Esri Production Mapping:
Creating Map Generalization Models
Automated Generalization

Best Scale Data

Multiple Scale Products
Generalization Sessions

<table>
<thead>
<tr>
<th>Desktop Mapping: Generalization for Multi-Scale Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Generalization tools available without extensions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Esri Production Mapping: Creating Map Generalization Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Generalization tools available in Esri Production Mapping Extension</td>
</tr>
<tr>
<td>• How to build GP models for generalization</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Esri Production Mapping: Distributed Generalization Workflows</th>
</tr>
</thead>
<tbody>
<tr>
<td>• How to deploy generalization models in production</td>
</tr>
</tbody>
</table>
Generalization Tools
Generalization Techniques

- Simplify
- Smooth
- Eliminate
- Amalgamate
- Exaggerate
- Collapse
- Typify
- Thin
Feature Generalization

Conversion Tools

Simplification Tools

Smoothing tools
Contextual Generalization

Collapse and Merge Roads

Delineate Built-up Areas

Production Mapping
Conflict Resolution

Conflict Resolution Tools
Production Mapping Generalization Tools
Generalization Workflow
Generalization Workflow

Best Scale Data

Model Generalization and Preparation
## Model Generalization and Preparation

<table>
<thead>
<tr>
<th>Road Name</th>
<th>Road Type</th>
<th>Number Lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-10</td>
<td>Motorway</td>
<td>8</td>
</tr>
<tr>
<td>I-10</td>
<td>Motorway</td>
<td>6</td>
</tr>
<tr>
<td>Main Street</td>
<td>Primary Route</td>
<td>2</td>
</tr>
<tr>
<td>Mill Lane</td>
<td>Local Route</td>
<td>2</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Hierarchy</th>
<th>Visibility</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
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<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>
Data Quality is important
A little garbage in, a lot of garbage out!

Must be single part
Must not overlap
Must not self-overlap
Must no overlap with
Must not self-intersect
Null or empty geometry
Geometry below XY tolerance
False dead ends
Non-linear segments
Line connectivity
...

...
Generalization Workflow

Model Generalization and Preparation

Divide Data

Best Scale Data
Generalization Workflow

Model Generalization and Preparation

Best Scale Data

Divide Data

Data Generalization

Workflow

Modeling and Preparation
Generalization Workflow

Best Scale Data → Divide Data → Data Generalization → Symbolization → Generalized Data

Model Generalization and Preparation
Generalization Workflow

Model Generalization and Preparation

Best Scale Data

Generalized Data

Divide Data

Data Generalization

Symbolization

Cartographic Generalization
Generalization Workflow

Model Generalization and Preparation → Divide Data → Data Generalization → Symbolization → Cartographic Generalization

Best Scale Data → Generalized Data → Cartographic Data
Generalization Models
Assess the data

- Small features (less than 10 square meters) should be converted to points
Find the tool and add to a model
Contextual Generalization

- When a large number of buildings are close together create a built-up area
Find the tool and add to a model
CTM
Generalization Models
Civilian Topographic Model (CTM)
Enabling Production Mapping for Topographic Mapping

Template Maps
Cartographic Rules
Generalization Rules
Editing Rules
Validation Rules
Workflows

Derived from NFDD
https://github.com/esri/ctm
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Complete Answers and Select “Submit”