

Dynamic Maps™ v2.3



Manual of Features *Liberate Your Information!*

Prepared by:

Spatial Knowledge Engineering Inc.
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Dynamic Maps at a Glance

Design Philosophy

Dynamic Maps has been designed to put the data, tools, and structures into the hands of staff and management – quickly, cost-effectively, and in a way that is open for growth and change. In these ways, Dynamic Maps is unique. In fact, Dynamic Maps reflects a new philosophy to GIS implementation. Many traditional GIS and mapping systems provide far too much functionality, overhead, cost, and complexity. As a result, these systems don't really meet the needs of a majority of the people working with spatial data. Almost 90% of most people's needs can be met by providing data access along with straightforward data viewing, manipulation, and map creation capabilities. Most people need:

- A system that's easy to use and learn.
- Access to corporate and project-specific data.
- The ability to quickly produce maps and ask simple questions of the data.
- The ability to integrate mapping with other applications such as word processing, spreadsheets, presentations.
- A system that doesn't cost an "arm and a leg".

Dynamic Maps Highlights

Dynamic Maps provides easy access to and manipulation of geographic data, associated tabular data (spreadsheet data), and other types of information (URLs, documents, pictures). Dynamic Maps provides a geographic window onto your organization's information.

More highlights:

- Runs on standard PCs.
- Uses a familiar Windows interface.
- Provides an holistic information query capability – such as searches of the metadata and other online data sources.
- Is "generic", not business-specific, and therefore can be used by multiple disciplines in many ways.
- Is *really* easy to learn and use.

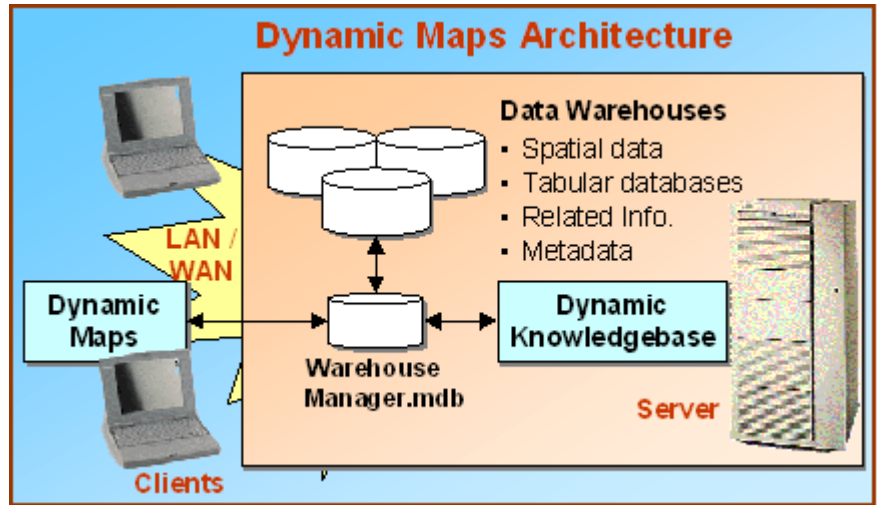
And more...

- Access spatial data, select features and get associated tabular information without having to know anything about the database, its structure or how to connect to it.
- Publish and access documents and URLs based on map features.
- Do simple geo-spatial analysis – such as finding map features, identifying features, measuring distance, and measuring area.
- Query tabular data sets and see their associated map features, and visa versa.
- Do simple tabular analysis – such as selecting records, using basic math functions and relationships, and sorting records.
- Pass data seamlessly to Excel and ArcView for more sophisticated tabular and spatial processing and output.
- Create "views" of all or part of the geographic area of interest and its various features.
- Change the look of and label selected map features to emphasize their display.
- Quickly generate a hard copy map.

- Send the map information to PowerPoint for advanced presentations.

Dynamic Maps System Architecture

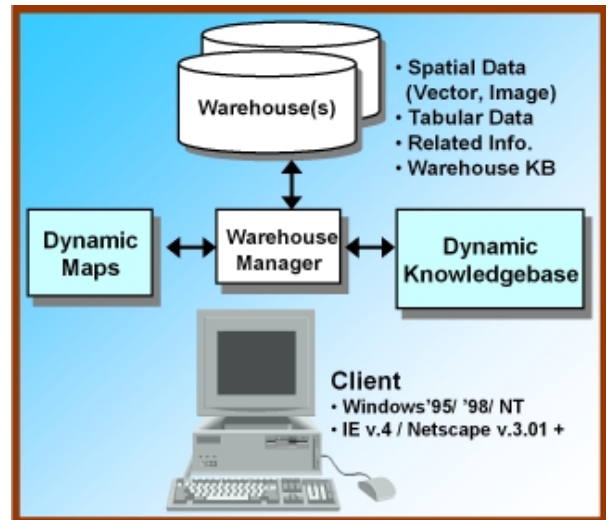
Dynamic Maps works in conjunction with a number of other systems and database elements to enable the storage, access, and management of spatial, tabular data and documents (geographically related information) which are organized into “data warehouses”. Other programs, such as Dynamic Web Maps, use the same data warehouses to deliver maps, tabular data and documents to clients using a web browser on the Internet / Intranet, while the Dynamic



Knowledgebase manages the data warehouse(s) that Dynamic Maps and Dynamic Web Maps use. The following architecture diagram is helpful in illustrating how the different components work together in a “Client-Server” mode where there are one or more Dynamic Maps clients on a network all accessing the corporate data warehouse(s). The diagram shows the Server components in the inner rectangle and the Dynamic Maps Clients and network components outside.

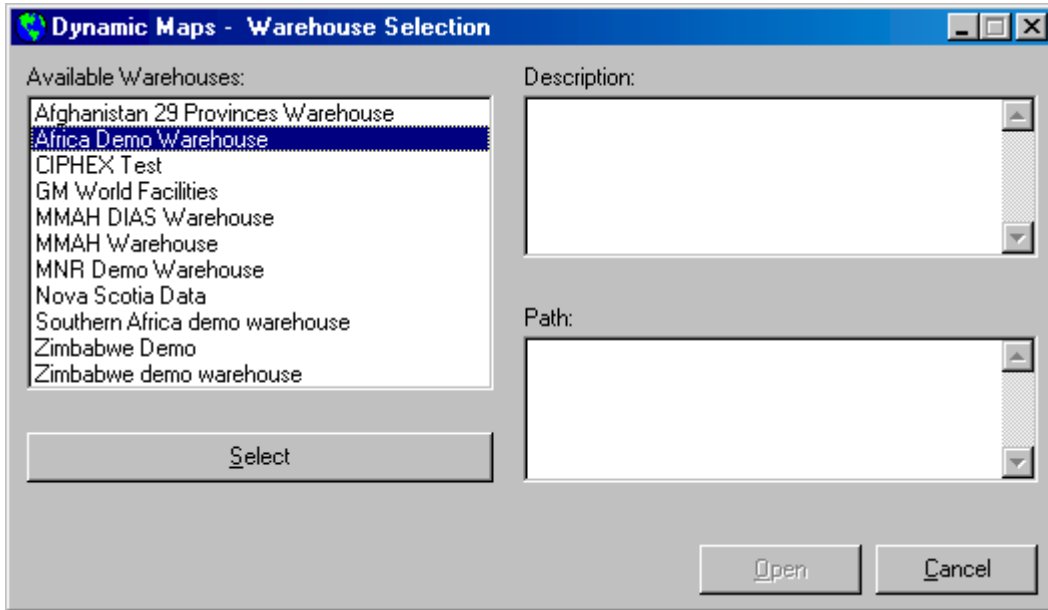
Using Dynamic Maps on a network provides a number of advantages because, for example, as the database changes and as new data sets and map layers are added, everyone using Dynamic Maps will have access to the latest data.

Dynamic Maps has also been designed to work in a “Standalone” mode, in which the Dynamic Knowledgebase, Warehouse Manager, Dynamic Maps and the data warehouses reside on one computer. This scenario is illustrated in the diagram.



Launching Dynamic Maps

When you launch Dynamic Maps from the Start menu (Start / Programs / Dynamic Knowledgeware / Dynamic Maps 2.3) you will first see the Warehouse Selection form (see graphic below). Use it to select the warehouse that you want to connect to. Double-click on the name of the warehouse to select it or highlight it and then click **Select**. Its description and path will appear. Click **Open**.



ADVANCED CONSIDERATIONS: Changing to a Network Install.

If you need to change Dynamic Maps to access a warehouse(s) on a network but Dynamic Maps is installed on your computer to run locally, you can do that automatically by running the "Reset dB Connection.exe" program. The program can be found under your <your install drive>Program Files/Dynamic Knowledgebase/Dynamic Maps 2.3 folder. When you restart Dynamic Maps make sure you navigate via Network Neighborhood to the new Warehouse Manger on your network drive.

If you have a local warehouse (imported using local pathnames) on your computer that you still need to access in a networked environment, then your system administrator can use Dynamic Knowledgebase to import your warehouse (use network pathnames) so that it is available to you over the network.

Refreshing the Warehouse and Changing the Warehouse Connection

Once you are working in Dynamic Maps, there are two functions that enable you to re-establish your warehouse connection or change warehouses.

Refresh Warehouse:

The **File / Refresh Warehouse** function is used when changes to the warehouse have taken place through the use of Dynamic Knowledgebase while Dynamic Maps is already open. If you want Dynamic Maps to reflect the changes, you need to refresh the warehouse. If you refresh the warehouse, you will lose any work on your view that you may have done and will be put back into the warehouse with the default view.

Change Warehouse Connection:

To change warehouses without exiting Dynamic Maps, you can use the **File / Warehouse Connection** function. If you change warehouses, you will lose any selections or graphic objects that you have added to the current view of the data.

Working with the Map View

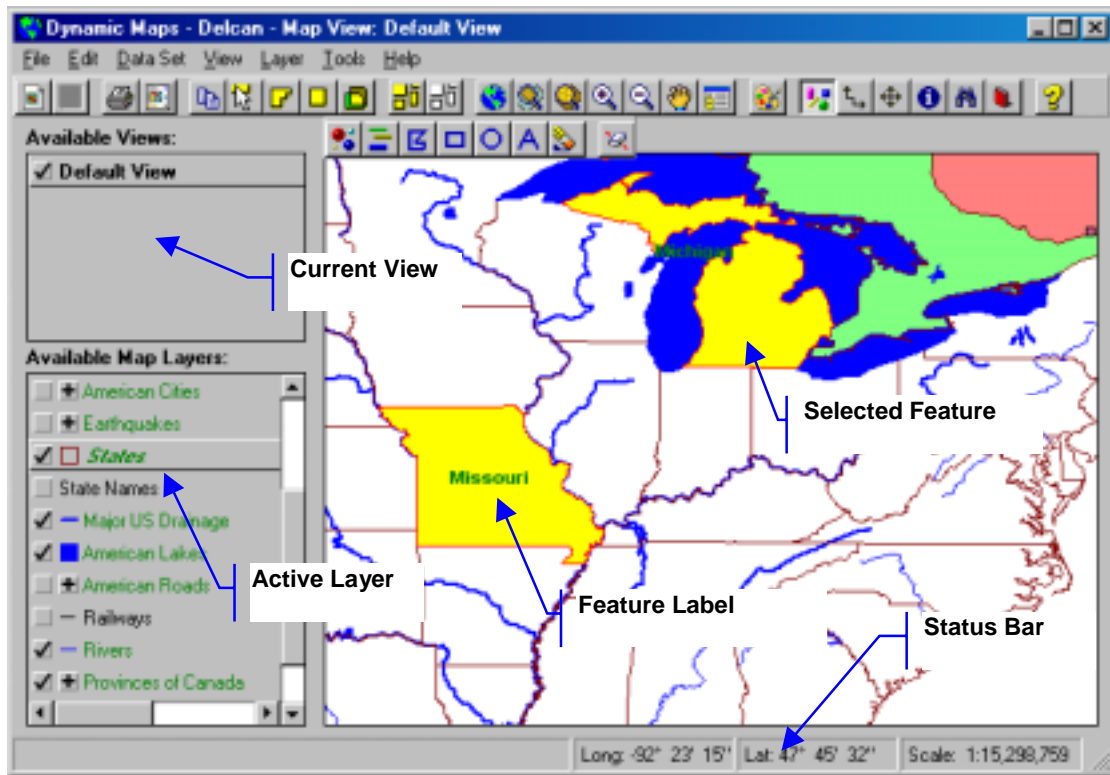
The Map View has all the functionality you need to create maps for publishing and observing various relationships between the tabular data and their associated map layers.

Overview of Using the Map View

You use the Map View to:

- Zoom and pan to define the appropriate area of interest.
- Turn map layers on and off.
- Change the look of the default map layers.
- Save, update, and delete user defined map view(s).
- Make a map layer the “Active Layer”.
- Find and identify features on an active map layer.
- Select features on an active map layer.
- Publish and access documents and URLs based on map features.
- Zoom to selected feature.
- Change the look of selected features.
- Define whether or not features should be labeled and how.
- Measure distance and area.
- Link with ArcView.
- Draw features and annotate the map view.
- Print and copy the map view.
- Copy features to the Windows Clipboard.

A Quick Tour of the Map View



The **Available Views** shows the list of “views” that you have created. A “view” is a snapshot of the spatial database at a particular location and scale, and with various rendering properties.

Views do not store selected features, your drawn objects, or the tabular data you have used. Instead the characteristics of the view are stored in the database, thus if the data changes so does the view. The first time you use Dynamic Maps, there will only be one view available on the Available Views list – the **Default View**. This Default View will reflect the map layer(s) available at the geographic extent of the database. Dynamic Maps will always launch with the Default View.

The **Available Map Layers** indicate the various map layers available and depend on the scale of the map view. When map layers are registered, one of the parameters that the system administrator sets is the viewing scales at which the map layer is visible. Map layers that have a lot of detail – such as a city street network – will not show up on the list until you have zoomed in to an appropriate scale. The list will also only show those map layers that are viewable in the current geographic extent. So, for example, if you have street networks for various cities in a region when you are zoomed in on one city, only that city’s network map layer will be listed and not network layers from other cities.

The **Available Map Layers** that are turned on will be part of the map legend when you output the map to PowerPoint or a printed map composition.

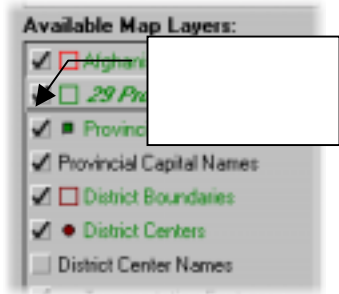
The **status bar** at the bottom shows the geographic/map coordinates of your cursor’s position on the map in the coordinate system of your data warehouse as well as the scale of the view.

Tip:
To change the rendering properties of any map layer, right-click on its name.

Tip:
Most Dynamic Maps functions are available as both buttons and menu items. For some functions, there are also “hot key” combinations – such as Ctrl+S for Save View.

In this manual the “view” also refers to the map display area.

Turning On and Off Map Layers



A lot can be accomplished just by selecting what map layers are displayed.

Visible map layers have a checkmark beside their name in the **Available Map Layers** field. To make a map layer visible, click on the checkbox. To turn a layer off, do the same.

The Map Layer’s appearance will be based on its default rendering properties – unless you have redefined the map layer’s rendering properties in this View. The default rendering properties are set by the systems administrator using Dynamic Knowledgebase.

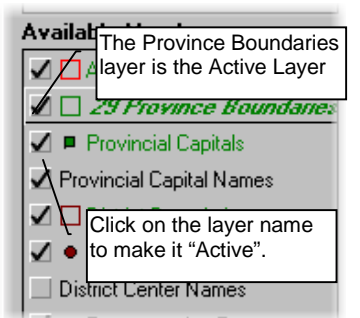


Every time you turn on or off a map layer, the map view refreshes. Sometimes, this can take a few moments if the map layer file is very large. Another way to define the various layers that you want to have visible without the map view repainting each time you select a layer is to use the **Layer / Visible Layer** function from the menu to get the **Select Visible Layers** form. This form enables you to select each layer that you want to be turned on or off by selecting or deselecting the layer’s checkbox. Click **OK** to confirm the choice.

Making a Layer the “Active Layer”

Definitions:
Active Layer: An Active Layer is the currently selected map layer. An active layer is a “Selectable” Map Layer. Only one layer can be *Active* at a time. When a layer is Active you can Select, Identify and Find features.
Selectable Map Layer: A Selectable Map Layer is a map layer that can be made Active and used for feature selection and query purposes and with which tabular data sets can be associated. Selectable Map Layers appear in green on the Available Map Layers list.

The “Active Layer” concept is important because:



- The tabular data sets available to you will depend on which map layer is active.
- Selections can only be made on the active layer, and,
- The find and identify features functions work on an active layer.

When a layer is “*active*”, its name becomes highlighted **bold and italic**. The layers that can be made active are called “Selectable” layers. They appear green in the list of **Available Map Layers**.



In order to make a layer active, make the layer visible first.

There are two ways to set an active layer. The first and easiest is to click on its name in the list of **Available Map Layers**.

The other way is to choose **Layer / Active Layer** from the menu or use CTRL+A – which will bring up the Active Layer form. The form lists all the available selectable map layers that are currently turned on. Click on the layer you want to make the active layer and click **OK**.

The Active Layer form will also turn off an active layer in the same way.

Getting Information About the Map Layer – Its “Description”

Use the map layer’s description to help determine if the map layer contains information appropriate to your needs. Select the **Layer / Description** function from the menu, and then choose the layer from the list of **Available Layers**. The system will launch your web browser and the report will be generated in it.






These map layer descriptions are an example of what are called “Metadata”. Metadata are helpful in that they provide information about the data and therefore make them more useful and relevant.

Map layers don’t necessarily have descriptions associated with them. If you have a map layer that does not, and you need to know more information about the layer, contact your systems administrator.

If your system won’t produce description reports, you probably don’t have “.htm” and “.html” file types associated with a program (such as Internet Explorer Netscape, or Word). The reports are generated in html. Ask your systems administrator if you need help setting file associations.



Getting the View You Want – Zoom and Pan


The zoom in , zoom out , zoom to selected feature , zoom to active layer , and pan  functions enable you to locate and center your area of interest.


To zoom in, click the **Zoom In** button, or use the **View / Zoom In** function. Left click and drag a defining rectangle on the map, release the mouse, and Dynamic Maps will zoom in to that area of interest.


To zoom out, use the **View / Zoom Out** function or click on the **Zoom Out** button. Click on the map view with your cursor to zoom out. The zoom out occurs from the position of where you clicked your cursor – i.e. your view has zoomed out with the spot you clicked on the new center of the map. Zoom out provides an increase in viewing area of 150%.


If you try to zoom out past the extent at which your active layer is visible and you have features selected, the system will warn you that your active layer will be changed and will give you the opportunity to cancel the zoom out function. If you zoom out past the extent at which your active layer is visible, you will lose all selected features in that active layer.

The system will remember what layers are visible – even if you have zoomed past their visible extent and they no longer appear on the list of **Available Map Layers**. This way, if you zoom back to their visible extent, they will reappear without having to be turned back on.

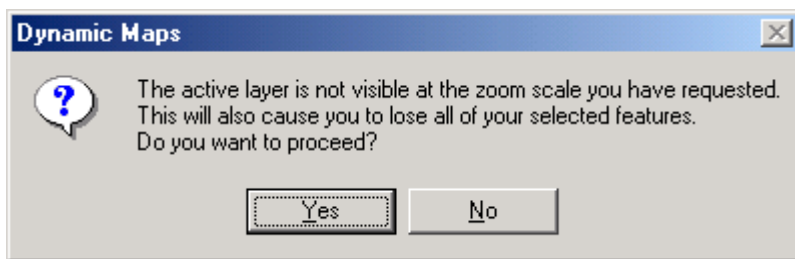
The **Zoom to Selected** features button  and **View / Zoom to Selected** will center any selected features on the map and zoom in to them. The feature is only available when a layer is active and features are selected.

The **Zoom to Active Layer** button  and **View / Zoom to Active Layer** menu option will center the view on the active layer and zoom in or out to its maximum extent. This feature is only available when a layer is active.

The **View / Pan** menu function or select the **Pan** button  enables you to change the center point of your view. When in pan mode, the cursor changes to a hand. Left click on the map view and hold down the mouse while you drag in the direction opposite to what you want to see. It should appear as though you are pulling the map with your mouse. When you release the mouse, the new map view area is drawn.


The **View / Zoom dB Extent** menu function (Ctrl+G) and its associated button  resets the map view to the system's database extent – the "Default View".

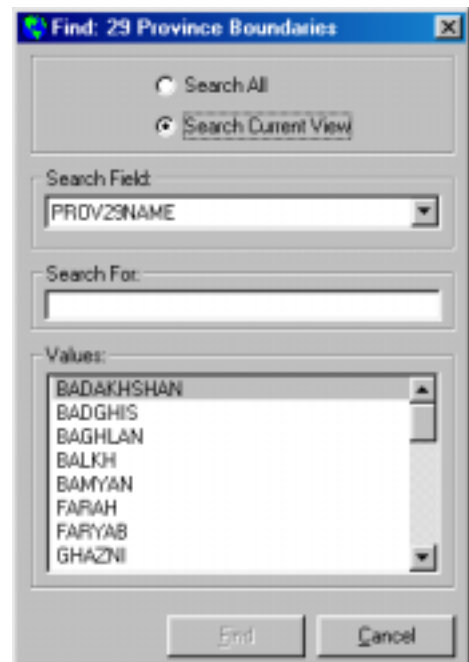
If you try to zoom out to the database extent and your active layer is not visible at this extent and you have features selected, the system will warn you that your active layer will be changed and will give you the opportunity to cancel the zoom function (see diagram below).



Finding and Identifying a Feature on the Active Layer


Two functions that come in very handy when working with a map layer is the ability to find a feature and to identify a feature.

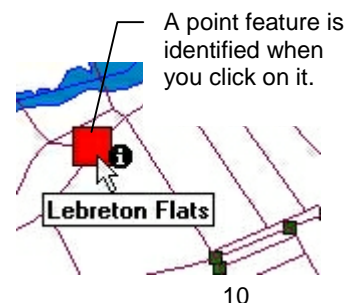
 Use the **Find Feature** button or **Tools / Find Feature** to quickly locate an active layer feature. When you select the find function, a listing of available features appears for the current active map layer at the current map extent (view). You have the choice to **Search Current View**, or to **Search All**. If you choose to **Search All**, all the features in the active layer will be listed.



You also can select the **Search Field** from the dropdown list. The **Search Field** lists all the fields in the map layer's attribute file, so there may be a number of attributes that you can choose from to do your search.

Scroll through the **Values** listing to find the feature of interest and click on it. The **Values** field lists all the values for the particular **Search Field** you have chosen. You can also start typing the name of the feature in the "Search For" field and the system will start matching the name based on the first few letters. Then click **Find** and the feature will be highlighted on the map. If the feature is outside the visible extents of the current map, the view will pan to its location.

 Use the **Identify Feature** button or **Tools / Identify Feature** to quickly scan the map and identify the active layer's features. When you are in identify mode, the cursor will change and every feature you click on will become



highlighted and its name will appear. To turn off the Identify Feature function, click on the Identify Feature button again.

If you want to change the colors and styles the system uses when it renders features that are identified or found, you can do this from the **Render Find/Identify** item in the View menu.

You can only find and identify features on an *active* map layer. If a map layer is not selectable its features cannot be found or identified. Talk to your system administrator about making the layer selectable (this may require updating the actual data and/or it may not be possible).

Using Advanced Identify

You can also see all the information contained about a feature in the map layer’s attribute table by using the **Advanced Identify** feature. From the Tools menu select Advanced Identify. Now when you click on a feature to identify it, a form appears with the information from its record for that feature.

Shape	Poly
MUNID	52007
COUNT	1
FIRST_NAME	MARKSTAY-WARREN
ENV_SENSIT	34
RECYCLING	0
HAZD_ISSUE	4
WATER_ISSU	0

Selecting Features on an Active Layer

Why select features? Selected features help show that the feature(s) is in some way unique or has a property or value of interest to you and your audience. As a result, selecting features is one of the most important functions of Dynamic Maps.

There are many ways to select features right in the map view. Other feature selection techniques – such as selecting features based on records in a spreadsheet or through the use of a structured query – involve more advanced processes, and these methods are outlined in the *Working with the Spreadsheet* section. The following describes the feature selection tools and techniques that are available on the map view directly.

As each feature is selected, its display characteristic(s) changes to indicate that it is selected. There are several ways to directly select and unselect features on the map view. These are:

-  **Select by Pointing**
-  **Select by Polygon**
-  **Select by Rectangle**
-  **Select by Intersecting**
-  **Select All**
-  **Unselect All**

These functions are available in the **Edit-Select Features** menu or as buttons where shown.

Once you have selected features using one of the functions, you cannot add to the selected set by using another function – or using the same one again. Doing so will automatically remove the currently selected set. However:

- You can add a selected feature to an existing selection set by using the “Select by Pointing” function while holding down the CTRL key on your keyboard.
- You can unselect features one at a time, by using the “Select by Pointing” function, holding the CTRL key and click on the unwanted selected feature(s).

Select by Pointing



Click the **Select by Pointing** button or use **Edit / Select Features / Select by Pointing** and your cursor will become a pointing finger. Then position your cursor over the active layer feature and click on it. You can select multiple features by holding the CTRL key while clicking.

Features are also “unselected” in this manner. Holding down the CTRL key and clicking on a selected feature will unselect that feature but leave other features selected.

Select by Name

With **Edit / Select Features / Select by Name**, you can select a feature(s) by choosing its name from a listing of the available features in the active layer. The **Select By Name** form has two selection options – you can list only those features in the active layer that are visible in the current view, or you can list all features in the active layer.

To select a feature from the list, click on its name and then click **Select**.

To select multiple features by name, hold the CTRL key while selecting the names from the list.



If you choose to list all the features in the active layer, you may select a feature that is outside your current map view. If you do, the system will zoom out and pan so that all the selected features are visible.

If you select from only those names in the current view, the system will not zoom out if some of your selected features do not fit entirely within the view. Dynamic Maps will maintain the map view in its current location and scale.

Select by Rectangle



The **Select by Rectangle** function is available as a button and in the menu at **Edit / Select Features / Select by Rectangle**. It lets you define a rectangular shape on the map view by clicking your left mouse button at one corner and dragging the cursor to the opposite corner. When you release the mouse, all the active layer features within or touching the rectangle will be selected.

Tip:
If you have selected features that you do not want, you can remove them without losing the other selected features by using *Select by Pointing* to pick the unwanted feature(s) while holding down the CTRL key.


Select by Polygon



The **Select by Polygon** function is available as a button and in the menu at **Edit / Select Features / Select by Polygon**. It lets you define a polygonal shape on the map view for selecting features. All the active layer features that are at least partially within the polygon will be selected.

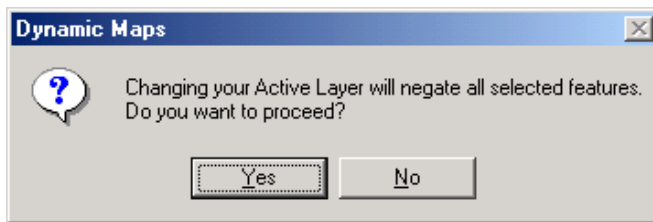
To draw the bounding polygon, select the **Select by Polygon** button and the cursor will change to a hatch mark. Mark one corner of the polygon by clicking on the map. Move the cursor to the next corner and click, and then to the next corner, and so on. When you have defined all sides of the polygon, double-click the mouse and any enclosed and touching map features will be selected.

Select by Intersecting

 The **Edit / Select Features / Select by Intersecting** function is different than any of the others and, perhaps, is not quite as intuitive. For one thing, the selection process is done for a non-active layer! The idea behind this function is to enable you to identify and display an intersecting spatial relationship between one layer and another. This means you must first develop a select set of features on the active layer that you are working with and then use it like a stencil to lay over top of another layer – which will then become the active layer. The new active layer will have any of its features that overlap and intersect with the “stencil” layer selected.



Once you have selected the features on the active layer that is going to be used as your “stencil”, choose the **Select by Intersecting** function. A form will appear that lists the other selectable map layers at the viewing scale. Choose the layer from this list that will become the new active layer with its intersecting features highlighted and select **OK**. Dynamic Maps will then display the following message:



Click **Yes** to indicate that you wish to proceed with the intersection operation. Dynamic Maps will then create the intersection set of active features on the new active layer.

Example: Say you have a polygon layer representing district administrative areas and a point layer representing village locations, and you want to select all the villages within a specific district. Selecting the villages using the **Select by Pointing** function would be time consuming and not very accurate. However, by first selecting the district and then using the **Select by Intersecting** function and indicating that you want to intersect with the village layer, Dynamic Maps will automatically select all the villages within the district.


The intersection process may take a few moments to calculate and display.

Select All

 Choosing **Edit / Select All** will select all the features on the active layer -- regardless of your current view scale and extent.

If you just want to select the active layer features that are visible in your current map view, use a bounding rectangle with the **Select by Rectangle** function that captures them

Unselect All

 Choosing the **Edit / UnSelect All** function clears the currently selected set of features on the active layer. Be careful about using this function, since its effects cannot be undone.

Publishing and Accessing Related Information

Geography is a powerful way to reference information. Dynamic Maps can link information objects such as documents, pictures, URLs, and more to map features. Once registered, they are available to anyone with access to the data warehouse.

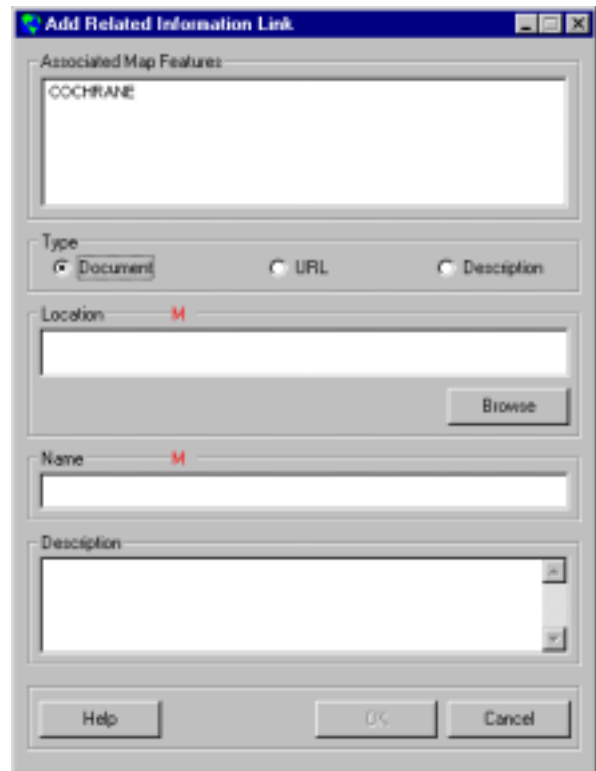
Password protection: A password may be required in order to use the Add, Update and Delete Related Information functions. The password has been specified by your systems administrator as a way of managing the Dynamic Maps clients' use of this function. If you are challenged for a password, type in the warehouse's password and click **OK**. If you can't remember the password, contact your system administrator. The passwords are warehouse-specific – not user-specific, so everyone with access to a data warehouse will be using the same password to manage related information.

Adding (Publishing) Related Information

To add related information, first select the map layer feature(s) to which the information is related. Then choose **Tools / Related Information / Add** from the menu.

The **Associated Map Features** field displays the feature name(s) on the active map layer that are currently selected and against which the information object will be registered. Note, all features in the list will be assigned the link.

The Type field enables you to choose whether you are registering a "**Document**", a "**URL**" or just a "**Description**".



Document Type

A "Document" is ANY single digital file in any format. For example, a "Document" could be a word processing file, an image, a zipped collection of music, a presentation, etc. To register a document, click **Browse** to locate the file. Click **Open** and the file will be copied to the warehouse for use by you and others. Give the Document a logical **Name** and provide a **Description** (optional). This will help the user identify the information and determine if it may be useful to them.

URL Type

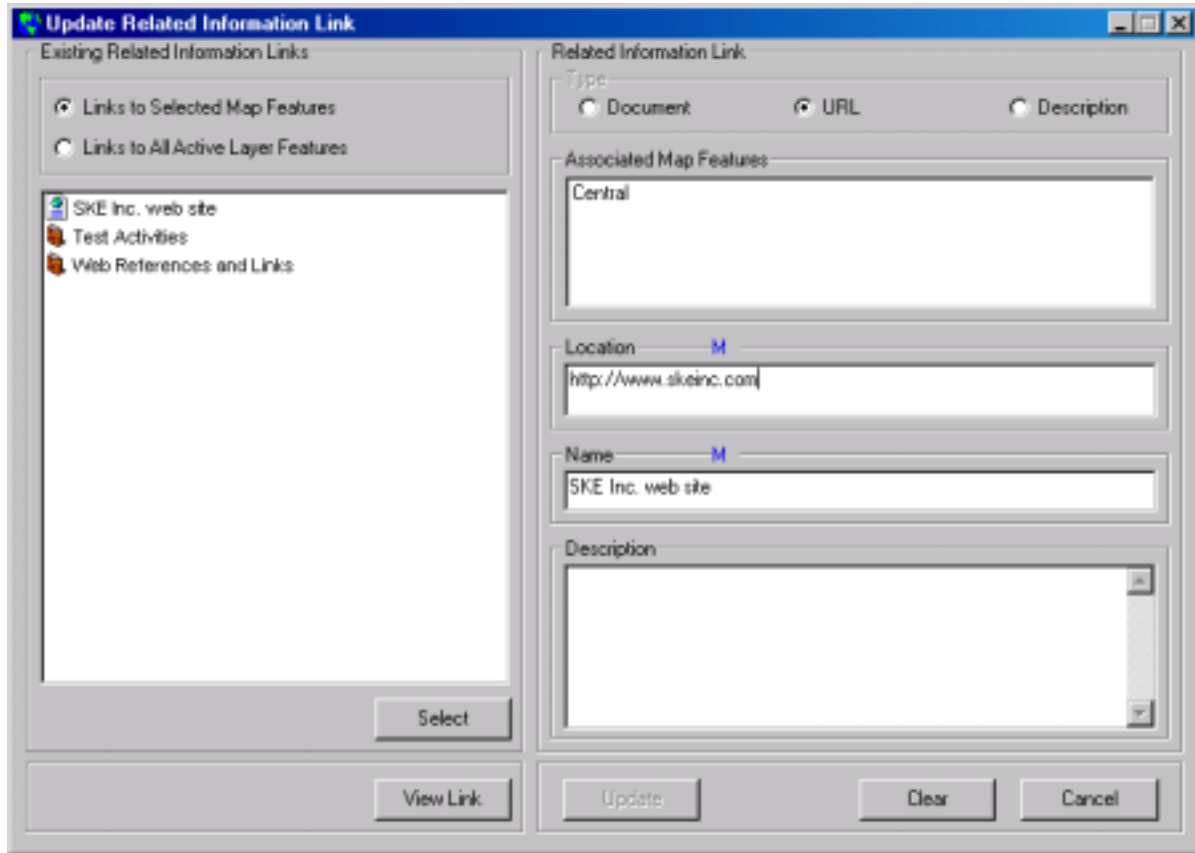
A **URL** is any Internet or Intranet address that would be accessible to the user. To register a URL, type the web address in the Location field (a "http://" prefix is added by default, you can change this to FTP:// if necessary.) Give the URL a logical **Name** and a **Description** so that the user can determine whether or not it is useful to them.

Description Type

A **Description** is an outline of an information source (such as a film or paper maps). To register a description of an information source, give it a logical **Name** and provide related information (such as contact name, number, organization and description of the information holding) in the **Description** form.

Updating Related Information

To update a related information link you have registered, go to the **Tools / Related Information / Update** menu. The following form will be displayed:



If there are map features selected, the system will list the **Links to Selected Map Features**, otherwise it will list **Links to All Active Layer Features**. Note, you do not have to have any map features selected to update or delete information objects associated with the active map layer.

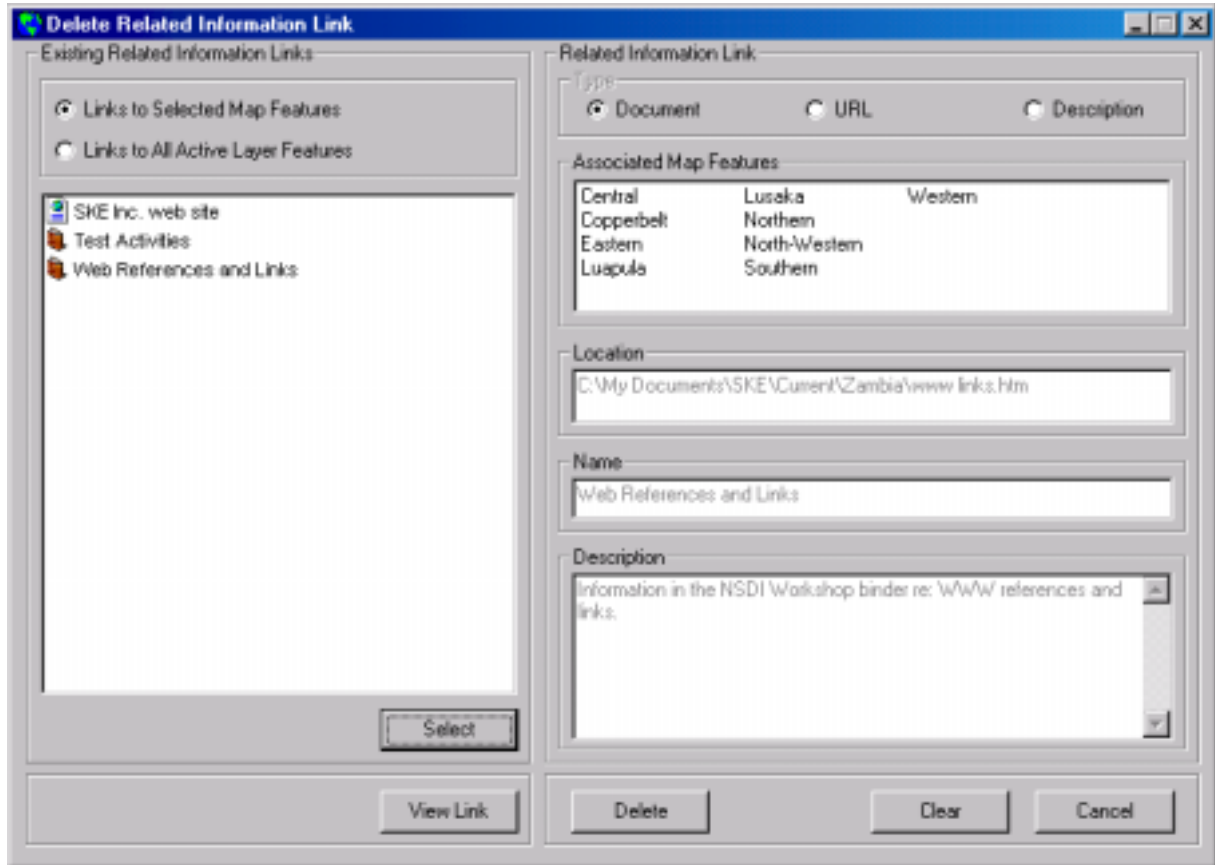
By selecting the related object, the system tells you what map features it's associated with in the **Associated Map Features** field. You can't select one map feature to update its related info. The update applies to all the map features against which the object has been registered.

You are able to update the **Name** and **Description** fields only when you update a document, however, you can also update the **Location** for a URL.

Any information object name or description you update will be updated for all its related map features.


Deleting Related Information

To delete a related information link you have registered, go to the **Tools / Related Information / Delete** menu. The following form will be displayed:

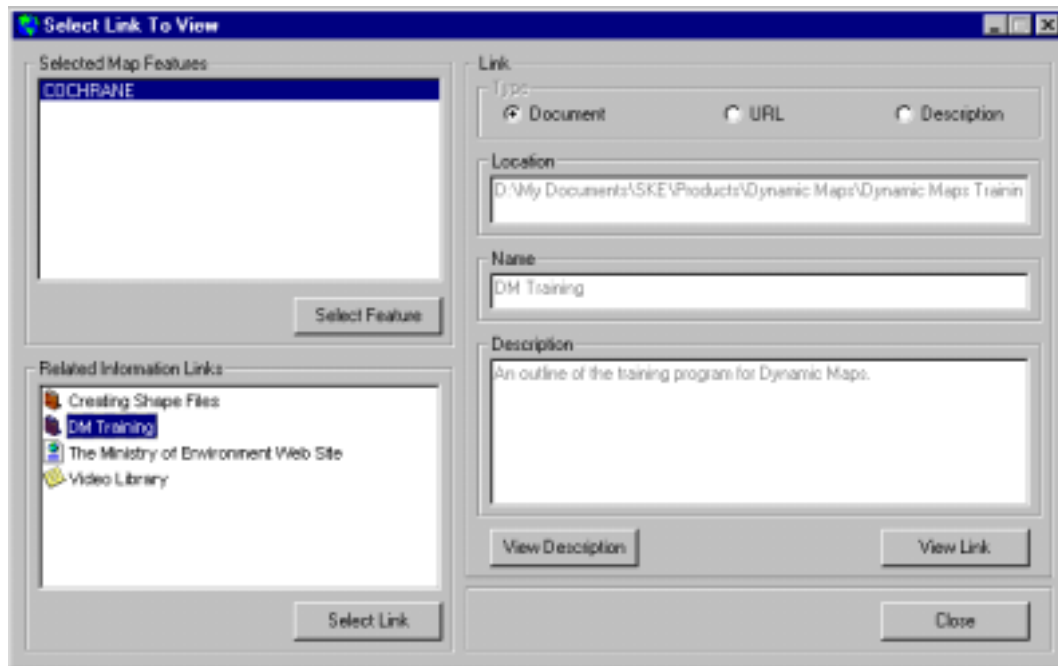


To delete an information object, select it from the list and click **Delete**. This removes the relationship to all its associated map features.

Accessing Related Information

 Related information can be accessed for any selected feature that has related information registered against it by clicking on the **Related Information** button or from **View / Link to Related Information**. The system will then do one of three possible things:

1. If there is only one selected map feature and the feature has only ONE information object registered against it, then that object will be downloaded / launched automatically.
2. If there is only one **Selected Map Feature** but more than one **Related Information Link** then the system will display the following form



You can select the desired information object by double-clicking on it or highlighting it in the **Related Information Links** list and clicking on the **Select Link** button. Selecting the information object will populate the **Link** fields. To access the link, click the **View Link** button. The **View Description** button opens a window that shows the full description of the related object if one was entered and there is not enough space in the **Description** field.


3. If there is more than one selected map feature then all the **Selected Map Features** will be listed and you must first select the map feature by double-clicking on the feature name or highlighting the feature name and clicking on the **Select Feature** button. You can then select the desired information object as described above – by double-clicking on it or highlighting it in the list and clicking on the **Select Link** button; and finally clicking the **View Link** button.

Map Layer and Feature Rendering

Changing How Map Layers Look

You can change how any map layer looks i.e. its “rendering properties” – except image layers. Different map layers will have slightly different rendering property options, depending on whether the layer is composed of polygons, lines, points, or labels.

There are four ways to change the rendering properties for map layers.

1. Right-click on the layer name in the **Available Map Layers** list.
2. Click the **Render Properties** button . You will get a form showing all the available map layers. Click on a map layer and click **OK**.
3. Type Ctrl-R to get the **Render Properties** form. Click on a map layer and click **OK**.
4. Use **Layer / Render Properties** from the menu. Click on a map layer and click **OK**.

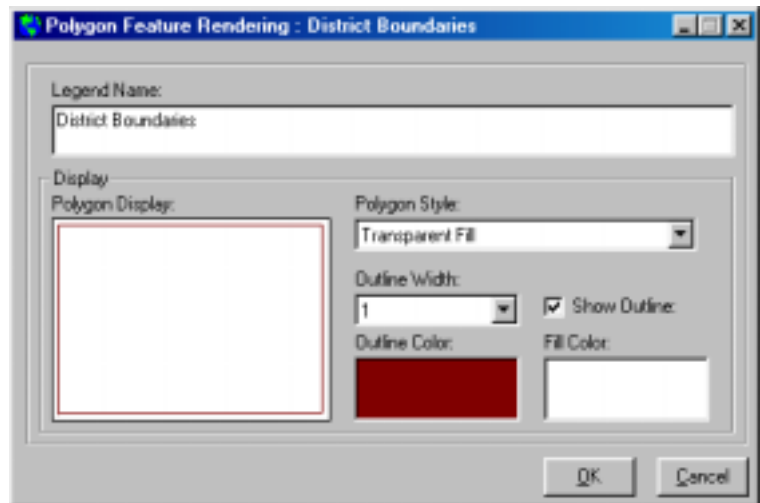


If you want Dynamic Maps to “remember” the changes you make to the rendering properties of the map layers, save your work in a “View”. See the “*Managing Views*” section for more information.

Rendering Polygon Layers

For polygon-type layers, you can change the color of the polygons’ outline, the outline width, the outline visibility, the color of the fill, and the style of the fill. The rendering parameters include:

- **Color:** When you click on the color swatch, the common Windows color form appears. Select a color from the default colors available, or select **Define Custom Color**. Click **OK** when you have the color you want.
- **Polygon Style:** The style reflects how the polygon will be filled. The available polygon fill styles include: solid, transparent, and a number of other line-type fills including highly transparent that is useful if you want a solid shade but still want to see features underneath.



When you set a “transparent” fill, it is essentially the same as setting no fill. You are able to “see through” these polygons to other feature layers.

- **Outline Color:** The outline color defines the border color for the polygon.
- **Outline Width and Show Outline:** This sets how wide the outline will be and whether or not the outline appears at all. If the “**Show Outline**” indicator is checked, the features’ outline will be visible. If you have a transparent fill, you cannot turn “**Show Outline**” off.

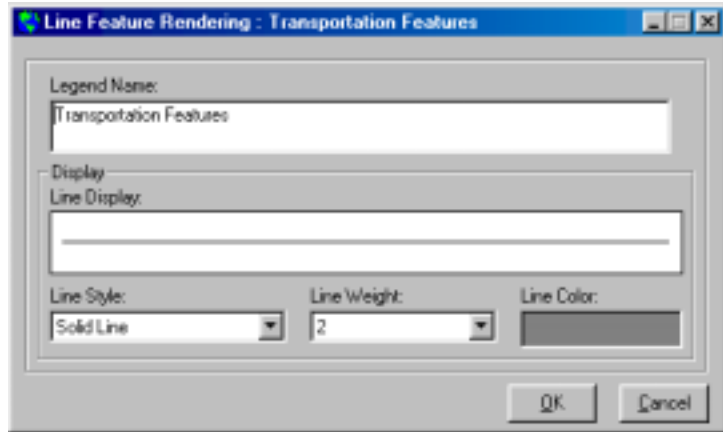


There is a bug in Windows 98 Operating System that prevents outline widths greater than 1 to be displayed properly in the Map Composition and when copying a View. This is not a problem under Windows '95, NT or 2000.

Rendering Line Layers

For line layers, you can change the color of the line, the style of the line, and the weight of the line.

- **Line Style:** The available line styles include: solid, dash, dot, dash dot, and dash dot dot.
- **Line Weight:** The available sizes start at one pixel and go up to 5, although you can define any line width by typing in a value.
- **Line Color:** When you click on the color swatch, the common Windows color form appears. Select a color from the default colors available, or select **Define Custom Color**. Click **OK** when you have the color you want.

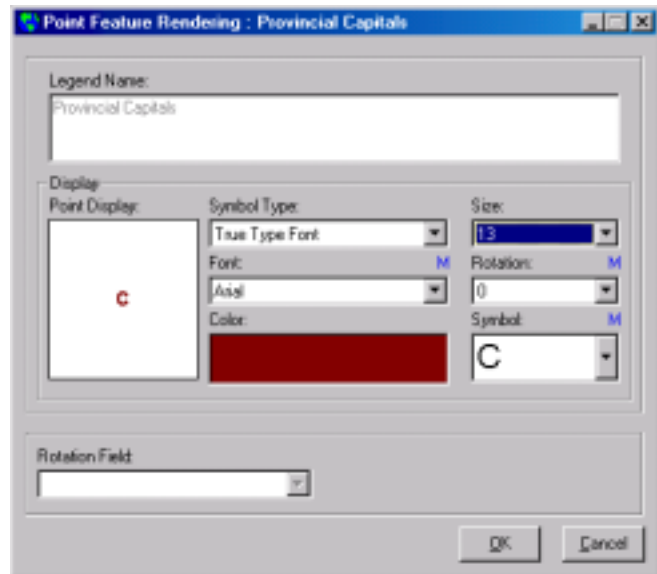


There is a bug in Windows 98 that prevents line styles other than solid with a width greater than 1 to be displayed properly in the Map Composition and when copying a View. They will all appear as solid lines. This is not a problem under Windows '95, NT or 2000.

Rendering Point Layers

For point layers, you can change several features including color, symbol type, and size. If you choose a True Type symbol, you can also change the font, symbol, and rotation. The **Point Display** area shows you how the symbol will look before you accept the changes with **OK**. Other rendering parameters include:

- **Symbol Type:** You have the option of Square marker, Circle marker, Triangle marker, Cross marker, and True Type font. You can use any font available on your system when you select the True Type marker. Some widely available fonts – such as Wingdings – provide interesting and useful markers. Also, when you have selected a True Type marker, the form expands to show you the list of available symbols from the particular font. You choose the symbol in the **Symbol** field.
- The **Font** field shows the list of available fonts when you have chosen a True Type font. Scroll down to find the font you want to use and select it. You may need to try several fonts until you find the symbol you want to use.



- **Color:** When you click on the color swatch, the common Windows color form appears. Select a color from the default colors available, or select **Define Custom Color**. Click **OK** when you have the color you want.

If you choose True type marker, you may need to wait a moment while the font names are loaded.

- **Symbol:** The **Symbol** field shows the list of available symbols (such as letters or icons) when you have using a True Type font. Scroll down to find the symbol you want to use and select it.
- **Size:** The size is set in either pixels for the circle, square, triangle and cross markers or in points for the True type markers.
- **Rotation:** The rotation field indicates how much the True Type font symbol will be rotated in a counter-clockwise direction. The values are in 15-degree increments.
- **Rotation Field:** If the map layer contains a field with symbol rotation values, these can be used instead. This allows for each point feature on the map layer to have unique rotation for its symbol. Note, if this is specified then it will override the general rotation value specified above.

Rendering Label Layers

For label layers you can change the font used by selecting the font in the **Font Name** field; the font's color by clicking on the color swatch and selecting the color from the Windows color picker; and, the font's size by selecting the size in the **Font Size** field. Other parameters include:

- **Rotation:** You can change rotation values at 15° intervals from 0 to 345 degrees. Rotation occurs counter-clockwise.
- **Horizontal Alignment:** You can orientation / position the label relative to the feature it represents Left, Right, or Center.
- **Vertical Alignment:** You can position the label relative to the feature it represents: Top, Bottom, or Center.



The following four fields are used in special cases where the creator of the map layer has set up special rendering fields for labels.

- **X Offset Field:** Works based in map units (either decimal degrees or meters – depending on the warehouse type and whether the map layers have been projected in meters or decimal degrees.) The X-Offset describes the number of map units to the left or right of the feature center that the label will be placed. Select the field name from the drop-down list that contains the offset values for each feature label.
- **Y Offset Field:** As with the X-Offset, the Y-Offset describes the number of map units above or below the center of the feature that the label will be placed. Select the field name from the drop-down list that contains the offset values for each feature label.
- **Rotation Field:** The rotation field is the number of degrees rotation identified for the label layer. Select the field name from the drop-down list that contains the rotation values for each feature label.
- **Text Height Field:** The text height field describes the size of the text in the label. When the Text Height field is used the Font Size is ignored. Select the field name from the drop-down list that contains the text height values for each feature label.

Changing How Selected Features Look

Dynamic Maps uses a default yellow color to differentiate selected features from others. This color and various other properties for selected features can be changed using the **View / Render Selected** menu function. When you select **Render Selected**, you will get one of three render properties forms – depending on whether your selected features are points, lines or polygons. After making your rendering property changes, click **OK** to accept the changes you’ve made.

Any changes you make to the default rendering properties are only active for the session. They will be lost if you refresh/change your warehouse connection or exit.

Changing How Found and Identified Features Look

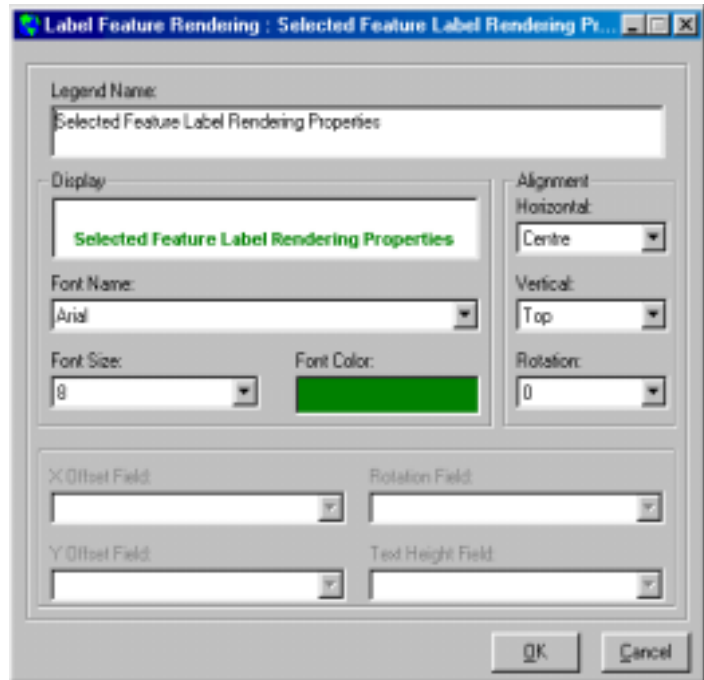
You can change the way a feature appears when it is identified / found by using **the View - Render Find/Identify** menu function. Its default rendering style is solid red.

Note, any changes you make to these default rendering properties are only active for the session. They will be lost if you refresh/change your warehouse connection or exit.

Changing How Selected Features are Labeled

Dynamic Maps displays a selected feature’s “label” or name on the Active Map layer by default. You can easily turn labels off by clicking on the **View / Label Selected** menu item. With labels on, every feature you select will be labeled with its name.

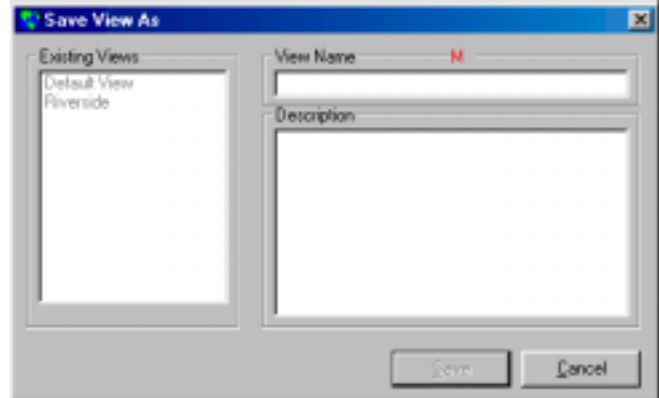
You can change the way the selected feature’s label is rendered. The **View / Render Labels** menu item launches the form. With it, you define the font attributes such as the face, size, alignment and the color. Choose a font that will be easy to read at the appropriate size. Remember also, the text will appear over the selected features’ rendering color background (Dynamic Maps default is yellow).



Managing Views

Saving a View

You might find yourself frequently working on a particular area of interest with a consistent set of map layers with various rendering properties. As a result, you may want to save this as a “View”, so that you can quickly come back to it and start from there. To save a new view, use the **File / Save View As** function from the menu bar. You will get the following form.



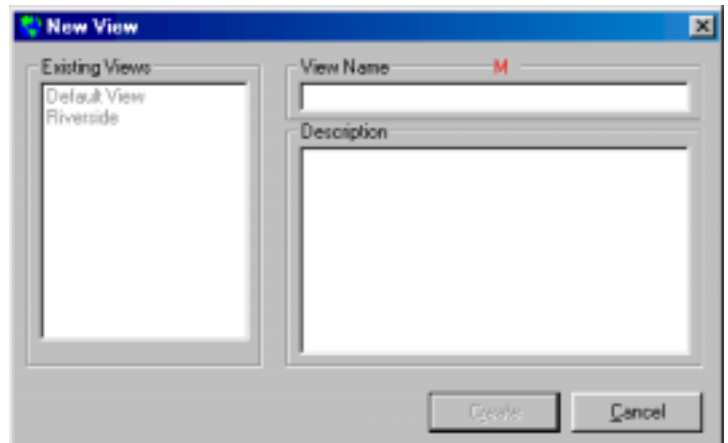
Type in an appropriate **View Name** and **Description** and then click **Save**. The **View Name** is mandatory. This view will now be available in this session and whenever you launch Dynamic Maps again. Saving a view will also save your class rendering properties (see the *Doing Class Rendering* section).

Creating a New View



The **File / New View** function and the **New View** button enable you to create a new view at the extent of the database. Clicking the **New View** button launches the **New View** form shown below.

When specifying a new view, you must provide a unique name for the view. Click **Create** to create the new view. The view name will appear on the **Available Views** list so that any time you need to return to this view, you click on the name.



A new view will always be created at the full extents of the data warehouse, i.e. zoomed all the way out. If you want to save a view you are working on in a particular area of the map, use **Save View As** instead of **New View**.

The New View function can be used when you don't like what the Default View is showing and want to create a custom view at maximum data extents.

Updating a View



When you make changes to the view – either by changing its extent, relative location, or the rendering properties of the map layers, you can use the **Save View** button, or **Ctrl+S**, or **File / Save View** to update the view.

You cannot update the Default View. If you want to save the view you have and you are working with the Default View, use the Save View As function from the File menu.

Deleting a View

If you no longer need a view on your **Available Views** list, you can delete it. Deleting a view does not affect the data in the warehouse -- you are not deleting data. Choose **File / Delete View**. Select the view you want to delete from the list of available views. Confirm that it is the view by looking at the description, and then click **Delete**. If you change your mind or if it is not the view you want to delete, select a different view from the list or **Cancel**.

You cannot delete a current view (the view you're in). The best way to delete a view is to be in the Default View – then all your views will be available for deletion.

You cannot delete the Default View.

Printing a View



Dynamic Maps gives you the ability to print the view directly – rather than go through the process of creating a map composition. To print your view, use the **Print Map View** button or **File / Print View**. You will get the standard windows **Print Setup** form.

While the Print View function prints what you see on the screen, map creation is normally done with the map composer.

Copying a View

If you want to capture the current map view for use in another Windows-based program, such as Word or WordPerfect, use **Edit / Copy All**. This will create a graphical representation of the map view and put it into the Windows Clipboard memory. To retrieve it, open the program you are putting it in, and select Paste.

Copying Selected Features



Dynamic Maps provides you the ability to copy the selected features and their labels as they appear in the map view. All other map features and layers will not appear in the resulting image. To copy the selected features choose **Edit / Copy Selected**, CTRL+C, or the **Copy Selected** button. The image is then ready to be pasted into Word, WordPerfect, etc. The **Copy Selected** function also copies any user drawn features on the map view.

Drawing and Annotating



Your map view can be used as a canvas for drawing shapes and annotation. The drawing and annotation tools provided by Dynamic Maps are easy to use. The drawing functions are all available from the **Draw** button or from the **Tools / Draw** menu.

Drawn objects are saved with your map composition as part of the overall graphic file created when you generate a map composition. Also, if you want a quick copy of them, you can select a layer feature and use **Edit / Copy Selected** or **Edit / Copy All**. These functions will copy the drawn features into the Windows clipboard as a single “image”, and the image can then be pasted into any other Windows application such as your word processor.

Tip:

If you need more advanced drawing and annotation capability, you have a few options depending on your needs and your system's software.

1. The export to ArcView function will take your map view and associated data and create a project within ArcView. ArcView has some more powerful cartographic tools and capabilities. Once in ArcView, however, there is no direct way to bring the map view back into Dynamic Maps. Registration of new data would have to be done through Dynamic Knowledgebase.
2. The PowerPoint Slide option in the Map Composer exports your map view as a graphic file to PowerPoint along with other surround features (which you could turn off if you'd like). PowerPoint has several design options and capabilities. Once the map view is in a graphic format, it cannot be imported back to Dynamic Maps.
3. You can use the Copy All function in the Edit menu to copy your view to any graphic-based Windows program.
4. You can use the Copy Selected function in the same way as noted above to move the selected features into the Windows clipboard for pasting into other graphic applications. You must first have a selected feature(s) on an Active Layer for this function to be available.

The objects you draw are only available for this session and are not stored in the database. As a result, they cannot be saved as individual objects for use in later sessions or with the view. If there are specific features that are frequently required for the map, these might best be digitized and registered as a map layer with the Dynamic Knowledgebase.

Tip:

If you plan to create different lines, shapes and text on the same map view, try creating a map composition template with that map view and then exporting it to PowerPoint. Once in PowerPoint you can create several versions of the same map with various lines and graphics that you can store separately.

Drawn objects cannot be edited. They must be deleted and redrawn.

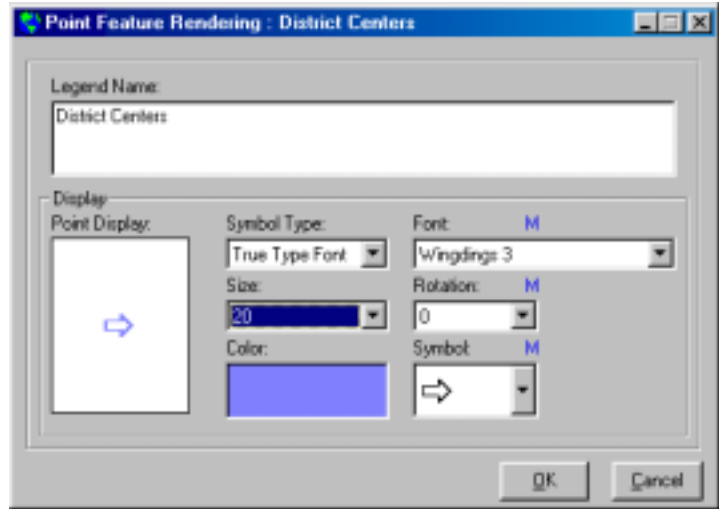
Draw Points



You can draw points of various styles, weight, and color using either default styles or any true type font on your system. To draw a point, click the **Draw** button to reveal the drawing toolbar and select the **Draw Point** button. Select the point symbol properties you want, select **OK**, and then position your cursor over the place on the map view where the point should go and click the left mouse button.

Points have the following unique options:

- Symbol Type:** You have the option of Square marker, Circle marker, Triangle marker, Cross marker, and **True Type marker**. You can use any font available on your system when you select the True Type marker. Some widely available fonts – such as Wingdings and Webdings – provide interesting and useful markers. Also, when you have selected a True Type marker, the form expands to show you the list of available symbols from the particular font. You choose the symbol in the **Symbol** field. If you choose True Type marker, you may need to wait a moment while the font names are being loaded.
- Font:** When you choose True Type marker for the style, the fonts listing will list all the True Type fonts on your computer.
- Symbol:** The symbol field shows the list of available symbols when you have chosen a True Type marker. Scroll down to find the symbol you want to use and select it.
- Size:** The size is set in either pixels for the circle, square, triangle and cross markers or in points for the True Type markers.



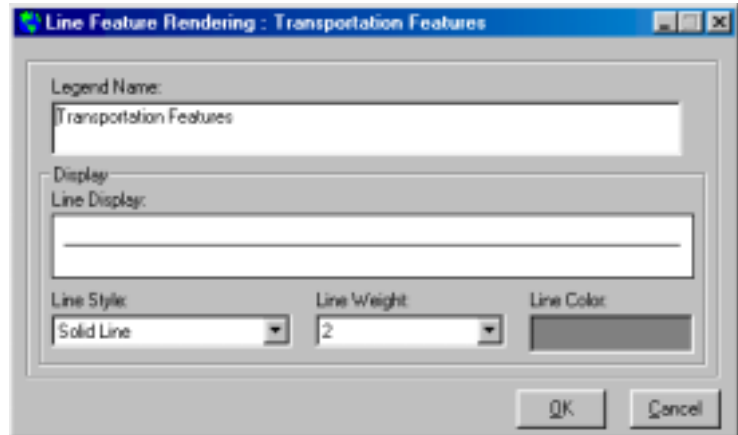
Draw Line



You can draw a complex line of various styles, weight, and color on your map. To draw a line, click the Draw button bar to reveal the drawing toolbar and select the Draw Line button. Select the line's rendering parameters from the Line Symbol Properties form.


The parameters include:

- Line Style:** The available line styles include: solid, dash, dot, dash dot, and dash dot dot.
- Line Weight:** The available sizes start at one pixel and go up to 5, and you can define the line width by typing in a value.
- Line Color:** Clicking on the swatch brings up the Windows color picker from which a color can be chosen and assigned.

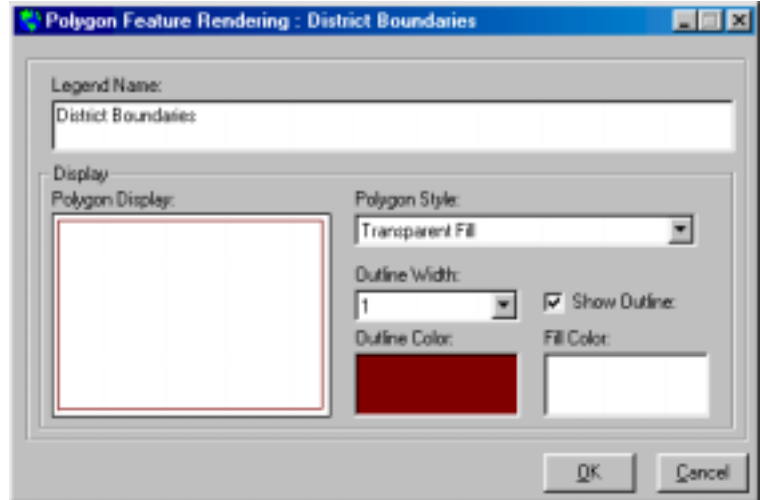


If the weight and color in the **Line Display** field are acceptable, click OK. The form disappears and the cursor should now look like a little pencil. To draw the line, position your cursor over the line's start point. Click once at that point to lock the line's beginning and move your cursor to the next point on the path at which the line's direction changes. Click once to lock the line segment at that position and move the cursor again to the next point on the line at which its direction changes locking the new line segment, and so on. When the line is completed, double-click the left mouse button and the completed line will be drawn with the rendering parameters you assigned.

Draw Polygon

 Use the **Draw Polygon** tool to draw a closed polygon with various fill patterns, fill color, and line color. To draw a polygon, click the **Draw** button to reveal the drawing toolbar and select the **Draw Polygon** button. The rendering parameters include:



- **Polygon Style:** The style reflects how the polygon will be filled. The available polygon fill styles include solid, transparent, and a number of other line-type fills. There are also **partially transparent fills** with varying color intensities and reflect the color you have chosen. So for example, a “highly transparent” fill for a red polygon will appear red but highly transparent.
- **Outline Color:** The outline color defines the border color for the polygon. The Dynamic Maps default outline color is black.
- **Outline Width and Show Outline:** The outline width can be assigned from 1 to 5 and, if not transparent, the outline itself can be turned off with the Show Outline parameter.



Once you have defined the polygon’s values, click **OK**. The form disappears and the cursor should now look like a little pencil.


Position your cursor over one of the polygon’s corners. Click once at that point to lock the polygon corner and move your cursor to the next corner. Click once to lock this corner at that position and move the cursor again to the next corner locking the new edge segment, and so on. When the polygon is completed, double-click the left mouse button and the polygon will be drawn with the rendering parameters you assigned.

Draw Rectangle and Draw Circle

  Use the **Draw Rectangle** and **Draw Circle** functions to draw a rectangle or circle with various fill patterns, fill color, and line color. To draw, click the **Draw** button and click the **Draw Rectangle** or **Draw Circle** button. Select the rendering parameters from the Rectangle or Circle Symbol Properties form, click **OK**, and position your cursor over a) one of the rectangle’s corners or b) the edge of the circle. While holding down the left mouse button, move the cursor to a) the diagonally opposite corner for a rectangle, or to b) the far edge of the circle, and release the mouse.

The rendering property options are the same as they are for a polygon. See the polygon example above for more details.

Add Text

 The Add Text function lets you create additional labels for features or add other relevant information on your map. Adding text may take a few tries and experimentation, since there are many parameters such as the text size, what it says, and its path that you need to define before it appears on the map.

To insert text:

1. Click the **Draw** button and select the **Add Text** button. The Label Feature Rendering form will appear, with a default size color and font face and example text. Click **OK** once you have assigned

the appropriate parameters to the text. See “Rendering Label Layers” for more information about the rendering parameters on this form. Some rendering properties, such as the X-Field Offset, Y-Field Offset, Text Height Field, and Rotation Field are grayed out on this form.

- Once you click **OK**, you are brought back to the map to define a path for the text. Text is input on a line (path) that you create on the map. The line can be straight, or it can have several segments. Use the cursor to define this path, remembering the size of text and its approximate length. Click on the path beginning point with the left mouse button, move the cursor to the end of the line segment, click again, move the cursor to the next corner, etc. At the end of the path, double-click the cursor.
- Once you have defined the path, a form will appear in which you input the text. You can only insert one line of text at a time. Once you have inserted the text click **OK** and the form will disappear and you will be returned to the map view and the text will appear.



- If your text is longer than the path you define, the text will continue in the same direction as the path. If your text is shorter, the text will appear centered on the path.
- Text follows the path and the direction in it was drawn. Therefore, text will appear differently on a path drawn top to bottom than bottom to top.
- Sharp corners in the path will be automatically smoothed by the text so that changes in direction appear gradual rather than sudden.
- To create text that is upside-down on the image, draw your path backwards starting from right to left.

Delete User Drawn Features



The Delete User Drawn Features function deletes drawn objects and text that you have created on the map view. Select the **Delete User Object** button and then select the object you want to delete.

Delete All User Objects



If you want to delete all user objects from the map view, click on the **Delete All User Objects** button. You will be prompted for confirmation before this action takes effect.

Other Functions on the Map View

Measuring Distance and Area

Dynamic Maps provides two easy-to-use tools that enable you to quickly measure the distance along a complex line and to measure the area within a complex polygon.



To measure distance along a line or between points, select the **Measure Distance** button or use **Tools / Measure / Distance** and click on the starting point. Move the cursor to the next point and click once, move to the next point and click, and so on. At the end of your line, double-click the cursor and the system will return the measurement in kilometers or meters, depending on the distance. Your drawn line is automatically erased once the distance is calculated and displayed.



To measure area, select the **Measure Area** button or use **Tools / Measure / Area** and click on one corner of your polygon. Move the cursor to the next corner and click once, move to the next corner and click once, and so on. Once you've completed defining the polygon, double-click the cursor and the

system will generate the area in square meters or square kilometers depending on the size of the polygon. Your drawn polygon is automatically erased once the area is calculated and displayed.

When measuring distance or area on a map layer that's based on geographic coordinates, the resultant distance or area is only an approximation. The actual calculations are done on a generalized map surface and not on the reference ellipsoid using geodetic distances.

The accuracy of a distance or a polygon area also depends on the accuracy of the original maps used to create the warehouse, any processing of the digital data that's been done, the screen resolution that you are using when defining the locations and the viewing scale.

Linking with ArcView

Dynamic Maps provides a way to send your map view to ArcView. The link to ArcView is a convenience but not a necessity for most users and uses, and it is only available to those users with ArcView installed on their computer. Use the **Tools / ArcView** function to automatically launch ArcView and pass your current view's map layers data into an ArcView project.

Some notes about the link with ArcView:

- Once in ArcView, the map layers (now called "themes") can be saved as a "project" or manipulated further.
- ArcView provides some additional and useful cartographic functions.
- Once you have exported your data to ArcView, your data cannot be brought back to Dynamic Maps.
- You cannot export any user-defined features (circles, added text, etc.) from your view.
- The link to ArcView does not support the linkage of spreadsheet / tabular data from Dynamic Maps. You have to use ArcView's database connectivity functions to do this.

Working with the Spreadsheet and Tabular Data

Introduction


A key component of the system is the database interface – provided through a spreadsheet that appears in a separate window below the map view. The spreadsheet provides direct access to and manipulation of tabular data sets associated with an active layer. The spreadsheet and map view are linked – so as records are selected in the spreadsheet, the corresponding map features also become selected on the map, and visa versa. It is important to understand how to work with the spreadsheet so that you can get the most out of Dynamic Maps.

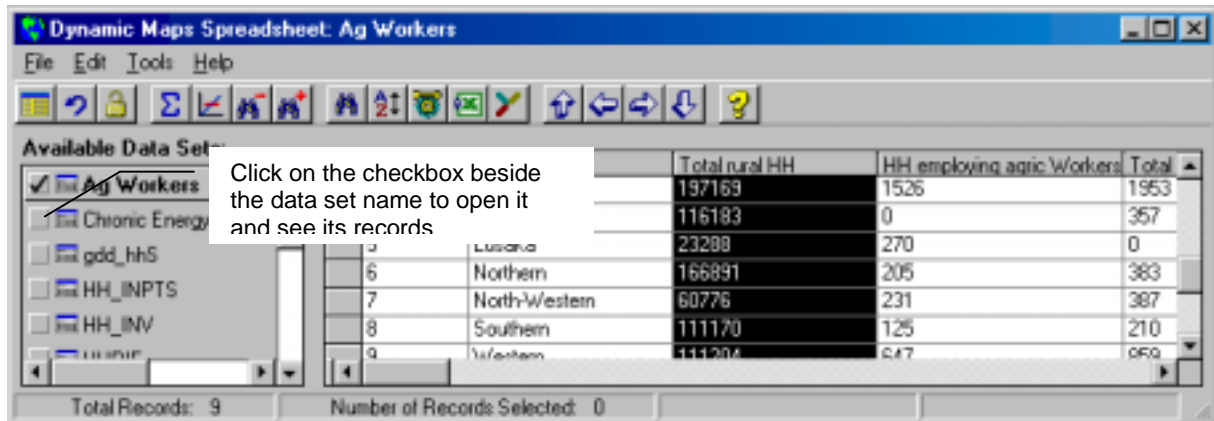
If you have never used a spreadsheet before – don’t worry. You will quickly catch on to how this works. If you are an experienced spreadsheet user – you will be pleased by the functionality and versatility of the Dynamic Maps Spreadsheet and will appreciate the powerful query function, the class rendering, and the link to M/S Excel.

The Spreadsheet’s Basic Functionality

Launching the Spreadsheet and Opening a Data Set

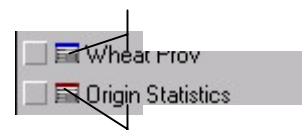
To use the spreadsheet and work with data sets, you must first make a map layer active. Since data sets are registered by the system administrator or imported by you (see **Importing a Data Set** below) based on a particular map layer, your choice of a map layer will determine what tabular data sets are available.

To launch the spreadsheet, make a map layer active and then click on the **Open Data Set** button  or choose **Data Set / Open Data Set** from the map view menu. The Dynamic Maps Spreadsheet will open and all the data sets associated with the active layer will be displayed in its **Available Data Sets** list.



Find the data set of interest and click on the checkbox beside its name to populate the spreadsheet with its data. The data set name will now become raised and bold.

There are two types of data sets – “system” and “user”. System data sets are defined by the systems administrator and cannot be modified by you. User data sets are “imported” by you and stored on your computer. System data sets appear first in the list with a blue icon and user data sets appear with a red icon.



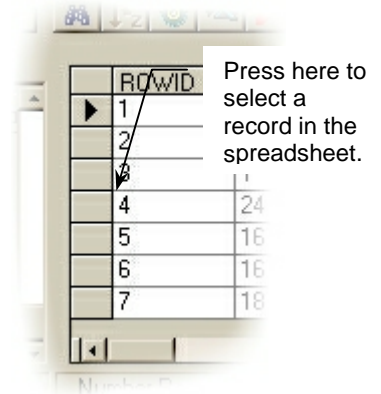
Getting Information About the Data Set (Description)

Some or all data sets may have been registered with a description to help you determine if the data set contains information appropriate to your needs. To get a description of a data set, select the **Tools / Description** function from the menu, and then choose the data set from the list of **Available Data Sets**. A report will be generated in your web browser.

Selecting Records

Just as with the map view, there are many ways to select records in your spreadsheet. Making selections is important because your selections will be automatically reflected on the map. In other words, as you select a record, its associated map feature will also be selected.

To select a record, the most straightforward way is to click on the little square to the immediate left of the record (where a black arrowhead appears). The record will become highlighted black with white text and its related map feature will appear selected on the map view. To select multiple records in this way, hold down the Ctrl key while you click on the record.



You have other direct ways to select records on the spreadsheet. You can:

- Select features on the map view's active layer. This will cause all related records in the spreadsheet to become selected (if there are any).
- Select a spreadsheet column and then use the **Find Minimum** or **Find Maximum** functions. This will cause the record(s) with the minimum or maximum value to become selected.

Depending on the tabular data set's content, there may be map features that do not have any associated tabular records, i.e., when you select a feature on the map you may not see any records selected.

If the selected feature(s) does not appear on the Map View, it may be because your view is at the wrong location. You may need to pan or zoom out to see the selection or use the **Zoom to Selected** button on the map to find the selected feature(s).

Other selection functions include:

Select All



You can select all the records in the Dynamic Maps Spreadsheet at once by using the **Spreadsheet Edit / Select All** function or corresponding button. The map view will also change to reflect this new selected set. This is particularly useful after you have done a query and you want to show the results of the query on the map.

Select Inverse



Once you have one or more record(s) selected, you can use the **Inverse Selected** function. The **Spreadsheet Edit / Inverse Selected** function and the **Inverse Selected** button let you reverse the current selection. It makes all unselected records selected, and makes the selected records unselected. The map view will also change to reflect this new selected set. This is useful when you want to see the opposite of what you have currently selected.

Unselect All



Once you have some records selected, the **Unselect All** function becomes active. The **Spreadsheet Edit / Unselect Records** function and the **Unselect All** button releases all the currently selected records.

The map view will change to reflect that no records are selected. Be careful, you cannot “undo” this function once you have unselected all the records.

Tip:
 If you just want to work with the selected records as if they are a unique data set, you can launch Excel and send it only the selected records using the **Spreadsheet – File / MS Excel_Selected Records** function. Or, you can create a query using the query builder to give you a subset of records to work with.

Move to Selected



The Move buttons enable you to navigate quickly through the spreadsheet from one selected record to another. In this way you can quickly find the various records that related to the selected features on your map. With these you can jump to: the first selected record in the list, the next selected record, the previous selected record, and the last selected record.

Finding Records



The **Spreadsheet Tools / Find** function and the Find button let you find a string of alphanumeric characters in the spreadsheet. The function invokes a form similar to the Microsoft Excel Find function.



Type in the character string in the “Find What” field and click the Find Next button. The string you type does not have to be the entire length of a word or number. For example, if you type “old”, the Find will locate records with “golden”, “Old Site”, etc. If you want to conduct a case-sensitive search, turn the “Match Case” checkbox on.

The form will stay active with the current find until you click **Cancel** or until you have cycled through all the records that match your criteria with **Find Next**.

Finding a record does not select it automatically. To select a found record, click on the record row at the left-hand side of the spreadsheet.

Tip:
 One way to find many records at the same time is use the Query Builder function. The query function also creates a subset of your data set containing just those records that you have “found”.

Finding Minimum and Maximum




Finding the minimum value or the maximum value in a column is a fast way of selecting the lowest or highest value record(s) field in the data set. When you use the **Spreadsheet Tools / Find Minimum** or the **Spreadsheet Tools / Find Maximum** function or their associated buttons, the system searches a numeric column in the data set *and selects the record* that has the lowest or highest value. If more than one record has the same minimum or maximum value, they are all selected.

To use, select a numeric column of the spreadsheet by clicking on its column name, and click the Find Minimum or Find Maximum button on the toolbar or use the **Spreadsheet Tools / Find Minimum** or **Spreadsheet Tools / Find Maximum** menu function. When the minimum or maximum records are found, they are selected. As with other spreadsheet functions, the related feature(s) on the Map View also become selected.

If the column contains inappropriate "0" values, these will be selected. An inappropriate "0" value occurs on some data sets that have a record field set to 0 when in fact its value is not known. You can create a query to get rid of the records that contain inappropriate "0" values.

Sorting Records

 If you want to change the order in which the records appear, you can sort the records based on any column (field) in the data set both in ascending and descending order. To do so, select the column to sort. Now click on the **Sort Records** button or select **Spreadsheet Tools / Sort** from the menu. The following form will appear. Choose the order you want the records sorted in and click **OK**.





If you need to sort simultaneously on multiple fields, you will need to transfer the data to M/S Excel and use the Data – Sort function. Note, any data transferred to Excel should only be sorted through this function in order to maintain a consistent link with the map features, i.e., the link to Excel can become scrambled if you sort on an individual column and not on the whole spreadsheet.

Tip:
You may want to use the sort function when you start your work on the Spreadsheet, because the records are sorted by default based on the first column – which is often a record ID field and not always the most useful to work with.

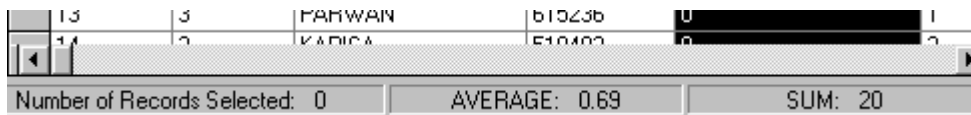
You may want to do your sort **BEFORE** you select records, since once records are selected, you cannot resort a column with loosing the selection.

Using the Math Functions – Sum Column and Column Average

A data set is an organized group of records, each of which has fields that store a specific type of data – such as a particular quantity, quality, value, name, identifier, etc. related to that particular record. Each column of the spreadsheet displays all the data from a particular field for each record in the data set. For data set fields that contain a useful measure or quantity, such as amount spent or quantity delivered, it is sometimes important to know the sum total or an average of those quantities.

  The **Spreadsheet Tools / Math Functions - Sum** function and its associated button lets you select a numeric column and then calculate the sum total of the column's values. Similarly, the **Spreadsheet Tools / Math Functions - Average** function and its associated button lets you select a numeric column and calculate the average of all the column's values.

The column sum and the column average appear on the spreadsheet's status bar.



These functions can only be used on a numeric column. If a column looks like it contains numeric values but the math functions are not enabled, then the field (column) is actually defined in the database as an alphanumeric field.

Linking with M/S Excel


Dynamic Maps is able to link *dynamically* with M/S Excel and therefore provide virtually unlimited record selection, analysis, and business charting capability. The link remains intact as long as both Excel and Dynamic Maps remain open. Closing either program will end the link.

As well, any sorting of data in M/S Excel should be done by using the Excel Data/Sort function. This will ensure that the order between the records in Excel and the map features does not get corrupted.

The Dynamic Maps spreadsheet will probably meet most, if not all, of your needs for record selection and query. As a result, the most common reason for linking to Excel will probably be when you want to reflect the tabular data with a business graphic / chart to complement the map or to do more sophisticated statistical analysis. By passing the tabular data to Excel, you have at your disposal very powerful and fairly easy to use chart and graphic presentation capability. If you want to use that chart or graphic into your Map Composition, save it as a .bmp file and then use the “**More**” function on the business graphics form in Map Composer. See **Using Map Composer** for more information about including graphics in the map composition.

To export a chart or graphic as a .bmp image file, you need a graphics program. Select the entire chart in Excel and copy it to the Windows clipboard. Launch your graphics program and select Paste. Then save the image as a .bmp file.

You have two choices for passing data to Excel. You can pass all the data in the spreadsheet, or you can send Excel just the selected records.

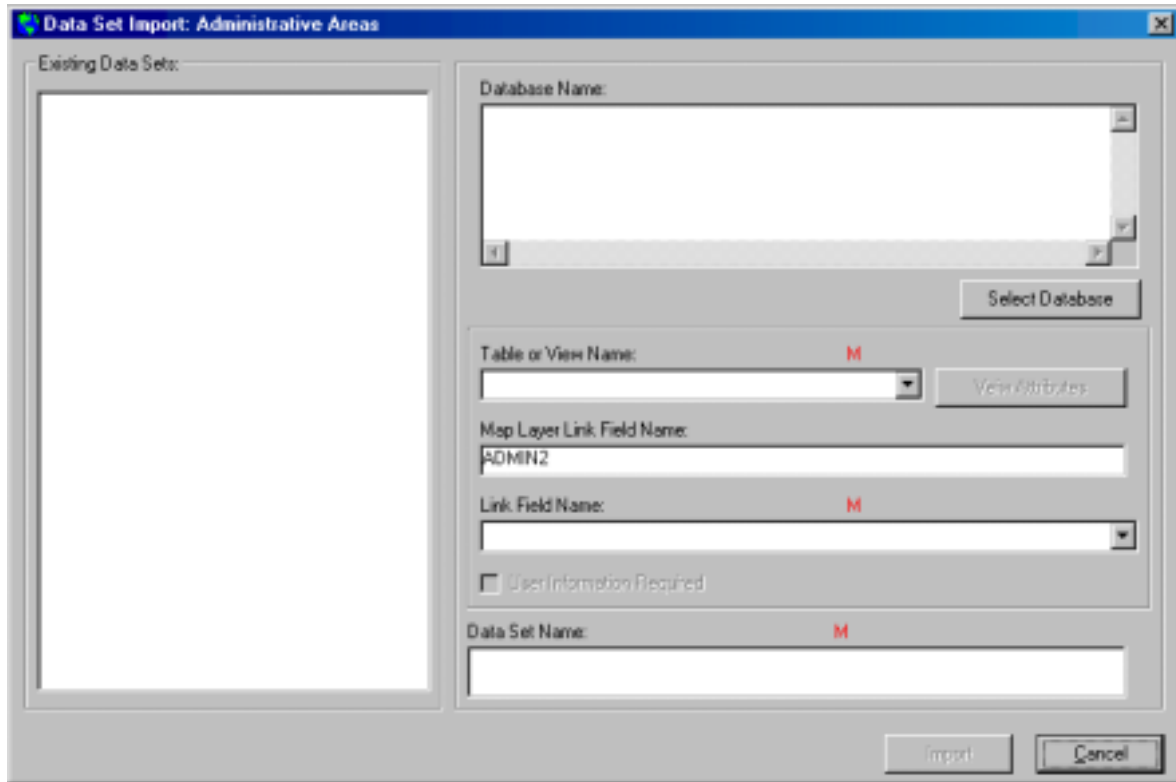
-  To pass all the data to Excel, use the **Spreadsheet File / M/S Excel – All Records** function or the button on the tool bar. This launches M/S Excel, moves all the data from the Dynamic Maps Spreadsheet into Microsoft Excel, and closes the Dynamic Maps spreadsheet. Once in Excel, a link is maintained with the Map View, so that any selection of the data you do in Excel will be reflected in the Map View and visa versa.
- To pass just the currently selected data to Excel, use the **Spreadsheet File / M/S Excel – Selected Records** function. This moves selected records from the Dynamic Maps spreadsheet into Microsoft Excel and closes the Dynamic Maps spreadsheet.

If you transfer data from one Excel worksheet to another, the link with the map is not maintained in the new Excel worksheet.

The link with the map view and Excel is two-way but the link between the Dynamic Maps *Spreadsheet* and Excel is one way. Once the Dynamic Maps spreadsheet closes when Excel is launched, there is no dynamic way to return the data to the Dynamic Maps spreadsheet. If you make changes to the data using Excel and want to bring it back into Dynamic Maps, you can import the new data set by using the Import Data Set function in Dynamic Maps. This data import will bring the data set as a local/user data set, i.e., no one else will be able to access it. If you want everyone else to see the new data set, then ask your database administrator to register the data set as a system data set using the Dynamic Knowledgebase tool.

You may need to be patient! The process of transferring large data sets to Excel can take time.

Importing Your Own “User” Data Set



The data sets set up by the system administrator using Dynamic Knowledgebase and available to everyone are called “system” data sets. Dynamic Maps can also import data from your computer or elsewhere as a “User” data set. To import and access a user data set, the data set can be in Microsoft Access (.mdb) format, Microsoft Excel (.xls) format, dBase IV (.dbf) format, or stored in an Oracle database. The data set to be imported must have a field that can be linked to the active map layer’s identifier field. User data sets, once registered, are only available to your computer.

In order to import a data set, you must first have a map layer active in the map view. You will be tying the records of the tabular data set you are importing directly to a spatial feature in the map layer – and therefore the system needs to know to which map layer the tabular data set is being tied.

After setting a map layer active, choose the **Data Set / Import Data Set** function from the map view menu. The Data Set Import form (shown above) will be displayed.

Click the **Select Database** button on the form and the following sub-form will be displayed:

The screenshot shows a dialog box titled "Data Set Type". It has a "Database Type:" section with four radio buttons: "Access" (which is selected), "dBase", "Excel", and "Oracle". Below these is a "Browse" button. The next section is "Server Name:" with an empty text box. Below that is "User Name:" with an empty text box, followed by "User Password:" with an empty text box. The final section is "Database Name:" with a larger empty text box. At the bottom right are "OK" and "Cancel" buttons.

Access, Excel, dBase Databases:

Select the database type and click **Browse** to locate the database on your machine or network. If the Access database has a password then you will also need to specify this in the **User Password** field. Click **OK** to go to the registration form.

Connecting to an Oracle Database:

If you are defining a connection to an Oracle database, the **Browse** button will not be active, but you will need to input the Oracle **Server (Service) Name**, as well as your **User Name** and **User Password**.

Definitions:

Database Table: A **Database Table** is a collection of data about a specific person, place, thing or event. Using a separate table for each thing means the data is stored only once, making the database more efficient and reducing data errors. Tables organize data into columns (called fields) and rows (called records).

Database View:

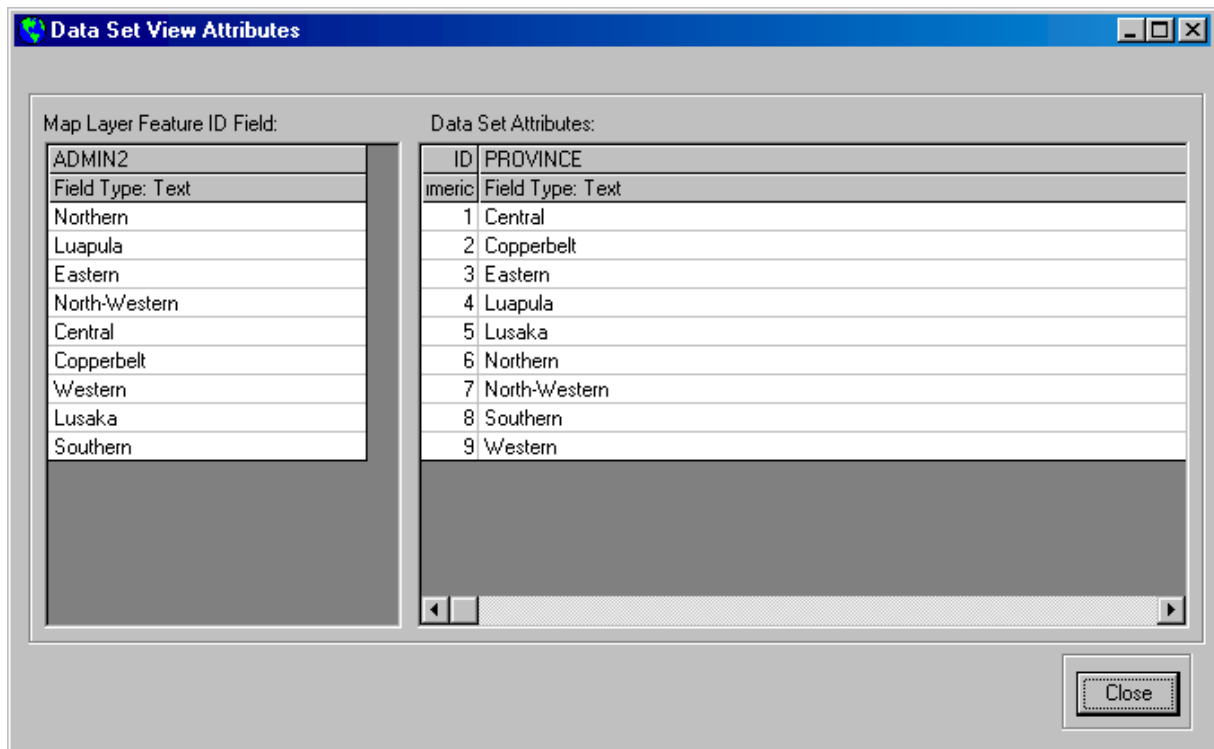
A **Database View** is a subset of fields from a specific table, or a number of fields from different tables that have been joined together. Views are a powerful way by which specific data can be accessed from a relational database. Note, it is also possible to use Access views to link to external databases and other types of databases through its Open Database Connectivity (ODBC) functionality, thus enabling Dynamic Maps to work with data maintained in other operational databases that are not directly supported. Please ask your system administrator for more details if you need to get at data held in different tables and databases.

The **Existing Data Sets** field reflects all the data sets that are either available as System data sets or User data sets for this particular active layer. You may want to quickly scroll through the list to determine whether or not your data set already exists.

The **Database Name** field reflects the name of the database that you have just selected. It cannot be changed from this form. If you have selected the wrong database, click **Select Database** again to back out to the Map View and start again.

The **Table or View Name** field reflects the tables and views in the database. Choose the table / view by highlighting its name in the list. If you have chosen an Excel spreadsheet, this will list the various tabs in the spreadsheet. The **Link Field Name** field will be populated with all available fields in the table / view based on your selection. Depending on how the data set was set up, the table / view name will usually describe a particular subject matter of interest and is therefore a good clue as to what table is most appropriate to meet your needs.

The **View Attributes** button enables you to list the contents of the database as well as the field types. It also shows the values associated with the map layer’s “Feature ID” field. With this, you are quickly able to see what field in your database should be the “**Link Field Name**” and whether or not there may be problems with the linkage (such as misspellings, incorrect numbering or different field types).



For each field, you can right-click on the field names to get a variety of functions. For each field you can:

- **Sort Ascending and Sort Descending.** Choose one of these to sort the records in the Data Set Attributes table or the Map Layer Feature ID Field table based on the table and column over which your cursor was clicked. This helps identify the high and low extent of the records in that field and it works on both numeric and text fields.
- **Set Link Field:** When you right-click over the Data Set Attributes fields you can assign that field as the Link Field. This is a quick way to select the field that you want to use as the Link Field (see **Link Field Name** described below).

The **Link Field Name** values will now appear for your chosen table or view. Choosing the right link field is vital. The link field is the field that relates the record in the data set to the active layer’s feature. Each feature in the map layer has a unique ID. Therefore, there needs to be a column in the imported data set that reflects this in order for the data set to be linked to the corresponding map layer features.

Use the **View Attributes** button to help ensure a match between the Link Field in the data set and the Map Layer’s Feature ID field.

At this point, you will be able to confirm whether or not you are able to relate this particular data set to the active map layer. If say, you are importing a data set and trying to link it to a District map layer, but the appropriate Feature ID is not in the **Link Field Name** list, then you will not be able to relate the records in this data set to Districts.

For example, if you are importing a data set that has information about, say, certain economic indicators within various regions, three conditions must be met:

- a) there must already be a selectable map layer for "Regions" with a unique Feature ID for each region. It would need to be the active layer; and,
- b) the economic indicators tabular data set must have a field whose values correspond to the relevant map feature's Feature ID. In this way, each record in the data set can be "linked" to its appropriate region. This field name will appear in the **Available Link Fields** field.
- c) The two fields that will be linked must be of the same data type, i.e., they must both be integer, or text – you can't join two different field types.

Give your data set a name in the **Data Set Name** field. The **Data Set Name** will appear in the listing of **Available Data Sets**. Because this is a user-imported data set, it will appear with a red symbol to differentiate it from the system data sets, which have a blue symbol.

Note: Your data set can have some records that do not link to any features on the active map layer. This is perfectly acceptable. However, if there are no records in the data set that link to the active map layer features then the import will not be allowed and you will get a message indicating this.

Considerations for Importing an Excel Spreadsheet:

When importing an Excel spreadsheet, the system will assume that the first row of the spreadsheet contains your field headings.

Any OLE objects in the spreadsheet will not be shown in the grid – such as graphs.

When matching on a non-numeric field, sometimes a record in Excel will look like it's spelled correctly, but in fact there is a blank space before or after the name that you can't see. If so, the link with the map layer won't be successful. Sometimes the words are spelled slightly differently, and sometimes there is different capitalization.

Advanced Considerations: In cases like this, you should actually import the excel spreadsheet into Access. You'll now see much more clearly if there is a blank space. Also in another table, import the map layer's .dbf file into the same database. If you do a join of the two ID fields by creating an Access query - depending on how the join is done you can tell what records are exactly the same and what aren't, and therefore what records won't link.

Deleting a User Data Set

To delete a data set, use the **Data Set / Delete Data Set** function from the map view menu. All the existing user data sets available for the current active layer will be listed. Select the one you no longer need by clicking on it and then clicking **Select**. The name will appear on the form to confirm this is the data set you want to delete. If so, click **Delete**, if not, click **Cancel**. If you delete a data set that is opened in Spreadsheet view, you will have to close the Spreadsheet before the data set is deleted.

You can only delete user data sets that you have imported. System data sets can only be removed by using Dynamic Knowledgebase tool.



You can only delete a user data set if its associated map layer is active.

Using Query Builder

Introduction to Query Builder

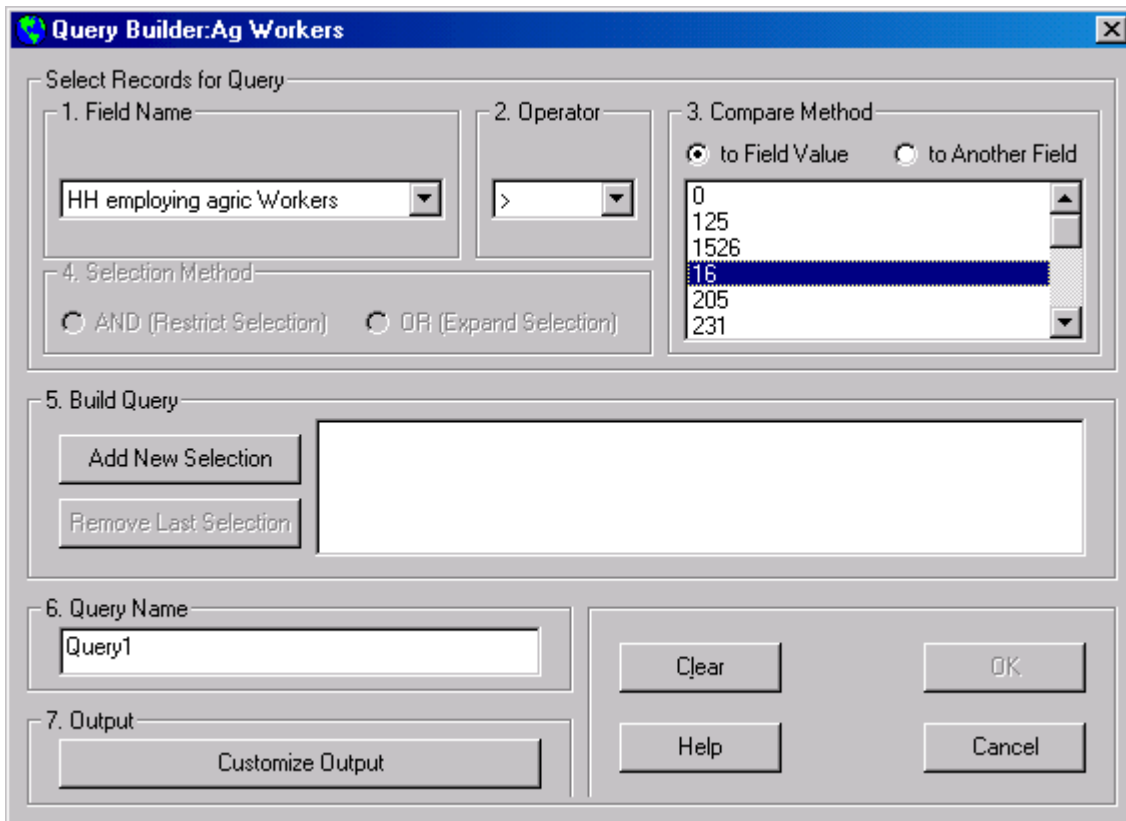
The query builder provides a powerful way to pick and choose records from the data set based on various parameters and various fields that you assign. The idea of query builder is to create a new data set that contains only records that meet certain criteria and contain only the fields that you are interested in. By doing so, you can then select these records or create a more meaningful class rendering for them on the map.

The results of a query only stay active while the spreadsheet is open.


If you want to save the result of a query as a user data set, send the query results to Excel and save the Excel file. Then import that Excel file as a User Data Set!

Building queries that work perfectly may take a bit of practice, but you will quickly get the idea of it and should be able to create temporary data sets that reflect your needs and intentions.

Once the query is built, the results can be reflected in the map view as selected records, used for class rendering, and/or sent to Excel for further analysis, chart making, and business graphics.



How to Use Query Builder

 To use the query builder, you need to be in the Dynamic Maps Spreadsheet and have a tabular data set selected. The query builder works on the selected data set. Launch query builder from its button or from the **Spreadsheet Tools / Query Builder** menu function. The form above will appear with the **Field**

Name filled with the first column heading from the spreadsheet and the **Available Fields** list populated with all the column headings from the spreadsheet.

The first main step is to define the criteria by which the query will select your records. You can go through this selection process several times, so you can define a fairly detailed and exact subset of records.

1. Choose the **Field Name** from the pull down list of field names (spreadsheet column headings) on which the selection criteria will work.
2. Choose an **Operator**.
 - For numeric fields you have several mathematical operators available, such as equals (=), less than (<), greater than (>) and not equal (<>).
 - For text fields, you can use the “Like” operator to extract fields with the same value. The <> operator will give all values but the chosen one.
3. Choose the **Compare Method** that the operator will work on. The operator can work against the values in the field by clicking on the “**To Field Value**” indicator; or it can work against another field in the database by clicking on the “**to Another Field**” indicator. In the first case, you have defined a criterion for the query that says records in the data set will be selected based on the value of a particular field. In the second case, you have defined a criterion for the query that says the records in the data set will be selected based on the relationship between one field (the “**Field Name**”) and another the (“**to Another Field**”).

For example, if you want to select all records in one field that have the same value as records in another field, you would define the criteria with a Field Name, the “=” Operator, and the “to Another Field” field with the field selected that has the matching values.

4. **Selection Method:** Each expression you create (except the first expression) can either add to the selected record set or restrict the selected record set.
 - **AND (Restrict Selection)** includes the criteria as defined and tells the query builder to search based on it and any other criteria in the list. Use this button if this is the first expression you have defined for the query. Using multiple **AND** statements tends to *reduce* the number of records that will be returned, since selected records must meet each and all of the criteria that you set.
 - **OR (Expand Selection)** tells Query Builder to set up an “or” situation with the various defined criteria so that several situations might exist that a record is selected. When you use **OR**, you are *increasing* the number of records that the system will return. For example, use **OR** when you want to capture all records that have a field with a value greater than some high value or less than some low value. In this example, you set up the first “greater than” criteria with **AND** and then the second “less than” criteria with the **OR**.

Use **Or Into Criteria** to separate various scenarios for record selection. Every time you use an “Or” statement, the query considers the statements that follow to be a unique instance. With the “Or” statement, you can set up several criteria “sets” that can include multiple “And” statements – with each “set” started by an “Or” statement. With each “Or” statement, the query builder will

know when the new set of criteria begins and, once launched, will return records that meet any of the criteria sets.



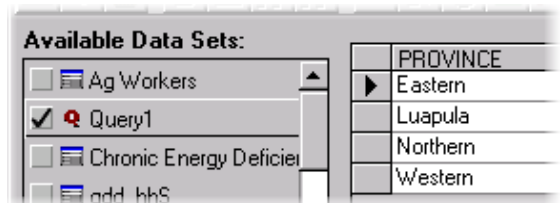
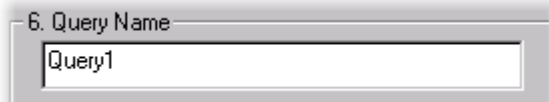
- Build Query:** To put the expression into the criteria statement in the “**Build Query**” field, you click the **Add New Selection** button. If you want to remove criteria, clicking the **Remove Last Selection** button will remove the last criteria in the query statement.

If you make a mistake or need to revise your query statement, select **Clear**. It will delete the entire statement and reset the form.

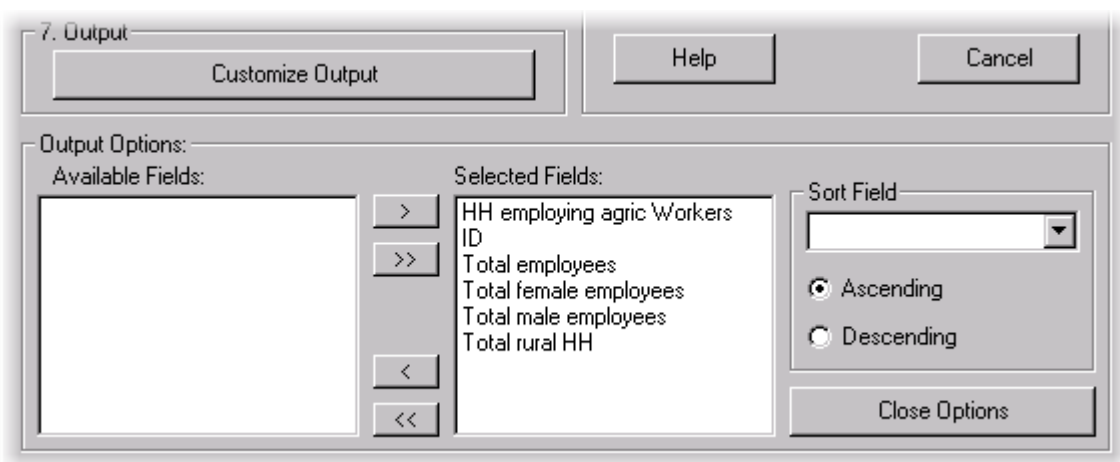


Some data sets may have improper values of “0” reported in a field(s) when the data for the field(s) is not “0”, it is just unknown or not reported. If you notice this in your data set – particularly in the field of interest (say, population of certain provinces = 0), then you may need to eliminate those records by using the query function. Select the field name, choose the “>” operator and pick the 0 value as part of your query criteria. If some records legitimately do have a 0 count for that field, you will need to be more selective in the design of your query in order to weed out the illegitimate records.

The second major step is to customize the output of the query. Once your query statement is set, you can now define how the resulting data set will be output – what fields (columns) it will contain, how they will be sorted, and what the name of the query will be.



- Provide a descriptive name for the query in the **Query Name** field. This name you have assigned the query will appear highlighted in the **Available Data Sets** list and will have a unique “**Q**” symbol.



- Click the **Customize Output** button to see the bottom part of the form and to determine what fields you want to have in your resultant spreadsheet. The system defaults to having all fields available. If you want to remove any from the selected list, highlight the unwanted field and use

the **Move Back One** button to remove it from the list. If you want to remove all the fields, use the **Move Back All** button. To select individual fields from the **Available Fields** list, highlight the field and use the **Move One** button to put it into the **Selected Fields** list or use the **Move All** button to move all the fields from the **Available Fields** to the **Selected Fields** list.

Sort Field: Finally, you can choose a field to have the resulting spreadsheet sorted by. Select the field by using the pull-down "**Sort Field**" menu and choose whether the field should be sorted Ascending or Descending. These functions are also available in the spreadsheet.

The data set's Link Field will automatically be added to the spreadsheet when you build a query so that a link with the Map View is maintained.

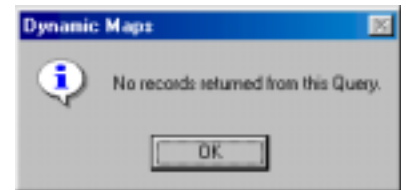
Note: The Selected Fields you put into the output do not have to be the same fields on which you based the criteria. For example, if you are setting up a relationship to show the number of cattle greater than 100 for farms in a province, then the Selected Field might only need to be the "Number of Farms" field and the query's criteria might be something like "Number of Cattle > 100".

Finally, click **OK** to accept the query and the form will disappear and the query results will be shown in the spreadsheet.

Troubleshooting:

If your query selection is too narrow or you have made a mistake, Dynamic Maps will provide the following message when you submit the query "No records returned from this query." This may be happening because:

- a) For criteria statements that you have defined with more than one criteria, the most common mistake is using too many limiting "AND" criteria. Every time you use an AND selection method you are telling query builder that the record must satisfy all the criteria in the same statement (unless it is separated by an "OR" selection method). Look at your query criteria statement again – did you mean to use an "OR" selection method statement instead?
- b) For criteria statements with one criteria, you may have used the Greater Than (>) operator and chosen the maximum numeric value in the **Compare Method** list, or the Less Than (<) operator and chosen the minimum numeric value in the list. There are no records with fields greater than or less than these values.
- c) For criteria statements that match the values of one field against another, the fields may have no values that match.

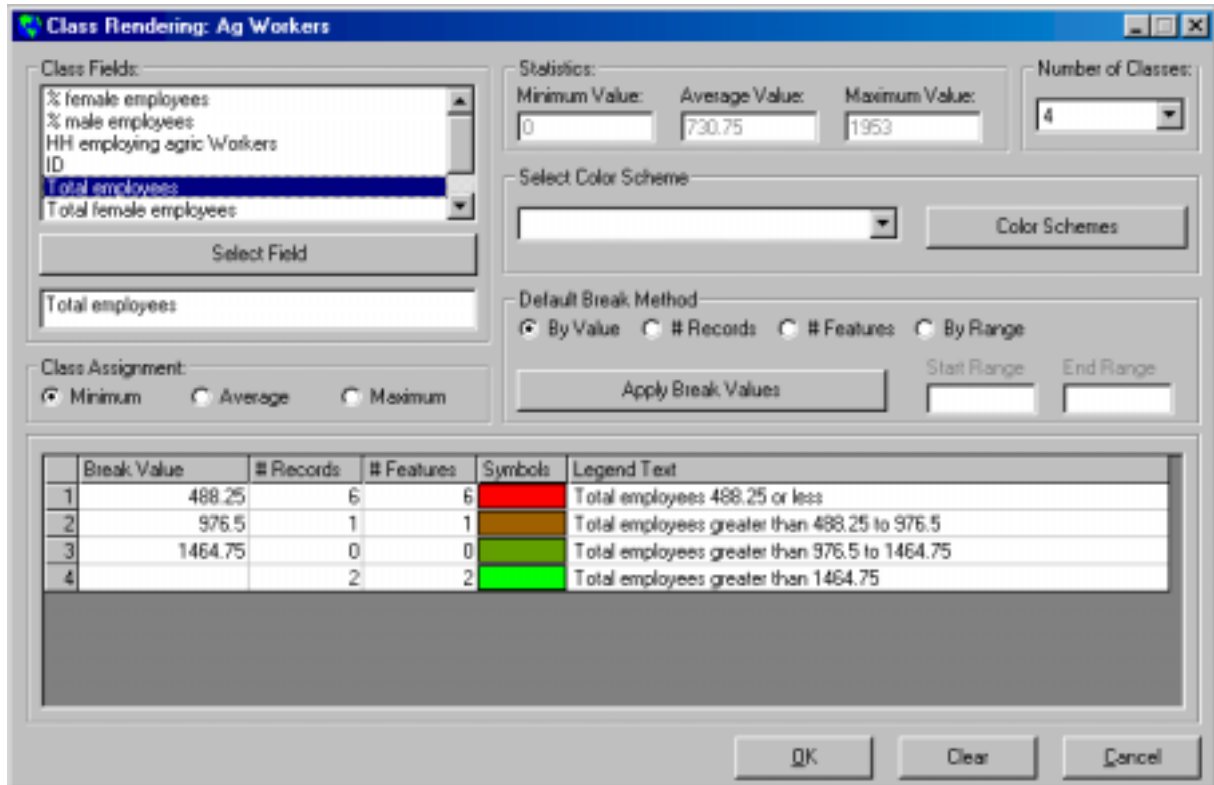


Doing Class Rendering

Introduction to Class Rendering

Class Rendering is a way of visualizing your tabular data with a map. By using class rendering, you are able to divide the spreadsheet's records into meaningful value-ranges or partitions ("classes") and then display ("render") these on the map in different colors and styles. This is a particularly useful function when you want to illustrate spatial data trends and distributions.

Class rendering is different from the query function. The query function acts on the various records and returns a certain subset of the database. With class rendering, you are working on a particular numeric field and all that field's values. Therefore, if you only want to class render a few records in the database, first run a query to return only those records.



How to Do Class Rendering

Select the data set from the list of **Available Data Sets**.



Select the **Class Rendering** button or **Spreadsheet - Tools / Class Rendering**. You will get the Class Rendering form (as shown above) that will show you the available **Class Fields** in the data set and “**Number of Classes**” will default to four.

Class fields are all numeric fields. You can't class render based on a text field.

Select the field from the **Class Fields** list on which you will be working. Do this by clicking on the field name and click **Select Field**. As soon as you do this, you will notice that Dynamic Maps will look through all the values in the selected field to determine the Minimum Value, Maximum Value and Average Value in the “**Statistics**” area.



Using these values, you can now determine how many “classes” or categories/splits you want to make and at what value each break/split should occur. Use the “**Number of Classes**” field to set the number anywhere between 2 and 10.

Break Value	#
1	488.25
2	976.5
3	1464.75
4	

Once you set the number, Dynamic Maps will automatically update its Class Breaks fields to show the chosen number of breaks and will display some default rendering properties for each.

Changing Color Selections

If you don't like the system's default color scheme, you can:

- Double click on the color in the “**Symbols**” field. This will bring up a rendering form for that type of data (point or line or polygon). This allows you to individually specify the rendering properties for each class. (See the Symbols Rendering Properties discussion below)
- **Select Color Scheme** from the drop-down listing. If none of the available color schemes are suitable, or if there are no color schemes, you can define your own color scheme by clicking the **Color Scheme** button.

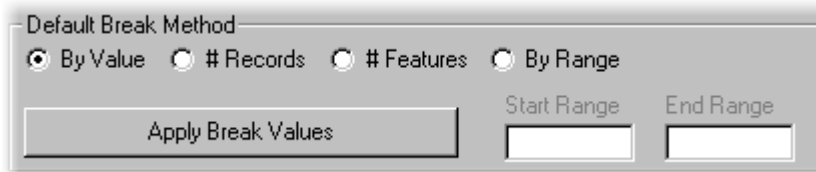
Symbols	
6	T
1	T
0	T
2	T



See **Defining a Color Scheme** below for more information about how to create and edit a Color Scheme.

Note: The color scheme function only sets the fill color parameter for the rendering properties of each class. Other rendering properties, such as transparency and outline need to be set manually for each class if you want them changed from their default.

Define the "Break Method" and the "Break Values"



The key to using Class Rendering is setting up meaningful break points for the data. You have the choice of determining the Break values in one of four ways:

- The default method is **By Value**. With this, Dynamic Maps defines even split points in the data based on the minimum and maximum values divided by the number of classes selected. Look at the **# Features** column in the class rendering spreadsheet to determine how many map features will be displayed in each break. You can then adjust the **Break Value** for each break if you want to get an appropriate number of features, or more meaningful break values. Click on the actual break value and type the number that you want. The number you enter must be less than the next break value.
- If you choose the **# Records**, the system tries to create the breaks by allocating an equal number of records to each class. Note: this may be misleading or it may appear not to work because some data set records can have the same value, and these would need to be in the same break. As a result, some breaks could end up with more or less records.
- If you choose **# Features**, the system tries to create the breaks by allocating an equal number of map layer features to each class. As with the **# Records**, the results may not always appear to be correct, because the values for several map features' records may be the same and therefore the system must classify these map features in the same break. If many map features have the same value as each other, the system will not be able to compensate and will give results that contain more features in some classes and fewer in others.
- If you choose **By Range**, the system enables you to actually set the range of values for the data, and it ignores the minimum and maximum values in the data. This way, you can create ranges with no features in the lowest or highest breaks. This is particularly useful, for example, when you have data that are percentages and you want to show the whole range from 0-100 even

	Break Value	# Records	# Features
1	488.25	6	6
2	976.5	1	1
3	1464.75	0	0
4		2	2

though you have no data in the high or low percentage. Define the range using the **Start Range** and **End Range** fields.

Each time you change or assign a new **Break Method**, you need to click the **Apply Break Values** button. This will refresh the Class Properties with the new values.

After setting your break values, the class rendering spreadsheet (the bottom part of the form) will show you how many records in the database and how many features on the map layer are going to be associated to each class. If one class has substantially more records / features than another, or no records at all, you may want to edit the Break value(s). Click on the actual break values and enter the value you want. Continue to edit until you are satisfied that your map will best portray the information.

	Break Value	# Records	# Features
1	488.25	6	6
2	976.5	1	1
3	1464.75	0	0
4		2	2

Class Assignment

Another item to consider at this point is the **Class Assignment**. The Class Assignment fields can be very important to your final product and you may need to try different settings to see the difference each makes. See the **Class Assignment Scenario** below for an example of how this works.

Class Assignment:





Minimum Average Maximum

The Class Assignment kicks in when a geographic feature that is being rendered has more than one class associated with it – i.e. a map feature with several associated tabular data set records that fall into more than one class. Say, for example, you have assigned different classes based on budgets for a data set that is based on a “districts” map layer. If several projects are underway in the same district and they have widely varying budgets, then that district can be assigned to different classes. Since the district can only be rendered with one set of properties (belong to only one class), the Class Assignment fields enable you to tell Dynamic Maps how to treat these instances of multiple varied classes for one map feature.

- When Class Assignment is set to “**Minimum**”, then the associated geographic feature will be rendered based on the rendering characteristics assigned to the lowest valued class applicable.
- When Class Assignment is set to “**Maximum**”, the associated map feature will be rendered based on the rendering characteristics assigned to the highest valued class applicable.
- When Class Assignment is set to “**Average**”, the various records associated with that geographic feature will have their Class Fields averaged, and the appropriate rendering color will be assigned to that feature based on that average value.

Symbols Rendering Properties

Depending on whether the map layers are point-type, line-type or polygon-type, their features’ rendering properties can be changed to reflect a wide variety of types and colors. For polygon layers, the default rendering properties have a black outline and a solid fill. To change the rendering properties for any or all of your classes, click on the color swatch or symbol in the “**Symbols**” field for the class you want to change. Use the Class Rendering - Rendering Properties form to set the color of the feature, the style, and the outline color.

	Symbols	
6		T
1		T
0		T
2		T

Tip:
 Solid fills will prevent any other feature underneath them – such as rivers, points, place names, etc. – from appearing. If you want your class rendered features to appear a uniform color, and you want the features underneath to show up in the display, choose a “highly transparent fill” or “somewhat transparent fill” as the style for the feature rendering. As a result, your features will still have a uniform color, but they will also be highly or slightly transparent so the other layer features will be visible beneath.

Setting Legend Text

By default, the system creates a class rendering legend that will appear in the map view. You are able to change the text that will appear in the map legend. Click on the **Legend Text** field value and type in the new text to replace what's there.

Legend Text
Total employees 488.25 or less
Total employees greater than 488.25 to 976.5
Total employees greater than 976.5 to 1464.75
Total employees greater than 1464.75

Once you are happy with the parameters click the **OK** button at the bottom of the form. The system will close the Class Rendering form and display the results on the map.

If you do not like the results you can go back into the Class Rendering form and make appropriate changes. The system remembers all your parameters while the class rendered map is available. To permanently save the class rendered map use the **File / Save View As** function. Next time you return to this view, the class rendering parameters will be saved and available for you to reuse.

Tip:
If you only want to do class rendering on a particular set of records in the spreadsheet, then create a new data set with only those records. To create a new data set, design a query that will produce a list containing only those data records.

Tip:
Use the Clear button to clear the Class Rendering form if you want to try different parameters.

Tip:
If you want to save your class rendering, you can do this by using the **Save View As** function. Next time you return to this view, the class rendering parameters will be saved and available for you to reuse.

Question:
The Class Field I want to use isn't on the Class Fields list. Why not?

Potential Solution:
The Class Field will list only those fields that have numeric values. Are you sure the field is a numeric field? Sometimes a field with numbers in it will actually be defined in the database as a text or string field. One way to test if the numbers are actually defined as numbers in the database would be to try to do a column sum or average on the field using the Spreadsheet. If you can't, that's why.

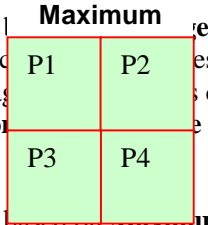
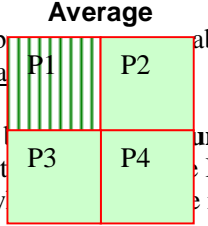
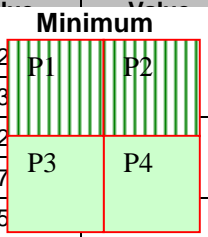
If this is the case, you may need to contact your systems administrator for assistance in redefining the data – or send it to Excel and try changing the types yourself and then re-import it as a user data set.

Class Assignment Scenario

The following is a simplified scenario to help make it easy to understand how spreadsheet data are treated in a class rendering depending on their class assignment. Remember, class assignment only makes a difference when one or more map features have more than one record related to it in the spreadsheet.

Say my map has four “regions”. I want to consider an attribute that is present in the spreadsheet for all four regions, but for two of those regions there is more than one value for that attribute as shown in the following table. I want to render the map into two classes, so that regions with a value less than 3 are rendered as vertical lines and those with a value of 3 and above are rendered as solid.

Region	Data Set Attribute Value	Average Attribute Value	Minimum Class Render as:	Average Class Render as:	Maximum Class Render as:
P1	2	2.5	Lines (value=2)	Lines (value=2.5)	Solid (value=3)
P1	3	2.5			
P2	2	4.5	Lines (value=2)	Solid (value=4.5)	Solid (value=7)
P2	7	4.5			
P3	5	5	Solid	Solid	Solid
P4	4	4	Solid	Solid	Solid



Looking at the Attribute Value column above table, Regions P1 and P2 have values that could put them in either class.

If I choose to render based on **Minimum Class Assignment**, then regions P1 and P2 would be rendered with vertical lines. I am telling the system "consider the lowest attribute value in the region when assigning the rendering" and they both have a minimum value lower than 3.

If I choose to render based on **Average Class Assignment**, then the system sums the relevant values in each region, takes an average of these, and then renders the regions based on those average values. In this case, all the average values except Region P1 are 3 or greater, and so regions P2, P3, and P4 are rendered as solid while P1 is rendered with vertical lines.

If I choose to render based on **Maximum Class Assignment**, then all my regions would have the same solid color, because I would be telling the system "consider the maximum value in the region when assigning the rendering" and all four regions have an attribute value of three or greater.

Using the Results of Class Rendering

Once you have conducted the Class Rendering and the results are displayed on the map view, there are some options available to you to get your view ready for map composition.

1. You can draw graphics and add text.
2. You can conduct measurements of area and distance.
3. You can zoom in and out as well as pan.
4. You can individually select those features that have a class value of interest.

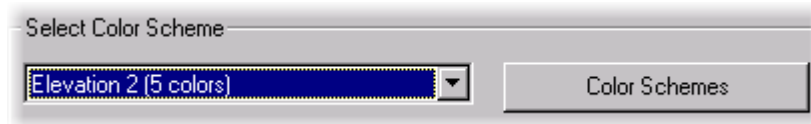
A "+" sign is now beside the active layer on which you did class rendering. Clicking on it will reveal the rendered feature class legend and their associated color. These will be carried over to your map legend when you compose a map.

To clear the class-rendered map, use the **Spreadsheet Tools / Class Rendering - Clear** function.

Defining a Color Scheme

Dynamic Maps enables you to manage the color schemes you use for creating class rendered maps. There are several functional components and options for creating, editing, and managing your color schemes.

The Color Scheme functionality is available from the Class Rendering form by clicking on the **Color Schemes** button or from the **Spreadsheet Tools / Color Scheme - Create** menu function.

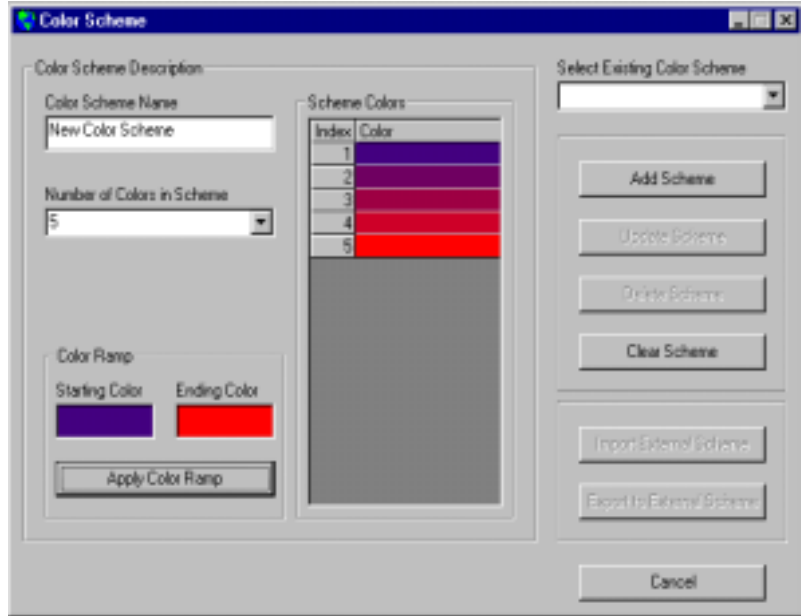


Creating a New Color Scheme

Give the scheme a name in the **Color Scheme Name** field. Identify how many colors you want in the scheme. When you do this, the **Scheme Colors** field gets filled with black swatches.

The fastest approach to creating a scheme is to use the **Color Ramp** feature. By clicking in the **Starting Color** and **Ending Color** fields you can define a ramp's beginning and end colors. Clicking **Apply Color Ramp** populates the other colors in the **Scheme Colors** display list.

If you want to change a color in the **Scheme Colors** display list, click on the color swatch and choose a new one.



When you are satisfied with the colors chosen, click **Add Scheme**.

Use **Clear Scheme** to clear the information on the form and start again. Any unsaved changes will be lost.

Note: The color scheme function only sets the fill color parameter for the rendering properties of each class. Other rendering properties, such as transparency and outline need to be set manually for each class if you want them changed from their default.

Managing the Color Scheme

If you want to edit an existing color scheme, use the **Select Existing Color Scheme** dropdown list to select the color scheme. Each color in the scheme can be edited by selecting it in the **Scheme Colors** field. If you need to update the number of colors in the scheme, you must update the number of colors first and then re-select the scheme before you can assign values to those new colors. If you want to update the name of the color scheme, type a new name in the **Color Scheme Name** field. After editing, select **Update Scheme**.

Deleting a Scheme

To delete a scheme from the list of available color schemes, select the scheme and then click **Delete Scheme**.

Importing a Color Scheme

To import a color scheme file provided by the system administrator or someone else, clear the form and click the **Import External Scheme** button. Locate the <scheme name>.clr file on your computer or on the network and click Open. The color scheme will have to have a unique name -- which may mean renaming an existing color scheme before importing if there are two schemes with the same names.

Exporting a Color Scheme

You can share the color schemes you create with your colleagues. To export a color scheme to an external file, select the color scheme you want to export and click "**Export Color Scheme**". Give the theme a file name and location and click **Save**. It isn't necessary to add the file extension .clr – the system will do this automatically when you name the file.

Working with Map Composer

The Map Composer is your tool for creating basic cartographic products that can be printed on standard office printers or sent to PowerPoint. With Map Composer, you add surround features such as a title, legend, graphics, and text to the map you created in the map view.

Building a Map Composition



When you have completed working with your map view and are now ready to create a map with it, select the **Map Composition** button or use **File / Compose Map**. The Map Composition Definition form appears.

Decide on what **paper size** you will be printing the map, or if it will be a PowerPoint slide. Paper sizes come in two **standard** formats – Metric sizes and Imperial sizes. The available paper sizes for both Imperial and Metric reflect the common sizes that are supported by desktop printers – and slightly larger. Select Imperial or Metric size and then pick the size from the Select Paper Size pull-down menu. If you are creating a map for exporting to PowerPoint, select the “**PowerPoint Slide**” option from the list.

Identify whether the map will be output with a **Portrait** (vertical) or **Landscape** (horizontal) layout in the **Select Page Layout** field. This is disabled for a PowerPoint slide which is a default landscape format.

Specify your printer for hard copy map output. The system displays your current default printer. You can change the **Current Printer** by clicking on the **Select Printer** button at which point a printer selection form will be displayed.

Once you have picked a paper standard, the map’s size, its orientation, and the printer, the system will indicate if there are any templates available for that size and orientation. If so, the **Select Template** button will become active.

CONCEPT – Map Templates

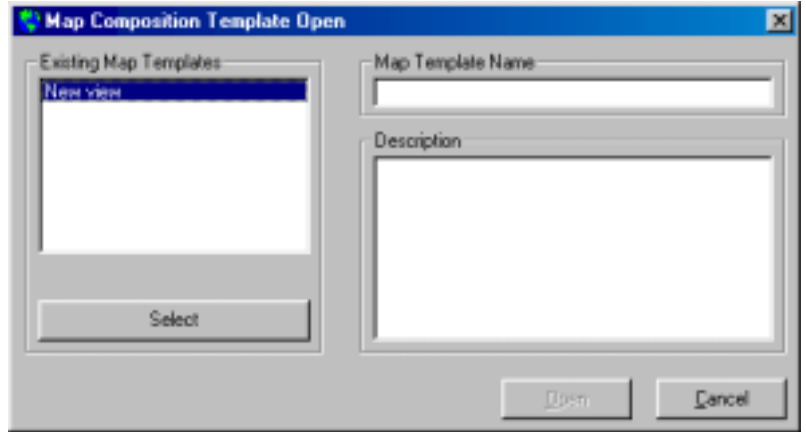
If you are creating several maps with similar design characteristics and surround features, you may want to create and use a map template. The Map Template is a preset design with the surround features already in place as previously defined. With the template, all you need to do is change/add

the appropriate text in any of the text components you may have included (like the Title) and then double-check the final layout and design before printing. Organizations can use map templates to standardize the map look and format.

The first time you create a map composition, there are no user templates. Templates are user-specific and need to be defined with each install of Dynamic Maps.

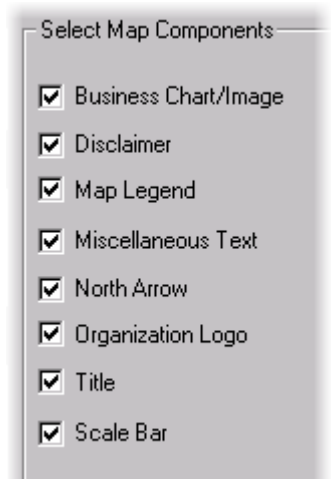
If you're using a Template:

If you want to use a template, choose **Select Template** and a list of all map templates for that paper size and orientation will be displayed. Select the template from the list and its name and description will appear. If that is the template you need, click **Open**. All the map component information on the form will change to reflect the template selected. In other words, those surround features in the “**Select Map Components**” area that are used by the template will be checked “on” and the others will not be checked. Unless you want to make changes to these presets, select **OK** on the form and the map composition will be displayed.



If you are not using a Template:

Once you have defined the paper size and orientation, select the various map components that you want to appear on the composition. Don't worry if you are not sure at this point what map components you want – you can always add or remove them later. Each map component is turned “on” or “off” by clicking on and off the check mark beside its name. You will get an opportunity to change them when you are in the Map Composition. When you have decided what components to start off with, click **OK** and the map composer will be displayed.

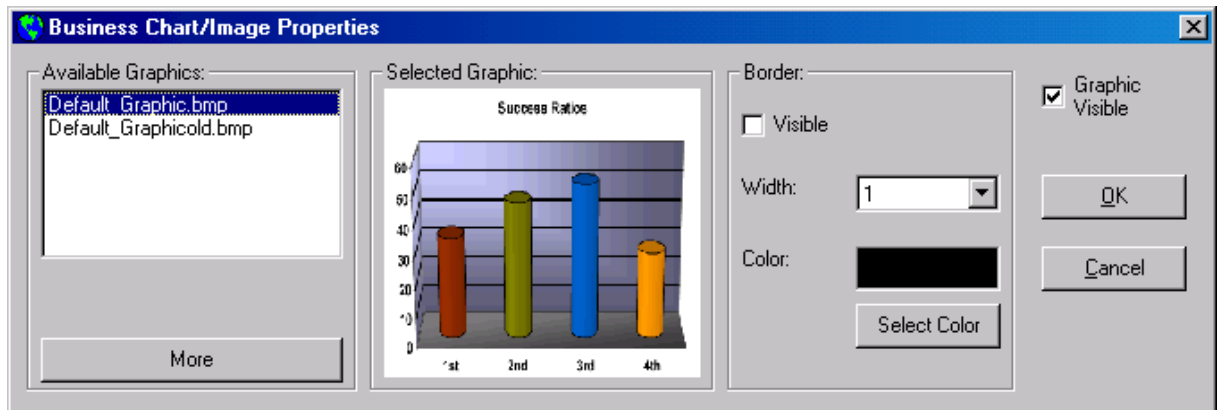


Each of the components on the map composer can be resized and several have properties, such as border, text, size and color that can be defined. The map components are accessible in the map composer's **View** menu or a component can be accessed directly by right-clicking on it.

Clicking on a map component with the left mouse button enables you to change its size and location. Move the mouse over the corners until little arrows appear and then drag the corner in or out to change the size. Note the resizing is proportional in both directions.

The Map Components

Business Chart/Image



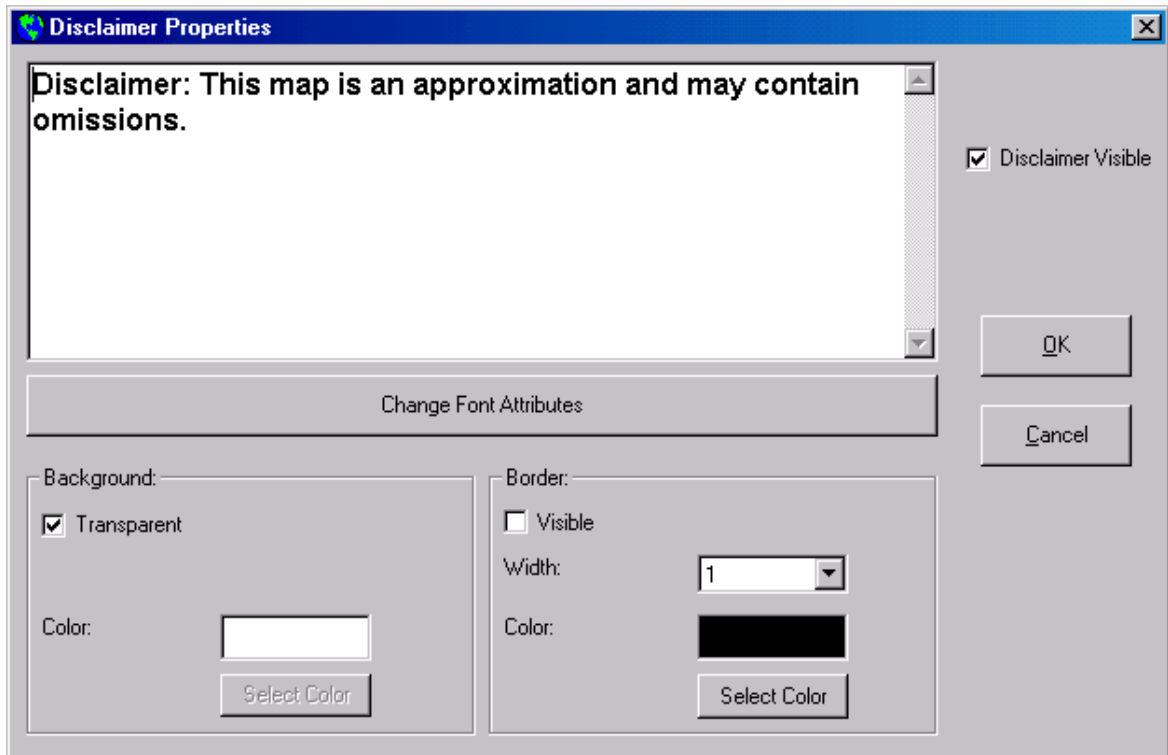
If you have an image in .bmp format that reflects or enhances the information shown on the map – such as a picture of the location, or a business graphic or chart, this component provides an opportunity to incorporate that image on the map composition. To access the form, right-click on the Business Chart/Image element or select **Map Composer - View / Business Chart/Image**.

Tip:

Here is a quick way to create a Key Map image for your map composition:
From the map view, zoom out to the full extent and draw a rectangle with the Draw functions reflecting the area of interest in the map composition. Copy the map view into the Windows clipboard using the **Edit / Copy All** function; launch an image manipulation program and paste the contents of the clipboard. Save the image as a .bmp file. Then when you create the map composition for the area of interest; right click on the default Business Chart/Image object to bring up the properties form and use the **More** button to select the .bmp file which will insert the “key map” image into your composition.

The **Available Graphics** field lists the graphics in the system’s “Business Graphics” directory. You can select any graphic on your system or network using **More**. When you do, Dynamic Maps will put a copy of the graphic into the directory and add it to your list of Available Graphics. These graphics all must be in .bmp format.

Disclaimer



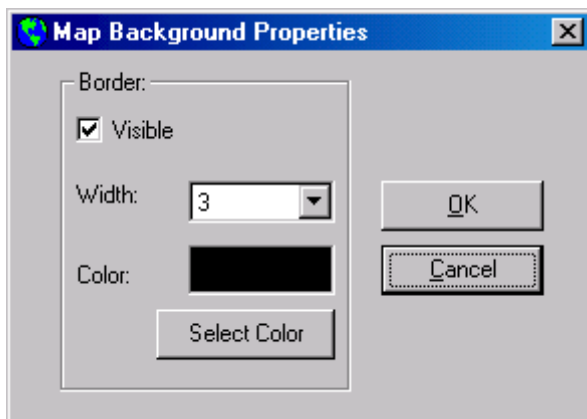
Disclaimer is a text field. Its default purpose is associated with copyright and other related notifications, although, you could use it for any text. To access the form, right-click on the Disclaimer element or select Disclaimer from the Map Composer - View menu.

Type the text you want (or copy from another Windows application) in the form. To change the font attributes such as size, style, font face, and color click **Change Font Attributes**.

You can also change various aspects of the field's appearance. To add a background color to the text box, turn off the "transparent" checkbox and select a color using **Select Color** or by right clicking on the color swatch. The text box can also have a border around it. Turn the border on and off by checking the Border Visible box. Set the width of the border – between 1 and 5 pixels – and provide a new color for the border if you want to change the default black color.

The map component itself is turned on and off, i.e. made visible on the Map Composition, by selecting the "Visible" checkbox.

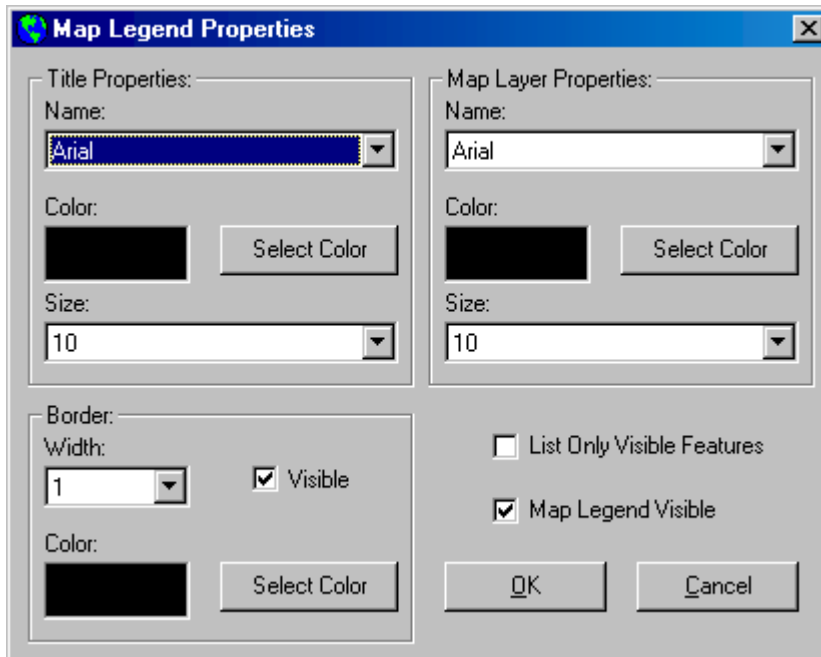
Map Background



The Map Background option provides you the opportunity to add a border around the map composition. To access the form, right-click anywhere on the map composition outside of any other elements or select **Background** from the map composer's **View** menu. To turn the border on, click the **Visible** checkbox. If you want a border, specify its width in pixels and if necessary, change the color by right-clicking the color swatch or using **Select Color**.

The output results may vary in effectiveness depending on the printer you use since the border may not match the paper's edge.

Map Legend



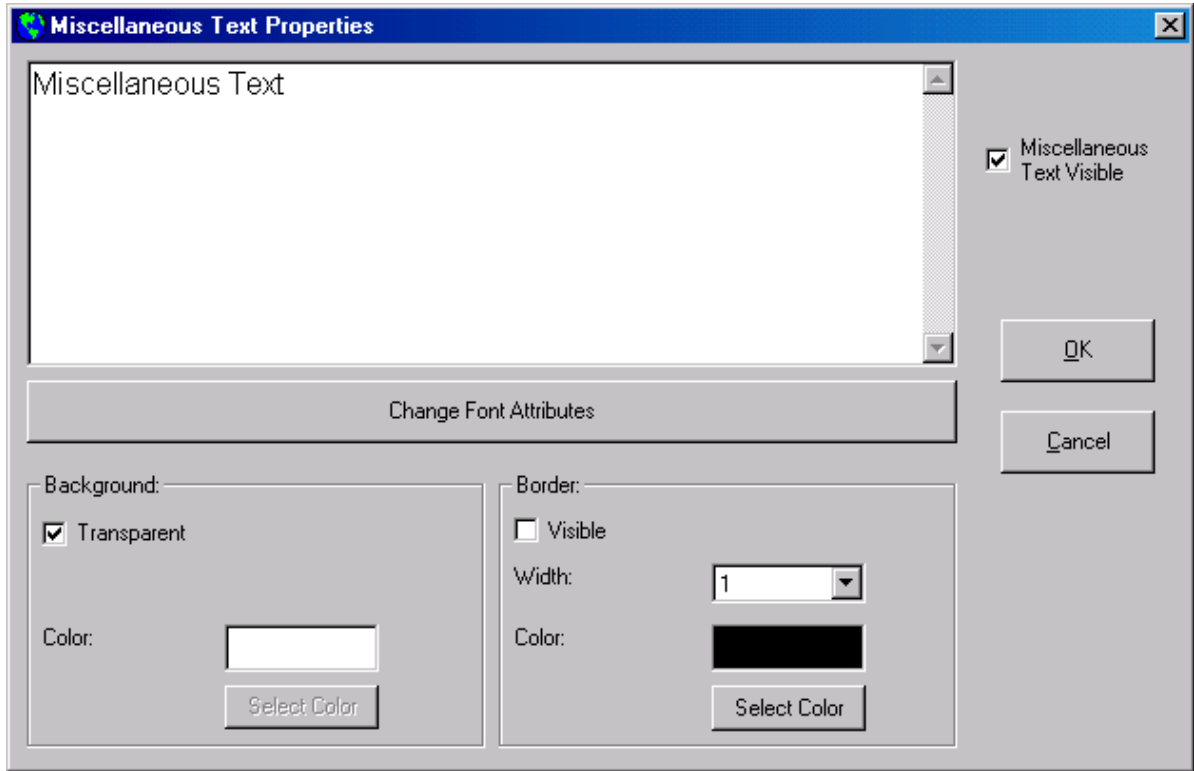
The Map Legend illustrates the various map layers shown on the map as well as any class rendering results. The legend is generated by the system based on the map layers that are turned on.

To access the form, right-clicking on the **Map Legend** in the map composer. It enables you to:

- Edit the font properties (color, font, size) of the legend title and of the map layer names.
- Edit the border's width and color and turn the border off.
- Ensure only Visible features are listed – meaning if a map layer is turned on, but has no visible features in the view, then it won't be in the legend.

If you publish the map composition in PowerPoint, you can edit the legend. By right-clicking on the legend, or by selecting **Map Composer - View / Legend**, you can define a border for it and turn its visibility on and off.

Miscellaneous Text



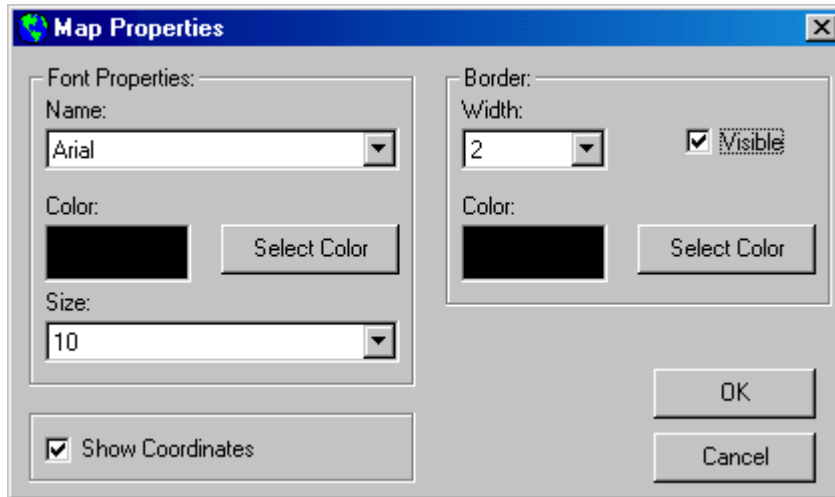
The Miscellaneous Text box enables you an opportunity to provide, say, a description of the project that the map represents or any other pertinent information. To access the form, right-click on the Miscellaneous Text element or select **Map Composer - View / Miscellaneous Text**.

Type the text you want in the form or copy text from another Windows application. To change the font attributes such as size, style, font face, and color click **Change Font Attributes**.

You can also change various aspects of the field’s appearance. To add a background color to the text box, turn off the “transparent” checkbox and select a color using **Select Color** or by clicking on the color swatch. The text box can also have a border around it. Turn the border on and off by checking the **Border Visible** checkbox. Set the width of the border – between 1 and 5 points – and provide a new color for the border if you want to change the default black color.

The map component itself is turned on and off, i.e. made visible on the map composition, by selecting the **Miscellaneous Text Visible** checkbox.

Map

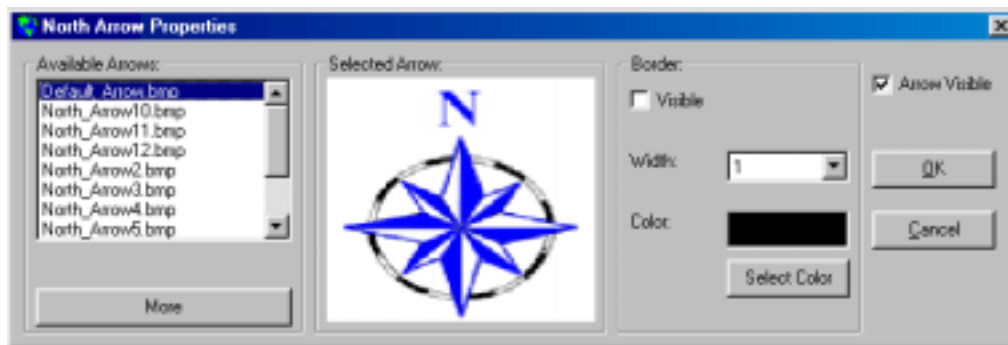


No matter what, the map will always be present! You can add a border to the map by right-clicking on the map element or selecting **Map Composer - View / Map**. Click the border visible checkbox to turn the border around the map’s image on and off. Its width and color can also be easily changed.

You are also able to turn on and off the coordinates that will appear on the corners of the map, as well as edit their font name, size and color.

If you publish the map composition to PowerPoint, the map component can be edited by converting the image and ungrouping its features.

North Arrow



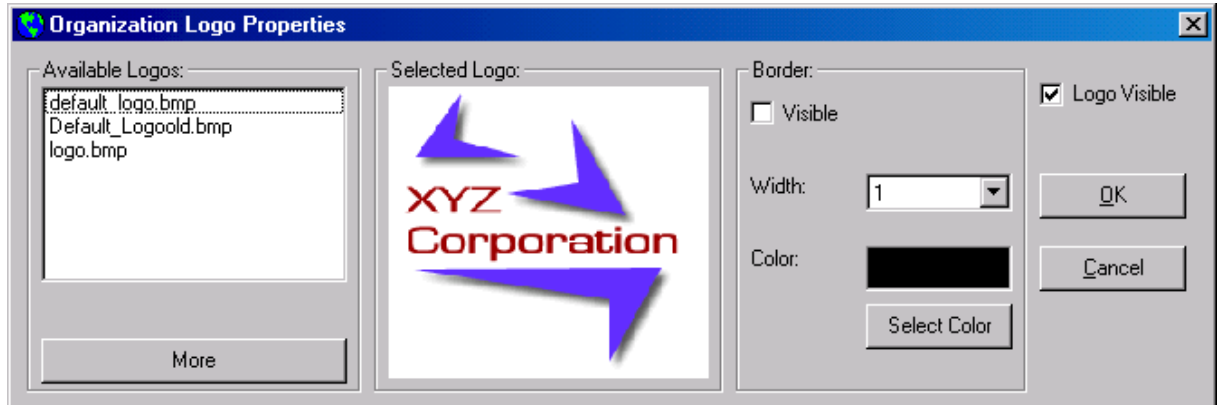
The North Arrow indicates the direction of North. Your map is always created with its orientation pointing straight up towards North - North at the top. To access the form shown below, right-click on the North Arrow element or select **Map Composer - View / North Arrow**.

You can choose from several different north arrow styles. Clicking on a name in the list will cause the graphic to appear in the **Selected Arrow** field. Some graphics may appear slightly distorted because the graphic is always stretched to fit the dimensions of the preview field.

You can put a border around your north arrow – which may be a good idea if the arrow is being used against a non-transparent background. Click on the “**Border Visible**” checkbox and assign an appropriate width and color. Use the “**Arrow Visible**” checkbox to turn the component on and off on your map composition.

To add a north arrow to the list of available arrows, use the **More** button to navigate to the image file. The graphic must be in .bmp format.

Organization Logo



The Organization Logo component provides the opportunity to include your organization's logo. To access the form shown below, right-click on the **Organization Logo** component or select **Map Composer View / Organization Logo**.

You can choose from any logo on the list. Clicking on a file name in the list will cause the graphic to appear in the **Selected Logo** preview field. Some graphics may appear slightly distorted because the graphic is always stretched to fit the dimensions of the preview field.

You can put a border around your logo – which may be a good idea if the logo is being used against a non-transparent background. Click on the “**Border Visible**” checkbox and assign an appropriate width and color.

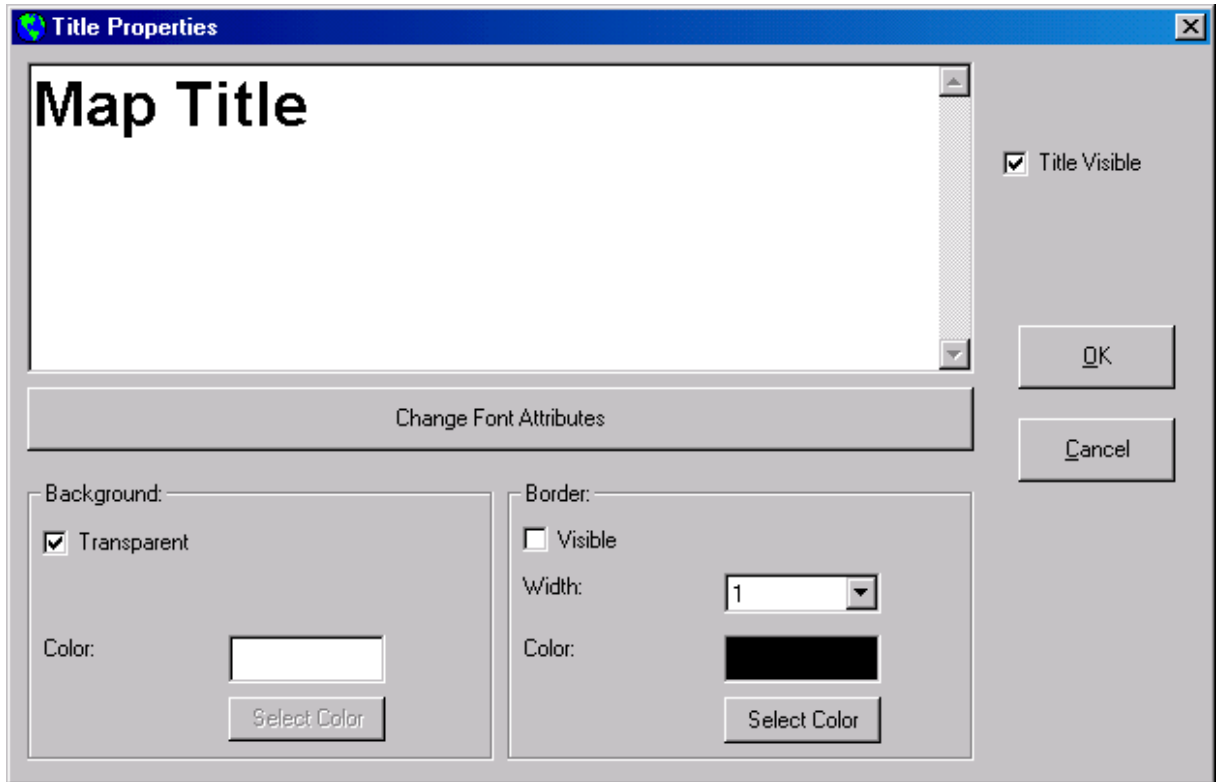
Use the “**Logo Visible**” checkbox to turn the component on and off.

Use **More** to add additional graphics (.bmp format) files to your **Available Logos** list.

Tip:

To change the default logo, copy the new logo graphic to the Program Files\Dynamic Maps\Pictures\Logo directory. Rename the Default_Logo.bmp file and then rename your logo to “Default_Logo.bmp” (note the use of the underscore). Your graphic file must be in .bmp format.

Title

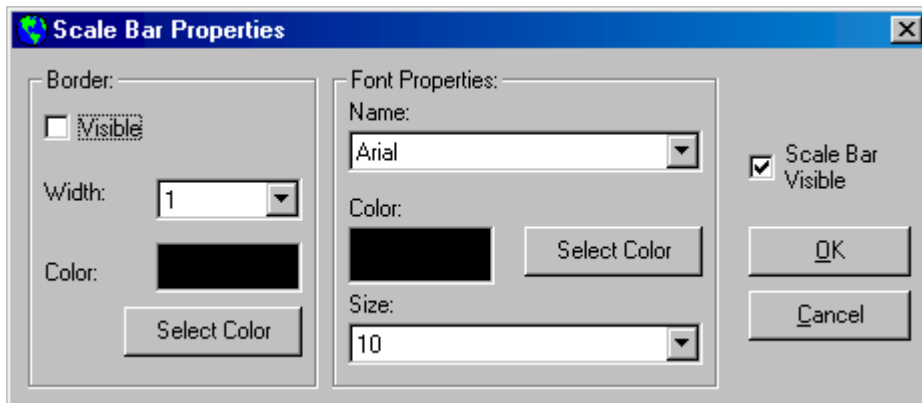


The Title field is a text field in which you can provide a title for the map. To access the form right-click on the Title element or select **Map Composer - View / Title**. Type the text you want in the form or paste the text from another Windows application. To change the font attributes such as size, style, font face, and color click on **Change Font Attributes**.

You can also change various aspects of the field’s appearance. To add a background color to the text box, turn off the “transparent” checkbox and select a color using **Select Color** or by right-clicking on the color swatch. The text box can also have a border around it. Turn the border on and off by checking the **Border Visible** box. Set the width of the border – between 1 and 5 points – and provide a new color for the border if you want to change the default black color.

The map component itself is turned on and off, i.e. made visible on the map composition, by selecting the “**Title Visible**” checkbox.

Scale Bar



The scale bar is a graphic that the system automatically generates to indicate the scale at which the map image is drawn. To access the form, right-click on the Scale Bar element or select Scale Bar from the **Map Composer - View** menu.

From the Scale Bar Properties form you can:


- Add a border to the scale bar image – which may be a good idea if the map uses a background image.
- Turn the scale on and off by the **Scale Bar Visible** checkbox.
- Change the font properties of the scale bar such as color, name and size.

If you publish the map composition to PowerPoint, you can edit the scale bar itself by converting and ungrouping the image.


Manipulating the Map Components

The various map components can be resized and moved to best suit your layout requirements.

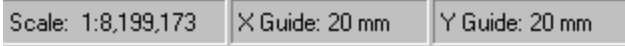
Moving a Map Component

Move your mouse cursor over the component until it becomes a four-way arrow symbol . Click on the component with your left mouse button and drag the component to its new location while holding the mouse button. Release the mouse when the component is in the proper location. You can use the horizontal and vertical guides to help you position the component at a specific location. The guides can be turned on/off from the **View / Guides Visible** menu.

Resizing a Map Component

To resize any of the map components, move the cursor over to a corner of the component until the cursor becomes a two-way arrow . Click the left mouse button and hold to grab the corner and drag to its new size.

Using the Map Guides

 On the Map Composition form, you have an important tool to help with the layout of the map and its surround features. These are the red-hatched map guides: the X Guide and Y Guide. These guides, the horizontal Y-Guide and the vertical X-Guide show you the position of the map feature. Their positions are displayed in inches or mm – depending on the paper type chosen and reflect the distance from the left hand side of the page for the X Guide, and the top of the page for the Y Guide. To move a guide, move your cursor over top of it until it becomes a two-way arrow, click and hold with the left mouse button, and then drag the guide to position.

Components “snap” to guides automatically. As a result, it is very easy to position components in exact locations and to line them up vertically and horizontally. To get a component to “snap” to a position, the X Guide must be near the left or right side of the component, or the Y Guide must be near the top or bottom of the component.

In the **Map Composer – View** menu you can select “**Guides Visible**” to turn the guides off and on.

Editing Map Component Properties

Each map component has several editable properties. To access these, put your cursor over top of the component and right click the mouse. This will bring up the component’s properties form. If the

component is no longer visible on your map composition, then you can access it from the **Map Composer - View** menu.

Changing Border Properties

You can turn on or off a component’s border in the final composition by checking the “**Borders Visible**” checkbox.

The map component will still appear to have a border while in map composition mode so that it can be easily resized and positioned. However, the border will now be light gray in color.

To change the border colors, click **Select Colors** and choose from the basic set of colors.

Using PowerPoint



You can create a PowerPoint slide instead of a paper map by selecting PowerPoint Slide in the Map Composition Definition Form’s “Select Paper Size” field. When you are in Map Composer, selecting **Map Composer – File / PowerPoint** launches PowerPoint and creates a new “presentation” with your map composition on a slide. At this point, any changes you make in PowerPoint to the map composition are not retained in Dynamic Maps.

When you choose to create a PowerPoint slide, the various map components are transferred as a text box, an editable picture, or as an image. These can have various effects and enhancements applied including shadows, borders, and fills. Text boxes can be rotated and given 3-D effects. Pictures have a variety of formatting tools available through the Picture Toolbar - such as transparency, contrast, and brightness.

Component	Component Characteristics
Business Chart/Image	The Business Chart / Image is transferred as an image.
Disclaimer	The Disclaimer is transferred as a text box.
Map Background	Map Background is not transferred.
Map Legend	The Map Legend is transferred as an editable picture object.
Miscellaneous Text	The Miscellaneous Text component is transferred as a text box.
North Arrow	The North Arrow is transferred as an image.
Organization Logo	The Organization Logo is transferred as an image.
Title	The Title is transferred as a text box.
Scale Bar	The Scale Bar is transferred as an editable picture object.

The map itself is transferred as an editable picture object. To edit the map, select it and click OK when challenged to convert the object and then “Ungroup” from the Draw menu. Now every feature on the map consists of one or two shapes on the PowerPoint slide. Click outside the map to unselect all features and now click and edit the feature(s) you want. Because entire features are transferred to PowerPoint, some features may actually lie partially outside your map composition area on the slide. You may want to select and delete these. By editing in PowerPoint this way, you have the opportunity for a great deal of visual effects – such as animating individual features and “exploding” them out from the map to highlight them.

Saving the Map Templates

The placement, type and characteristics of the map composition's elements you created in the map composer can be saved as a template – meaning that all the various surround features, their sizes, fonts, positions, border properties, text descriptions, and their visibility can be saved for use in other map compositions. This is particularly important if, say, you need a consistent look and text descriptions to your map compositions for a project.



Once the map composition is ready and you believe you may need to use the same layout again with a different map, select **Map Composer – File / Save Template As** or the **Save Map Template As** button from the Map Composer's button bar. The “**Map Composition Template Save As**” form will appear. The form provides a list of existing templates for that paper size and orientation. Type in a unique name in the **Map Template Name** field and provide a description of the template in the **Description** field for your reference and click **Save**.


If you want make changes to this template, select it when you start creating the map composition and then save it as described above.

To **delete a Map Template** that you no longer need, use **Map Composer - File / Delete Template**. The form will list all available templates for that paper size and orientation. Select the template you want to delete from this list and its name and description will appear on the form for you to verify it is the one you want to delete. Click **Delete** to delete the template.

Previewing Your Map Composition (Open Composition)

Before printing, Dynamic Maps gives you a chance to see what the final product will look like.



Use the **Open Composition** button on the map composer button bar, or the **Map Composer File / Open Composition** function from the menu to launch the **Map Composition Viewer** form. From this form, you see exactly how the graphics file will look when it is created and sent to the printer. Use the **View Full Composition, Zoom In, Zoom Out** and **Pan** buttons  to view the area of the map of interest. You can now save the map composition graphic file or print it.

If you are not satisfied with the result, exit the form to return to map composer and fix the element(s) that may be unsatisfactory.

Saving a Map Composition

When you are satisfied with the result, you may want to save the map composition so that you have it available later as a graphic file. To save a composition, use **File / Open Composition** from the Map Composer form, and then **File / Save** from the Map Composition Viewer form.


When you save the map composition, all your current map compositions will be listed regardless at what scale they have been produced. Since you might be making similar compositions at varying sizes and with varying layouts, this helps you keep track. Give your new map composition a unique name and description and then click “**Save**”.

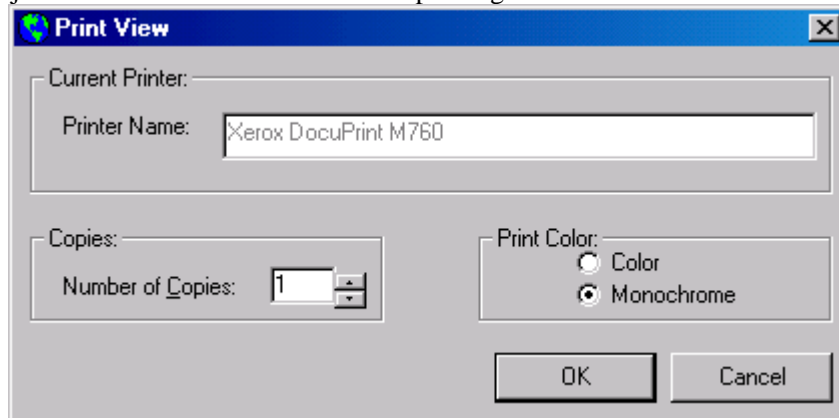
When you save a map composition you have no way of later editing it directly from Dynamic Maps, since it is saved as a graphic file in .bmp format.

Each map file will be about a 4 megabyte .bmp file. You may need to delete old, unused map compositions to help conserve hard disk space after a while. Note: to delete a map composition, you need to use the delete function found in the **File / Delete Map Composition** menu of the Map View (not the Map Composition).

If you want to view your compositions, you may want to keep them in the same folder on your machine so that you know where they are. You will need to use a graphics viewer in order to see the view a map composition previously created. There are many excellent freeware graphics viewer programs available, such as “IrfanView” (<http://www.irfanview.com/>).

Printing a Map Composition

 To print the map composition, use either the **Map Composition Viewer – File / Print** menu or the Print button. You will first be given the opportunity to define whether or not the print will be color or monochrome and the number of copies. Depending on your printing / printer situation, you may need to make some adjustments for color or monochrome printing.



Definition:
Monochrome The image will be printed in a single hue or color, typically gray scale.

Appendix 1 - Dynamic Maps Function Descriptions

Working with Forms

When you encounter forms in Dynamic Maps, you can often use the ESC key to clear an individual field. Use **Clear** to clear the entire form. Use **Close** to exit. You can also use the TAB key to move from one field to another.

Map View Functionality

File	Edit	Data Set	View	Layer	Tools
New View	Copy Selected	Open Data Set	Pan	Active Layer	Related Information
Delete View	Copy All	Import Data Set	Link to Related Information	Rendering Properties	- Add Related Info.
Save View	Select Features	Delete Data Set	Zoom In	Visible Layer	- Update Related Info.
Save View As	Select by Intersecting		Zoom Out	Description	- Delete Related Info.
Compose Map	- Select by Name		Zoom dB Extent		Measure
Open Map Composition	- Select by Pointing		Zoom to Selected		- Measure Area
Delete Map Composition	- Select by Polygon		Zoom to Active Layer		- Measure Distance
Select Printer	- Select by Rectangle		Label Selected		Draw
Print View			Render Labels		Identify Feature
Refresh Warehouse	Select All		Render Selected		Advanced Identify
Warehouse Connections	Unselect All		Render Find / Identify		Find Feature
Exit					ArcView

Map View File Functions

File / New View (Ctrl+N)

File / New View and associated button enables you to create a new view at the extent of the database. When specifying a New View, provide a unique name and provide a description. Once these fields are completed, click **Create**. The view name will now appear on the Available Views list so that any time you need to return to this View, click on the name.

File / Save View (Ctrl+S)

File / Save View saves the current Map View with the same name previously specified. If there is no user-specified name, the system goes to the “Save View As” form.

File / Save View As

File / Save View As is used when you want to give the view you are working on a new name. As with the New View function, you must provide a View Name and Description (optional). Once you have done so, click **Save**.

File / Delete View

File / Delete View brings up a form of available views from which you choose the one to delete. The Default View and the view currently being worked on are not on the list of available views for deletion. To delete a view, select it from the list and click **Delete**. Check the name and description that appear on the form once the view is selected to ensure the view you are deleting is the right one.

File / Compose Map (Ctrl+M)

File / Compose Map invokes the **Dynamic Maps – Map Composition Definition** form. Your input establishes the parameters for map composition.

File / Open Map Composition

File / Open Map Composition enables you to select a map composition already created and available in the list of map compositions and open it for viewing and printing.

File / Delete Map Composition

File / Delete Map Composition deletes a map composition from the list of available map compositions.

File / Select Printer

File / Select Printer enables you to choose the printer you will use prior to creating a map composition.

File / Print View (Ctrl+P)

File / Print View enables you to do a quick print of the current Map Layers View.

File / Refresh Warehouse

File / Refresh Warehouse enables you to start over with the same warehouse at its default view. This is particularly helpful if changes have been made to the data warehouse while you have Dynamic Maps running.

File / Warehouse Connection

File / Warehouse Connection invokes a Warehouse Selection form and enables you to connect to another data warehouse.

File / Exit (Ctrl+X)

File / Exits terminates the Dynamic Maps session.

Map View Edit Functions

Edit / Copy Selected (Ctrl+S)

Edit / Copy Selected enables you to copy just the selected map feature(s) to the Windows clipboard as a graphic image. From there, the features can easily be pasted into any standard Windows software supporting cut and paste functionality.

Edit / Copy All

Edit / Copy All copies all visible features in the map view and places them in the Windows clipboard. This is a very simple way to get your view into Word or PowerPoint.

Edit / Select Features (Ctrl+S)

You have the following options for selecting features on the active layer:

- Select by Intersecting
- Select by Name
- Select by Pointing
- Select by Polygon
- Select by Rectangle

Edit / Select By Intersecting

Edit / Select Features / Select by Intersecting enables you to select any features on a non-active layer that intersect with features you have already selected on your active layer.

Edit / Select by Name

Edit / Select Features / Select by Name brings up a list of the available features on the active layer. Selecting one or more feature names feature from the list will automatically select and highlight the feature on the map view. You can list only those features in the active layer that are visible in the current view, or list all features in the active layer.

Edit / Select by Pointing

With “Select By Pointing”, you select and unselect features on the active layer by positioning your cursor on them and clicking. You can select multiple features by holding the CTRL key while clicking the mouse.

Edit / Select by Polygon

Edit / Select Features / Select by Polygon lets you define a polygonal shape on the map view for which all the intersecting active layer features will be selected.

Edit / Select by Rectangle

Edit / Select Features / Select by Rectangle lets you define a rectangle on the map view for which all the intersecting active map layer features will be selected.

Edit / Select All

Edit / Select All selects all the features on the active layer.

Edit / UnSelect All

Edit / UnSelect All clears the currently selected set of features.

Map View Data Set Functions

Data Set / Open Data Set

Data Set / Open Data Set launches the Dynamic Maps Spreadsheet and displays the Available Data Sets for the active map layer in the Map View.

Data Set / Import Data Set

Data Set / Import Data Set allows an appropriately structured tabular data set to be imported and linked with the current active map layer. Once the data set has been successfully imported, it is displayed as a user data set in the Available Data Sets list in the Dynamic Maps Spreadsheet.

Data Set / Delete Data Set

Data Set / Delete Data Set enables you to remove a user data set from the user database.

Map View View Functions

View / Pan

View / Pan lets you grab and move the map image in any direction with the mouse.

View / Link to Related Information

View / Link to Related Information provides you with a list of any related information objects that may have been registered for the selected feature(s). Once the function is invoked, click on the desired map feature to see its linked related objects. If there are none, the system will bring up a message form indicated this.

View / Zoom In (Ctrl+Z)

View / Zoom In enables you to increase the scale of the Map View by defining a rectangle for the new area of interest.

View / Zoom Out

View / Zoom Out enables you to zoom out 150% and center on the position of the cursor.

View / Zoom dB Extent (Ctrl+G)

View / Zoom dB Extent zooms to the outer boundaries of the system's database.

View / Zoom to Selected

View / Zoom to Selected zooms to the selected feature(s) and centers it in the map view.

View / Zoom to Active Layer

View / Zoom to Active Layer zooms to the extent of the active layer.

View / Label Selected

View / Label Selected enables selected features' label to be shown. It can be toggled on and off.

View / Render Labels

View / Render Labels enables you to define the size and color of the labels.

View / Render Selected

View / Render Selected enables you to change the rendering properties used for selected features.

View / Render Find - Identify

View / Render Find - Identify enables you to change the rendered properties of features when they are found or identified.

Map View Layer Functions

Layer / Active Layer (CTRL+A)

Layer / Active Layer provides a list of all selectable map layers from which you can set the active layer by clicking on its name in a list.

Layer / Render Properties (Ctrl+R)

Layer / Render Properties enables you to select a currently visible map layer in the Available Map Layers list, and then define its rendering properties (i.e. how it appears on the map view).

Layer / Visible Layer

Layer / Visible Layer enables you to quickly turn the layers on and off in your map view all at once – rather than one at a time.

Layer / Description

Layer / Description enables you to get a report (often called “metadata”) in your web browser about a map layer.

Map View Tools Functions

Tools / Related Information - Add

Tools / Related Information – Add enables you to publish a document, URL or description against a selected map feature(s). You may need specific privileges i.e. a warehouse password and operating system privileges depending on your system’s security settings (see your system administrator for details).

Tools / Related Information – Update

Tools / Related Information – Update enables you to update the logical name and the description for a linked information object for the selected map feature(s).

Tools / Related Information – Delete

Tools / Related Information – Delete enables you to delete any related information object for the selected map feature(s).

Tools / Measure - Area

Tools / Measure - Area enables you to define a polygon and find its approximate area in square meters or kilometers.

Tools / Measure - Distance

Tools / Measure - Distance enables you to draw a complex line and find its approximate length in meters or kilometers.

Tools / Draw

Tools / Draw launches the Draw Toolbar with a number of drawing-related functions. These can be used to enhance your map composition with project-specific descriptive lines, shapes, and text.

Draw Point

Draw points of various styles, weight, and color using either default styles or any true-type font on your system. See “Drawing and Annotating”.

Draw Line

Draw a complex line of various styles, weight, and color. See “Drawing and Annotating”.

Draw Polygon

Draw polygons with various fill patterns, fill color, and line color. See “Drawing and Annotating”.

Draw Rectangle

Draw rectangles with various fill patterns, fill color, and line color. See “Drawing and Annotating”.

Draw Circle

Draw circles with various fill patterns, fill color, and line color. See “Drawing and Annotating”.

Add Text

Add text to create labels for features or add other relevant information on your map. See “Drawing and Annotating”.

Delete User Object

Delete User Object deletes drawn objects and text.

Delete All User Objects

Delete All User Objects deletes all drawn objects and text.

Tools / Identify Feature

Tools / Identify Feature enables you to identify a feature on the active layer by clicking on it.

Tools / Advanced Identify

Tools / Advanced Identify enables you to identify a feature and get all the information about that feature that is stored in the map layer primary attribute table.

Tools / Find Feature (Ctrl+F)

Tools / Find Feature enables you to find a particular feature on the active layer – either within the current view or over the entire layer’s extent.

Tools / ArcView

Tools / ArcView launches ArcView and passes the currently visible Map Layers to ArcView if ArcView is installed.

Spreadsheet Functionality

File	Edit	Tools
M/S Excel - All records	Select All	Query builder
M/S Excel - selected records	Inverse Selection	Find
Exit	Unselect	Find minimum
		Find maximum
		Sort
		Math functions - sum
		Math functions - average
		Class rendering
		Description
		Color Schemes

The Spreadsheet File Functions

Spreadsheet File / M/S Excel – All Records

Spreadsheet File / M/S Excel – All Records launches M/S Excel, moves all the data from the Spreadsheet into Microsoft Excel, closes the Dynamic Maps spreadsheet and maintains a link between the records now in Excel and the map view.

Spreadsheet File / M/S Excel – Selected Records

Spreadsheet File / M/S Excel – Selected Records launches M/S Excel, moves any selected records in the Spreadsheet into Microsoft Excel, closes the Spreadsheet and maintains a link between the records now in Excel and the map view.

The Spreadsheet Edit Functions

Spreadsheet Edit / Select All

Spreadsheet Edit / Select All selects all the records in the Spreadsheet. The map will also change to reflect this new selected set.

Spreadsheet Edit / Inverse Selected

Spreadsheet Edit / Inverse Selected lets you reverse the current selection. It makes all unselected records selected, and makes the selected records unselected.

Spreadsheet Edit / Unselect Records

Spreadsheet Edit / Unselect Records releases all the currently selected records.

The Spreadsheet Tools Functions

Spreadsheet Tools / Query Builder

Spreadsheet Tools / Query Builder enables you to create a sub-set of the records in the Spreadsheet that meet specific criteria you define.

Spreadsheet Tools / Find

Spreadsheet Tools / Find lets you find a string of characters in the Spreadsheet.

Spreadsheet Tools / Find Minimum

Spreadsheet Tools / Find Minimum finds and selects the record(s) with the minimum value in a column (field).

Spreadsheet Tools / Find Maximum

Spreadsheet Tools / Find Maximum finds and selects the record(s) with the maximum value in a column (field).

Spreadsheet Tools / Sort

Spreadsheet Tools / Sort sorts the spreadsheet's records in ascending or descending order in a column (field).

Spreadsheet Tools / Math Functions / Sum

Spreadsheet Tools / Math Functions / Sum calculates the total of a column's values.

Spreadsheet Tools / Math Functions / Average

Spreadsheet Tools / Math Functions / Average calculates the average value of a column (field).

Spreadsheet Tools / Class Rendering

Spreadsheet Tools / Class Rendering - Create lets you divide the spreadsheet's records into meaningful value-ranges or partitions ("classes") and then display these on the map in different colors and styles. To clear the class-rendered map, use the **Spreadsheet Tools / Class Rendering - Clear** function.

Spreadsheet Tools / Description

Spreadsheet Tools / Description enables you to get a report describing a data set in your web browser (often called "metadata").

Spreadsheet Tools / Color Scheme

Spreadsheet Tools / Color Scheme enables you to manage the color schemes you use to create class rendered maps – including importing and exporting schemes from elsewhere.

Map Composer Functionality

File	View
Save Map Template	Business Chart / Image
Save Map Template as	Disclaimer
Delete Map Template	Map
Open Composition	Map Background
Microsoft PowerPoint	Map Legend
Exit	Miscellaneous Text
	North Arrow
	Organization Logo
	Scale Bar
	Title
	Guides Visible

Map Composer File Functionality

Map Composer – File / Save Map Template

Map Composer – File / Save Map Template enables you to save your current map parameters for use in subsequent map compositions. If your current map’s parameters have not been previously saved and named, then the system invokes the “Save Map Template As” form.

Map Composer – File / Save Map Template As

Map Composer – File / Save Map Template As saves a new map template.

Map Composer – File / Delete Map Template

Map Composer – File / Delete Map Template provides you with a list of the templates you have saved and enables you to select then delete one of those templates.

Map Composer – File / Open Composition

The **Map Composer – File / Open Composition** function creates a preview of the map composition and displays it in its own window. From this form you can:

- Save Map Composition – lets you define the name and the file location for the graphic (.bmp) file that you are about to save; and,
- Print Map Composition.

Map Composer – File / Microsoft PowerPoint

Map Composer – File / Microsoft PowerPoint sends the map composition to PowerPoint.

Map Composer View Functions

Map Composer – View provides you direct access to the various map components’ control forms. These enable you to change various parameters of each element. This is particularly helpful if, for example, your template does not include one of the components, but you decide to include the component. By selecting it in the View menu, you can now make it “visible” on the map composition.

Map Composer – View / Guides Visible

Map Composer – View / Guides Visible lets you select whether or not the X and Y (vertical and horizontal) guides are visible on the map composition. The guides can then be used to orient and “snap” composition objects.

Appendix 2 - Glossary of Terms

Active Layer	The Active Layer is the currently selected map layer. Only one layer can be active at a time. An Active Layer can have its features selected and identified and can have related information registered against its features. Only Selectable map layers (the ones with names that appear in green color) can be made active.
Available Map Layers	The Available Map Layers lists the map layers registered in the warehouse and visible at the current map view's scale.
Data Set	<p>A Data Set contains tabular information associated with one of the Selectable Map Layers. There are two types of Data Sets: System Data Sets and User Data Sets.</p> <p>System Data Sets are registered in the system by the System Administrator using Dynamic Knowledgebase and cannot be deleted by the end-user. System data sets are accessible to any one using Dynamic Maps. The System Administrator can also define views as Data Sets that connect the System dB with other ODBC-compliant databases visible on the local or wide area network, thus allowing a virtual table to be created "on the fly". The usefulness of this function is that Dynamic Maps can connect to almost any production database.</p> <p>A User Data Set consists of data defined by the user through the Data Set / Import Data Set menu function and is only accessible to the user.</p>
Database	A collection of related information, managed, and stored as a unit. A GIS database includes data about the spatial location and shape of geographic features recorded as points, lines, areas, or pixels as well as their attributes.
Database Table	A Database Table is a collection of data about a specific person, place, thing, object and event. Using a separate table for each topic means the data are stored only once, making the database more efficient and reducing data entry errors. Tables organize data into columns (called fields) and rows (called records).
Database View	A Database View is a subset of fields from a specific table, or a number of fields from different tables that have been joined together through a SQL statement. Views are a powerful way by which specific data can be accessed from a relational database.
Default Map View	The Default Map View is the view the system uses on start-up. The Default Map View's extents are defined by the full extents of all the map layers registered in the data warehouse.
Image Data	<p>An image is a graphic representation or description of an object. Some common examples of image data include remotely sensed data, aerial photography, scanned data, and photographs. Image data are a form of raster data where each grid-cell, or pixel, has a certain value depending on how the image was captured and what it represents. For example, if the image is a remotely sensed satellite image, each pixel represents energy reflected from a portion of the Earth's surface. If, however, the image is a scanned document, each pixel represents a grey-scale value associated with a particular point on the document.</p> <p>The main difference between image data and feature-based spatial data is that images are usually used to provide background information to the vector based feature data.</p>
Image Layer	An Image Layer is file in .bmp, .bil, .tif or .sid format (raster format) with an

	associated World file for geo-referencing.
Map Components	The Map Components are objects in a map composition.
Map Composition	A Map Composition is the end product map generated through the Map Composer tool. The map is a .bmp file that consists of the final representation of the Map View and Map Components the user has selected. The map is depicted on one of several possible paper sizes for printing.
Map Coordinates	Map Coordinates describe the location of geographic features in a coordinate system. Dynamic Maps supports two types of coordinates systems: Geographic/Curvilinear and Cartesian coordinates. Geographic / Curvilinear coordinate systems have their coordinates displayed as Degrees, Minutes and Seconds, and Cartesian coordinate systems have their coordinates displayed in rectangular units such as meters. Distance and area calculations are displayed in rectangular units - meters/kilometers and square meters/kilometers. Distances and area are always calculated in a Cartesian coordinate system using a generic map projection when dealing with geographic based warehouses – therefore they are only approximations.
Map Extent	The rectangular limits of the Earth's surface area you want to display. Typically, the extent of the geographic data in the warehouse defines the map's initial extent.
Map Layer	A Map Layer is a collection of geographic features represented as points, lines, polygons or labels and are represented in vector or raster format.
Map Scale	Map scale defines the distance relationship between the map and the Earth's surface. The map scale is expressed as a fraction of distance, such as 1:50,000 where one distance unit on the map represents 50,000 of the same distance units on the Earth. Map scale can also be expressed as equal units; for example, 1 inch = 1 mile or 1 inch = 2,000 feet.
Map Template	Using a Map Template, you can define and save for later use the various Map Components to be displayed in a Map Composition, how they are displayed, and where they are displayed in the Composition. The map template does not include the Map View and the Available Map Layers.
Map View	The Map View is what you see in display area of geographic data visible to the user along with the associated display parameters.
Metadata	Data that describe data. Metadata provide information about the map layer or data set –who created it, the contact person, the type of data, its accuracy, etc.
Overview of Spatial Data	Geographic or “spatial” data are any data that describe any part of the Earth's surface or the features found on it. Along with cartographic and scientific data, they can also include business data, land records, photographs, customer databases, travel guides, real estate listings, legal documents, videos, etc. In fact, over 80% of all data used in business and government can be related directly to geographic features like addresses and locations.
Pan	Pan moves the viewing window in any direction to display parts of the map that, at the current viewing scale, lie outside the current map view.
Pixel	Short form for “picture element”. A pixel is the smallest resolvable element in a raster image. A pixel has both a spatial location and a value component.
Raster Data	Raster data organize information in a matrix. Each cell has a number that represents a particular geographic feature, such as soil type, elevation, land use, slope, etc. Raster data are often used to store information about geographic features that vary continuously over a surface. Image data are a form of raster data in which each cell or pixel of the image stores an optical value. The quality/resolution of raster data depends on the grid size in which

	they are recorded. Since the grid cell size is fixed, as you zoom in on raster data you will eventually see the shape of the cells. See Image Layer.
Related Information	Any type of digital file and URL and text description can be related to a spatial feature or features. This enables geography to be used as an index to non-geographic information objects.
Role of SKE Inc.	<p>Thank you for using Dynamic Maps. Spatial Knowledge Engineering Inc. developed this software to meet a key need for a data access and manipulation tool that was not being met by traditional high-cost, high-overhead, hard-to-learn mapping and GIS systems.</p> <p>Software development is just one of the things we do. Spatial Knowledge Engineering Inc. is a total solutions company – working with clients to identify their business information needs and designing and building the appropriate information and management systems to meet these needs. Please feel free to contact us at www.skeinc.com for more information.</p>
Selectable Map Layer	A Selectable Map Layer is a map layer that can be used for feature selection and query purposes and with which tabular data sets can be associated. The database administrator designates map layers as “selectable”.
Shapefiles	<p>The shapefile format defines the geometry and attributes of geographically-referenced features in three files with specific file extensions. They are:</p> <ul style="list-style-type: none"> • .shp - the file that stores the feature geometry. • .shx - the file that stores the index of the feature geometry. • .dbf - the dBASE file that stores the attribute information of features. • Plus, often various index files (that help speed up the access and drawing of the data).
Spatial Data	<p>Spatial data store the location of geographic features, along with attribute information describing what these features represent. Data describing location are stored in a vector or raster data structure, and corresponding attribute data are stored in a set of tables related geographically to the features they describe.</p> <p>Dynamic Maps supports the following spatial data formats:</p> <ul style="list-style-type: none"> • shapefiles and ArcInfo coverages (workstation and PC), and • .sid, .bil, .bmp, .tiff image data with a World file. <p>Spatial data have an explicit relationship between the geometric and attribute information, so that both are always available when you work with the data. Spatial data are geo-referenced to known locations on the Earth's surface. To ensure that location is accurately recorded, spatial data always use a specific coordinate system, unit of measurement, and map projection. When spatial data are displayed, they have a particular scale just like any paper map.</p> <p>Spatial data are primarily feature-based. They enable specific geographic phenomena to be managed, manipulated, and analyzed easily and flexibly to meet a wide range of needs. Spatial data are organized in different themes. For example, rivers, land use, elevation, and built structures will each be stored separately. This makes it easier to manage and manipulate the data, especially since much of the system's power comes from being able to analyze the spatial relationships between different geographic themes.</p>
Spreadsheet	Your tabular data are displayed and queried by the Spreadsheet. The Spreadsheet displays text, numeric, and memo data types in a table format. When any record is selected in the Spreadsheet, its corresponding geographic feature is automatically selected in the Map View. The reverse is also true – so when a geographic feature is selected, the corresponding record is selected in the Spreadsheet, if the Data Set is open.

<p>Tabular Data</p>	<p>Tabular data (data in a table format) can reflect almost any data set, whether or not it contains geographic data. Dynamic Maps works with data in M/S Access, Excel, dBase, and Oracle formats.</p>
<p>Vector Data</p>	<p>Vector data record spatial information as a set of x,y or Latitude, Longitude coordinates in a rectangular (planar) or curvilinear coordinate system. Point features are recorded as single locations. Line features, including the outlines of polygons, are recorded as an ordered series of coordinates, and polygons as a closed series of coordinates. Vector data are very well suited to record the location of discrete geographic features with precise locations like streets, boundaries, streams, villages, etc.</p> <p>Vector data are highly dependent on the number of coordinate points that are chosen to represent features, especially natural features like streams and coastlines. As you zoom in on vector data representing such features, you will eventually see the individual straight-line segments that make up their vector representation. That is why, you should not be fooled in to thinking that digital data is endlessly accurate. Each data set has an inherit accuracy that is dependent on how it was initially surveyed (located and described) and then how it was represented, i.e., on hard copy maps created at a specific scale or in digital databases.</p>
<p>Warehouse</p>	<p>A warehouse is a grouping of map layers and their associated system data sets and related information objects and descriptions. Map layers in a warehouse will always have the same coordinate system, datum and projection. They may also be grouped for logical reasons – such as local data or data at a national scale. Dynamic Maps can access multiple Warehouses, but not at the same time.</p>

Appendix 3 – Creating and Using Graphics in Map Compositions

A variety of graphics can be used in your map composition. The system stores and displays different types of graphics – referred to in the system as the Organization Logo, the North Arrow, and the Business Graphic. The various images can be placed anywhere on the map and can be resized to fit the space available. The various files are stored in a series of directories under Program Files / Dynamic Maps / Pictures.

The software enables you to easily add a graphic to the list of available graphics, by clicking the **More** button on the form. When you find and select the graphic, the program automatically adds it to the list and makes a copy of the file and puts it in the appropriate directory. This graphic will then be available for subsequent map compositions as well.

In all cases, the graphic needs to be in windows bitmap (.bmp) format.

You may need to experiment with the size of the graphic, since resizing it on the map composition may produce unwanted results.


To remove any graphic from a list, you need to use Windows Explorer to delete or move the file from its directory. However, please be careful when deleting any files from this area.

Creating a .bmp File with M/S Paint

If you do not have specialized software for creating simple graphics and images, Microsoft provides the basic Paint program. You can use Paint to create a bitmap image suitable for use in Dynamic Maps. Microsoft Paint is not a very user-friendly or powerful graphics program, so it is recommended that a more suitable program be used if several graphics are going to be manipulated.

For example, to grab a pie chart from a document and save it as a graphic, select and copy the graphic. Open Paint (found in Start – Accessories – Paint) and use Edit/Paste or Ctrl+V. If the graphic appears as you want, use “**Edit / Copy To**” to now save it back out as a bitmap. If you need to change the graphic in any way, use Paint’s tools.

To save part of the overall Paint view as a graphic (as you would normally want to do):

1. Select the area you want to save by clicking either of these  in the toolbox and then dragging the cursor to define the area. In most cases, this area will be the actual graphic that you have pasted into Paint.
2. On the Edit menu, click Copy To.
3. Specify a folder and a file name.

If you use File/Save or Save As, the entire page will be saved, including any white space surrounding the graphic.

Appendix 4 – Dynamic Maps Installation and Setup Instructions

Uninstall First

If you are installing a new version or re-installing Dynamic Maps, first remove the old program from the computer. To uninstall the old version, go to Control Panel / Add Remove Programs and find Dynamic Maps in the list of programs. Select it and click “Remove” and accept all the prompts.



*If the uninstall prompts whether you want to delete shared files, pick NO. These files **should not** be deleted since they may affect other applications that depend on their shared components.*

You may also get a message from the Uninstall-shield program when it is finished that some files could not be removed. This is probably because new or changed files were manually added to the program folder after installation, so they were not “registered” by the install. If you are removing all of the Dynamic Maps programs, these files – located in the {root:\Program Files\Dynamic Knowledgeware\Dynamic Maps} directory can be removed manually by using Windows Explorer. Please be careful if you are deleting files from this area of the computer.

Install Dynamic Maps

Dynamic Maps is installed using the installation program “Dynamic Maps 2.3 Install.exe”. Dynamic Maps is designed to work under Windows ’95, Windows ’98, Windows NT Server/Workstation v4 with Service Pack 3+, Windows ME, and Windows 2000.

Insert the installation CD in the drive and navigate to the appropriate install file. Double-click on the file to begin installation, and accept any prompts. As with most Windows programs, other programs should be not be running. At the end the computer will ask if you want to reboot. Select Yes.

During the installation process, a couple of Microsoft upgrades may be installed on the computer as well. If Dynamic Maps is being installed on a Windows 95 machine, both MDAC 2.1 and DCOM will be automatically installed. If on a Windows 98 or Windows NT machine, only MDAC will be installed. Both DCOM – Distributed Common Object Model, and MDAC – Multiple Data Access Components are required for the database and server interaction to work properly. If your machine already has these components installed, their re-installation will not adversely affect any current program. PLEASE NOTE: Under Windows 95, the computer will automatically reboot twice – once after Dynamic Maps is installed and once after the MDAC components are installed.



Make sure you reboot your computer to complete the install. This is very important since your registry will not be set up appropriately if you do not reboot.

You will need a program associated with “.htm” and “.html” file types in order to view metadata reports. If you have Internet Explorer or Netscape Navigator installed then it will be automatically associated with these file types. If you don’t have a web browser installed, you can set the file association for Word or WordPerfect, etc. Ask your systems administrator for help setting file associations, or install the freely available Internet Explorer or Netscape Navigator.

Locate the Warehouse Manager.mdb File

Dynamic Maps uses data that have been set up in a “warehouse” using a specialized tool called the Dynamic Knowledgebase. The warehouse(s) can exist locally on your computer, if you have used

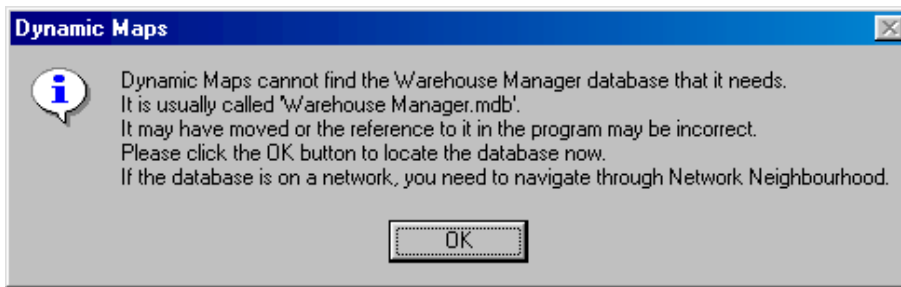
Dynamic Knowledgebase and have set it up; or it can exist on a server computer on a local area network. If it's on a network, the warehouse(s) likely has many people accessing it. As a result, Dynamic Maps can be run in stand-alone mode – as long as all the data are on your computer and you have set up a warehouse using Dynamic Knowledgebase; or in network mode. But, it cannot do both at the same time. The “*Reset dB Connection.exe*” program located in the {root}/Program Files/Dynamic Knowledgeware/Dynamic Maps 2.3 directory enables you to switch from one warehouse manager to another – although you should normally not need to use this.

Before you launch Dynamic Maps for the first time, you should find out where the *Warehouse Manager.mdb* file is located. The *warehouse manager.mdb* file keeps track of the various warehouses of data that exist on the system and that are available to you. If you are running Dynamic Maps on a **network**, your systems/database administrator will provide the location of the file. If it's on your machine, it will likely be in a “C:\Warehouse Manager” directory.

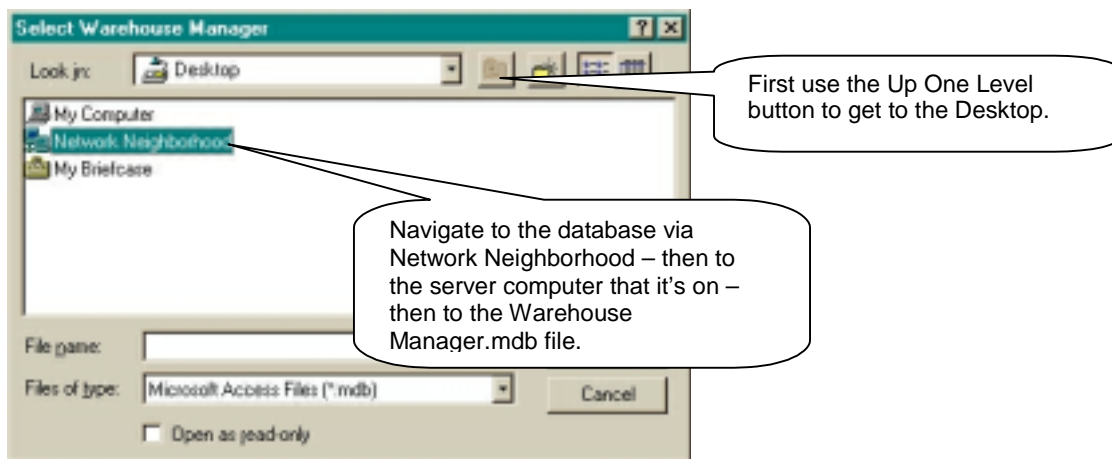
If you are running Dynamic Maps **locally**, you will need the *Warehouse Manager.mdb* installed on your computer using the *Warehouse Manager Install.exe* file, and the appropriate warehouse(s) needs to be set up with Dynamic Knowledgebase.

Running Dynamic Maps for the First Time

The Dynamic Maps Icon is located in Start / Programs. The first time it runs it will ask you to point it to the *Warehouse Manager.mdb* file is so that the system can access the warehouse(s) of map layers and tabular data.



If you are accessing the data over a network, navigate via Network Neighborhood to the location of the *Warehouse Manager.mdb* database. (If the warehouse is on your computer in a local install, you can navigate via My Computer). This will mean first navigating back up to the root level of the computer, like this:



Select the *Warehouse Manager.mdb* file – located in the Warehouse Manager directory on your machine or on the network, and the Warehouse Selection form for Dynamic Maps will appear. You are now able to select the warehouse with which you want to work and launch Dynamic Maps. The next time you

launch Dynamic Maps, the system will know where to find the *Warehouse Manager.mdb* file and will automatically start with the Warehouse Selection form.