



Esri International User Conference | San Diego, CA
Technical Workshops | July 12, 2011

Esri Production Mapping – An Introduction

Eric Ray

Lana Tylka



Workshop Overview

Part 1	Industry challenges What is Esri Production Mapping Manage workflows
Part II	Enhanced editing tools
Part III	Performing quality control
Part IV	Cartographic production tools
Part V	Additional resources

Industry Challenges

- **Authoritative data**
 - Produce data you can trust
 - Share and exchange – regardless of its source
- **Good, fast, and cost-effective**
 - Improve the speed and accuracy of your data / maps
 - Streamline workflows for efficiency
- **Commercial-off-the-shelf solution:**
 - Configure to needs
 - Eliminate custom code or scripts

Esri Production Mapping

- **Meet the standards set by an organization**
 - High quality databases and cartographic products



**Enhanced
Editing Tools**



**ArcGIS Data
Reviewer**



**Cartographic
Production Tools**



**ArcGIS Workflow Manager
&
Task Assistant Manager**



**Product
Library**



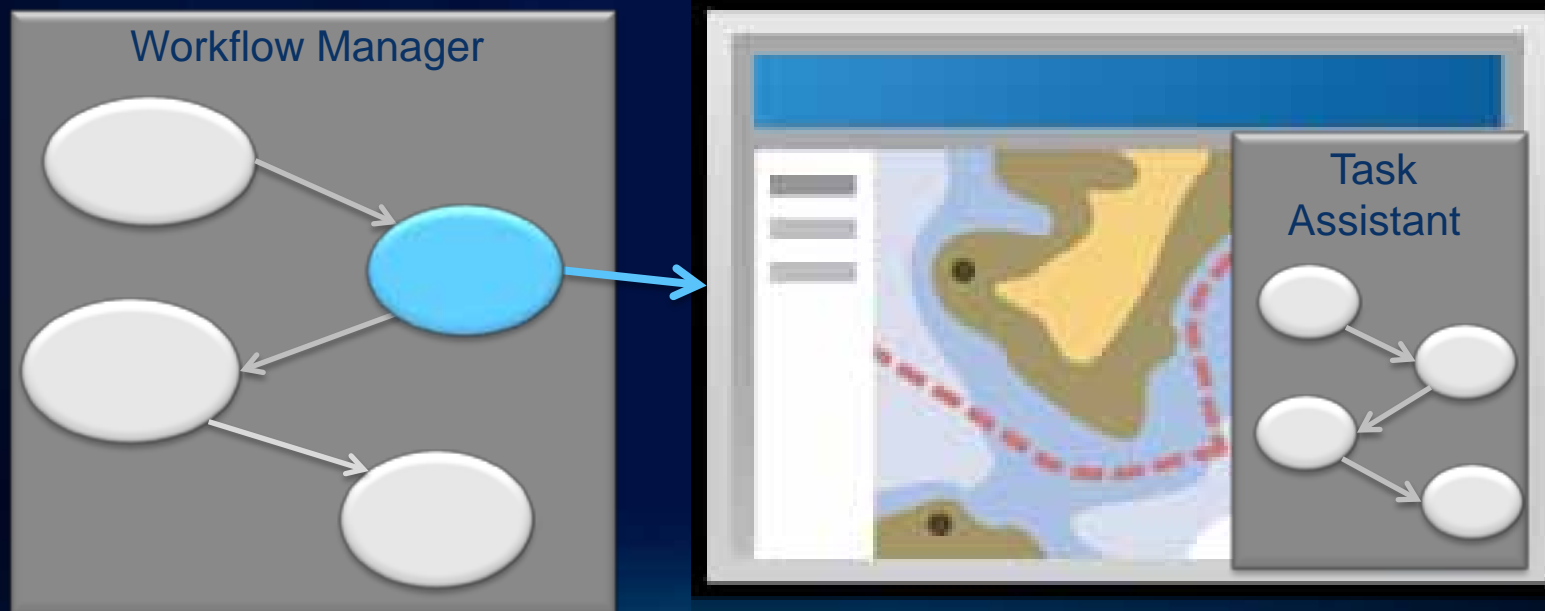
**Resource
Center**

The Data and Map Production Workflow



Manage workflows at multiple levels

- Define your workflows
- Macro – link to multiple systems at a high level
- Micro – tasks inside of ArcMap



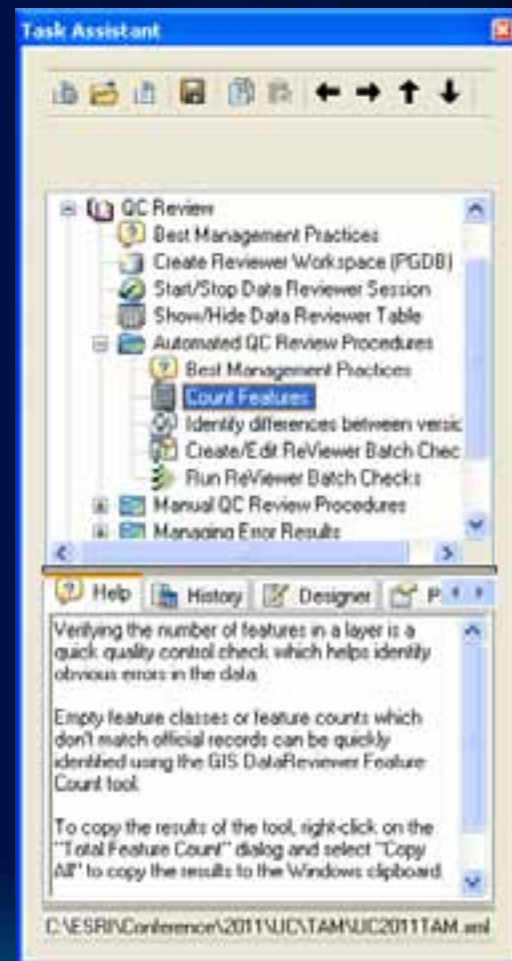
Workflow Manager

- **Define and enforce standard workflows**
 - Ensure consistency across an organization
- **Create and assign units of work (jobs)**
 - Assign resources
 - Automate tasks
 - Notify users of pending work
- **Track and manage status of work**



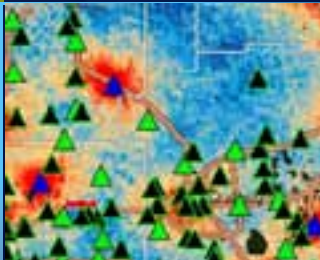
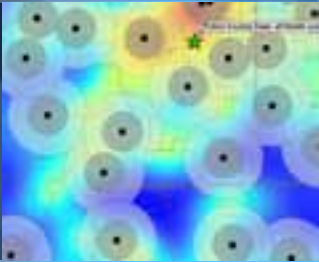
Task Assistant Manager

- Standardize workflows in ArcMap
- Promotes sharing of knowledge
 - Communicate best practices
- Automated tasks
- Provides consistency and efficiency

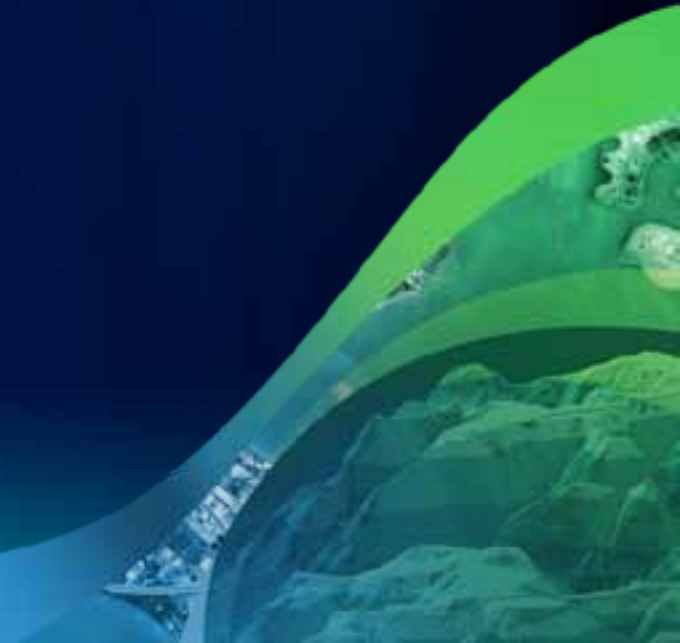


DeKalb County Board of Health
Fulton County Dept. of Health and Wellness/District 3, Unit 2, Office

Demo: Managing workflows



Data loading and editing



The Data and Map Production Workflow

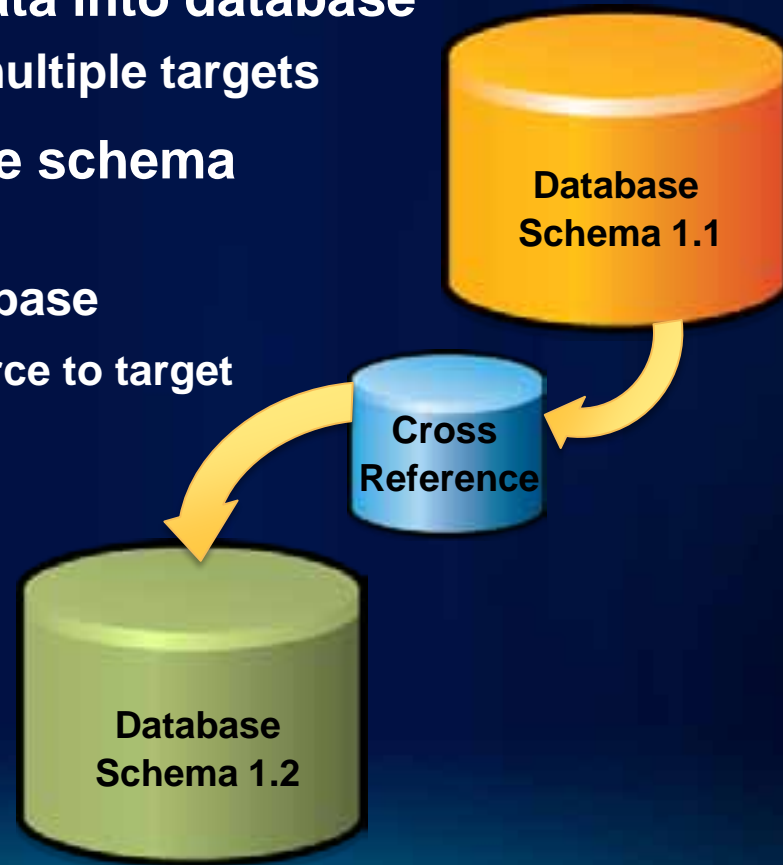


Available databases

- **Resource center has data models for specific industries**
 - **Electric and Gas Utilities**
 - **Water\Wastewater**
 - **Transportation**
 - **Local Government**
 - **Telecommunications**
- **Use your own**
 - **Esri Production Mapping is configurable**

Data loading

- **Efficient loading of data into database**
 - Multiple sources to multiple targets
- **Convert data from one schema to another**
 - Cross reference database
 - Maps data from source to target



Editing using Production Mapping

- Feature Manager
 - Increase productivity

Feature Manager

Manage Features

Template: Road (AWHS 1 lane - under const. Metadata: None

<Search>

Roads

- Road (AWHS 1 lane - under construction) 1P030L023
- Road (AWHS 1 lane) 1P030L003
- Road (AWHS 2+ lanes - median) 1P030L002
- Road (AWHS 2+ lanes - under construction) 1P030L040
- Road (AWLS 1 lane - candy stripe sym)
- Road (AWLS 1 lane - under construction) 1P030L049
- Road (AWLS 2+ lanes - under construction) 1P030L051

Create Update Metadata Selections: 0

Create Attributes

	Field Name	Field Value
<input checked="" type="checkbox"/>	F_CODE	AP030 - AP030
<input checked="" type="checkbox"/>	ACC	1 - Accurate
<input checked="" type="checkbox"/>	FUN	6 - Fully Functional
<input type="checkbox"/>	HCT	0 - Unknown
<input type="checkbox"/>	LOC	0 - Unknown
<input checked="" type="checkbox"/>	LTN	2
<input checked="" type="checkbox"/>	MES	1000 - Without Median
<input type="checkbox"/>	NAM	
<input type="checkbox"/>	NFI	

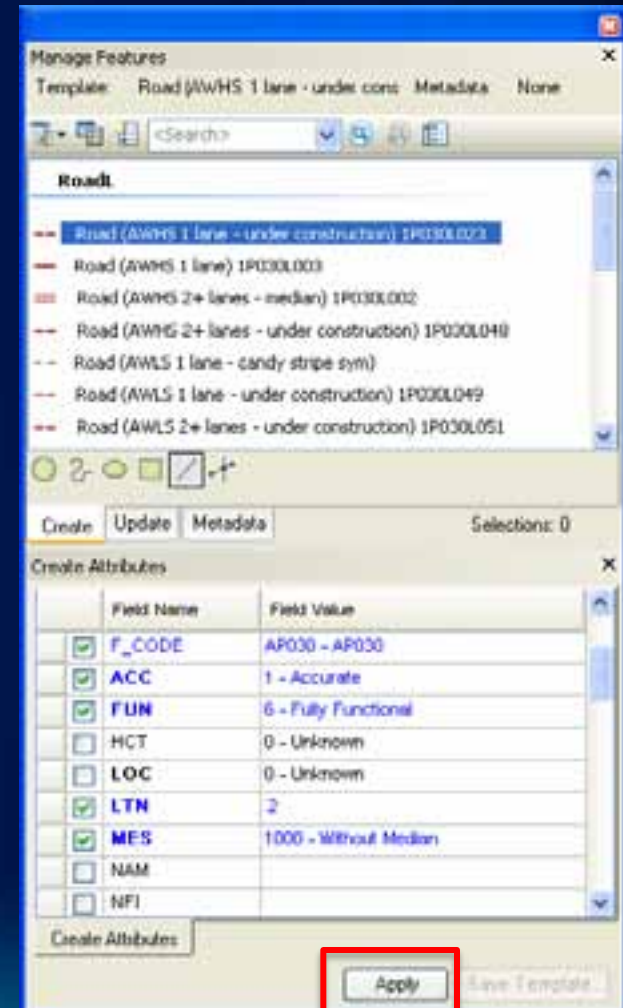
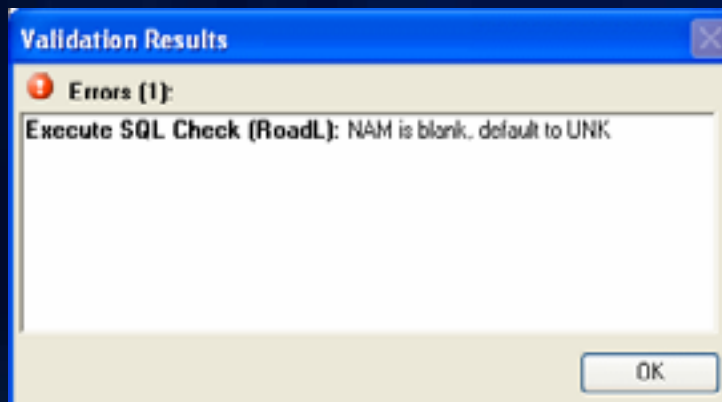
Create Attributes

Apply Save Template

Editing using Production Mapping

Feature Manager

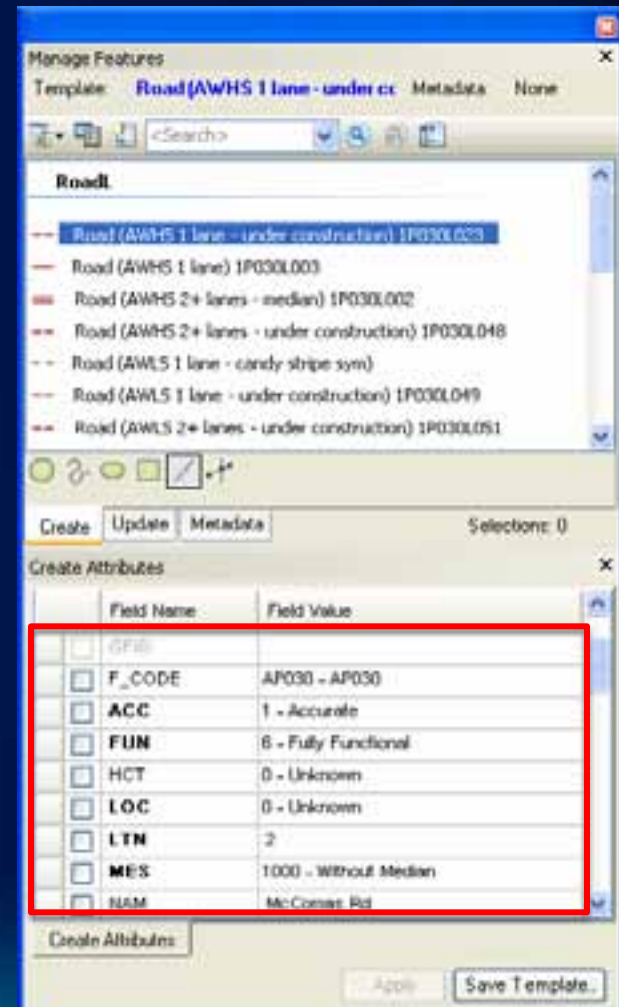
- Feature Manager
 - Increase productivity
- On-the-fly validation
 - Reject noncompliant data



Editing using Production Mapping

Feature Manager

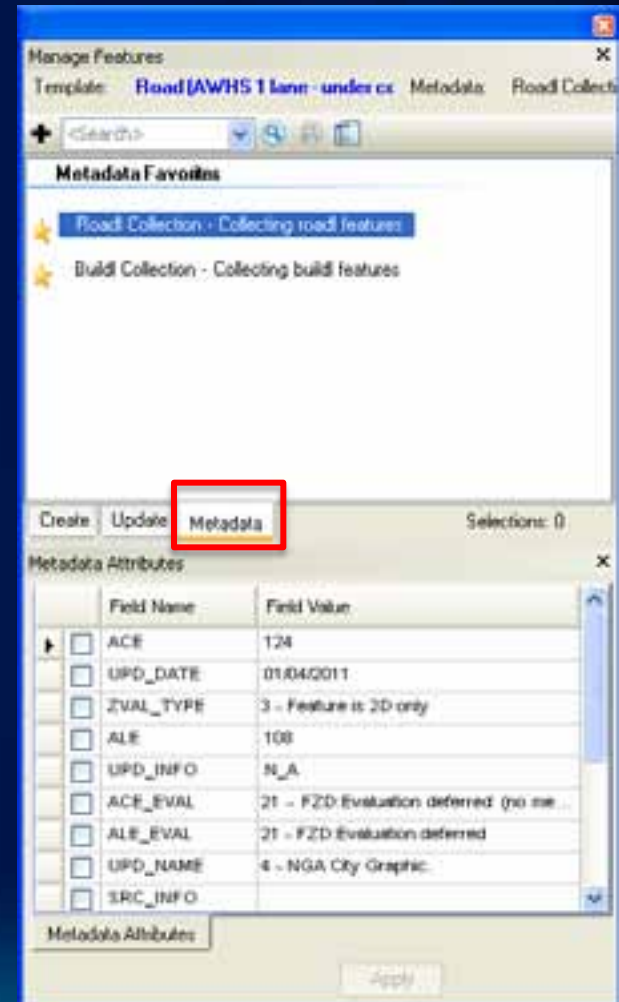
- **Feature Manager**
 - Increase productivity
- **On-the-fly validation**
 - Reject noncompliant data
- **Attribute management**
 - Field configurations



Editing using Production Mapping

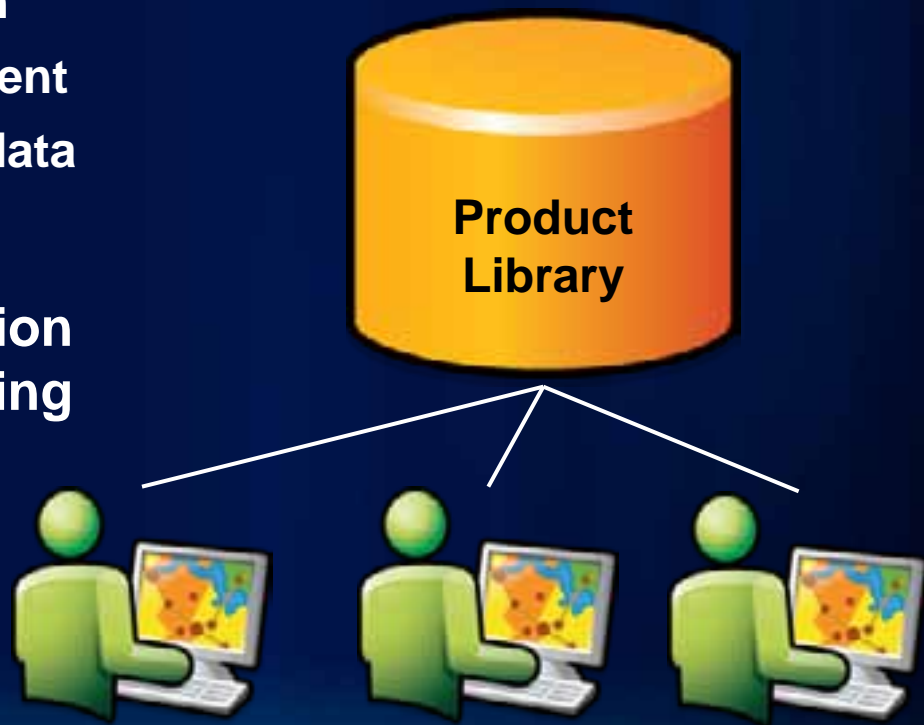
Feature Manager

- **Feature Manager**
 - Increase productivity
- **On-the-fly validation**
 - Reject noncompliant data
- **Attribute management**
 - Field configurations
- **Feature level metadata**
 - Captures information when creating or modifying a feature



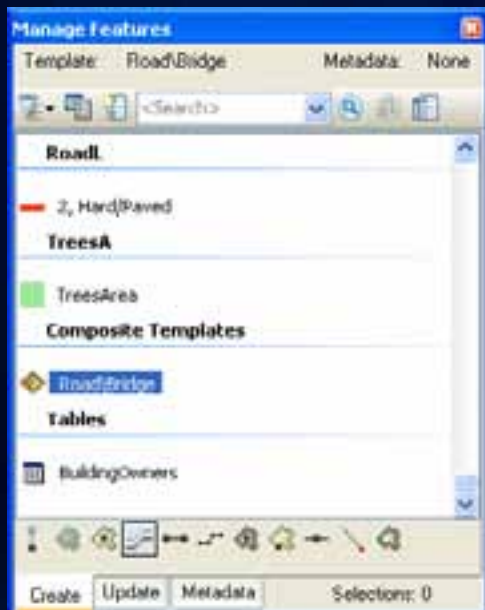
Product Library

- **Stores editing business rules**
 - Database validation
 - Attribute management
 - Feature level metadata
- **Geodatabase**
- **Connect to production database when editing**



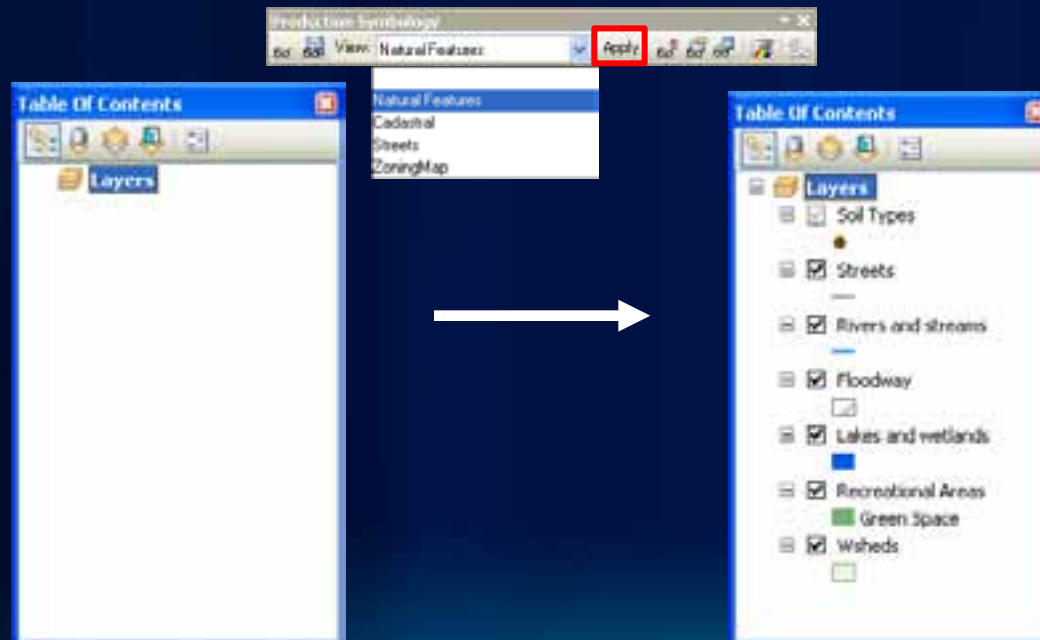
Additional editing tools

- **Composite templates**
 - Create multiple features with one sketch

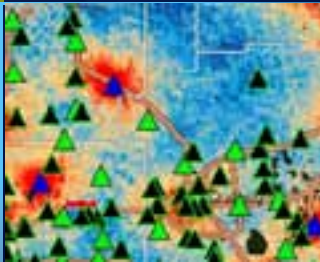
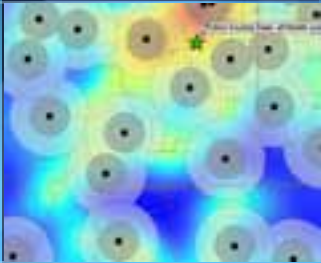


Views

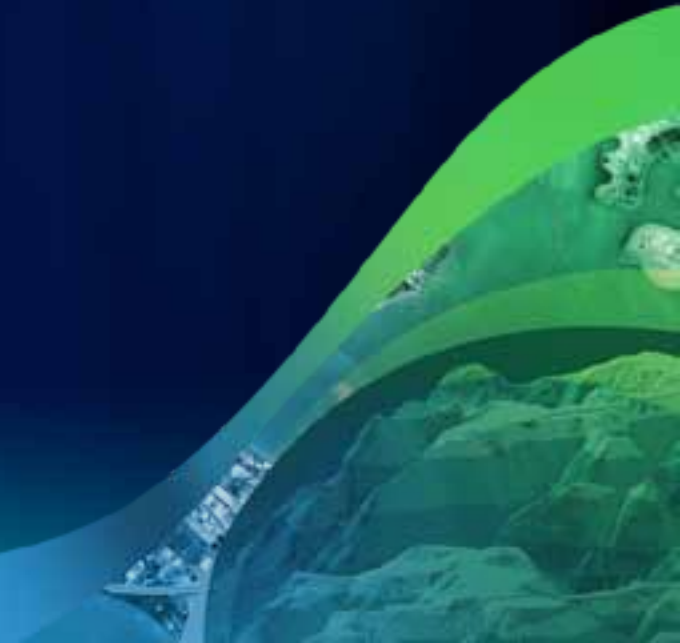
- Save and retrieve data frame and layer properties
- Stored and managed in a geodatabase
- Quickly load layers in table of contents



Demo: Feature Extraction



Quality Control



The Data and Map Production Workflow



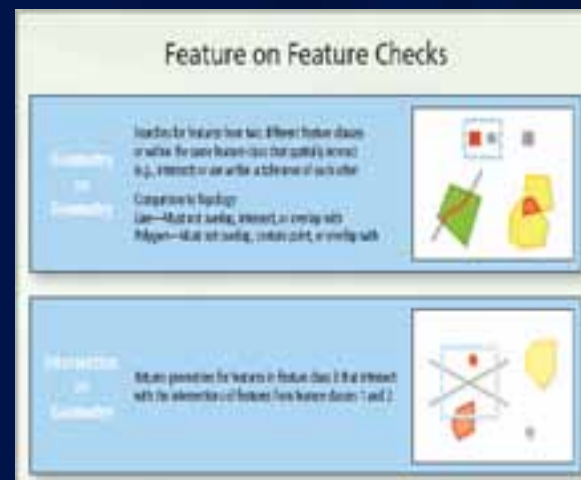
When to perform quality control

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



ArcGIS Data Reviewer

- **Automated quality control**
 - Geometry checks
 - Attribute checks
- **Visual quality control**
- **Errors centrally managed and tracked**
 - Reviewer workspace
 - Reviewer table



RECORDID	OBJECTID	CHECK TITLE	NOTES	SEVERITY	REVIEW TECH
474	2009	Geometry on Geometry Check (Schools, Landmark Areas)	School point in landmark with a different name	3	review0207
475	813	Geometry on Geometry Check (Schools, Landmark Areas)	School point in landmark with a different name	3	review0107
476	2043	Geometry on Geometry Check (Schools, Landmark Areas)	School point in landmark with a different name	3	review0207

Automated checks

- **42 automated checks**
 - Configure to ensure specification
- **Batch Jobs**
 - Automated running of multiple checks
 - Quality control model
 - Available for supported data models
 - Established to ensure data standards
 - Easily distributed



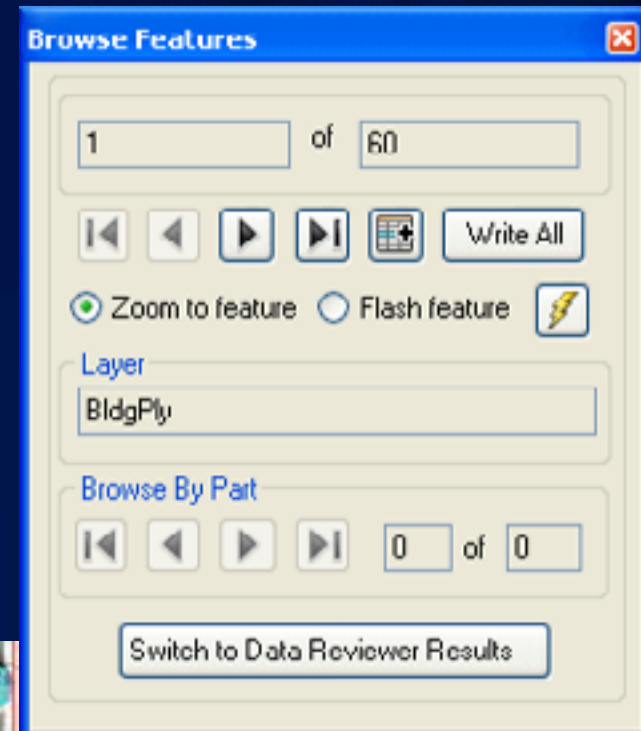
Visual Review Tools

- **Single features**
 - **Commit to Reviewer table**



Visual Review Tools

- **Single features**
 - Commit to Reviewer table
- **Browse a selection set**



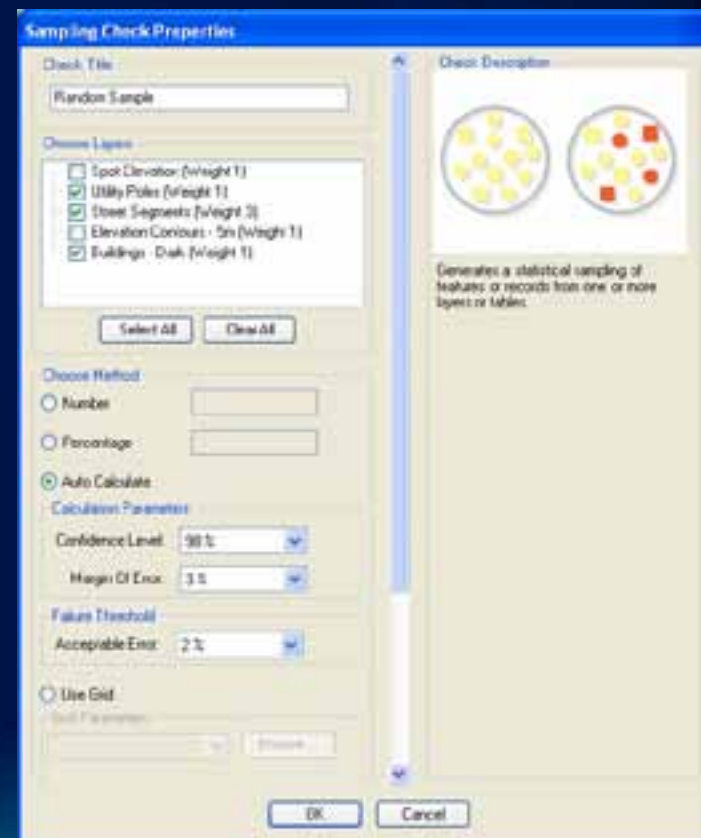
Visual Review Tools

- **Single features**
 - Commit to Reviewer table
- **Browse a selection set**
- **Missing features**



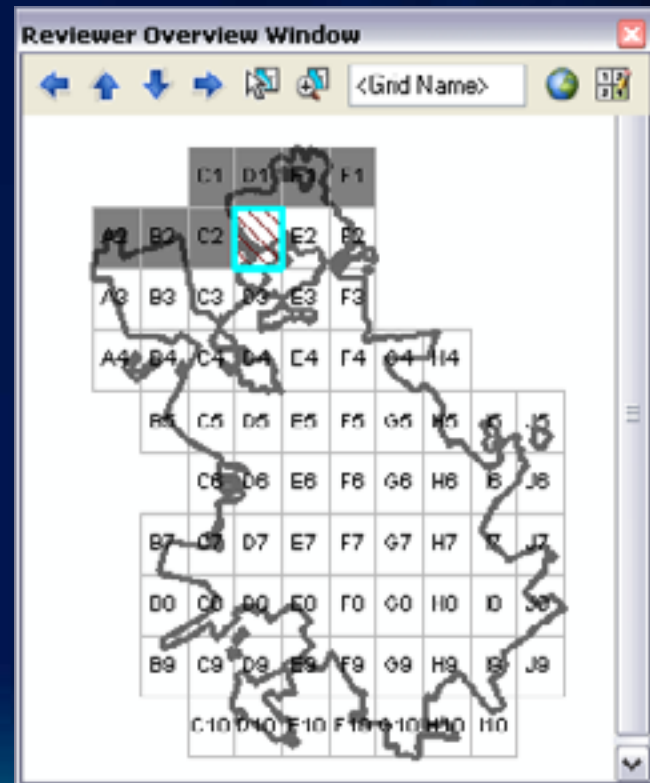
Visual Review Tools

- **Single features**
 - Commit to Reviewer table
- **Browse a selection set**
- **Missing features**
- **Sample check**
 - Browse randomly selected features



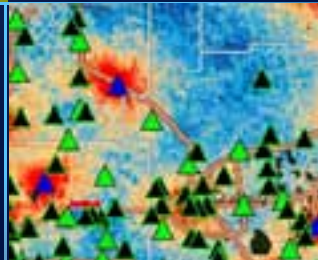
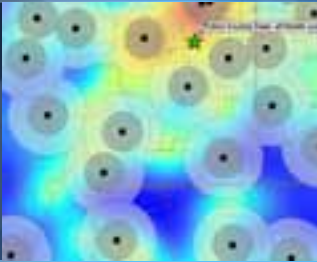
Visual Review Tools

- Single features
 - Commit to Reviewer table
- Browse a selection set
- Missing features
- Sample check
 - Browse randomly selected features
- Reviewer Overview Window
 - Systematic visual review

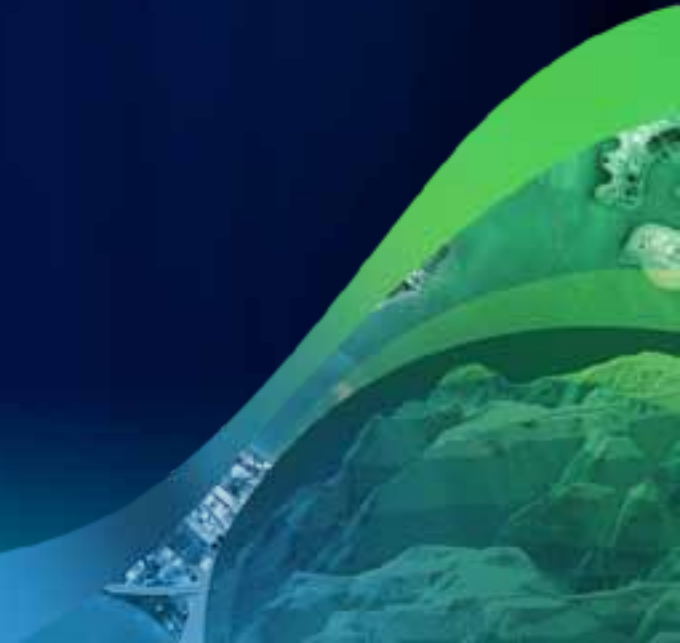


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Demo: ArcGIS Data Reviewer



Cartographic production

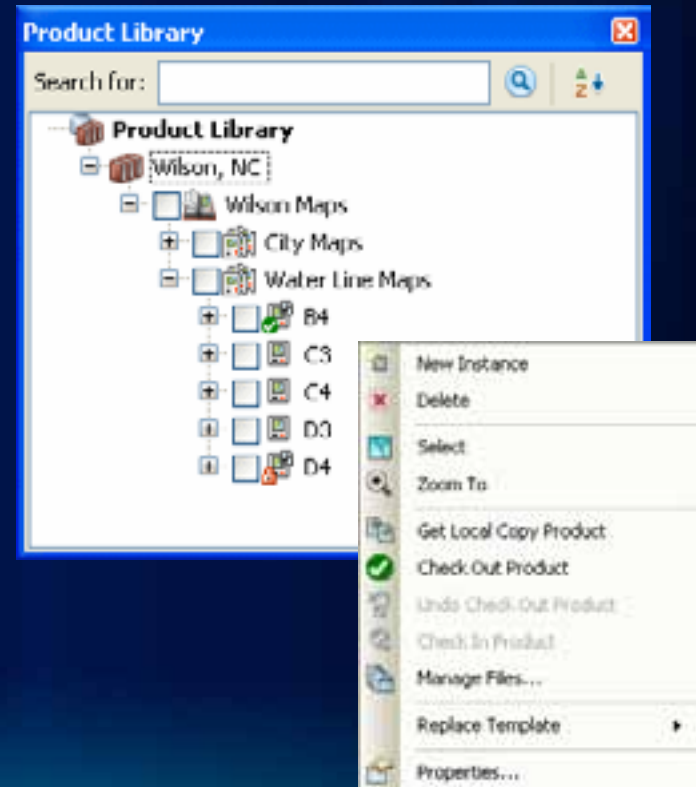


The Data and Map Production Workflow



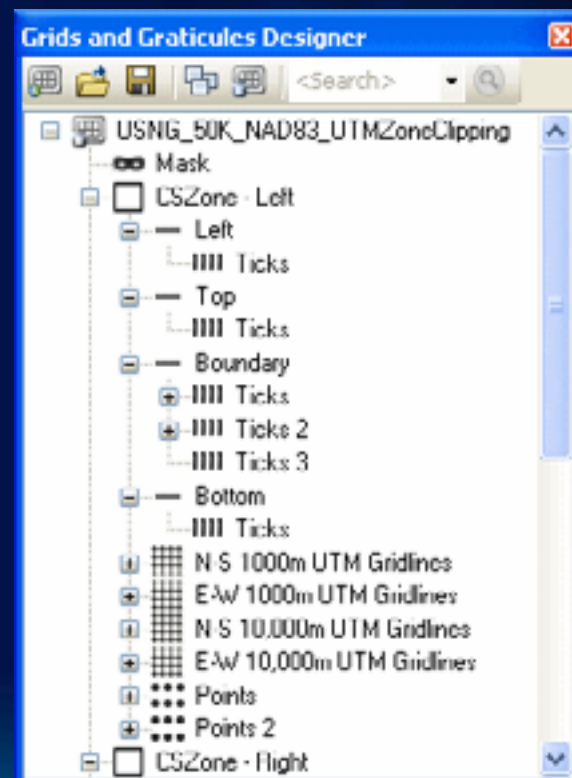
Product Library

- Multiple maps and multiple users
- Check out/Check in map documents
- Exclusive locking
 - Prohibits two people from editing map at the same time
- Version history maintained



Design cartographic reference grids

- **Grids and Graticules Designer**
 - Edit existing template
 - Create a new template



Symbology rules

- **Visual specifications**
 - Created for specific map products
 - Standardize and reuse
 - Batch symbolize data
 - Uses predefined representation rules



Cartographic production tools

- Dynamic table generation
 - Update based on data in current extent

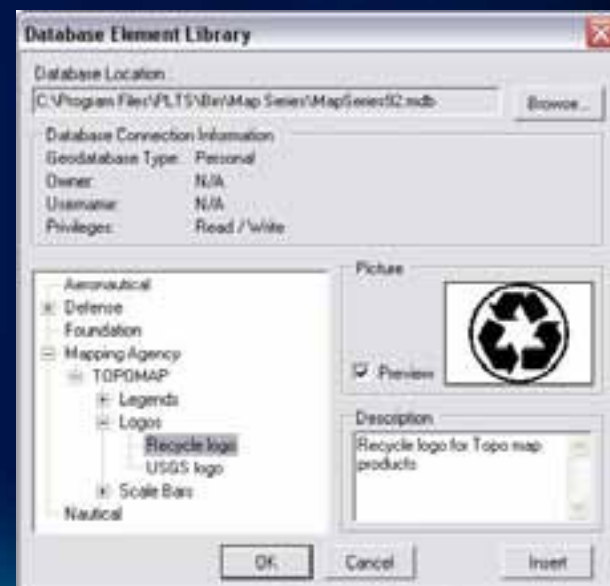
Category	Reference Number	Feature Name
1	4	Industrial plant with warehouse
1	12	Warehouse and storage facility
1	10	Underground PO Storage
1	8	Market
1	9	Truck depot
4	28	Al Kuf Military Hospital
5	40	Military facility
5	34	Helipad
5	35	Helipad
8	61	Transformer station
8	66	Water treatment plant
8	61	Bus depot
8	62	Transformer station
8	57	Oil power plant
8	53	Dam
8	54	Dam
8	88	Water treatment plant
8	58	Helipad
8	60	Bus depot
9	74	Imam Muhammad Abu Al Hasan Mosque

Compiled from 2006 Sample Data

INDUSTRIAL AND COMMERCIAL		
Number	Grid Reference	Name
1	0000	Ad Dawrah Petroleum Refinery
1	0000	Ad Dawrah Petroleum Refinery
1	0000	Dairy products plant
2	0000	Al Hama Industrial Complex
2	0000	Gas products storage facility
2	0000	Al Hama Industrial Complex
3	0000	Grain storage facility
3	0000	Al Zafaraniyah Industrial Strip
3	0000	Al Zafaraniyah Industrial Strip
4	0000	Industrial plant with warehouses
4	0000	Bank of Baghdad
4	0000	Bank of Baghdad
5	0000	Brick factory
5	0000	Brick factory
5	0000	Madras
6	0000	Madras
6	0000	Brick factory
6	0000	Brick factory
7	0000	POC storage
7	0000	Industrial facility
7	0000	Business facility
8	0000	POC storage facility
8	0000	Refract. separator facility
8	0000	Refract. separator facility
8	0000	Refract. separator facility
9	0000	Truck depot
9	0000	Cement plant
9	0000	Cement plant
10	0000	Underground POC storage
10	0000	Central Bank of Iraq
11	0000	Powerhouse and condensation facility
11	0000	Courtyard of Commerce
12	0000	Warehouse and storage facility
12	0000	Cement plant
13	0000	Fuel truck depot
13	0000	Fuel truck depot
14	0000	Gas and oil separation plant
14	0000	Grain storage
15	0000	Grain storage
17	0000	Refract. separator
18	0000	Gas Cement Factory
18	0000	Al Zafaraniyah Cotton Textile Plant

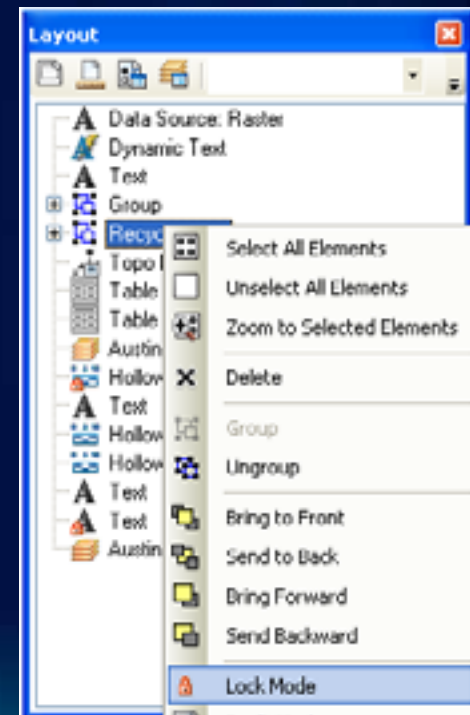
Cartographic production tools

- **Dynamic table generation**
 - Update based on data in current extent
- **Database element library**
 - Store and share layout elements



Cartographic production tools

- **Dynamic table generation**
 - Update based on data in current extent
- **Database element library**
 - Store and share layout elements
- **Manage elements in the Layout window**
 - Centralized layout management



Cartographic production tools

- **Dynamic table generation**
 - Update based on data in current extent
- **Database element library**
 - Store and share layout elements
- **Manage elements in the Layout window**
 - Centralized layout management
- **Layout and data frame rules**
 - Enforce standards

Layout Rule for Legend

Horizontal rule: Legend 2cm left of page

Vertical rule: Legend 3cm above page bottom

Data Frame Rule

Scale: 1: 50k

Size: 35cm x 50cm

Rotation: True north

Coordinate system:

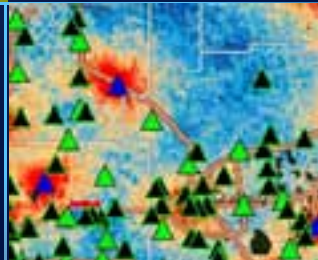
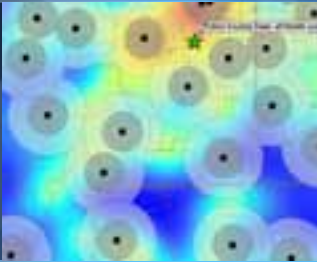
UTM zone



Fulton County Dept. of Health and Wellness/District 3, Unit 2, GSA

DeKalb County Board of Health

Demo: Cartographic Production



Additional Resources and Questions

- **Esri Production Mapping**
 - <http://resources.arcgis.com/content/esri-production-mapping/10.0/about>
 - White papers
 - System requirements
 - Success stories
 - Free 60-day trial
- **Training**
 - <http://training.esri.com>
- **Workshop evaluations**
 - www.esri.com/sessionevals



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