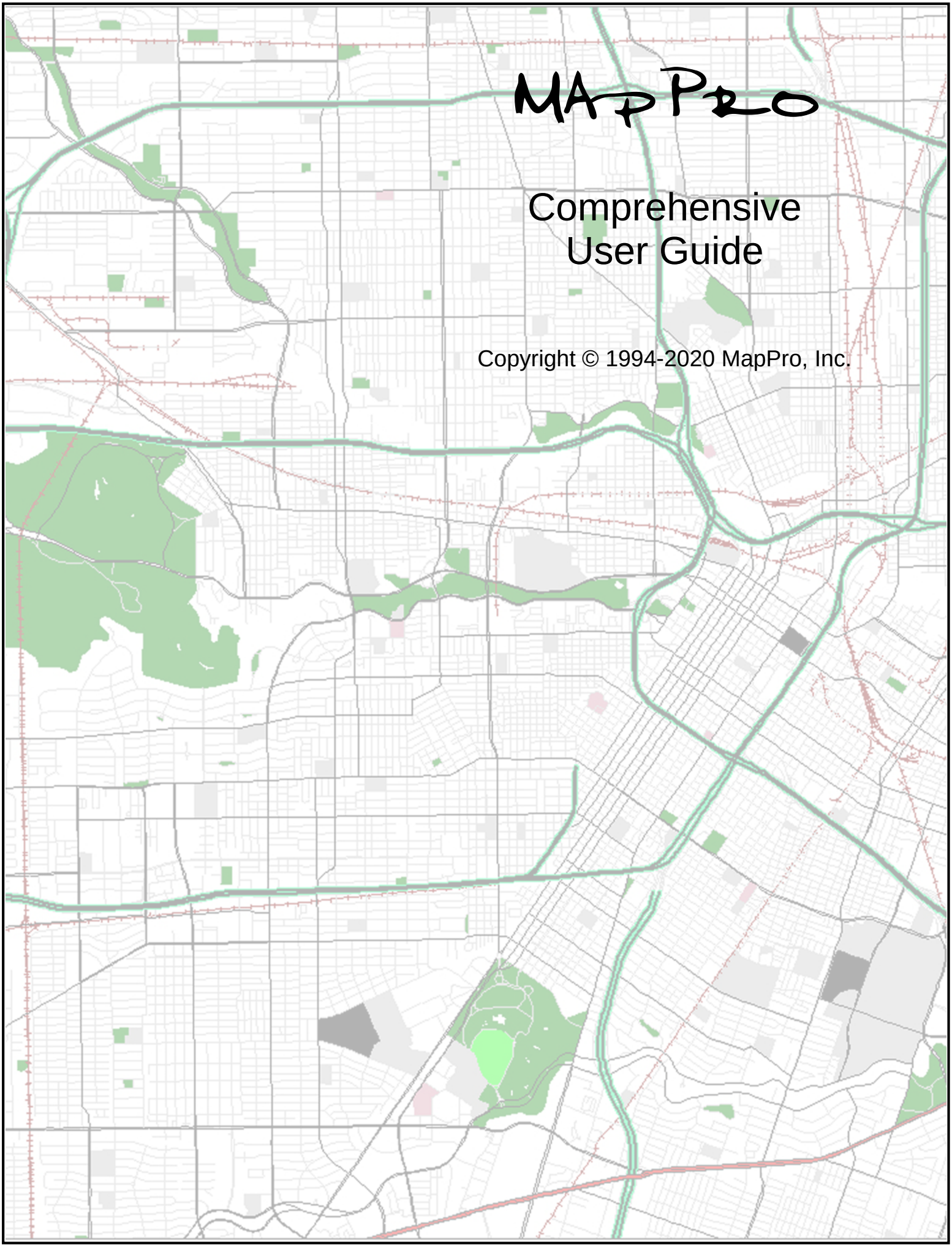

Comprehensive User Guide

MapPro Help

A Comprehensive Help Guide

by MapPro Support Team

Printed: October 2020 in Houston, TX

Revison 3.0.0

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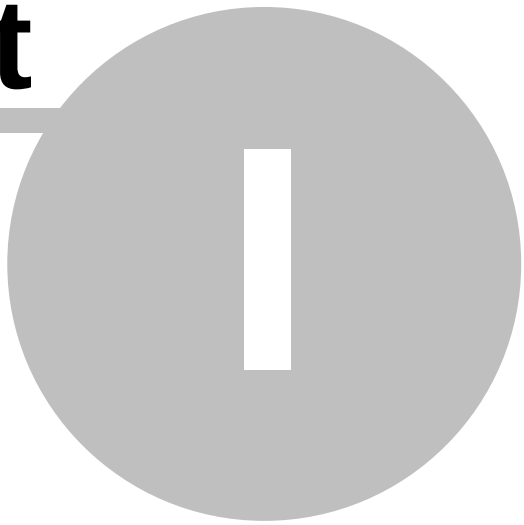


1 Getting Started

1.1 MapPro Overview

MapPro is a comprehensive desktop mapping application that has been developed to run with MapInfo Corporation's MapInfo Professional. MapPro is distributed on a CD that contains all the software plus all the map data for up to one entire state. The latest MapPro software and maps may also be downloaded from MapPro's Support web site at **www.mappro.net**. MapPro enables users to generate high quality color or black and white Location Maps, Flood Maps, Hazard Maps and Aerial Maps that are needed for their normal business activities.

MapPro has a easy to use interface that allows inexperienced users the ability to create maps with just a few clicks of the mouse and has powerful features to meet the mapping needs of more experienced users.
* Unlimited number of property locations and arrows can be put a map.
* Add property locations from your own private database.
* Seamless maps across county boundaries.
* Map scale limits removed. Maps can show an entire State if desired.
* Create your own private map layers with the Database Utility.
* Select from 2 different sizes of property arrows and create any number of additional arrow types with the Arrow Maker Utility.
* Automatic or Manual Map Data File naming.
* Automatic Map Labeling as you pan across the map.
* Text, lines, polygons, or symbols may be added to the map, are automatically saved with the Map Data File and then automatically redisplayed when the file is opened again.
* Copy the MapPro Map Window into other Windows Applications such as Word, Excel, or Word Perfect.
* Maps can be printed on letter, legal, or ledger size paper or printed to an Adobe Acrobat file for sending them via email.

With MapPro maps can be created two different ways:

1. **Map Maker** is used to create maps when the user has one or specific addresses to be located on the map. Map Maker is initiated by creating a new map data file where all the address information is saved. One or more addresses are entered through a interactive dialog. The address, street name, zip, grid, and city are verified and corrections can be made as needed. The Location or Flood Map or Hazard Map can then be displayed.

2. **Map Viewer** is used to create maps when the user does not have a specific address or just wants to view the maps in an area. After initiating Map Viewer, the map for entire Licensed area is displayed. The user then selects the county and a grid area in the county to zero in on the area that is desired. A map frame is then positioned to exact area desired and the map is displayed. Annotated arrows may then be added to the map at any location desired or the drawing tools may be used to add text, symbols, lines, or polygons to the map. The Flood Map may also be displayed for the area with a click of a button.

The **Arrow Maker Utility** is a feature that allows the user to create and define any number of different Map Arrows that can be used on Map Maker Maps. With Arrow Maker you can set all the attributes of an arrow - text, text font, text style and color, arrow color, fill, and border. Arrows can also be designed to be automatically numbered when multiple arrows of the same type are used on a map.

The **Database Utility** is a powerful feature of MapPro. Users can either create a new database or import an existing database in dBase DBF or Microsoft Access formats to MapPro. Users can also import Microsoft Excel spreadsheets. The database can then be geocoded with a comprehensive geocoder to create a map layer to be used with MapPro. Since the database remains in its original format, the latitude, longitude, and updated address information may extracted and used to update the original database. Any number of database map layers may be created and preferences may be set to always insert specific database map layers when displaying a map.

1.2 Supported Operating Systems

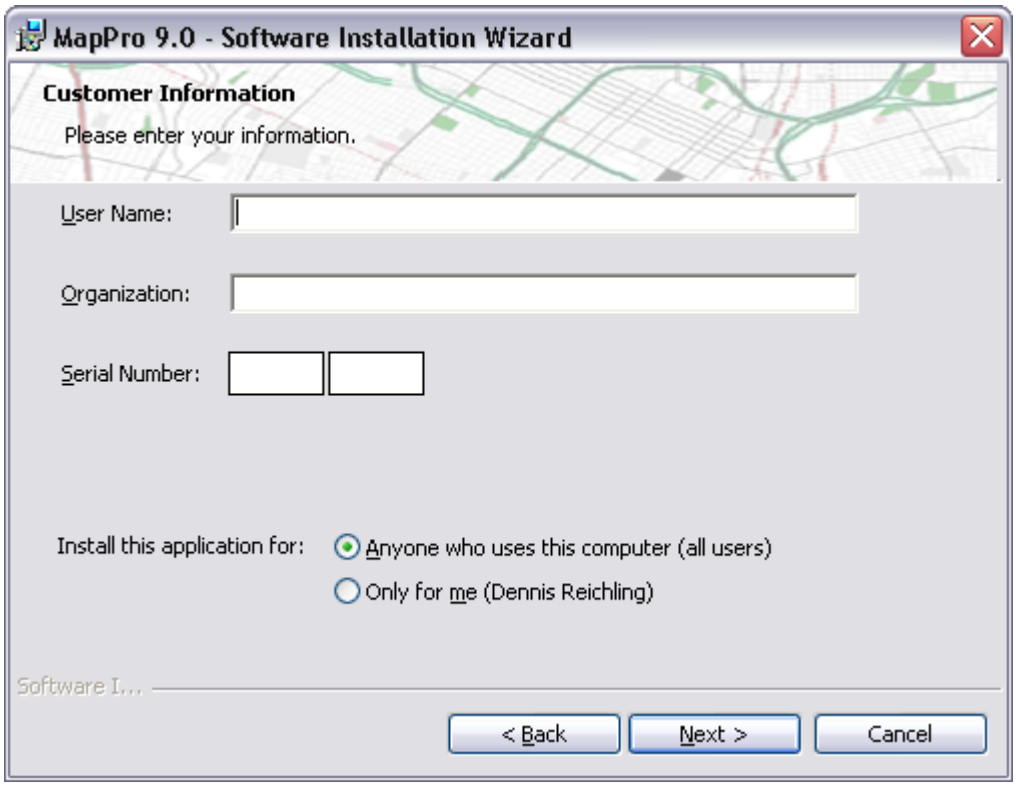
MapPro will run on Windows XP and new operating systems, including Windows Server editions. MapPro is not compatible on Mac OS, however, many customers will be able to run MapPro in a Parallels environment. MapPro cannot provide technical support on configuring this setup.

1.3 Installation Guide

This is a guide to help get MapPro installed on your PC. This installation guide applies to either single user MapPro License or a Demo License. If you are installing MapPro with a Network License see the **Network Installation Guide**.

1. The MapPro Software may be either downloaded from MapPro's Support Web Site at **www.mappro.net** or installed from a CD. If you are installing MapPro from the web site follow the instructions on the web page. If you are installing MapPro from a CD insert your MapPro CD in your CD Drive. Then click "Start", then "Run". Click the "Browse" button. Double-click on "My Computer" and find your CD Drive where MapPro CD resides (you should see "MapPro80" label next the CD drive letter. Double-click on CD drive letter then double-click on "Setup.exe". Click OK. The dialog "Welcome to the MapPro 9.0 Installation Wizard" should be displayed.

2. Click "Next", rear the MapPro License Agreement and agree to the terms and click "Next" again. The following dialog will be displayed.



Enter your name, company name, and Serial Number. This Serial Number is case sensitive so enter it exactly as shown. Then click "Next".

3. A dialog is then displayed showing the installation location for MapPro. The default location is "C:\MapPro". The drive where MapPro is installed can be changed if your C Drive is full but it is not recommended that you install it on a network drive or change the installation directory name.

4. Click "Next". Another dialog is displayed saying "Ready to Install Application", click "Next" again. MapPro will then be installed and a dialog will be displayed, "MapPro 9.0 has been successfully installed" when the software installation is complete.

5. The MapPro software installation is now complete. If you downloaded the MapPro software installation from the web site MapPro will automatically download the licensed maps from the web site after MapPro has been registered. If you installed MapPro from a CD leave the CD in the CD Drive for now since the Maps will not be loaded until after you register MapPro.

Click "Finish"

1.4 Network Installation Guide

What is a MapPro Network License?

A MapPro Network License allows all workstations on a single Local Area Network to share one or more MapPro Licenses. The network may be either a peer to peer network or a client-server network. One workstation on the network is designated to be the "MapPro Network Host". A program called "MapPro Network Host" is installed on this workstation only. The MapPro Network Host program is used to setup the network license initially and is used to reinitialize and/or update the network license. The Host MUST have access to the internet. The only absolute requirement for a MapPro Network

License is a shared hard drive somewhere on the network that is accessible by all computers on the network. This is the location that contains the network license information. The disk space requirement on this hard drive is minimal (less than 50k).

Advantages to a MapPro Network License

1. Reduced Cost. By sharing a MapPro License on a network all workstations connected to the network have access to MapPro with only a 25% additional charge for a one user network license. Depending upon the number of users on the network, MapPro may be configured for up to 99 network licenses.

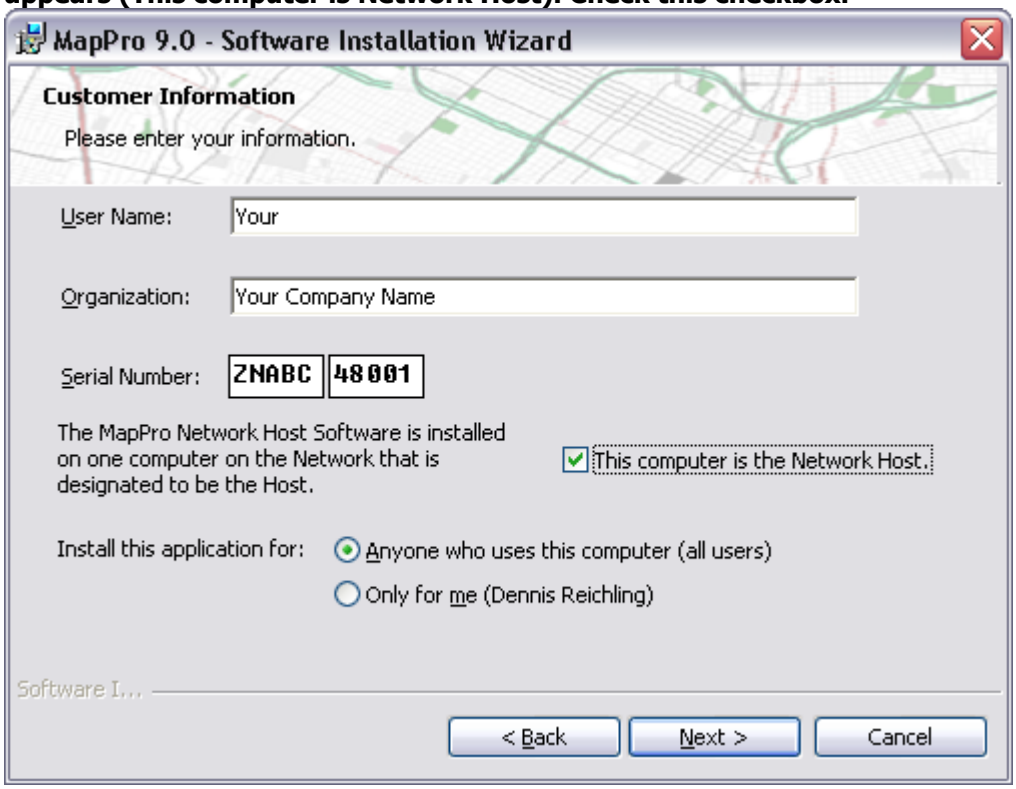
2. Ability to share maps with other users on the network. By specifying a network location where map files are stored, maps may be created on one workstation but then opened by any other user on the network.

Prerequisites

If you are installing MapPro on a network you should be familiar with your network and have the knowledge necessary to share disk resources and map network drives. MapPro requires a shared directory on the network with full access rights enabled for all computers that will be running MapPro on the network. This is the key to the entire MapPro network installation. MapPro Technical Support can provide you only limited help in this area and is outside the scope of the actual MapPro Software.

Setting up MapPro on the Network - MapPro Network Host

1. The workstation you select to be MapPro Network Host must be setup first. Install MapPro on this workstation. At the beginning of the software installation process you will be prompted for a Serial Number. All MapPro Network License Serial Numbers start with "ZN" and are 10 alpha-numeric characters in length and are case sensitive. **When this serial number is entered a checkbox appears (This computer is Network Host). Check this checkbox.**



This forces the MapPro Network Host program to be installed. See the **Installation Guide** if you need more help getting the MapPro software installed.

2. After MapPro is installed, run MapPro Network Host program by double-clicking the icon on the desktop.

3. Enter the Network License Path where the MapPro network license will reside. **This directory can not be located in the same directory that MapPro is installed.** If network is a peer-to-peer network a sub-folder under MapPro called "License" is recommended (ie. enter C:\MapPro\License\). If this directory will reside on a server the choice of location and directory name is yours to make. If the directory does not exist MapPro Network Host will create it. Make sure that this Network License Path is accessible to all computers on the network that will be running MapPro and that full access rights are enabled to this directory and that each computer on the network that will run MapPro has this shared resource mapped to a drive letter.

4. The Serial Number entered at the time of the installation is then displayed. Verify it is correct.

5. Enter your Company information.

6. After all the above information has been entered, verify you are connected to the internet if you have a dialup connection and click the OK button. The MapPro Network Host program will exit and automatically restart after registration is complete and will display the message: "MapPro License Updated Successfully".

7. Now you are ready to start MapPro on the Network Host Computer. MapPro on the Network Host works just as it does on any other computer on the network in that it shares the MapPro license with all other computers. After starting MapPro enter the "ZNxxxxxxxx" serial number. The Directory Preferences will then be displayed.

8. The Network License Path is the key here. Set the Network License Path to point to the same path as you did for the Network Host in step 3 above.

9. The Data Directory Path could be set to point to a place on the network that allows all of these files to be saved in a shared location. The advantage to this is that maps can be created on one computer on the network and then the same opened by other computers on the network.

10. It is NOT recommended that the Map Directory Path reside on the network. This will adversely

affect the performance of MapPro and put a heavy load on the network when MapPro is used.

11. After MapPro sees a valid Network License Path it will determine what maps are licensed and proceed to load the licensed map files from one or more CDs or from a downloaded zip file.

Setting up MapPro on the Network - Other Network Workstations

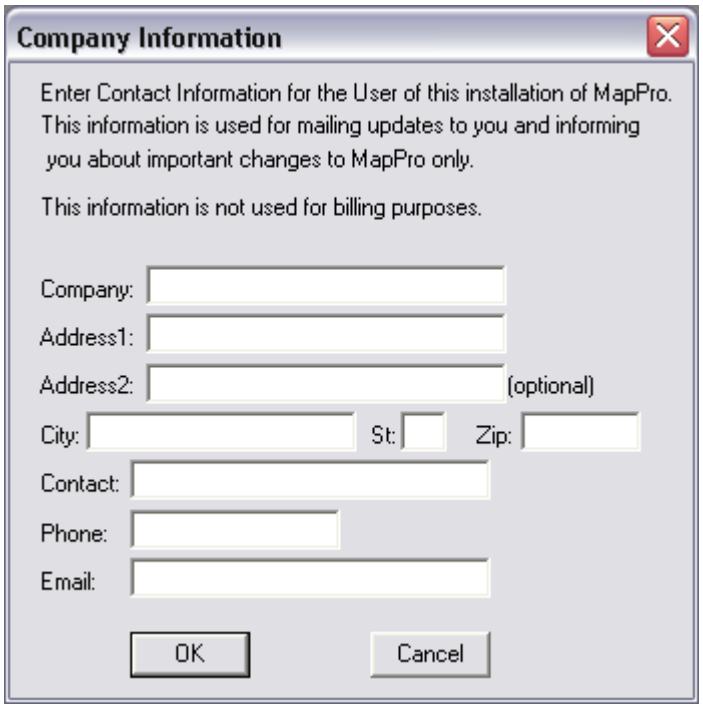
1. With a network license, MapPro may be installed on any computer on the network.
2. After MapPro is installed on a workstation, follow steps 7 thru 11 above. Make sure that you have the folder to the Network License Path on the MapPro Network Host computer shared with full access rights and have Mapped this shared resource to a drive letter on each workstation that MapPro is installed.

1.5 Registering MapPro

1. The MapPro Software places a MapPro icon on your Windows Desktop. Double-click on the MapPro icon to start and register MapPro. MapPro will start and the following dialog will be displayed.

The Serial Number that you entered during the software installation should be displayed. Verify that it is correct. if it is not correct change it now. Then click Ok.

2. The following dialog will be displayed to obtain your company information.



Enter all the requested information, then click Ok.

3. MapPro must connect to the MapPro Server via the Internet to register your copy of MapPro and obtain the Map License information. If you have a firewall installed on your computer it may be necessary to temporarily disable it to allow the MapPro communications software to connect to the MapPro Server.

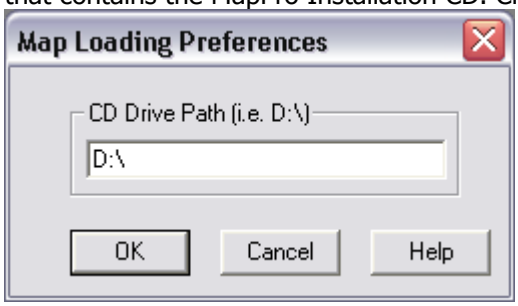
4. If you receive a "Copyright Violation" message, re-verify the Serial Number you entered (serial number is case sensitive) and try again. If you receive any other error message contact MapPro Technical Support. After MapPro has registered the following dialog will be displayed.

5. MapPro must now load the maps required for your installation of MapPro. Maps may be loaded from an installation CD or from a zip file downloaded from the web site.

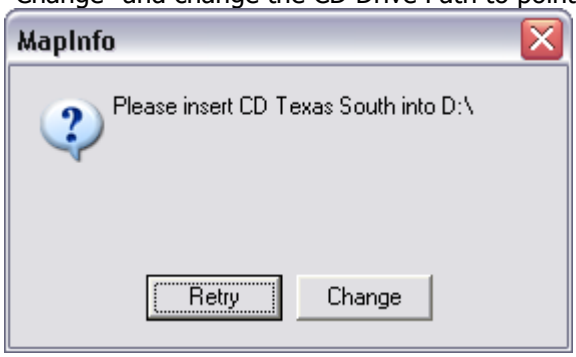
Select the Map source. If you selected Web proceed to Step 8 otherwise go to Step 6.

6. The following dialog is displayed to obtain your CD drive letter and the destination path where the maps will be saved. This information should all be correct. The CD Drive path should point to drive

that contains the MapPro Installation CD. Click Ok.



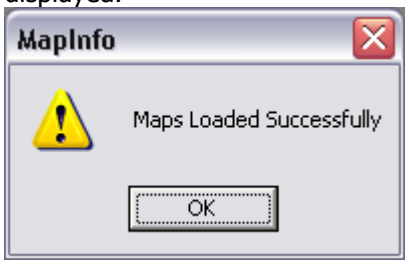
7. If you see a dialog similar to the following, you may have removed the CD from the drive or you have it inserted it into a second CD drive on your system. If this occurs insert MapPro CD or select "Change" and change the CD Drive Path to point to the correct location.



Go to Step 9.

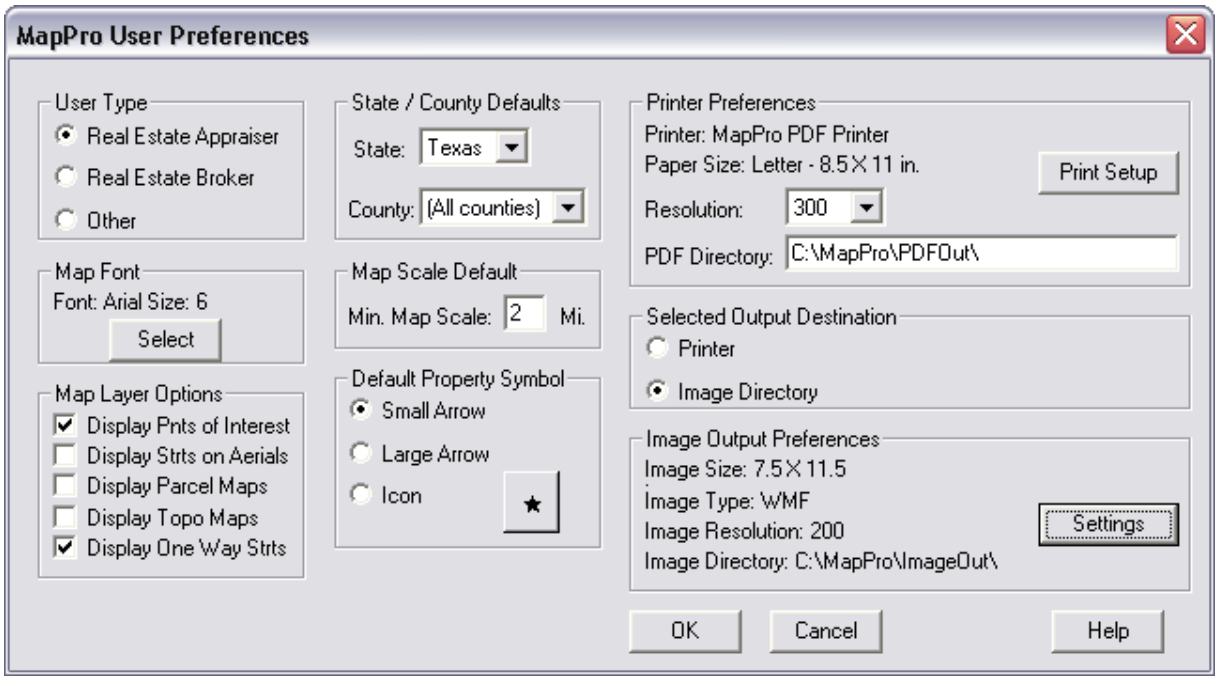
8. If you selected "Web" in Step 5, MapPro will automatically download a zip file containing the licensed maps from MapPro's web site and save the file. The file is saved in a directory called "Download" under the MapPro directory if you have a Single User License or a Demo License or in the Network License Path if you have a Network License. An estimated download time for several different types of internet connections is displayed in a message window. After the download is complete or if the file has been previously downloaded the licensed maps are unzipped automatically into the appropriate state directories and all the required map layers are then created.

9. After all the maps have been loaded and map layers have been created the following dialog is displayed.



1.6 User Preferences

Selecting User Preferences from the File Menu displays the following dialog:



User Type

MapPro is currently designed to support three different types of users- Real Estate Appraiser, Real Estate Broker, and Other. The only difference in these three user types is the way the fields in the header of the printed maps are defined.

The Real Estate Appraiser User Type header contains fields for File No., Borrower or Owner, and Lender or Client.
The Real Estate Broker User Type header contains fields for Client, Agent, Agent's Office Ph., and Agent's Home Ph.
The Other User Type header is a free form header containing a Description field.

Map Font

Map Font allows the default map font to be changed. Font sets the font type for all labels on the map. The size sets the font size for street and water labels - 6 is the default. Note that a font size less than 8 must be manually entered. The larger font sizes result in fewer streets being labeled since the automatic labeling does not allow labels to overlap each other. The color, background, and effects of the font is controlled internally by the software and therefore have no effect. Arial font is the default. This is a standard Windows font and works very well on the maps where text is printed at virtually every angle. True Type fonts generally print better at smaller font sizes.

Map Layer Options

The following Map Layer Option set the default settings for certain map layers. All of these settings may also be controlled through selections on the Options Menu after a map is displayed.

Display Pnts of Interest Check this box to display the points of interest layer on the map. The points of interest layer contains schools, parks, golf courses, cemeteries, churches, shopping centers, etc. and some users may not want this layer displayed since it adds numerous maps points that may not be needed for their particular application. This layer may also be temporarily turned on or off by selecting the Display Points of Interest selection on the Options Menu.

Display Strts on Aerial This check box will only be enabled if the optional Infrared Aerials, available for some areas, have been purchased. Checking this box causes the street maps to be overlayed on top of the aerial images.

Display Parcel Maps This check box will only be enabled if the you have subscribed to the optional Parcel Maps. (Currently only available for portions of the Houston area) Checking this box causes the parcel maps to be automatically displayed when the map scale is 2 miles or less.

Display Topo Maps This check box will only be enabled if the you have subscribed to the optional Topo Maps. (Currently only available for the Houston area) Checking this box causes the topo maps to be automatically displayed when the map scale is 2 miles or less.

Display One Way Strts Check this box to display the one way streets layer on the map. The one way streets layer layer contains arrows indicating the direction of one way streets. These directional indicators are displayed when the map scale is 2.5 miles or less. Some users may not want this layer displayed since it can add numerous arrows to the map that may not be needed for their particular application. This layer may also be temporarily turned on or off by selecting the Display One Way Streets selection on the Options Menu.

State/County Defaults

The State / County Defaults specifies the default State and County for the **Map Point Data** dialogs. Selecting "(All Counties)" for the County default causes MapPro to use the Zip Code of the property address to find its location. Selecting a specific county causes MapPro to search only that county.

Map Scale Default

Min. Map Scale: Sets the minimum desired size of a map created using Map Maker. This distance is the horizontal or East/West distance across the map. The default value is 3 miles. There are no restrictions on what this value can be. It can be as little as .01 miles or as large as 100 miles. You may want to experiment with this setting to find a value that suits your needs. This setting only controls the minimum map scale, it does not control the maximum map scale. When more Map Point location is entered, MapPro dynamically scales the map so that all of the entered Map Point locations are shown. This could result in a map being displayed that is 30 miles or more across.
This also sets the initial size of the map frame displayed in Map Viewer. This is the horizontal or East/West distance across the map frame. The North/South distance is determined by this value along with the paper size.

Default Property Symbol

The Default Property Symbol preference sets the default property symbol style to be used on all Map Points. There three possible selections: Small Arrow, Large Arrow or Icon. Select the radio button next to the desired selection. If Icon is selected, the default symbol style for the icon may be selected by clicking on the Icon Button. All font names beginning with "MapInfo" contain symbols provided by MapPro although any font in the list may be selected. Browse through the various fonts to find a symbol that fits your needs.

Printer / Paper Size Preference

Printer / Paper Size Preference is used to specify which printer and paper size will be used for MapPro maps. Initially this is set to the Windows default printer. This setting is saved with each file so if you set a certain map file to print on a specific printer this setting will be restored when the same map file is opened again. MapPro installs a PDF Printer that may be used to generate Adobe PDF output. The name of this printer is "MapPro PDF Printer". PDF output may be sent to any specified directory. A default directory "PDFOut" is created under the MapPro directory that may be used for this output.

Resolution - Visible only if "MapPro PDF Printer" is the selected printer. Use to set the PDF file output resolution. Available settings are 300, 600, and 1200 DPI.

PDF Output Directory - Visable only if "MapPro PDF Printer" is the selected printer. Directory where PDF output will be sent. Default is "C:\MapPro\PDFOut\".

Selecting the **Print Setup** button allows the paper size and/or the default MapPro printer to be changed.

Selected Output Destination

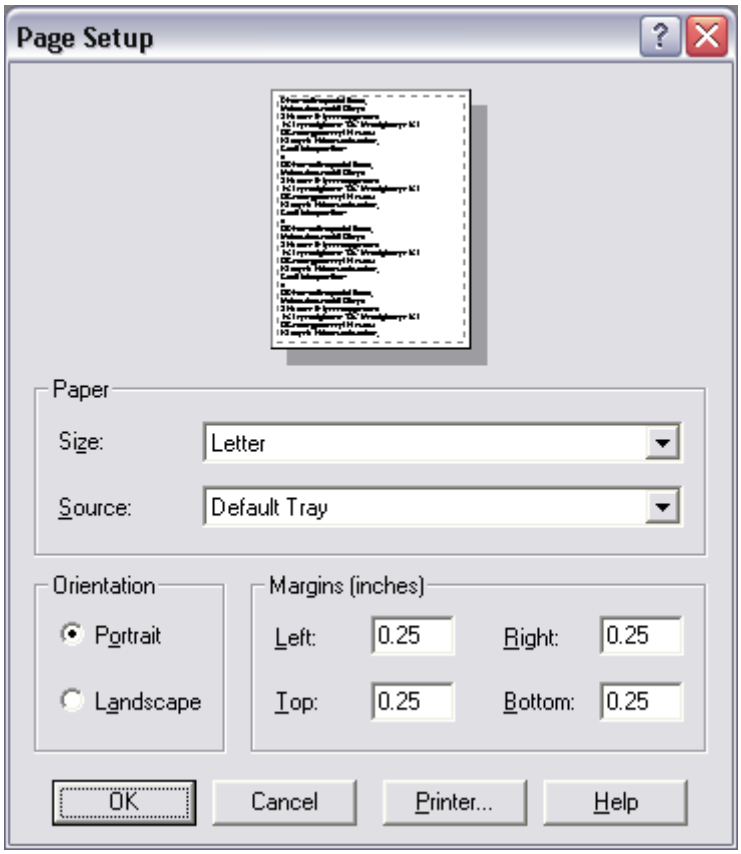
Selected Output Destination determines whether Maps will be printed to the selected Printer or Maps will be sent to the specified Image Directory when the **Print Map** button is pressed or Print is selected from the File Menu.

Image Output Preferences

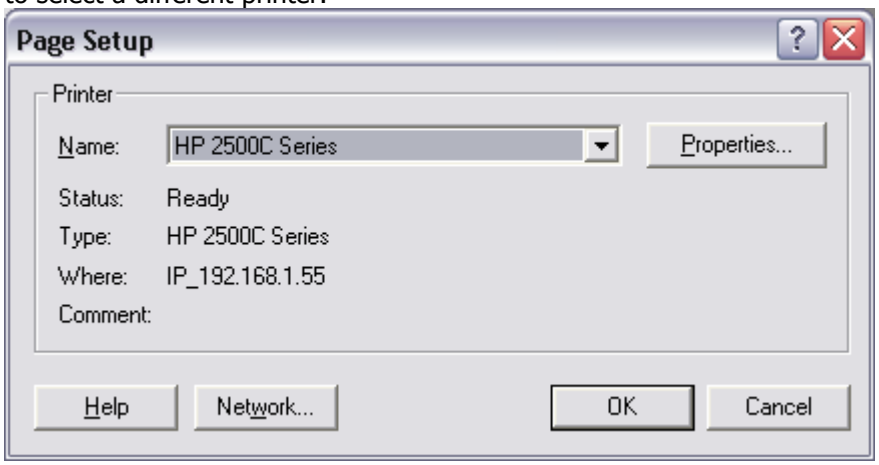
MapPro has a feature that allows Maps to be printed to image files. These files will be saved in the specified Image Directory with the Image Type, Size and Resolution specified. This is very useful if you have a need to import MapPro's maps into other applications. The naming convention for these files is as follows; If for example the MapPro Map Data file name is "123456" and the specified file type is "WMF", then the file name for the Location Map would be "123456_Location_Map.wmf" and the Flood Map would be "123456_Flood_Map.wmf". When images are created the normal header which appears on the printed maps is removed since this header is provided by most applications to which these maps will be imported. Selecting the **Settings** button allows the Image Output Preferences to be changed. If you are integrating MapPro with a residential appraisal software, you should set the image output type to PNG.

1.6.1 Print Setup

Print Setup displays the following Page Setup dialog. Make sure the paper size is set correctly. Page margins are controlled internally in the MapPro software so leave these settings at their default values.



Select a different printer by clicking on the "Printer..." button. Click down arrow next to Printer Name to select a different printer.



1.6.2 Image Ouput Preferences

Selecting the Settings button for Image Output Preferences displays the following dialog:

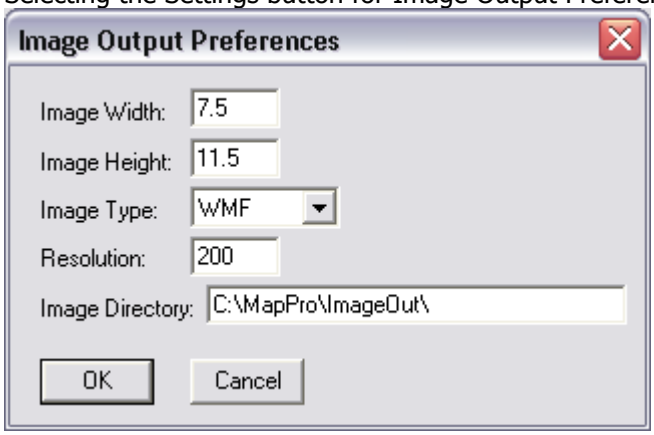
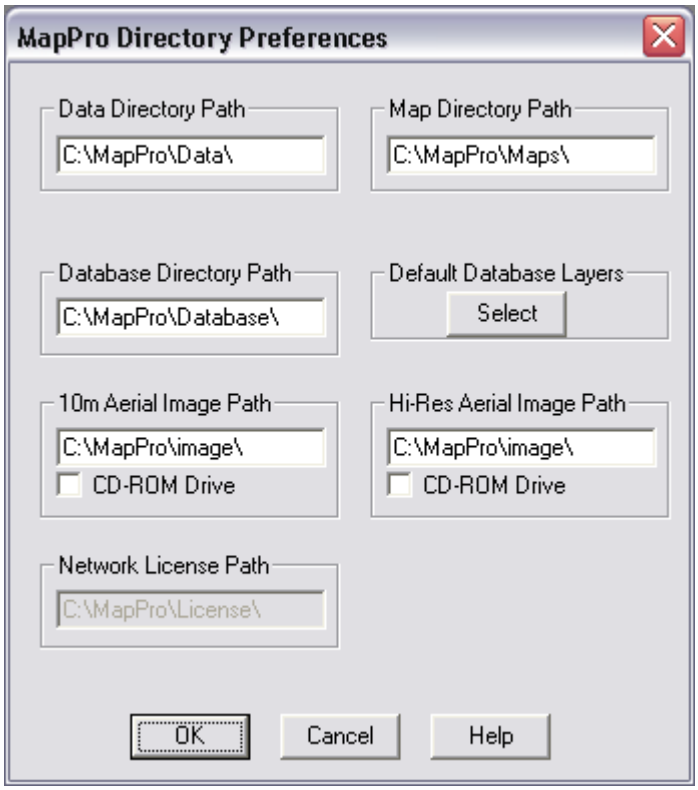


Image Width - Set Image Width to match custom paper size width.
Image Height - Set Image Height to match custom paper size height.
Image Type - Select the Image Type for saved images. The following image types are available:

"BMP" specifies Bitmap format
"WMF" specifies Windows Metafile format
"JPEG" specifies JPEG format
"PNG" specifies Portable Network Graphics format
"TIFF" specifies TIFF format
"PSD" specifies Photoshop 3.0 format
"TIFFCMYK" specifies TIFF CMYK format
"EMF" specifies Windows Enhanced Metafile format.

Resolution - Image output resolution in DPI. Recommended values: 96, 100, 150, 200, 300, 600. Increasing resolution can significantly increase file size. Doubling resolution will quadruple file size.
Image Directory - Enter the full path where images will be saved.

1.7 Directory Preferences



Data Directory Path

Data Directory Path tells MapPro where the Map Data Files (.mpd) are located. The default location of this path is "C:\MapPro\Data\". If the Map Data Files will be shared with other users on a network drive, the path should be "N:\PATH\MapPro\Data\" where N is the mapped network drive letter and \PATH is the path (if any) on the network drive.

Map Directory Path

Map Directory Path tells MapPro where the Map Files are located. The default location is "C:\MapPro\Maps\". The Map Directory Path is the largest portion of the disk space requirement for MapPro. If you do not have sufficient space on your "C:" drive you may enter an alternate drive. It is not recommended that you install the maps on a network drive since this will significantly slow down the creation of maps in addition to putting a heavy load on your network.

Database Directory Path

Database Directory Path tells MapPro where the User Database Files are located. The default location is "C:\MapPro\Database\". No databases are provided but databases may be created or imported with the **Database Utility** creating your own private map layers. If the Database Files will be shared with other users on a network, the path should be "N:\PATH\MapPro\Database\" where N is the mapped network drive letter and \PATH is the path (if any) on the network drive.

Default Database Layers

Default Database Layers is used to specify the default database layers that will be automatically added to all Map Viewer and Map Maker maps. This preference provides a very convenient way to map database layers that you always use. See **User Database Layer** for details.

10m Aerial Image Path

If you have not purchased any aerial image data from MapPro this field will be disabled. 10m Aerial Image Path tells MapPro where the **optional** 10 meter aerial image files are located. The 10m Aerial Images normally require in excess of 100MB of disk space. If you have a sufficient amount of free hard disk space and you plan to use the aerial images frequently, install the 10m Aerial Images on your hard drive. The default path is "C:\MapPro\Image\". If you did not install the 10m Aerial Images on the hard disk, this path should be "X:\" where X is your CD-ROM drive letter. The CD-ROM Drive check box must also be checked. You may install the 10m Aerial Images on a network drive the path should be "N:\PATH\MapPro\Image\" where N is the mapped network drive letter and \PATH is the path (if any) on the network drive.

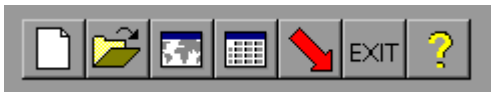
Hi-Res Aerial Image Path

If you have not purchased any aerial image data from MapPro this field will be disabled. Hi-Res Aerial Image Path tells MapPro where the **optional** 2.5 meter or 1 meter Aerial Image Files are located. The Hi-Res Aerial Images can require large amounts of disk space. For operation with a CD-ROM drive this path should be "X:\" where X is your CD-ROM drive letter. The CD-ROM Drive check box must also be checked. You may install the Hi-Res Aerial Images on a network drive the path should be "N:\PATH\MapPro\Image\" where N is the mapped network drive letter and \PATH is the path (if any) on the network drive.

Network License Path

Network License Path Network License Path is only used when MapPro has been installed with a network license. It contains the path on the network where the network license files for the network workstations are stored. The MapPro Network Host computer is responsible for initializing these files at the time of installation or when the network license is updated. Each MapPro Network Workstation must enter a path to the same location as specified on the MapPro Network Host. Once a valid path has been entered on the MapPro Network Workstation this field becomes disabled and can no longer be changed. When a peer to peer network is used, the Network License Path must NOT be set to the installation directory for MapPro on the Network Host (normally C:\MapPro\). In this case set the Network License Path to "C:\MapPro\License\".

1.8 Startup Button Bar



New Map Data File

Selecting the New Map File button on the Startup or Map Functions Button Bars or selecting **New Map Data File** from the **File Menu** causes a new Map Maker data file to be created. A date coded file name, using year, month, day and a sequential number starting at 01 thru 99, is displayed as the default file name in the New Map Data File dialog. You may either use this name or enter your own file name. The default File Type for Map Data Files is "mpd" (MapPro Data). These files are save in the Data Directory Path which is normally "C:\MapPro\Data". DO NOT change this path here. Select **Directory Preferences** if you would like these files saved in a different location. After the Map Data File has been created the **Map Point Data** dialog is displayed where Map Points for the Map Maker Map can be entered. Once the file has been created, **Open Map Data File** may be selected to reload all saved information relevant to a map.

Open Map Data File

Selecting the Open Map File button on the Startup or Map Functions Button Bars or selecting Open Map Data File from the File Menu displays a dialog where a previously created Map Data File may again be opened. Select the desired Map Data File and select Open or double-click on the file name. When the file is opened, the **Map Point Data** dialog is automatically displayed so that the Map Points may be reviewed prior to displaying a map.

Map Viewer

Map Viewer is a feature of MapPro that allows an area within a licensed counties to quickly be displayed without having to enter an actual street address. This can be very useful if you are dealing with a tract of land which has no actual address or in rural areas where rural route addressing is used. With Map Viewer, these maps can be quickly be displayed with just a few clicks of the mouse. Click here for more information on the use of **Map Viewer**

Database Utility

The Database Utility is a MapPro feature that provides users the capability to create databases or import existing Microsoft Access or dBase databases. These databases may then be geocoded (the process of assigning X and Y coordinates to the database records so they can be displayed as objects on a map) and then added as layers to the map. Click here for more information on the use of **Database Utility**

Arrow Maker

The Arrow Maker is a utility that allows users to create or modify arrows that are used on the maps in MapPro. Click here for more information on the use of **Arrow Maker**

Exit MapPro

Exit MapPro terminates execution of MapPro.

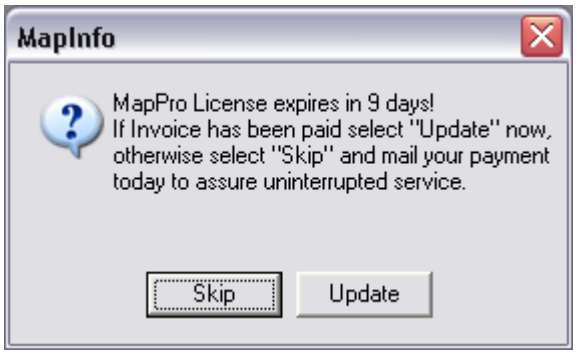
Help

Displays MapPro Help

1.9 Updating MapPro License

MapPro is a software as a service application. An internet connection is required to obtain this information from the MapPro Server. Each licensed computer has a unique Serial Number that is used to initially register the company information and obtain the authorization for the licensed map and data options. Once registered, only the specific computer that initially registered a particular Serial Number may obtain license updates for that licensed Serial Number. Any attempt to register a MapPro Serial Number previously registered on another computer will result in a **Copyright Violation**. If you would like to move the licensed serial number to another computer or if your original computer has had problems and the software was reloaded contact MapPro at 713-789-1406 for assistance.

When MapPro is started and 10 or fewer days remain until the expiration of the License a message similar to the one below will be displayed.



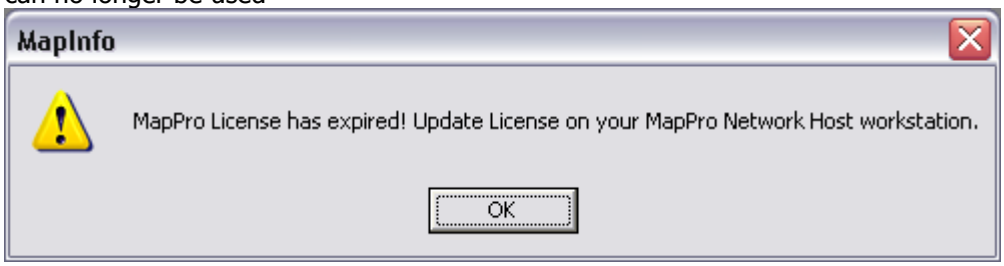
The About MapPro... selection on the Help Menu will also tell you the number of days that remain on the license at any time.

When the license expires, the following message will be displayed:

With a MapPro Network License one workstation on the network is designated the MapPro Network Host for the network. This computer is responsible for administrating MapPro on the network with the use of a separate program called "MapPro Network Host". The last two digits of the serial number determines how many licenses may be active on the network at any one time. All licenses float on the network and are available to any computer on the network that has MapPro installed. With a Network License, when MapPro is started on any workstation and 10 or fewer days remain until the expiration

of the License a message similar to the one below will be displayed.

When the license expires, the following message will be displayed. MapPro will automatically exit and can no longer be used



1.10 Technical Support

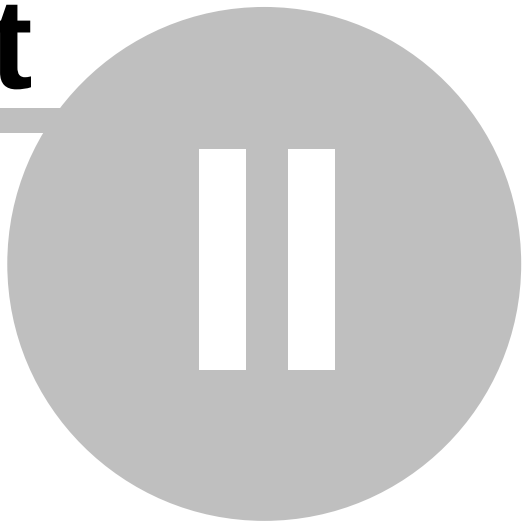
The latest MapPro software, software updates, map updates and other information is available on MapPro's Support web site at **www.mappro.net**

If you encounter problems working with the MapPro Software or have difficultly accessing the MapPro Server, our technical support specialists can help.

Please have your MapPro Serial Number ready before you call Technical Support.

Technical Support Phone: (713) 789-1406
Technical Support Email: support@mappro.com

Part



2 Reference Documents

2.1 Flood Zone Definitions

The following are the flood zone definitions as stated on the FEMA Flood Insurance Rate Maps:

Special Flood Hazard Areas Inundated by 100-Year Flood (Shaded cyan, blue, green, & violet on Flood Map)

Zone A: Areas of 100-year flood; No base flood elevations determined.
Zone AE: Areas of 100-year flood; Base flood elevations determined.
Zone AH: Areas of 100-year flood; Flood depths of 1 to 3 feet (usually areas of ponding); Base flood elevations determined.
Zone AO: Areas of 100-year flood; Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); Average depths determined. For areas of alluvial fan flooding velocities also determined.
Zone A99: Areas of 100-year flood; To be protected from 100-year flood by Federal flood protection system under construction; No base elevations determined.
Zone V: Areas of 100-year flood; Coastal flood with velocity hazard (wave action); No base flood elevations determined.
Zone VE: Areas of 100-year flood; Coastal flood with velocity hazard (wave action); Base flood elevations determined.
Zone A1-A30: Areas of 100-year flood; Base flood elevations and flood hazard factors determined.

Other Flood Areas (Shaded yellow on Flood Map)

Zone X: Areas of 500-year flood; Areas of 100-year flood with average depths of less than one foot or drainage areas less than one square mile; and areas protected by levees from 100-year flood.
Zone B: Areas of 500-year flood; Areas of 100-year flood with average depths of less than one foot or drainage areas less than one square mile; and areas protected by levees from 100-year flood.
Zone X500L: Areas where the 500-year flood zone (area with 0.2% annual chance of flooding) is an **area protected by a levee** (may be provisionally accredited).
Zone OW: (Shaded blue on Flood Map) Areas designated as **open water areas**. These are areas within county or community administrative boundaries but not covered by FEMA flood zones. In the past, we had either not captured such polygons or used a zone code of the closest properly coded polygon (typically V or VE). Please note the OW zone shall not be considered a Special Flood Hazard Area but it may be associated with a CBRA area. If any address point or street segment intersects with this new zone code it should be manually reviewed.

Other Flood Areas (Not shaded on Flood Map)

Zone X: Areas determined to be outside 500-year flood-plain; Areas of minimal flooding.
Zone C: Areas determined to be outside 500-year flood-plain; Areas of minimal flooding.
Zone D: Areas in which flood hazards are undetermined.

Areas shaded pink on Flood Map are areas that do not participate in FEMA's National Flood Insurance Program.

2.2 FEMA Q3 Flood Data Use Policy

This section presents FEMA's use policy regarding the Q3 Flood Data. It provides separate policy statements for standards of care, Community Rating System, and flood determination uses and also explains the "Good Faith Standard." Complete "Q3 Flood Data Users Guide" may be obtained from

FEMA's web site.

Standards of Care

For the development of applications using the Q3 Flood Data, the user has the following responsibilities:

- to obtain and review the technical documentation of the Q3 Flood Data, with particular regard to the limitation of this product;
- to establish minimum mapping and accuracy standards required for the proposed application;
- to obtain digital base maps and ancillary data of appropriate scale, resolution, and accuracy to support the applications; and
- to determine whether Q3 Flood Data is based on the currently effective FIRM panel.

The quality, accuracy, and reasonableness of any applications developed using Q3 Flood Data are the sole responsibility of the end-user.

The Q3 Flood Data product is not suitable for engineering applications such as detailed site design and development plans, Letters of Map Change, or submittal of FIRM Map Revisions.

Community Rating System

For the purposes of the Community Rating System (CRS), Q3 Flood Data may be used in the following ways:

- for calculations of SFHA areas and similar applications that require geographic calculations and measures;
- for partial fulfillment of GIS provisions per the provisions of Section 440, "Flood Data Maintenance," as described in the National Flood Insurance Program Community Rating System Coordinator's Manual (Reference 5); and
- for development of "notification" lists of potentially flood-prone properties, per the provisions of Section 330; and
- for partial fulfillment of credits for the performance of flood determinations, when performed in conformance with guidelines for determination presented below.

Flood Determinations

The Q3 Flood Data can support flood determinations in a limited fashion, in conformance with the "Good Faith" standard, if used within the following guidelines:

- The end user has obtained a source of address or property location data and combined it with Q3 Flood Data in a manner that conforms to the Standards of Care outlined above.
- The end user has made no determinations as to the flood prone status of a property that is within 250 feet of an SFHA boundary. This requirement is due to the accuracy, resolution, and variations of the Q3 Flood Data relative to the source FIRMs.

- The end user has verified that the Q3 Flood Data FIRM panel and suffix conform to the panel and suffix of the currently effective FIRM.

- The end user has confirmed the availability of flood insurance in the community for which the determination is to be offered.

- The end user has confirmed the zone and BFE with the source FIRM or DFIRM for properties located within 250 feet of the SFHA boundary or within the SFHA.

The "Good Faith Standard"

The mandatory flood insurance purchase requirements of the 1973 National Flood Insurance Act apply only when a structure is located in an SFHA in a community that is participating in the NFIP. Such a structure must be insurable under the rules of the NFIP. Even though a portion of the land parcel upon which the structure is planned or built may be within an SFHA, the mandatory purchase requirement is triggered only if the structure itself is within an SFHA.

The compliance of lenders with the mandatory flood insurance purchase requirements of the 1973 Act is based on the "good faith standard." Determining whether a structure is located in an area of special flood hazard requires the examination of the location of the structure in relationship to the areas of special flood hazard as shown on the applicable FIRM. The good faith standard recognizes that despite FEMA's best efforts to make the FIRMs as useful as possible, the descriptions of SFHA areas, as depicted by some maps, may, in some instances, not be clear enough to permit lenders to decide with certainty and precision whether or not property that is the security for a loan or that is the subject of financial assistance is located in such an area. It is for this reason that FEMA has recommended a "good faith standard."

The good faith standard requires lenders to exercise "due diligence and good faith" in determining the location of a property that is the subject of a loan relative to areas of special flood hazards as shown on a FIRM. This guidance is further explained, with additional information on the 1973 Act, in the publication Mandatory Purchase of Flood Insurance Guidelines (Reference 6).
When determinations are being made by lenders, or firms or individuals retained by lenders to assist in these endeavors, collateral data in addition to the FIRM is frequently required. FIRMs do not include all roads within communities, nor do they depict address, property boundary, or structure location information. As a result, determinations frequently can be made only by using an ancillary source of data, such as a land parcel map, to determine the location of a property on the FIRM.

Digital address range data, land parcel, and structure information is available for many communities across the nation. Using these digital data and GIS technology, it is possible to make determinations relative to the 1973 Act and meet the good faith standard. However, the lenders must assure that due diligence and good faith are exercised in application of digital mapping systems to make determinations. Because of both the increased complexity and analytical capabilities of GIS, assuring compliance with the good faith standard may require additional effort relative to use of paper maps.

A prime concern is to assure that the accuracy of the digital base map and structure location data are appropriate for use with the chosen digital FIRM data set (DFIRM or Q3 Flood Data) to make determinations relative to the 1973 Act. The concern for accuracy of the ancillary data used with DFIRMs should increase in direct proportion to the relative closeness of the property under analysis to the SFHA boundary. Thus, lenders might not find it prudent to use digital data at the 1:100,000 scale as the primary source of information upon which to make a determination regarding a property located within 250 feet of an SFHA. Such caveats should be carefully considered when U.S. Bureau of the Census TIGER data are used as the source from which property determinations will be made.

In some instances, GIS technology will enable the use of large-scale land parcel, topographic, structure, and other information, with digital FIRM data to make determinations. GIS technology allows maps to be created at any user-specified scale. Enlargement of scales does allow for precise determinations to be made. However, precise measurements are not inherently accurate. Accuracy can only be assessed from an appraisal of the quality of source data.

SFHA boundary information conveyed by Q3 Flood Data files was developed to overlay USGS 7.5-minute topographic maps at a scale of 1:24,000. Thus, Q3 Flood Data cannot be assumed to have an accuracy of better than 40 feet. Due to other limitations, FIA recommends that determinations using GIS technology and Q3 Flood Data generally be made only when structures are located 250 or more feet outside an SFHA boundary. In cases where the structure is within 250 feet of the SFHA or inside the SFHA, data such as the BFE determined from a FIS flood profile and the surveyed lowest adjacent grade and/or lowest floor elevation should be used to make a determination.

Prudence may require that a more conservative margin than 250 feet be used to determine the need for ancillary data to support a GIS determination. Terrain variations, the nature of flood hazards in the area, and the quality of all digital data being used to make the determination should be considered when establishing the need for collecting survey and flood profile data.

2.3 Environmental Hazard Types

NPL (National Priorities List)
List compiled by the EPA pursuant to CERCLA 42 USC Subsection 9605(a) (8) (B) of properties with the highest priority for cleanup pursuant to EPA's hazard ranking system. See 40 CFR Part 300.
Source: United States Environmental Protection Agency

D-NPL (Delisted Sites from the National Priorities List)
Sites that have been deleted from the National Priorities List.
Source: United States Environmental Protection Agency

CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System)
The list of sites compiled by EPA and that EPA has investigated or is currently investigating for potential hazardous substance contamination for possible inclusion on the National Priorities List.
Source: United States Environmental Protection Agency

NFRAP (No Further Remedial Action Planned)
The list of sites compiled by the EPA that to the best of the EPA's knowledge, Superfund has completed its assessment of a site and has determined that no further steps will be taken to list that site on the NPL.
Source: United States Environmental Protection Agency

CORRACTS (RCRA Corrective Action Sites)
List of hazardous waste treatment storage or disposal facilities and other RCRIS facilities (due to past interim status or storage of hazardous waste beyond 90 days) who have been notified by the US Environmental Protection Agency to undertake corrective action under RCRA.
Source: United States Environmental Protection Agency

RCRA TSD (RCRA Treaters, Storers, or Disposers of Hazardous Waste)
List maintained by the EPA of those facilities on which treatment, storage, and/or disposal of hazardous wastes takes place, as defined and regulated by RCRA.
Source: United States Environmental Protection Agency

RCRA GEN (RCRA Generators of Hazardous Waste)
List maintained by EPA of those persons or entities that generate hazardous waste as defined and regulated by RCRA, includes Small Quantity Generators (SQGs), Large Quantity Generators (LQGs)

and Conditionally-Exempt Small Quantity Generators (CESQGs).
Source: United States Environmental Protection Agency

ERNS (Emergency Response Notification System)
EPA's Emergency Response Notification System list of reported CERCLA hazardous substance releases or spills in quantities greater than the reportable quantity, as maintained at the National Response Center. Notification requirements for such releases or spills are codified in 40 CFR Parts 302 and 355.
Source: National Response Center

FED-BROWNS (Federal Brownfields Sites)
Brownfield sites receiving federal grants.
Source: United States Environmental Protection Agency

DEA-LABS (US Drug Enforcement Administration (DEA) National Clandestine Laboratory Register)
The U.S. Department of Justice provides listing of addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments. Sites are mapped as State Supplemental database sites.
Source: US Department of Justice, Drug Enforcment Agency

TRIBAL UST (Tribal Underground Storage Tanks)
Sites compiled by the various EPA Regions with underground storage tanks on tribal lands.
Source: EPA Regional Offices

TRIBAL LPST (Tribal Leaking Underground Storage Tanks)
Sites compiled by the various EPA Regions with leaking underground storage tanks on tribal lands.
Source: EPA Regional Offices

SPL (State Funded Superfund Sites)
Sites included in this category are included in a state's database of superfund sites, but may or may not be included in the US EPA CERCLA database. Available information varies by state
Source: State Government Agency

SCL (State CERCLIS Sites)
Sites included in this category serve as a state equivalent to the US EPA CERCLA database. Information available varies by state.
Source: State Government Agency

SWLF (Solid Waste Landfills)
Includes state landfill and/or solid waste disposal sites in a database maintained by state agencies. Information available varies by state.
Source: State Government Agency

CLI (Closed Landfill Inventory)
Lists of landfills that may be closed or unpermitted.
Source: State Government Agency

UNAUTH (Unauthorized Landfills)
Includes state landfill and/or solid waste disposal sites that are either unpermitted or unauthorized.
Source: State Government Agency

Brownfields (Brownfields Site Assessments)
State maintained list of completed and ongoing Brownfield Site Assessments. Available information

varies by state.
Source: State Government Agency

BROWARD-BF (Broward County Brownfields Redevelopment Sites)
Broward County, Florida maintained list of completed and ongoing Brownfield Site Assessments. Available information varies by state.
Source: Broward County Pollution Prevention & Remediation Division

ICR (Institutional Controls Registry)
This list contains sites listed in the state's or department's Institutional Controls Registry (ICR). The information in the ICR summarizes certain data about properties where institutional and engineering controls are used to control exposure.
Source: State Government Agency

RRC-Browns (Railroad Commission Brownfields Site Assessments)
State of Texas maintained list of completed and ongoing Brownfield Site Assessments. Available information varies by state.
Source: State Government Agency

VCP (Voluntary Cleanup Program Sites)
State maintained list of sites undergoing voluntary cleanup. Institutional controls are included for some sites. Available information varies by state.
Source: State Government Agency

RRC-VCP (Railroad Commission Voluntary Cleanup Program Sites)
State of Texas maintained list of sites undergoing voluntary cleanup. Available information varies by state.
Source: State Government Agency

LPST (Leaking Petroleum Storage Tanks)
State lists of leaking aboveground and underground storage tank sites. Section 9003(h) of Subtitle I of RCRA gives EPA and states, under cooperative agreements with EPA, authority to clean up releases from UST systems or require owners and operators to do so. Available information varies by state.
Source: State Government Agency

PST (Petroleum Storage Tanks)
State lists of underground and/or aboveground storage tanks required to be registered under Subtitle I, Section 9002 of RCRA. Available information varies by state.
Source: State Government Agency

UST (Underground Storage Tanks)
State lists of underground storage tanks required to be registered under Subtitle I, Section 9002 of RCRA. Available information varies by state.
Source: State Government Agency

St-Suppl (State Supplemental Database Sites)
Sites mapped with this symbol may be from any of the databases below.

IOP (Innocent Owner-Operator Program)
State maintained list of sites undergoing cleanup based on innocent owner/operator determination. Available information varies by state.
Source: State Government Agency

AST (Aboveground Storage Tanks)
State maintained list of registered aboveground storage tanks. Available information varies by state.

Source: State Government Agency

DRYCLEANER (Registered Dry Cleaning Facilities)
State maintained list of dry cleaning facilities and drop stations. Available information varies by state.
Source: State Government Agency

IHW (Industrial Hazardous/Solid Waste Facilities)
State maintained list of permitted hazardous and solid waste facilities. Available information varies by state.
Source: State Government Agency

St-Spill (State Spill Registry)
State maintained list of reported spills. Data may be duplicated in National ERNS list. Available information varies by state.
Source: State Government Agency

2.4 Census Tract Demographics

When a Location Map is displayed Census Tract Demographic information may be displayed with the use of the **Info Tool**. Below is a table containing the field names for the CT layer and a description for each field. Source of Data: US Census Bureau 2000 Census

CT	**Census Tract Number**
FIPS	Full Census Tract Number including State, County, and Census Tract
POP_2000	Total population
POP_WHITE	White alone
POP_BLACK	Black or African American alone
POP_AIAN	American Indian and Alaska Native alone
POP_ASIAN	Asian alone
POP_NHPI	Native Hawaiian and Other Pacific Islander alone
POP_OTHER	Some other race alone
POP_2RACE	Two or more races
POP_HISPLAT	People who are Hispanic or Latino
MED_AGE	Median age Both sexes
MED_AGE_M	Median age Male
MED_AGE_F	Median age Female
HH_POP	Total Population in households
HH_AVGSZ	Average household size
HH_TOTAL	Total Households
HH_1P	Total 1-person households
HH_1PM	1-person households Male householder
HH_1PF	1-person households Female householder
HH_2MP	Total 2-or-more person households
HH_2MPFAM	Total 2-or-more person Family households
HH_2MPCOU	Total 2-or-more person Married-couple family
HH_2MPU18	Total 2-or-more person Married-couple family with own children under 18 years
HH_2MPNU18	Total 2-or-more person Married-couple family no own children under 18 years
HH_OTHFAM	Total 2-or-more person Other families
HH_MNW	Total Male householder, no wife present

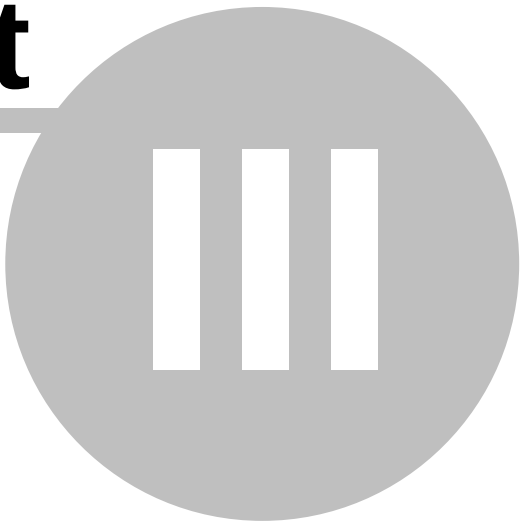
HH_MNWU18	Male householder, no wife present with own children under 18 years
HH_MNWNU18	Male householder, no wife present no own children under 18 years
HH_FNH	Total Female householder, no husband present:
HH_FNHU18	Female householder, no husband present with own children under 18 years
HH_FNHNU18	Female householder, no husband present no own children under 18 years
HH_NONFAM	Total Nonfamily households
HH_NONFAMM	Nonfamily household Male householder
HH_NONFAMF	Nonfamily household Female householder

FAM_TOTAL	Total Families
FAM_POP	Total Population in families
FAM_AVGSZ	Average family size

HU_POP	Total population in occupied housing units
HU_POPOWN	Occupied housing units owner occupied
HU_POPRENT	Occupied housing units renter occupied
HU_AVGSZ	Total occupied housing units average household size—
HU_AVGSZO	Occupied housing units average household size owner occupied
HU_AVGSZR	Occupied housing units average household size renter occupied

Logrecno	Statewide Census Record Number

Part



3 Map Viewer

3.1 Creating Maps with Map Viewer

Map Viewer is a feature of MapPro that allows an entire licensed area within a State to quickly be displayed without having to enter an actual street address. This can be very useful if you are dealing with a tract of land which has no actual address or in rural areas where rural route addressing is used. With Map Viewer, these maps can be quickly be displayed with just a few clicks of the mouse:

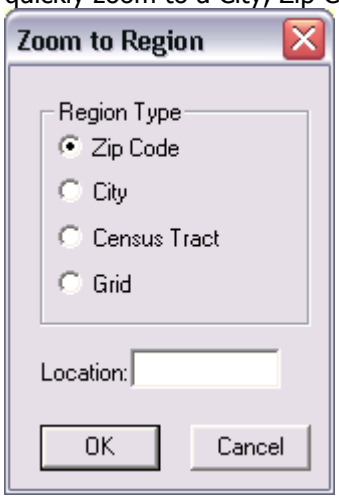
1. To start Map Viewer click the Map Viewer button on the **Startup Button Bar**.
2. If you have licensed maps in more than one State, a dialog box will be displayed so that the State can be selected. Select the desired State from the pop up menu. Map Viewer will start and display a county map for the entire licensed area within the State. If you have licensed maps in only one State, Map Viewer will start and immediately display a county map for the entire licensed area within the State.
3. A Message window is displayed at the top of the screen with the message: "**Select County from Map**". At this point you have two different options:
   (1) Move mouse pointer inside the county boundary of the county desired and click.
   (2) Click on **Zoom to Region** button and select a region type and enter a location, then proceed to step 5.
4. Map Viewer will zoom-in on the selected county and display a grid with the message: "**Select Grid Area from Map**". Move the mouse pointer inside the grid area that is closest to the area of interest and click.
5. Map Viewer will now zoom-in on the area selected, display a Map Frame in the center of the area, and display the size of the Map Frame in the Message Window. The width of the Map Frame displayed is determined by the Map Scale Default setting and the height of the Map Frame is determined by the Paper Size setting. Both of these settings may be changed in **User Preferences**.
6. Once the Map Frame is displayed, the size and position of the Map Frame may be changed. You can click and drag the Map Frame to adjust its position or the **Set Map Center** button may be used to set its position. Using the **Zoom-In Tool** will reveal more streets if there is not enough detail to find the location to be mapped. See **Map Viewer Buttons** for more details on adjusting the size and position and changing the viewed map.
8. When you have finished setting the size and position of the Map Frame, select the **Display Map** button. Note that the size and position of the Map Frame set at this point is just a preliminary setting. Both size and position of the map can be changed at any time after the detailed map is displayed.

3.2 Map Viewer Buttons

Unselect Objects - Unselects all previously selected objects. This button is disabled when no objects are selected.

Select Objects - Used to select County, Grid Area, and move Map Frame.

Zoom to Region - Selecting Zoom to Region displays the following dialog. Allows user quickly zoom to a City, Zip Code, Census Tract or Grid (if available).



Zoom-In Tool - The Zoom-In Tool may be used to zoom-in on a certain area of the displayed map that you would like to examine more closely.

To use Zoom-In Tool:
1. Click the Zoom-In button.
2. Move the mouse pointer to the center of the area you want to zoom in on. Clicking the mouse button then magnifies the area by a factor of two and the point where you clicked now becomes the center of the map window. You can repeat this procedure until you have the desired level of enlargement.

OR

2. Draw a marquee around the area by dragging the Zoom-In pointer diagonally and release mouse button. The selected area enlarges to fill the map window. The aspect ratio of the map window is not changed however, so if you choose an area that has a very different shape from the window, you will end up seeing a much wider or taller area of the map than you selected.

Zoom-Out Tool - The Zoom-Out Tool may be used to zoom-out on a certain area of the displayed map that you would like to see more of.

To use the Zoom-Out Tool:
1. Click the Zoom-Out button.
2. Move the mouse pointer to the center of the area you want to zoom out. Click the mouse and the map size will increase by a factor of two with the center of the map being at the point where you clicked. You can repeat this procedure as desired.

OR:

2. Draw a marquee by diagonally dragging the Zoom-Out tool across the window. The area displayed in the current map window then shrinks in size to fit inside the marquee area.

 **Grabber Tool -** The Grabber Tool allows the displayed map to be moved in any direction Moving map only affects the display and does not affect the map position when it is printed.

To reposition a map:
1. Select the Grabber Tool button. The cursor displays as a hand when moved over the map window.
2. Click and hold down mouse button in an area of the map. While holding down the mouse button, drag the map in the desired direction. When you release the mouse button, the map is redrawn in its new location.

 **Previous View -** Displays the previous Map Viewer screen.

 **Bigger Map -** This button causes the Map Frame to increase in size by 10-20%. The amount of the increase varies with the size of the original frame.

 **Set Map Center -** When this button is selected, the center of the Map Frame is set at the point in the map window where the left mouse button is clicked.

 **Smaller Map -** This button causes the Map Frame to decrease in size by 10-20%. The amount of the decrease varies with the size of the original frame.

 **Display Map -** After the size and position of the Map Frame has been set, selecting Display Map causes the **Location Map** to be displayed.

Exit Map Viewer - Exit Map Viewer without displaying a map.

 **Map Viewer Help -** Displays Map Viewer Help.

Part

4 Map Maker

4.1 Creating Maps with Map Maker

Map Maker is used to make maps when you have one or more known addresses to mapped.

To Create a Map with Map Maker:

1. Click on the **New Map File** button on the **Startup Button Bar**.
2. Click on **Add** button on the **Map Point Data** dialog.
3. Enter the Map Point address information and select the Arrow Type and size.
4. Repeat step 2 and 3 for any additional Map Points.
5. After after Map Point have been entered, select Done.
6. The **Map Functions Buttons**, the **Map Tools Buttons**, and the **Main Menu** are then displayed.
7. Select the map to display from the Map Functions Button Bar and then use the other Map Functions, Tools, and Main Menu functions as needed.

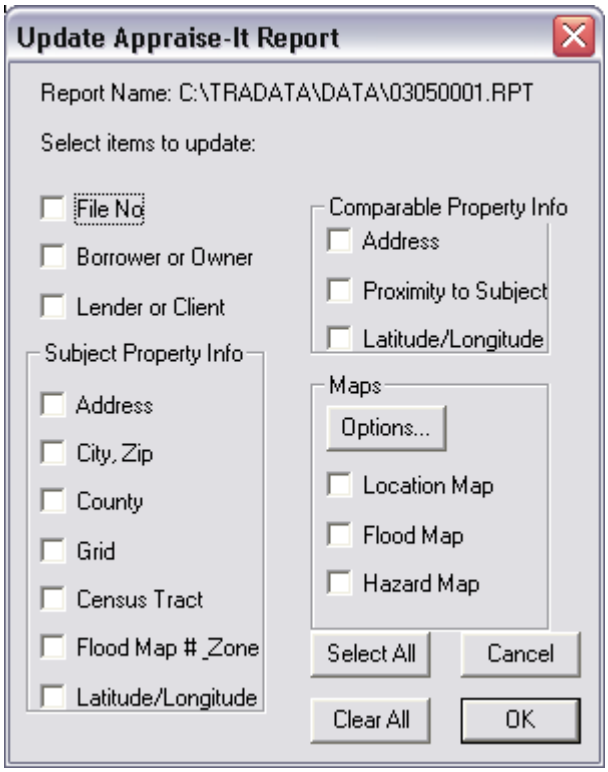
4.2 Appraise-It Interface

MapPro has a complete Interface to Software for Real Estate Professionals' Appraise-It Software. With this Interface, information contained in a Appraise-It appraisal report may be extracted from the report by MapPro. This information includes all the data that would normally be manually entered on the **Map Point Data** dialogs. In order for the Appraise-It Interface to MapPro to work, certain components are installed at the time of the MapPro installation which allows MapPro to be initiated directly from the Appraise-It Tools Menu. Appraise-It must exist on your system when MapPro is installed. If Appraise-It was installed after MapPro, perform a repair on the installation to install the required components.

To initiate MapPro from Appraise-It, select MapPro from the Appraise-It Tools Menu. MapPro will start and automatically performs a **New Map Data File** operation with the default name for the Map Data File being the same as the name of the report. After the Map Data File is created, MapPro retrieves the information from the Appraise-It report and locates each of the property addresses just as if they were entered from the Map Point Data dialog. After all the addresses have been located the Map Point Data dialog is displayed. When MapPro is started via Appraise-It, the User Type is automatically forced to Real Estate Appraiser regardless of which type is set in the **User Preferences**. The arrow Type for all Map Point are also automatically set to the correct type for the appraisal form being used in Appraise-It.

If MapPro was previously initiated from Appraise-It from the same report, the Map Data File will already exist. In this case you may use the same name or enter a new name. If you use the same Map Data File, you may use the previous data or get new data from the Appraise-It report.

The Location and Flood Maps, as well as other information needed in the Appraise-It Report may be sent back to Appraise-It. After any map has been displayed, an additional "**Appraise-It**" Menu item appears on the **MapPro Menu Bar**. This menu contains **Update Appraise-It Report...** that displays the following dialog:



Click on each item you want to update in the Appraise-It report or click on **Select All** to quickly select all the fields. Select **OK** and the Appraise-It report will be updated. Appraise-It must be running with the Report Name specified at the top of the **Update Appraise-It Report** dialog open in order for the report to be successfully updated. Maps sent to Appraise-It should be saved in Windows Metafile format (WMF) and are saved in the Appraise-It Image Directory. The file names of the map image files sent to Appraise-It are the name of the report with "Location_Map" or "Flood_Map" appended to it. When MapPro has completed the update process a message "**All Information Sent to Appraise-It - MapPro will Exit**" is displayed. The maps can then be viewed under Mapping and Sketch Addenda on the Appraise-It Contents Menu.

4.3 ACI Report Interface

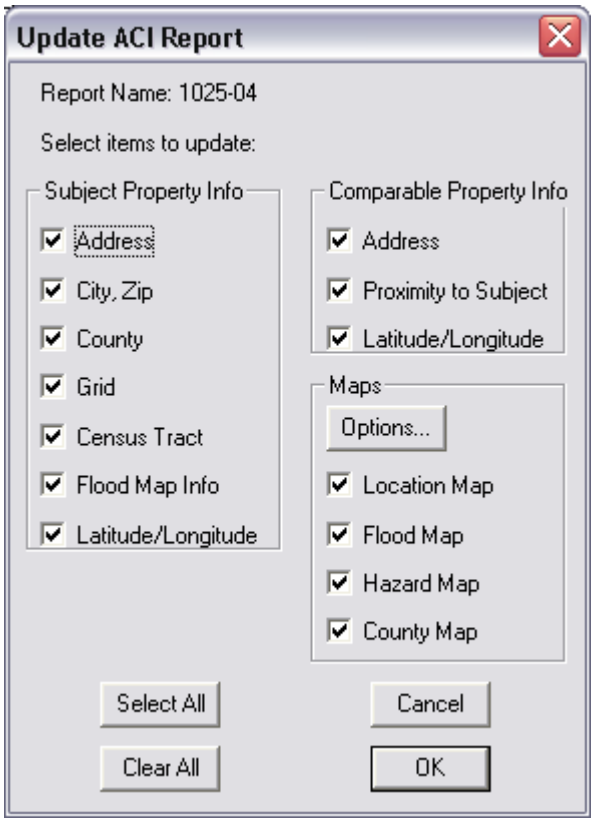
MapPro has a complete Interface to ACI's ACI Report Software. With this Interface, information contained in a ACI Report appraisal report may be sent to MapPro directly from the ACI Report software. This information includes all the data that would normally be manually entered on the **Map Point Data** dialogs. In order for the ACI Interface to MapPro to work, users must have **MapPro Version 8.3 or higher** and must also have **ACI Report Version 8.6.1 or higher**.

To initiate MapPro from ACI Report, select MapPro from the ACI Report E-Services/Mapping Menu. MapPro will start and automatically performs a **New Map Data File** operation with the default name for the Map Data File being the same as the name of the report. After the Map Data File is created, MapPro retrieves the information sent from the ACI report and locates each of the property addresses just as if they were entered from the Map Point Data dialog. After all the addresses have been located the Map Point Data dialog is displayed. When MapPro is started via ACI Report, the User Type is automatically forced to Real Estate Appraiser regardless of which type is set in the

User Preferences. The arrow Type for all Map Point are also automatically set to the correct type as used in ACI Report.

If MapPro was previously initiated from ACI Report from the same report, the Map Data File will already exist. In this case you may use the same name or enter a new name. If you use the same Map Data File, you may use the previous data or get new data from ACI Report.

The Location and Flood Maps, as well as other information needed in the ACI Report may be sent back to ACI Report. After any map has been displayed, an additional "**ACI Report**" Menu item appears on the **MapPro Menu Bar**. This menu contains **Update ACI Report...** that displays the following dialog:



Click on each item you want to update in ACI Report or click on **Select All** to quickly select all the fields. Select **OK** and the report will be updated. Maps sent to ACI Report should be saved in Windows Metafile format (WMF) to insure the highest quality. When MapPro has completed the update process a message "**All Information Sent to ACI Report - MapPro will Exit.**" is displayed.

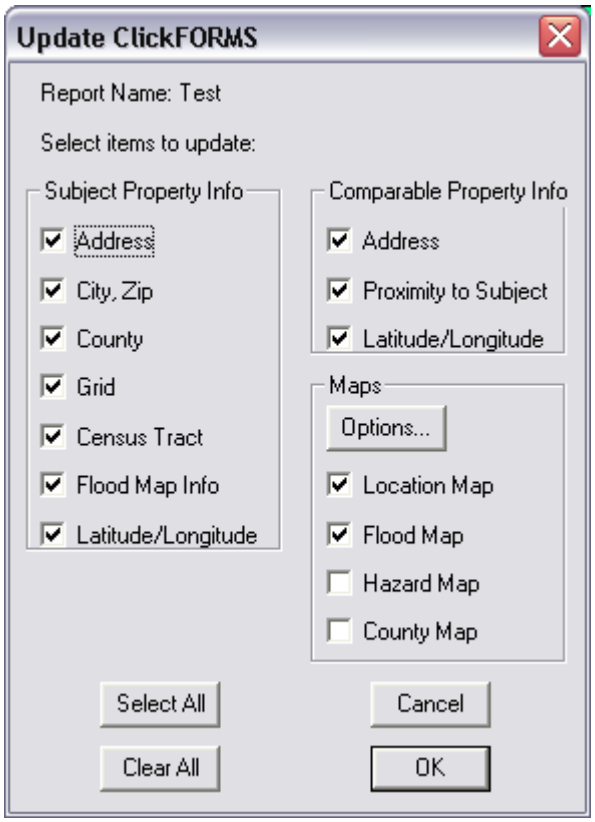
4.4 ClickForms Interface

MapPro has a complete Interface to Bradford Technologies' ClickFORMS Software. With this Interface, information contained in a ClickFORMS appraisal report may be sent to MapPro directly from the ClickFORMS software. This information includes all the data that would normally be manually entered on the **Map Point Data** dialogs. In order for the ClickFORMS Interface to MapPro to work, users must have **ClickFORMS Version 3.0.0** or higher.

To initiate MapPro from ClickFORMS, select MapPro from the ClickFORMS Tools Menu. MapPro will start and automatically performs a **New Map Data File** operation with the default name for the Map Data File being the same as the name of the report. After the Map Data File is created, MapPro retrieves the information sent from the ClickFORMS report and locates each of the property addresses just as if they were entered from the Map Point Data dialog. After all the addresses have been located the Map Point Data dialog is displayed. When MapPro is started via ClickFORMS, the User Type is automatically forced to Real Estate Appraiser regardless of which type is set in the **User Preferences**. The arrow Type for all Map Point are also automatically set to the correct type as used in ClickFORMS.

If MapPro was previously initiated from ClickFORMS from the same report, the Map Data File will already exist. In this case you may use the same name or enter a new name. If you use the same Map Data File, you may use the previous data or get new data from ACI Report.

The Location and Flood Maps, as well as other information needed in the ClickFORMS Report may be sent back to ClickFORMS. After any map has been displayed, an additional "**ClickFORMS**" Menu item appears on the **MapPro Menu Bar**. This menu contains **Update ClickFORMS...** that displays the following dialog:



Click on each item you want to update in ClickFORMS or click on **Select All** to quickly select all the fields. Select **OK** and the report will be updated. Maps sent to ClickFORMS should be saved in JPEG format. This format is specified by selected "JPEG" on the Image Output Preferences section of User Preferences. When MapPro has completed the update process a message "**All Information Sent to ClickFORMS - MapPro will Exit.**" is displayed.

4.5 Using Google Earth Pro with MapPro

If Google Earth Pro is installed on your PC, when the Aerial Map button is pressed MapPro will start Google Earth Pro. MapPro creates a file for use with Google Earth Pro and places this file in the "Data" folder under the MapPro installation folder. This folder is normally C:\MapPro\Data. This file will have the same name as the MapPro map data file name with "_MapPro.tab" appended to the name. Therefore if your map file name was "123456.mpd" the file created for importing into Google will be "123456_MapPro.tab". After Google Earth starts, go to the File Menu, select Import and find the file created by MapPro.

Part V

5 Menus & Buttons

5.1 Main Menu

The MapPro Main Menu contains the following list of menu items. Each of the Main Menu items contains one or more sub-menu items that may be selected. The MapPro software disables or removes items from the Main Menu and its sub-menus when prerequisites for the specific menu item have not been performed or the Menu is not applicable. The disabled menu items appear grayed or lighter in color when they are disabled.

File **Edit** **Map** **Options** **Setup** **Help**

File Menu

New Map Data File - Causes a new Map Maker data file to be created. A date coded file name, using year, month, day and a sequential number starting at 01 thru 99, is displayed as the default file name in the New Map Data File dialog. You may either use this name or enter your own file name.

Open Map Data File - Displays a dialog where a previously created Map Data File may again be opened. Select the desired Map Data File and select Open or double-click on the file name.

Close Map Data File - Closes the currently open Map Data File.

Save Map Data File - Forces currently open map data file to be saved. It is normally not necessary to perform this operation because the MapPro software automatically saves the current map data file whenever the data changes or after a map is displayed or altered in any way.

Save Map Data File As... - In some instances you may want to create maps that have much the same data as a previous map you have created. In this instance, open the map data file that contains the similar information and then select Save Map Data File As... and enter the name of the new map data file.

Print - Initiates a print operation. See **Print Map**.

User Preferences - Displays current User Preferences and allows them to be changed. See **User Preferences**.

Directory Preferences - Displays current Directory Preferences and allows them to be changed. See **Directory Preferences**.

Exit MapPro - Exits MapPro

1. ????????.MPD - The **File Menu** contains the names of the four most recently created or opened map data files. Selecting one of these four menu items performs the same operation as selecting **Open Map Data File** and then opening one of these four files. These menu items simply provide a faster way to get to your most recently used files. After selecting one of these four file names, the **Map Point Data** dialog is automatically displayed so that the

Map Points may be reviewed prior to displaying a map.

2. ????????.MPD
3. ????????.MPD
4. ????????.MPD

Edit Menu

Undo - Cancels the previous edit operation.

Copy Map Window / Copy - If no objects are currently selected this Menu Item is "**Copy Map Window**" which copies the currently active Map Window to the Clipboard. If an object is selected this Menu Item is "**Copy**" which copies the selected object(s) to the Windows Clipboard.

Paste - Pastes the contents of the Windows Clipboard into the Cosmetic Layer of the Map.

Cut - Deletes the currently selected and editable text and copies the selected object(s) to the Windows Clipboard.

Clear - Deletes the currently selected and editable text.

Unselect All - Unselects any selected objects.

Map Menu

Set Map Display Scale - Allows the map scale (width) of the displayed map to be changed. This menu item is disabled if Dynamic Map Scaling is enabled. The Map Scale displayed is the current map scale. Enter the new desired value.

Disable Dynamic Map Scaling / Enable Dynamic Map Scaling - When Map Maker displays a map it dynamically scales and centers the map based upon the location of all the Map Points that have been entered. There may be an occasion when you want to adjust the position and map scale manually so you can show some feature on the map that is not shown. When **Disable Dynamic Map Scaling** is selected this dynamic scaling feature is turned off, the **Set Map Display Scale** menu item is enabled, and the **Disable Dynamic Map Scaling** menu item changes to **Enable Dynamic Map Scaling**. The map scale and position may then be manually set.

Set Map Distance Units - Allows the current map distance measurement units to be changed. Default is Miles. Yards, Feet, Kilometers and Meters may be selected.

Display Cursor Location / Display Zoom - Normally when a map is displayed the **Zoom** or map scale is displayed in the lower left corner of the map window. When **Display Cursor Location** is selected, the **longitude** and **latitude** at the location of the mouse pointer is displayed in the lower left corner of the map window. The menu item is then changed to **Display Zoom (Map Scale)** to display the map scale again.

Save Window As... - Allows the map window to be saved in a Image File. The **Save Window As** dialog allows you to specify the Image Size.

Same as Window - The default Width and Height of the image are automatically displayed. When you choose this setting, the image is saved with the current dimensions.

Custom Size - When you want to make the image larger or smaller, scale the image by either entering the width or height or resize the window manually. When you

change either the height or the width, MapInfo changes the other dimension to preserve the image's proportions.
When the **Save** button is pressed the **Save Window to File** dialog where you can specify the **File Name**, **Path**, and **Save as type**.

Options Menu

Show Drawing Tools Buttons/Hide Drawing Tools Buttons - Shows or Hides the **Drawing Tools Buttons**

Edit UserMap Layer/Edit Cosmetic Layer - MapPro allows users to create their own private map layer that can be used for new streets or other map features not contained in the MapPro's Maps. This UserMap layer resides in the **Data Directory Path** specified in **Directory Preferences**. In order to add a map object to the UserMap Layer, select **Edit UserMap Layer** menu item on the Options Menu must be selected after a map is displayed. After the UserMap editing has been enabled "Editing: UserMap" in the bar at the bottom of the map window. The **Drawing Tools** may then be used add streets or other map features. Map objects added to the UserMap layer will be saved when **Edit Cosmetic Layer** is selected from the Options Menu or the Map Data File is closed.

Hide UserMap Layer/Show UserMap Layer - When any map is displayed the UserMap layer is automatically displayed to show any additional map features you have added. If you wish hide the UserMap layer you may do so by selecting **Hide UserMap Layer**. In order to display the UserMap layer again select **Show UserMap Layer**.

Clear UserMap Layer - Clears all map objects and data for the entire UserMap Layer. A warning message is displayed prior to the operation being performed. **USE THIS WITH EXTREME CAUTION**, you may permanently destroy a great deal of work that has been done.

Display Streets on Aerials - This menu item will only be enabled if the optional Infrared Aerials, available for some areas, have been purchased. Checking this menu item causes the street maps to be overlayed on top of the aerial images.

Setup Menu

Company Info - Displays your Company Info and allows any of the information to be changed. This information is sent to the MapPro Server every time you select **Update MapPro License**.

Reload Licensed Maps - Allows the licensed map files to be reloaded from CD or downloaded Zip File. This should normally not be necessary unless these files were inadvertently deleted or they have been corrupted in some way. If maps were previously loaded you will be asked if you wish to load "All" or just "New" map files. If you suspect a file might be corrupt, select "All".

Update MapPro License - Used to update your MapPro License when your licensed counties have changed, your company info has changed or you have recently made a payment.

Help Menu

Contents - Displays the Help Contents for MapPro Help.

Search for Help On... - Allows you to search for Help by entering or selecting a specific keyword.

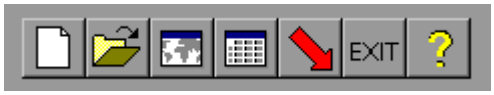
How to use Help - A standard Windows Help Tutorial that contains help on how to use Help.

About MapPro... - Displays a dialog with Software and Map Versions, Serial Number and Licensed Options.

Census Demographic Profiles... - Displays links for any state wide demographic profiles that have been installed.

Web Site Links... - Displays links to MapPro's Web Sites.

5.2 Startup Button Bar



New Map Data File

Selecting the New Map File button on the Startup or Map Functions Button Bars or selecting New Map Data File from the File Menu causes a new Map Maker data file to be created. A date coded file name, using year, month, day and a sequential number starting at 01 thru 99, is displayed as the default file name in the New Map Data File dialog. You may either use this name or enter your own file name. The default File Type for Map Data Files is "mpd" (MapPro Data). These files are save in the Data Directory Path which is normally "C:\MapPro\Data". DO NOT change this path here. Select **Directory Preferences** if you would like these files saved in a different location. After the Map Data File has been created the **Map Point Data** dialog is displayed where Map Points for the Map Maker Map can be entered. Once the file has been created, **Open Map Data File** may be selected to reload all saved information relevant to a map.

Open Map Data File

Selecting the Open Map File button on the Startup or Map Functions Button Bars or selecting Open Map Data File from the File Menu displays a dialog where a previously created Map Data File may again be opened. Select the desired Map Data File and select Open or double-click on the file name. When the file is opened, the **Map Point Data** dialog is automatically displayed so that the Map Points may be reviewed prior to displaying a map.

Map Viewer

Map Viewer is a feature of MapPro that allows an area within a licensed counties to quickly be displayed without having to enter an actual street address. This can be very useful if you are dealing with a tract of land which has no actual address or in rural areas where rural route addressing is used. With Map Viewer, these maps can be quickly be displayed with just a few clicks of the mouse. Click here for more information on the use of **Map Viewer**

Database Utility

The Database Utility is a MapPro feature that provides users the capability to create databases or import existing Microsoft Access or dBase databases. These databases may then be geocoded (the process of assigning X and Y coordinates to the database records so they can be displayed as objects on a map) and then added as layers to the map. Click here for more information on the use of **Database Utility**

Arrow Maker

The Arrow Maker is a utility that allows users to create or modify arrows that are used on the maps in MapPro. Click here for more information on the use of **Arrow Maker**

Exit MapPro

Exit MapPro terminates execution of MapPro.

Help

Displays MapPro Help

5.3 Map Functions Buttons

New Map Data File

Selecting the New Map File button on the Startup or Map Functions Button Bars or selecting New Map Data File from the File Menu causes a new Map Maker data file to be created. A date coded file name, using year, month, day and a sequential number starting at 01 thru 99, is displayed as the default file name in the New Map Data File dialog. You may either use this name or enter your own file name. The default File Type for Map Data Files is "mpd" (MapPro Data). These files are save in the Data Directory Path which is normally "C:\MapPro\Data". DO NOT change this path here. Select

Directory Preferences if you would like these files saved in a different location. After the Map Data File has been created the **Map Point Data** dialog is displayed where Map Points for the Map Maker Map can be entered. Once the file has been created, **Open Map Data File** may be selected to reload all saved information relevant to a map.

Open Map Data File

Selecting the Open Map File button on the Startup or Map Functions Button Bars or selecting Open Map Data File from the File Menu displays a dialog where a previously created Map Data File may again be opened. Select the desired Map Data File and select Open or double-click on the file name. When the file is opened, the **Map Point Data** dialog is automatically displayed so that the Map Points may be reviewed prior to displaying a map.

Close Map Data File

Closes a open Map Data File in **Map Maker** or closes a **Map Viewer** session and displays the **Startup Buttons**.

Exit MapPro

Saves any unsaved file and exits MapPro.

Map Point Data

The Map Point Data is the primary dialog in MapPro where property addresses are added, changed or removed. The dialog is displayed every time a Map Data File is created or opened or when the Map Point Data button is selected. From this dialog Map Points, either containing an actual street address or just a description, may be added, changed, or removed from the map. Map Points may also be added from a User Database or added to a User Database. There is no defined limit on the number of Map Points that may be added. There is of course a practical limit though, since too many arrows on a map could result in most of the map detail being obscured by the arrows themselves. For details on this dialog see **Map Point Data**.

Location Map

When the Location Map button is pressed, MapPro selects the appropriate layers for the map, creates the arrows or icons for the map points (if being displayed from Map Maker), dynamically scales and centers the map, labels all the information on the various layers and then displays the map. The County Location Map is also displayed but is hidden behind the maximized Location Map. Restoring the Location Map window to its normal size will reveal the County Location Map. The Location Map is automatically displayed when the **Display Map** button is clicked in **Map Viewer**. See **Map Layers** for information on all the map layers contained on the Location Map.

Flood Map

When the Flood Map button is pressed, MapPro selects the appropriate layers for the map, creates the arrows or icons for the map points (if being displayed from Map Maker), dynamically scales and centers the map, labels all the information on the various layers and then displays the map. The County Location Map is also displayed but is hidden behind the maximized Flood Map. Restoring the Flood Map window to its normal size will reveal the County Location Map. See **Map Layers** for information on all the map layers contained on the Flood Map.

During the process of displaying the Flood Map from Map Maker, the flood zone information for the

first map point (considered to be the Subject property) is checked. If it is determined that the Subject property is within 250 ft. of the edge of a 100 yr. Flood Zone a message stating this fact will be displayed. Due to the positional accuracy of the Street Maps and Flood Maps, the actual location of the property in relation to the 100 yr. flood zone could be in error by up to 250 ft. FEMA recommends that additional research must be done in order to make actual flood zone determination. It is recommended that the location shown on the Flood Map be compared with the location on FEMA paper FIRMs or that a survey may be necessary to make actual flood zone determination. A red 250 ft. radius circle is displayed on the Flood Map to show the possible margin of error.

Hazards Map

This button will be displayed if you have subscribed to the Hazards Map option. Hazards Map contains known potential environmental risks within a one mile radius of the subject property. The subject property is considered to be the first property in Map Point Data whether it is called subject or not. This data is a compilation of information from EPA and state databases. The American Society for Testing Materials (ASTM) has established a radius standard for each type of potential hazard. The table below contains the radii formats established by ASTM:

Hazard Type	**Radius(Mi.)**
NPL, CORRACTS, SPL	1.00
RCRIS_TSD, CERCLIS, SWLF, LUST	0.50
NFRAP, RCRIS_LG, RCRIS_SG, UST, AST	0.125
ERNS, ST-SPILL	0.05

Only the hazards that apply to the above standard are displayed. There may be many other potential hazards in the one mile radius from the subject property. See **Environmental Hazard Types** for details on each type of environmental hazard. See **Map Layers** for information on all the map layers contained on the Hazards Map.

Aerial Map

This button will be displayed if MapPro detects that Google Earth Pro is installed on your PC or if you have purchased optional Aerial Images (available for some metro areas in Texas and for Puerto Rico). If Google Earth Pro is installed on your PC, when the Aerial Map button is pressed MapPro will start Google Earth Pro. Then go to the File Menu in Google Earth Pro and select Import. MapPro creates a file for use with Google Earth Pro and places this file in the Data folder under the MapPro installation folder which is normally C:\MapPro. See **Using Google Earth Pro with MapPro** for details on importing MapPro addresses into Google Earth Pro. When the Aerial Map button is pressed and you have purchased aerial image data, the aerial image for the area is displayed. The Aerial must have been previously loaded on to your system When the Aerial Map button is selected, the Aerial Image Path setting in **Directory Preferences** is examined to determine the location of the images. If the image file for the displayed area cannot be located the operation is aborted. See **Map Layers** for information on all the map layers contained on the Aerial Map.

User Database Layer

Any number of User Database Layers may be added to any Map Viewer or Map Maker Map. These User Database Layers may be created using the **Database Utility**. option. Default Database Layers may be specified in **Directory Preferences** in you wish to always display certain database layers on all Map Viewer and Map Maker maps. The User Database Layer settings for each map are saved in the Data Directory with the same file name as the Map Data File but has a ".MDB" file extension. "Default.MDB" contains the Default Database Layers and exists only if defaults have been specified.

Print Map

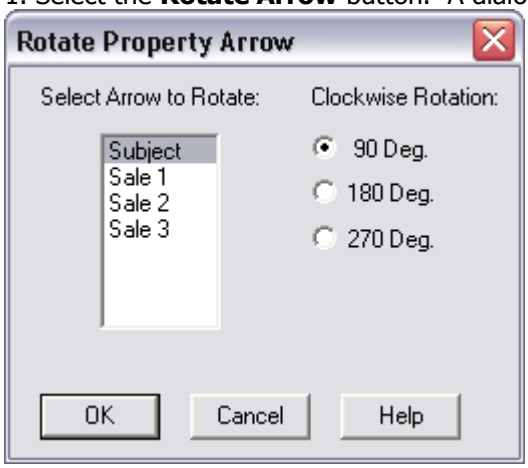
Print Map is one of most important functions in MapPro. Print Map allows maps to be not only maps to be printed but also allows maps to sent to image files for importing into other applications. **User Preferences** contains settings for the printer and image output and users should make sure these settings are correct before using the Print Map function. See **Print Map** for detailed information on printing maps.

Rotate Arrow

When the map is displayed, Map Maker will normally place the arrows so they do not overlap each other. But sometimes due to the close proximity of the arrows one arrow may be positioned partially on top of another. **Rotate Arrow** allows any arrow to be rotated clockwise 90, 180, or 270 degrees.

To rotate an arrow:

1. Select the **Rotate Arrow** button. A dialog box similar to the one below will be displayed.



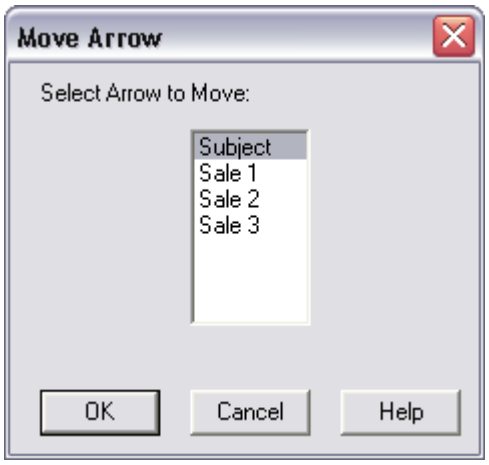
2. Select the arrow to rotate from the list and select the clockwise rotation desired.
3. The selected arrow will be rotated and the map will be redisplayed.

Move Arrow

When the map is displayed, the location for the placement of the arrows is determined by addressing information associated with each street segment. Occasionally you may find that an arrow has not been placed in exactly the right location due to some inaccuracy in the addressing. If this occurs, you may move the location of the arrow with the **Move Arrow** Tool.

To move an arrow:

1. Select the **Move Arrow** button.
2. Move mouse pointer to the exact location that the arrow should be located and click. Use the **Zoom-In Tool** if needed to enlarge the map to permit more accurate placement.
3. The following dialog will then be displayed. Select the arrow to move.



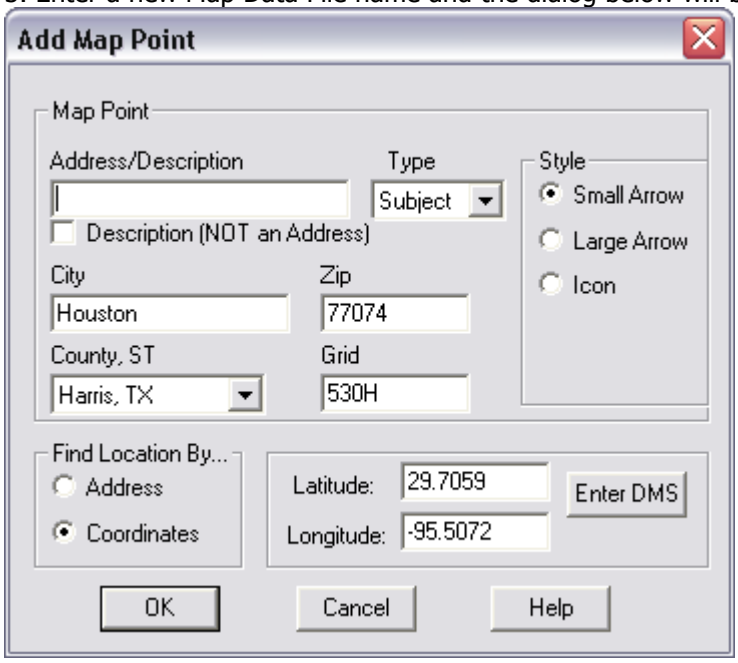
4. The arrow is moved and the map is redisplayed.

Place Arrow

The **Place Arrow** Tool can be used on both Map Viewer and Map Maker maps. Since Map Viewer Maps do not contain any arrows no Map Point Data associated with them, using the **Place Arrow** Tool on a **Map Viewer** map causes it to transition from a **Map Viewer** map to a **Map Maker** map. When the arrow is placed on the **Map Viewer** map, a **Map Data File** needs to be created to save the **Map Point Data** associated with the placed arrow. This works just as if a **New Map File** function was performed right in the middle of the **Place Arrow**.

To place an arrow in a Map Viewer map:

1. Select **Place Arrow Tool** button.
2. Move mouse pointer to the exact location that the arrow should be located and click the mouse button... Use the **Zoom-In Tool** if needed to enlarge the map to permit more accurate placement.
3. Enter a new Map Data File name and the dialog below will be displayed.



4. Enter an Address or Description and select an Arrow Type. Note that the City, Zip, County, and Grid

get automatically filled with the correct information. If the Map Point is not within a city boundary or no grid is available, these fields will be left blank.
5. The **Map Viewer** map now becomes a **Map Maker** map. The map is dynamically scaled and centered with the map scale set to the Min. Map Scale value in **User Preferences**. Note the title bar of the map window now displays "**Map Maker**" and the Map Data File name. Note also that the **Map Point Data**, **Rotate Arrow**, and **Move Arrow** buttons are now enabled.

In Map Maker the Place Arrow Tool serves two purposes.
First, when the Map Point Data is entered, the map points are located using the address, zip code, and sometimes the grid. Sometimes, especially in fast growing areas, a new street may exist that is not on the map. If the map point location cannot be found, a message will be displayed informing you that the arrow will have to be manually placed.
Secondly, after all the arrows for the data entered in Map Point Data have been placed on the map, either automatically or manually, the Place Arrow Tool may be used to place an arrow on the map and then enter the address or description.

To place an arrow for a Map Point that was not found in a Map Maker map:

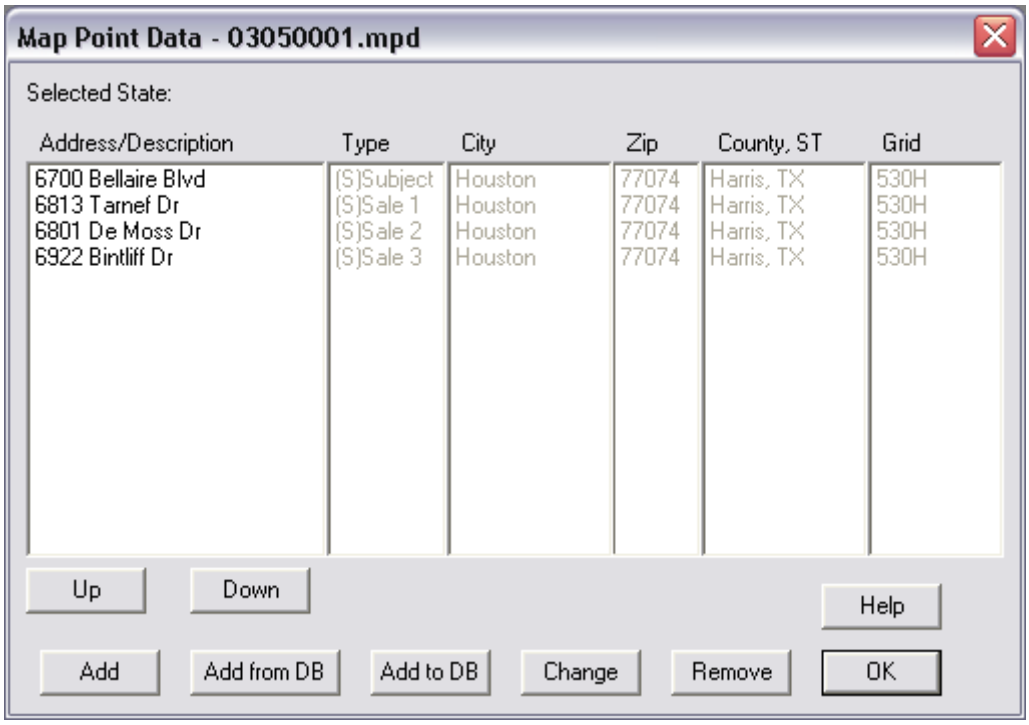
1. Select **Place Arrow** Tool button.
2. Move mouse pointer to the exact location that the arrow should be located and click the mouse button... Use the Zoom-In Tool if needed to enlarge the map to permit more accurate placement.
3. A dialog will then be displayed listing all the Map Points not yet placed on the map. Select a Map Point from the list and select OK.
4. The selected Arrow is placed on the map and the map is redisplayed.

To place an arrow for new Map Point in a Map Maker map, follow the same procedure as used for placing an arrow in a Map Viewer map. Since a Map Maker map already has a Map Data File associated with it, step 3 will be eliminated.

 **Help**
Displays MapPro Help.

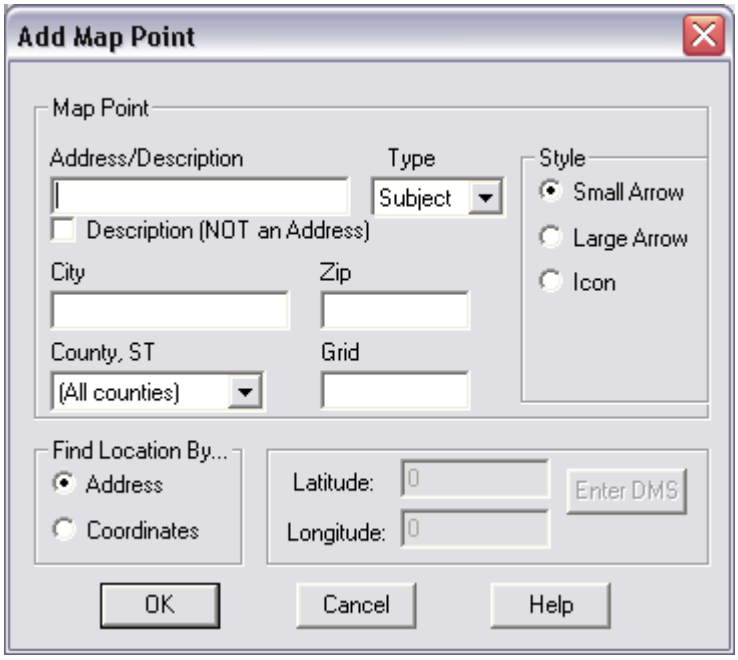
5.3.1 Map Point Data

The Map Point Data is the primary dialog in MapPro where property addresses are added, changed or removed. The dialog is displayed every time a Map Data File is created or opened or when the Map Point Data button is selected. From this dialog Map Points, either containing an actual street address or just a description, may be added, changed, or removed from the map. Map Points may also be added from a User Database or added to a User Database. There is no defined limit on the number of Map Points that may be added. There is of course a practical limit though, since too many arrows on a map could result in most of the map detail being obscured by the arrows themselves.



Adding Map Points

To add an address (which MapPro refers to as a Map Point) select the **Add** button on the Map Point Data dialog. The following dialog will then be displayed.



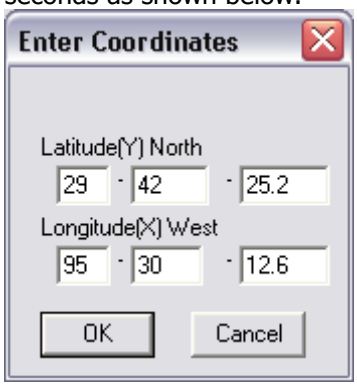
1. Enter a street address, a street intersection, or a description in the **Address/Description** field. If an **street address** is entered, make sure it is a full street address containing both and address number and a street name. Include any directional prefix or suffix (such as N, S, E, W) to the street name. Also include any suffix (such as Dr, Ave, Blvd, Cir, Place, etc.) to the street name. Do **not**

include any punctuation (such as . or ,) in any part of the street name. The program contains an abbreviation table that will take care of abbreviations for common street prefixes and suffixes, therefore you may spell out the prefix or suffix and the street name will still be found.

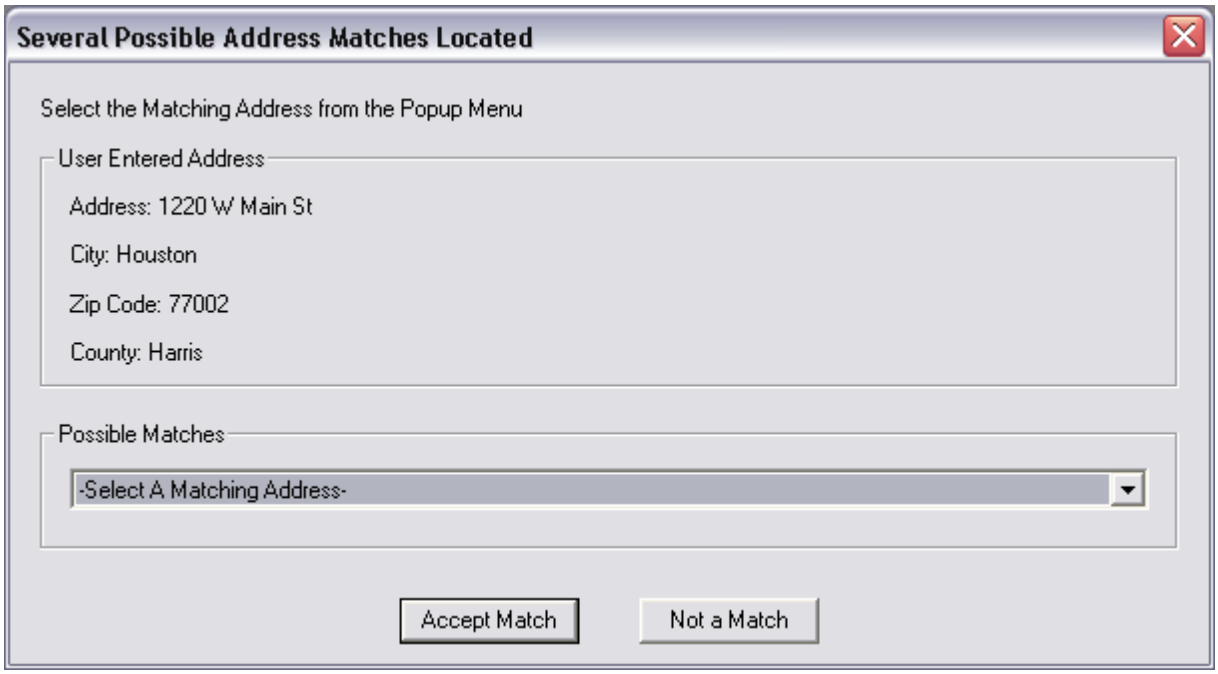
A **street intersection** may be entered by separating two street names with " && ". (i.e. "Chimney Rock Rd && Richmond Ave") When a street intersection is used, the streets must cross one another. The intersection will not be found if one street "T"s into another.

If Address/Description field contains a **Description** make sure the Description Check Box below this field is checked so the software does not try to locate it.

2. Select the arrow type from the **Type** pop up menu. Types that end in a # sign will result in the # being replaced with a number starting at 1 and will be incremented each time this Type is selected. Additional Types may be added to this list. See **Arrow Maker** for details.
3. **Style** contains the Default Property Symbol style selected in **User Preferences.** This default style may be changed for any Map Point if desired.
4. Enter the city in the **City** field. This field is optional and may be left blank. MapPro will automatically fill the City name field with either the Post Office name or the City name.
5. Enter the zip code in the **Zip** field. If you don't know the zip code the field can be left blank. If the Zip field is left blank the County, ST where property is located must be selected in step 6.
6. The **County,ST** normally will contain "(All counties)" which is the default selected in **User Preferences**. If this field displays an actual county name rather than "(All Counties)" or you did not enter a Zip in step 5, you must select the correct county where the property is located. MapPro will find the correct county if a Zip is entered and the County,ST field contains "(All counties)"
7. The **Grid** field exists only in some States and Counties. This field is a local map book page and block letter. This field is only used if the property address can not be located. In this case the map point is set an approximate location at the center of the grid entered. Enter the map grid location where the map point is located into the Grid field if you have this information. This field is also optional.
8. The **Find Location By... Address/Coordinates** selection defaults to Address. In this mode the address information entered in the fields above is used to find the location of an address on the map. If a user already has the earth coordinates (ie. latitude & longitude) of a property, the **Coordinates** radio button may be selected. When Coordinates is selected a decimal latitude and longitude may be entered or the **Enter DMS** button may be selected to enter the coordinates in degrees, minutes, and seconds as shown below.



9. When OK is selected, the Map Point is located based upon the information entered. If the entered address is found in the entered zip code, city, and grid the Map Point information is added to the list box fields in Map Point Data dialog. If the exact address can not be found, MapPro analyses the entered information in order to find possible matches. If possible matches are found a dialog similar to the one below is displayed:



Possible matches with Street Address, City, Zip Code and County are displayed in the popup menu. User must either select an address from this list and click Accept Match or click Not a Match if none of the possible matches are correct. In this case the Advanced Search dialog will be displayed where several different options exist to find the specified address. See **Advanced Search** for details.

Also See: **Adding Map Points from a Database** and **Adding Map Points to a Database**

Changing Map Points

To Change a Map Point, select the Address/Description field on the Map Point Data dialog for the Map Point you wish to change. Then select the Change button. The Change Map Point dialog is displayed. Make the needed changes to the Map Point and select **OK**. If the Map Point was previously located and the Address, Zip, or Grid was changed, the following dialog will be displayed and the Old Address and New Address are displayed in a Message window at the bottom of the screen.

If **Yes** is selected, the new address is located in the same manner as for **Adding Map Points** above. If **No** is selected, the modified fields are changed but the new address will not be located.

If the arrow for the Map Point was moved or manually placed the following dialog will be displayed:

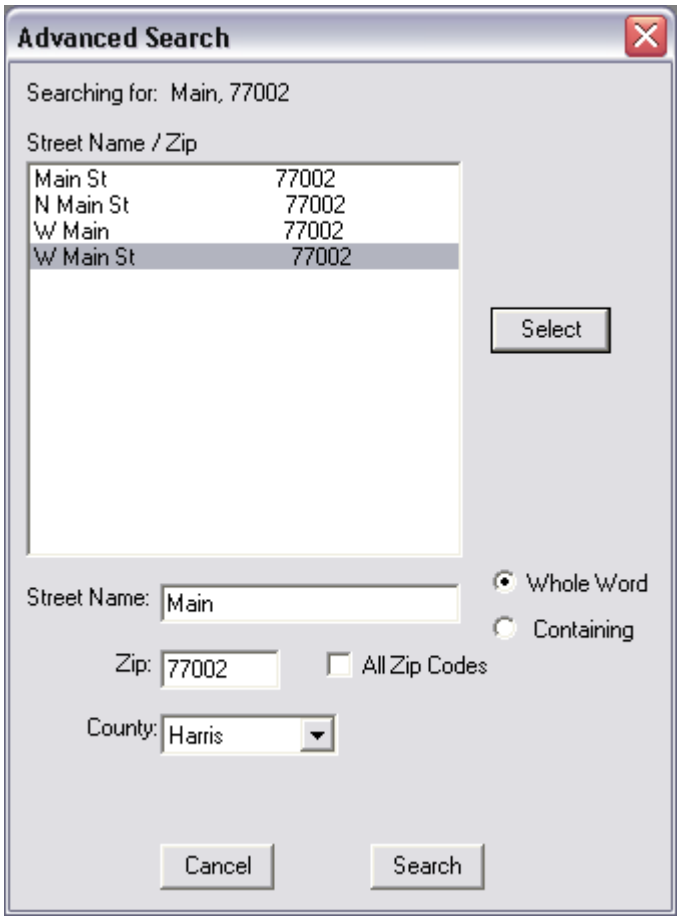
If **Yes** is selected, the current position of the arrow is saved and the modified fields are changed. If **No** is selected, the new address is located in the same manner as for **Adding Map Points** above.

Removing Map Points
To Remove a Map Point, select the Address/Description field on the Map Point Data dialog for the Map Point you wish to remove. Then select the **Remove** button. A dialog verifying this operation is displayed.

Changing the Order of Map Points
After Map Points have been added to the **Map Point Data**, the order which they appear in the list may be changed. This may be accomplished by selecting the Address/Description field of the Map Point to move in the list. Then select the **Up** or **Down** button depending upon which way you want to move the Map Point in the list.

5.3.2 Advanced Search

When an exact match can not be found on a address and zip code that has entered the following Advanced Search dialog is displayed:



Below is a list of tips for finding street addresses with the Program's response, followed by the suggested action:

1. Street Name not found.

Program Response: Advanced search dialog displayed. Any directional prefix to street and/or directional suffix or street suffix of less than 4 character is removed from entered name to create a base name for the street. Advanced Search dialog displays a list of street names that closely match the base name of the street. If the entered zip code crosses county boundaries, a message "Additional counties remain to be searched" is displayed at the bottom of the Advanced search dialog.

Suggested Action: Look at the list of displayed names, if the street name you are looking for appears in the list click on the street name/zip code in the list and then click on **Select**. If the list is empty or you do not see a name that you feel matches the street you are looking for there are several different options available to you:

A. If you think the street might be in another zip code click the "**All Zip Codes**" check box and then click **Search**. All zip codes in the county will be searched for the street name entered with a list of close matches and their zip codes displayed.

B. If you feel that you may have misspelled the street name, correct the spelling and click **Search**.

C. If you want to match on only a portion of the name when you are not sure of the spelling or other reasons, type in only a portion of the name, then click on "**Containing**", then click on Search. For example: If you originally entered the street name "N Bayou Park Dr". Advanced Search will display "Bayou Park" but you might want to search for all streets containing "Bayou".

You can do this both with "All Zip Codes" checked or unchecked.
D. If additional counties remain to be searched and you think the property is in another county, click **Cancel** and the next county will be searched.
E. If you click **Cancel** with no counties remaining to be searched the location of the property will be placed either at the center of the grid if it was provided or the center of the zip code if no grid was provided.

2. Street Address not found in entered zip code.

Program Response: Find dialog displayed with error "Boundary not found." List of zip codes containing address displayed.

Suggested Action: Select correct zip code from list. Occasionally an address will be found in a zip code other than the correct zip code. This mainly occurs when the entered address is on or very near a zip code boundary. Unfortunately the only way to get the arrow to be displayed correctly in this situation is to select the wrong zip code.

3. Address not found.

Program Response: Find dialog displayed with error "Address number not found." List of available address ranges displayed.
Suggested Action: Make sure the street suffix is correct. Many times streets with the same base name but a different suffix exist in the same zip code. (i.e. Park Ln, Park Dr, & Park Ct) A good indicator that this might be the case is if the available ranges are no where close to address number entered. Address ranges of "0" in the list indicates a street segment that has no addressing assigned. This will occur frequently on rural roads. Sometimes a new street segment has been added to a street that is not in the map or a existing map segment has been recently addressed. If there is an address range fairly close to the address number entered, select that address range. One of two different messages will then be displayed depending upon whether or not a Grid was entered. If no Grid entered: "Exact street address NOT found! Find using Closest Address or Manually place location later?". If Grid entered: "Exact street address NOT found! Find using Closest Address or Find approximate location using Grid?". Select your preference.

4. City different than entered City

Program Response: A message is displayed informing you that the actual city where the Map Point was found is different than the City that was entered.
Suggested Action: It is up to you to decide if you want to change the City or not. Many times the mailing address city name is different than the actual city boundary that a Map Point is within.

5. Grid different than entered Grid

Program Response: A message is displayed informing you that the actual grid where the Map Point was found is different than the Grid that was entered.
Suggested Action: It is up to you to decide if you want to change the Grid or not. The grid used by MapPro may not be precisely aligned with the paper map grid.

5.3.3 Adding Map Points from a Database

Map Points may be added to the Map Point Data from a selected database. This feature makes it easy to add Map Points that have already been geocoded and also eliminates having to type the information in again.

Add from Database: To add Map Points from a database, select the **Add from DB** button on the

Map Point Data dialog. A File Open dialog will be displayed. Select the database where Map Points will be added from. The Map Point Data dialog is then removed from the screen, the database is opened and the following message will be displayed:

Select the desired records by clicking on the box(es) on the left side of the window. To select multiple records hold the Shift key down while selecting. Use the scroll bars as needed to view records further down in the database. Click the **Add Selection** button when all the desired records are selected. If you wish to abort the selection process, click the Add Selection button with no records selected. All currently selected records may be unselected by clicking on the Unselect Objects button.

After the Add Selection button is clicked, an Add Map Point dialog is displayed for each of the selected records. Change the arrow Type for each as needed. If the database records were previously geocoded, the latitude and longitude contained in the database record are used. If the record has not been previously geocoded, the Map Point is located in the same manner as a normal Add Map Point operation. See **Advanced Search** for additional information. Selecting Cancel on the Add Point dialog will cancel or bypass the adding of the currently displayed Map Point. When all the selected records have been processed the database is closed and the Map Point Data dialog is redisplayed.

5.3.4 Adding Map Points to a Database

A selected Map Point may be added to selected database. This feature makes it easy to add records to a database without having to retype the information and then geocode the point in the Database Utility.

Add Map Point to Database: To add a Map Point to a database, select a Map Point from the Address/Description field in the **Map Point Data** dialog. Then select the **Add to DB** button. A File Open dialog will be displayed. Select the database where the Map Point is to be added. The database is opened, the Map Point is added to the database using the last symbol used when geocoding was performed in the selected database or the default symbol if no geocoding was ever performed on the selected database. A message is displayed confirming the Map Point was added.

5.3.5 Map Layers

Maps in MapPro contain many layers of information. These layers are arranged in a way so that objects of one layer do not obscure the view of objects of another layer. Each type of map in MapPro contains certain unique layers of information not contained on the other maps. Below is a list of the map layers contained on each type of map.

Location Map Layers

The Location Map contains 16 different layers of information:

1. Cosmetic Layer - Where all map objects you create such as lines, symbols, polygons, and text are placed.
2. Arrow2 - Where the text for the Map Maker arrows is placed.

3. Arrow - Where the Map Maker arrows are placed.
4. Highways - Contains all Limited Access Roads, US highways and state highways.
5. Major - Contains major city streets and major county roads.
6. Strt - Contains all the streets and roads of any type. All addressing information is contained in this layer.

Any User Database Layers are inserted here.

7. UserMap - Contains user drawn streets or other info.
8. RR - Contains all railroads.
9. Watrmin - Contains minor streams, lakes, and ponds.
11. Pnts - Contains points of interest including schools, fire station, police stations, hospitals, post offices, etc.
11. Watrmaj - Contains major rivers, bayous, and creeks.
12. Areas - Contains areas such as airports, shopping centers, colleges, major parks, subdivision names, etc.
13. Cities - Contains City boundaries.
14. Ct - Contains census tract boundaries and demographics.
15. Zip - Contains Zip Code boundaries.
16. Counties - Contains County boundaries.

Flood Map Layers

The Flood Map contains 16 different layers of information:

1. Cosmetic Layer - Where all map objects you create such as lines, symbols, polygons, and text are placed.
2. Arrow2 - Where the text for the Map Maker arrows is placed.
3. Arrow - Where the Map Maker arrows are placed.
4. Fldrad - Where the 250 ft. radius circle around the first map point or Subject property is placed.
5. Highways - Contains all Limited Access Roads, US highways and state highways.
6. Major - Contains major city streets and major county roads.
7. Strt - Contains all the streets and roads of any type. All addressing information is contained in this layer.

Any User Database Layers are inserted here.

8. UserMap - Contains user drawn streets or other info.
9. RR - Contains all railroads.
10. Watrmin - Contains minor streams, lakes, and ponds.
11. Pnts - Contains points of interest including schools, fire station, police stations, hospitals, post offices, etc.
12. Watrmaj - Contains major rivers, bayous, and creeks.
13. Areas - Contains areas such as airports, shopping centers, colleges, major parks, subdivision names, etc.
14. Cities - Contains City boundaries.
15. Flood - Contains the FEMA flood hazard map.
16. Counties - Contains County boundaries.

Hazards Map Layers

The Hazards Map contains 16 different layers of information:

1. Cosmetic Layer - Where all map objects you create such as lines, symbols, polygons, and text are placed.

2. Arrow2 - Where the text for the Map Maker arrows is placed.
3. Arrow - Where the Map Maker arrows are placed.
4. Radii - Where the .05, .25, .5, and 1 Mi. radius circles around the first map point or Subject property are placed.
5. Hazard - Contains the environmental hazards.
6. Highways - Contains all limited access highways, US highways and primary state highways.
7. Major - Contains secondary state highways, major city streets and major county roads.
8. Strt - Contains all the streets and roads of any type. All addressing information is contained in this layer.

Any User Database Layers are inserted here.

9. UserMap - Contains user drawn streets or other info.
10. RR - Contains all railroads.
11. Watrmin - Contains minor streams, lakes, and ponds.
12. Pnts - Contains points of interest including schools, fire station, police stations, hospitals, post offices, etc.
13. Watrmaj - Contains major rivers, bayous, and creeks.
14. Areas - Contains areas such as airports, shopping centers, colleges, major parks, subdivision names, etc.
15. Cities - Contains City boundaries.
16. Counties - Contains County boundaries.

Aerial Map Layers

The Aerial Map contains x layers of information:

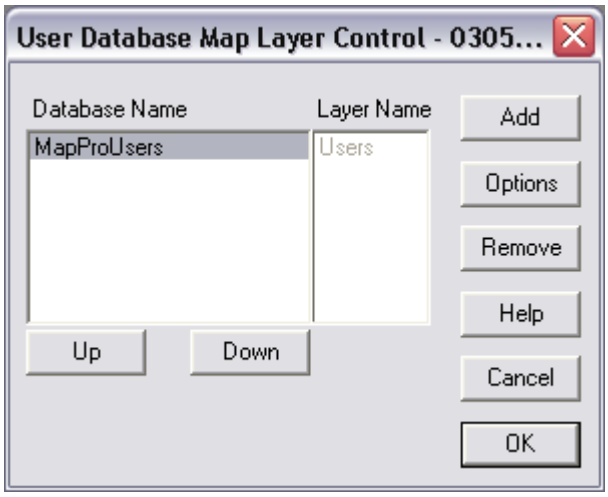
1. Cosmetic Layer - Where all map objects you create such as lines, symbols, polygons, and text are placed.
2. Arrow2 - Where the text for the Map Maker arrows is placed.
3. Arrow - Where the Map Maker arrows are placed.
4. Major - Contains secondary state highways, major city streets and major county roads. (if Display Streets on Aerial from Option Menu selected)

Any User Database Layers are inserted here.

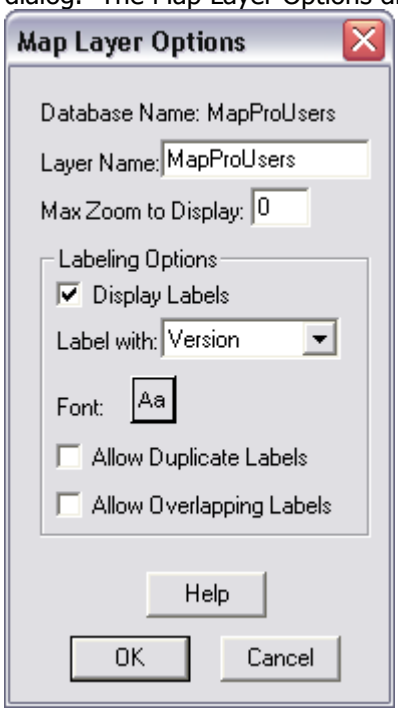
5. Aerial Image.
6. Doqq - Grid containing information telling MapPro which aerial to display.
7. Counties - Contains County boundaries.

5.3.6 User Database Layer

To Add a User Database Layer:
1. Click on the **User Database Layer** button. A dialog similar to the on shown below will be displayed. If Default Database Layers have been specified or User Database Layers were previously added to the current Map Data File they will appear in the list box.



2. To add a database layer click on the **Add** button. Any databases that reside in the Database Directory Path (see **Directory Preferences**) will be displayed. Select a database from the file open dialog. The Map Layer Options dialog shown below will then be displayed.



3. Set the Map Layer Options.

Layer Name - Enter a map layer name for the database. Default layer name is the Database Name. Certain layer names already used by MapPro are not permitted and an error message will be displayed if one of these reserved names is entered.

Max Zoom to Display - This is the highest map scale in miles where map objects will be displayed. Default is 0 which means always display. Some databases have 1000's of points and you may not want to display the database once the map scale goes above a certain level because of the processing time involved to display such a database or because the information displayed is not meaningful until a much smaller map scale is reached. Enter a value that suits your particular application.

Labeling Options - Map labels may be displayed for the objects in the User Database Layer.

Display Labels - Check this box if you want to display map labels for this layer.

Label with: - Select the field name from the pop-up menu that the map objects will be labeled with.

Font: - Select the font and font attributes to use for the labels.
Allow Duplicate Labels - Check this box if you want to allow objects with duplicate labels to all be labeled. If not checked only one object with that text will be labeled.
Allow Overlapping - Check this box if you want all objects labeled even if the text overlaps the text of another label.

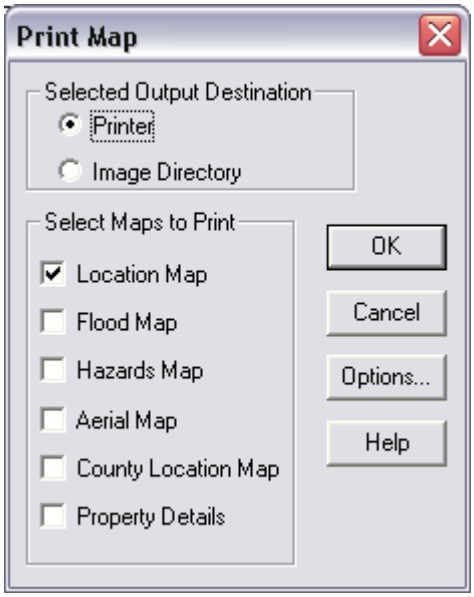
To change the options for a database layer, select database name in the **Database Name** list box then click on the **Options** button. The Map Layer Options dialog shown below will then be displayed.

To remove an existing database layer, select database name in the **Database Name** list box then click on the Remove button.

If more than one database layer exists the order of the database layers may be changed by using the **Up** and **Down** buttons. Select database name in the **Database Name** list box then click on the **Up** or **Down** button to change the order.

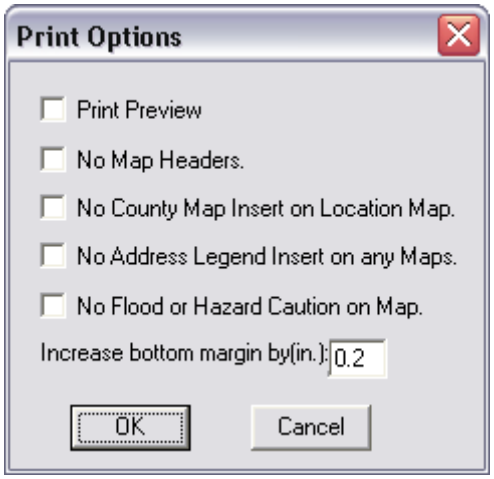
5.3.7 Print Map

Print Map allows any or all of the maps available to be printed or sent to images files in a single uninterrupted operation that requires no further operator intervention. The printer and image output settings are defined in **User Preferences**. When Print Map is selected, the following dialog is displayed:



Selected Output Destination - Displays the default Output Destination selected in **User Preferences**. The Output Destination may be switched if desired.
Select Maps to Print - Displays all the available Maps that may be printed based upon the licensed options and the Map data available. The currently displayed map is selected by default but may be deselected if desired. Select all the Maps that you wish to print or send to the Image Directory.
Options Button - There are several options that may be selected when printing. These options are saved each time they are saved so they do not need to be redefined for each print operation.

Selecting the **Options** button displays the following dialog:



Print Preview - This option is only available if **Selected Output Destination** is **Printer**. Selecting this option caused a print preview of each map before it is printed. Select this option if you want to alter some aspect of the printed page such as changing the Map Title or creating some sort of non-standard header. See **Print Preview** for details.

No Map Headers - This option is automatically set if **Selected Output Destination** is **Image Directory** since the images files generated are normally intended to be imported into other applications that provide their own header. Headers are normally printed at the top of each printed page. In some cases, you may want to print the maps without this header. Selecting "No Map Headers." prevents these headers from being printed. With "No Map Headers" selected the printed map is recentered vertically on page.

No County Map Insert on Location Map - Prevents the small county map insert from being placed on the bottom of the **Location Map**.

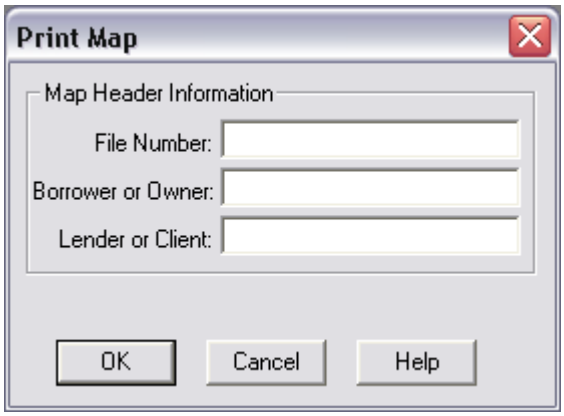
No Address Legend Insert on any Maps - Prevents the Address Legend insert from being placed in the bottom left corner of the all map pages. This option is automatically selected when a map contains 10 or more property locations since size this legend will extend upwards on the map page beyond the area reserved for legends. Selecting **Property Details** allows this address legend and addtional information to be printed on a separate page if desired.

No Flood or Hazard Caution on Map - The Flood and Hazard Caution Messages that appear when maps are displayed are printed at the bottom of the Flood and Hazard Maps respectively. Checking this box prevents these messages from appearing.

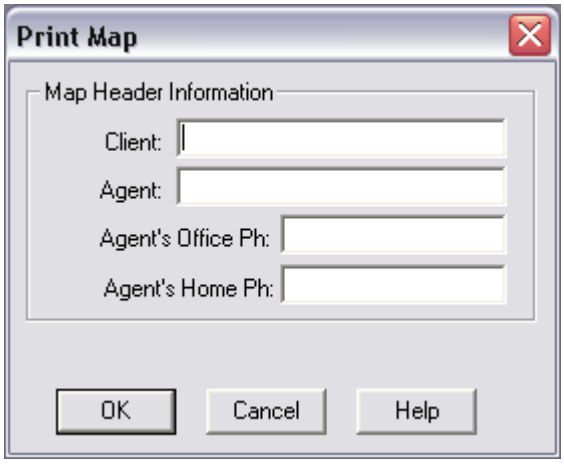
Increase bottom margin by: - MapPro prints to 0.4 inches from the bottom of the page. Many ink jet printers are unable to print this close to the bottom of the page and will result in a loss of printed information. This field allows the bottom margin to be raised by up to another 0.5 inches. Enter a value in inches.

If the "**No Map Headers**" check box was not selected in the "**Options**" Dialog, one of the following three dialog boxes is displayed where several fields of information that is printed in the header of the printed maps is entered. The fields required for the map header varies with the **User Type** set in **User Preferences**. Below are the three different dialogs displayed for each **User Type**.

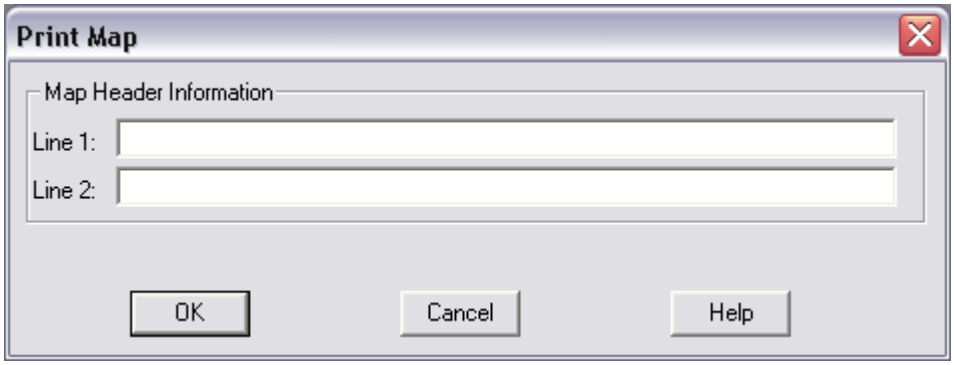
Real Estate Appraiser User Type.



Real Estate Broker User Type.



Other User Type.



After the Map Header information has been entered and if Print Preview was not selected under Options, a dialog is displayed where the **Number of Copies** to print may be specified.

Once the print operation has started it is possible to abort the print operation. When printing begins

for each map page, a dialog displaying Printing Layout is displayed with a Cancel button. There is also a Print Stop button (looks like a Stop sign) displayed at upper left corner of the screen. To abort the print operation, repeatedly press the Enter key on the keyboard and click on the Print Stop button with the mouse. There is only a very small window of time between map pages where the print operation may be aborted.

5.3.7.1 Print Preview

If the **Print Preview** option is checked, each map will be displayed on the screen prior to printing. The content of the printed page may then be modified if desired using any of the **Drawing Tools Buttons** or by double-clicking on text or by dragging objects on the page. When the **Print** button is selected on the Print Preview screen, the number of copies to print must be specified. This mode of operation does require operator intervention prior to each map being printed.

Stop Print

Selecting Stop Print terminates the print preview of current map page without printing. If the additional maps were selected for printing the next print previewed map will be displayed.

Unselect Objects

See **Map Tools Buttons** for details

Select Objects

See **Map Tools Buttons** for details

Zoom-In

See **Map Tools Buttons** for details

Zoom-Out

See **Map Tools Buttons** for details

Grabber

See **Map Tools Buttons** for details

Print

Select **Print** when all editing operations have been completed and you are ready to print the map. The number copies to print may be entered.

5.4 Map Tools Buttons

 **Unselect Objects** - Unselects all previously selected objects. This button is disabled when no objects are selected.

 **Select Objects -** The **Select Objects Tool** is used to select map objects. Once selected the object is highlighted and may be moved, cut, copied or deleted from the map. Only objects on the cosmetic layer may be moved, cut, or deleted from the map. The only objects on the cosmetic layer after a map is displayed are the labels for streets, cities, points of interest, etc. Other objects such as lines, polygons, text, or symbols may be added to the cosmetic layer with the use of the **Polyline Tool**, **Polygon Tool**, **Text Tool**, or **Symbol Tool**.

To move a map object:

1. Select the **Select Objects Tool**. This is the default selection, so unless you have used another tool it should be already selected.
2. Move mouse pointer to object you wish to move and click on object to select it and hold down mouse button.
3. If other objects exist in other map layers at the same point, it may be necessary to hold down the Ctrl key while clicking to get the desired object selected.
4. Drag object to the desired destination and release mouse button.
5. Click on the **Unselect Objects** button or select **Unselect All** from the **Edit Menu** to unselect the object.
6. Press **Ctrl-Z** or select **Undo** from the **Edit Menu** to undo the move.

To cut or delete a map object:

1. Select the **Select Objects Tool**.
2. Move mouse pointer to object you wish to cut or delete and click on object to select it.
3. If other objects exist in other map layers at the same point, it may be necessary to hold down the **Ctrl** key while clicking to get the desired object selected.
4. Press **Ctrl-X** or select **Cut** from the **Edit Menu** to cut the object or
press **Delete** key or select **Clear** from the **Edit Menu** to delete the object.
5. Press **Ctrl-Z** or select **Undo** from the **Edit Menu** to undo the cut or delete.

To copy a map object:

1. Select the Select Objects Tool.
2. Move mouse pointer to object you wish to copy and click on object to select it.
3. If other objects exist in other map layers at the same point, it may be necessary to hold down the **Ctrl** key while clicking to get the desired object selected.
4. Press **Ctrl-C** or select **Copy** from the **Edit Menu** to cut the object or
5. Press **Ctrl-V** or select **Paste** from the **Edit Menu** to put a copy of the map object in the cosmetic layer.

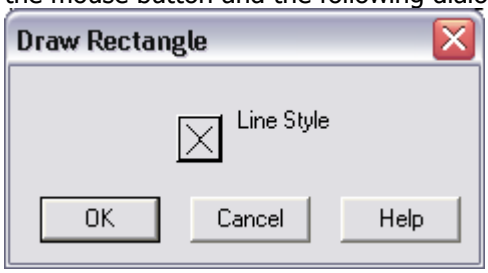
To select multiple objects hold down Shift key while selecting additional objects.

Draw Rectangle

The **Draw Rectangle Tool** serves two different purposes. The first more obvious one is it allows a rectangular box to be drawn on the map. Secondly, if a User Database Layer has been added to the map, it allows objects from the User Database Layer within the rectangle to be selected and the selected results saved in a DBF file. For example, if you have a User Database Layer containing all your customers added to the map, you might want to generate a list of which customers are located within a certain rectangular area because you are trying to establish sales territories. You can use the Draw Rectangle Tool to accomplish this.

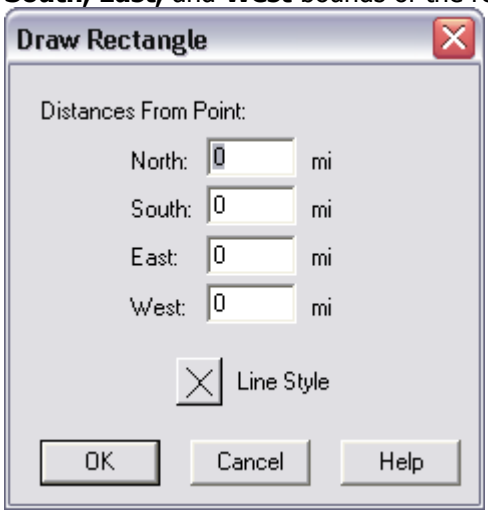
1. Add the desired **User Database Layer** to the map.
2. Select the **Draw Rectangle Tool**.
3. Draw the desired rectangle on the map. This can be done in two different ways.

1. Starting where you want one corner of the rectangle to be drawn, click and hold the left mouse button and drag the mouse diagonally across the map until you have the desired rectangle. Release the mouse button and the following dialog will be displayed. Set the desired **Line Style**.



or...

2. Move mouse pointer to a point on the map which you want to be the focal point of the rectangle. Click and release left mouse button. The following dialog will then be displayed. Enter the **North, South, East,** and **West** bounds of the rectangle and set the desired **Line Style**.



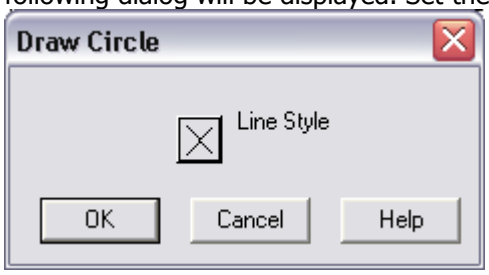
4. If you have added other objects, i.e. lines, text, etc., on the map a question asking if you want to "**Delete existing objects from Cosmetic Layer?**" will appear. If you answer **Yes** all objects you

added are deleted.
5. If a User Database Layer has been added to the map a question asking if you want to "**Select objects within Rectangle from Database Layer(s)?**" will appear. If you answer **Yes**, select the desired layers from the Database Map Layers dialog. Then enter the DBF file name where the selected results will be saved. Change the destination path if desired. If no objects are found within the rectangle, a message notifying you of that fact will be displayed.

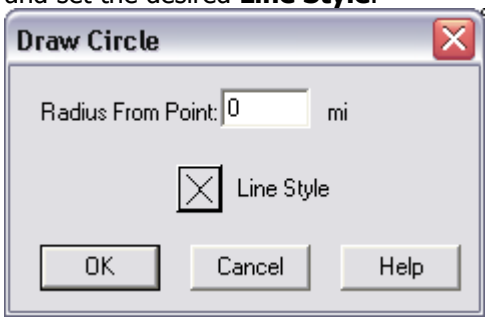
Draw Circle

Like the **Draw Rectangle Tool** the **Draw Circle Tool** can either draw a circle on the map only or select objects from the User Database Layer within the circle to be selected and saved in a DBF file.

1. Add a **User Database Layer** to the map if desired.
2. Select the **Draw Circle Tool**.
3. Draw the desired circle on the map. This can be done in two different ways.
1. Starting where you want the center of the circle, click and hold the left mouse button and drag the mouse across the map until you have the desired size of circle. Release the mouse button and the following dialog will be displayed. Set the desired **Line Style**.



or...
2. Move mouse pointer to a point on the map where you want the center of the circle. Click and release left mouse button. The following dialog will then be displayed. Enter the **Radius** of the circle and set the desired **Line Style**.



4. If you have added other objects, i.e. lines, text, etc., on the map a question asking if you want to "**Delete existing objects from Cosmetic Layer?**" will appear. If you answer **Yes** all objects you added are deleted.
5. If a User Database Layer has been added to the map a question asking if you want to "**Select objects within Circle from Database Layer(s)?**" will appear. If you answer **Yes**, select the desired layers from the Database Map Layers dialog. Then enter the DBF file name where the selected results will be saved. Change the destination path if desired. If no objects are found within the circle, a message notifying you of that fact will be displayed.

Draw Polygon

Like the **Draw Rectangle Tool** the **Draw Polygon Tool** can be used either draw a polygon on the map only or select objects from the User Database Layer within the polygon to be selected and saved in a DBF file.

1. Add a **User Database Layer** to the map if desired.
2. Select the **Draw Polygon Tool**.
3. Draw the desired polygon on the map by moving the mouse pointer the starting point for the polygon. Click left mouse button to mark first point. Move mouse pointer to the next point of a polygon, click to mark next point. Repeat this process until you have placed the last point of the polygon. Double-click left mouse button to close polygon and the following dialog will be displayed. Set the desired **Line Style**.

4. If you have added other objects, i.e. lines, text, etc., on the map a question asking if you want to "**Delete existing objects from Cosmetic Layer?**" will appear. If you answer **Yes** all objects you added are deleted.
5. If a User Database Layer has been added to the map a question asking if you want to "**Select objects within Polygon from Database Layer(s)?**" will appear. If you answer **Yes**, select the desired layers from the Database Map Layers dialog. Then enter the DBF file name where the selected results will be saved. Change the destination path if desired. If no objects are found within the polygon, a message notifying you of that fact will be displayed.

Zoom-In

The **Zoom-In Tool** may be used to zoom-in on a certain area of the displayed map that you would like to examine more closely.

To use Zoom-In Tool:
1. Click the **Zoom-In** button.
2. Move the mouse pointer to the center of the area you want to zoom in on. Clicking the mouse button then magnifies the area by a factor of two and the point where you clicked now becomes the center of the map window. You can repeat this procedure until you have the desired level of enlargement.
OR
2. Draw a marquee around the area by dragging the **Zoom-In** pointer diagonally and release mouse button. The selected area enlarges to fill the map window. The aspect ratio of the map window is not changed however, so if you choose an area that has a very different shape from the window, you will end up seeing a much wider or taller area of the map than you selected.

Zoom-Out

The **Zoom-Out Tool** may be used to zoom-out on a certain area of the displayed map that you would like to see more of.

To use the Zoom-Out Tool:
1. Click the **Zoom-Out** button.
2. Move the mouse pointer to the center of the area you want to zoom out. Click the mouse and the map size will increase by a factor of two with the center of the map being at the point where you clicked. You can repeat this procedure as desired.
OR

2. Draw a marquee by diagonally dragging the **Zoom-Out** tool across the window. The area displayed in the current map window then shrinks in size to fit inside the marquee area.

Grabber

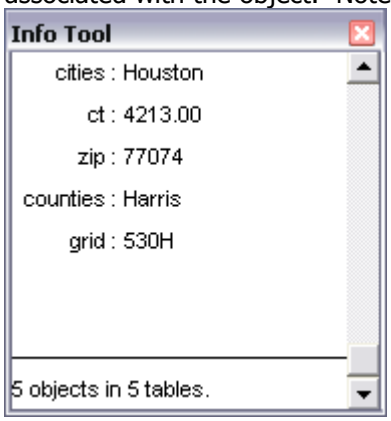
The **Grabber Tool** allows the displayed map to be moved in any direction Moving map only affects the display and does not affect the map position when it is printed unless **Dynamic Map Scaling** has been disabled.

To reposition a map:
1. Select the **Grabber Tool** button. The cursor displays as a hand when moved over the map window.
2. Click and hold down mouse button in an area of the map. While holding down the mouse button, drag the map in the desired direction. When you release the mouse button, the map is redrawn in its new location.

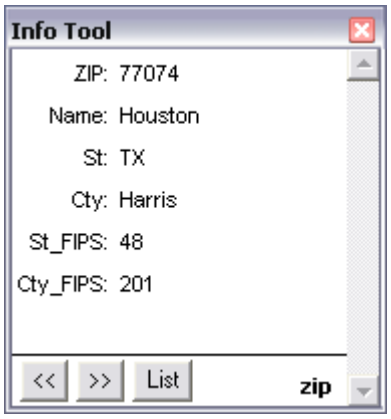
Info

The **Info Tool** may be used to display the data associated with any object on the map.

To display the data associated with map objects:
1. Select the **Info Tool** button. Mouse pointer becomes a crosshair.
2. Move mouse pointer on a map object and click mouse button. The Info Tool Window is displayed. If you have chosen a location where there are multiple overlapping objects, the bottom of the Info Tool Window displays the number of objects selected and the number of tables containing those objects. The name on the left side of the window is the layer name followed by the first field of data associated with the object. Note the example below.



3. Choose an object from the list and all the data associated with that object will be displayed. Use the scroll bars on the right side of the window to view all the fields if necessary or stretch the size of the window.



The arrow buttons allow you to go back and forth between the objects that you selected. Clicking the **List** button returns you to the previous window that lists the objects.

Label

When a Map is displayed the software automatically labels the objects on the map. Normally the automatic labeling does a good job of labeling various objects on the map, but occasionally you may want an object on the map labeled that was not automatically labeled. When this occurs you can use the label tool to label those objects.

To use the Label Tool to label a object:
1. Select the **Label Tool** button
2. Click on an object with the **Label Tool** and a label appears.

Several map layers contain boundaries, such as zip codes and census tracts, that are not visible on the screen. These boundaries may also be labeled. To determine the what invisible boundary layers exist at any point on the map use the **Info Tool**. The number and order of the map layer objects are listed in the **Info Window**.

To label objects in other map layers:
1. Select the **Label Tool** button
2. Hold down the **<Ctrl>** key and click with **Label Tool** at the point of interest on the map. the top-most layer will be labeled.
3. While continuing to hold down the **<Ctrl>** key, click at the same point again. The next layer down is labeled.
4. Repeat step 3 as often as needed.
5. Use the **Select Objects Tool** to move labels or delete unwanted labels.

Note: If the original map scale was changed with either the **Zoom-In Tool** or the **Zoom-Out Tool** the labels will be displayed and printed smaller or larger than the other labels in the same map layer. Restore original map scale and position before using the **Label Tool**.

Ruler

The Ruler Tool allows you to measure the shortest distance between two points on a map or the distance along a selected path.

To measure the distance between two points:

1. Select the Ruler Tool from the Menu Button Bar and the Ruler window displays.
2. Click at the point where you want to start measuring.

Distance in the Ruler window is the distance between the point where the mouse was last clicked and the current mouse pointer position. As you move the cursor, you will see the distance measurement change in the Ruler window. You can position the Ruler window anywhere on the screen.

Total is the total of all the distances measured during the current use of the Ruler tool.

3. Click a second point. Distance is added to the total distance. If you are only measuring the distance between two points, you are done; double-click to terminate the measurement. If you are measuring the length of a
path containing more than one segment:

4. Continue this process to keep a running total of the length of a multi-segment path. This is useful when you want to follow along a street in a map and see how long the street is. You can also use it to find the distance along a path that includes various streets and roads.

5. Double-click the mouse button when you have completed the measurement.

You can now start another measurement or choose a new tool. When you choose a new tool, you may want to close the Ruler window.

Note: To change the units of measure, select **Set Map Distance Units** from the **Map Menu**.

City Demographics

The City Demographics Tool allows year 2000 US Census City Demographics profiles to be displayed. In order for this to work properly the Census Demographic Profile data for the State or States currently licensed must be downloaded and installed from MapPro's Support Web Site @ www.mappro.net. This button will be enabled when any map is displayed after the demographic profile data has been downloaded and installed. Adobe's Acrobat Reader is used to display these profiles. The Acrobat Reader may be downloaded free from Adobe's web site.

To display a the Census Demographic Profile for a city, display either a location, flood or hazard map. After map is displayed select the City Demographics button and click on the map in the city of interest. The profile will be displayed with Acrobat Reader.

Additional Demographic profiles may be display by selecting Census Demographic Profiles from the Help Menu.

5.5 Drawing Tools Buttons

The Drawing Tools Buttons are used when the User wants to add lines, polygons, text, or symbols to a map. These buttons are normally not displayed on the tool bar but may be displayed by selecting **Show Drawing Tools Buttons** on the **Options Menu**.

 **Set Line Style - Set Line Style** allows the style, color, and width of the line to be set prior to using the **Polyline Tool**. In order to change the line style of a line that you have already drawn, select the line using the **Selector Tool**, then change the line style with **Set Line Style**.

 **Polyline Tool -** The **Polyline Tool** allows a single or a multiple segment line to be drawn on a Location or Flood Map. This tool can be used to add some feature to the map such as a neighborhood or subdivision boundary or a new street not shown on the map. Prior to selecting this tool, set the line style, color, and width by clicking on the **Set Line Style** button. Then:

1. Click on the **Polyline Tool** button. The mouse pointer will look like a +.
2. If you are drawing over streets or connecting to street intersections or other objects on the map, turn on **Snap** by typing the letter "S".
3. Move the mouse pointer to where you want to begin drawing and click the mouse button once.
4. Move the mouse pointer to draw the first line segment.
5. Click the mouse button once if you want to terminate the current line segment and continue drawing or double-click to stop drawing. By pressing the Shift key while drawing a line, the line segments are constrained to horizontal, vertical,
and 45-degree diagonals.

Use the **Zoom-In Tool**, **Zoom-Out Tool**, or the **Grabber Tool** to adjust the view of the map as needed before or after drawing lines.

To move or delete a line see **Select Tool**
To copy lines you have drawn to another map see **Copying Map Objects**
To put a label on a line you have drawn see **Text Tool**

 **Set Polygon Style - Set Polygon Style** allows the pattern, color, and background color (if any) of the fill and style, color, and width of the border to be set before using the **Polygon Tool**. To change the style of a polygon you have already drawn, select the polygon with the **Select Tool**, then change the settings with **Set Polygon Style**.

 **Polygon Tool -** The **Polygon Tool** allows multi sided areas to be drawn on a displayed Map. This tool can be used to add some feature to the map such as a shopping center, tract of land, or the outline of a large building. Prior to selecting this tool, set the fill and border style by clicking on the **Set Polygon Style** button. Then:

1. Click on the **Polygon Tool** button. The mouse pointer will look like a +.
2. If you are connecting the polygon to existing objects on the map, such as streets, waterways, or other objects on the map, turn on **Snap** by typing the letter "S".
3. Move the mouse pointer to where you want to begin drawing and click the mouse button once.
4. Move the mouse pointer to draw the first line segment.
5. Click the mouse button once if you want to terminate the current line segment and continue drawing or double-click to stop drawing. By pressing the Shift key while drawing a line, the line segments are constrained to horizontal, vertical,
and 45-degree diagonals.

Use the **Zoom-In Tool**, **Zoom-Out Tool**, or the **Grabber Tool** to adjust the view of the map as needed before or after drawing lines.

To see the length of the perimeter, area, and earth coordinates of the polygon you have drawn, double-click on the polygon with the **Select Tool**.
To move or delete a polygon see **Select Tool**
To copy a polygon you have drawn to another map see **Copying Map Objects**
To put a label on a line you have drawn see **Text Tool**

 **Set Text Style - Set Text Style** allows you to set the Font, Size, Attributes, Text Color and Background Color (if any) before entering text on a map with the **Text Tool**. To change the text style of text already on the map, select the with the **Select Tool**, then change the settings with **Set Text Style**. It is also possible to rotate the text by double-clicking on the text and then setting the angle of rotation in the dialog.

 **Text Tool -** The **Text Tool** allows additional text to be placed on the map at any desired location. Before selecting the **Text Tool**, set the font, attributes, size and color of the text with the **Set Text Style** button.

To add text on a map:

1. Set text style.
2. Select **Text Tool** button. The mouse pointer changes to a I-beam when moved over map.
3. Place mouse pointer to the point on the map where you want to place the text and click once.
4. Type the text desired.
5. Then either select the **Select Tool** or move mouse pointer to another location on map where you want to additional text and click once. Type the text desired.

To change existing text on the map:
1. Select the **Select Tool**.
2. Position mouse pointer over the text you want to change and double-click.
3. Edit the text in the dialog as needed.
4. The text style, rotation, and justification may also be changed from this dialog.

 **Set Symbol Style - Set Symbol Style** allows the symbol type, color, and size of the symbol to be set prior to using the **Symbol Tool**. To change the settings for a symbol you have already placed on the map, select the symbol with the **Select Tool**, then change the settings with **Set Symbol Style**. All fonts that start with "MapInfo" in the name are mapping symbols installed with MapPro.

 **Symbol Tool -** The **Symbol Tool** allows a variety of different symbols to be placed on the map in order to show a particular point of interest that you want to call attention to on a map. Set the symbol style with the **Set Symbol Style** button before selecting the **Symbol Tool**.

To place a symbol on a map:
1. Set Symbol Style.
2. Select **Symbol Tool**. Mouse pointer changes to a + when moved over the map.
3. Position mouse pointer to the point on the map where you want the symbol to be placed and click once.
4. Repeat step 3 as often as desired.
5. Select the **Select Tool** when finished.

Snap Feature - The **Snap Feature** causes the mouse pointer to snap to the closest node of an existing object on the map. This is very useful when adding new lines or polygons to the map that you want to connect to some object already on the map. To turn on the Snap Feature simply type the letter "S" on the keyboard. Note that when Snap is turned on the word "SNAP" appears at the bottom of the screen and you will notice a large + with dashed lines appear when the mouse pointer is moved close to an existing object on the map. To turn off the snap feature simply type the letter "S" again.

Copying Map Objects - When text, lines, polygons, or symbols are added to a map, these objects are placed in the cosmetic or top layer of the map. If the map is redisplayed or if another map is displayed, anything added to this layer of map is discarded. In order to save these objects so that do not have to be recreated the objects may be copied to the Windows Clipboard and then pasted onto the new map that is displayed.

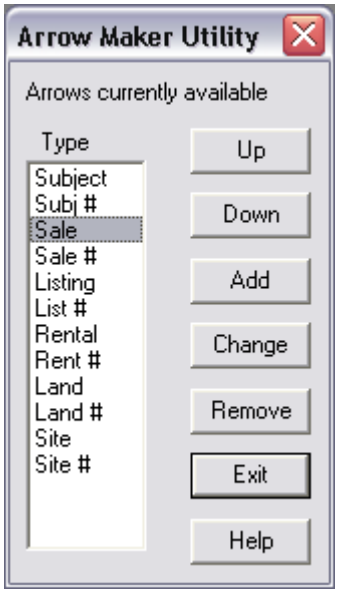
To copy objects to another map:
1. Select the **Select Tool**.
2. Select the objects you wish to copy. Hold down the **Shift** key to select more than one object.
3. Type "**Ctrl-C**" or select **Copy** from the **Edit Menu** to copy the selected objects to the Windows Clipboard.
4. Display the Map that you wish to copy the objects to.
5. Type "**Ctrl-V**" or select **Paste** from the **Edit Menu** to paste the contents of the Windows Clipboard onto the map.

Part VI

6 Arrow Maker

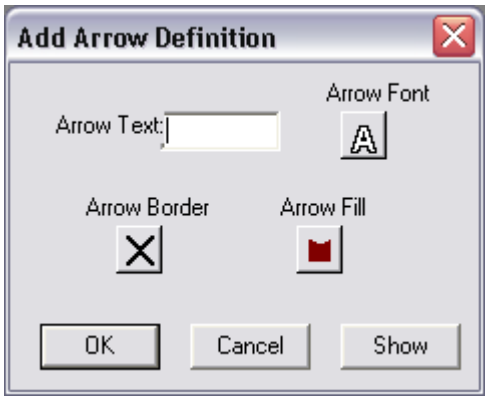
6.1 Arrow Maker Utility

The Arrow Maker Utility allows the to create or modify annotated arrows that are used on Map Maker maps. The Utility is initiated by clicking the Arrow Maker Button on the Startup Button Bar. The dialog below is displayed when Arrow Maker is started. The 12 arrow types displayed in the dialog are the default arrow types installed by MapPro. These arrows may be modified if desired. Users of Appraise-It should not modify the order of the arrows because the MapPro/Appraise-It interface automatically assigns these arrow types and therefore expects them to be in this pre-defined order. In order to view any existing arrow in the "Type" list, select the arrow type by clicking on it with the mouse and all four rotations of both the large and small arrow will be displayed.



Adding an Arrow Definition

When the **Add** button is selected on the Arrow Maker Utility dialog the following dialog is displayed. The Arrow Font, Border, and Fill defaults to these attributes for the last arrow in the list. Type the text desired for the arrow in the Arrow Text field. Adding a '#' character at the end of the arrow text will cause Map Maker to number the arrows sequentially starting a 1 for each Map Point Location of that type. Due to the limited space for text inside the arrows, arrow text of only 6-9 characters will fit inside arrow depending upon the font and font attributes being used. Select Arrow Font, Arrow Border, or Arrow Fill to change their respective attributes. Note that the Size attribute for Arrow Font has no effect on the actual size of the font in the arrow. The font size is automatically scaled to maximum size possible that will fit into the arrow. Select the Show button at any time to preview the arrows appearance.



Changing an Arrow Definition

To change an Arrow Definition click on the arrow type in the list box. You will see a preview of the arrow in the Arrow Viewer window. Click the **Change** button to change the Arrow Definition.

Removing an Arrow Definition

To remove an Arrow Definition click on the arrow type in the list box. You will see a preview of the arrow in the Arrow Viewer window. Click the **Remove** button to remove the Arrow Definition.

Part

7 Database Utility

7.1 Database Utility

The Database Utility is a MapPro feature that provides users the capability to create databases and import existing Microsoft Access or dBase databases. These databases may then be geocoded (the process of assigning X and Y coordinates to the database records so they can be displayed as objects on a map) and then added as layers to the map. These geocoded databases normally reside on the hard disk of the Users PC, but they may also be created and reside on a network drive so they may shared by all users on a network. See the Database Directory Path setting in **Directory Preferences** for details.

The Database Utility is initiated by clicking on the Database Utility button on the **Startup Button Bar**. After it is initiated the **Database Utility Buttons** and Menu are displayed.

Below is a list of the fields that are required in a MapPro Database. Field names in a imported database do not need to be the same as is required for MapPro. Many databases though may not have all parts of the street address concatenated together in a single field. If this is the case use your primary database application to create an Address field with all the street address info concatenated.

Field Name	Type	Width	Comment
Address	Character	40	(Recommended, must be long enough for long street names)
NotAddr	Logical		N/A (Description in address field indicator)
City	Character	30	*
Zip	Character	5	(5 Digit Zip Code - 9 Digit Zip Codes not currently supported for geocoding)
County	Character	30	(If County field is blank Zip Code must be provided in order to geocode address)*
Grid	Character	8	(Paper map grid location)*
Latitude	Decimal	9	(Decimals = 6)*
Longitude	Decimal	11	(Decimals = 6)*
GeoResult	Integer	N/A	(Holds the Result Code of geocode operation)
GeoStat	Logical	N/A	(TRUE if record has been geocoded, FALSE if it has not been geocoded)
RecNum	Integer		N/A (Holds record number)#

* Contents of these fields not required. Will be updated during geocoding process.
# Record Number field automatically updated by MapPro.

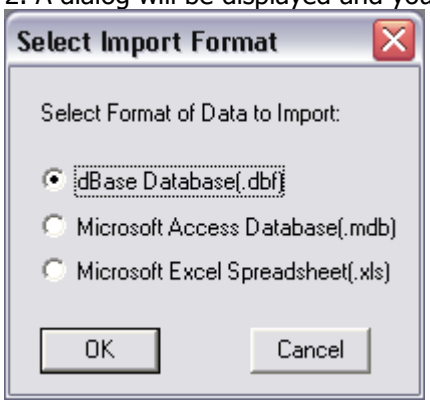
7.2 Database Utility Buttons

New Database

New Database is used to create a new database or import an existing database. All databases that are created are saved in dBase DBF format. Databases that are imported must be in dBase DBF

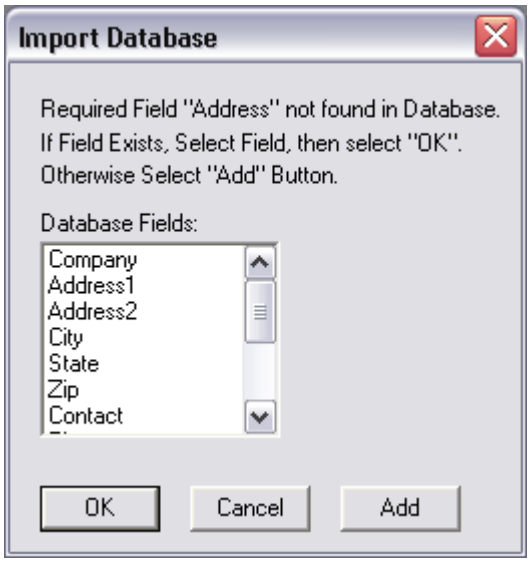
format or in Microsoft Access format. All MapPro databases are saved in the Database Directory Path defined in **Directory Preferences**.

To Import an Existing Database:
1. Click on the **New Database** button and select "**Yes**" on the "Import Data from Existing Database?" dialog.
2. A dialog will be displayed and you will then be asked to select the format of data to import:



3. A dialog is then displayed to select the database to be imported. Change directory, if necessary, to locate the database to be imported. If the database is located in a directory other than the directory specified by the Database Directory Path in **Directory Preferences**, the database is copied to the Database Directory.
4. If you are importing an Access Database the following dialog will be displayed. An Access database may contain multiple tables so the specific table to be imported must specified.

5. You will then be asked to "Enter New MapPro Table Name". You may use the same name as import file name or assign a new name.
6. The fields of the database are then examined to determine if the fields required by MapPro exist. If the required field exists, it is assumed that the field contains the required information and the existing field is used. If the required field does not exist, a message similar to the one below is displayed:



If a field containing the required information exists but has a different field name, select the field containing the required information and select "OK". The existing field name is then changed to the required field name. In above example "Address1" field contains the street address. If the field does not exist click the "Add" button and a new empty field will be created.
The above process will be repeated until all the required fields have been selected or created. The contents of the database is then displayed on the screen in a Browser Window.

Note: If you are importing a **Microsoft Excel** spreadsheet, the Database Field Names displayed will be the column letters (I.E. A, B, C, D, etc.) therefore make sure you know how the speadsheet is organized so the correct column can be assigned. If the first row in the speadsheet contains the field names then delete this row from the database after the correct field names have been defined. Use the **Modify Structure** button to alter field names in database that are not one of the required fields.

To Create a New Database:
1. Click on the **New Database** button and select "**No**" on the "Import Data from existing Database?" dialog.
2. You will then be asked to "Enter New Database Table Name". Enter a name for the database.
3. A new empty database will then be created with the field names and characteristics shown in step 5 above. A Browser Window will then be displayed showing the field names of the new database.
4. Use the **Modify Structure** button to add addition fields to the database.
5. Use the **New Record** button to add records to the database.

Open Database

Open Database is used to open an existing MapPro database.

To Open a Database:
1. Click on **Open Database** button.
2. Select an existing database to open from the Database Directory.
3. The selected database is opened and displayed in a Browser Window.

Save Database

Save Database is used to permanently save any changes made to a database. This button will only be enabled if there are unsaved changes to a database.

Revert Database

Revert Database is used to permanently discard any unsaved changes made to a database. This button will only be enabled if there are unsaved changes to a database. When the **Revert Database** button is selected, you are given the opportunity to either discard the changes or cancel the revert database operation.

Print Database

The **Print Database** button may be used to print all or a selected portion of a open database. Depending upon the number and width of the fields in the database, several pages in width may be required to print the contents of the database records. When the print dialog is displayed, the default Windows printer is selected. Change printer and printer properties (i.e. paper size, portrait/landscape) as needed. If you wish to print only a portion of the database select Options button on the Print dialog and enter a **From** and **To** range.

Close Database

Close Database is used to close a open MapPro database. The **Close Database** button is only enabled if a database is currently open. If the database has any unsaved changes, you are given the option of either saving the changes, discarding the changes, or canceling the Close Database operation.

Exit Database Utility

Exits the **Database Utility** and displays the **Startup Buttons**. If a database is currently open a **Close Database** operation is performed before exiting.

New Record

New Record causes a new blank record to be appended to database and displayed at the bottom of the Browser Window.

An alternate way to add a new record.
If several of the database fields of the new record you want to add contain the same information as another record in the database, an easier way to add the new record is to:
1. Locate the similar record in the database.
2. Select the record by clicking on the box at the left side of the Browser Window next to the record.
3. Click on the **Copy** button on the Database Utility Button Bar.
4. Click on the **Paste** button on the Database Utility Button Bar. The copied record will be appended to the database.
5. Modify the fields of the pasted record that are different. If the Latitude and Longitude fields contain non-zero values, this indicates that the copied record was previously geocoded and when this record

was copied the geocoded map symbol was also copied. In this case, since the geocoded map symbol already exists, the new record will have to be geocoded by selecting the new record and performing a geocode of "**Selected Records Only**". This allows the copied map symbol to be moved to the correct location. See **Geocode Database** for more information.

Modify Structure

Modify Database Structure is used to add, remove, or change the order of fields in your database. The field type and field width (number of characters) may also be specified. MapPro databases must contain several pre-defined fields of information in order for the database to work correctly with MapPro. When a new database is created in the Database Utility these fields are automatically defined. If a database is imported, the Database Utility looks for each of these pre-defined fields. If the fields cannot be found in the imported database, a dialog is displayed where the field name containing the required information can be selected or a new field added to the database if it does not exist. Below is a list of the required fields with their name, type, and width:

Field Name	Type	Width	Comment
Address	Character	40	(Recommended, must be long enough for long street names)
NotAddr	Logical	N/A	(Description in address field indicator)
City	Character	30	
Zip	Character	5	(5 Digit Zip Code - 9 Digit Zip Codes not currently supported for geocoding)
County	Character	30	(If County field is blank Zip Code must be provided in order to geocode address)
Grid	Character	8	(Paper map grid location)
Latitude	Decimal	9	(Decimals = 6)
Longitude	Decimal	11	(Decimals = 6)
GeoResult	Integer	N/A	(Holds the Result Code of geocode operation)
GeoStat	Logical	N/A	(TRUE if record has been geocoded, FALSE if it has not been geocoded)
RecNum	Integer	N/A	(Holds record number)

Note: The order of required fields is not important and may be changed.

All MapPro databases must be mappable. **DO NOT remove the check in the Table is Mappable check box. Doing so will cause all map objects (symbols) for the database to be DELETED and the database will have to be geocoded again.**

At the top of the **Modify Table Structure** dialog is a box that lists the fields in order from top to bottom. To choose a field from this box, click on its name and the field is highlighted.

Field - This column contains the names of the fields (columns) in the table from top to bottom.
Type - Indicates the type of field with the number of characters in the field listed in parentheses (where applicable).
Indexed - An "X" in this column indicates the field is indexed. MapPro databases do not need indexing on any field. When the column is blank, the field is not indexed.
Up/Down - Allows you to move the selected field up or down one position in the list box. The file structure is reorganized accordingly. Moving a field up or down has the effect of moving it left or right in a Browser. When a table displays in a Browser, the first field becomes the leftmost column, the second field becomes the second column from the left, and the last field becomes the rightmost column.
Add Field - Allows you to add a new field at the bottom of the list. This field has a default name of

field1, field2, field3, etc., depending on the order in which the field was created.
Remove Field - Allows you to remove the selected field from the table.
Table is Mappable - Always is checked for MapPro.
Projection button - Displays the Map Projection used. MapPro uses Latitude/Longitude (NAD 83 for US)

Field Information - Allows you to specify information about the fields.
Name - Allows you to enter the name of the new field in the Name box. Defaults are field1, field2, etc. A field name can be up to 31 alphanumeric characters long. You can use letters, numbers, and the underscore. Do not use spaces; instead, use the underscore character ("_") to separate words in a field name. You can use upper and lowercase for legibility, but MapInfo is not case-sensitive.
Type - A drop down list is used to indicate the field type. The following types are available:

Character: Stores up to 250 alphanumeric characters. You cannot perform arithmetic operations on numerals in a character field. You should store ZIP Code information in character fields, otherwise leading zeros are dropped.
Decimal: Stores numbers in fixed-point decimal form. Do not put commas in decimal
Integer: Stores integers (numbers without a decimal). The range is from -2 billion to +2 billion
Small Integer: Integers between -32,767 and +32,767. Small integers take up less space.
Float: Stores numbers in floating-point decimal form.
Date: These fields can contain a calendar date in the format MM/DD/YYYY. The year can be specified by two or four digits and is optional. Use slashes or hyphens to separate components of a date. The following are valid dates: 01/23/91, 5-6-1989, 10/07.
Logical: These fields contain only true/false or yes/no information, stored as "T" for true/yes and "F" for false/no.

Decimal, integer, small integer, and float can only contain numeric symbols. These fields do not accept any characters besides numbers, the minus sign, or decimal points for decimal and floating-point numbers.

Width - Type the number of characters in the field (character and decimal fields only). Maximum field width is 250 for character fields and 19 for decimal fields. A valid decimal value has a total number of characters, including the decimal point, minus sign if negative, and padding to precision if necessary, not to exceed the decimal width.

Note: If you insert a data value that is out of range, the bad value will be inserted with no error displayed.

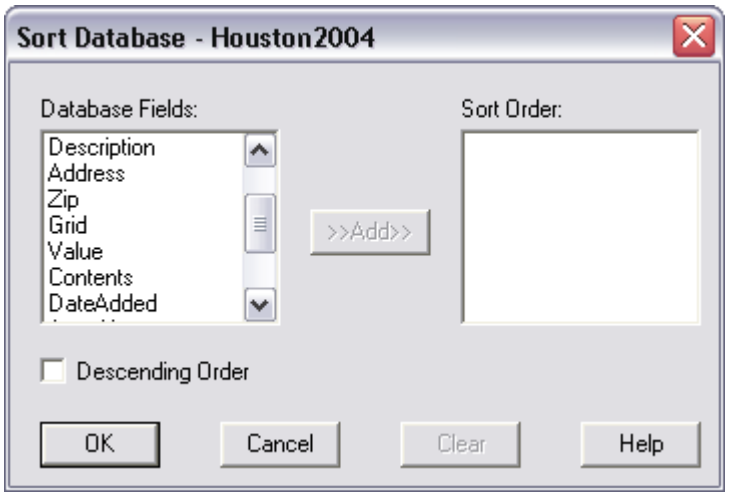
Pack Database

The **Pack Database** button allows you to compress a database so that they use less disk space and to eliminate records that have been marked as deleted. It is normally not necessary to pack a database unless you have deleted database records.

Sort Database

Sort Database allows the records of a User database to be sorted in a specific order based upon the contents of one or more selected fields. This enables the database records with like characteristics to viewed in a logical order. Fields may sorted in ascending or descending order.

To Sort a Database:
1. Click on **Sort Database** button. A dialog similar to the one below will displayed.



2. Select the first sort field from the **Database Fields** list box. If you want to sort the field in descending order check the **Descending Order** check box. Then click the **>>Add>>** button. The selected field is added to the **Sort Order** list box. You may also double-click on the field name
3. Repeat step 2 for additional fields as you want sorted. Select **Clear** to clear the **Sort Order** list box if you make a mistake.
5. After the **Sort Order** list box contains the complete sort order list, select **OK** and the database will be sorted and redisplayed.

Geocode Database

The **Geocode Database** button is used to initiate the geocoding (the process of assigning X and Y coordinates to the database records so they can be displayed as objects on a map) operation for a database. Geocoding normally involves a three step process. First, records are geocoded in an automatic mode which requires no operator intervention. Second, records are geocoded in an interactive mode where the operator can make corrections in the street name and zip code. Third, a manual geocoder is used to place the location for records that can't be found.

Prior to attempting to geocode a database, visually inspect the records of the for the following:
1. Address field of records contain a full street name (i.e. street number followed by directional prefix, if any, followed by street name followed by the suffix followed by directional suffix if any.) Not all street addresses have all these attributes. Example: "2200 W Sam Houston Pkwy S" contains all the above attributes. The most common problem with geocoding street addresses is a missing suffix such as St, Ln, Dr, Ave, Ct, Cir, Rd, etc. With some common street names, all of these suffixes may be used with a particular street name somewhere in the county, and sometimes more than once.

2. NotAddr field should contain "F" (False) if the address field contains a street address. If address field contains a description the NotAddr should contain "T" (True).

3. Zip field contains the correct zip code. When duplicate street names exist in a county, the zip code is used to limit the search to a specific zip code. No automatic geocoding may be performed without supplying the correct zip code.

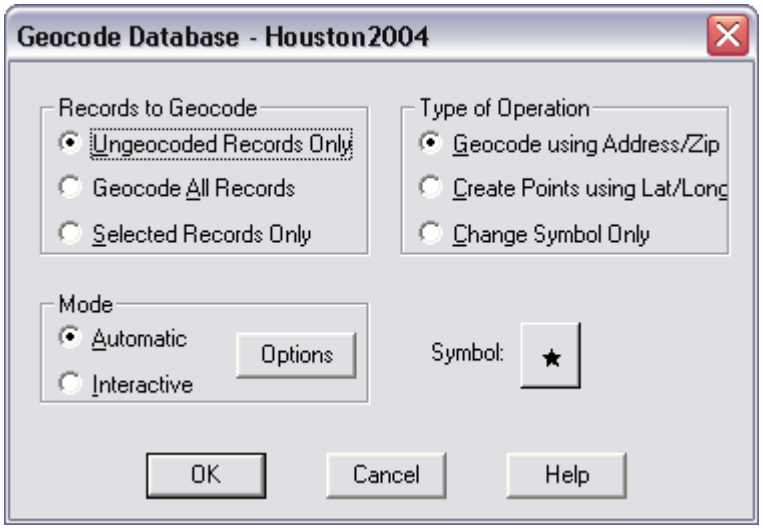
4. County field contains the correct county name. All geocoding is performed at the county level, therefore without the county names correctly entered, geocoding cannot be performed. Although most zip codes are entirely contained within a county, zip codes along county boundaries sometimes span

two counties.

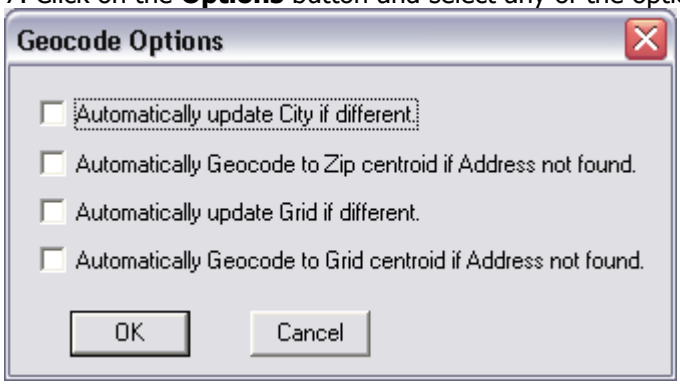
After visually inspecting the records of the database and making any needed corrections, you should now be ready to geocode the database.

To Geocode a Database:

First Geocoding Attempt.
1. Open the database to geocode.
2. Perform the visual inspection on the database outlined above.
3. Click on the Geocode Database button. The following dialog will be displayed:



4. Select the **Records to Geocode**. The first time geocoding is performed on the database **Ungeocoded Records Only** and **Geocode All Records** is the same since all records are ungeocoded.
5. Select the **Type of Operation**. This will normally be set to **Geocode using Address/Zip** unless the database already contains the Latitude and Longitude.
6. Select the **Mode**. On your first geocoding pass through the database use **Automatic**. **Automatic** mode requires no operator intervention.
7. Click on the **Options** button and select any of the options desired.



8. Select the **Map Symbol** to use. The currently selected symbol is displayed but there are 100's to choose from.
9. The Database Utility will then attempt to geocode records specified. The Latitude & Longitude are updated if geocoding using address/zip and a map object is created using the selected symbol. The number of successfully geocoded records will be displayed at the end of the geocoding operation.

Second geocoding attempt.
1. After the first geocoding pass is complete, you may want to perform a **Sort Database** at this point. Sort the database first by GeoResult in decending order Latitude and then by Zip. This will place all the ungeocoded records together at the top of the database grouped by zip code.
2. Visually inspect the Address, Zip, and County fields of these records looking for obvious problems and correct them as needed.
3. Click on the **Geocode Database** button to initiate the second geocoding attempt.
4. Select **Ungeocoded Records Only** or if there are a large number of ungeocoded records, you may want to select a group of 10-20 records at a time and process the ungeocoded records in batches by using **Selected Records Only**. Records are selected by clicking on box (box becomes black) on the left side of the Browser Window. Multiple records may be selected by holding the "Shift" key down while selecting records. Several adjacent records may be selected by holding the "Shift" key down and click and hold the left mouse button down on the first record in the group, and drag the mouse pointer over all the boxes of the records to be selected.
5. Select **Geocode using Address/Zip**, and this time select **Interactive** for **Mode**. When **Interactive** mode is selected, if any error is encountered in the processing of a record, a dialog, error message, or question is displayed which must be responded to by the user before processing will continue. The Symbol should still contain your previous selection.
6. In this interactive mode, the Database Utility will display a Find dialog to resolve problems with the street name, address number, or zip code in the same way as when Map Point Data is entered.
7. If the address problem cannot be resolved the address may be bypassed by selecting **Cancel** on the Find dialog. When **Cancel** is selected dialog is displayed asking if this ungeocoded record should be added to the manual geocode list. If "**Yes**" is selected, the record is added to a manual geocode list. The records added to this list are processed by the **Manual Geocoder** after all records to geocode are processed.

Manual Geocoder

Manual Geocoder is used to manually set the location of database records that cannot otherwise be located. At the completion of an Interactive geocoding pass, records that were added to the **Manual Geocode List** are processed by the **Manual Geocoder** which is automatically started. The **Manual Geocoder** can also be started with the button if the User wants to view the geocoded database or move the location of icons on the map. See **Manual Geocoder** for details on how to use this feature.

7.3 Database Utility Result Codes

The following table is a list of result codes and their definitions that are stored in the GeoResult field of the database after a database has been geocoded. Sorting the database in GeoResult order can be performed after the geocoding has been initially completed. This allows user to visually see how the database was geocoded or allows ungeocoded records to be grouped together for editing.

GeoResult	Definition
0	**Ungeocoded** – Has Not Been Run Through MapPro Geocoder
1	**Geocoded -** Exact Geocode Match
2	**Geocoded -** Abbreviation Substitution

3	**Geocoded -** Relaxed Zip Code and Abbreviations
4	**Geocoded -** One Possible Match Found with Entered Street Number and Root Street Name
5	**Geocoded -** Multiple Address Possibilities, User Selected
6	**Geocoded -** Advanced Search
7	**Geocoded -** Center of Entered Grid
8	**Geocoded -** Center of Zip Code
9	**Geocoded -** Manually Placed
20	**Geocoded -** Located by User Entered Lat/Long
31	**Geocoded -** Exact Intersection Geocode Match
32	**Geocoded -** Abbreviation Substitution on Intersection
33	**Geocoded -** Relaxed Zip Code and Abbreviations for Intersection
34	**Geocoded -** One Possible Intersection Match Found at both Root Street Names
35	**Geocoded -** Multiple Intersection Possibilities, User Selected
36	**Geocoded -** Intersection Advanced Search
100	**UnGeocoded -** Multiple Matches Found; Unable to Geocode in Auto Mode
107	**UnGeocoded -** Multiple Matches Found; Unable to Geocode in Auto Mode; Located at Center of Grid
108	**UnGeocoded -** Multiple Matches Found; Unable to Geocode in Auto Mode; Located at Center of Zip Code
137	**Geocoded -** Multiple Matches Found; Unable to Geocode in Auto Mode; Located at Center of Grid
138	**Geocoded -** Multiple Matches Found; Unable to Geocode in Auto Mode; Located at Center of Zip Code
800	**UnGeocoded -** Unable to Geocode, but in a geocodeable format
807	**Geocoded -** Geocoded to Grid; No Street Matches Found but in a format that may be geocodeable
808	**Geocoded -** Geocoded to Zip Centroid; No Street Matches Found, but in a format that may be geocodeable
900	**UnGeocoded -** Indication that it is in unlicensed area
999	**UnGeocoded -** Unable to Geocode, either in an ungeocodeable format or absolutely no matches found
9999	**UnGeocoded -** No Zip or County information included. Impossible to Geocode without one of these values.

7.4 Manual Geocoder

The **Geocode Database** function of the Database Utility has a special Manual Geocoder which is used to manually set the location of database records that cannot otherwise be located. At the completion of an Interactive geocoding pass, records that were added to the Manual Geocode List are processed by the Manual Geocoder.

When the Manual Geocoder starts it obtains the first record from the Manual Geocode List. It then opens a map window containing all the various street layers, zip code layer, city layer, county layer, grid layer (if available), and a layer containing the database that is being geocoded. The map window

is then positioned as follows:

1. If a Grid location is contained in the record and the grid layer is available, the map zooms in to the specified grid location.
2. If step 1 cannot be performed, the map zooms in to the specified Zip contained in the record.
3. If neither of the above can be performed, the map zooms in to the City contained in the record.
4. If none of the above can be performed, the map zooms in to the County contained in the record.
5. If none of the above can be performed, the map for the entire licensed area is displayed.

A message window is then displayed at the top of the screen with the message "**Find Location:**" followed by the address contained in the first record. The Manual Geocoder Button Bar shown below is also displayed.

The first two buttons are the only buttons which are unique to the Manual Geocoder.

Manually Geocode Address

The **Manually Geocode Address** button is used to manually mark the location where the map symbol will be placed.

To Manually Geocode an Address:
1. Use the map tools to find the location on the map where the map symbol should be placed.
2. Click on the **Manually Geocode Address** button. Mouse pointer changes to a cross-hair.
3. Move mouse pointer to the location where the map symbol should be placed and click left mouse button.
4. The Latitude & Longitude are retrieved and the map symbol is placed on the map.

Next Address

Skips the current address in the Manual Geocode List and the next address is processed.

Use the other map tools as aids to find the location of the address.

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