An Introduction to the Community Maps Information Model

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Agenda

- Overview of Community Maps Program
- Information Models
  - ArcGIS for Local Government
  - Community Maps
- Data Driven Cartography
- Comparing Data
- Preparing Data
- Resources
Purpose of Community Maps Program

*Esri-led initiative to enhance online maps with community-provided data*

- **Support Building Useful and Reliable Basemaps**
  - Designed to support a variety of maps and apps

- **Assemble Authoritative Data from GIS Community**
  - Data from local authorities and leading providers

- **Provide High Quality Cartography**
  - Beautiful maps built with best available sources
What’s New with Community Maps Program?

Community Maps 2.0

Added a New Participation Model - Vectors
New World Topographic Map Design
Dynamic Contributor Attribution
Issue Reporting

Gearing up to support:
Community Content in More Basemaps
Value Added Services

Still supporting cache contribution
Community Maps Workflow

Apply for the Program
Upload your GIS data (or we can send a drive)
Review the Data and Map prior
Contribute and Esri creates the Cache
First you need to prepare your Data!

Prepare → Apply & Upload → Review → Contribute
Update
Community Maps 2.0

Submission Requirements:
Basemap data conforms to the minimum feature classes and attribution of the ArcGIS for Local Government Data Model
ArcGIS for Local Government

• Collection of useful maps, apps, and tool templates focused on local government work

• Modules for common functions
  - Infrastructure – Water, Sewer, Streets, and Facilities
  - Land Records – Inventory parcels and value property
  - Elections – Administer elections and results
  - Planning & Development – Land use planning, permitting and development
  - Public Safety – Protect life and property

• Basemap Templates – general purpose, parcel public Access, mobile day & night, current & future land use, etc

• Information Model – the heart of the System
ArcGIS for Local Government

- Built on a common data model
Local Government Information Model and Community Maps

Feature datasets used for Community Maps
Community Maps feature classes

- AdministrativeArea
  - AdministrativeAreaBoundaryLine
  - CountyBoundary
  - MunicipalBoundary
  - SchoolBoundary
  - StateBoundary
- Elevation
  - SpotElevation
- PalmDesertCommunityMaps.gdb
  - AdministrativeArea
  - Elevation
  - FacilitiesStreets
  - ParcelPublishing
  - ReferenceData
    - BuildingFootprint
    - FacilitySite
    - FacilitySitePoint
    - LandBase
    - LandUse
    - Railroad
    - RoadCenterline
    - Soil
    - Vegetation
    - Waterbody
    - Waterline
- ParcelPublishing
  - OwnerParcel
Campus-like Areas of Interest
Community Maps attributes

- Local Government model feature classes contain many attributes
- Only a few required for Community Maps contribution
Domains and subtypes

- Attribute rules standardize values

**Subtypes**
- Federal
- State
- County
- Municipal
- School
- Neighborhood
The model and the map

- Community Maps feature classes become layers in the World Topographic map
- Attributes drive symbology and labeling
Anatomy of the Basemap

Start with a Blank Canvas
Anatomy of the Basemap

Exploded View
Facility Site Polygons
- Parks
- Stadium Property

Anatomy of the Basemap
Anatomy of the Basemap

Facility Site Polygons
• Parks
• Stadium Property

Landscape Areas
• Grass
• Dirt
Anatomy of the Basemap

Facility Site Polygons
- Parks
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Landscape Areas
- Grass
- Dirt

Street Pavement
- Walking Path
- Parking Lot
Anatomy of the Basemap

Facility Site Polygons
• Parks
• Stadium Property

Landscape Areas
• Grass
• Dirt

Street Pavement
• Walking Path
• Parking Lot

Pavement Marking Lines
• Parking Line / White
Anatomy of the Basemap

Facility Site Polygons
- Parks
- Stadium Property

Landscape Areas
- Grass
- Dirt

Street Pavement
- Walking Path
- Parking Lot

Pavement Marking Lines
- Parking Line / White

Road Centerline
- Major/ Minor Arterial
Facility Site Polygons
- Parks
- Stadium Property
Landscape Areas
- Grass
- Dirt
Street Pavement
- Walking Path
- Parking Lot
Pavement Marking Lines
- Parking Line / White
Road Centerline
- Major/ Minor Arterial
Railroad
- Rail
- Light Rail
Anatomy of the Basemap

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Road Centerline
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Railroad
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Building Footprint
- General
- Industrial
- Hotel
Anatomy of the Basemap

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Building Footprint
- General
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- Hotel

Trees
- Palm
- Maple
Facility Site Polygons
- Parks
- Stadium Property
Landscape Areas
- Grass
- Dirt
Street Pavement
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Pavement Marking Lines
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Building Footprint
- General
- Industrial
- Hotel
Trees
- Palm
- Maple
Facility Site Point
- Park /Stadium Label
Data Model Tour
Story Map
Implementing the Local Government Model

• Schema only layer package
  - Raster and stand-alone tables not included
    - Not required for Community Maps
    - Can add manually if desired

• XML workspace document
  - Contains entire schema

Load layer package into empty geodatabase
Geodatabase management choices

- **Discard non-Community Maps related elements**
  - Cleaner and easier to read

- **Keep entire model**
  - Long term stability
  - Facilitates future growth and adoption of Local Government maps and applications

- Decide based on your needs
Comparing data sources

- Map source feature classes and attributes to model
- Consider geometry and attribute data types
Data Comparison Demonstration
Data Preparation

• Two methods
  - Data Interoperability
  - ArcGIS for Desktop tools

  Data
  
  Spatial ETL
  
  Manually configure
  
  Local Gov Schema

  Data
  
  Local Gov Schema

  Data
  
  Local Gov Schema
ArcGIS Data Interoperability Extension

- Based on Safe Software’s FME
  - Feature Manipulation Engine
- Used to create Spatial ETL tools
  - Extract, Transform, and Load
Other Data Prep Methods

- Geoprocessing tools
  - Data loaders
  - Append
  - Feature to Point
- Heads up digitizing
- Attribute editing
  - For symbology control
- ModelBuilder
## Data migration methods

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<th>Spatial ETL</th>
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<tr>
<td><strong>Advantages</strong></td>
<td><strong>Disadvantages</strong></td>
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<tr>
<td>Read 100+ formats</td>
<td>Unfamiliarity with the tool</td>
</tr>
<tr>
<td>150+ transformers</td>
<td>Templates will need to be adjusted</td>
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<tr>
<td>Ready to use Templates</td>
<td></td>
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<tr>
<td>Easy to use GUI (much like ModelBuilder)</td>
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<tr>
<td>Other departments can easily contribute</td>
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<tr>
<td>Detailed logging</td>
<td></td>
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<tr>
<td>Can handle complex migration efforts</td>
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</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td><strong>Disadvantages</strong></td>
</tr>
<tr>
<td>Familiarity</td>
<td>Different workflows needed for different inputs</td>
</tr>
<tr>
<td>No extension needed</td>
<td>No templates</td>
</tr>
<tr>
<td>Integrate into models and scripts</td>
<td>Not easy for other departments to contribute</td>
</tr>
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</table>
Data Interoperability Workbench

- Instructions:
  1.) Add source dataset(s)
  2.) Connect to pathways
  3.) Add/modify/delete transformers
  4.) Change data flow as needed
Transformers

- Workbench objects that perform feature manipulation
- Accessed from the transformer gallery
- Examples
  - ValueMapper
  - Concatenator

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<td>St</td>
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<table>
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<td>North Main St</td>
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Constants

- Apply the same value on all output features
- Example
  - LASTEDITOR
Migration Demo

• Road Centerline using Data Interoperability

• Facility Sites using Model Builder
Get Started!

- Download the Local Government Information Model
- Use the Data Dictionary
- Compare Source Schema to Local Gov Schema
- Prepare Tools
- Apply and Contribute!
  - Communitymaps.arcgis.com

- Sign up for Community Maps Training
- Check out the ever-growing Resources
  - Help
  - Videos
http://events.esri.com/uc/2012/sessionEvals

Questions?