

Working with Maplex™ 3.5

Version 3.5 Enhancements



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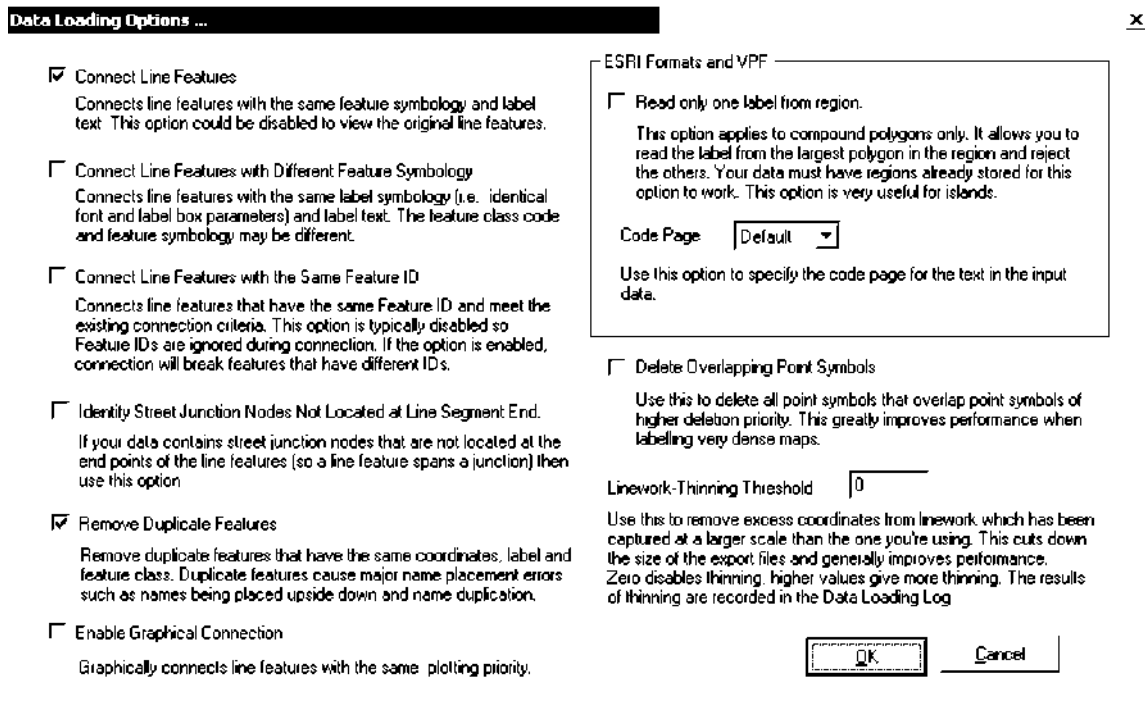
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Data Loading



Capacity Limits

The maximum number of feature coordinates per feature has been increased from 40,000 to 175,000.

Improvements to Line Connectivity

- Street feature connectivity has been improved. Street features with different labels are now connected, and if three or more such streets share a node, the labels are checked. For example, if A ST, A ST, and B ST meet, the two A STs will be connected and B ST will dangle.
- The loading option **Connect Lines with Different Feature Symbology** now works for streets as well as lines. However, the label style, box style, font parameters, and so on, must be the same for connection to take place.
- New options
 - **Connect Line Features with the Same Feature ID**—Allows linear features to be connected if they have the same feature ID number.
 - **Enable Graphical Connection**—Connects all line segments with the same symbology. This connection only occurs when the features are viewed, and it tidies up the artwork by removing as many of the intersegment wedges as possible. However, this connection is broken and the requested logical connection is complete when the features are submitted for placement.

Note: When you click a line feature, the highlight depends on the state of graphical connection as follows:

- **OFF**—The feature's unconnected segments are highlighted.
- **ON**—The graphically connected segments are highlighted. This may connect several features.

It is recommended that you leave this option off during editing and turn it on for final viewing of the map before export.

When the editor is on, clicking the label will highlight the label's connected features.

Map Extents

If your data is in degrees and you project it with Maplex™, you can specify your map bounds in latitude and longitude by clicking the new Lat/Long Extent button on the Data Manager dialog box. When you click the Lat/Long Extent button, a dialog box opens in which you can enter your latitude and longitude limits. When you click OK, Maplex finds the smallest rectangle in map units that encloses those limits and uses that rectangle as the bounds, updating the Map Extent fields with the new values. The dialog box accepts latitude and longitude values in decimal degrees including negative values.

Note: The values are not saved. The next time you open the dialog box, the text boxes will be empty. You cannot use latitude and longitude in the Batch Mode dialog box.

Lat/Long Extent [X]

Extent in Decimal Degrees

West	25.0
South	-15.0
East	160
North	60

OK Cancel

You can also use the Full Extent and Zoom Extent options to set map bounds.

Saving and Loading Projection Settings

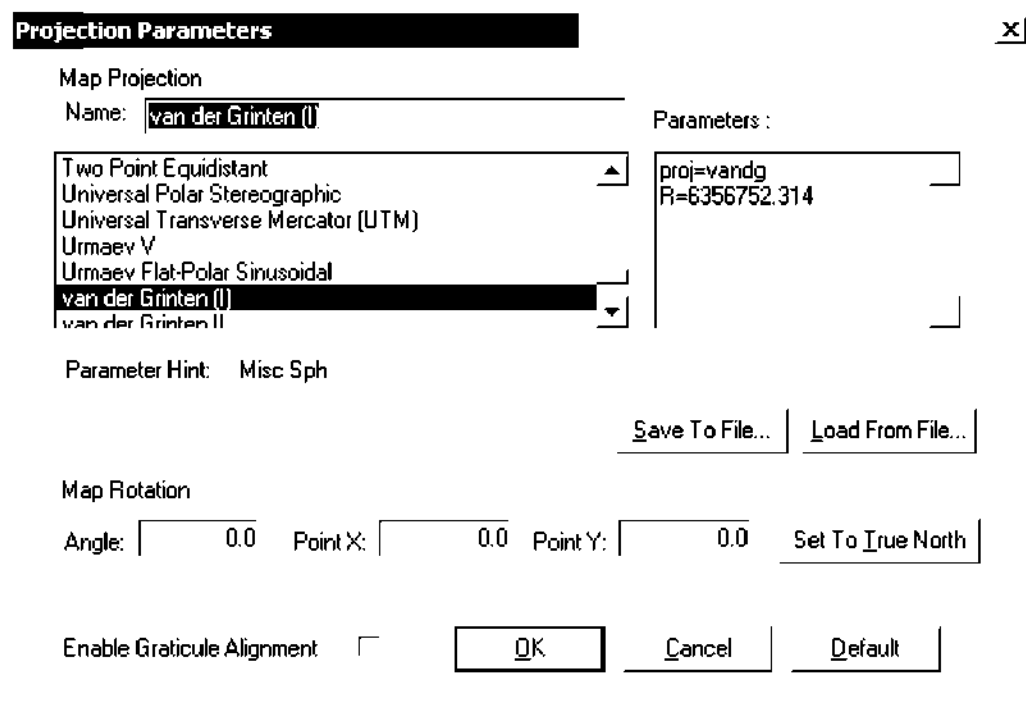
Two new buttons have been added to the Projection Parameters dialog box that allow you to save and load projection settings to and from a text file stored in a location you choose.

You can set up a folder (perhaps shared over a network) containing all your default projections. When you want to use a particular projection in a dataset, open the Projection Parameters dialog box,

click the Load From File button, browse to the location where the file is stored, and select the file from the standard file browser window.

Your projection settings files may or may not be complete. For example, the values for the center of the projection may be missing. You would need to fill these in (or change them if there were default values present) based on the extent of the map being used. The projection is still persisted in the dataset as normal.

Note: The Load From File and Save To File options do not affect the map rotation and graticule alignment settings.



Extent Filtering for ESRI Data Sources and Vector Product Format

Accessing sections of large (indexed) datasets is much faster than before. This is especially true of Spatial Database Engine™ (SDE®) where the filtering takes place on the server. The filtering will work for data stored in both projected and geographic coordinate systems, with one exception: If your data is in a geographic coordinate system and you use a projection in Maplex that has no inverse form, no filtering will occur.

Opening a Dataset

When opening a dataset, the initial folder in the file browser is now set to the project folder rather than the last folder opened. This change eliminates confusion caused by switching between projects with similar folder structures and content.

Placement

Street Labeling Placement

This has been improved in situations where the label's height is larger than the width of the street feature and the label is stacked.

New Parameter

There is a new parameter that can be set in the rule base Align to Direction of Line. It is located on the Placement tab. It appears instead of Align to Symbol Angle if the feature class is a line and is designed to work with the following placement styles:

- Offset Straight Left
- Offset Straight Right
- Offset Curved Left
- Offset Curved Right
- Center Straight Directed
- Center Curved Directed

For all other placement styles, the flag is unavailable. When Align to Direction of Line is enabled, Maplex will always align the label to the direction of the line (the direction is determined by the order of the coordinates in the data) even if it means placing a label upside down. If the placement style includes a left or right element, Maplex will honor it and place the label on the correct side of the line. This feature allows such things as one-way arrows to be used as labels since Maplex will ensure the arrow always points in the correct direction. When the parameter is off, Maplex will place labels in the normal way.

Editing

Saving Labels

The Save Label option is now available only after placement or new edits have been made. You must confirm that you want to save labels and edits if either stored labels or edits already exist on the disk.

Restoring Labels

Performing a Restore Labels operation after editing will cause your edits to be abandoned. You will be prompted to confirm this action. Existing edits are now reloaded during a Restore Labels operation.

Editing Feedback

The standard up-arrow label selection cursor gains an "F" modifier when in Follow Feature mode.

Automatic Leader Lines

This function can be activated by per-feature-class code. After all labels are placed, Maplex will draw a line from the placed label to the feature. The placement of the label is unaffected.

Note: Unplaced labels are unaffected.

The style of the leader line will be taken from the Maplex Leader Line Properties dialog box.

Leader Line Properties ... [X]

Line Symbology

Style: Dashdot [Preview]

Width (mm): 0.1 Dash Length (mm): 0.1

Take Color From Label Dash Gap (mm): 0.1

Color: BLACK [Color Swatch] Dot Length (mm): 0.1

Arrowhead Symbology

Style: Harpoon-Style [Preview]

Width (mm): 0.1 Length (mm): 0.1

Other

Draw Leader to Symbol Center

[OK] [Cancel]

Options

Inverted Label Tolerance (Tools > Options > Labeling)

This is the degree to which a line or street label is allowed to exceed past the vertical and be upside down. Previous versions of Maplex had this hard-coded to 5 degrees. This parameter is global; it applies to all feature classes. The angle specified on this line is validated within the range from 0.0 through +15.0.

Truncate Proper Nouns First (Tools > Options > Labeling)

In previous versions of Maplex, truncation was always done to the keywords/ending part of the label first.

Example: Original label—York Road ("Road Rd" is in the endings abbreviation file.)

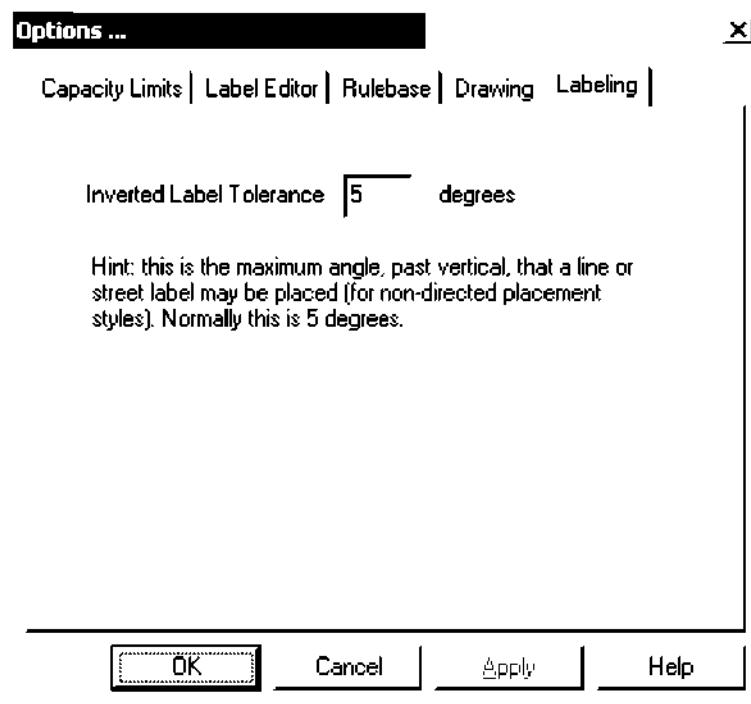
York Rd (abbreviated label)
York R.
Yor. Rd
Yor. R.
Yo. Rd
Yo. R.
Y. Rd
Y. R.

There is now an option on the Labeling tab of the Tools > Options dialog that allows the user to change the functionality of the truncation.

Enabling the option will truncate the proper nouns in a label first.

Example: Original label—York Road ("Road Rd" is in the endings abbreviation file.)

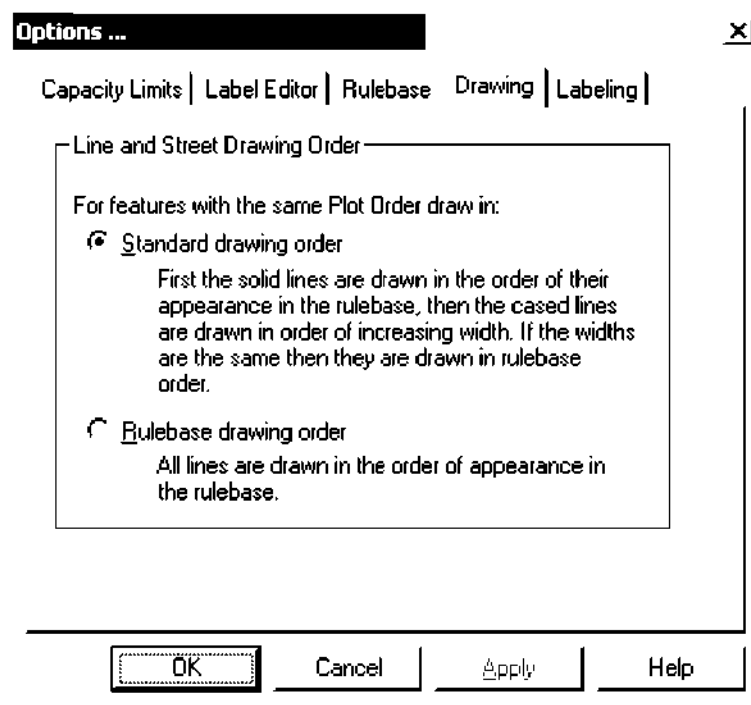
York Rd (abbreviated label)
Yor. Rd
Yo. Rd
Y. Rd
Yo. R.
Y. R.



Line and Street Drawing Order (Tools > Options > Drawing)

This affects linear features with the same value for their Plot Order parameter. This setting is persisted in the project.

- Standard drawing order—Solid lines are drawn first in the order of their appearance in the rule base, then cased lines are drawn in order of increasing width. If the widths are the same, they are drawn in rule-based order.
- Rulebase drawing order—All lines are drawn in the order of appearance in the rule base.



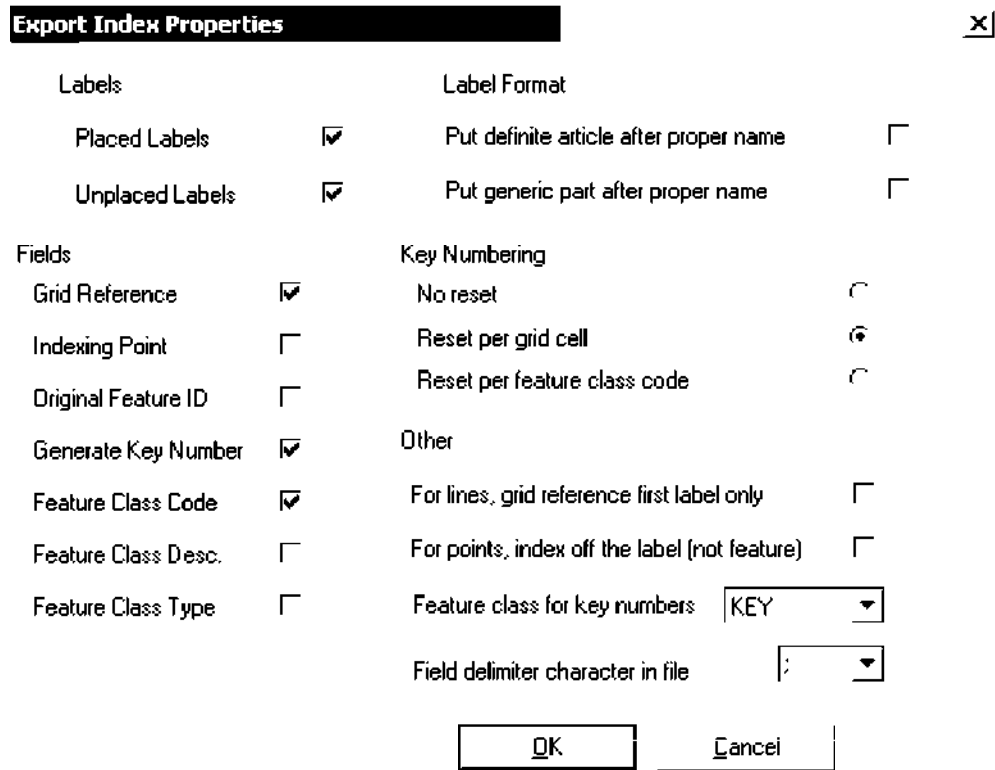
Export

Changes to Key Numbering

In previous releases of Maplex, the key number substituted for the unplaced label was a number from 1 to N, where N was the number of unplaced labels. This has been extended; key numbers can now be generated on the following bases:

- No reset—A number from 1 to N, where N is the number of unplaced labels.
- Reset per grid cell—The numbers are reset to 1 in each grid cell. The Grid Reference field must be included in the index export settings, which means the map must have a grid defined.
- Reset per feature class code—The numbers are reset to 1 for each feature class code. The Feature Class Code field must be included in the index export settings.

These Key Numbering options have been added to the Export Index Properties dialog box.



Annotation Export

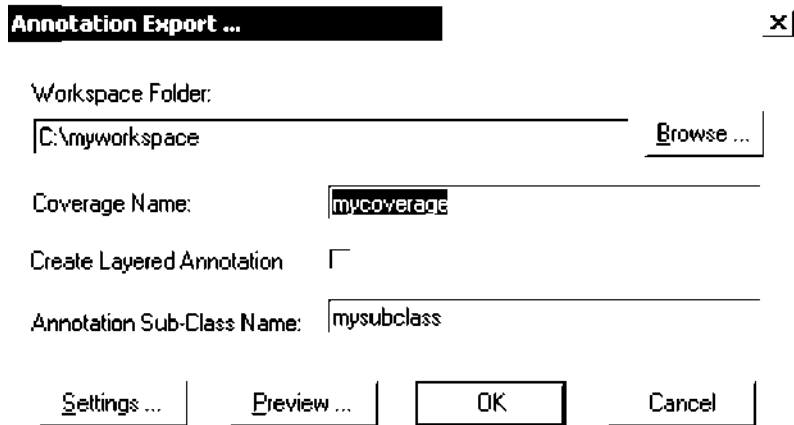
Changes have been made to both the interface and the functionality of the annotation export. There is now an Export Annotation option in the File menu. Selecting it opens a folder browser (rather than a file browser as was used previously), allowing you to choose where to save your annotation.

If you check Create Layered Annotation, Maplex will export an annotation file (annotation subclass) for each unique value of the Label Layer parameter (in the Export tab), which is further divided into placed and unplaced text.

Maplex now exports FCLASS and feature DESCRIPTION fields in both of the related files.

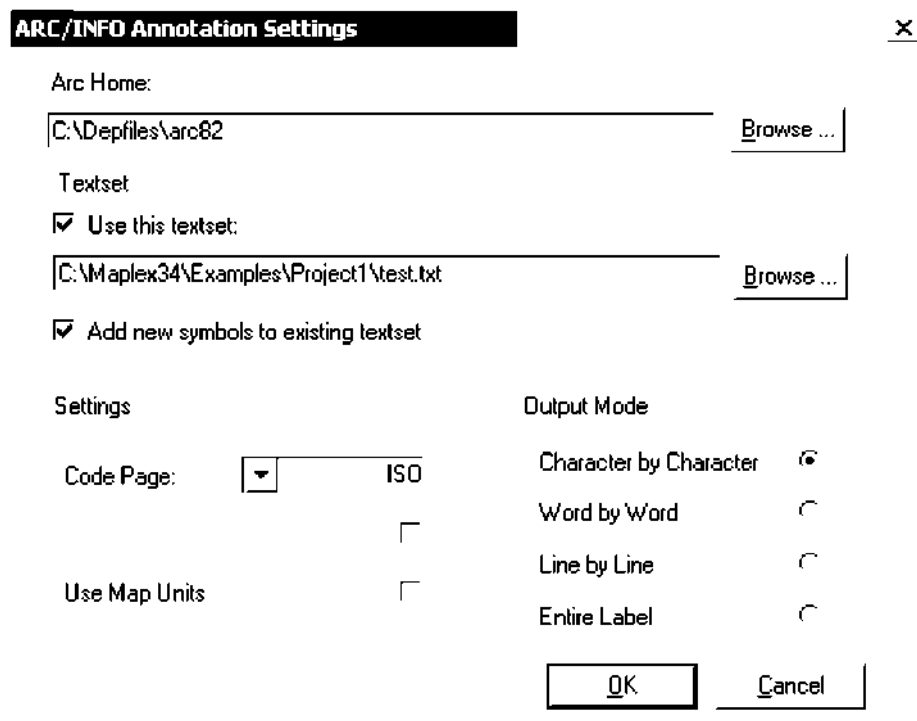
Note: Maplex exports two new support files in the coverage MaplexSubclassList.aml and MaplexHeader.aml. They are intended to ease the burden of rendering multiple subclass annotation. See the example ArcPlot.aml.mp layeredbuild in the utils directory.

The Label Layer parameter may not be a valid subclass name. Maplex validates each subclass name before using it and automatically corrects any problems. Each of the characters in the name must be in one of these three sets: [0–9] or [A–Z] or [_], and the name is limited to 13 characters. Maplex will omit the illegal characters and truncate the name. This may create unintentional duplicates. You can either check the log or the MaplexSubclassList.aml file for the list of subclass names used.



In the Annotation Settings dialog box there is an option to specify the textset file to be used. Checking the option Add new symbols to existing textset causes Maplex to reuse symbols in the textset, creating new symbols only when required. This is useful if you are generating multiple annotation coverages from different maps and want to use a consistent textset.

Annotation Export can now use fonts specified using the Add Fonts: Windows Fonts option. Care must be taken to ensure that the name for the TrueType or PostScript field in the font index file matches the name of the actual font in Windows®.



Automation Server

The following new methods have been added to the Component Object Model (COM) interface.

Name	Parameters	Description
GetFeatureClasses	Void GetFeatureClasses ([out] VARIANT* numFCs, [out] VARIANT* FCList)	Gets the list of Feature Class Codes in the current project.
GetRulebaseValue	Void GetRulebaseValue ([in] BSTR code, [in] RulebaseFieldNameConstants field, [out] VARIANT *value)	Gets the rule base value referenced by the Feature Class Code and the Field Name.
GetRuntimeValue	Void GetRuntimeValue ([in] RuntimeParameterNameConstants parameterName, [out] VARIANT *value)	Gets runtime parameters and some of the global rule base parameters.
SaveProjectAsXML	Void SaveProjectAsXML ([in] BSTR name)	Saves a Maplex project and rule base as a named XML file.

Example

See below for Visual Basic® (VB) code illustrating this new functionality.

Note: You will need to change the home string to point to your Maplex installation folder.

```
Private Const Home = "<Maplex35 Folder>"

' The Maplex application object

Dim Maplex As Maplex.Application
Option Explicit
Public Sub GetMaplexParameters()

' Create instance of Maplex (this should start Maplex).

' If it fails here, then Maplex is not correctly referenced.

Set Maplex = CreateObject("Maplex.Application")
Maplex.SelectProject (Home + "\Examples\Project1 ")
Maplex.SetRulebaseValue "7822", mxSymbolWidth, "4mm"

Dim value As Variant
Dim status As Boolean

' This method exports the global runtime parameters and each
' feature class rule base parameter to an XML file.
Maplex.SaveProjectAsXML ("c:\test.xml")
```

```

' Shows how to get individual rule base parameters for a given feature class code.
Maplex.GetRulebaseValue "7822", mxFeatureClassType, value
Debug.Print "FCType: ", value
Maplex.GetRulebaseValue "7822", mxSymbolWidth, value
Debug.Print "SymbolWidth: ", value
Maplex.GetRulebaseValue "7822", mxBoxBorderColor, value
Debug.Print "BoxBorderColour: ", value

' Shows how to collect and iterate through the feature classes in a project.
Dim numFCs As Variant
Dim FCList As Variant

Maplex.GetFeatureClasses numFCs, FCList
Debug.Print numFCs
Dim i As Integer
For i = 0 To numFCs - 1
    Debug.Print i, FCList(i)
Next i

End Sub

```

Others

Registry Setting

HideSplashScreen can be added as a string value registry key.

Key location: HKEY_LOCAL_MACHINE\SOFTWARE\ESRI\Maplex\3.5

If present and set to 1, the Maplex splash screen is suppressed during startup.

New Example Project

<Maplex35_Folder>\Examples\RulebaseConversion project has been added.

This VB project converts a stand-alone Maplex project into a Maplex for ArcGIS map document. The sample code supports Maplex datasets composed of shapefiles only. Not all of the feature symbolization is converted; for example, dot-dash centerlines are converted to solid lines.

Refer to the ArcMap™ documentation on how to add this utility as an ActiveX® control.

Rule Base Converter VB Project

This sample project must be compiled on a PC that has both Maplex 3.5 and ArcMap 9 Final installed.

The sample can only be used on Maplex datasets composed entirely of shapefiles. Datasets containing coverages, Vector Product Format, and so forth, are not supported.

To add the rule base conversion ActiveX control to ArcMap

- a. Select the Commands tab on the Tools > Customize dialog.
- b. Click Add from file... and select RulebaseConverter.dll.
- c. One object, CMainConverter, is added. A Rulebase Conversion command should appear in the Label category.
- d. Drag the Rulebase Conversion icon to a toolbar.

To run the tool

- a. Open a new map document.
- b. Set any projection required.
- c. Select the Maplex Label Engine (Labeling option on the Maplex toolbar).
- d. Click on the Rulebase Conversion icon and browse to the Maplex project folder and dataset.

After the conversion process has run, the following tasks have to be done manually to complete the conversion:

- a. Set symbols for those point features originally defined by an Illustrator or computer graphics metafile (CGM) files in the original rule base. These symbols all default to a crossed square after conversion.
- b. Rearrange the layers in the Table of Contents frame to restore the original plotting priorities. (**Note:** For some layers such as streets that are rendered using cased line symbols, the Symbolology > Advanced > Symbol Level option will have to be turned on.)
- c. Rearrange the labeling classes in the Label Priority Ranking dialog.
- d. Switch on the required layer labeling.

Save Project As XML File

Option added to File menu to save the current project as an XML file.

The file is saved to the current project directory as "project.xml".

(**Note:** An XML file can be imported into an Access database.)

Upgrade to MapObjects 2.3

Maplex 3.5 has been upgraded to use MapObjects® 2.3. See the ESRI Web site (www.esri.com) for information on the MapObjects 2.3 release.

New Maplex 3.5 Format

All Maplex files (i.e., EDT, MPL, and UNP files) are written in Maplex 3.5 format.

The Maplex 3.5 format contains one new keyword, TYPE. It was introduced to improve the reloading of multilabel components and added labels.

Keyword: TYPE

Format: TYPE val1 val2

Parameters:

val1—Enumerated value that indicates the label type

parent—Parent, base FC label

np_comp—Component label with no parent

comp—Component label that may or may not have a parent

added—Additional label added using Add Label edit operation

val2—Label FC, parents have a label FC of (null)

If no TYPE line occurs in a record, it is a standard nonmultilabel.

Reloading Maplex 3.4 Files

MPL files are parsed to separate out their multilabel components. These are then sorted into parent, parentless, and normal components. Sometimes it is not possible to do this because the placed text has been changed by editing from the original label.

The loading log reports the following Maplex records:

- a. Featureless added label records from the 3.3 prerelease—These are loaded as additional labels but unlinked to any feature.
- b. Edited multilabels—These are not loaded and the user must check/re-edit them prior to saving or they will be lost.

On saving, the user will be informed that MPL files are going to be written in the new Maplex 3.5 format.

Registering the Maplex Type Library

After installation, run the VBRegTLB.exe installer in the <installation folder>/utils directory to register the Maplex Type Library (MPL.TLB). The type library can be found in <installation folder>/program directory.

VBRegTLB.exe is a freeware utility.