ArcGIS Pro: Mapping and Visualization
Craig Williams, Edie Punt, & David Watkins
@williamscreigm, @epunt, & @daviddwatkins
Mapping an Visualization Vision
In ArcGIS Pro

• Improve drawing performance and quality

• Provide an intuitive and efficient map authoring experience in 2D and 3D
  - Creating 2D maps, 3D maps, and layouts
  - Layer symbology including symbol selection and editing
  - Layer properties
  - Labeling

• Support existing maps you have today and extend them with new capabilities
  • e.g. procedural modeling
Mapping Overview
What we built

• Unified 2D / 3D mapping experience
• One symbol model integrating 2D, 3D, and representation symbols
• Decoupling maps and layouts
• Modern graphics support
  - Anti-aliasing
  - True transparency support
  Improved drawing performance and application responsiveness
    Multi-threaded drawing
High Level Mapping UX Design Goals

• Emphasize your work, not the UI:
  • Layer symbology and labeling
    - Provide better support for iterative workflows (e.g. map design)

• Layer properties
  - Provide ability to make changes across many layers

• Provide quick access to commonly changed items but allow deeper changes

• Erase differences between 2D and 3D where appropriate
2D Maps and 3D Maps

• 2D Maps and 3D maps are similar...
  - Have layers, coordinate system, bookmarks...
• …but they usually have different goals
  - Different symbology, including different classification fields (eg: Utility Poles)

• Some 3D layers aren’t useful in 2D
  - Elevation surfaces, Multipatches, Extruded features etc…
Solution: 2 types of maps

• Maps (2D) and Scenes (3D)
  - .MXDs → Maps
  - .SXDs / .3DDs → Scenes in Local or Global view

• You can create new Maps and Scenes
  - Then add in data, set coordinate systems, etc.

• You can convert a Map into a new Scene
  - And vice versa

• You can also:
  - Copy layers between them
  - Re-use Bookmarks between them
  - Link them together for interactive navigation
Types of 3D Worlds

ArcGlobe
‘Global’ context
Global Coordinate System (WGS84)
Curvature of the earth
Large Data & Services
Multiple surfaces acting as one

ArcScene
‘Local’ context
Projected Coordinate Systems
Area-of-interest
Local data only
One surface per layer
## Terminology changes

<table>
<thead>
<tr>
<th>ArcMap name</th>
<th>ArcGIS Pro name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data frame</td>
<td>Map</td>
</tr>
<tr>
<td>Globe</td>
<td>Scene: Global View</td>
</tr>
<tr>
<td>Scene</td>
<td>Scene: Local View</td>
</tr>
<tr>
<td>Color ramp</td>
<td>Color scheme</td>
</tr>
<tr>
<td>Marker symbol</td>
<td>Point symbol</td>
</tr>
<tr>
<td>Fill symbol</td>
<td>Polygon symbol</td>
</tr>
<tr>
<td>Symbol layer</td>
<td>Symbol layer of type marker, stroke, or fill</td>
</tr>
</tbody>
</table>

**Example:** Polygon symbol made up of:
- Black stroke symbol layer (outline)
- Green fill symbol layer (interior)
Layout Enhancements

- Multiple layouts
- Scenes (3D maps) in layout
- Layout contents
- Map decoupled from the layout
- Removed printer dependencies
Layout Enhancements (New in 1.1)

- Rulers and Guides
- Layout snapping
- Extent Indicators
Export Improvements

- Support for transparency in PDF
- Anti-aliasing and improved graphics
- Faster
- Smaller file sizes

ArcGIS Pro: What's New in Mapping and Visualization

ArcGIS Pro

ArcMap
Export Improvements

- Support for transparency in PDF
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Map Automation
Provided by arcpy.mp module

- Script redundant mapping workflows
- Create map books
- Update projects, maps and layers (i.e. data sources, symbology)
- Automate the sharing of maps via export or publishing

Migrate arcpy.mapping scripts to arcpy.mp - what changes?
- Python 3.4
- Projects (.aprx)
- Layer file changes
- Multiple layouts
Demos
ArcGIS Pro releases

• 1.0 – released in January
• 1.1 – released last week (July 16th)
  - .NET SDK
  - Layout improvements
  - Range slider
  - User experience improvements throughout mapping

• See “Road Ahead” sessions for more information on 1.1 and upcoming releases
Related Presentations

- **ArcGIS Pro: An Introduction**
  - Tuesday 10:15am - 11:30am Ballroom 6A
  - Wednesday 10:15am - 11:30am Ballroom 6A
  - Thursday 10:15am - 11:30am Ballroom 6A
  - Friday 9:00am - 10:15am Ballroom 6A

- **ArcGIS Pro: Effective License Management**
  - Tuesday 8:30am - 9:45am Ballroom 16B

- **ArcGIS Pro: Analysis and Geoprocessing**
  - Tuesday 8:30am - 9:45am Ballroom 6A

- **ArcGIS Pro: Editing**
  - Tuesday 1:30pm - 2:45pm Ballroom 6A
  - Wednesday 10:15am - 11:30am Ballroom 6F
  - Friday 9:00am - 10:15am Room 4

- **ArcGIS Pro: Enterprise Deployment**
  - Tuesday 2:00pm - 2:30pm Tech Theater 15
  - Exhibit Hall A

- **ArcGIS Pro: virtualizing in Citrix XenApp and XenDesktop**
  - Wednesday 12:00pm - 1:00pm Room 2

- **ArcGIS Pro: Using Imagery**
  - Wednesday 3:15pm - 4:30pm Room 32 A
  - Thursday 3:15pm - 4:30pm Room 14 A

- **ArcGIS Pro and ArcMap: Working Together**
  - Thursday 10:15am - 11:30am Ballroom 20D

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