solution

Data Production

Cartography

Workflow

Data Validation
Without Collection Specifications
Feature collection specifications

Must Populate Road Type
Must populate Road Name for all Main Roads
Generalization

Best Scale Data → Generalization Tools → Smaller Scale Data → Multiscale Map Products
Traditional Cartography
With ArcMap
Grids and Graticules

Design

- Feature Based
- Custom Design
- Geographically aware
  - Scale
  - Coordinate system
  - Rotation
Visual Specifications

Defining

- Create Symbology
- Define Specifications
Layout
Providing Context

• Graphic Table Element
  - Dynamic table creation
  - Linked to feature layers
  - Include text, symbols
Layout
Providing Context

• Element Placement
  - Layout rules
Output
Production PDF

- Color Separation
- Transparency
- Overprint
- Etc.
Production Mapping Server

Product on Demand
Demo
Production Mapping Cartography and Server
Moving Forward to Pro

• Production Mapping functionality will be known as Topographic Production
• First functionality will be at the next release
Data and Map Production

- ArcGIS Workflow Manager
- ArcGIS Data Reviewer
- Quality Control
- Esri Production Mapping
- Cartography

...Focused on Quality, User Needs, and Innovation
Please Take Our Survey on the **Esri Events App**!

**Download the Esri Events app and find your event**

**Select the session you attended**

**Scroll down to find the survey**

**Complete Answers and Select “Submit”**
### Day and Description

**Wednesday, July 12**

<table>
<thead>
<tr>
<th>Event</th>
<th>Type</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>ArcGIS Workflow Manager: Advanced Topics</td>
<td>Technical Workshop</td>
<td>10:15 - 11:30am</td>
<td>SDCC Room 31</td>
</tr>
<tr>
<td>ArcGIS Workflow Manager: Integrate Tasks into your Workflow Process</td>
<td>Demo Theater</td>
<td>11:30am - 12:15pm</td>
<td>SDCC Demo Theater 06</td>
</tr>
<tr>
<td>Esri Production Mapping: Generating High Quality Product-on-Demand Maps Over the Web</td>
<td>Demo Theater</td>
<td>1:00 - 1:30pm</td>
<td>SDCC Demo Theater 18</td>
</tr>
<tr>
<td>ArcGIS Data Reviewer: An Introduction</td>
<td>Technical Workshop</td>
<td>3:15 - 4:30pm</td>
<td>Room 31B</td>
</tr>
<tr>
<td>ArcGIS Data Reviewer: Integrating Data Validation Capabilities into Web Applications</td>
<td>Demo Theater</td>
<td>3:30 - 4:15pm</td>
<td>Demo Theater 8 Enterprise</td>
</tr>
<tr>
<td>ArcGIS Workflow Manager: Integrating Geoprocessing and Python into your Business Processes</td>
<td>Demo Theater</td>
<td>3:30 - 4:15pm</td>
<td>SDCC Demo Theater 06</td>
</tr>
<tr>
<td>Esri Production Mapping: Automate Map Production with ArcGIS Workflow Manager</td>
<td>Demo Theater</td>
<td>3:30-4:15 pm</td>
<td>SDCC Demo Theater 03</td>
</tr>
<tr>
<td>ArcGIS Data Reviewer: Implementing Data Quality Reporting in Web Clients</td>
<td>Demo Theater</td>
<td>4:30 - 5:15pm</td>
<td>Demo Theater 8 Enterprise</td>
</tr>
</tbody>
</table>

**Thursday, July 13**

<table>
<thead>
<tr>
<th>Event</th>
<th>Type</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supporting Daily Workflows with Tools</td>
<td>Demo Theater</td>
<td>3:30-4:15pm</td>
<td>SDCC Demo Theater 03</td>
</tr>
<tr>
<td>ArcGIS Data Reviewer: Advanced Data Validation</td>
<td>Technical Workshop</td>
<td>8:30 - 9:45am</td>
<td>Room 31A</td>
</tr>
<tr>
<td>ArcGIS Data Reviewer: Leveraging Geoprocessing for Data Validation</td>
<td>Demo Theater</td>
<td>9:30 - 10:15am</td>
<td>Demo Theater 6 Spatial Data Mgmt</td>
</tr>
<tr>
<td>ArcGIS Data Reviewer: Validating Linear-Referenced Events</td>
<td>Demo Theater</td>
<td>10:30 - 11:15am</td>
<td>Demo Theater 6 Spatial Data Mgmt</td>
</tr>
</tbody>
</table>