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Creating Great Labels Using Maplex

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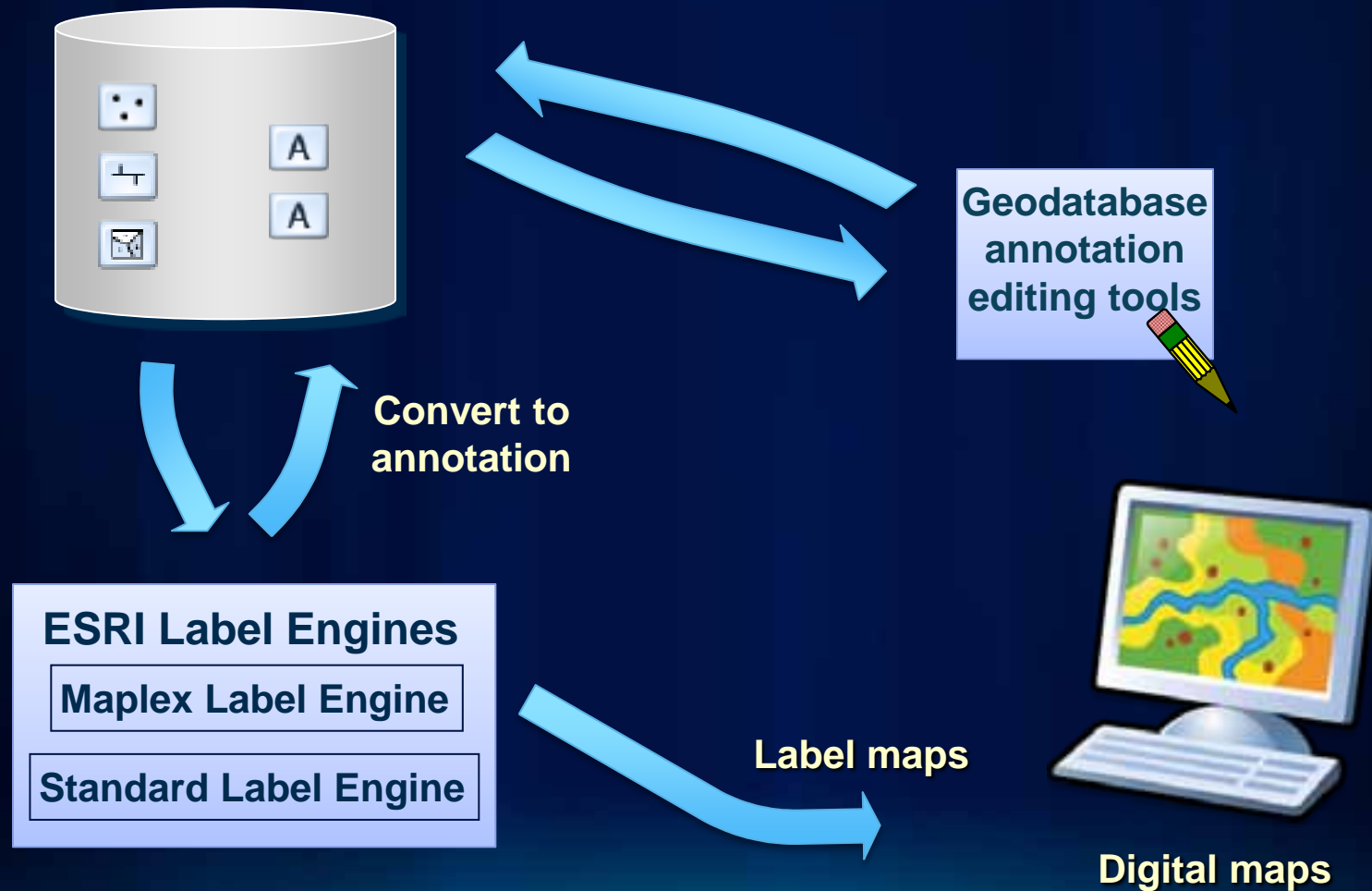
Presentation Overview

- What are the types of text in ArcGIS?
 - Labeling vs. Annotation
 - The role of *Maplex for ArcGIS*
- Maplex position properties
- *Demo* - street labeling
- Maplex fitting strategies
- Maplex conflict resolution properties
- *Demo* - Maximizing text placement
- Annotation
- Summary
- Questions

What Are The Types Of Text in ArcGIS?

- **What are Labels?**
 - Dynamically placed text by a label engine
 - Map refresh generates new text locations
 - Placed text can be “locked” after placement
- **What is Annotation?**
 - Stored
 - Geodatabase
 - Map document
 - Editable

Labels to Annotation Cycle



Labeling In ArcMap

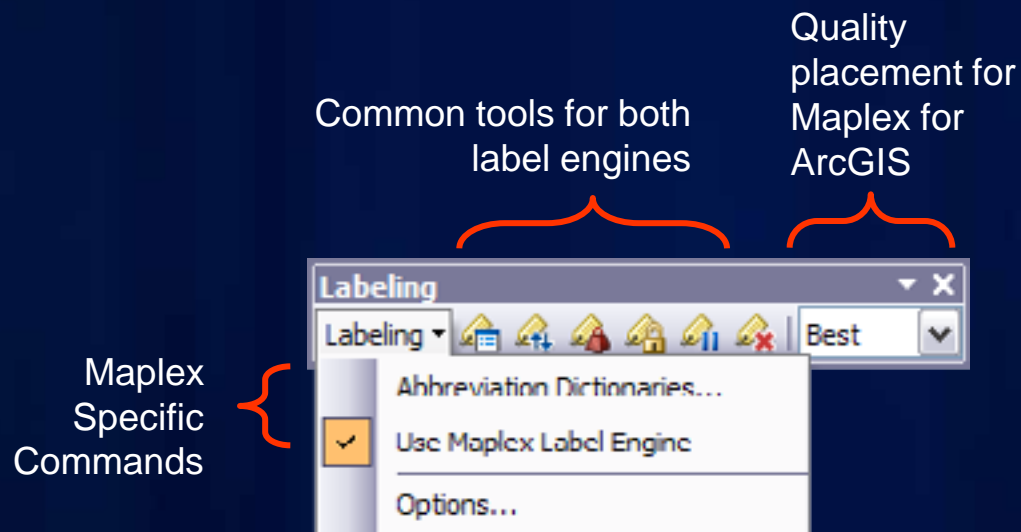
- **Unified user experience**
 - Labeling toolbar
 - Label Manager
 - Feature weights
 - Label priorities
 - Lock labels, view unplaced labels
- **Integration of Maplex for ArcGIS**
 - Plugs in to standard tools
 - Uses ArcGIS text symbol
 - Uses standard label expression and label class organization

Maplex For ArcGIS

- **Advanced high-quality cartographic text placement engine**
- **Fully integrated with ArcGIS**
 - Shared tools
 - Full annotation support
- **Numerous placement options**
- **End goal of reducing map production time and costs**
- **Included with ArcInfo, optional extension for ArcEditor and ArcView licenses**
 - Read-only mode for maps without a Maplex license
 - Available with server map services, but recommended for caching only

Labeling Toolbar

- Central location for labeling needs
- Extra commands enabled with Maplex



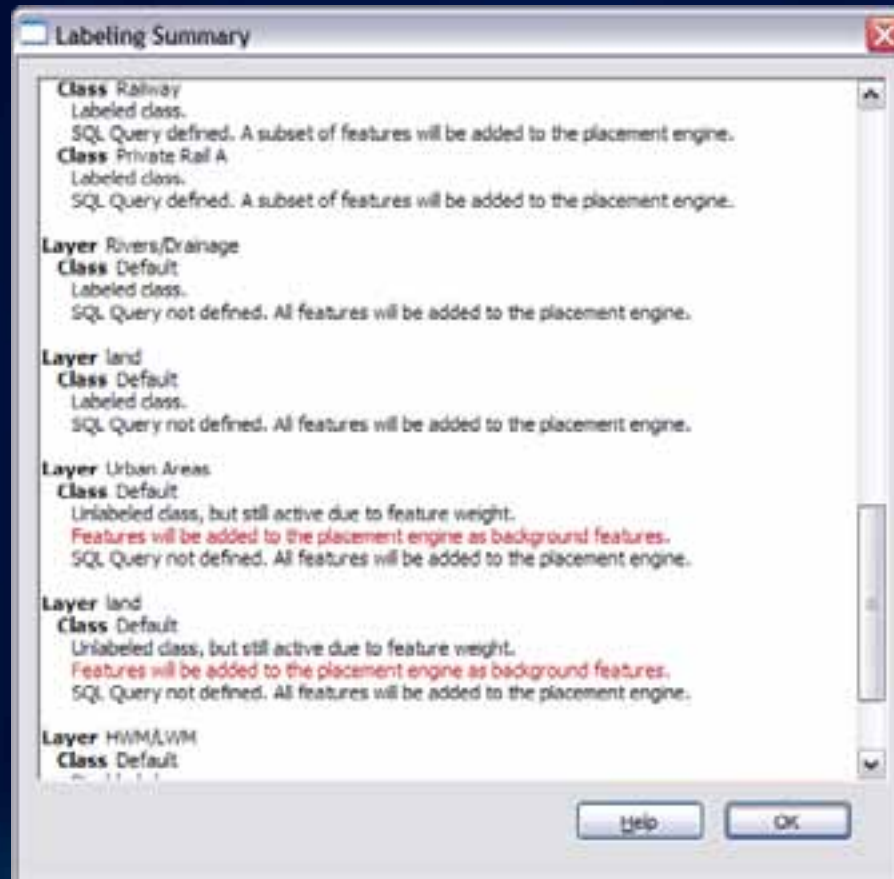
Label Manager

- Central location for label classes
- Easy access to common parameters



Label Summary

- Highlights potential problems in labeling properties



Label Weights

- Define weights to control behavior when labels and features overlap

Weight Ranking

Weights let you control which labels will be placed when there are potential conflicts (overlaps) between features and labels.

Feature Layer - Labeling Class	Feature Weight (Range 0 to 1000)	Polygon Boundary Weight
Towns - Small/Medium Town	100	N/A
Towns - Large Town	0	N/A
Towns - Very Large Town	0	N/A
Airport - Default	0	N/A
Spot Hts. - Default	20	N/A
Geog. Features - Woodlands	0	N/A
Geog. Features - Background Labels	0	N/A
Geog. Features - Small Estuaries	0	N/A
Geog. Features - Large Estuaries	0	N/A
Roads - Unclassified	20	N/A
Roads - Primary	50	N/A
Roads - ARoads	40	N/A
Roads - BRoads	30	N/A
Roads - Motorways	60	N/A
Roads - ARoads(Trunk)	20	N/A

Double-click on column header to sort table.

Show:

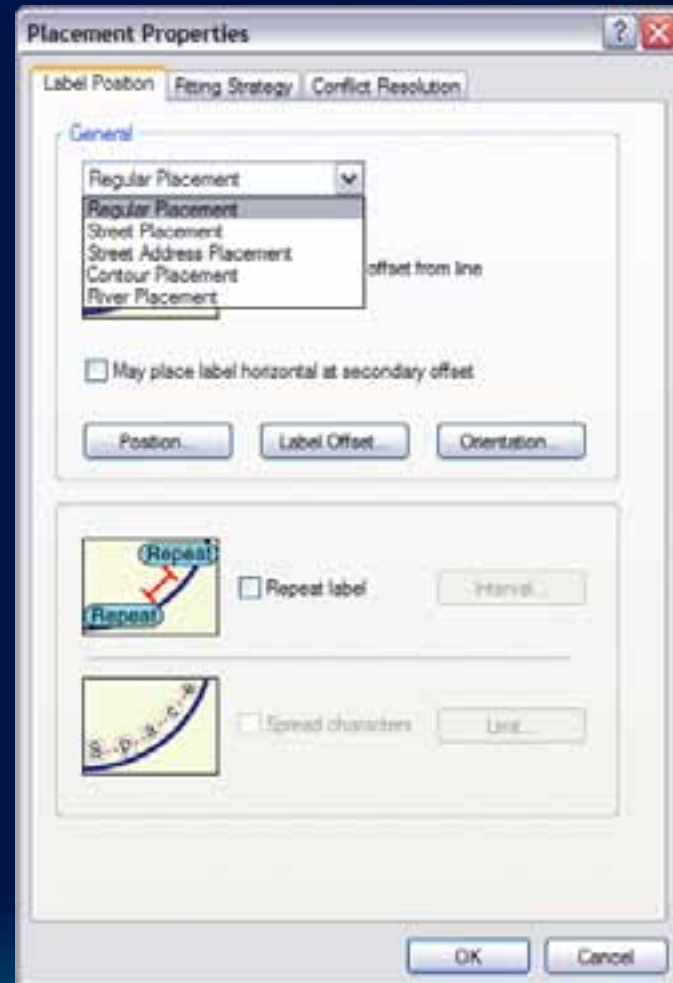
- Maplex weighting is based on values from 0 – 1000
- A value of 1000 is always treated as a barrier

Label Priority

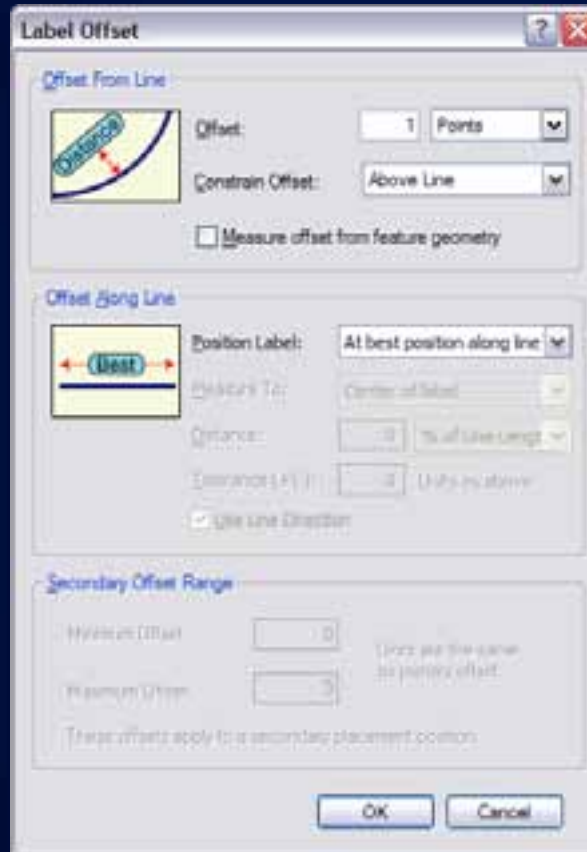
- Order of label placement priority
- Label class level property
- Also serves as the deletion priority for conflict resolution



Line Label Position



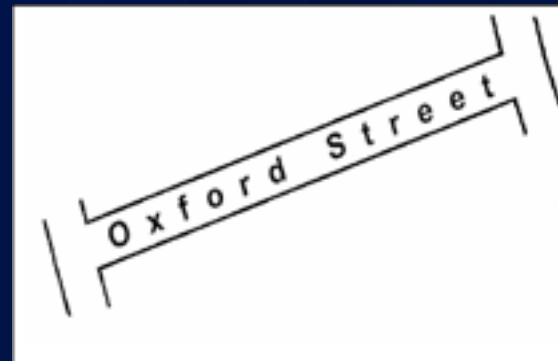
Line Label Offset



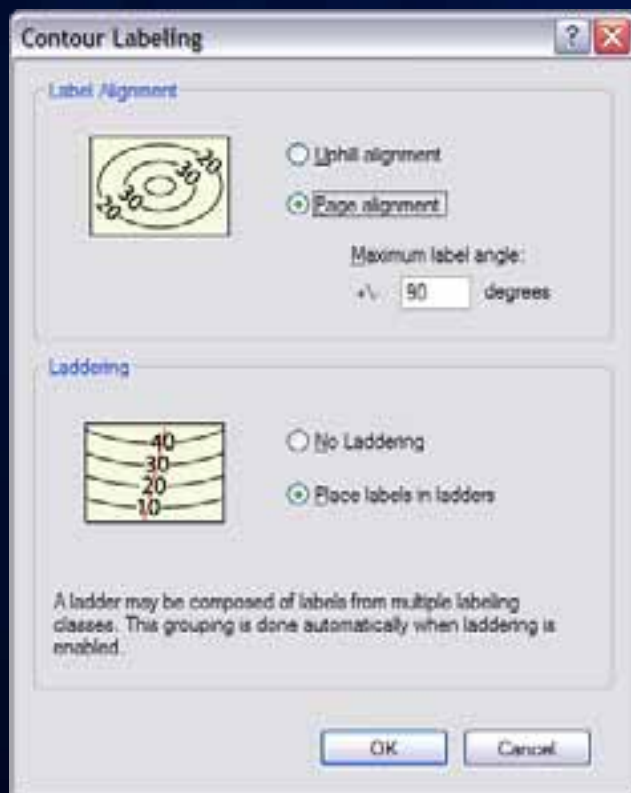
Street Placement



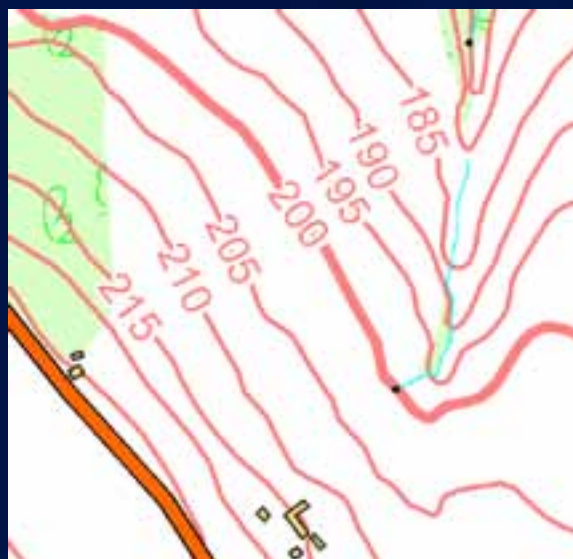
- **Street placement mode**
 - Character and word spacing
 - Strategies optimized for placing street labels



Contour Placement



- Contour placement mode
 - Page or Uphill alignment
 - Label laddering



Street Labeling

Street placement

Overrun features

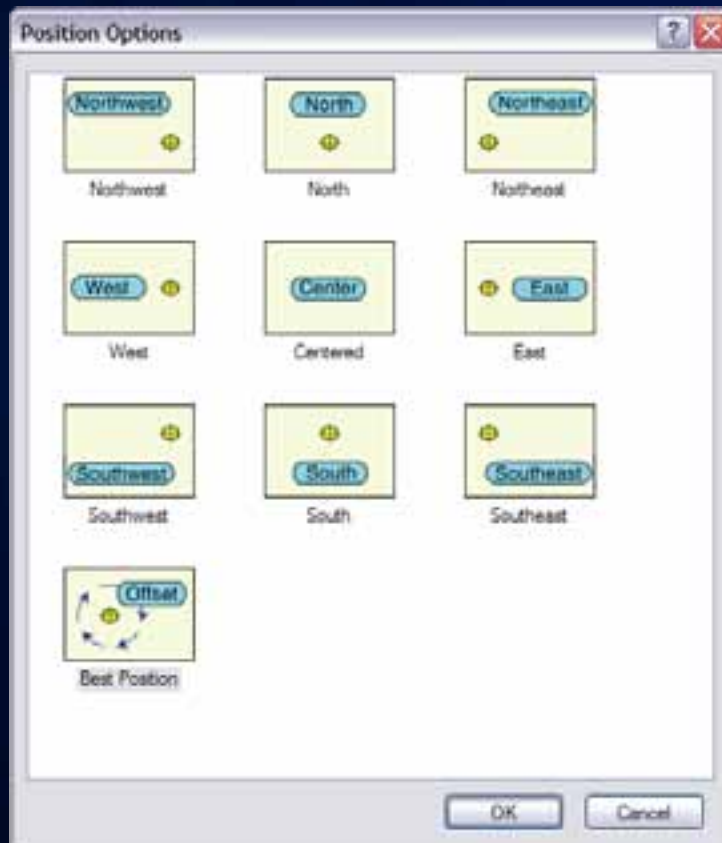
Abbreviation dictionary

Font reduction

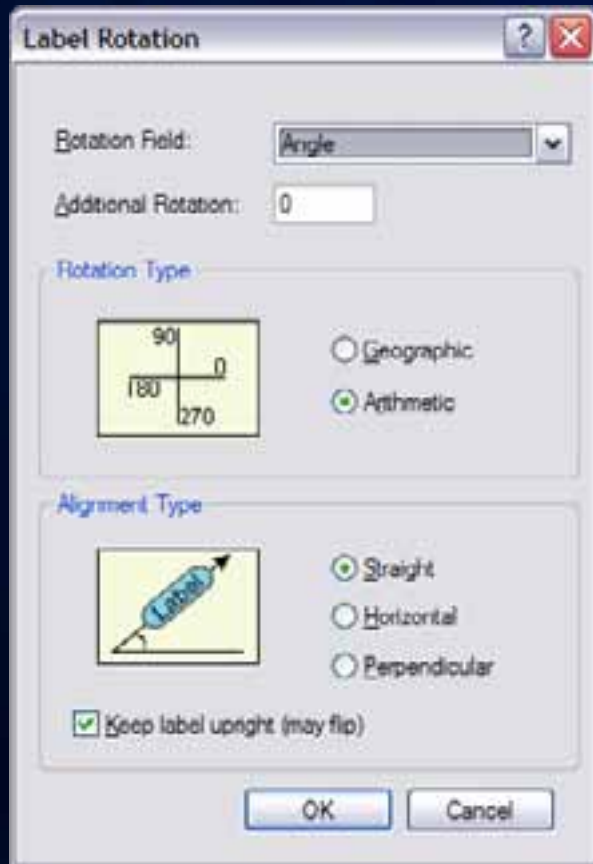
Strategy order



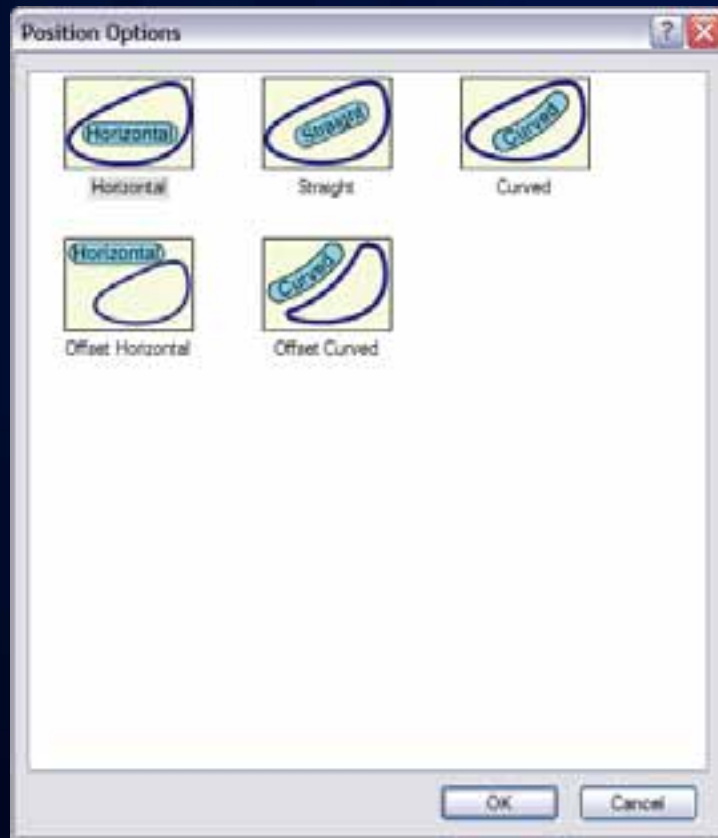
Point Label Positioning



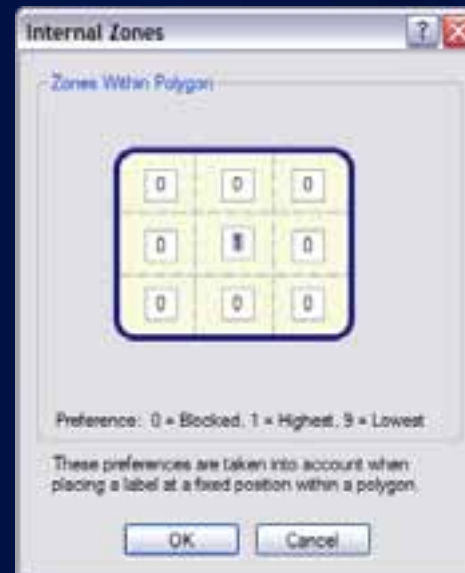
Point Label Rotation



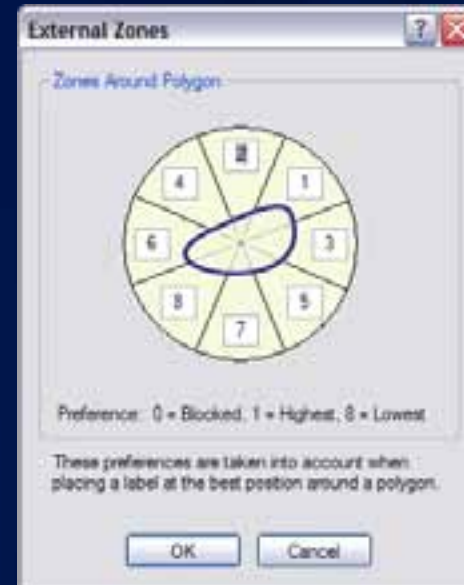
Polygon Label Positioning



Fixed Position Within A Polygon



Positioning Outside Of A Polygon



Polygon Border Labeling

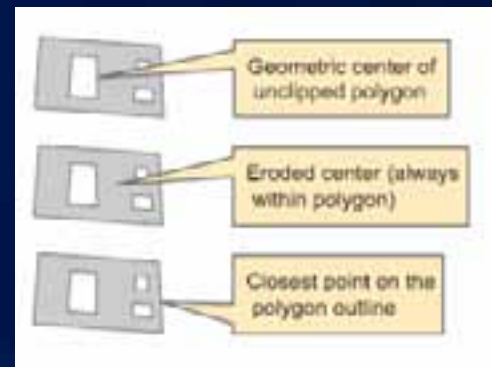


- Opposing labels are placed together
- Option to repeat labels at a distance
- Single sided boundaries optionally labeled

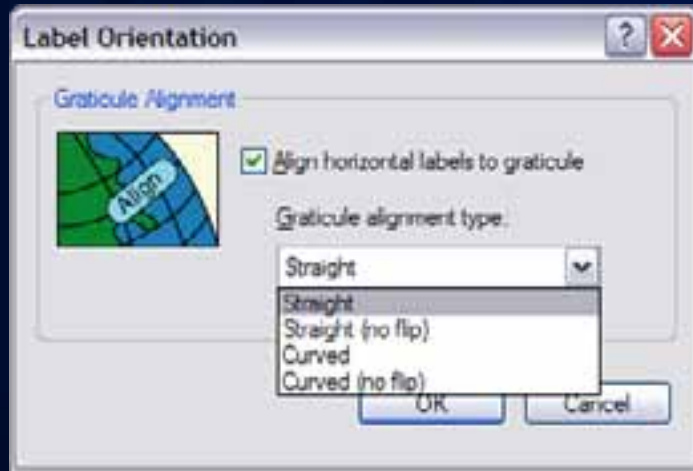
Polygon Leader Anchor Points



- Multiple options for placement of leader line anchor point when labeling polygons



Label orientation

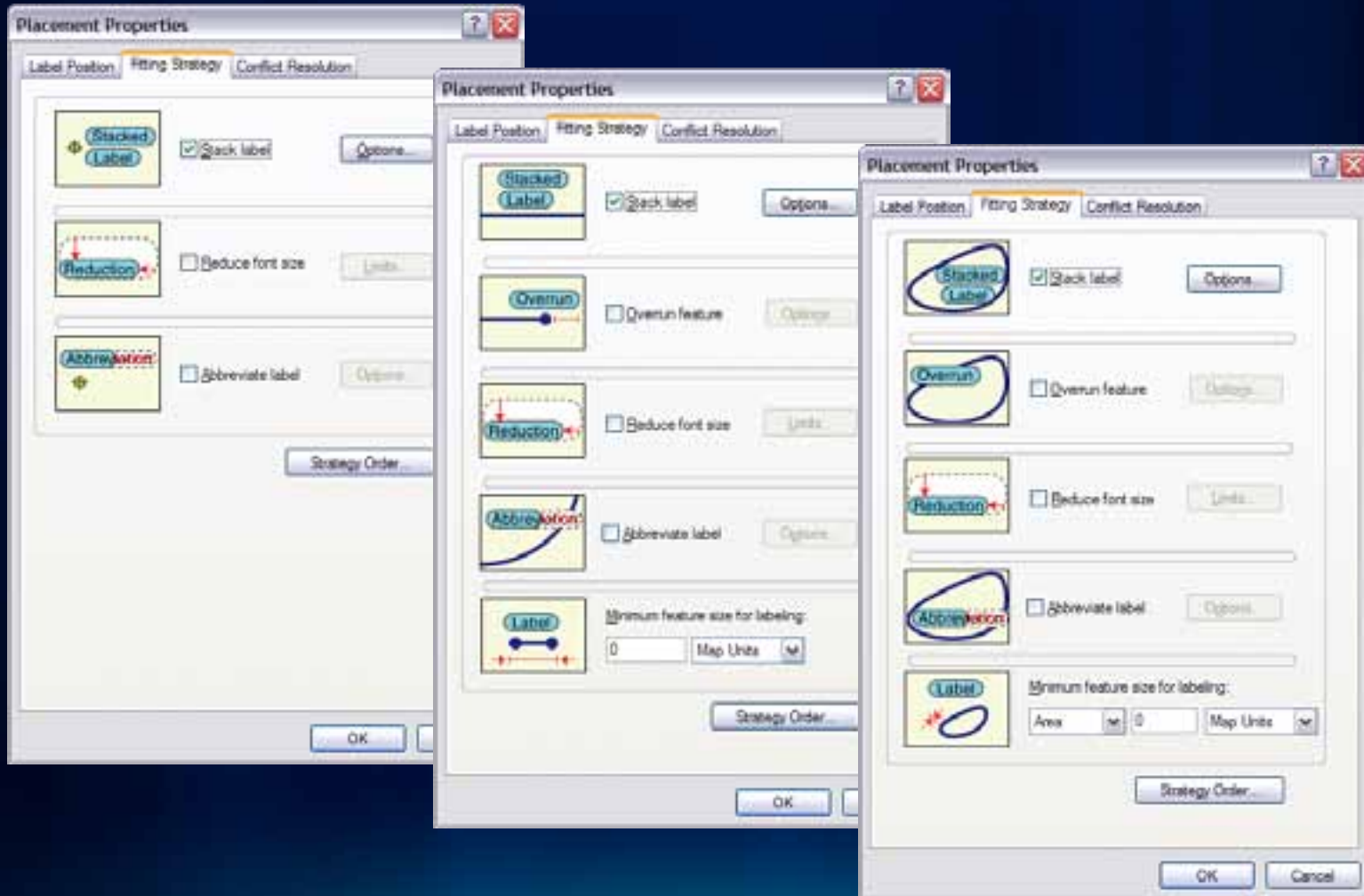


- Align to the graticule
- Available to any label placed horizontally

- East Asian vertical text placement
- Font must have vertical text metrics



Label Fitting Strategies

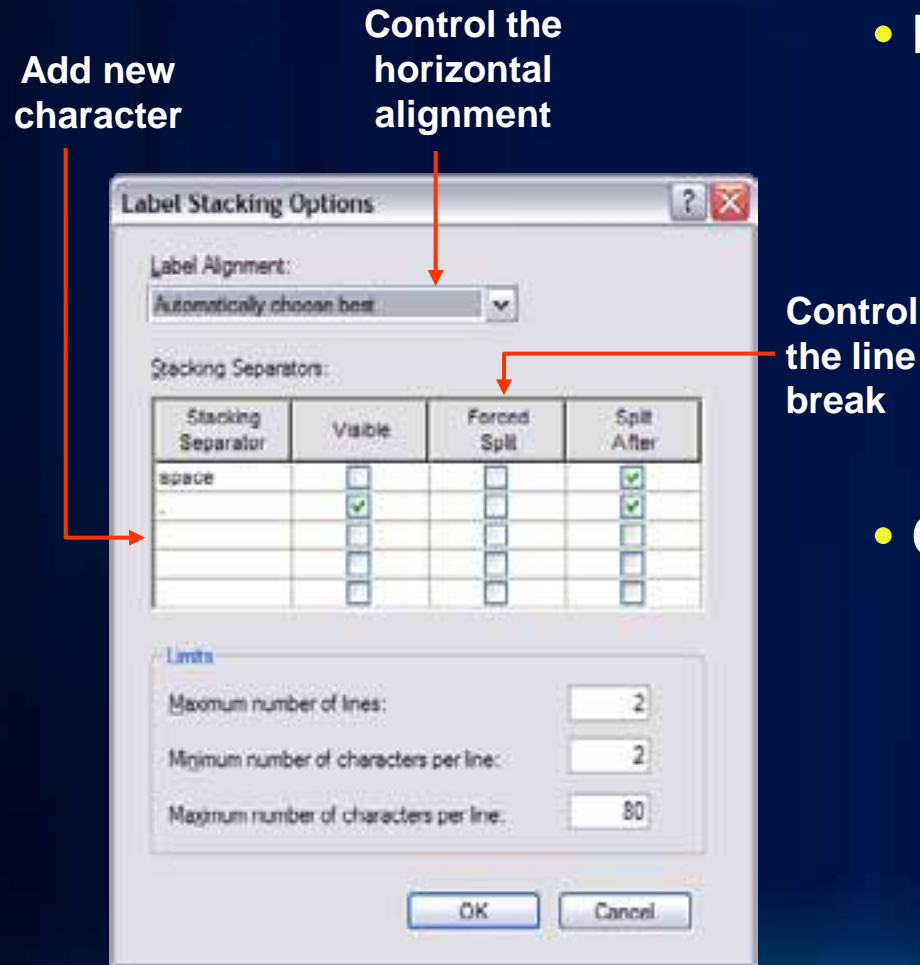


Strategy Order



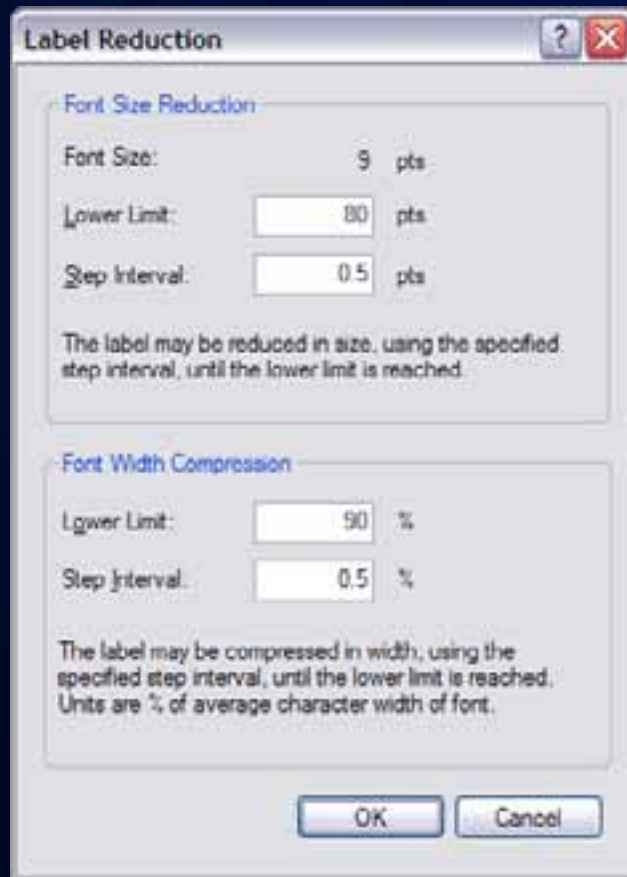
- **Select the order which fitting strategies are tried**

Label Stacking



- **Dynamic stacking**
 - Automatic stacking
 - Space, comma
 - Automatic alignment
 - Left, right, center
- **Controlled stacking**
 - User-defined characters
 - Forced stacking
 - Control justification

Label Reduction



- **Font size reduction**
 - Stepped decreases in font size to fit a label
- **Font width reduction**
 - Stepped decreases in width of characters to fit a label

Label Abbreviations



- Imported and exported to/from files or database tables
- Multiple dictionaries per map
- Translation, Keyword, and Ending types
- Truncation option not tied to a dictionary

Conflict Resolution



- Additional access to label weights
- Simplify placement by removing excess labels and assigning label buffers

Labeling Process

Labeling occurs after features draw

- 1. Properties are gathered from layers**
- 2. Properties are sorted by priority**
- 3. Barriers are gathered from the map**
- 4. Properties and barriers are then passed to the label engine**
- 5. Result is placed text drawn to screen**

Maximizing text placement

Boundary labels

Contour labels

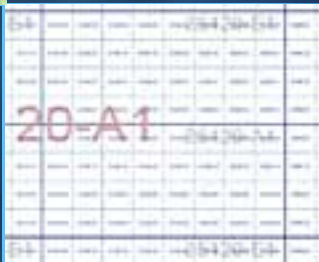
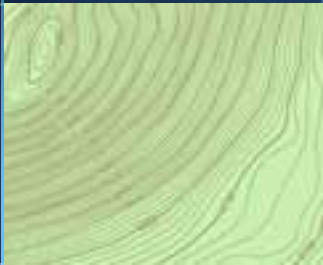
River labels

Internal zones

External zones

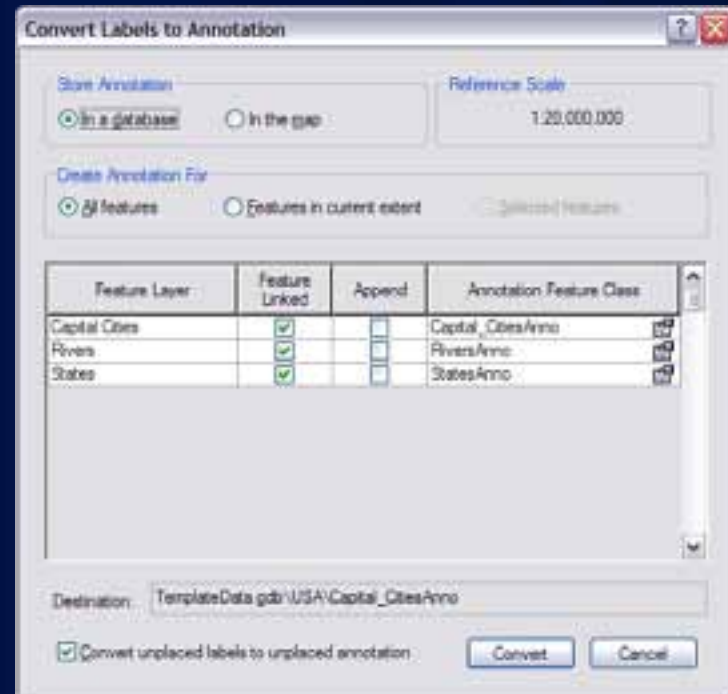
Street address placement

Callouts



Converting Labels to Annotation

- **Convert Labels to Annotation dialog**
 - WYSIWYG conversion
 - Grid showing all target annotation feature classes
 - Unplaced labels written as annotation to the database
 - Unplaced Annotation Window
- **Batch *Tiled Labels to Annotation* tool in ArcToolbox**
- ***Contour Annotation* tool in ArcToolbox**



Annotation Licensing

- **Feature Linked Annotation**
 - ArcEditor license to edit
- **Annotation created with Maplex**
 - No additional restrictions
 - Graceful downgrade to the Standard Label Engine for feature-linked updates without a Maplex license
 - Newly created features
 - Updates to geoemtry

Annotation Feature Class

- **Graphic text stored in the Geodatabase**
- **Each feature class has a symbol collection**
 - Improves productivity
 - Promotes standardization
 - Created when converting from labels
- **Control over feature-linked annotation behavior**
 - Creation of new features
 - Modification of feature geometry

Managing Annotation – Annotation Classes

- **Feature class can have multiple annotation classes**
 - Reduces the number of feature classes
 - Big performance gain in drawing and relationship logic
 - Created from label classes when converting to annotation
- **Each annotation class has:**
 - An expression
 - A symbol
 - A scale range

Managing Annotation

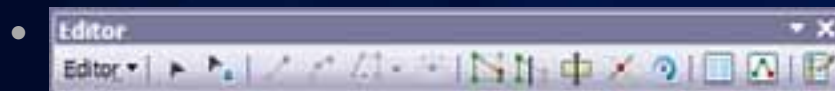
- Annotation properties are exposed as individual feature attributes
 - Supports queries against text symbol information
 - Allows for bulk updates to symbol properties



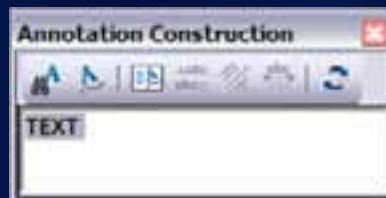
OBJECTID *	SHAPE *	FeatureID *	ZOrder	AnnotationClassID *	SymbolID	Status *	TextString	FontName	FontSize	Bold	Italic	Underline
1	Polygon	41 (Null)		0	0	Placed	Texas	Arial	8	Yes	No	No
2	Polygon	28 (Null)		0	0	Placed	Utah	Arial	8	Yes	No	No
3	Polygon	3 (Null)		0	0	Placed	Montana	Arial	8	Yes	No	No
4	Polygon	23 (Null)		0	0	Placed	Nevada	Arial	8	Yes	No	No

Editing Annotation - Overview

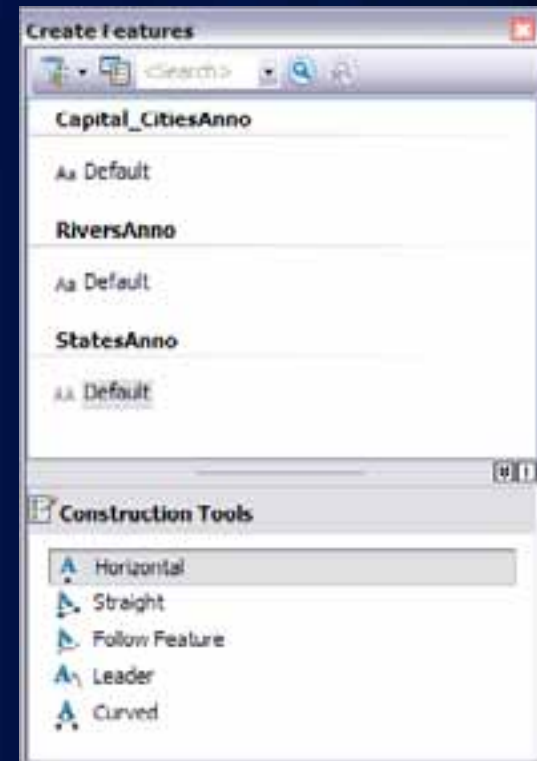
- Tightly integrated with feature editing environment
- Efficient experience when working with unplaced annotation
- Supports editing of multi-word annotation



Edit Annotation
tool on the main
Editor toolbar



Enter text for next construction



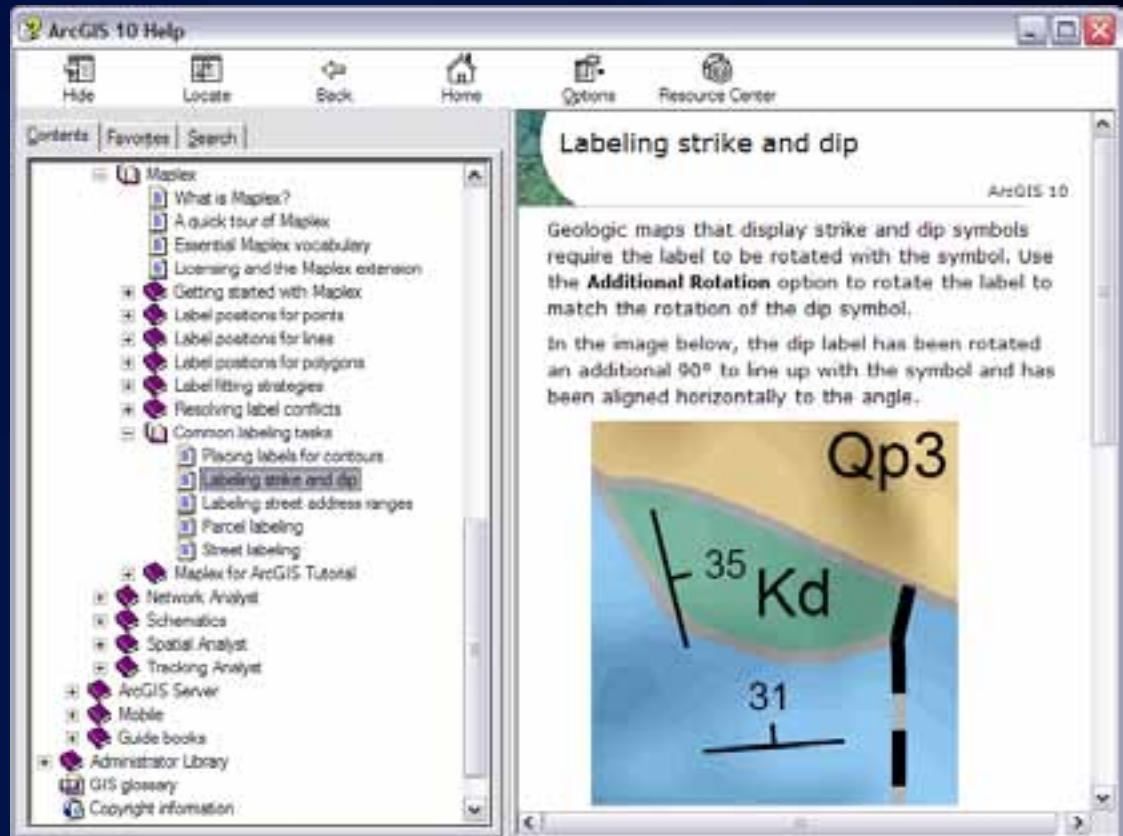
Feature templates
for efficient feature
creation

Constructing New Annotation

- **WYSIWYG construction tools**
 - Provide visual feedback
 - Place annotation where you want it the first time
- **Productivity shortcuts**
 - Hotkeys
 - Templates allow for predefined symbol / attribute choices
 - Use of expression to derive text (Cntrl-W)

Maplex For ArcGIS

- Examples
- Detailed explanations of options
- Common labeling task help



[ArcGIS 10 Maplex Web Help](#)

What's new in ArcGIS 10.1

Maplex label engine included at all license levels

- Python label expressions
- Global Maplex properties now at the label class level
- New label placement options and improvements

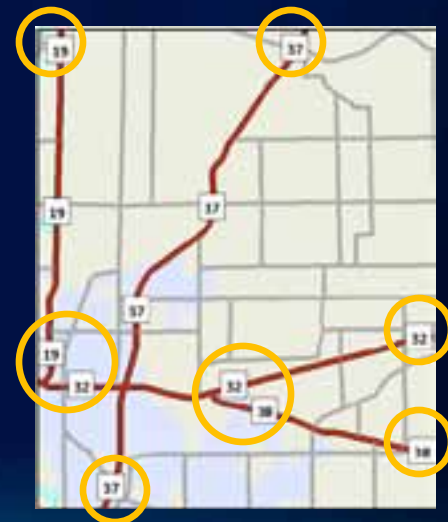
Key numbering



Straddle lines



Borders and Junctions



Summary

- **Maplex is an advanced high-quality cartographic text placement engine**
- **Integrates with the existing labeling and annotation experience**
- **Provides numerous placement properties and strategies to define the location of labels**
- **Efficient tools to edit annotation**
- **New functionality coming at ArcGIS 10.1**

Related Presentations

- **Labeling and Annotation Basics**
 - Room 6F Wednesday 10:15am
- **Managing and Editing Annotation**
 - Room 4 Wednesday 8:30am
 - Room 6C Thursday 10:15am
- **The Business Case for Mapping: Key Technologies that Save You Time**
 - Room 15B Thursday 3:15pm

See us at the Mapping and Visualization island in the ESRI Showcase

Questions?

Please fill out the evaluation for this workshop:
www.esri.com/sessionevals