“GIS Short Course”

Tift County Georgia

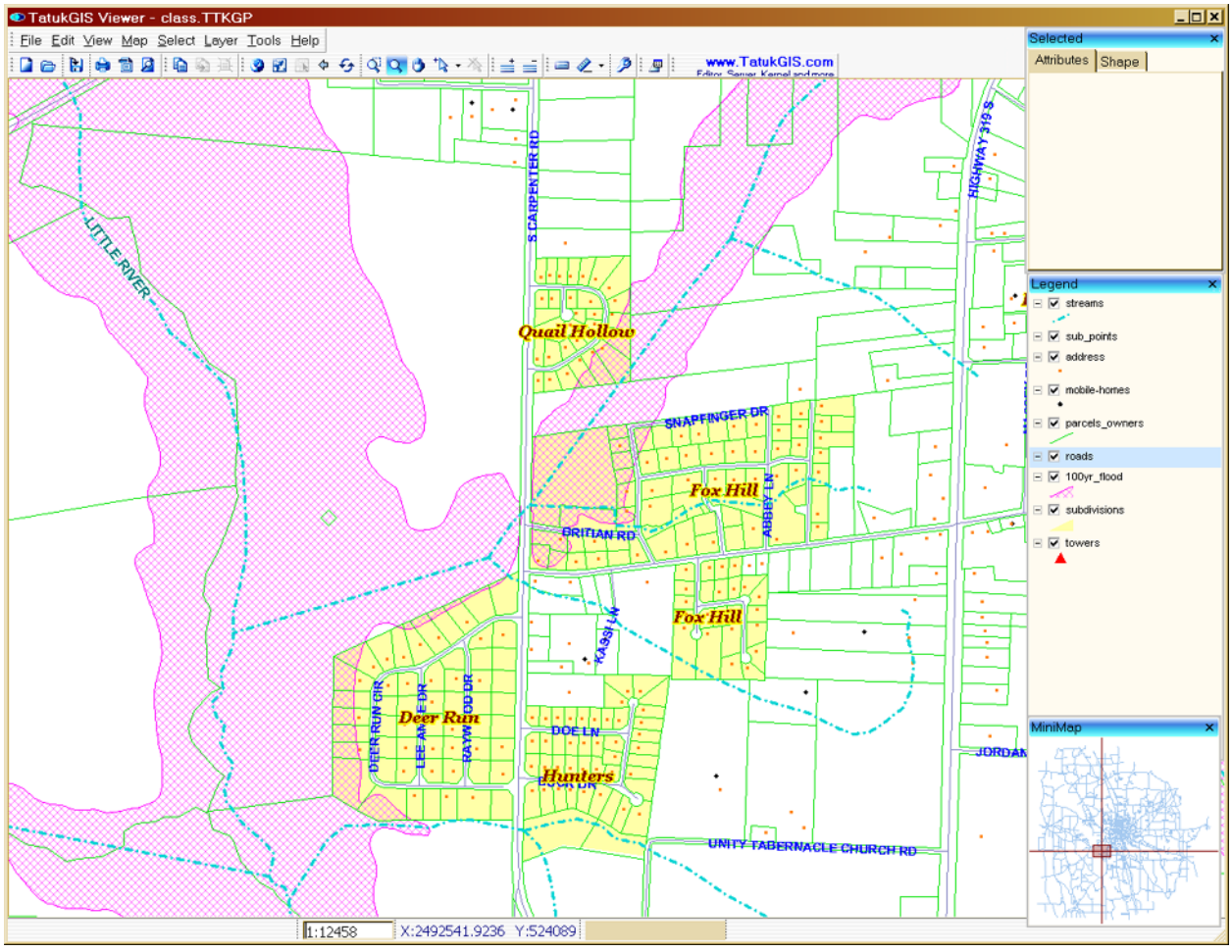
GIS is a methodology … a system … a discipline

Not a specific software program

The concepts given here can be applied to any GIS program,
as can most of the techniques and tricks.

(This course is in no way definitive, exhaustive … or guaranteed accurate)

This course uses the **TatukGIS Viewer**, version 1.10.1.362
free from www.tatukgis.com



Caution

GIS data layers used in this class are for use by Tift County officials, staff and other authorized persons only.

Many are not final products because they are still being edited or updated.

Do NOT give away, sell, loan, or otherwise distribute the Tift County data without permission from:
Roads, addresses, hydrants, schools – Vickie Hickman@ Tift E-911
Others – Tim Spivey@ Tax Assessors

BEFORE PRINTING maps for the public

100-year floodplain –
The 100-year floodplain data layer in GIS is for reference **ONLY**.
Any decisions regarding floodplains must be made using the official paper "FIRM" maps.
Do **NOT** print the **100-year floodplain** from GIS on maps for the public.

Tifton city limits –
This GIS data layer was created for property tax purposes.
Do **NOT** use it for enforcement or emergency response decisions.
If you include it on a map for the public, advise the client that the city limits line is for reference only.

2007 USDA color aerial photos
Photos were taken for crop analysis
For technical reasons, they do not align with our roads, parcels, etc.
Amount of detail visible ("resolution") is less than in the 1997 black&white aerials

Add a "disclaimer" and date
Any printed map should include a **disclaimer** containing language to the effect that Tift County assumes no legal liability for the map's use, or for the data used to create it.

Examples -

"This map is for reference only; no legal accuracy is implied. Data used is from County, state, Federal and other sources. Map produced on 0/0/00 by the Tift County XXXX Department."

"This map is for reference only; Tift County assumes no legal liability for the map's use or for the data it contains. Map data comes from County, state, Federal and other sources. Map produced on 0/0/00 by the Tift County XXXX Department."

Color keys used in this lesson plan

Blue text refers to **buttons**, **menu** choices, or **windows** in the Tatuk Viewer program

Red text refers to warnings or advsory notes

Magenta text is for general emphasis

Some basic GIS terms & concepts

Project – a document or file in which you put together the data layers you wish to use
- a project is only a "roadmap" or index of the layers; it does NOT store all the data a layer contains

Feature – a line, polygon, or point, any of which can be viewed, selected, and analyzed

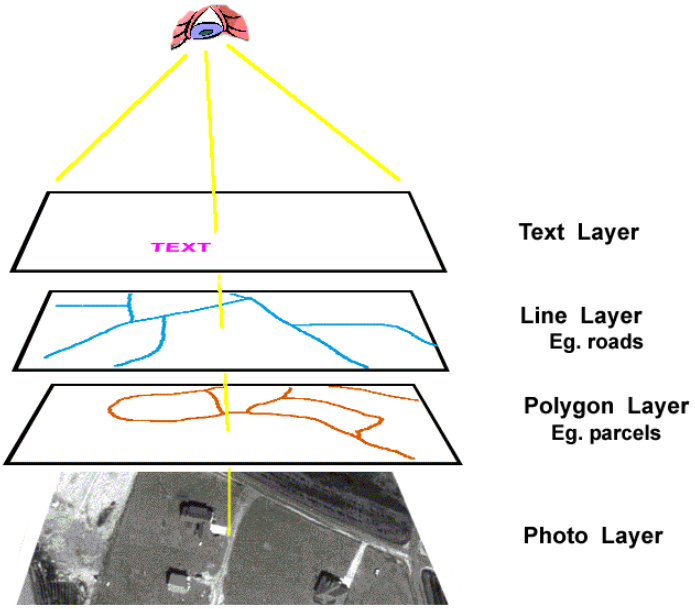
Record – in a database, a horizontal line of information

Field – in a database, a vertical column of information

Polygon – a 2-dimensional feature which is completely enclosed by a line, such as a circle or square, or the outline of a jigsaw puzzle piece

Layers or **shapefiles**

Think of layers as glass with data displayed on them.
The layers can be rearranged so that one appears to sit on top of the other.
As you stack more layers, you display more data
Layers can be displayed in different colors, to differentiate between them



Layers can be:
- added, using Add Layer
- removed, using Remove Layer
- made visible, by placing a check in the box next to the layer name
- made invisible, by unchecking the box next to the layer name
- moved, by highlighting a layer name and dragging it up or down in the Legend

Layers can contain:
- text
- polygons, such as parcels
- lines, such as roads
- aerial photos or other images

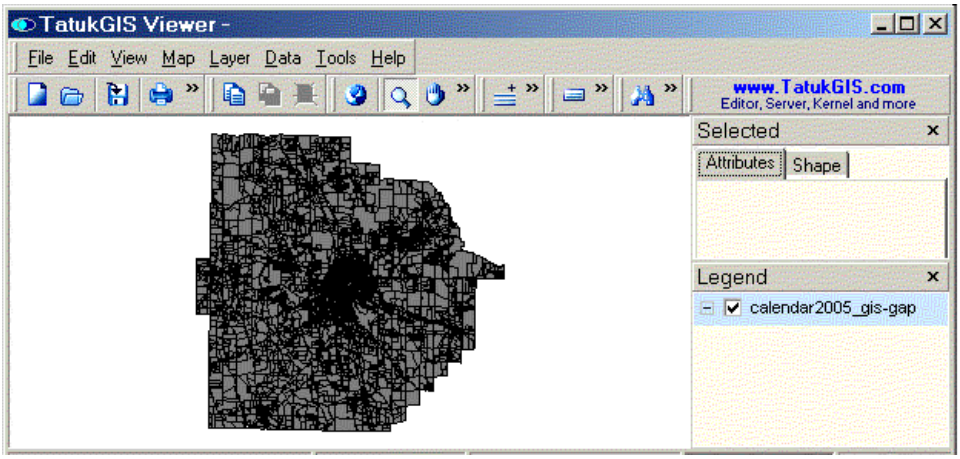
A layer **must** be **active** - highlighted in **blue** in the **Legend** window - before TatukGIS can perform any operations - such as queries or displaying information

There's another **key** GIS concept called:

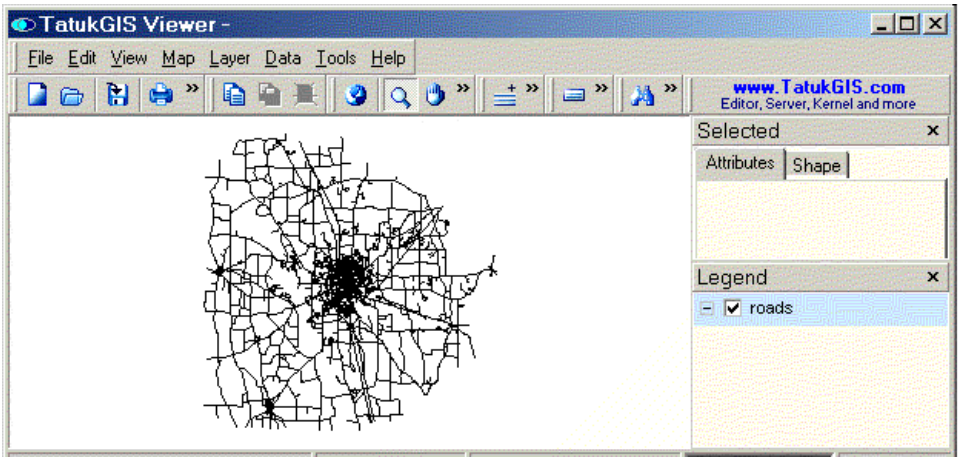
Making a backup – copy your Tatuk project to a CD, thumb drive, floppy disk, network server, etc

Some map layers for Tift County, available now --

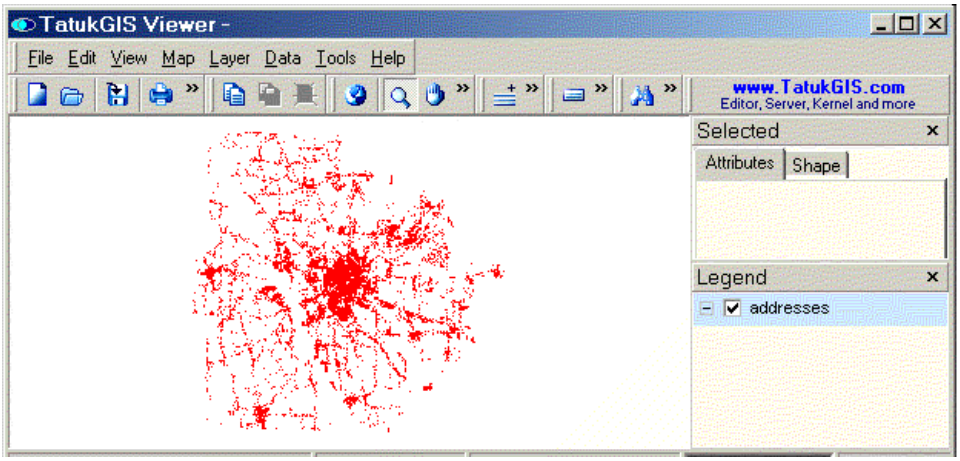
Parcels -



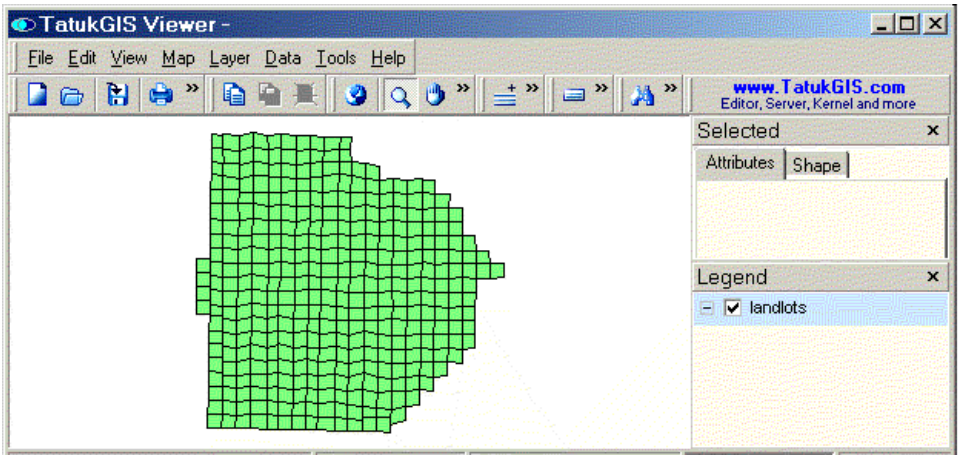
Roads -



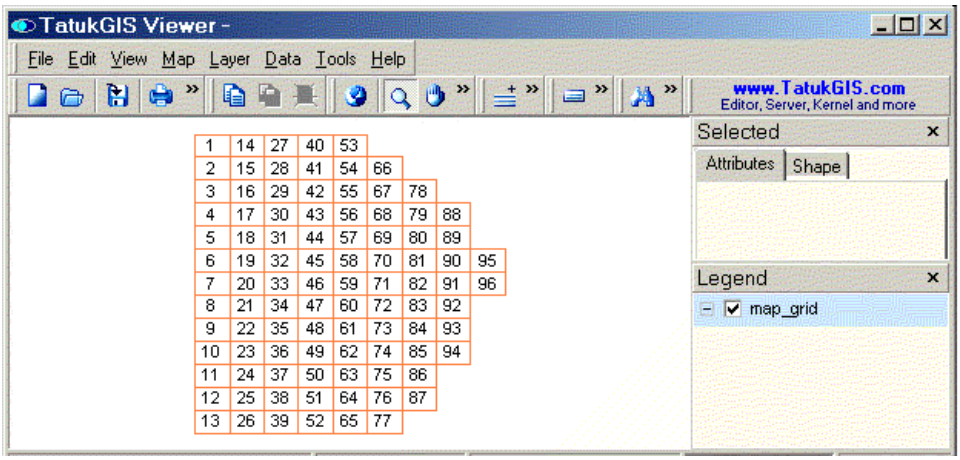
Addresses -



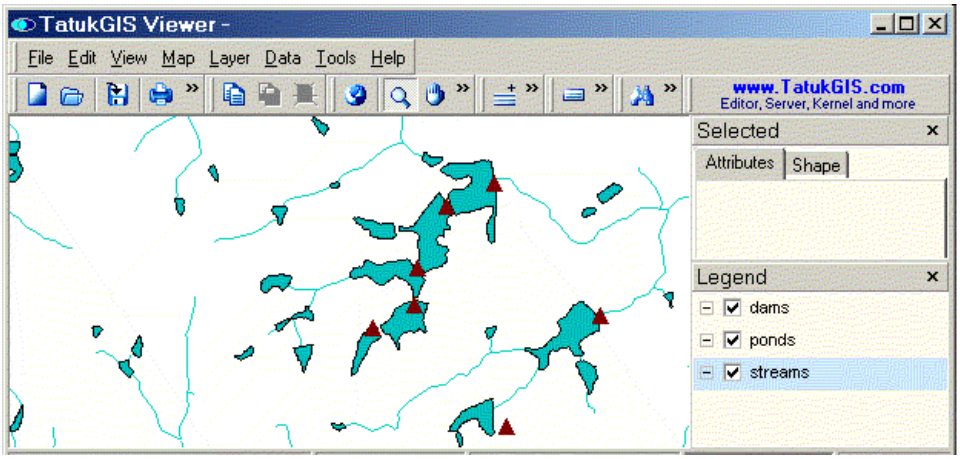
Landlot lines -



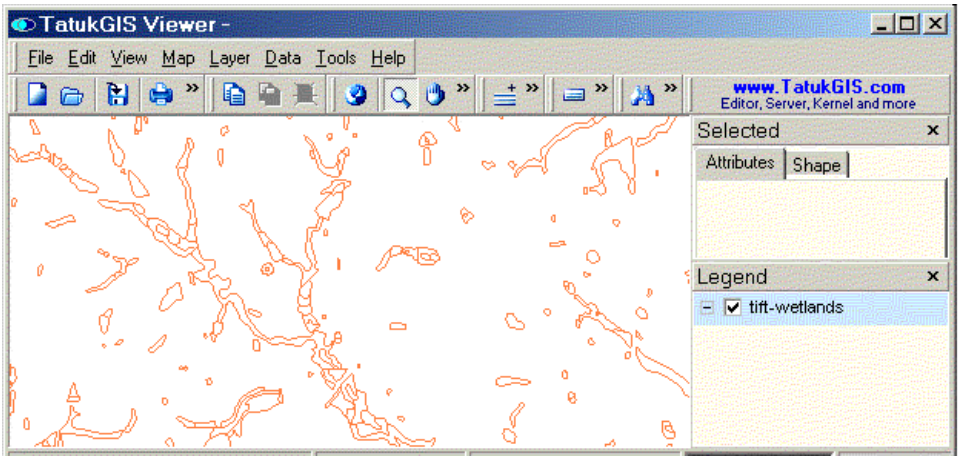
Tax map boundaries -



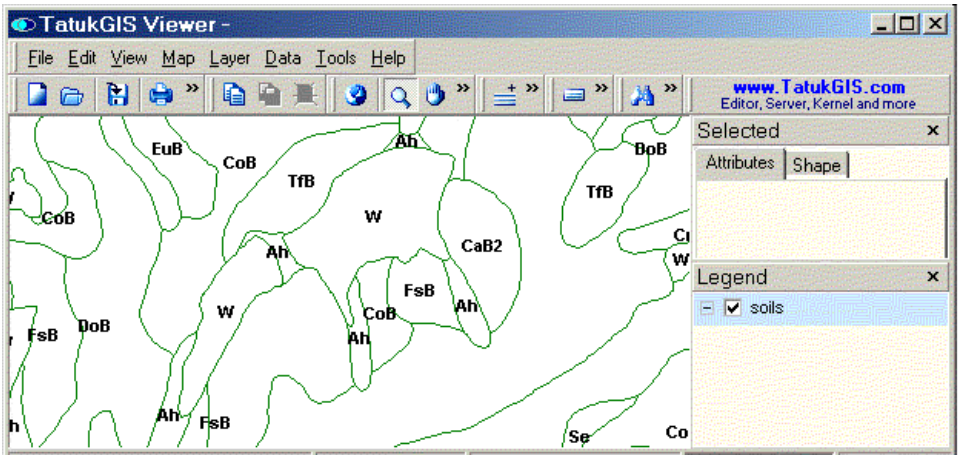
Dams, rivers/streams -



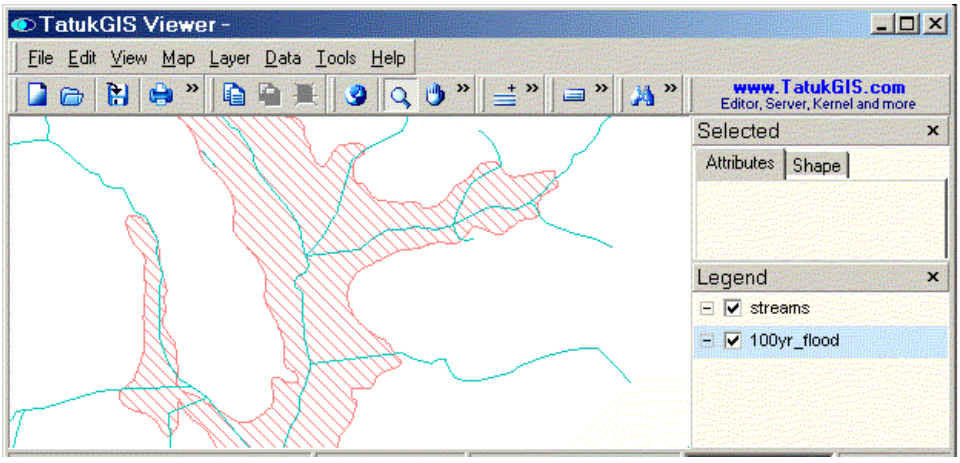
Wetlands -



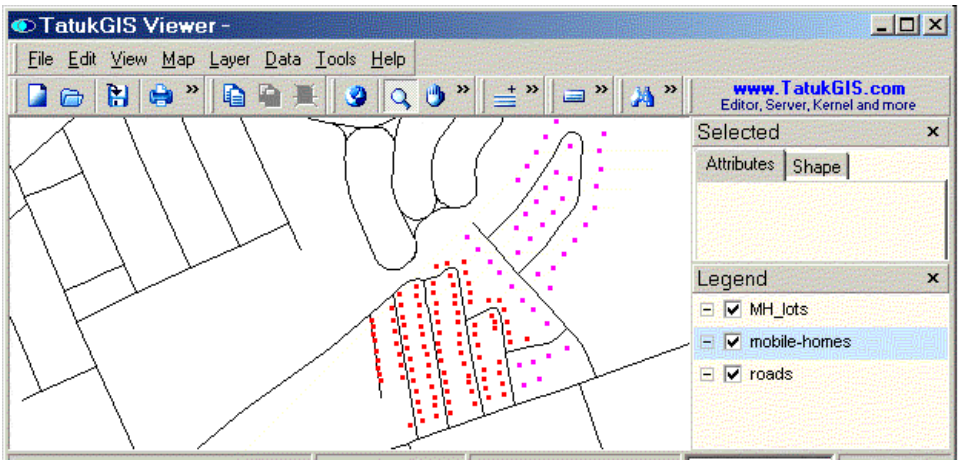
Soil types -



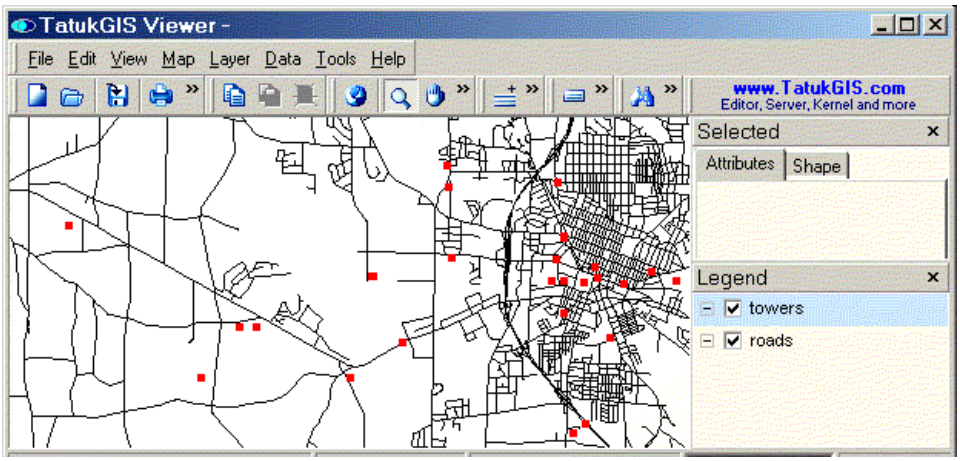
100 year floodplain -



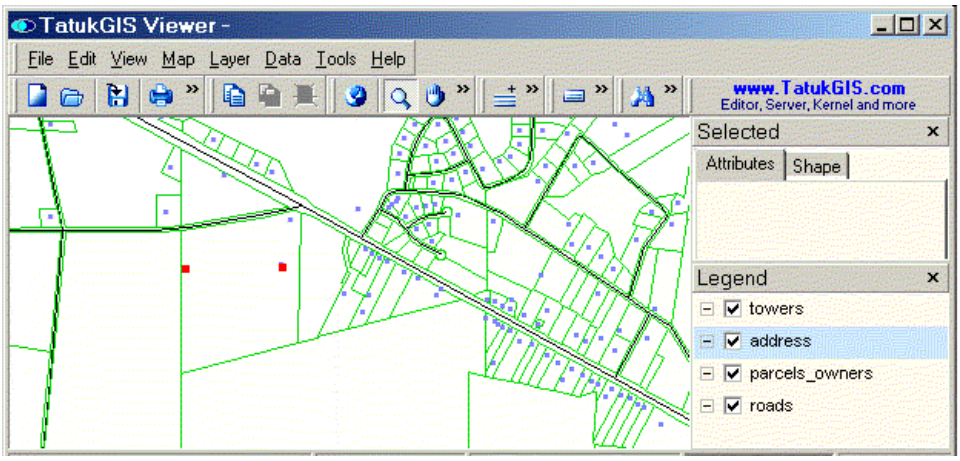
Mobile homes and lots -



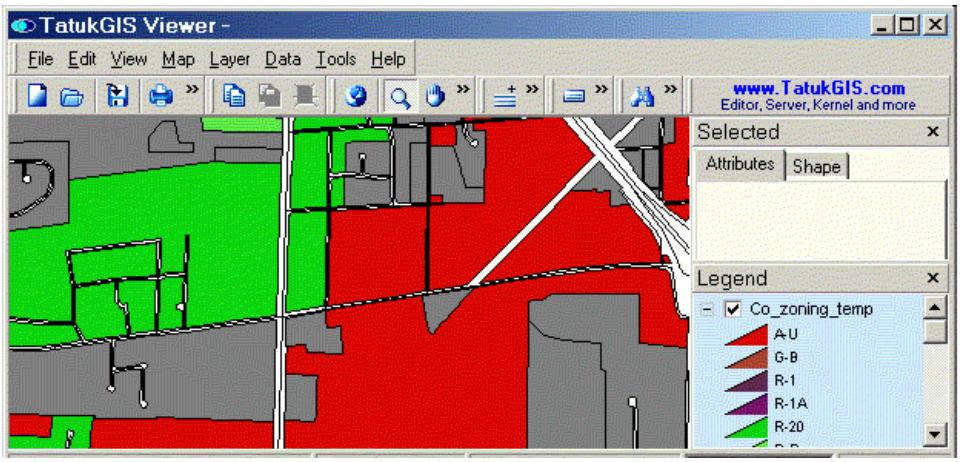
Cel towers -



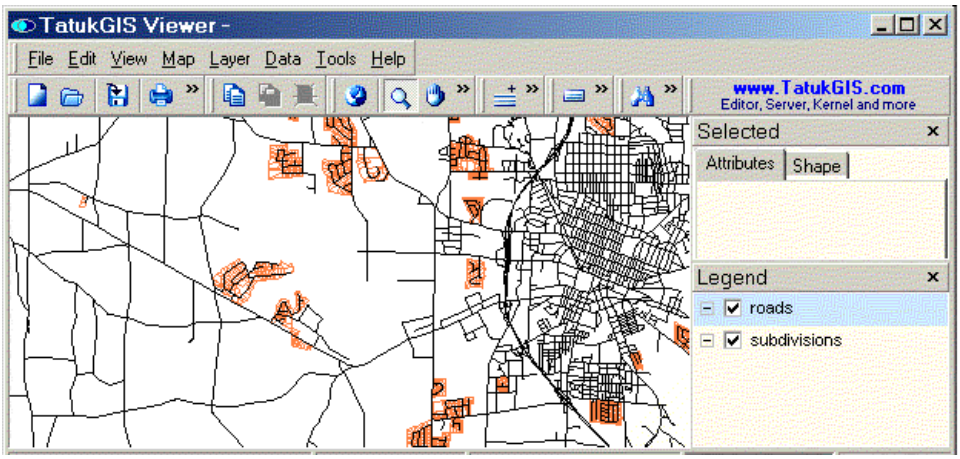
Relationships -



Zoning -



Subdivisions -

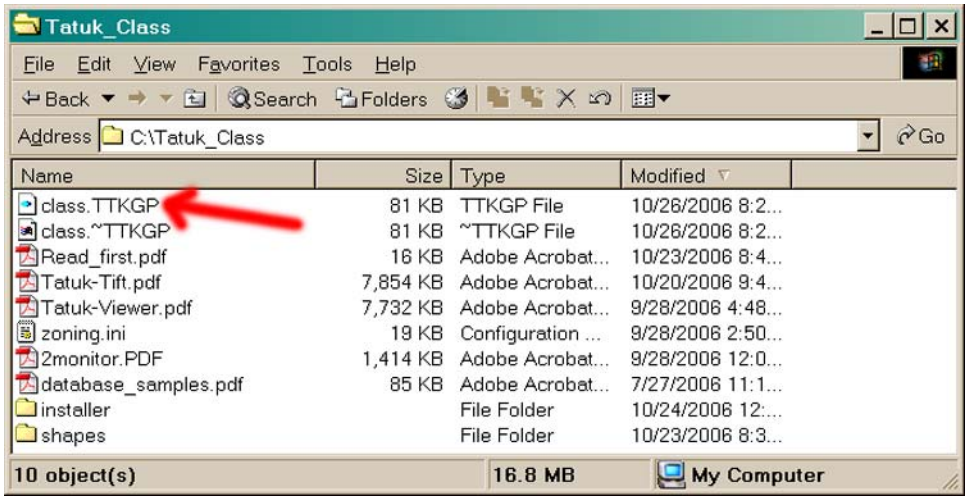


Also –
Bridges Commission districts Mobile home parks Schools
Tifton Historic District Groundwater recharge areas

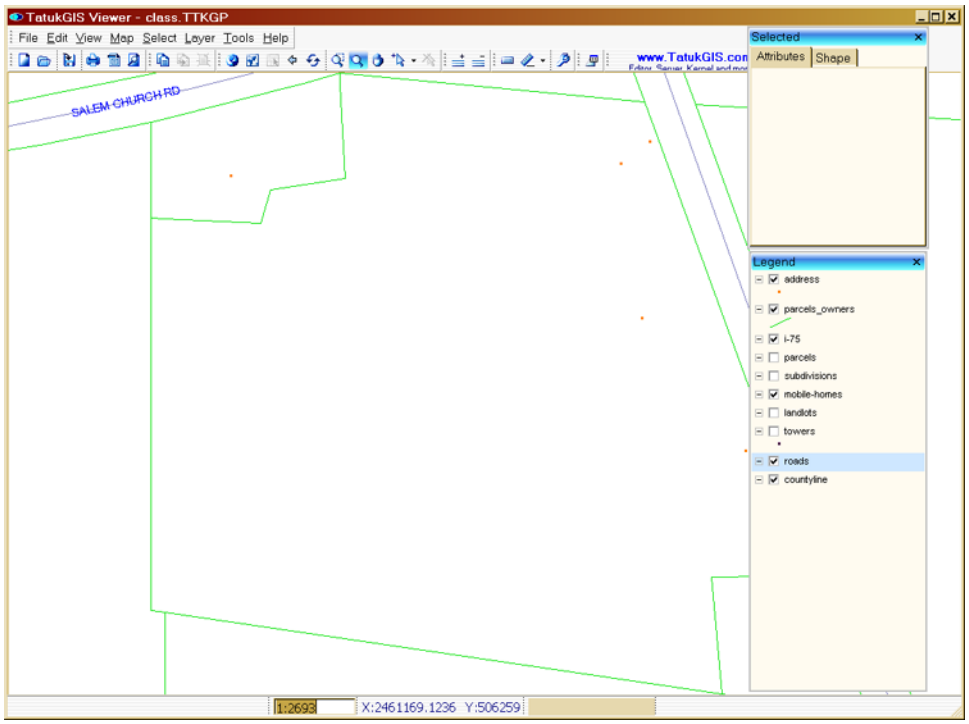
Getting Started

To open a map "project"

Double-click on the map file in My Computer or Windows Explorer -- in this case "**class.ttkgp**"



The **project** will open to the main window –



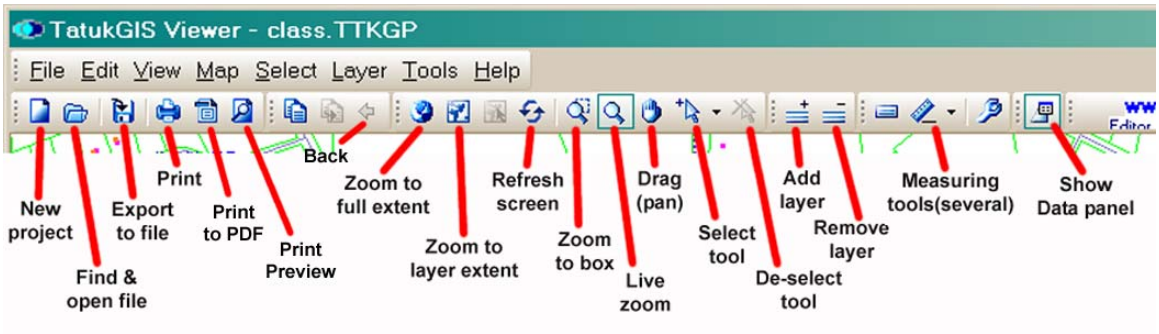
If you do not see 2 windows named Selected and Legend

Pull down the **View** menu to **Panels**, then choose **Selected** and **Legend**

Windows can be **moved** and **re-sized** to suit your preferences

If you're lucky enough to have 2 monitors, data windows can be moved entirely off of the main window

Here are the main **tools** in the toolbar, below the pull-down **menus** -



Some tool notes –

The **Zoom Mode** tool, or zoom to box, works in several directions – click and drag **southeast** to zoom in, click and drag any other direction to zoom out.

The **Zoom Extended** tool works in 2 directions – click and drag **away** from you to zoom out, click and drag toward you to zoom in.

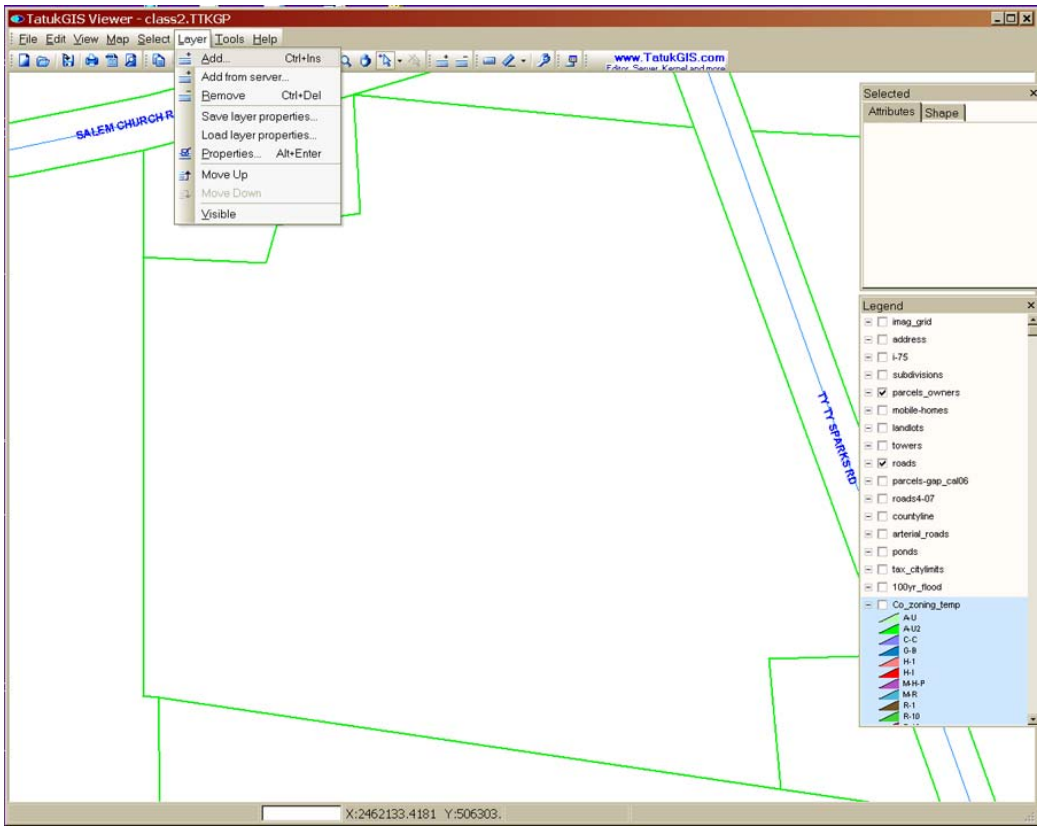
The **Drag Mode** tool works in all directions – click and drag to "slide" the map around the screen.

The **Zoom to full extent** tool will cause Tatuk to show the entire extent of your map.

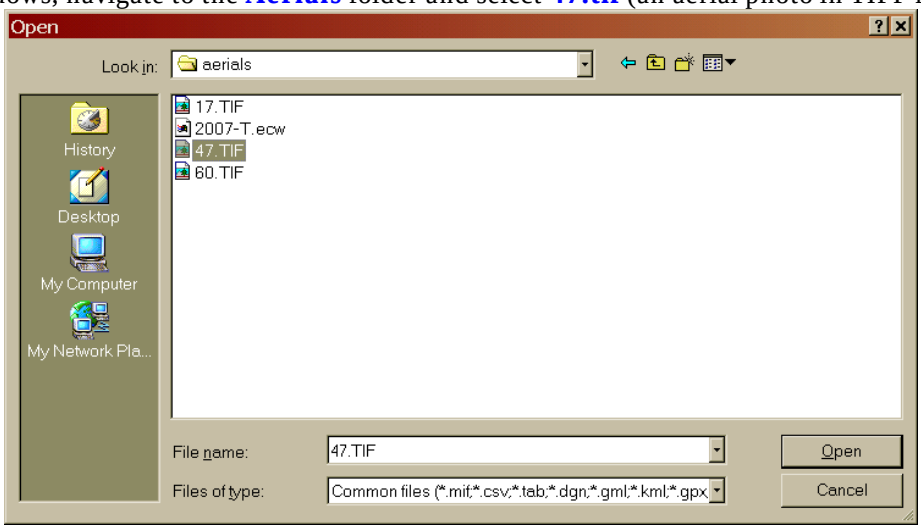
The **Previous Extent** (or **Back**) tool works like the Back tool in a web browser.

Adding map layers – eg. aerial photo #47

Pull down the **Layer** menu and choose **Add**



In Windows, navigate to the **Aerials** folder and select **47.tif** (an aerial photo in TIFF format) -



Click **Open** to add the layer to your Tatuk project

If the aerial photo is not visible on your screen

Click once on the layer name in the **Legend**, eg **47**, to highlight it in blue & make it **active**

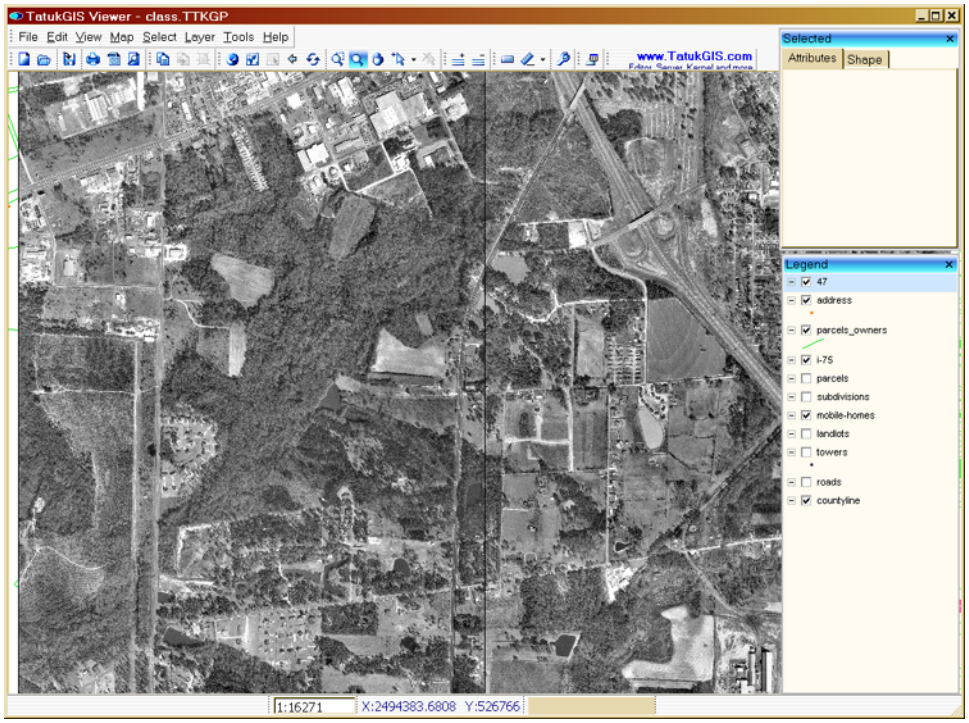
Click on the Layer Extent button 
This will zoom to the aerial photo

This tool **also** works with layers in the **Legend** such as **roads**, **parcels**, etc

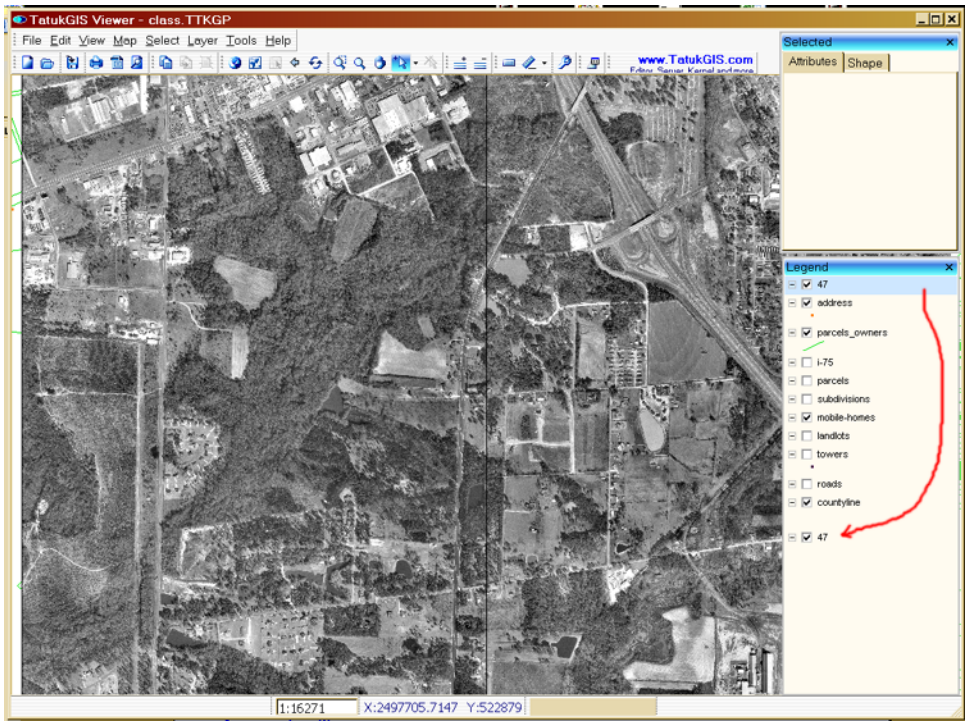
Moving layers in the Legend

If an aerial photo is added, it will appear at the "top" of the layer stack and will cover up any **layers** below it

This is **aerial photo #47** after being added to a project
Note that it obscures the layers below it -

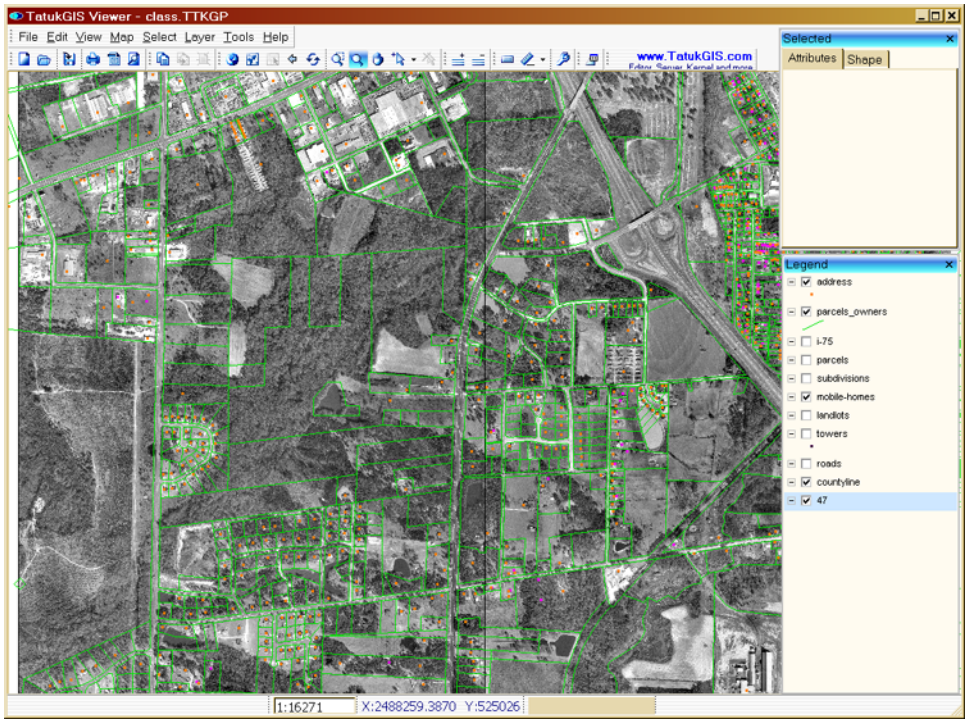


To move a layer up or down in the **Legend**, do a "**drag and drop**" --
Left-click on the layer name (here **47**) and hold the mouse button down
Then drag the layer up or down in the **Legend**
Here, you want aerial photo **47** to be below the roads, parcels & addresses -



Release the mouse button

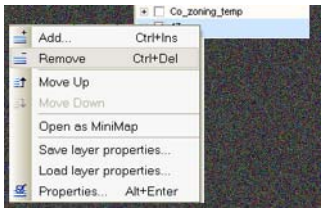
Note that the other layers now show on top of the aerial photo -



To remove a photo at the end of a session

Click once on the **layer** name in the **Legend**, eg **47**

Right-click & select **Remove**

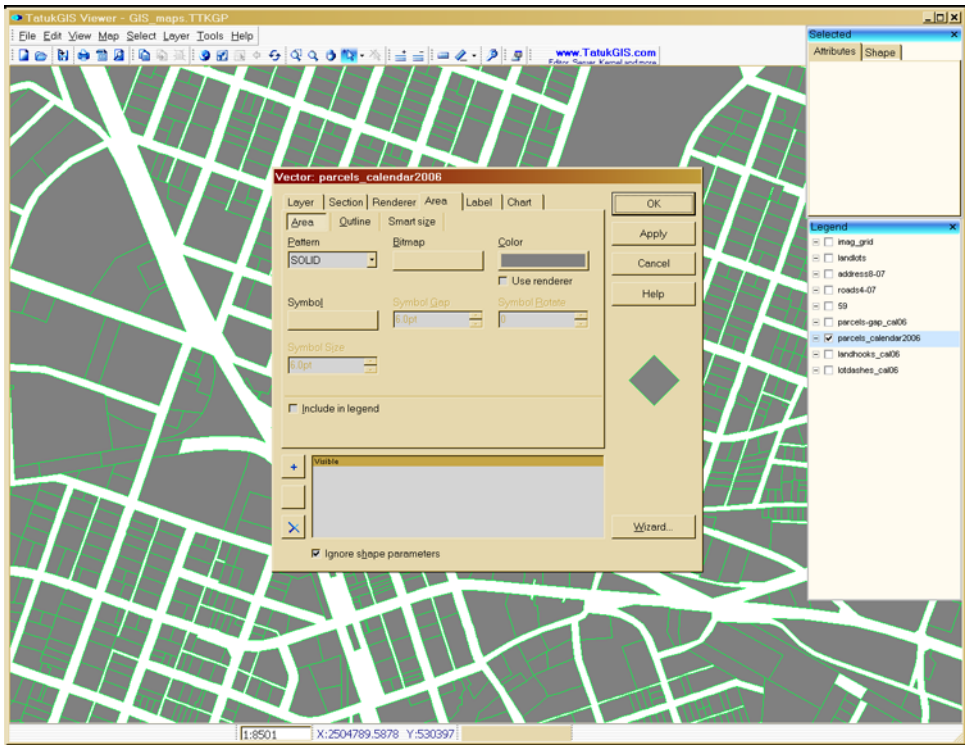


It's a good idea to remove photos from a project regularly, unless they're used often

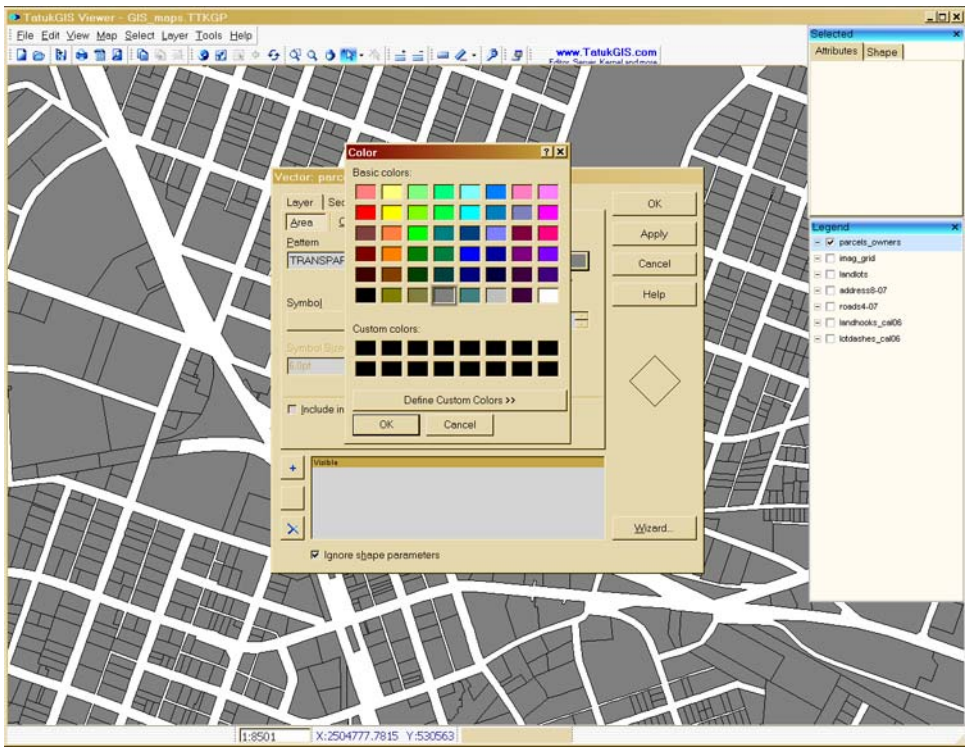
Changing the appearance of lines and points –

When you add a new "**polygon**" layer such as parcels, all the polygons will be filled with grey

Add the "**parcels_calendar2006**" layer to your project
Layer/Add menu, then open the **Shapes** folder
Double-click on the **layer** name and this window opens -



Click the tab named **Area**, then click the button named **Area**
Choose **transparent** in the **Pattern** pulldown window

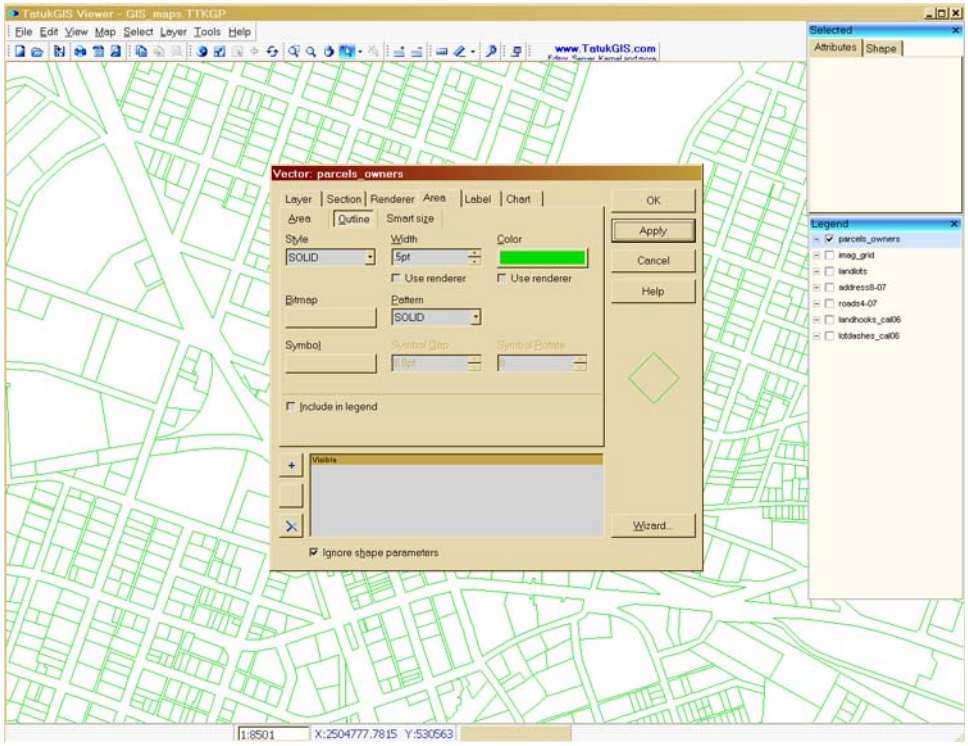


Click the **Apply** button to preview the changes – see next illustration

Click the **Outline** button, and hit the button under **Color** to select whatever color you want

The **Width** window lets you control how wide a line is

.5pt and **1pt** are a good starting point



Click the **Apply** button to preview the changes

When you're satisfied, click **OK**

The "Wizard" button

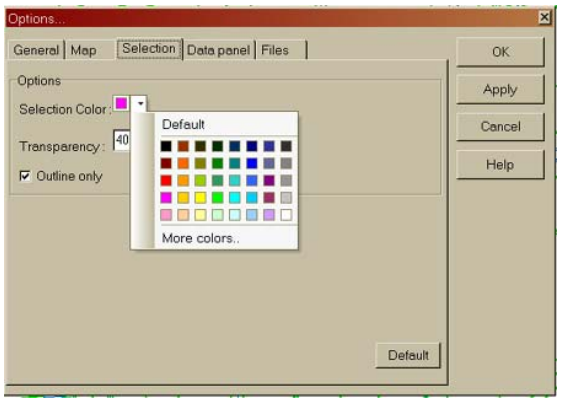
Used for assiging different colors to different features within a layer

Eg zoning classifications, soil types, political districts

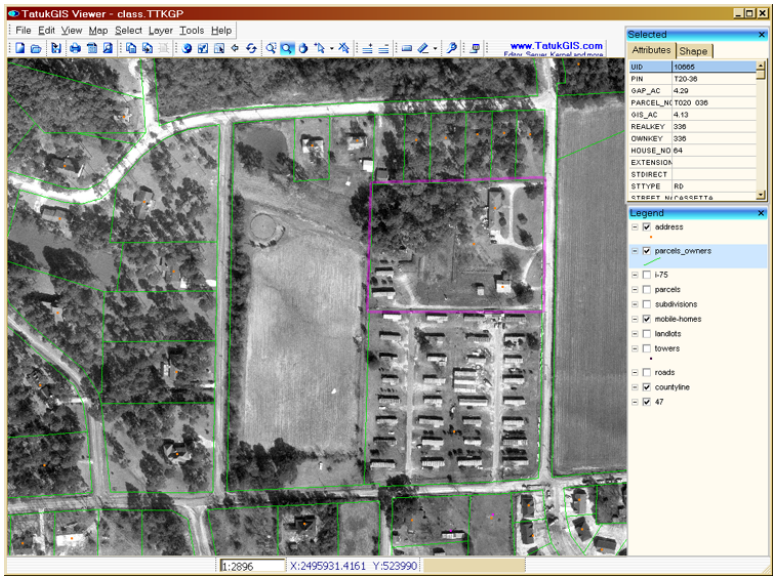
The Wizard is beyond the scope of this class

Setting highlight option for selections you make on screen – the color that appears around a selected item

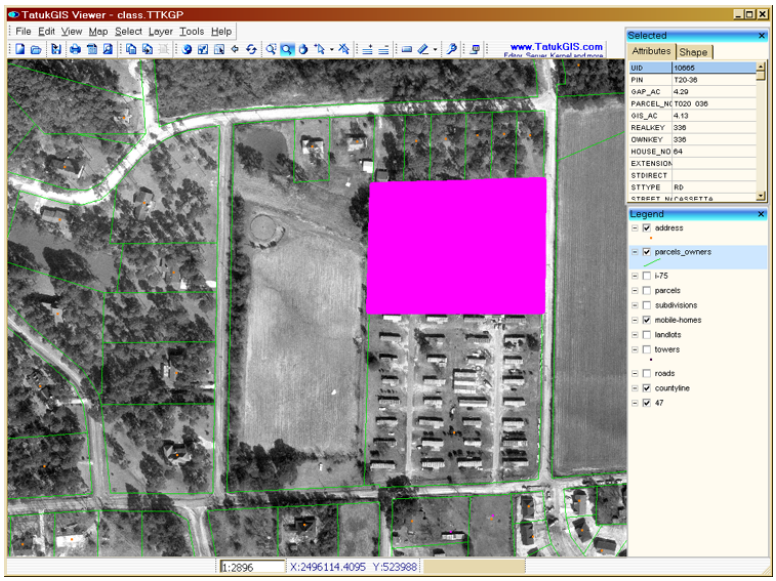
Pull down the **Tools** menu, choose **Options**, then click the **Selection** tab in the Options window
Click on the black triangle next to Selection Color to open a color picker window -



Outline Only is the best if you're going to be printing -



Otherwise it will print as an area of solid color -



Labeling -- adding parcel numbers, road names, etc

You have **LOTS** of choices here - the following illustrations show the effects of **some** settings

Double-click on a layer name, in this case **parcels_owners**

The "**Vector**" window will open

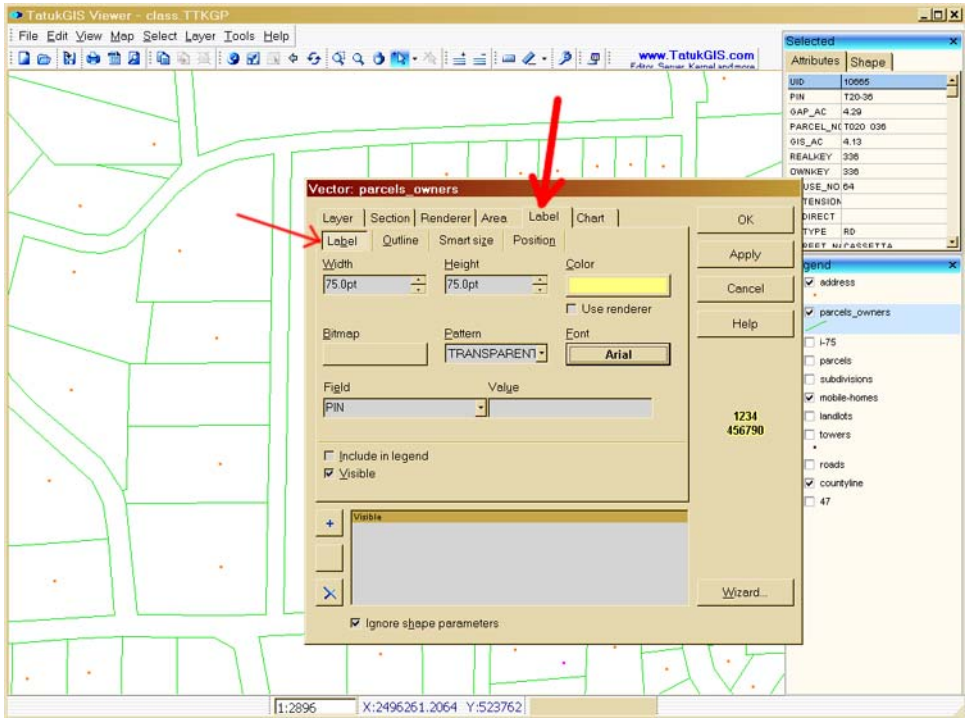
To chose a typestyle -

Click the **Label tab**, then click the **Label** button

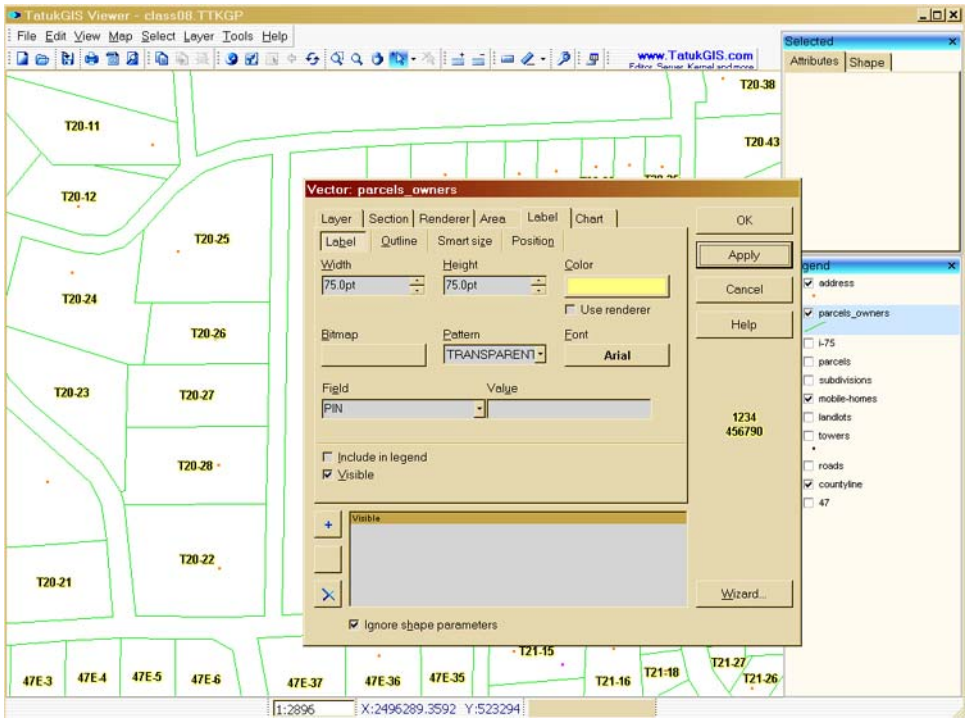
Click the **Font** button to select typestyle, color, bold, etc

Pull down the menu next to the **Field** box, and choose **PIN** (Parcel Identification Number)

Put a checkmark in the **Visible** box -



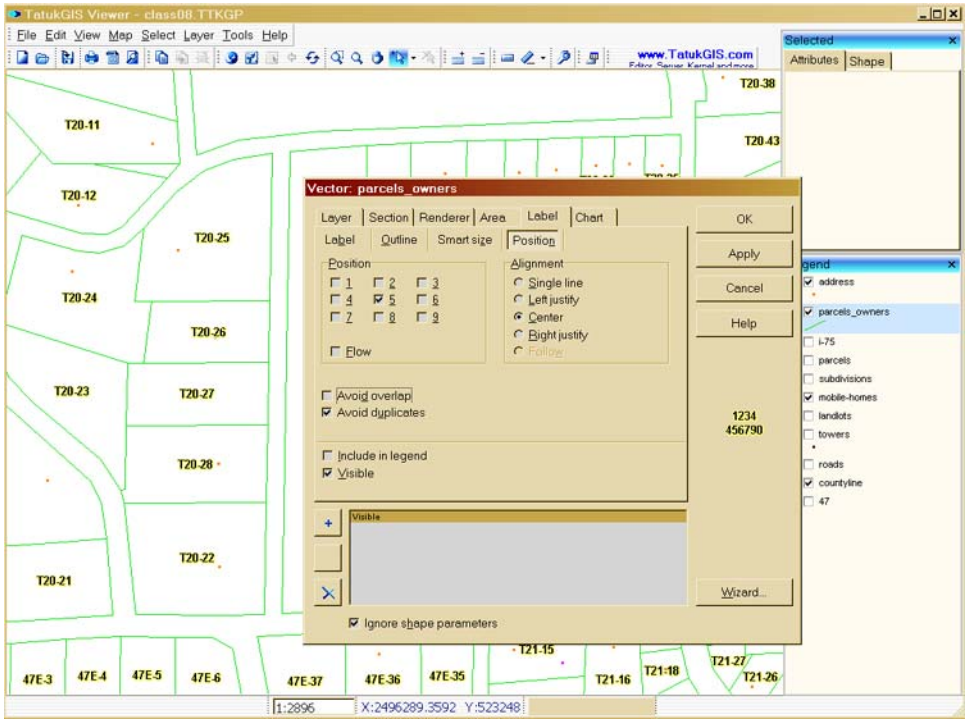
Clicking the **Apply** button will show you the effect without closing the selection window -



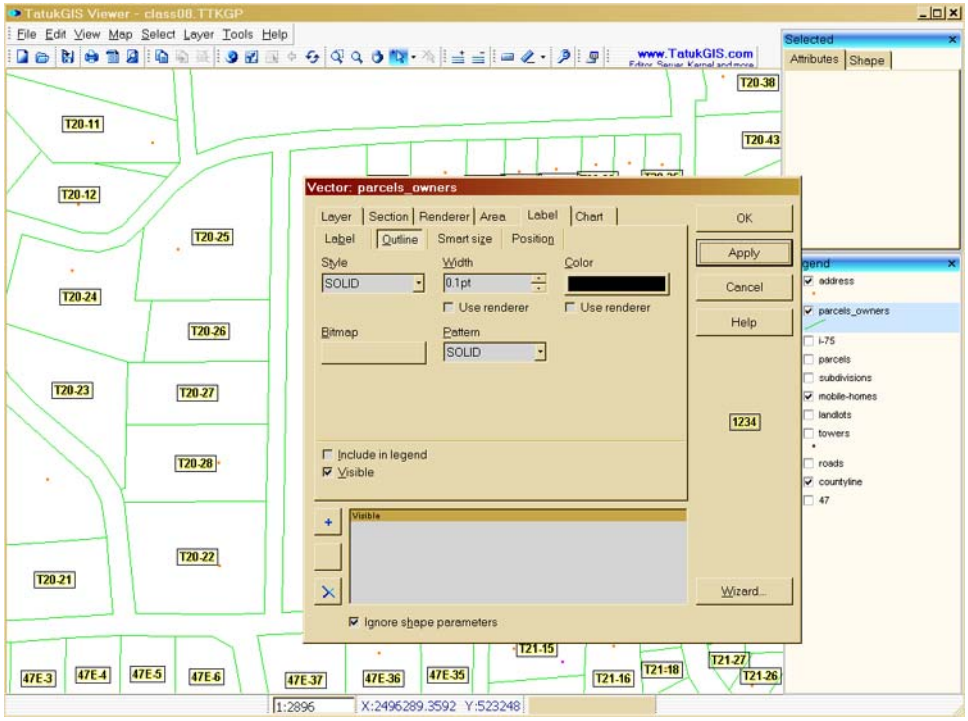
To select the positions where labels will be displayed –

Click the **Position** button and you will see choices for **Position** and **Alignment**
Choosing **5** and **Center** will center the label in its polygon

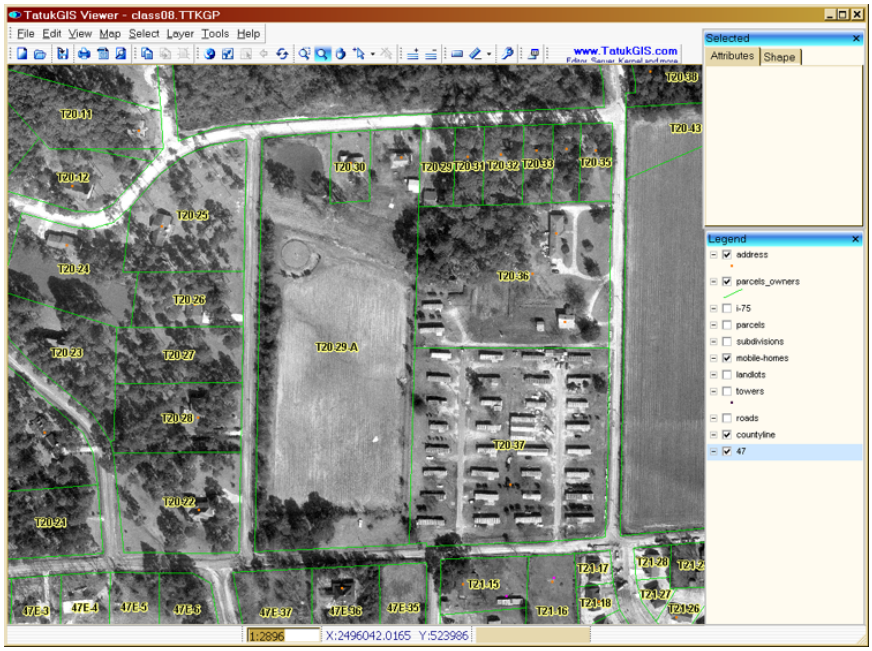
Clicking the **Apply** button will show you the effect without closing the selection window -



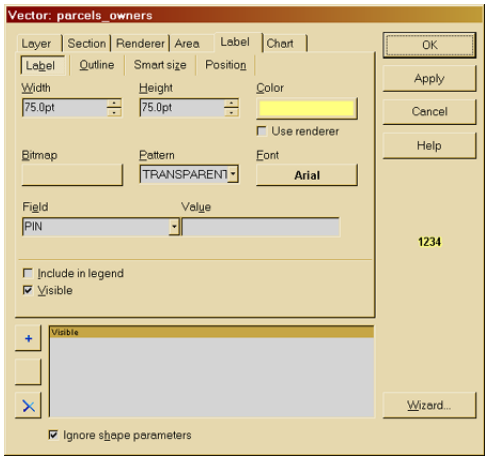
Outlined labels – best **avoided -**



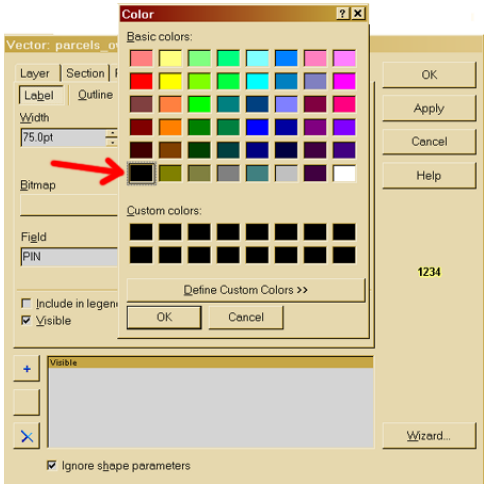
To get rid of the "halo" effect around text, shown here –



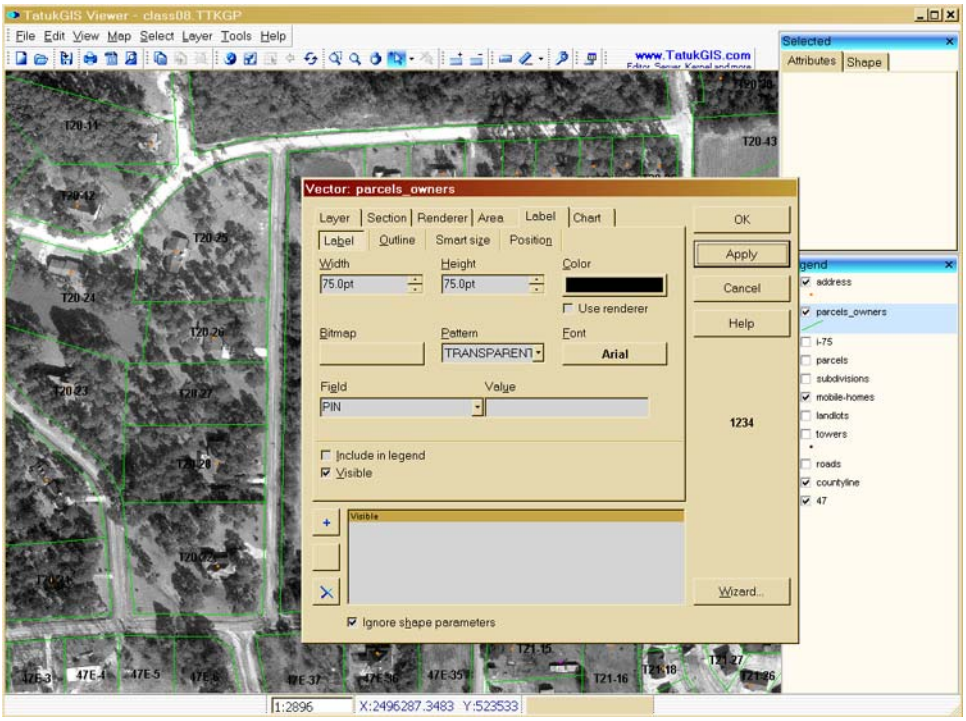
Double-click the appropriate layer in the **Legend** window
Click the **Label** tab -



Double-click the **Color** bar, change the color to **black** – select the color box shown by the red arrow -



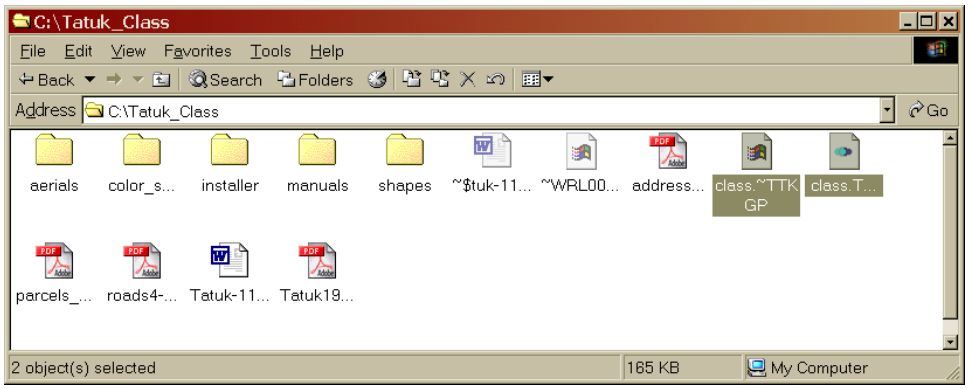
Click **Apply** to see the changes, then click **OK -**



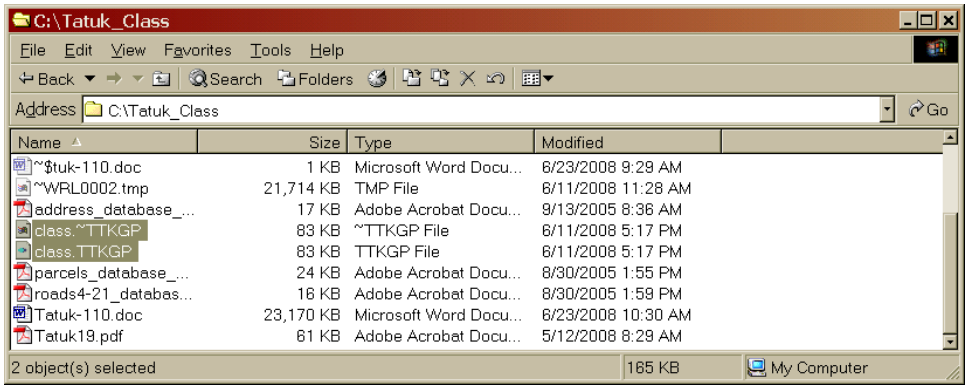
After setting up your project the way you want it (labels, colors, etc)

**** MAKE A BACKUP COPY ****

In My Computer or Windows Explorer, find the ".ttkgp" & ".~ttkgp" files and copy them to a safe place - CD, etc



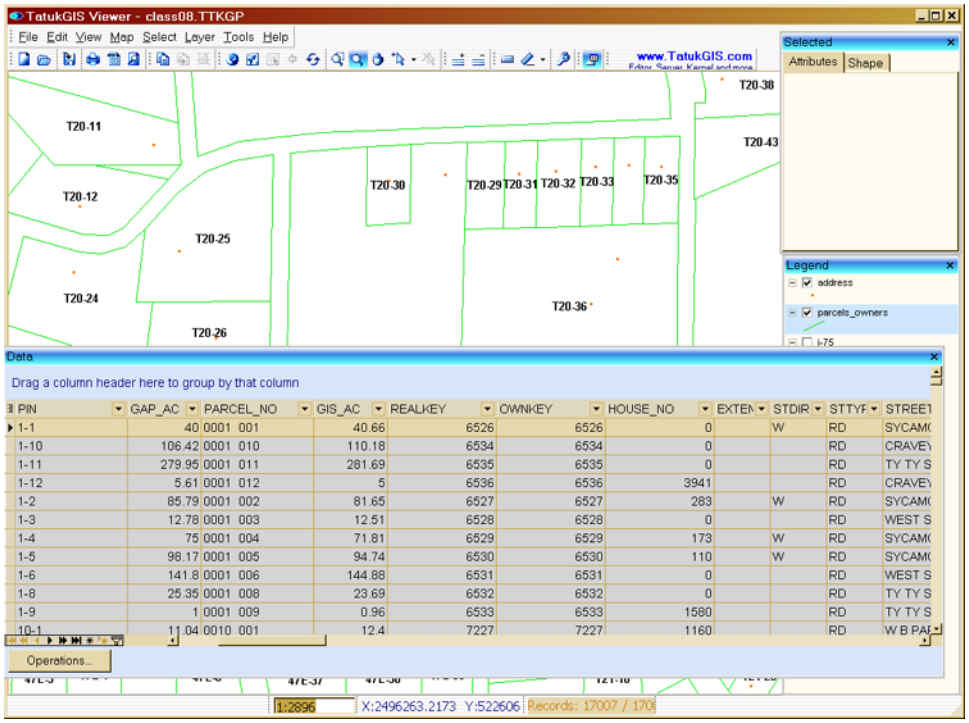
OR



Getting information about a parcel, road, address point, etc –

Each of the **layers** (shapefiles) includes a **database** - called an "**attribute table**" in GIS
Databases contain many **fields** (columns), each with different information or combinations of information.

Here's an example of what a **database** contains - eg. the **Parcels_owners** layers -

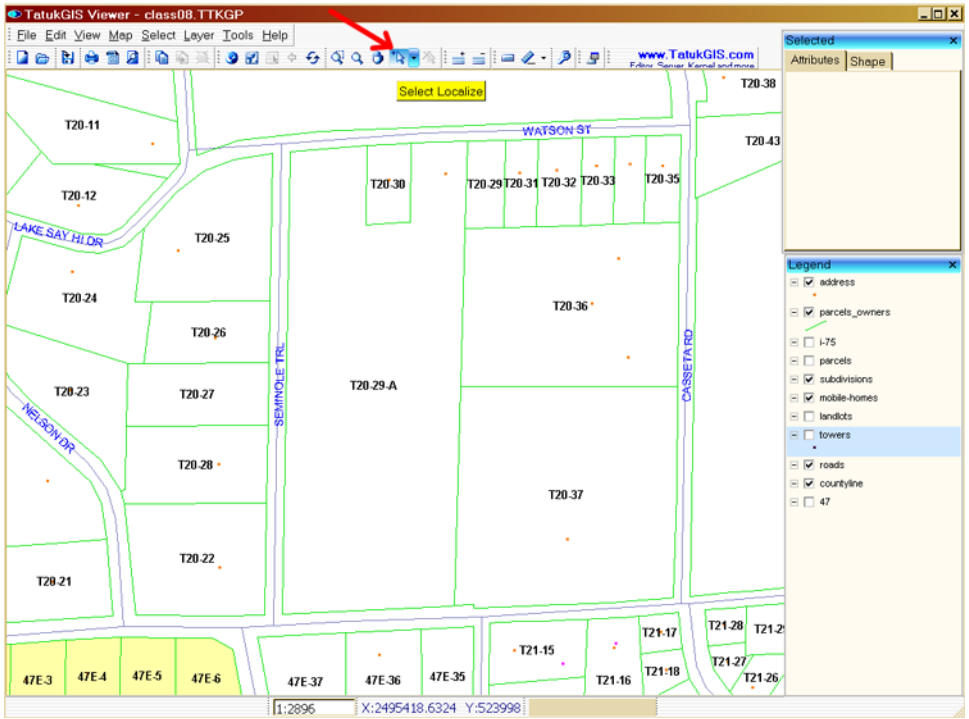


Accessing database info

Information from a layer's database can be shown in the **Selected** panel

Example: if you've found an area by moving around in the map

Click on the  **Select Localize** tool to activate the "**finger**" tool -

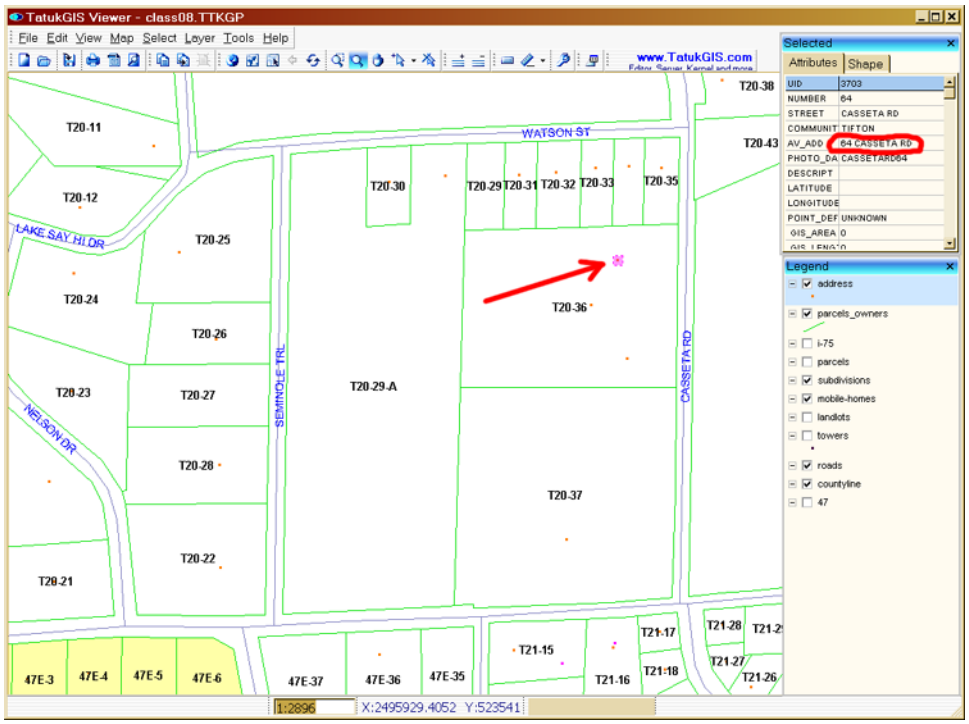


NOTE – this tool will select whatever feature (line, point, polygon) is **closest** to the **index finger tip**

Click on a feature, eg an **address** point shown as gold points

The feature will become highlighted

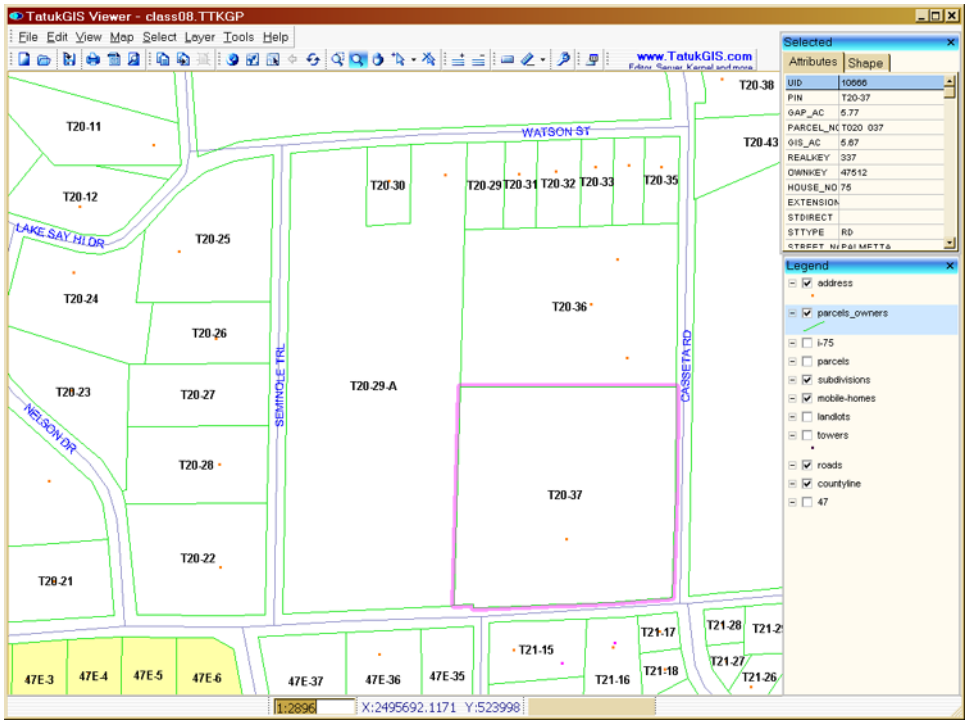
Information from the database will appear in the **Selected** window in the upper right -



Next, click on a parcel line (but not on an address point)

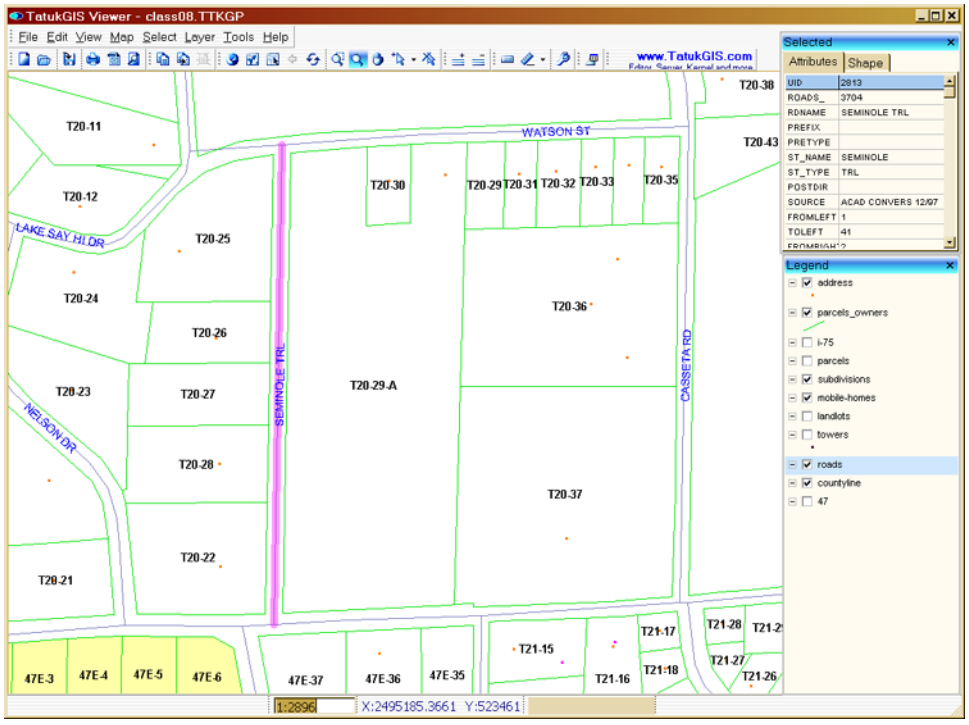
The parcel will become highlighted

Information from the parcels database will appear in the **Selected** window -



Next, click on a **road**, the road segment will highlight

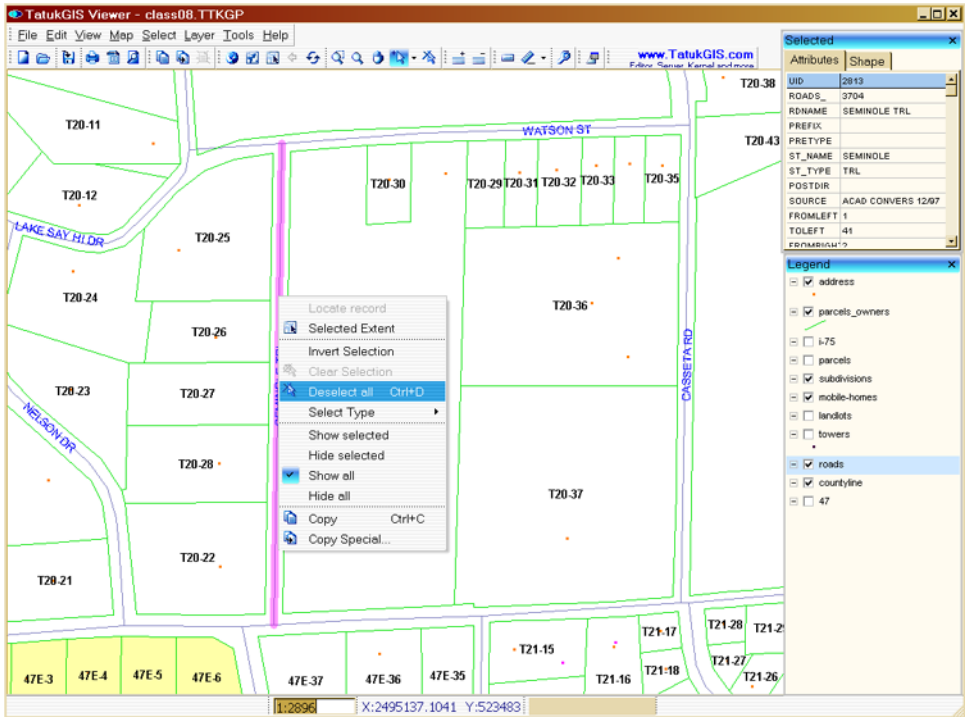
Information from the roads database will appear in the **Selected** window -



Getting rid of a highlight

Hit the **Deselect** button on the toolbar

Or right-click on the feature and choose **Deselect All -**



Some Data panel basics

You have been given printed samples of databases, showing the fields they contain

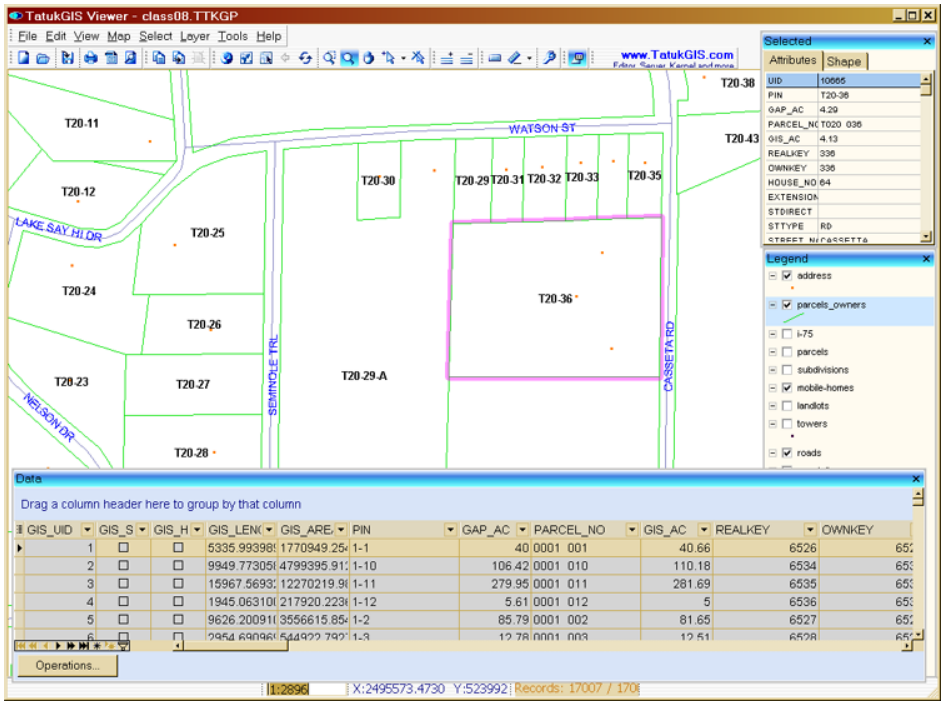
Use these samples to determine which field to use when doing searches & queries, and to see formatting (spelling, abbreviations, etc)

NOTE – if you're not from Tift County, your county's database fields **WILL** have different names

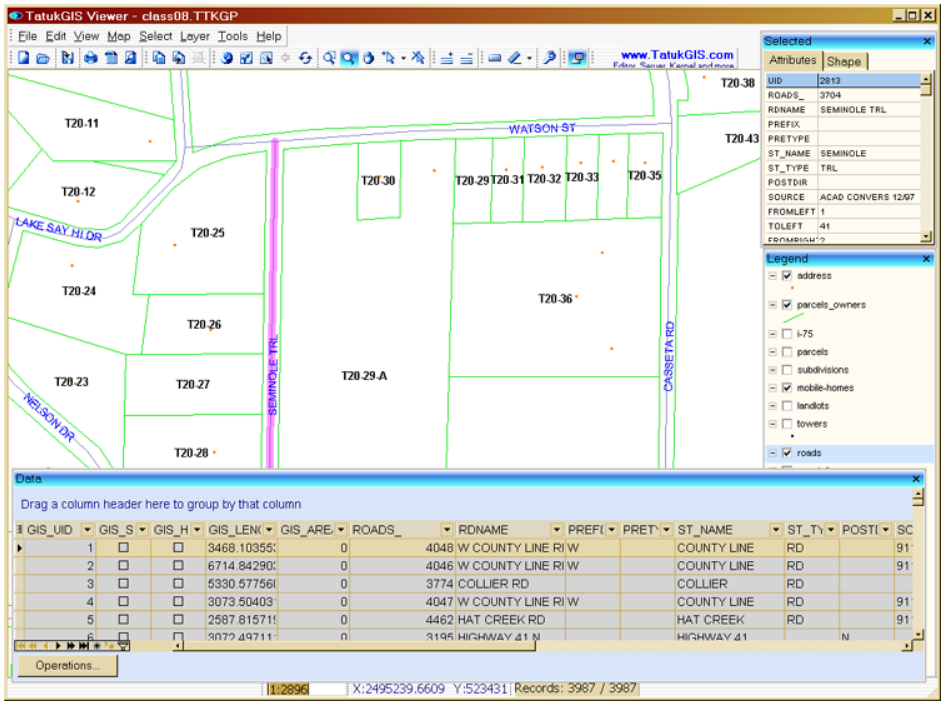
Open the **Data Panel** by clicking on the **Data** button  , then stretch the panel to the left & right

Pull the top edge of the data panel window up, until you can see at least 3 rows of records

If you select a feature, eg. a **parcel**, the database for that feature will appear in the **Data Panel -**

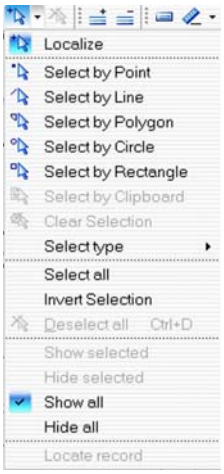


If you then select a different type of feature, eg. a road, its database will appear in the **Data Panel -**

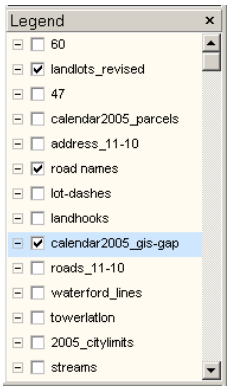


Controlling which layer a feature is selected from -

Click on the black triangle at the right of the **Select** tool, pull down the menu & choose **Select by Point** →



This tool will **ONLY** find things in the "active" layer in the **Legend** - the layer highlighted in **blue**



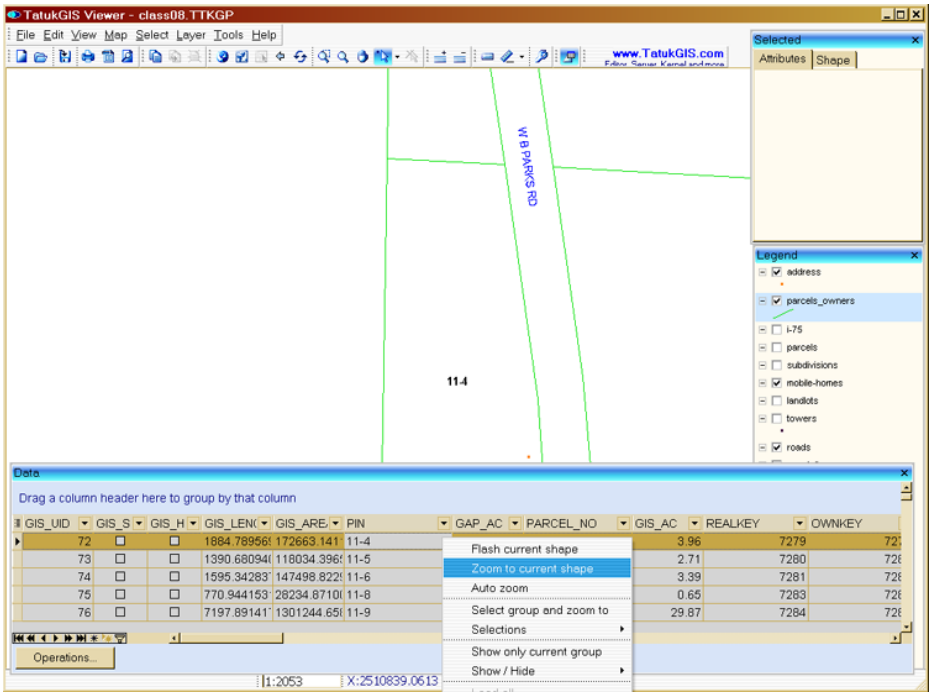
This is handy if you have a complex project, packed with features in different layers

Right-clicking to pop up a menu

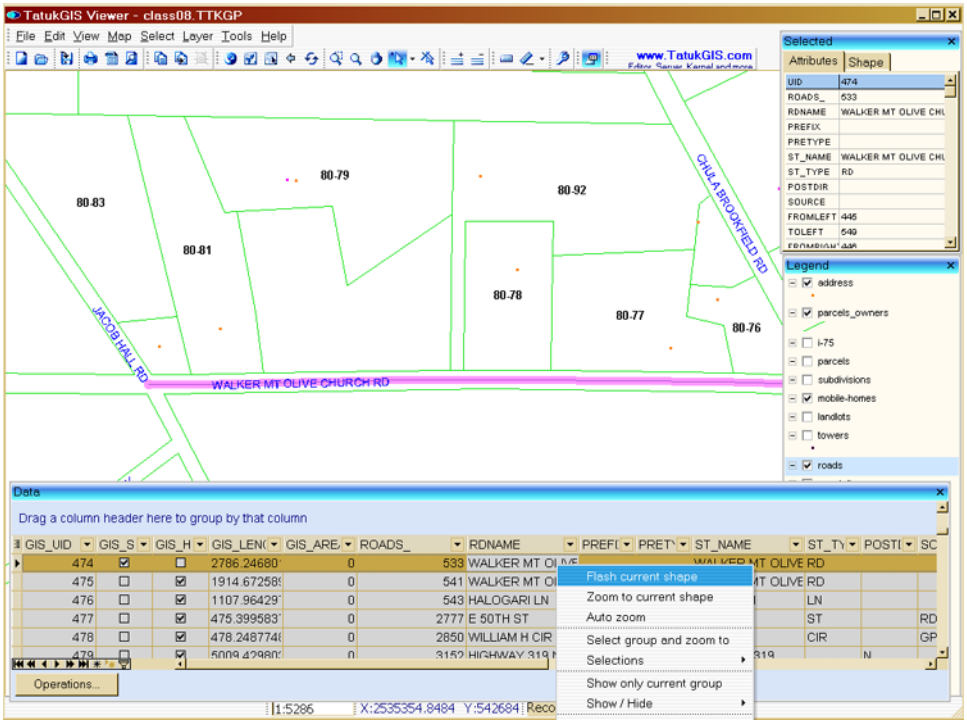
Many **Tatuk** actions or commands are found by **right-clicking** (or "alternate button", for you lefties)
Or by clicking the **Operations** button in the **Data Panel**

To zoom to a feature you've selected or found

Right-click anywhere on a **record** (line) in the **Data Panel**
Select **Zoom to Current Shape** -



Or to **Flash** a selected **feature** to find it (here a road)
Right-click on the record & choose **Flash Current Shape** -



You'll get practical experience with these 2 functions

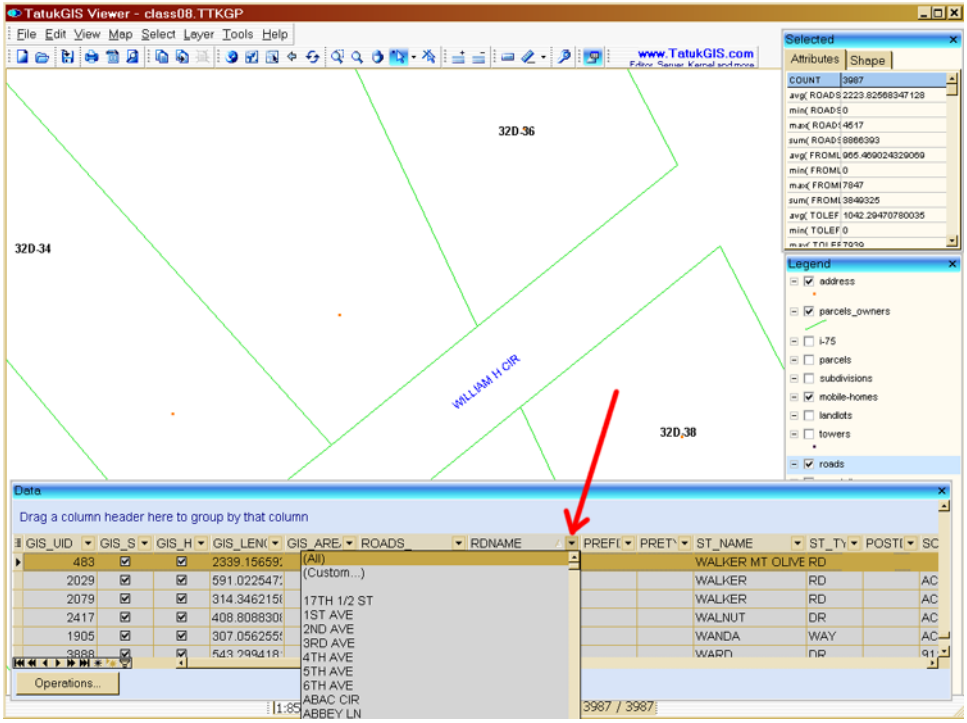
More Data panel basics

"**Cached**" and "**non-cached**"

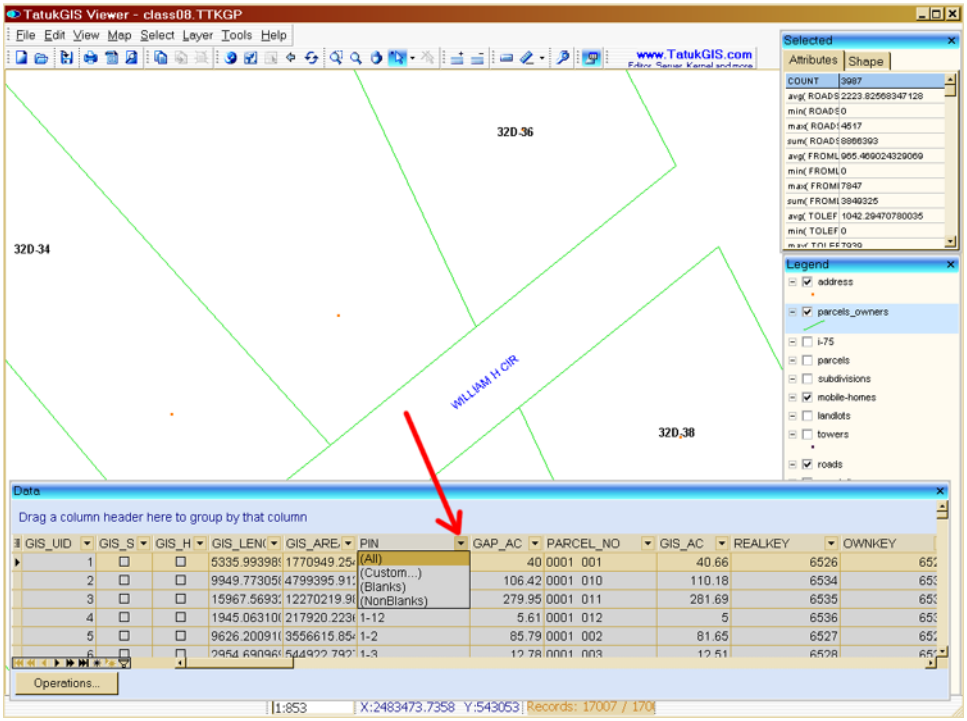
In the bottom left corner of the **data** panel, you'll see a button called **Operations**

This is where you can turn the cache mode on or off

Cached means all the records (eg. road names) will show up if you click the pull-down menu by a **field** name -



Non-cached means none of the records (eg. parcel #) will show up if you click the pull-down menu by a **field** name -



Setting the **cached** and **non-cached options**

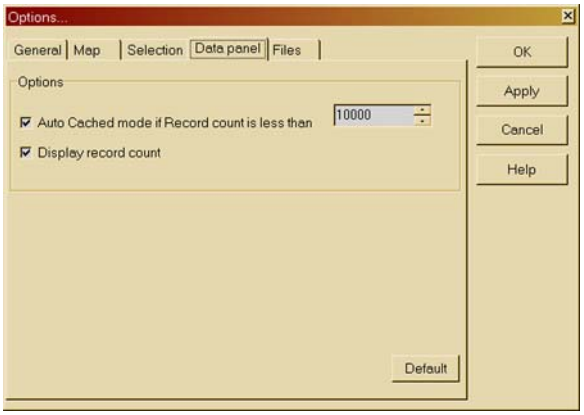
Open the **Options** window

Use the **Options** button  on the toolbar, or select **Options** under the **Tools** menu

Select the **Data Panel** tab

Choosing **Auto Cached** means Tatuk will count the number of records a database contains
You can tailor this to your own desires – "less than" sets the threshold

If you often scroll down through field pop-up lists, set the record count above 18,000 (for this course) -

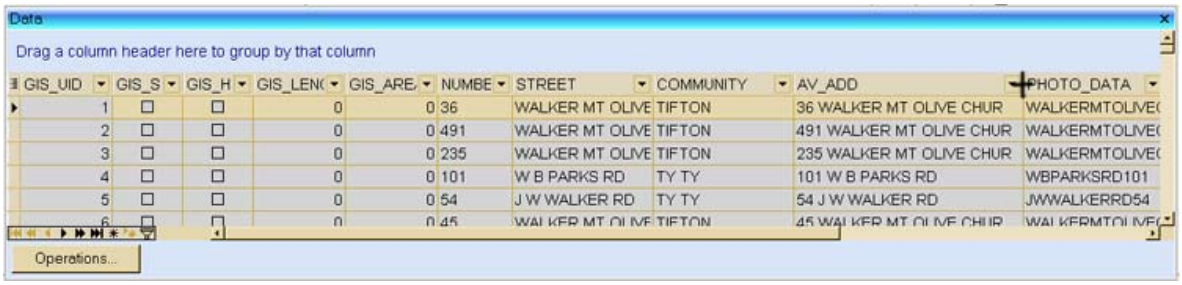


Some class layers which have databases containing more than 10000 records –

Parcels
Addresses
Roads

Note – you can make fields (columns) wider

Using the **Address** layer
Put the mouse cursor on the line between columns
The cursor will turn into a **black "cross"** with **left & right arrows**
"Click & drag" the cursor to the right and release the mouse button -



How GIS sorts numbers

When working in **databases**, most GIS programs sort numbers in a "**1,10,2**" pattern –

1	
10	T1
11	T10
12	T11
13	.
14	.
15	.
16	.
17	.
18	.
19	.
2	T19
20	T20
21	T21
and so on	

Finding a specific feature

Such as parcels, roads, addresses ... anything in a database

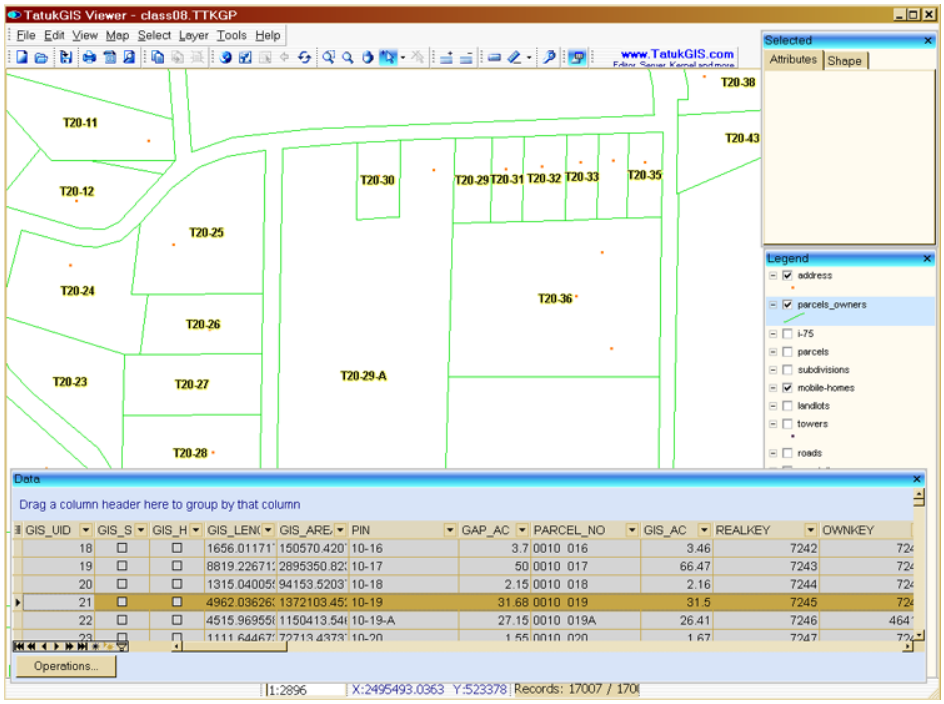
Your first option is to do a **Simple search** – here, searching the **Parcels_owners** layer

In the **Legend**, click on the **Parcels_owners** layer -- highlights it & loads the database into the **Data Panel**

Using the scroll bar on the right, scroll down through the database until you see the **record** you want

Here, the **PIN** field, looking for **10-19** (parcel ID number 10-19)

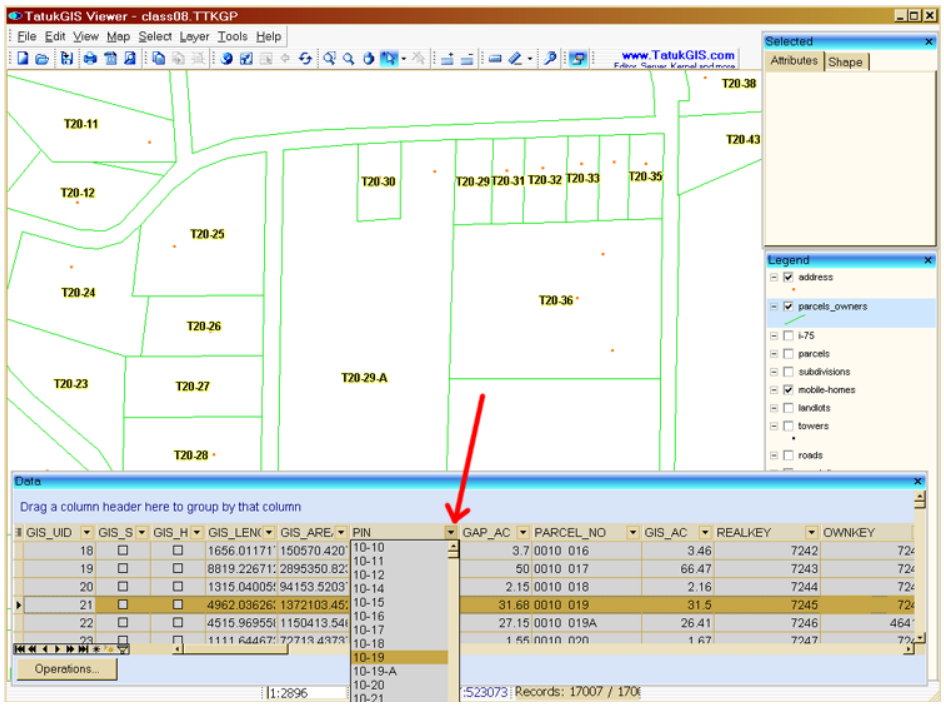
Select that record by clicking **ANYWHERE** within the line of the record -



Or – if the database is **cached**

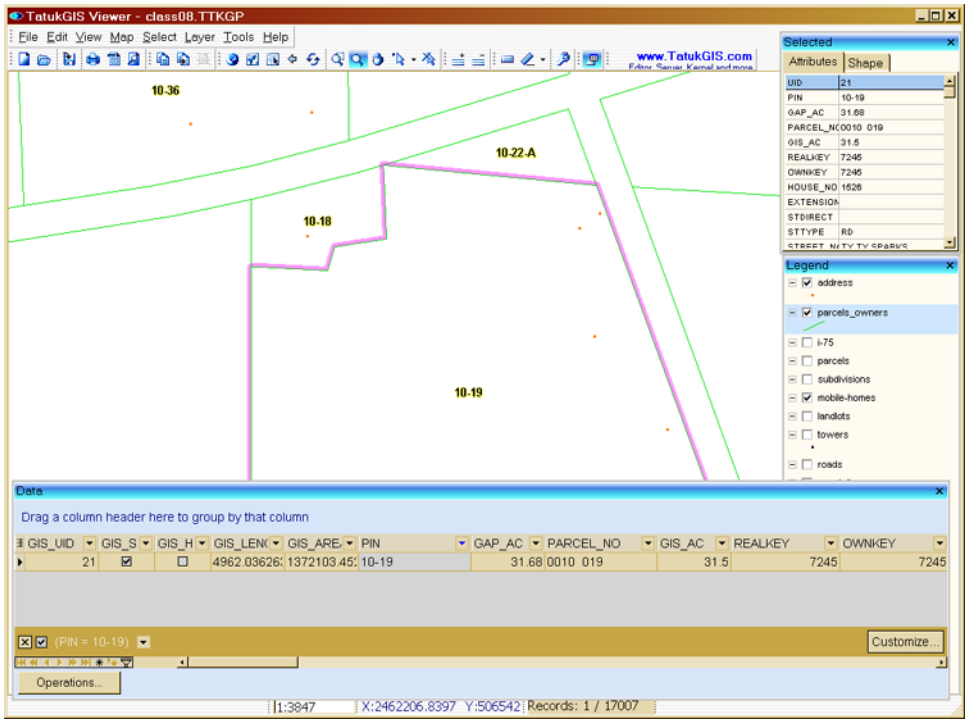
Click on the black triangle to pull the **PIN** menu down

Scroll down to the **PIN** you want, eg. parcel **10-19 -**



Tatuk will select **ONLY** that record in the database, eg. parcel **10-19**

Right-click on the record and choose **Zoom To Current Shape** to display the selection -



Use the  **Select by Point** tool to highlight the feature and show information in the **Selected** panel

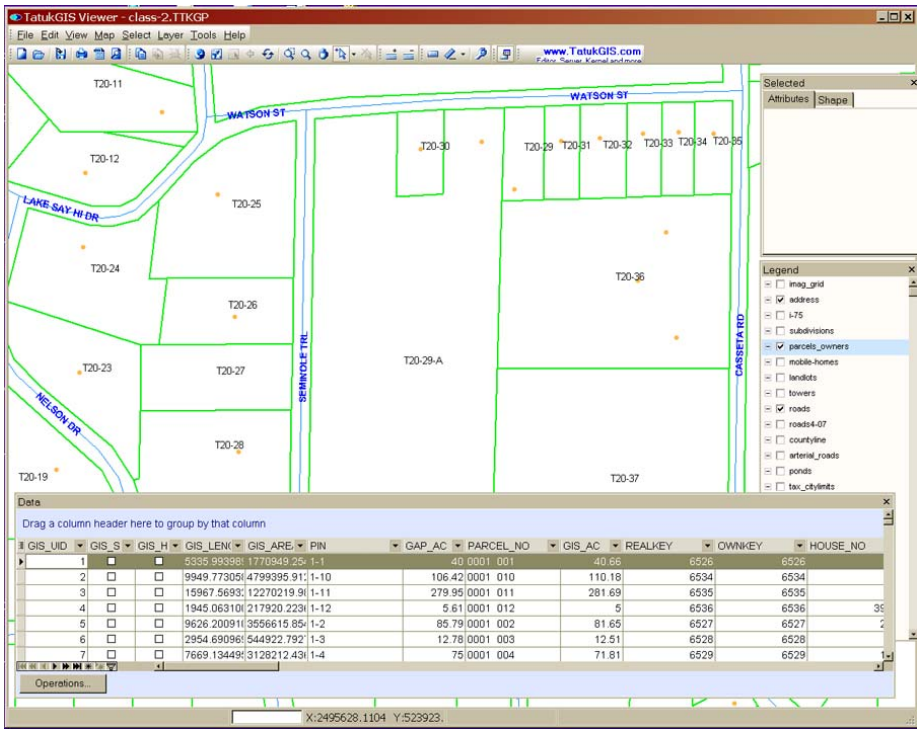
When you find a feature either of these ways, your selection first appears in the **Data** panel
Only after you use one of the **Select** tools will information appear in the **Selected** window

The most flexible search option is to do a Custom Query

Querying for **parcels** -

In the **Legend** window, click the **parcels_owners** layer to make it the active layer

The layer's database appears in the **Data** window -

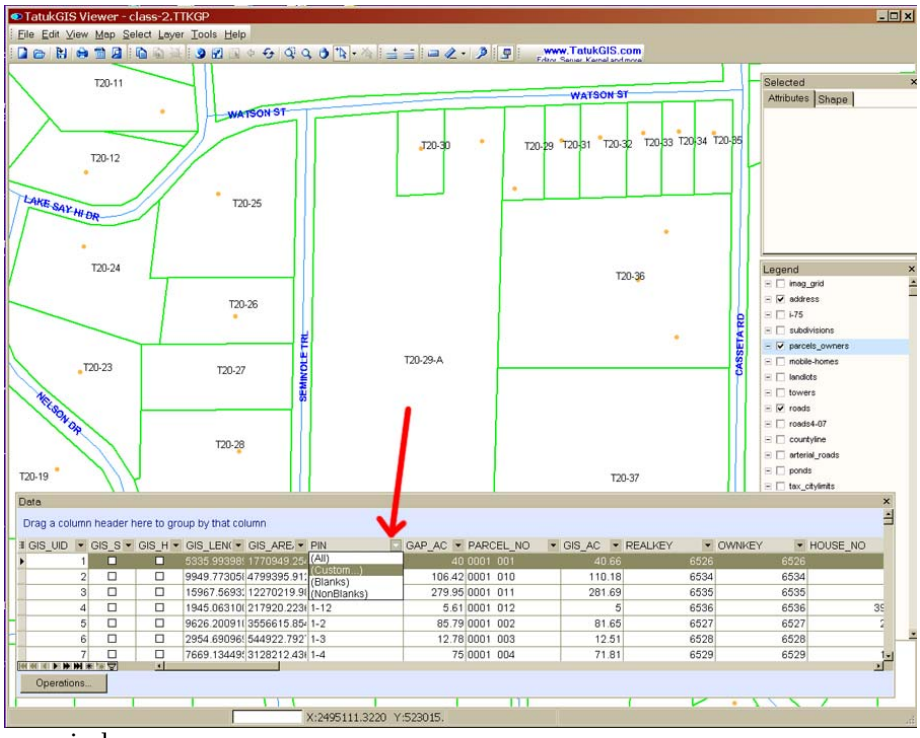


Pull the field menu down for the field you want to search – click on the black triangle

In this exercise, the **PIN** (parcel ID number) field

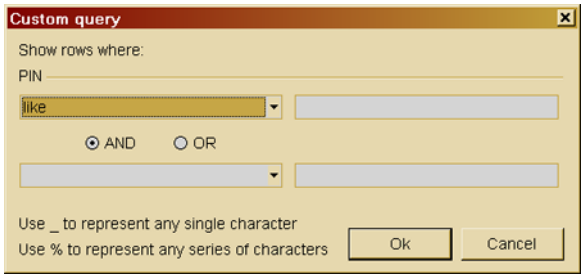
You'll see "**All**", "**Custom**", "**Blank**" and possibly more-

Select **Custom** -

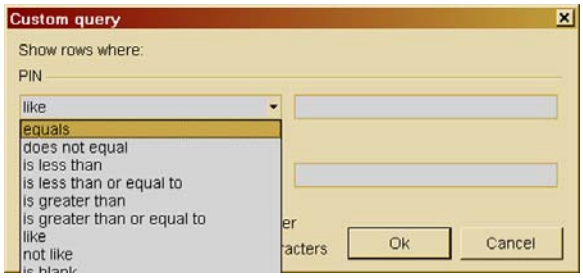


The **Query** window appears

Note that **PIN** has been automatically selected -

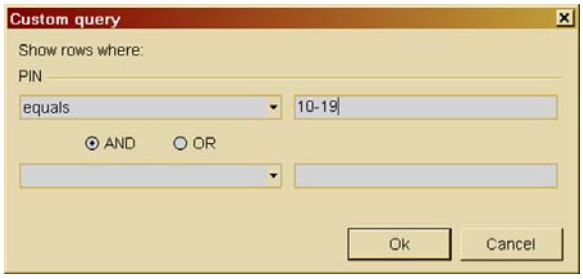


Pull the left menu down to **equals -**



You're going to search for parcel # **10-19**

To the right of **equals**, enter **10-19** with no "leading zeros" (not 0010 or 019) -



Hit the **OK** button

Note – type in the target info (eg 10-19) using whatever format is used throughout the field you're searching

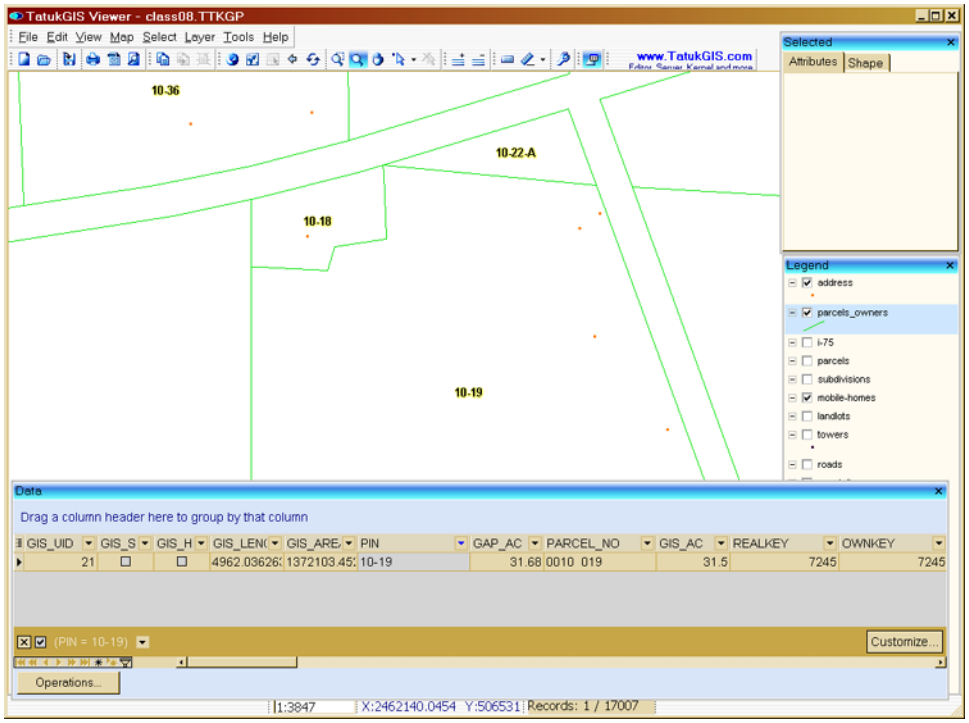
For example - if the database is set up using **0010 019** for parcel numbers, enter it that way

- if the database is set up using **St** instead of **Street**, type in **Main St**
- if the database is set up so that **N** (north) follows **Tift Ave**, type in **Tift Ave N**

(more)

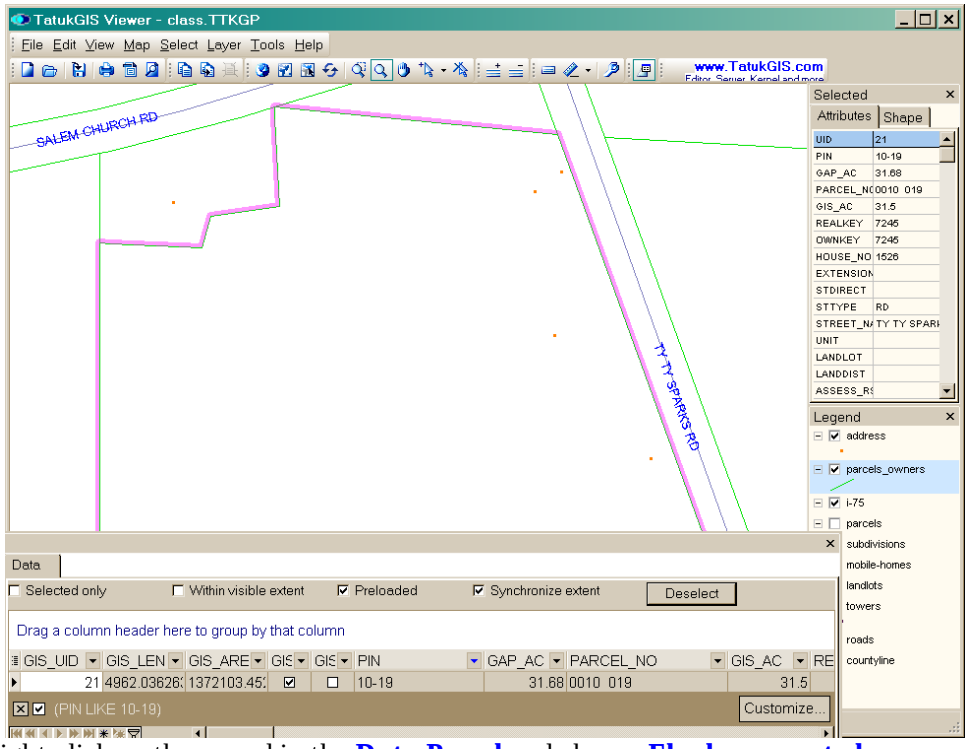
Tatuk will show your target in the **Data Panel**

Right-click on the record and choose **Zoom To Current Shape** to display the selection -

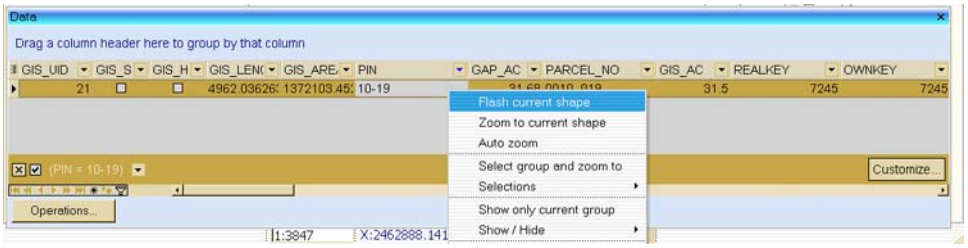


Note that the **Data** panel is covering part of the screen and the selected feature
To see the entire parcel, zoom out or move the **data** window

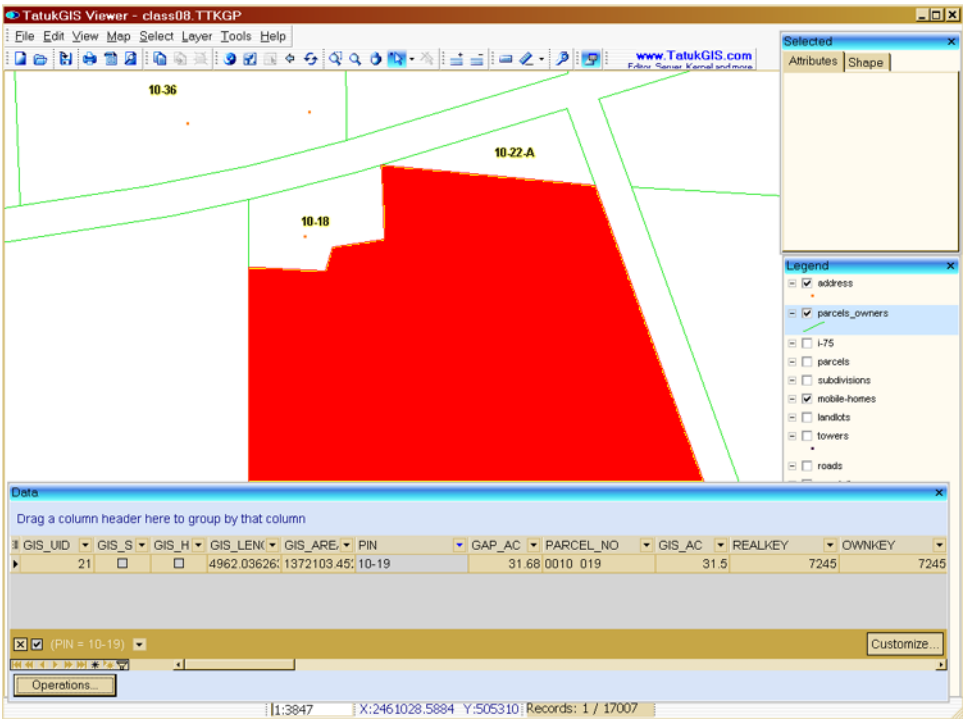
Use the **Select by point** tool and click inside the parcel lines
Information about the parcel will appear in the **Selected** window -



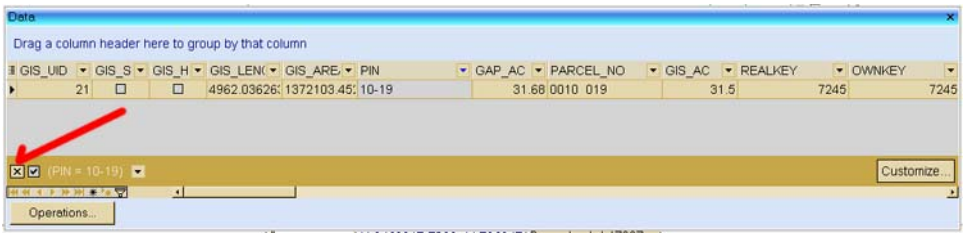
Then right-click on the record in the **Data Panel** and choose **Flash current shape -**



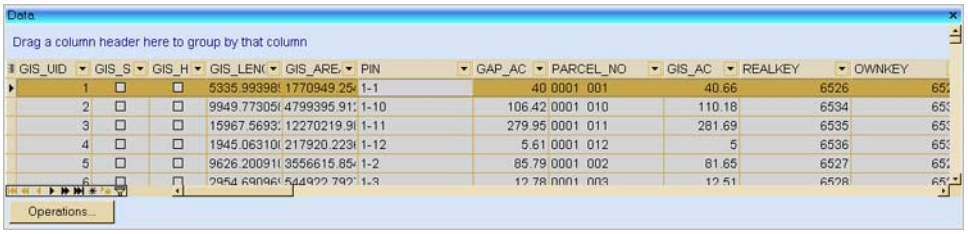
The selection will briefly flash red & yellow -



To clear this selection and show all the records in the database
Click the X box in the lower left corner of the **Data Panel -**



The entire database will now be visible, **AND** your custom query entries will be retained -

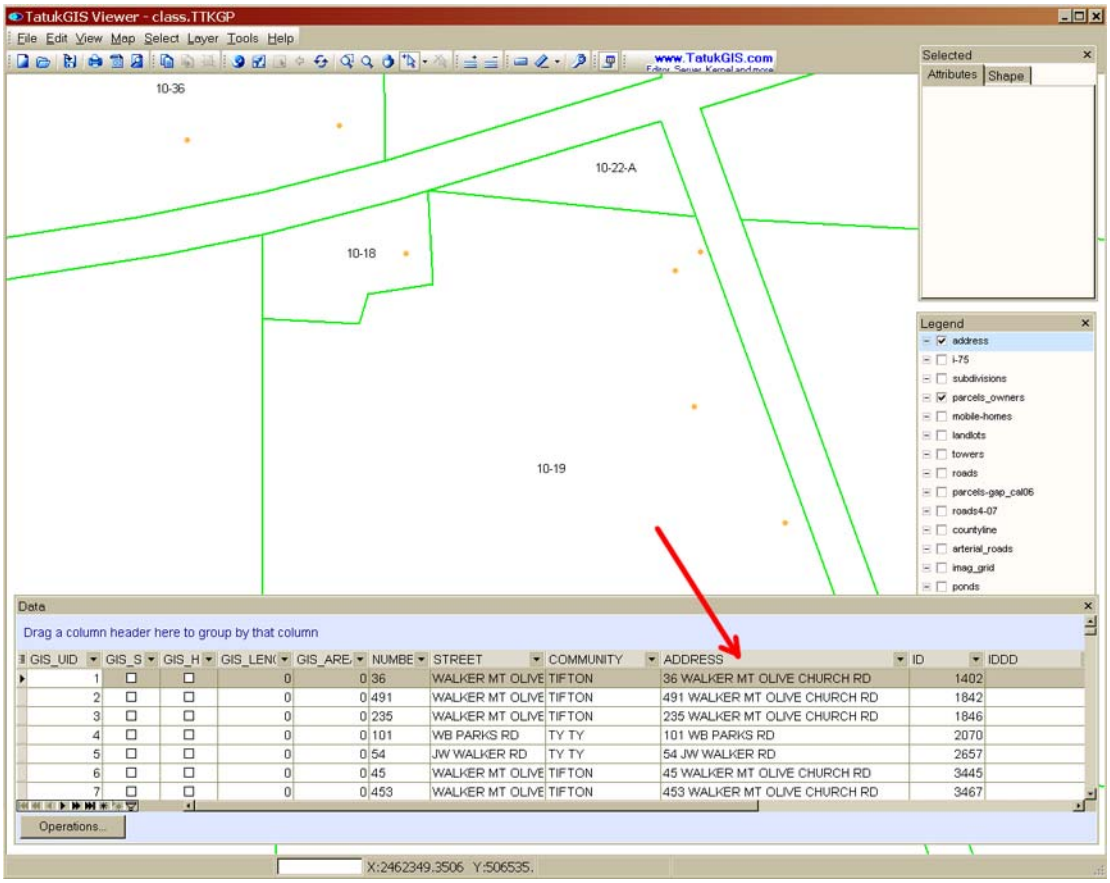


Exercises

Querying (searching) for address points

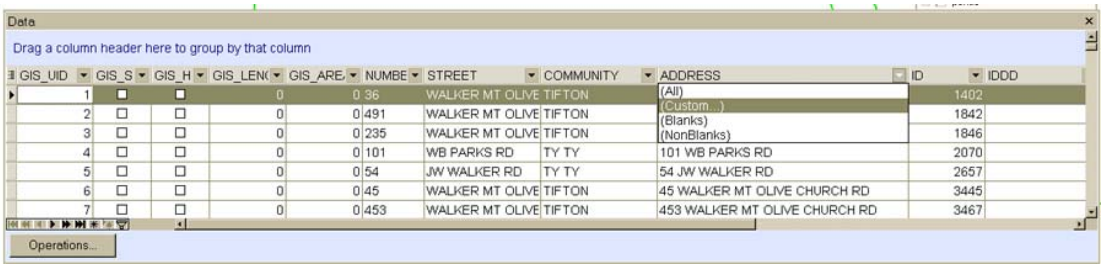
In the **Legend** window, single-click the **address** layer to make it active
The **Data** panel will show the address database (open the **Data** Panel if necessary)

Scroll the database (to the left or right) until you see the **Address** field
This field contains the complete address with house #



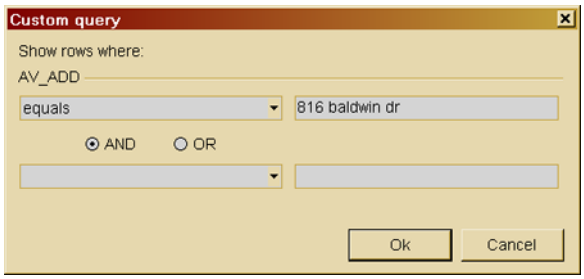
Widen the Address field if you desire

Pull down the **Address** field menu (click on the black triangle) & choose **Custom** -



In the **Custom Query** window

Pull down the lefthand menu to **equals**
Enter **816 baldwin dr** as the address you want, upper or lower case does **NOT** matter -



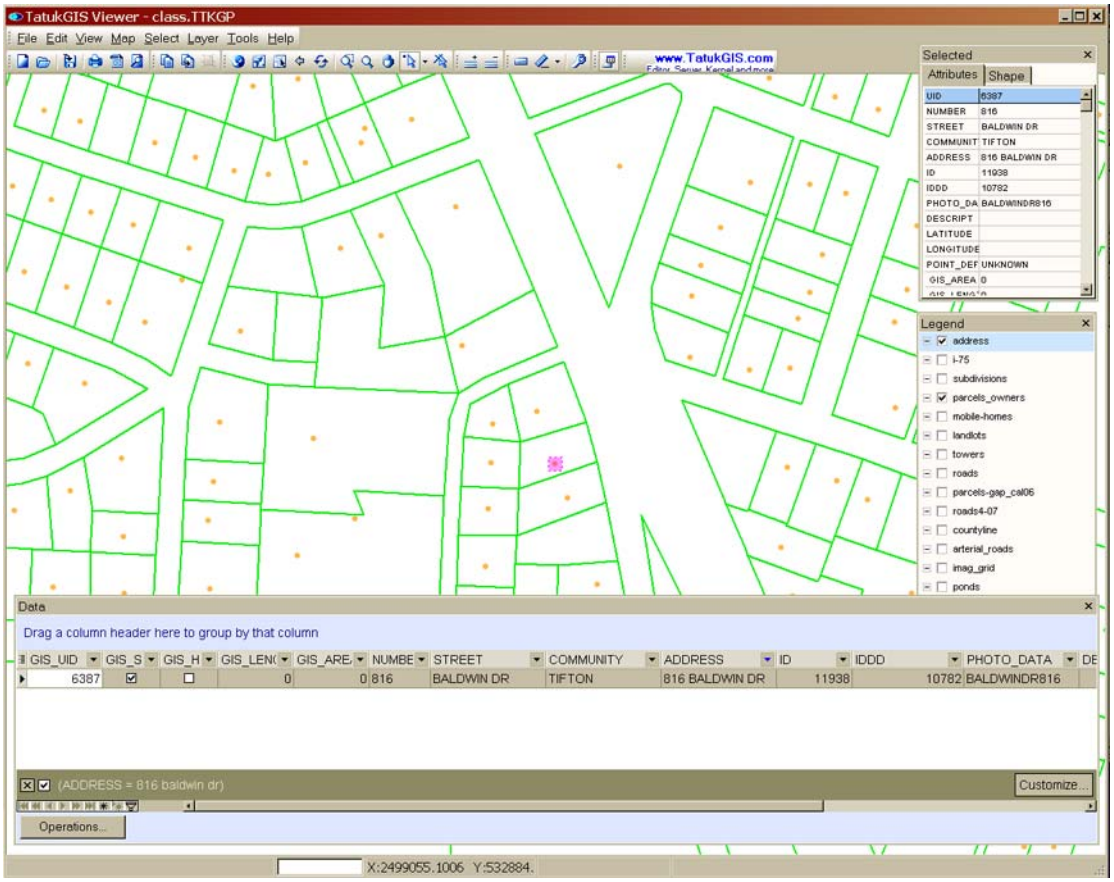
Hit **OK**

The search result will appear in the **Data** panel

Right-click on the record and choose **Zoom To Current Shape** to display the selection

The address point will be hard to see -
Right-click on the record and choose **Flash current shape**

Use the **Select by point** tool to select the address point and highlight it -



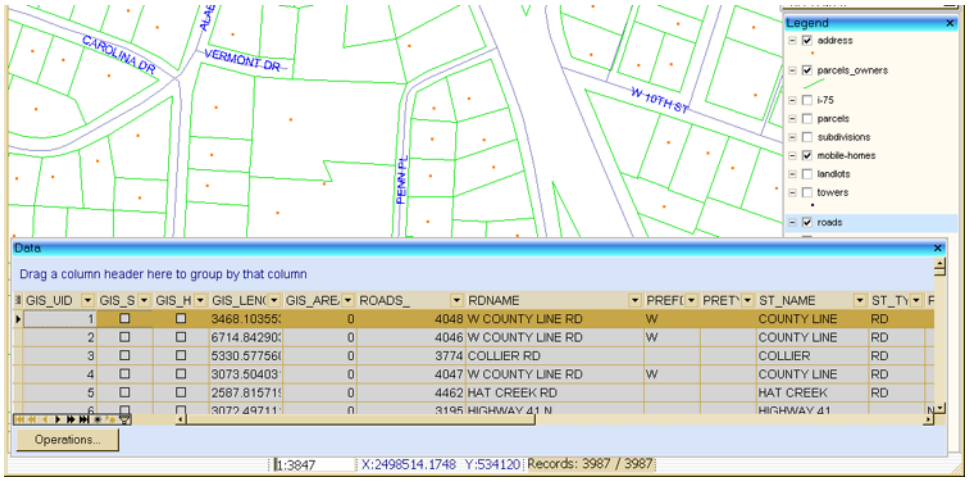
Information about the point will appear in the **Selected** window

Finding a road, by query

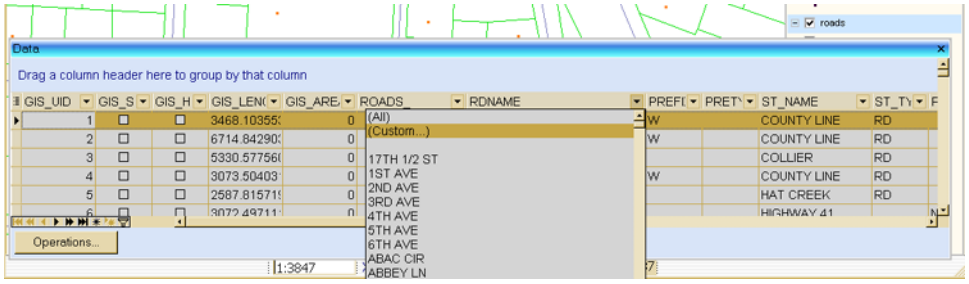
In the **Legend** window, put a check mark next to the **roads** layer
If you have labels set for the road names, they will appear

Then click once on the roads layer to highlight it & make it active
The roads database will appear in the **Data** panel

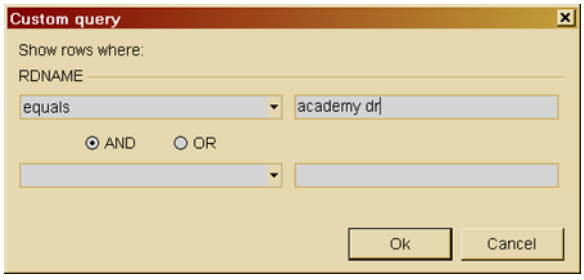
Widen the **RDNAME** field (column) -



Pull down the **RDNAME** field menu to **Custom -**



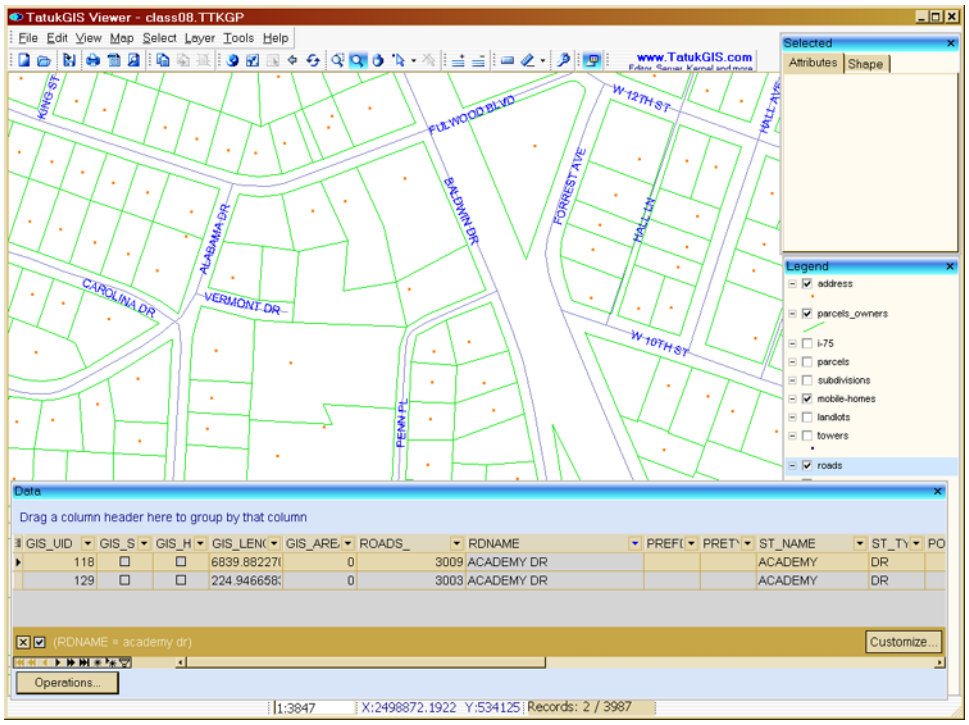
Enter **equals** and **academy dr** as your search -



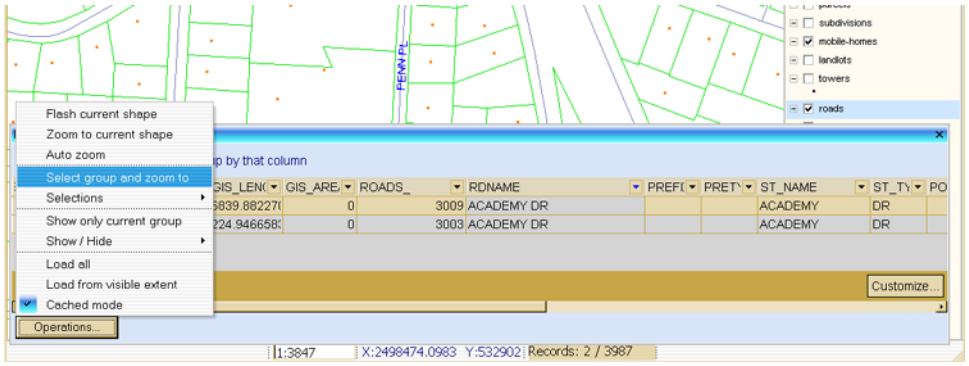
Hit **OK**

In the **Data Panel,** 2 records will show -- because there are 2 road "**segments**" named **Academy Dr**

GIS constructs roads as **segments** which run from intersection to intersection
Longer roads will have correspondingly more segments -

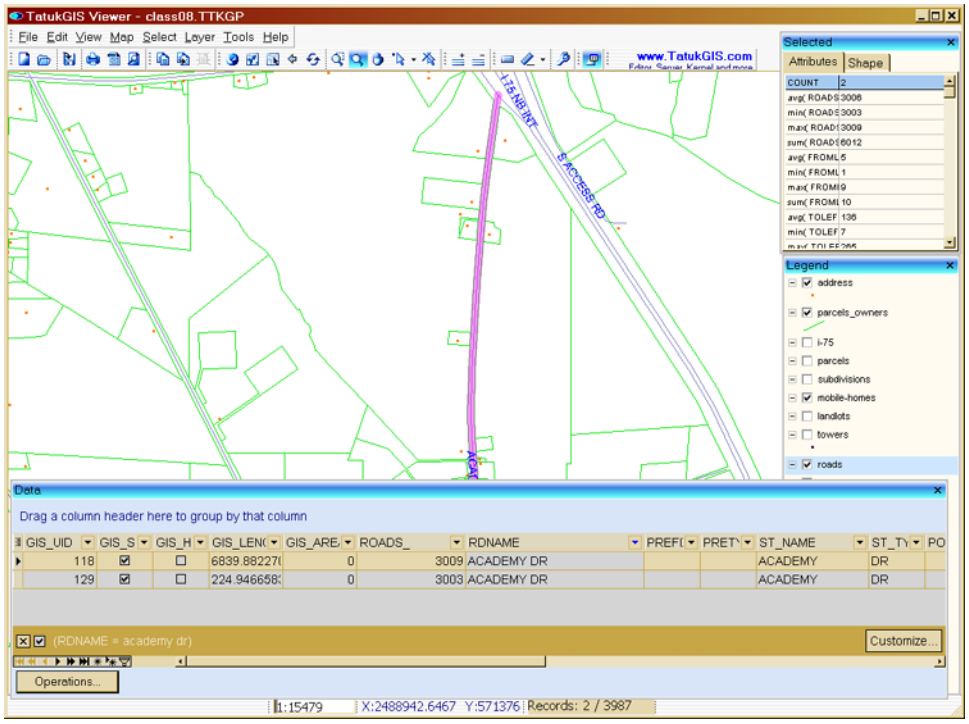


Right-click on any 1 of the records and choose **Select group and zoom to -**

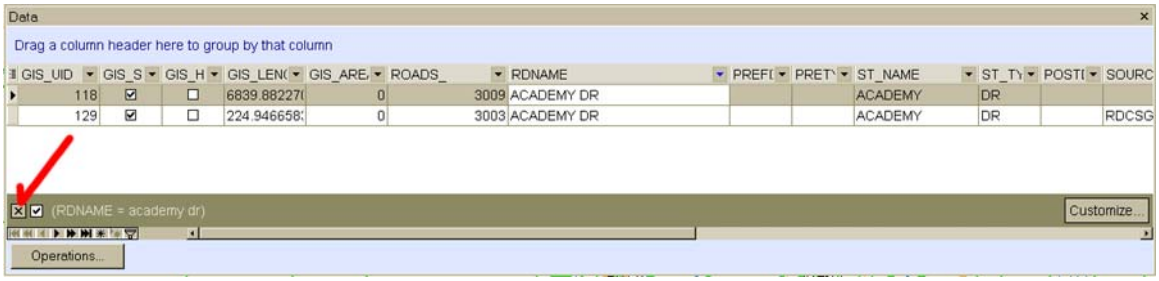


(more)

The 2 road segments will be highlighted -



To clear this selection and show all the records in the database -
Click the X box in the lower left corner of the **Data Panel**



"Wild card" search

Use this:
- if you're not sure of the spelling of a name
- if you want to search for any address starting with certain numbers
- if you don't know whether a street is a Lane, Court, Drive, etc
- you get the idea

Reminder – in order for a **simple** search of a database to be successful (as in earlier examples), you must enter your search text **exactly** the way it is stored in the database.

This search will **not** work :

Database contains	**You type**
Highway 319 S	US 319 South

The Wild card

The expression **Like** and the **%** sign are used in a wildcard search

% represents an unknown value – a whole word or part of a word

Use the **%** sign as part of a word, or separate it with a space

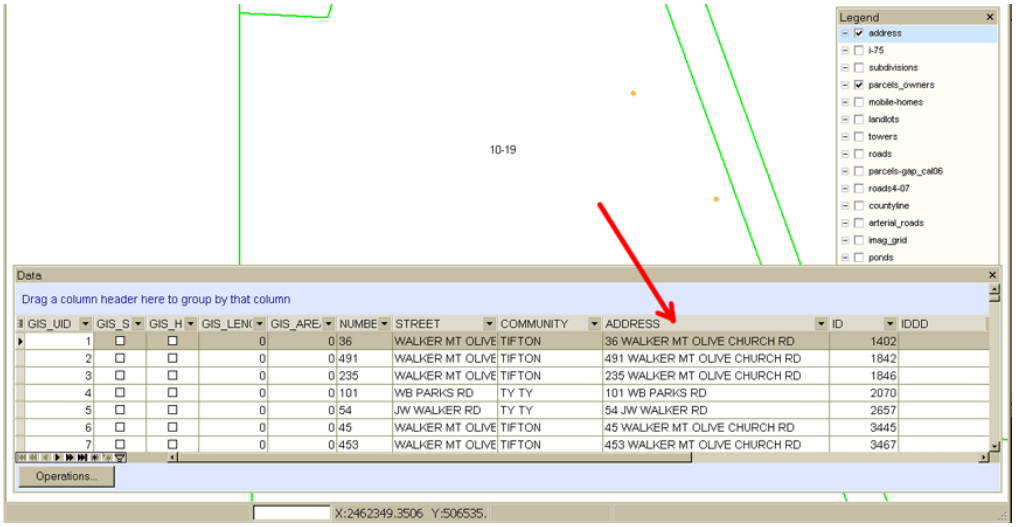
Search spelling	***Search results***
Thomas %	Thomas Jefferson, Thomas County
Thomas%	Thomasville, Thomason
Thom%	Thompson, Thomas, Thomasville

Exercise

Searching for 1301 Crescent - without knowing it's a **Drive**

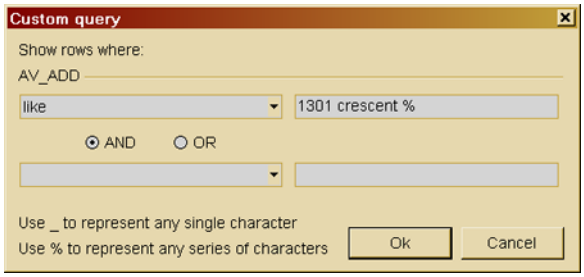
Make the **address** layer active, open the **Data** panel if it's not open already

Use the **Address** field, start a **Custom** query -



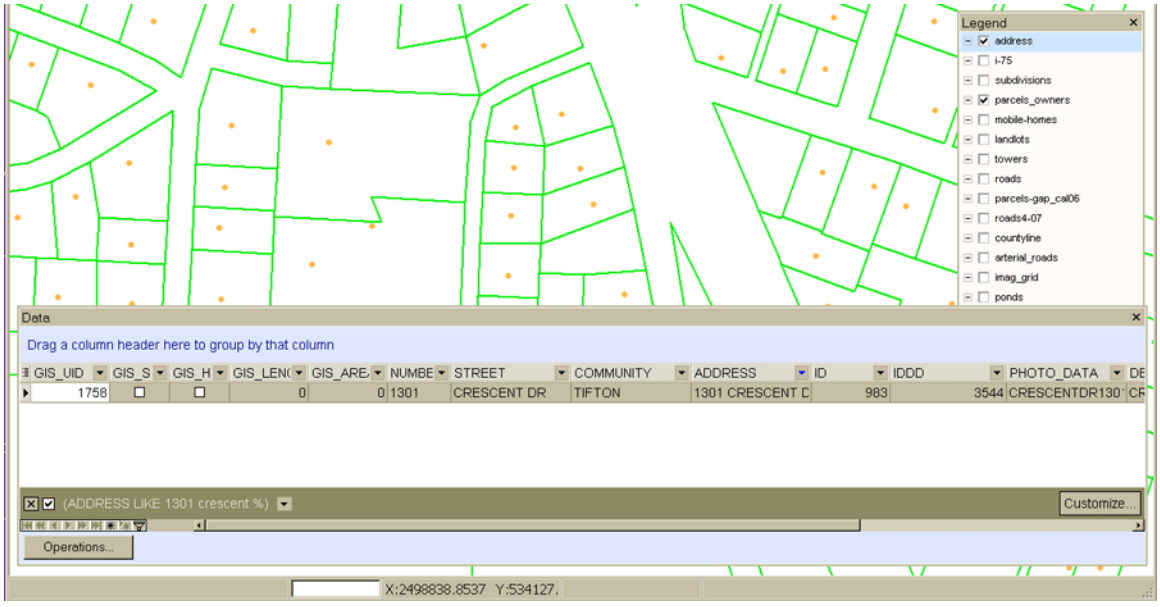
Enter **like** and **1301 crescent %** as your search – using **like** in the left-hand box

Important - put one space before the **%** sign; this separates the wildcard from a known value –

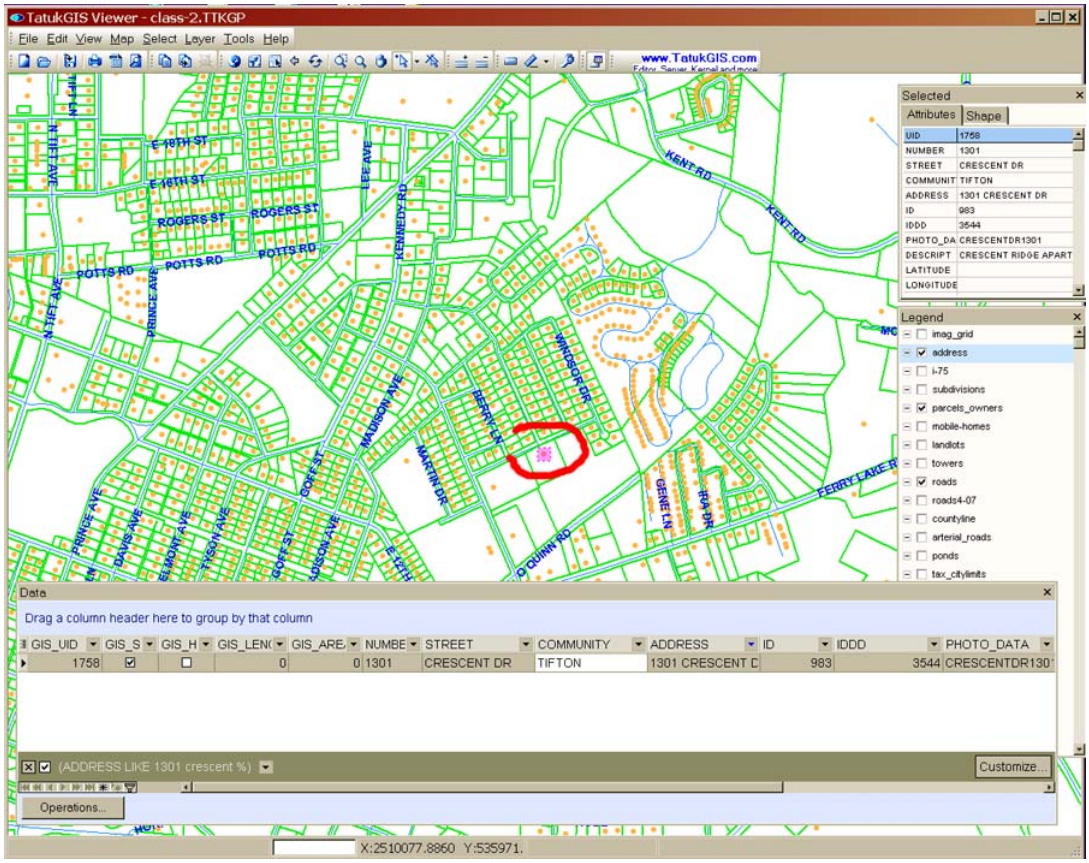


Hit **OK**

The result will show in the **Data** panel as 1 record -



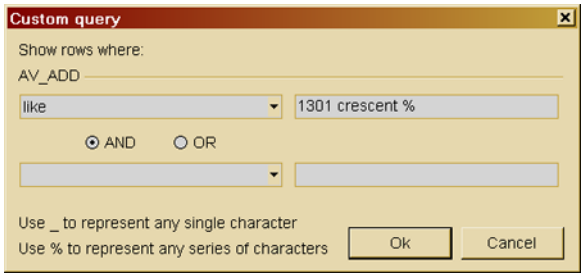
Right-click on the record and choose **Select Group and Zoom To,** to display the selection
The point for 1301 Crescent Dr will highlight – here it's been circled in red
The **Selected** window will show info -



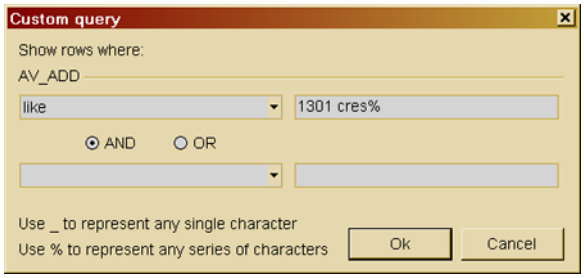
Right-click on the record and choose **Flash current shape**

Variations on wild card usage

Use this form, with a space between a road name and **%,** if you know the full name but not the road type -

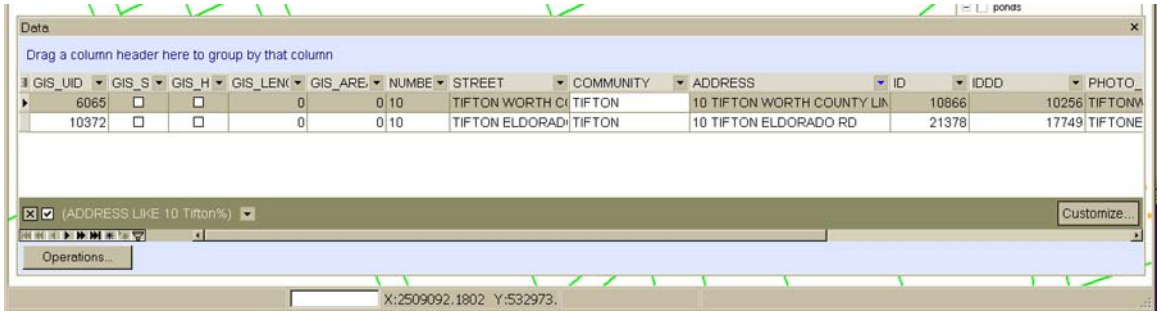


Use this form, with **part** of a name **including** the **%** if you're not sure of the road name or spelling
Note – there is no space before the **%** sign -



This **could** find any address containing 1301 Cres
1301 Crescent Dr
1301 Crescendo Ln

All results ("hits") will be shown in the **Data Panel**, where you can pick the one(s) you need
Here a wildcard search for **10 Tifton%** found Tifton Eldorado Rd and Tifton Worth County Line Rd -



NOTE – though the above examples refer to road and address searches, the **%** wildcard can be used for searches of **any** layer which has a database containing text or numeric data.

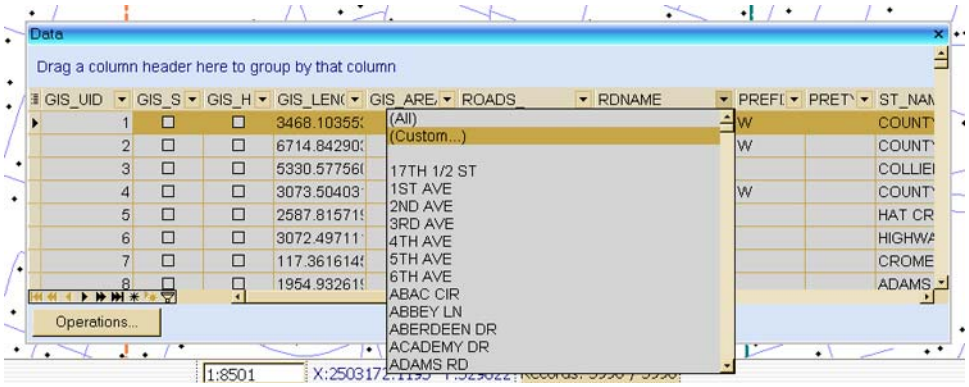
Finding the intersection of 2 roads

In the **Custom** query window, you'll do an "**OR**" search

Make the **Roads** layer the active layer

Here, a search for **Newton Drive** and **Tiffany Road** – when full road name and spelling are known

On the **RDNAME** field, pull down the menu to **Custom -**

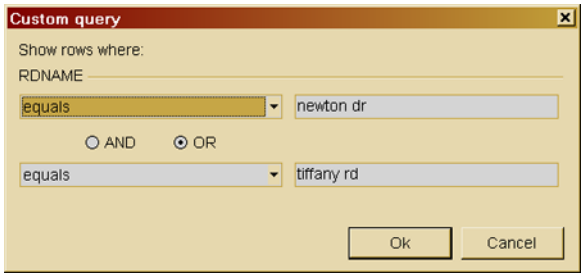


Query window

First line - **equals newton dr**

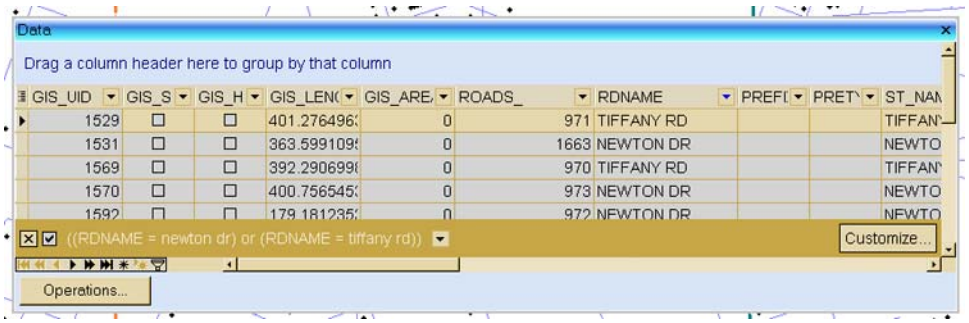
Click the **OR** button

Second line - **equals tiffany rd -**

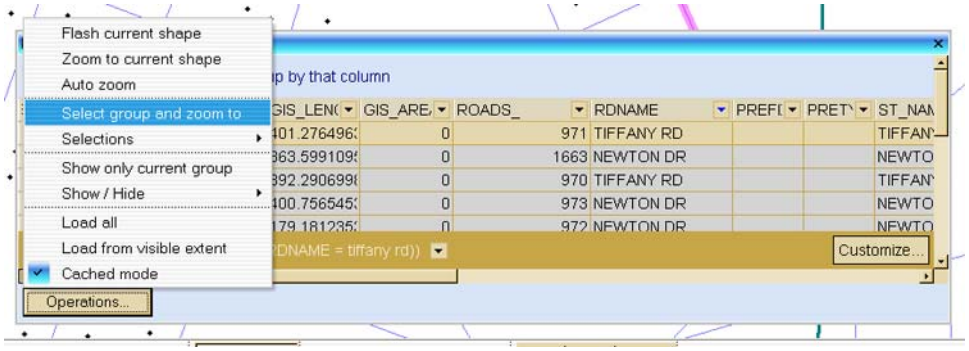


Hit **OK**

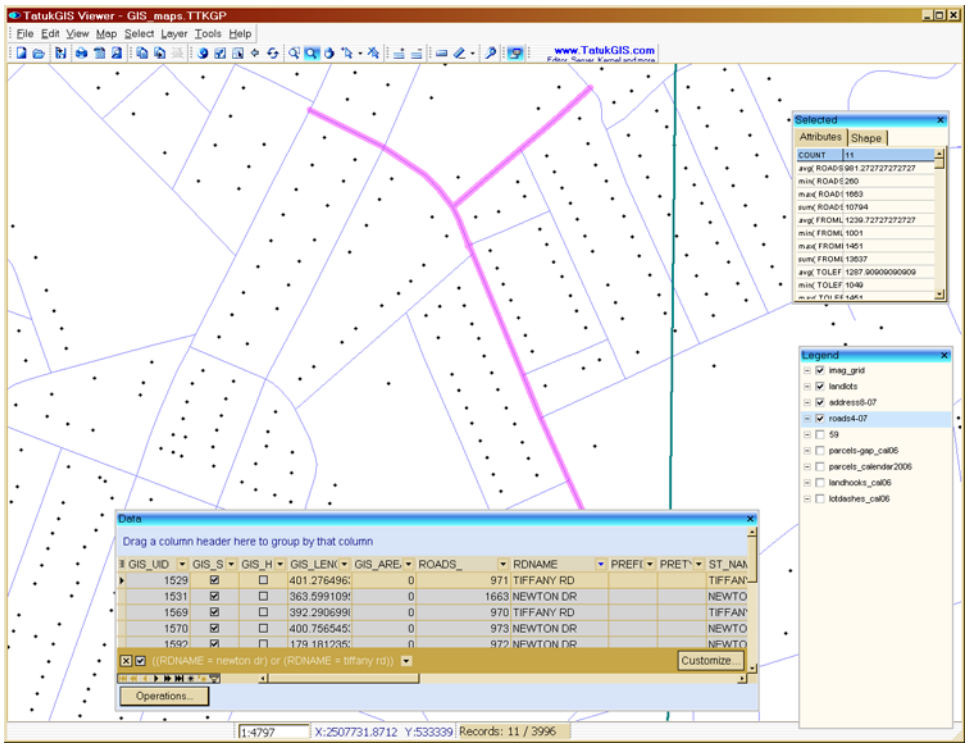
The **Data** panel will show the results of the query -



Click the **Operations** button in the **Data** panel
Choose **Select group and zoom to -**



Both roads will be highlighted at their intersection -

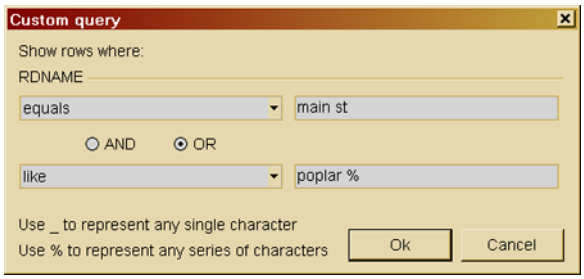


Abbreviated example of a **wildcard** search for Main Street and Poplar
Not knowing if Poplar is a street, road, or drive

Remember, a query for road intersections is always an "**OR**" search
and a **wildcard** query is always a "**like**" search

Start a custom query of the **RDNAME** field

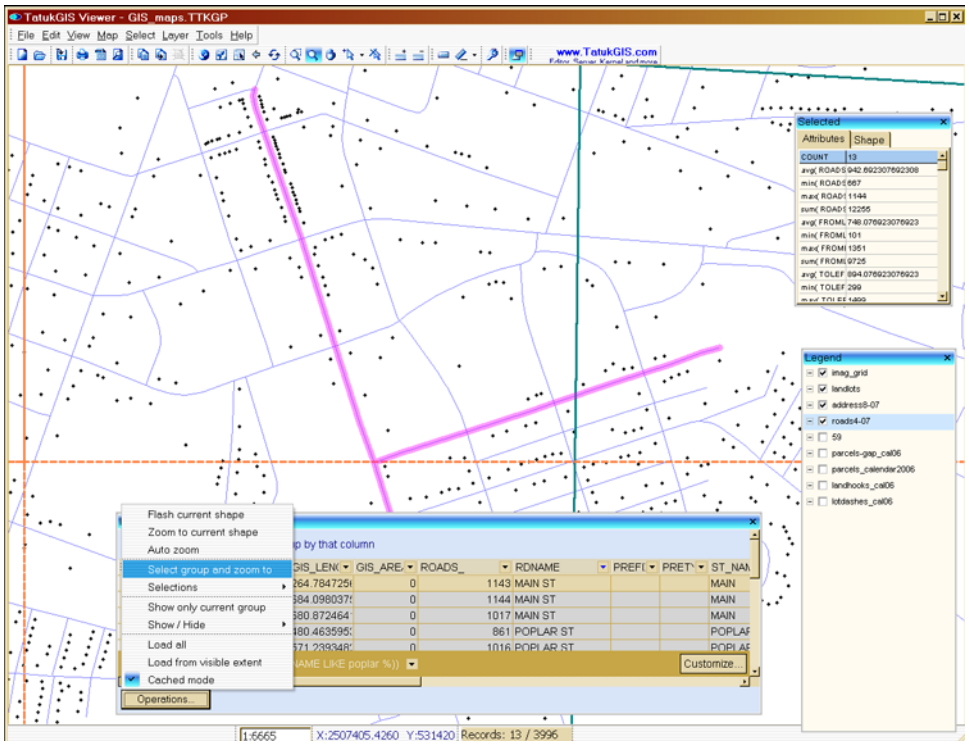
First line – **equals** and **main st**
Click the **OR** button
Second line - **like** and **poplar %** (space between poplar and %) **-**



Click **OK**

In the data panel, click the **Operations** button
Choose **Select Group and Zoom To**

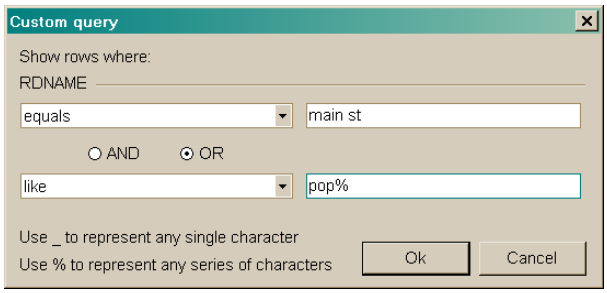
Here's the final result -



Example of a **wildcard** search for Main Street and Poplar
Not knowing how Poplar is spelled

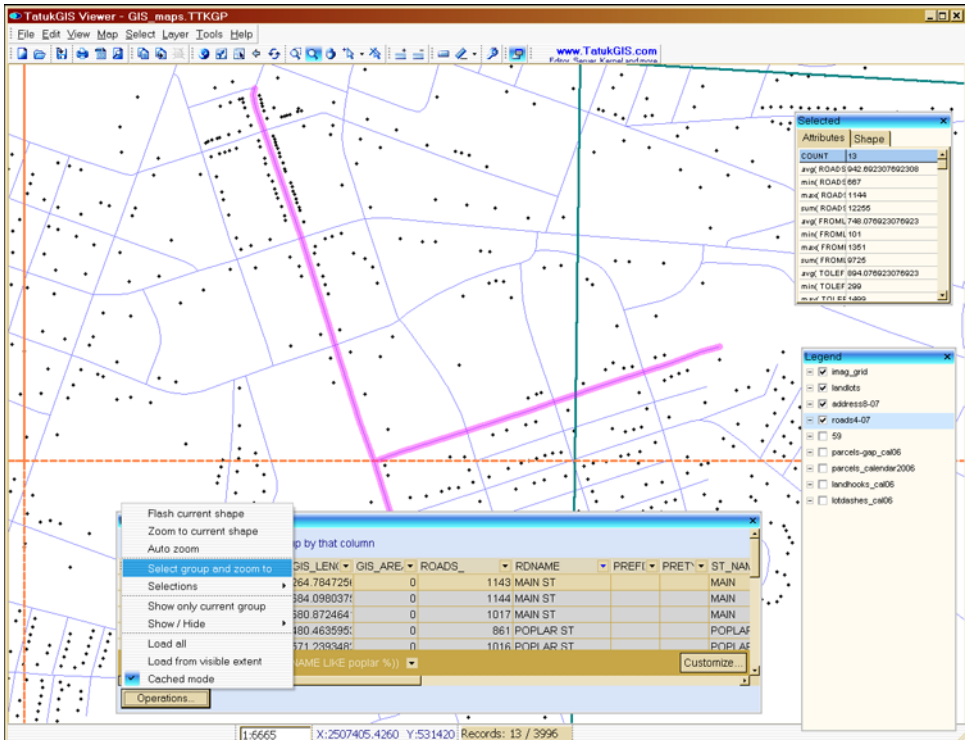
Hints – an intersection query is always an "OR" search
- when using the wildcard **%**, use "**like**" in the lefthand box

Query window
First line, **equals** & **main st**
Click the **OR** button
Second line, **like** & **pop%** -



Hit **OK**

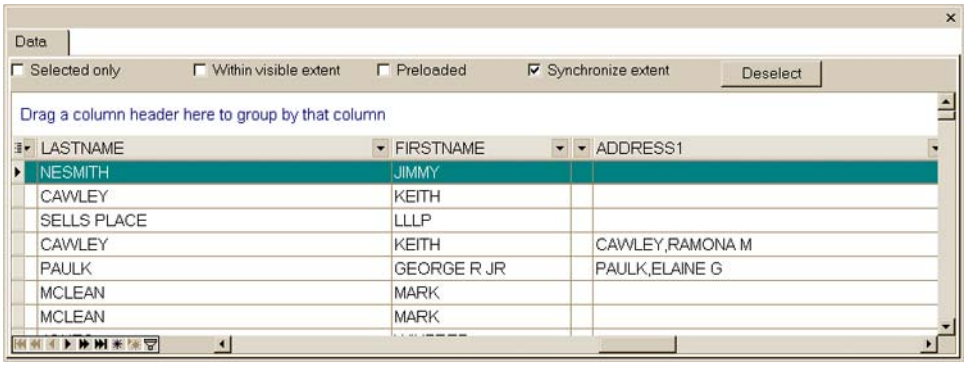
Here's the final result, after "zooming to" -



Complex queries

Searching for several specific items – eg first name, last name, street, address

This works for searches in which the info you want is in more than one database field –
Here, names are broken into fields **Lastname**, **Firstname** & **Address1**



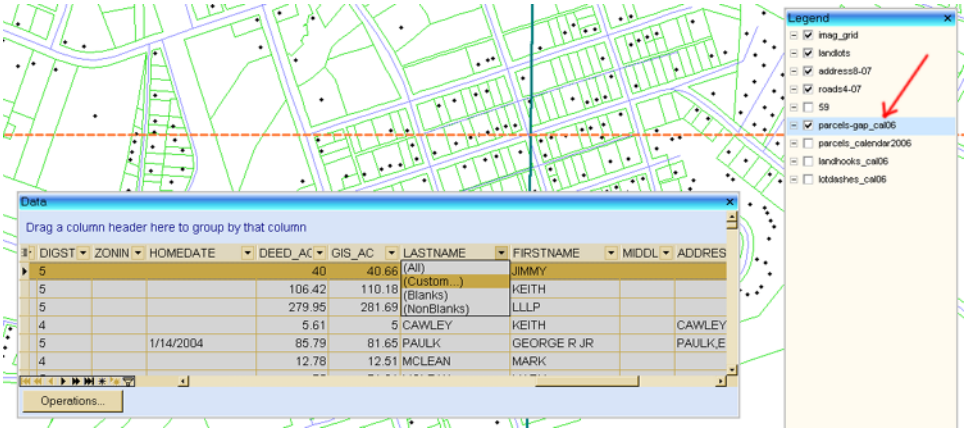
Exercise

Seach for a parcel owner, in a database in which the **first** and **last** names are in different **fields**

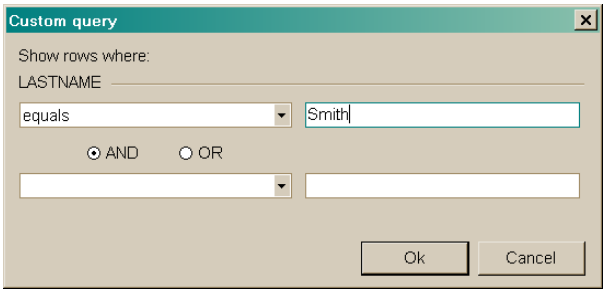
The parcels layer must be **active**, here the **parcels-gap_calO6** layer

Searching for **Joann Smith**

First do a **Custom** Query of the **LASTNAME** field

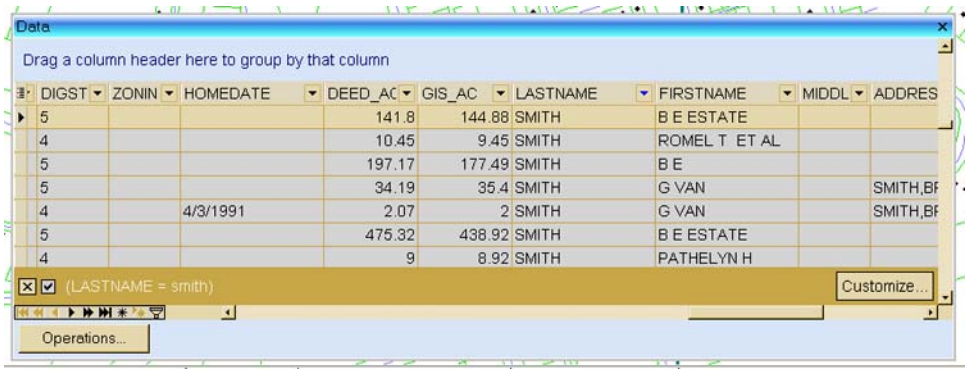


Use **equals** & **Smith -**

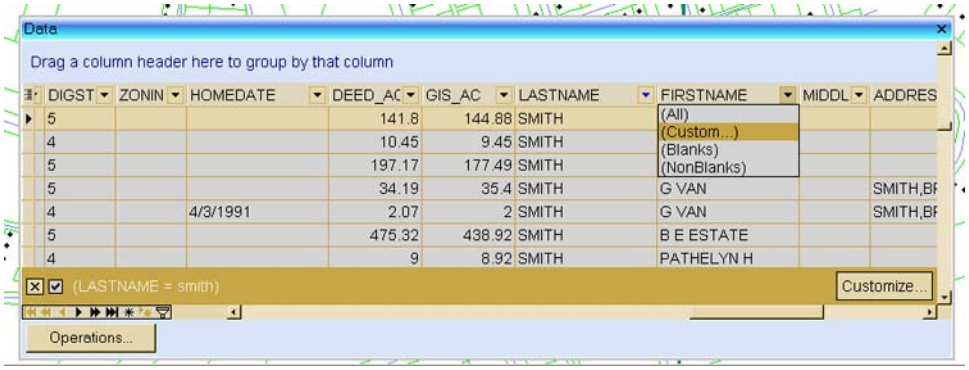


Click **OK**

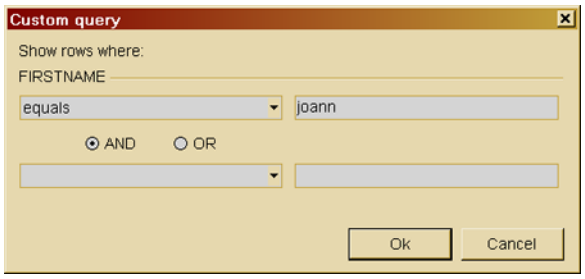
The **Data** panel will show **many** results -



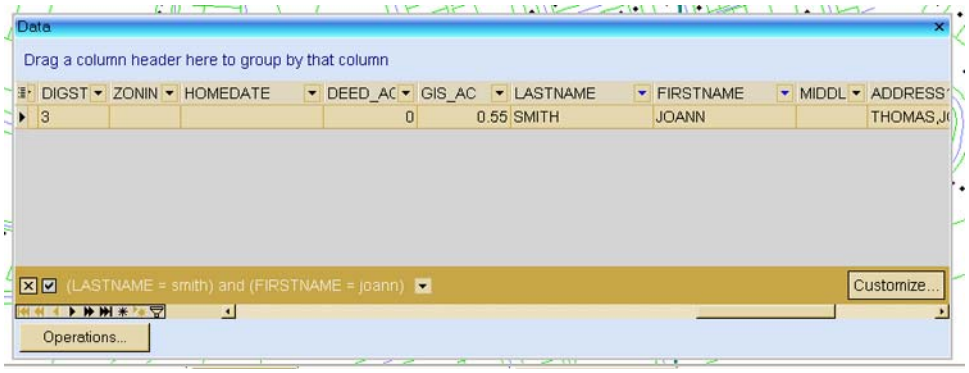
Then do a **Custom** query of the **firstnames** field -



Firstname equals **joann -**



The **Data** panel shows the **one** record -

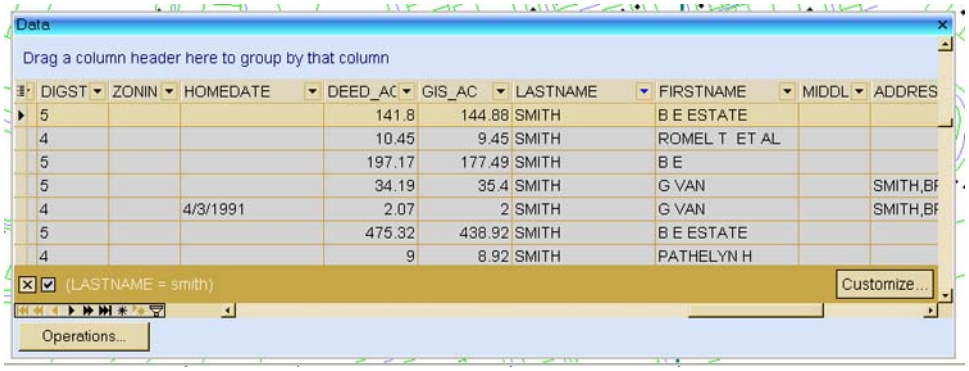


Wildcards can be used as well in **complex queries**

Abbreviated example

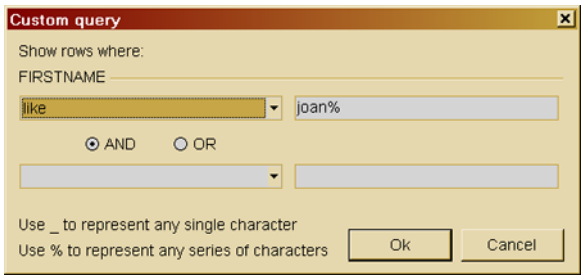
Here, first name something like **Joan.... Smith** (Joan, Joann, Joanas)
First do a **custom** query for **last names equals Smith**

Multiple records will show in the data panel -

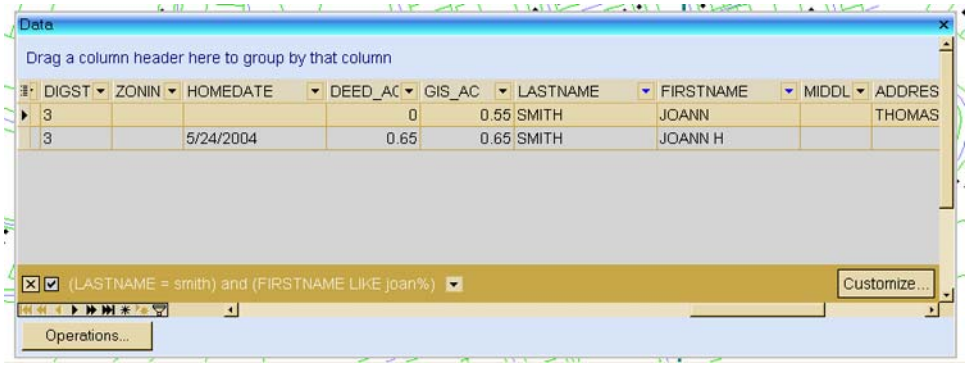


LEAVE the **data** panel as it is, do **NOT** remove the **x** in the lower left corner

Then run a **custom** query on first name field using **like** & **Joan%**
The **%** is your wildcard -



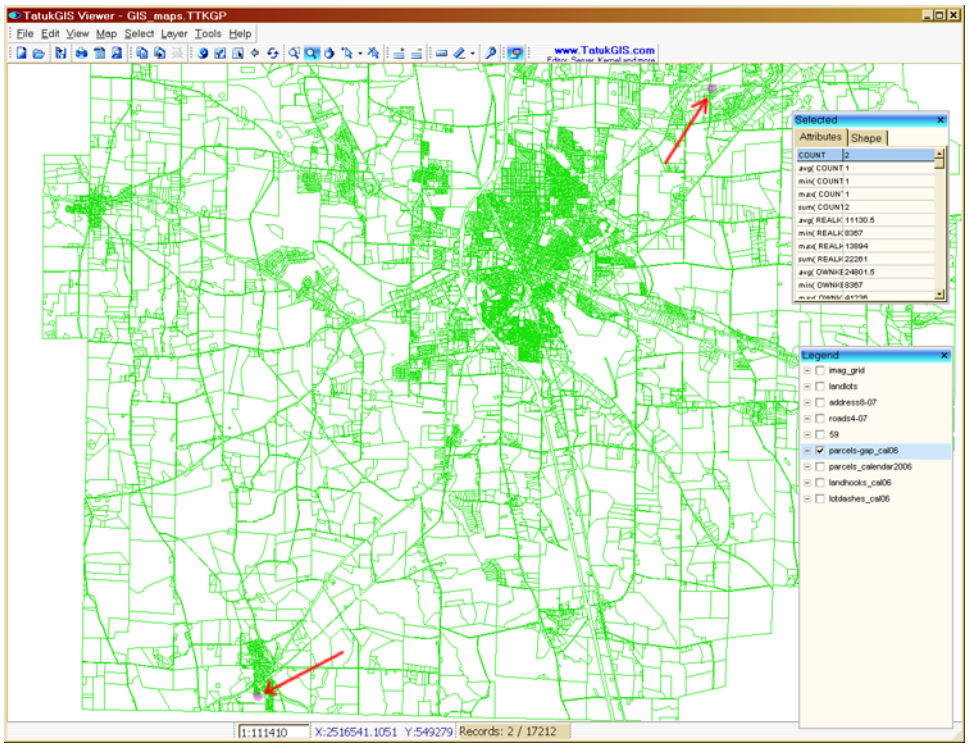
The **Data** Panel will display the results -



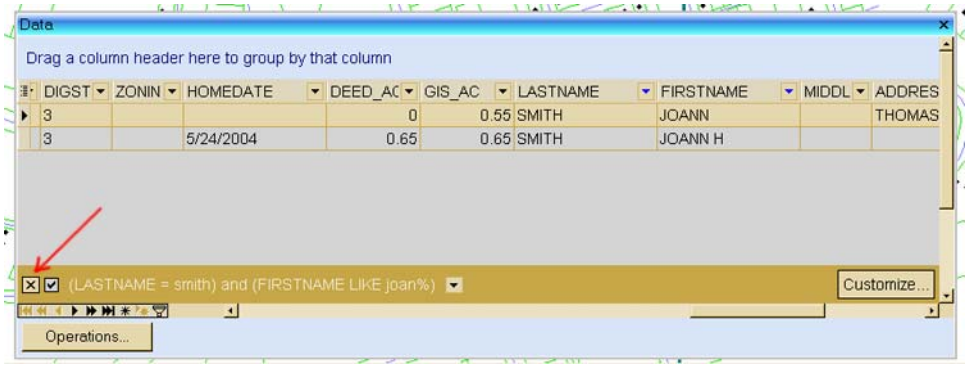
To see where all the **Joann Smith** results are in the county

Click the **Operations** button in the **Data** panel
Choose **Select group and zoom to**

The results will be highlighted (the red arrows in this illustration are not part of Tatuk)
If they're hard to see, **Flash** each record in the **data** panel
Right-click on the record and choose **Flash current shape -**



To close the **search** results and return to the full database
Remove the X from the box shown below, and wait while the database loads -



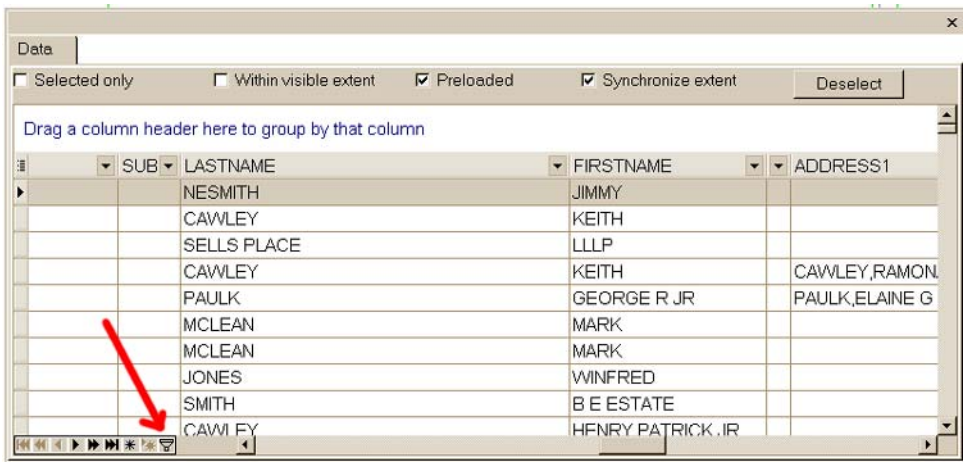
Notes –
Queries are **not** case-sensitive. Use upper or lower case when typing

Queries can be made more detailed
Eg. search for last name, then first name, then acreage or street

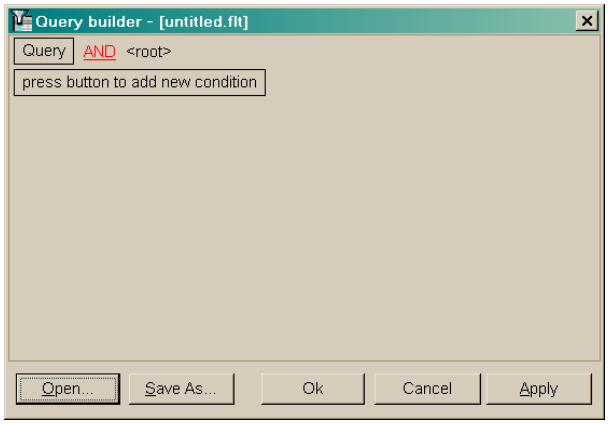
Searches are **not** limited to the examples shown here
You can search for partial addresses, partial street names, etc.

Advanced queries – only for the adventurous

Click on the query builder button



Using this syntax window is beyond the scope of this class



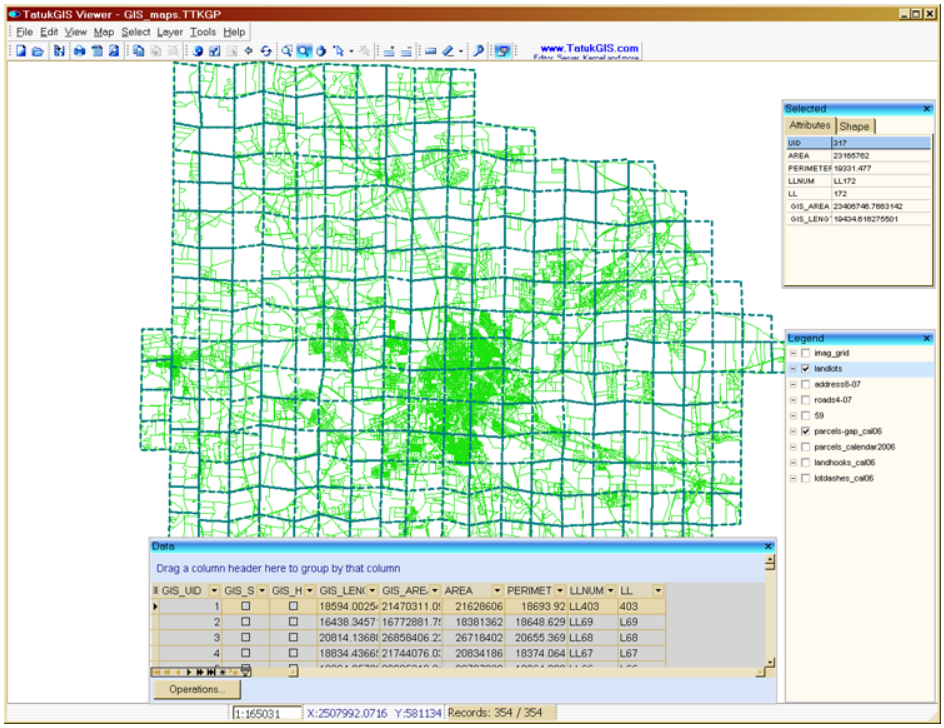
You're on your own with this .....

Determining a land lot number "on the ground"

Make the "**landlots**" layer active – click on the layer name in the **legend**

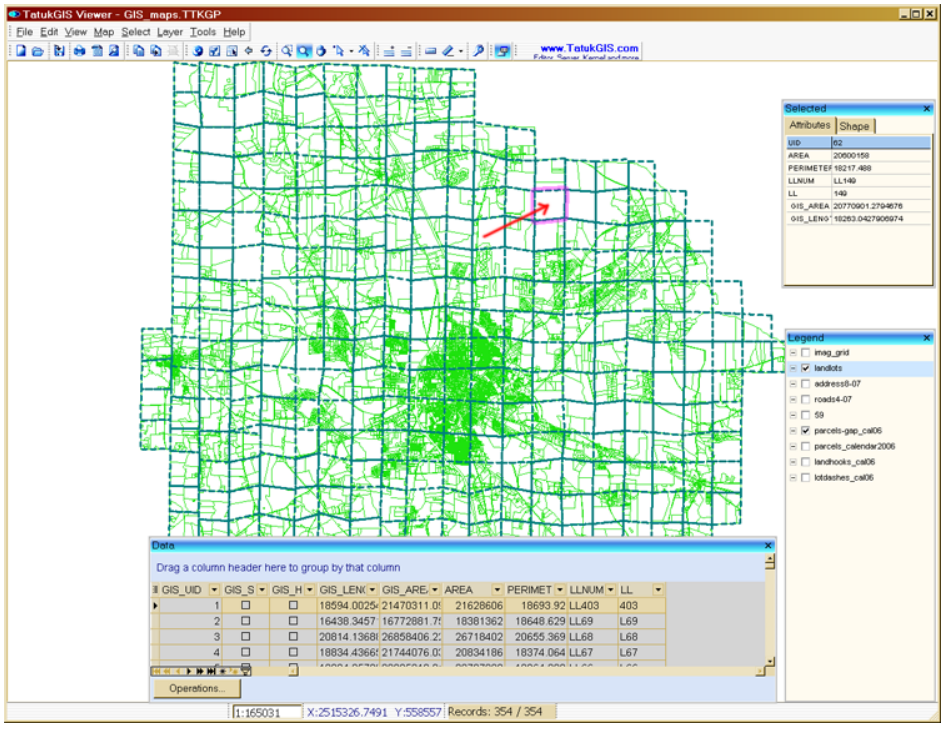
Be sure there is a **check mark** next to the name – otherwise you will not see the landlot grid

Click the **Layer Extent**  button to zoom out



Use the **Select by Point**  tool & click on the map

The land lot # will appear in the **Selected** window -



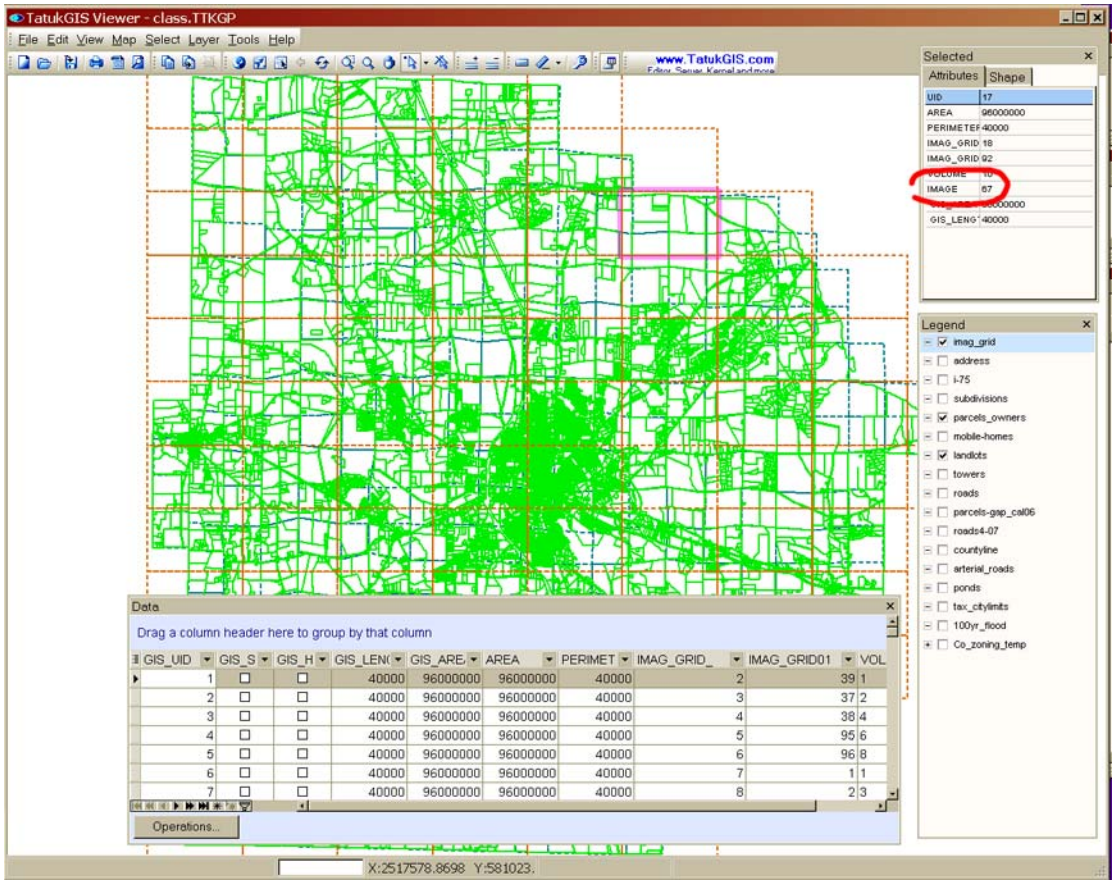
You could also search the database to find a landlot

Determining which aerial photo (image) you need to add

Turn on the "**image grid**" layer & make it active in the **legend**
Be sure there is a **check mark** next to the name – otherwise you will not see the image grid

Use the **Select by Point**  tool & click on the map in your area of interest
The imag_grid area will be highlighted
The aerial photo # will appear in the **Selected** window

In the **Selected** window, **IMAGE** is the aerial photo number
In this illustration, photo **67** -



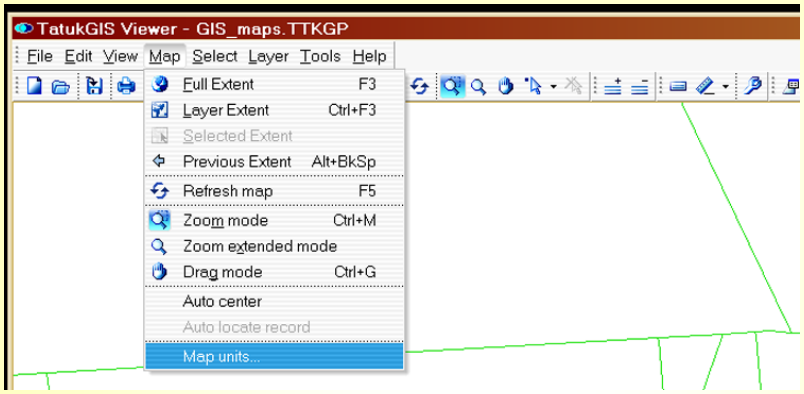
In real life, you will probably be looking at a smaller area of the county, such as a neighborhood, parcel or road
Use the above procedure to determine which aerial photo to add to your project

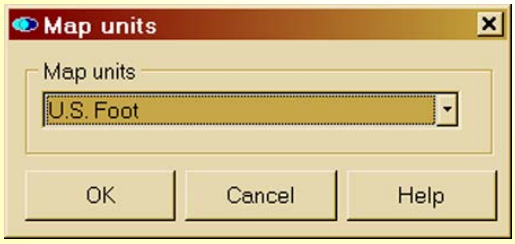
Just make sure the **imag_grid** layer is active and visible
Use the **Select by Point** tool, and click on your area of interest
Look in the **Selected** panel for the **Image** number

Measuring distances

Be sure the Tatuk project is set to measure in feet

Click the Map menu, select **Map Units**, then select **US Foot -**

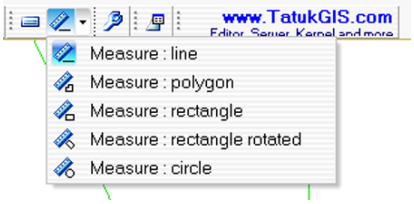




**** Save your map project after setting or changing map units ****

Click on the **Measure** tool 

Note the pull-down menu indicated by the black triangle
This is where you select the kind of measuring you want -



The **Measure Line** and **Measure Polygon** tools
As the mouse is clicked, the tool labels each point
0 is the anchor (starting) point
The **red** point is the most recent (last) point

Note - measuring tools leave a "trail" or line behind them
- the faint yellow dotted line may be hard to see

To measure individual lines around an area

For this exercise, find parcel **17-13** , zoom to it, & close the **Data** panel

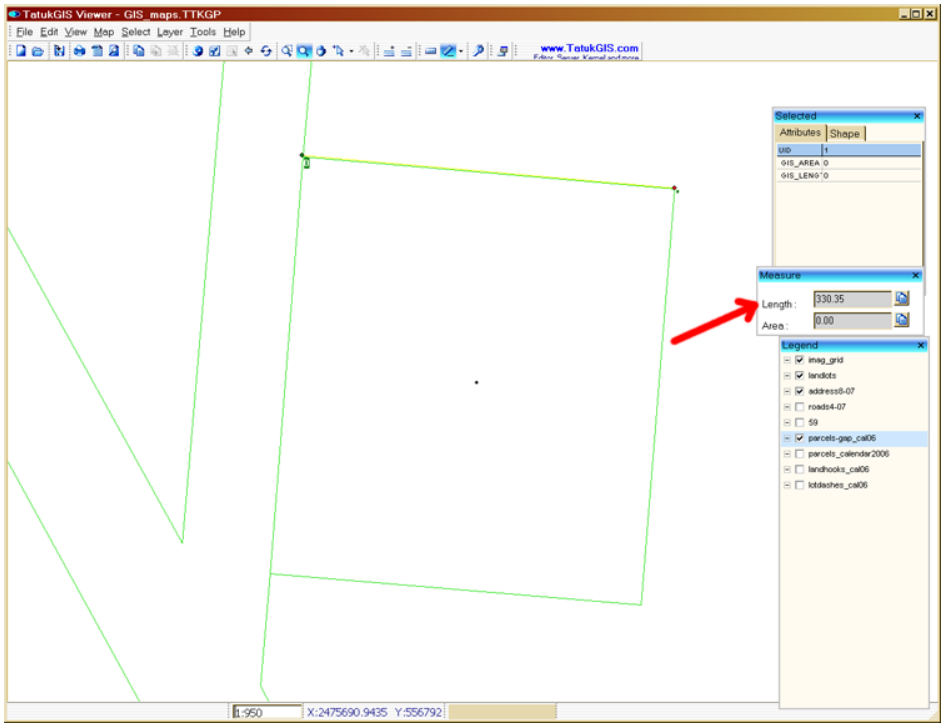
Choose the **Measure: line** tool

The **Measure** Panel will appear on screen by the **Legend**

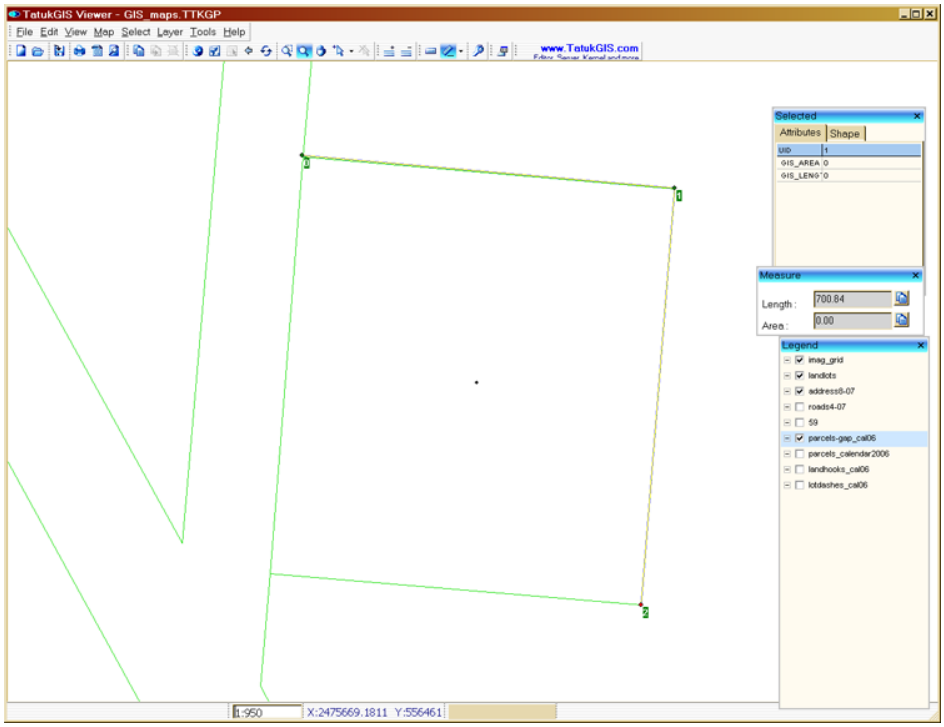
To measure the green property lines

Click at the starting point, then at the next point

The starting point will be labeled **0**, the next point will be labeled **1** -



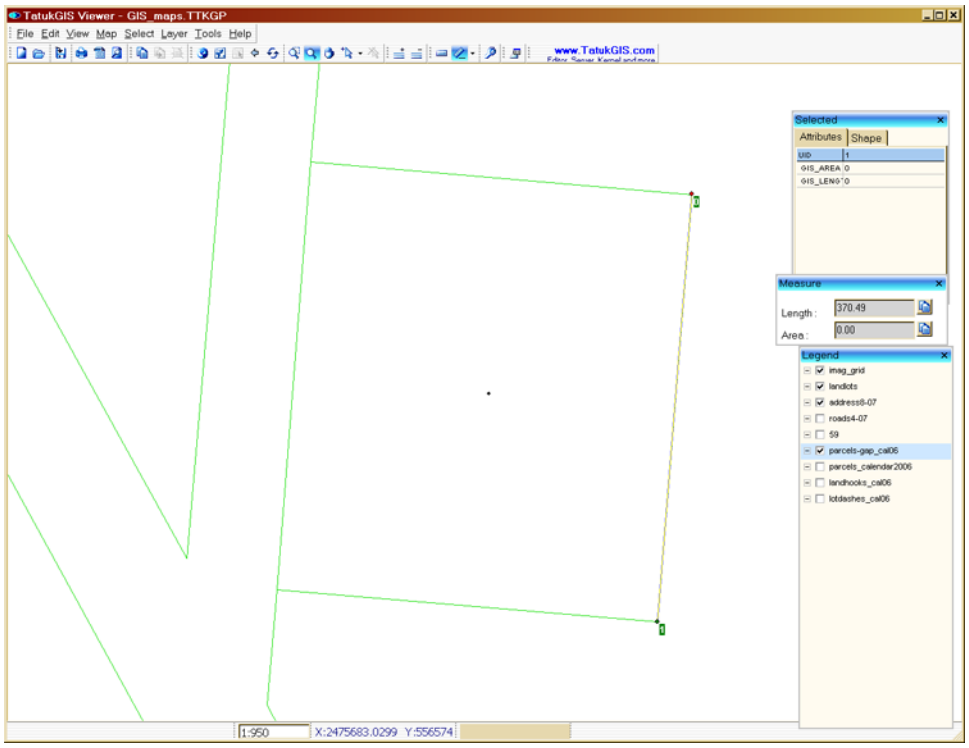
As you continue to click, the **Measure** window will show you the **total** lengths of **all** the line segments



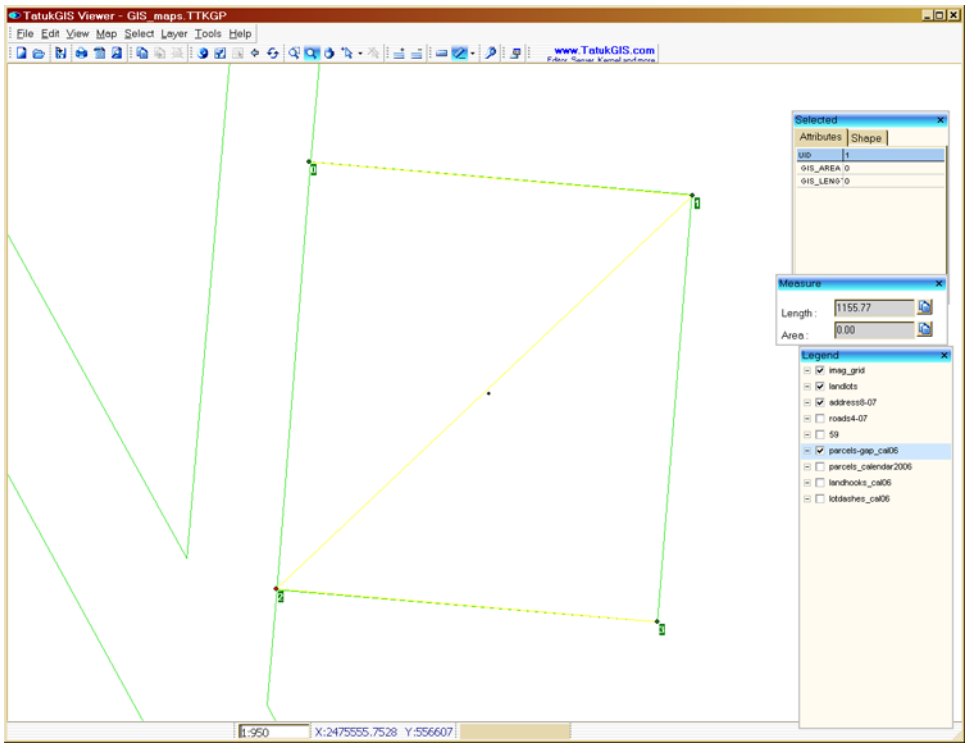
To measure the next line by itself, **without** adding its length to the previous line -

Click on top of the "**0**" point, the starting point, to delete it

Then click at a new point -



(Repeat this process around the area) -



Tip – to delete a measuring point, click on top of it to select it, then click again to delete it

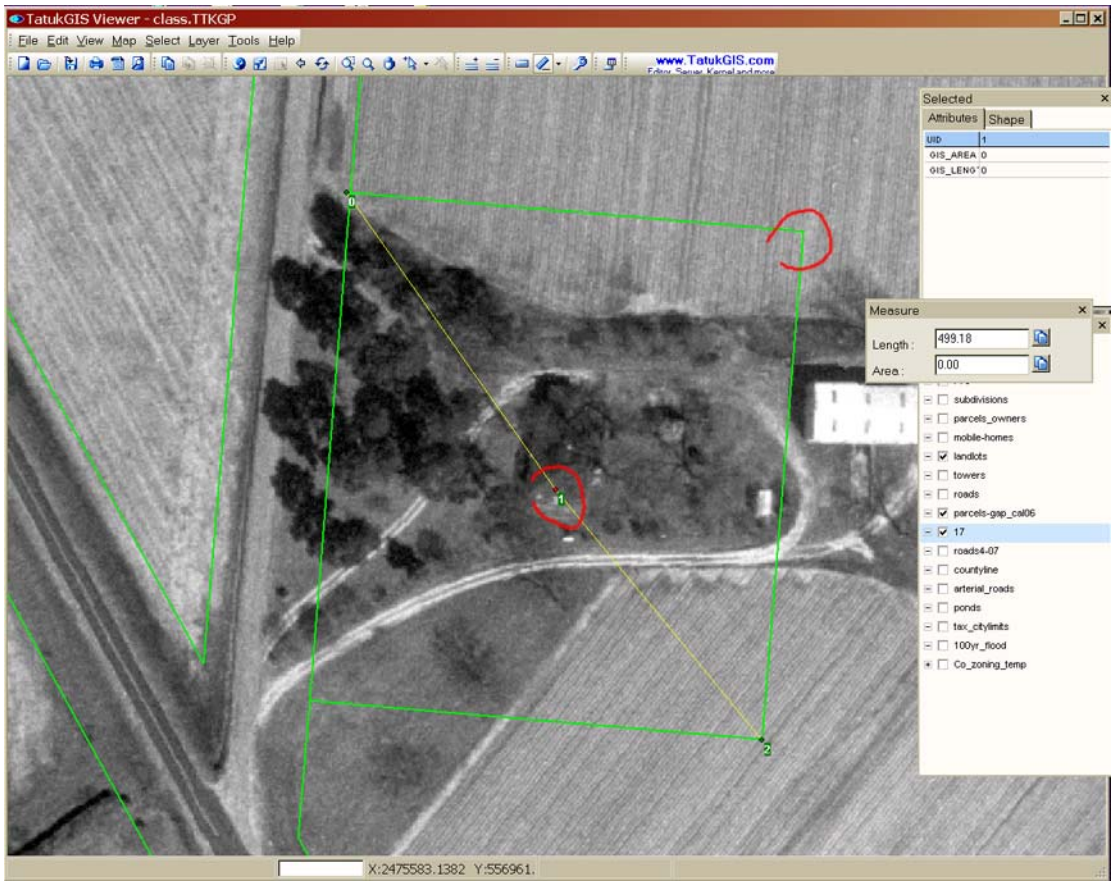
To adjust or change a measuring line

First, add **aerial photo #17** to your project (this will make the measuring lines easier to see)
Pull down the **Layer** menu, choose **Add**, open the **Aerials** folder, select **17.tif**
Then in the **Legend**, move (drag) the aerial until it's below one of the **parcel** layers

Start **measuring** a new area
Set (click to create) several points

Click on top of a point and **hold** the mouse button down
Drag the point to its new position and release the mouse button
(This is known as a "**drag & drop**")

In this illustration, **point 1** has been dragged from one **circled** position to a central position -

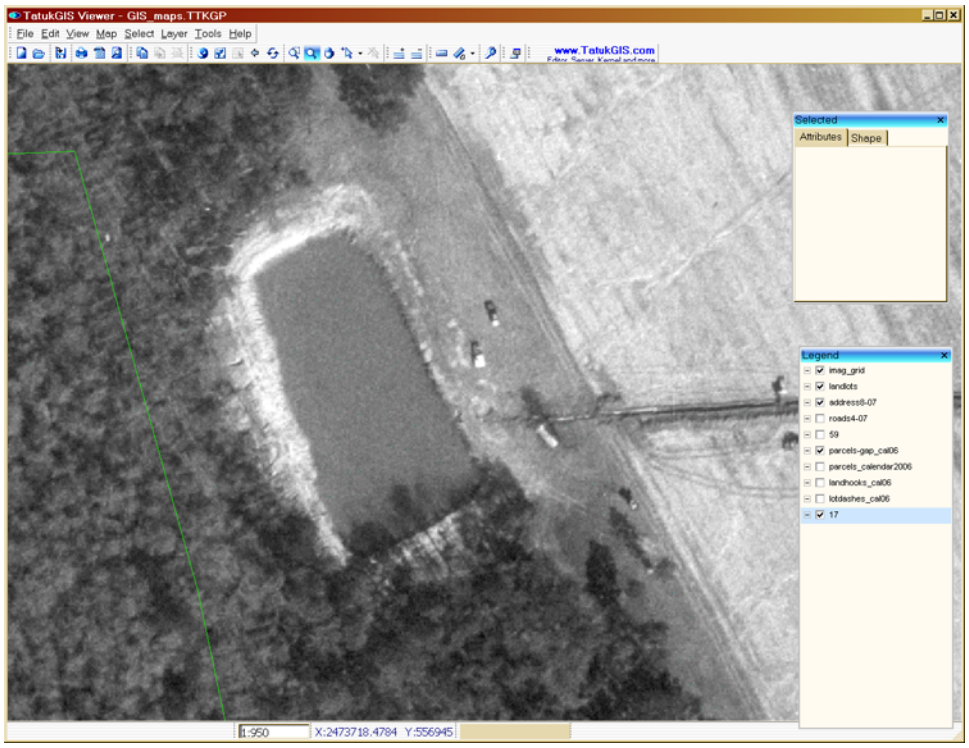


To calculate the area of a polygon (an enclosed area such as a pond)

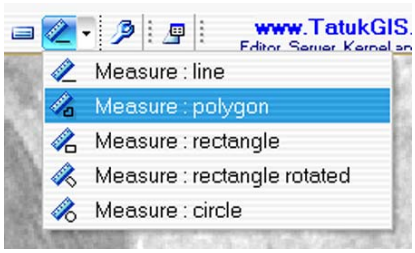
Be sure aerial photo #**17** is added to your project, then "pan" to the west until you see a small pond

Note that there are **NO** scroll bars along the edges of the Tatuk window

Use the **hand** tool – click & drag the hand to the right to move the image to the right
Imagine that you're moving the photo around behind a window cut in a sheet of cardboard



Choose the **Measure: polygon** tool -

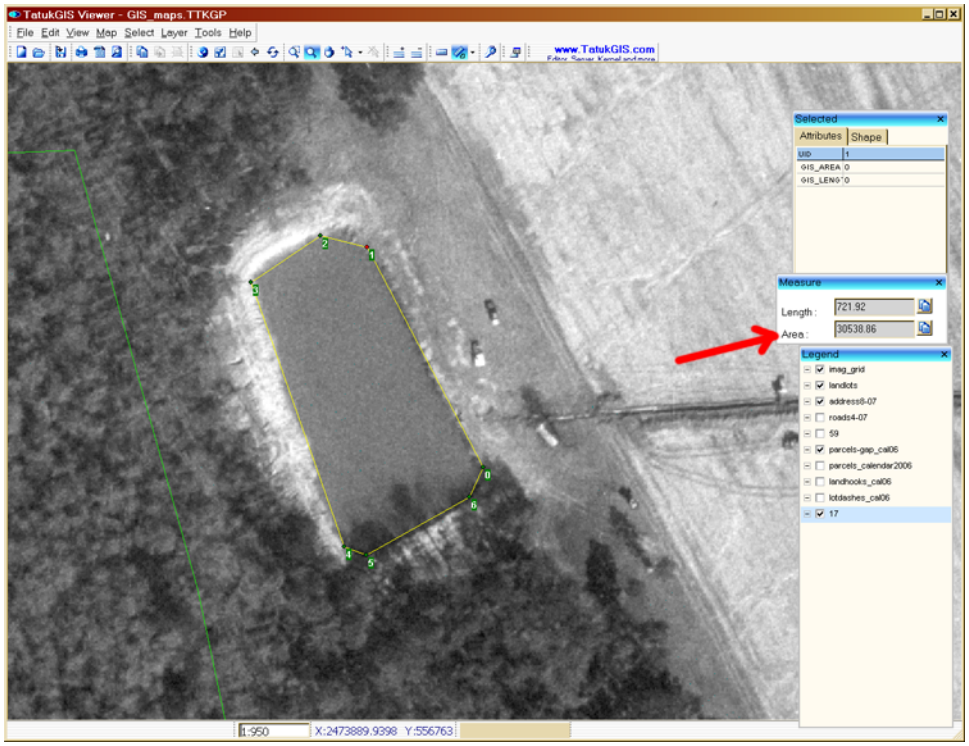


(more)

Click at a starting point, then at the next point, and so on - around the pond
The starting point will be labeled **0**, the next points will be labeled **1**, **2**, etc

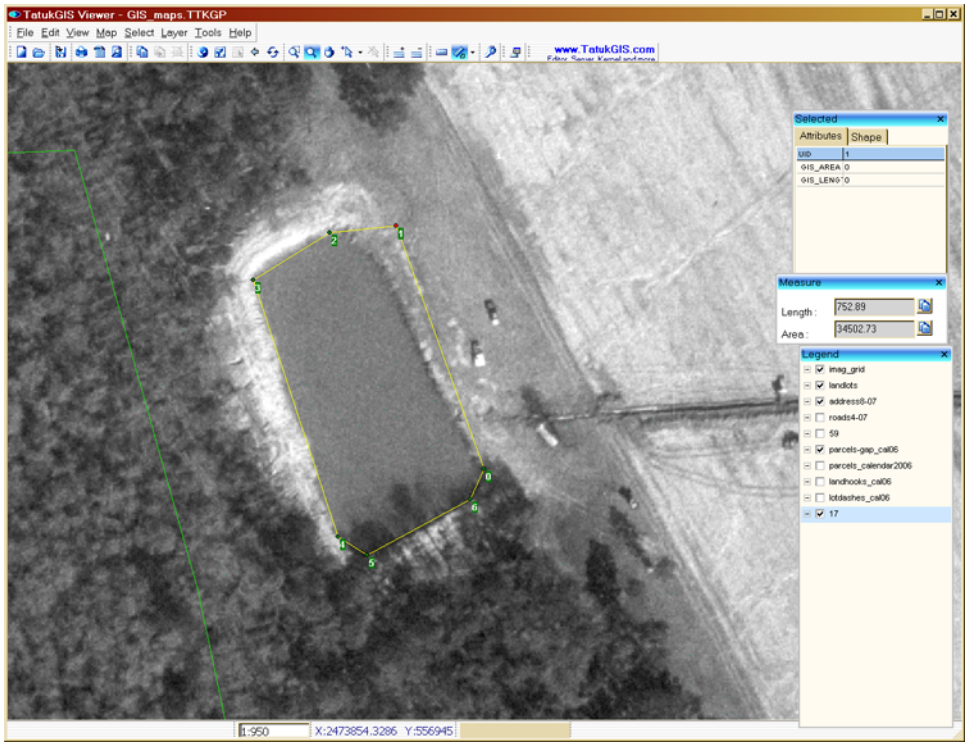
As you click around the pond, the **yellow** measuring line will appear to "rubber band"
and the **Area** and **Length** windows will continuously update

The **Area** window in the **Measure** panel will show area in square feet - divide by 43560 to get acres -



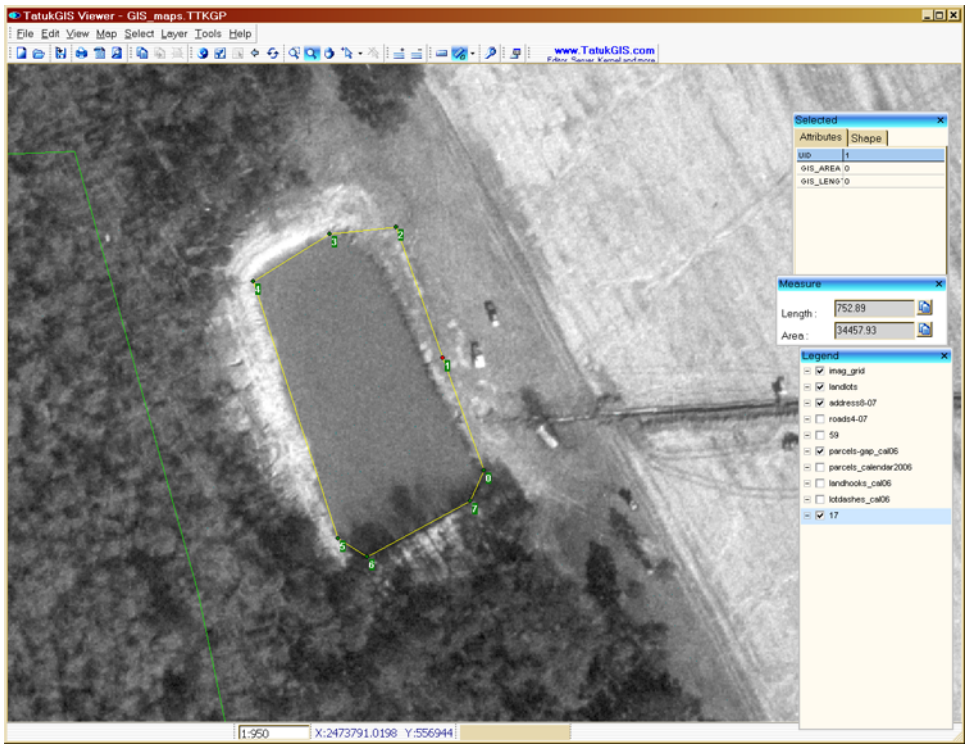
Different ways to change the shape of a measured area

Click on top of whichever point you want to move, **hold** the mouse down and drag the point to a new spot -

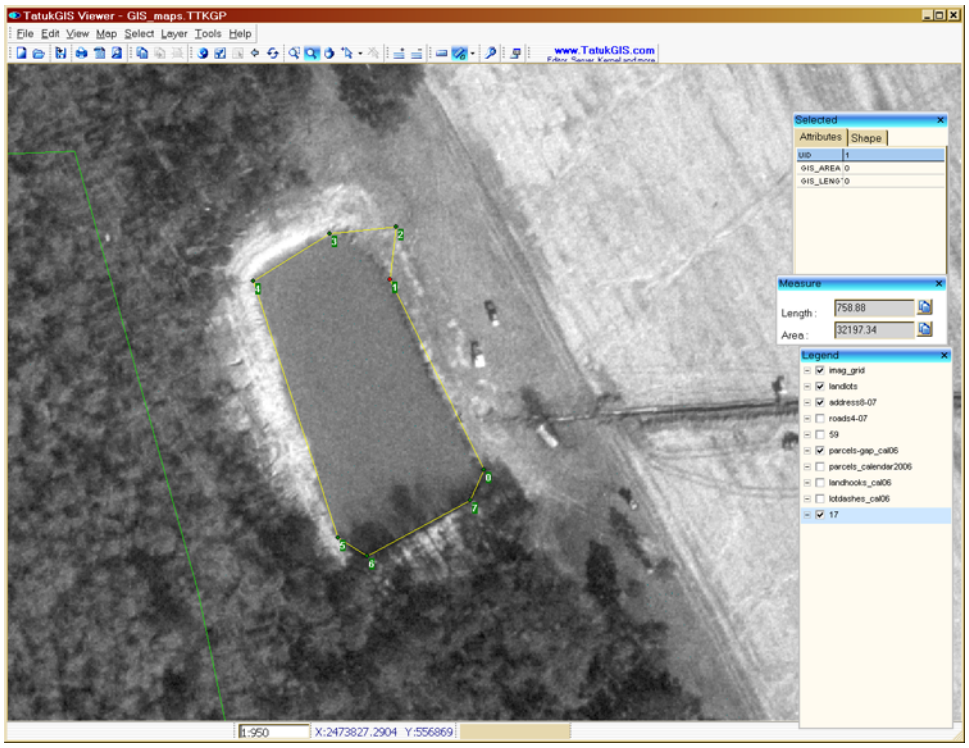


Or click on a line to add a new point

Here, a point midway along the right side of the pond -



Then try clicking on top of the new point, and drag it to another place -

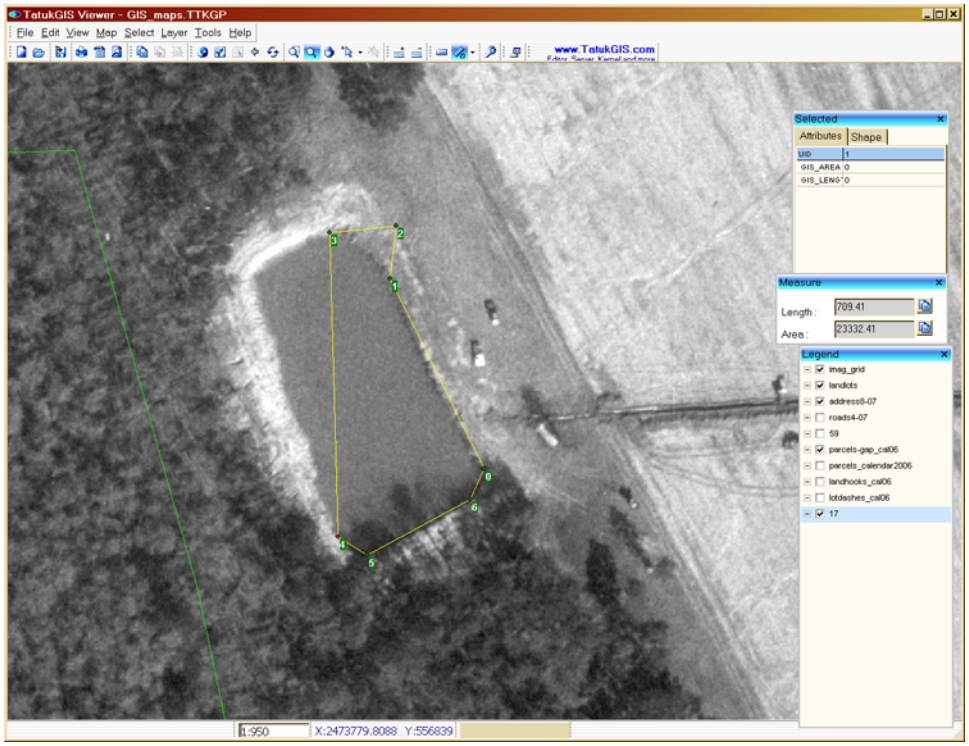


The **Area** and **Length** windows will always update in real time

To **delete** any point **at any time**

Click once on top of it to select it

Then click again to delete it



To remove the measuring lines and "dismiss" the measuring tool

Choose another tool, eg the **Select** tool

But **be wary** of the **Remove Layer** button

If you hit it, whichever layer is **active** will be **removed**

Printing

TatukGIS will print on the full area of the paper – using the settings in your **Windows default** printer

This is an example of a print on letter-size paper in "landscape" (wide) orientation -

Paper sizes

TatukGIS has been tested to print on paper as large as 11x17" (tabloid size)

To print on different sizes of paper, change your Windows default printer settings

To print a tall map rather than a wide map, change your default printer settings to "portrait"

Print preview

Use the **Print Preview**  button to make choices on how you want the print to look

NOTE –if you don't use the **preview**, some printers may print **more** than you see on the monitor screen

(continued)

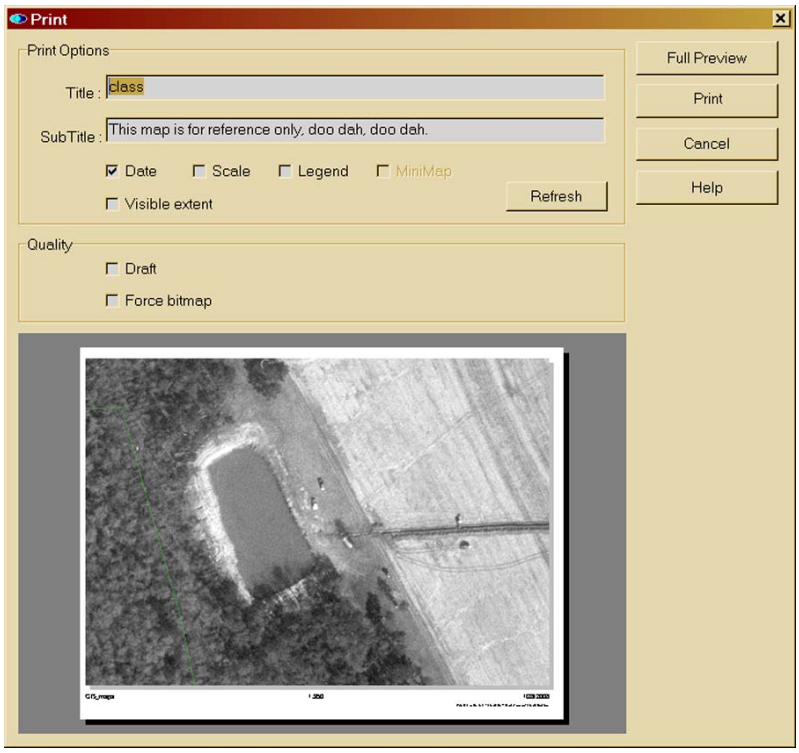
You have the option to print a **title, date**, **Legend** window, & **Minimap** window (if the **minimap** panel is open)

Scale factor is best left un-checked unless requested – this prints as a numerical value, not a bar or ruler

Hit the **Refresh** button to see any changes you have made in this preview window

In the **Sub Title** window, enter your map **disclaimer** (see page 2 of this manual)

You can save your disclaimer text in **Notepad**, then Copy & Paste it into the **Print Preview** window



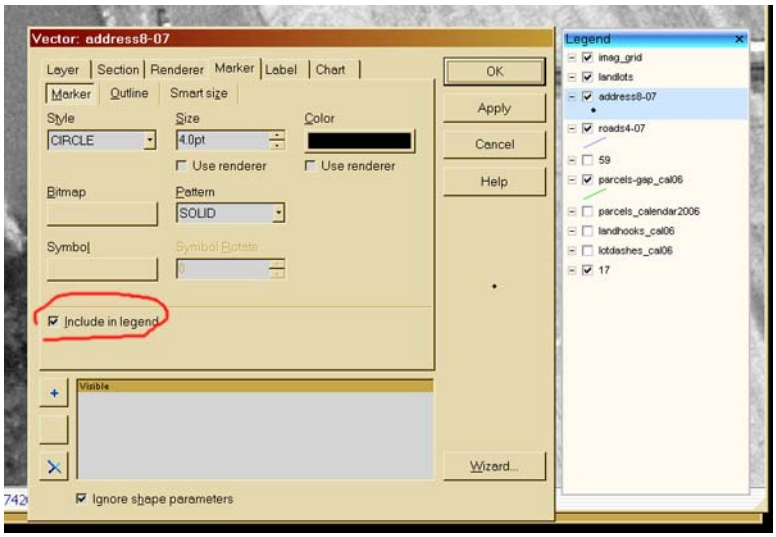
Click the **Full Preview** button to see what the print will actually look like –

Then, of course, click the **Print** button – in the upper left corner of the preview window

Including the Legend on the print

If you want your print to show the **Legend** & **layers** -
Be sure the layers have been configured so that their symbols are visible in the **Legend** in the project window

Example:
Here the lines and points for roads, parcels and addresses have been set to "visible" in the main **Legend** window
That is done by double-clicking on a layer as you would to change colors
Put a check mark in the "**Include in legend**" box -



In the **Print Preview** window, put a check mark in the **Legend** box, then click on **Full Preview**
You will see each layer represented by its name and symbol
Note that this Tatuk project contained many layers (illustrated above), but only **3** will show on the final print
-

E-mailing a map

You can save your map as a file that can be attached to an e-mail

NOTE – the **Selected** and **Legend** windows will **not** be exported

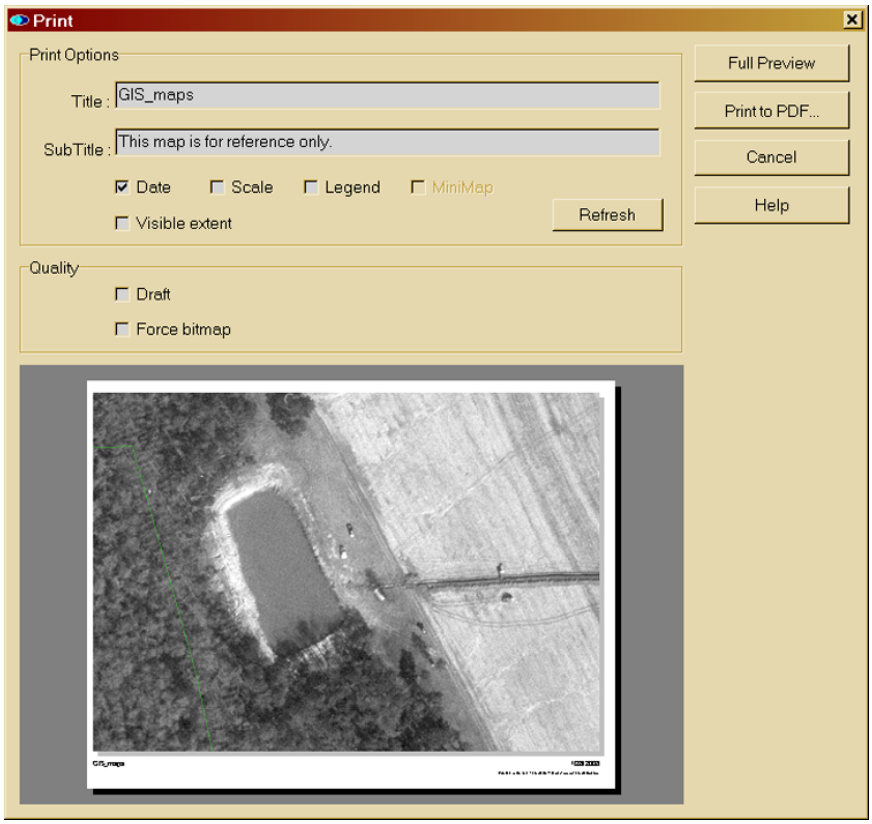
PDF files –

TatukGIS can create Adobe Acrobat PDF files, excellent for e-mailing

Use the **Print to PDF**  button, or menu **File/Print to PDF**

A print preview window will open

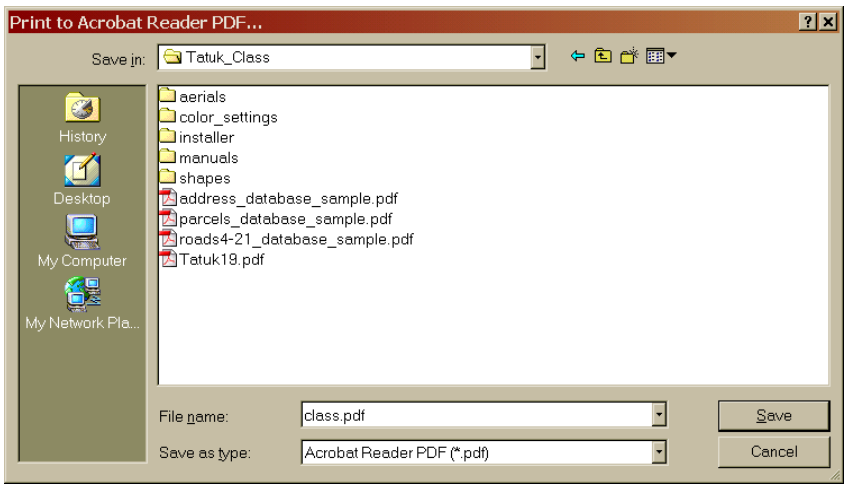
Choose what you want to show on the PDF -



Hit the **Print to PDF** button

Pick a location on your computer to store the PDF

Give the PDF a name –

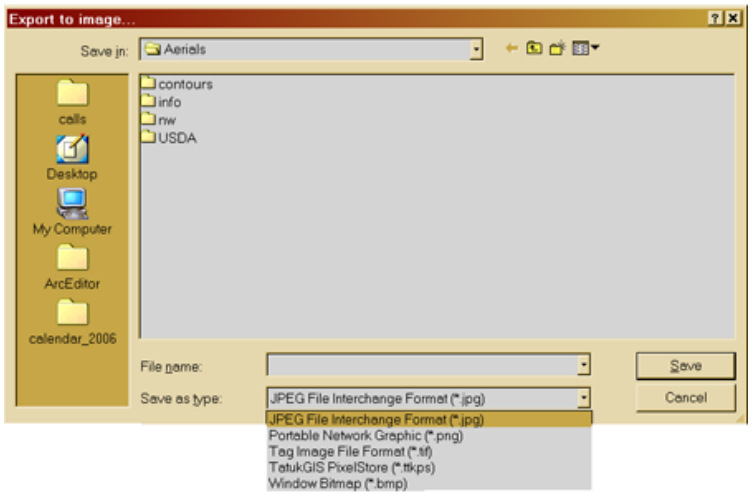


Export as an image

An alternative to PDF is to create an image file (snapshot)
Image formats available include JPEG (best for aerial photos) and TIFF

Use the **Export to Image**  button, or **File/Export to Image**

In the **Save As Type** pull-down menu, select JPEG (.jpg), TIFF (.tif), etc -

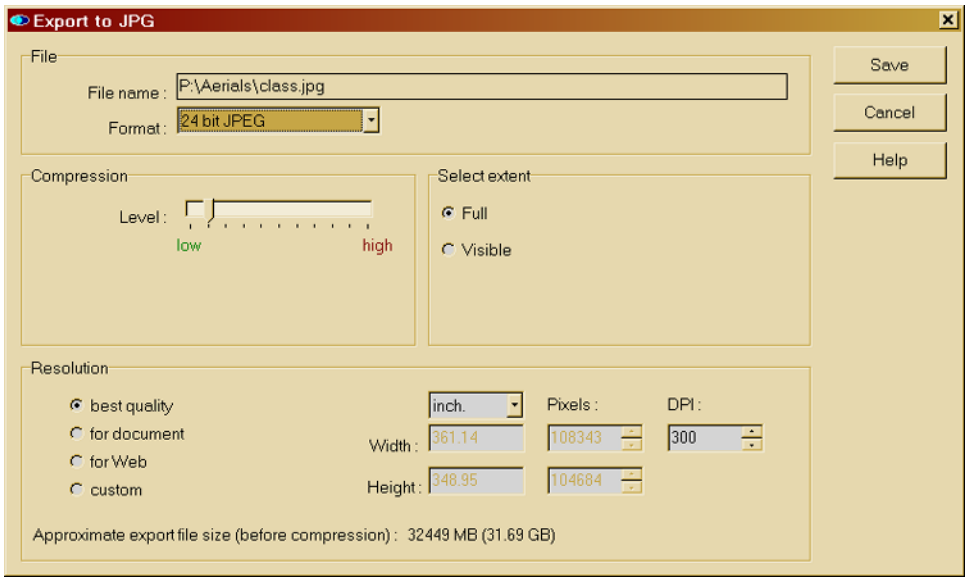


For **JPEG** (.jpg) you have choices

Note that under **Resolution**, **best quality** creates the largest digital file, **for web** creates the smallest file

Increasing file **Compression** makes the file smaller BUT with a **loss of detail in the image**

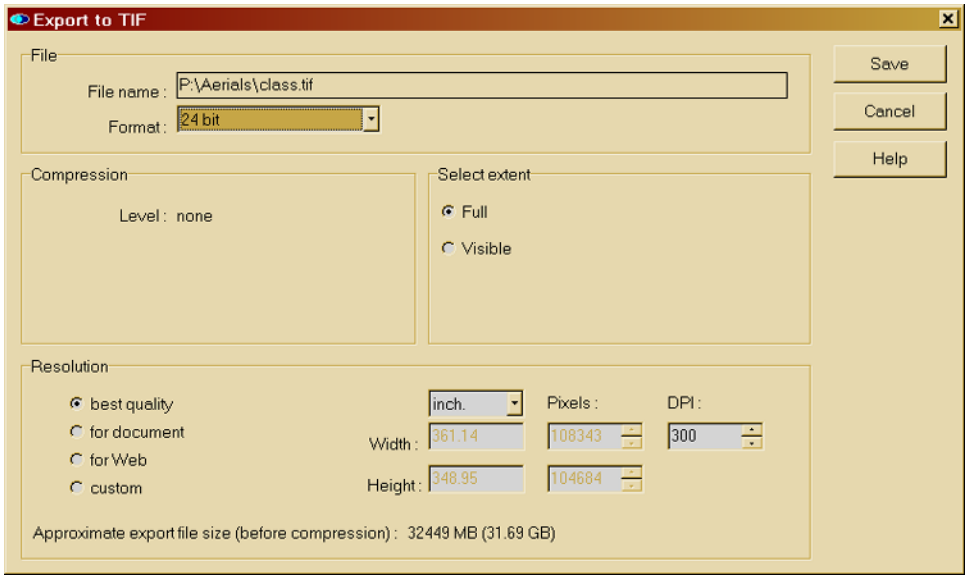
The settings illustrated here are good defaults



Note to finicky folks – JPEG is designed to compress photographs and will NOT give you the most detail in the exported image

To export as a **TIFF** (.tif) file

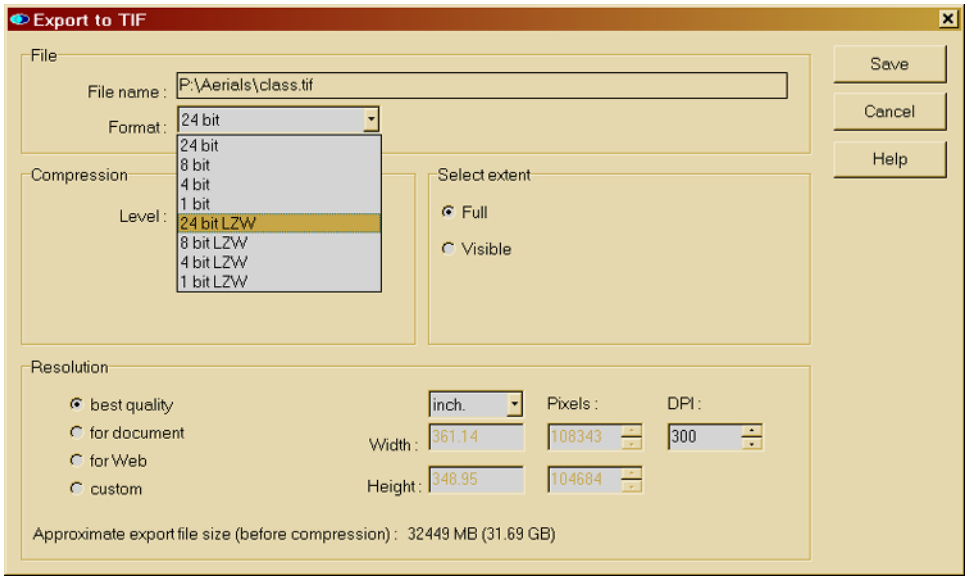
This will yield the highest image quality **but** also the largest digital file
Not recommended for e-mailing -



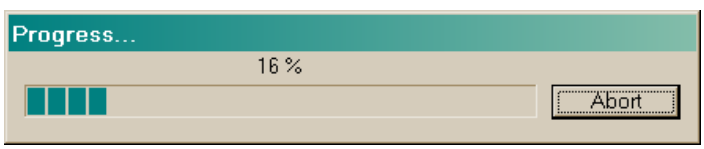
For TIFF (.tif) you have these choices

Note that under **Resolution**, **best quality** creates the largest digital file, **for web** creates the smallest file

If you want to compress the file, pull down the **Format** window to **24 bit LZW**
Use compression ONLY if you know that other software can read compressed TIFF files -



Click **Save** and a **progress window** will tell you when your file is finished and ready to e-mail -



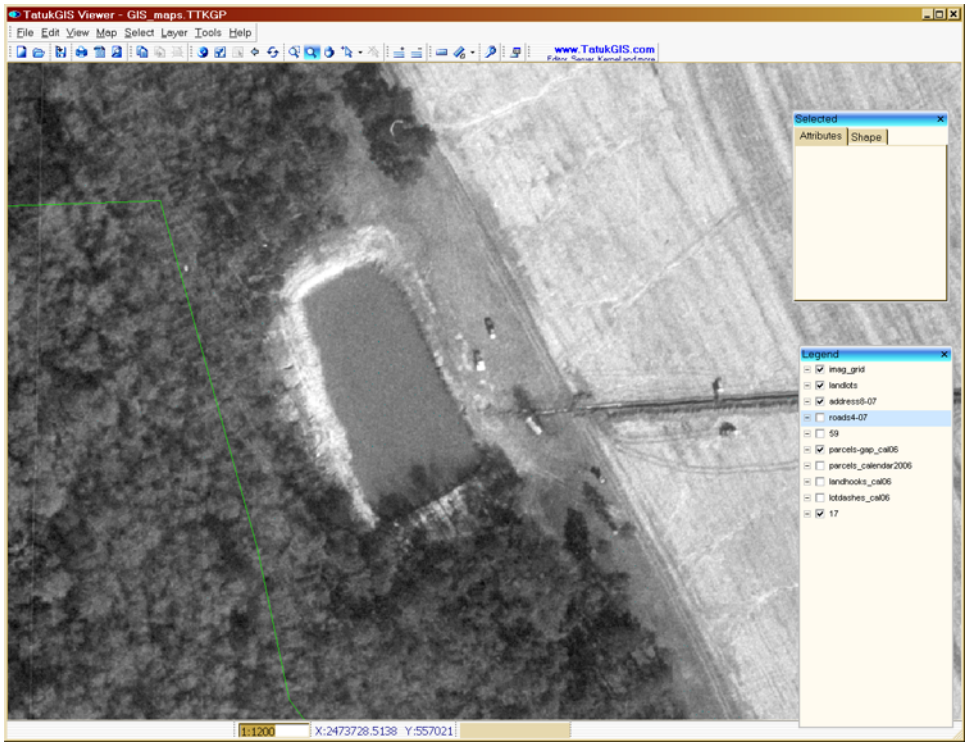
"**Scaling" a map -** Printing at a specific scale, eg 1:100, 1:200, 1:400
So that a ruler can be laid on the print to determine distances.

First get your map looking the way you want.

At the bottom of the Tatuk project window is a **data entry** window
Here it reads **1:1200**, which means 1"=100' (**1 ruler inch = 100 feet of ground distance**)

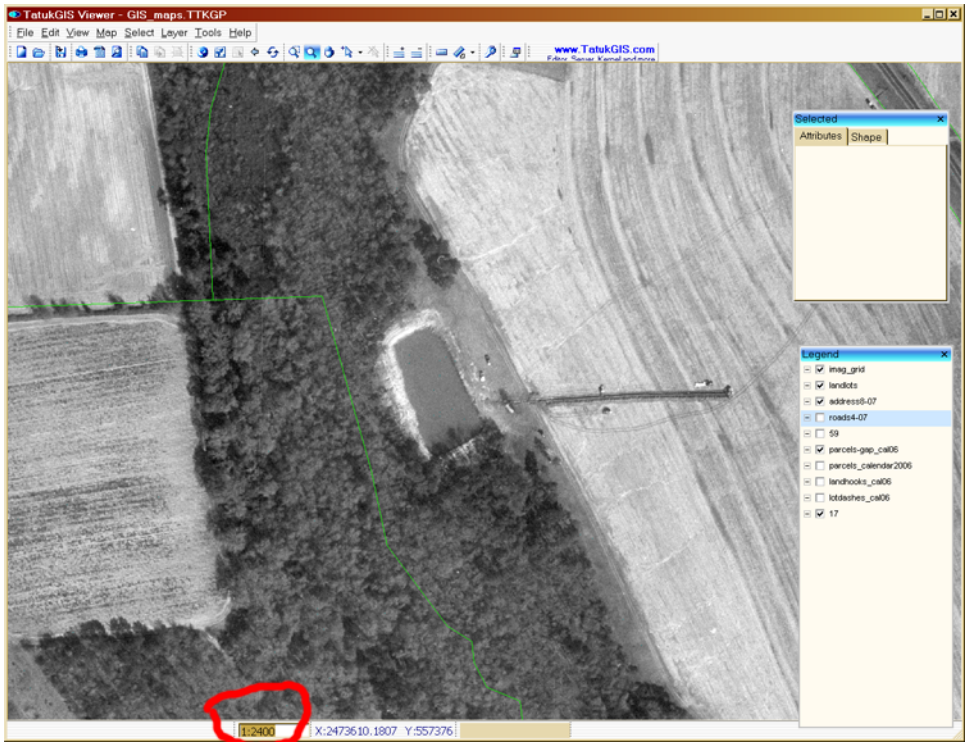
(If there's **nothing** in this window, you need to set the project's **map units**)

To change the scale, delete everything after the **colon**
Then type in your **new** scale number
For a 1"=100' map, enter 1:1200
For a 1"=200' map, enter 1:2400
For a 1"=400' map, enter 1:4800
Hit the **Enter** key on your keyboard -



Then proceed with printing, using **Print Preview** if you want

After changing the scale to **1:2400** (1"=200'), this is the result –



Advisory –
When printing, be sure your printer is set to print at **100%**, not "fit to page" or a similar setting
Make some test prints with your printer to see if you need to adjust the **scale** number you enter in the **scale** window

NOTE – scaling will **not** be accurate if the map is exported as a PDF or an image file (JPEG,TIFF, etc).

Saving a project

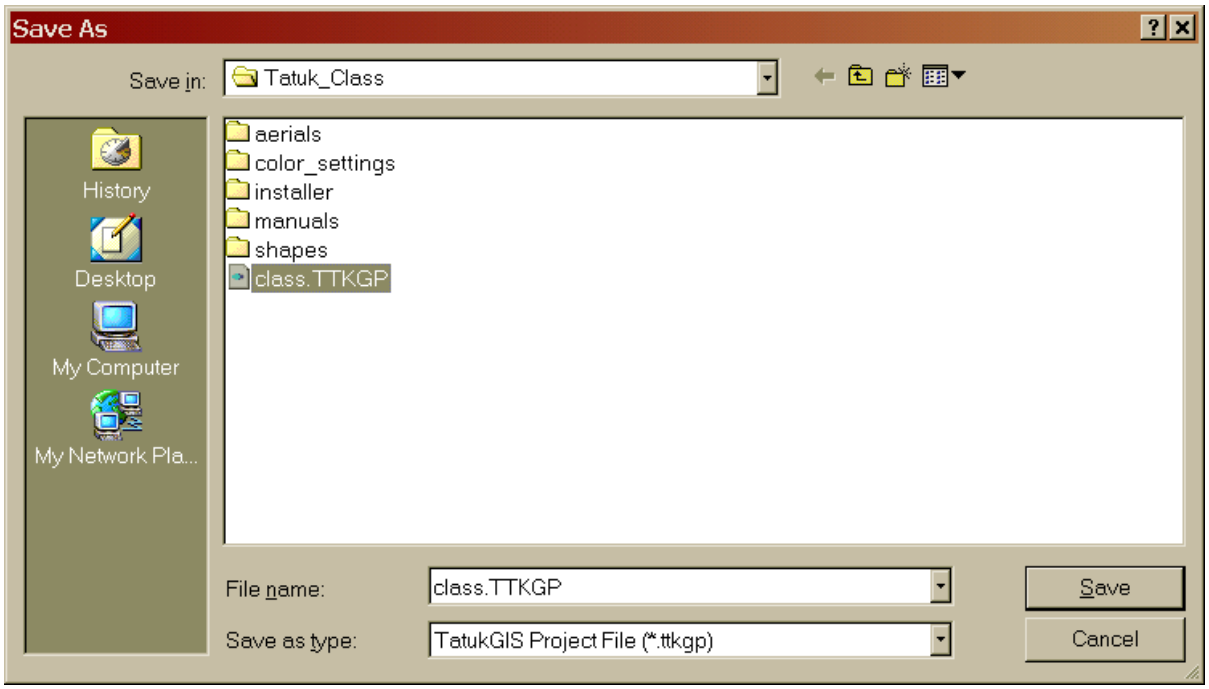
There is **no** simple **Save** button or menu item in Tatuk

First, look at the name of your project, in the upper left corner of the Tatuk window –

Go to the **File** menu, select **Save Project As**

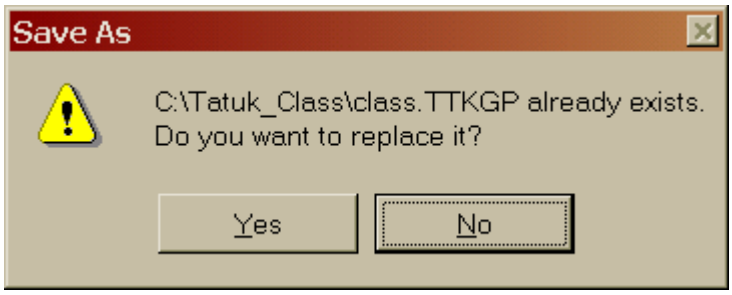
In the **Save As** window, **find** & **select** the file with the **same name** as you see in the upper left corner of the

Tatuk project window -



Click **Save**

This window will appear -



Hit **Yes** to save the project

Closing your project

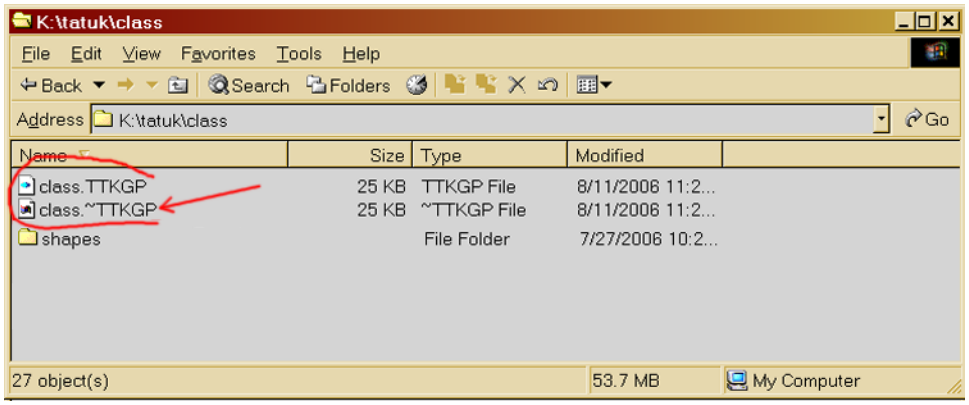
When you close a project window, Tatuk may ask –

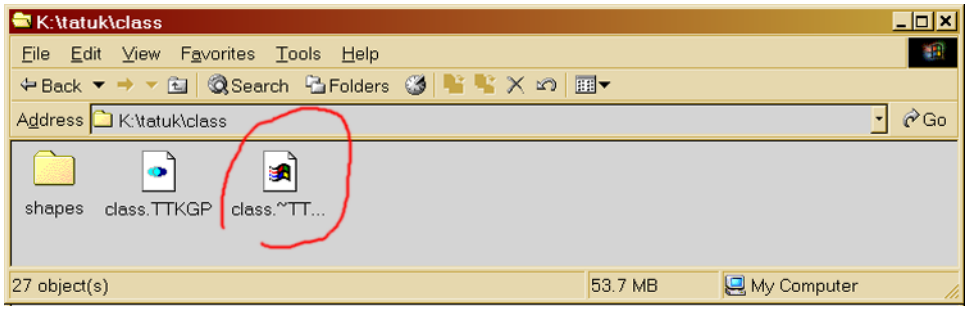
Hit **Yes**
You will go through the **Save As** routine above

**** IMPORTANT – danger Will Robinson ****

If you look in **My Computer** or **Windows Explorer**, you will see **2** files that have **similar** names
In this case, **class.ttkgp** and **class.~ttkgp**

Do **NOT** delete the file that has .**~ttkgp** at the end of its name -





The map project will NOT open if you delete the .**~ttkgp** file
Only throw it away if you delete its mate

YOU HAVE BEEN **WARNED**

Miscellaneous stuff

If you're using TatukGIS and a window comes up asking if you want to download an **update** –
Select **NO** – because the new version may be significantly different than the one you're using now

Download the new version to your computer and install it separately to evaluate ut
You can run multiple versions of TatukGIS

Handy tools to play with -

Select the "**Zoom Extended Mode**" tool and try it out

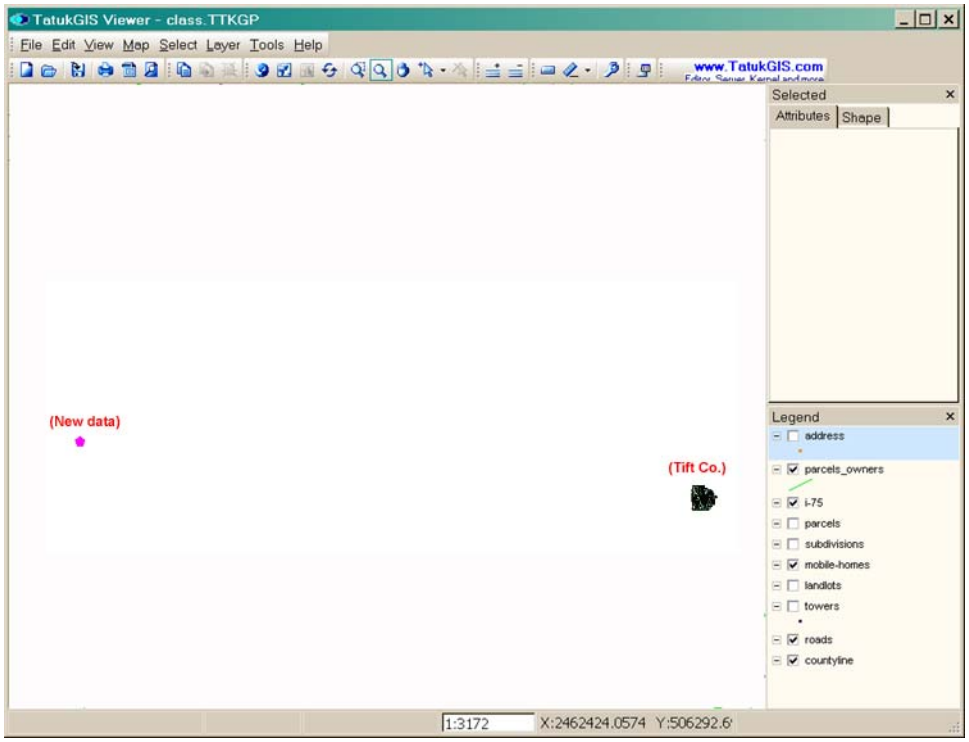
Select the "**Drag Mode**" (the hand) tool and use it along with your mouse wheel
Use the mouse to drag the window around, and the wheel to zoom in and out

Use the "**Previous Extent**" button to go back to the last places you looked at

To select more than one feature using the **Select Localize** tool (the hand), press the **Ctrl** key on your keyboard

The pull-down menu by the **Select Localize** tool gives you many selection options to try

Q. - "I downloaded a map file (from the internet), and when I add it to Tatuk, it shows up somewhere in Alabama"
A. - You've encountered a "**projections**" issue. E-mail the file to Tim at the Tax Assessors and he can re-project it
to the proper place on the ground.

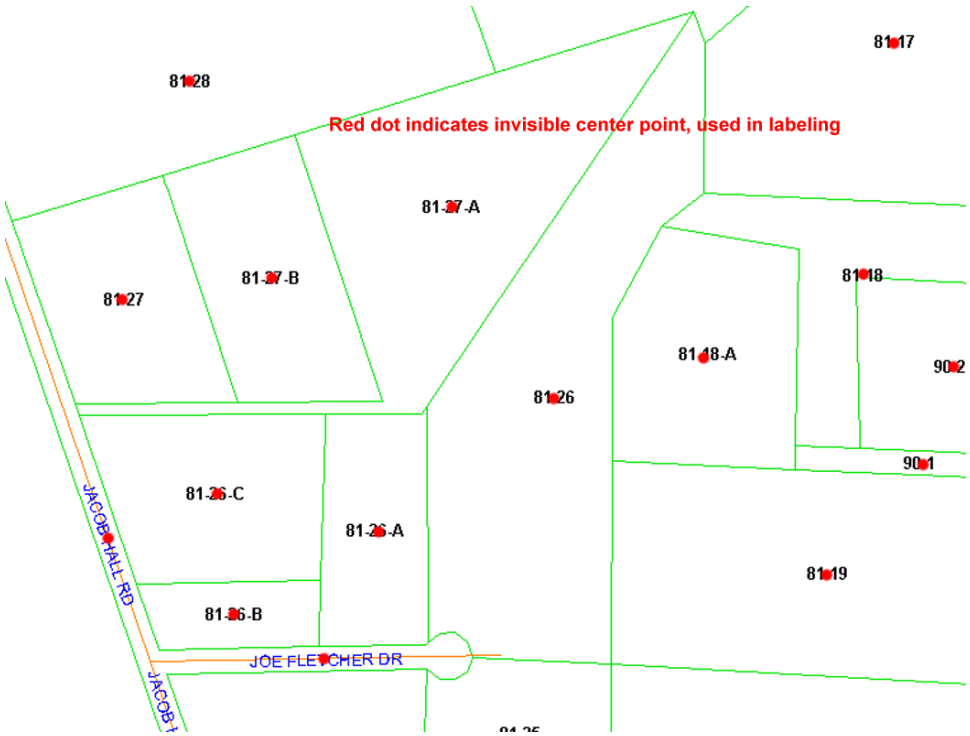


Tips about labeling

The Tatuk software uses invisible points within each **feature** as its "label location points".
Eg. each parcel has one invisible center point, each road segment has one center point, etc.
It will not "**stack**" lables on top of eachother.
Do not try to cram too many labels from different layers into the same small area, eg a **parcel**

The optional **Label position** settings uses the invisible **points**, and will help you stagger or offset labels in tight areas

This illustration simulates how the software decides where to put labels on the **parcels** and **roads** layers.
Each parcel enclosed by property lines is a closed polygon with one center point.
Each road segment, from one intersection to another, has one center point.



Labeling complex layers such as zoning, soils, etc
If you have set different colors for different areas such as zoning classifications or soil types

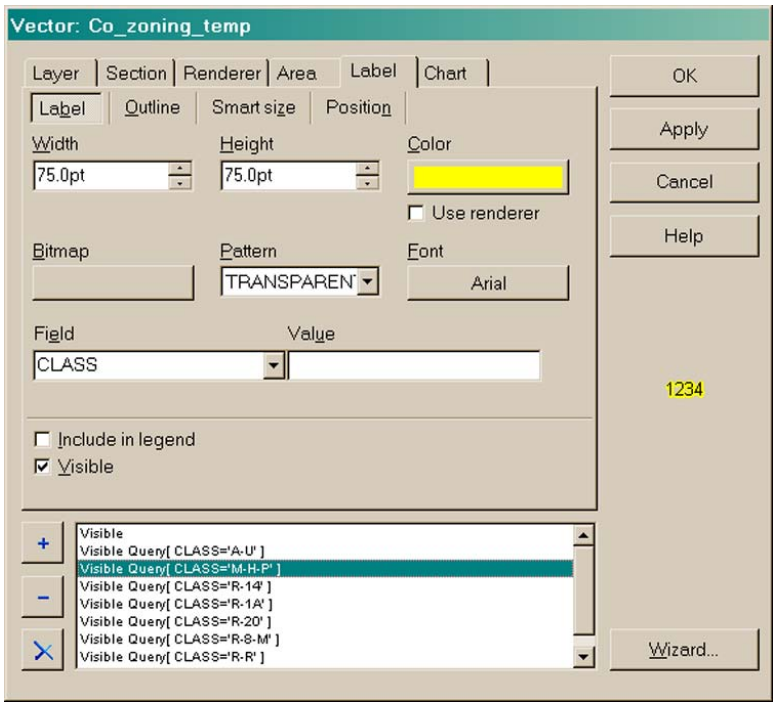
This is just a **quick overview** – you have many options to try out

(continued)

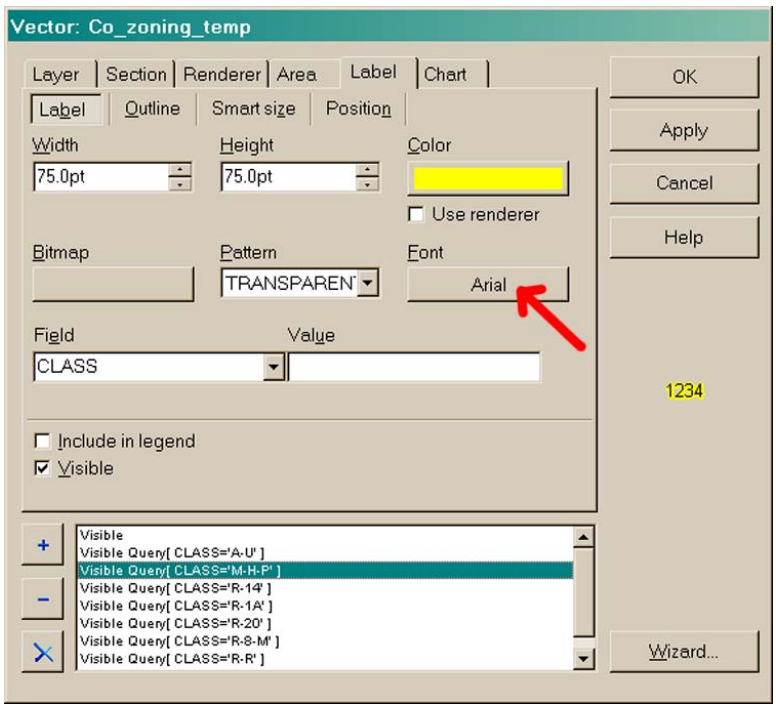
Double-click on the **layer** you're labeling, select the **Label** tab, then click the **Label** button

In the bottom window, select each "**Visible**" item, such as **(Class='M-H-P')**
In the **Field** window, choose the field you want to use for labels, here the **Class** field
Repeat for each visible item

Put a check in the "**Visible**" box

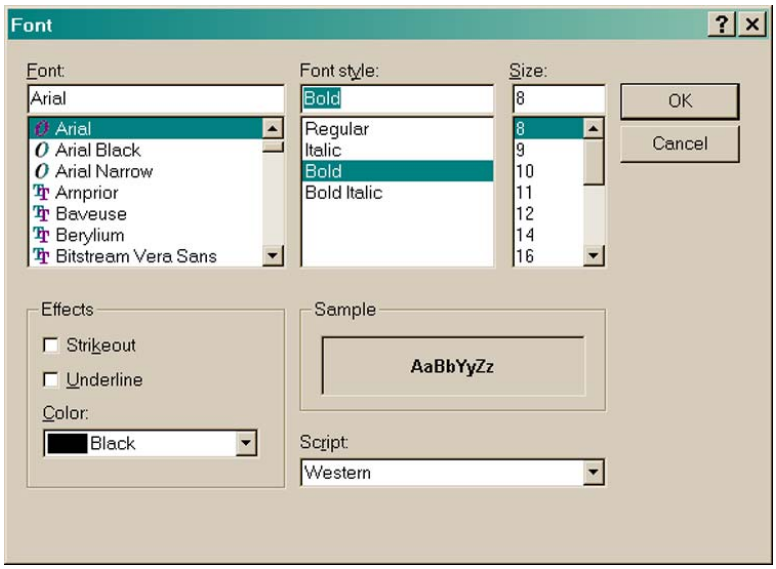


To set the typestyle for your labels, click on the button below **Font**



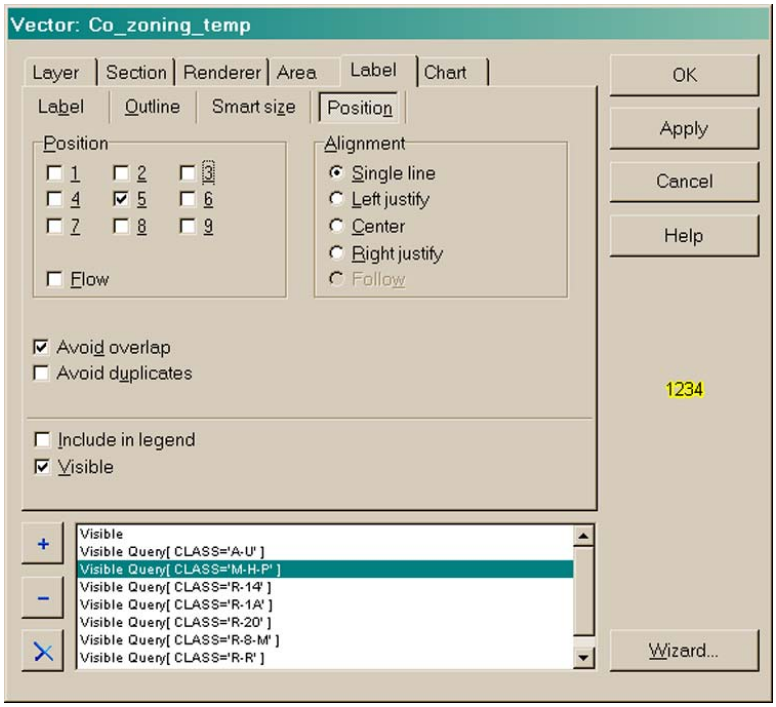
This opens the **font** selection window

Set size, color, etc, to your preference

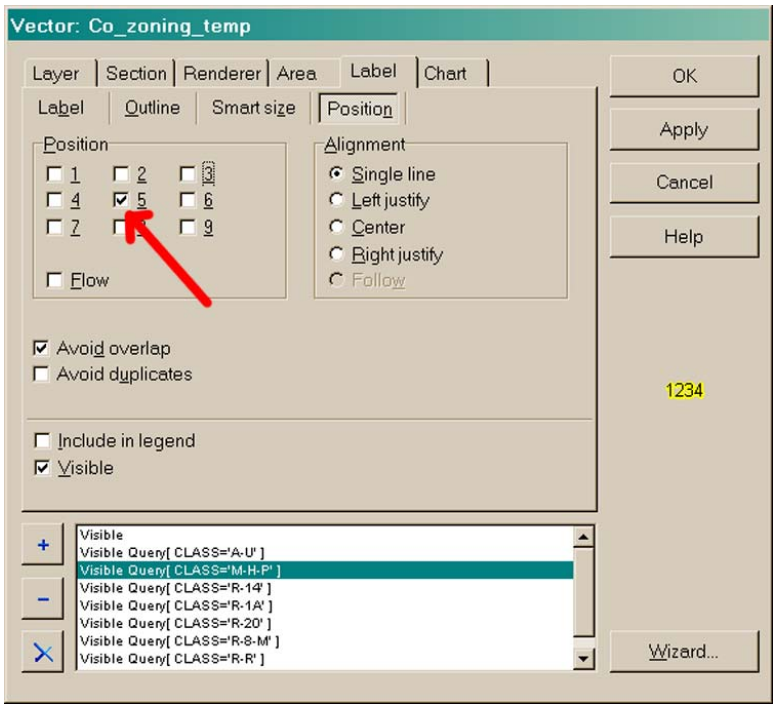


Labels have a **Position** setting

To get it, click the **Position** button while the **Label** tab is selected



Position #5 places labels on the invisible **label points** (remember?)



Additions, questions or comments?
Call Tim Spivey at the Tift County Tax Assessors
229/386-7840

Produced by the
Tift County Tax Assessors
GIS Department
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Rev. 4

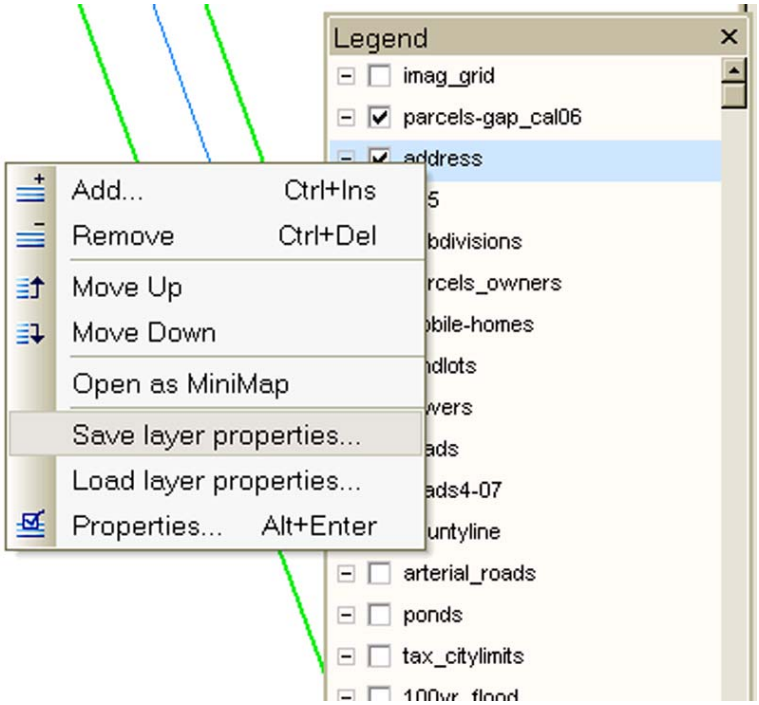
Index

Saving and re-using color & label settings for layers

After you set your color and label preferences for a layer, you can apply the same settings to other similar layers.

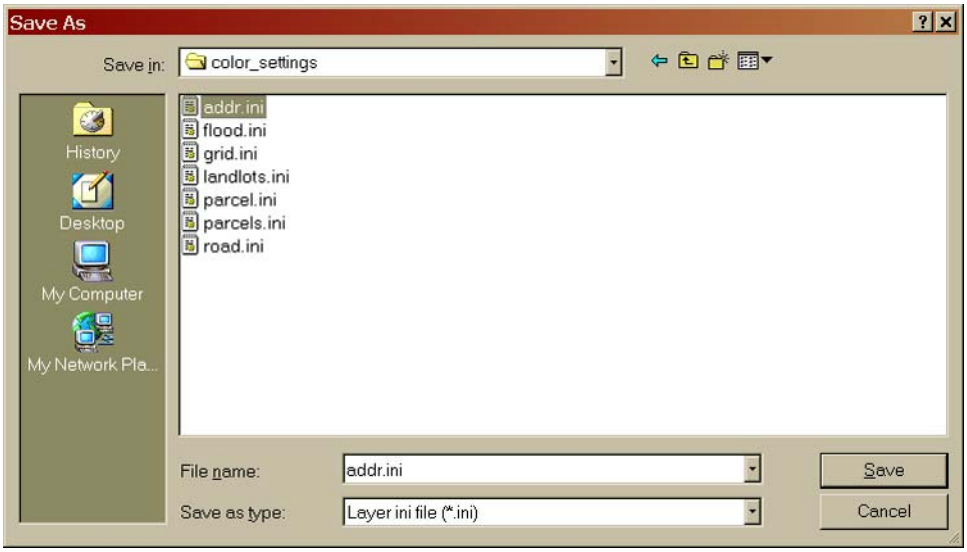
First save your color settings

Right-click on a layer namein the **Legend**



Choose **Save layer properties**

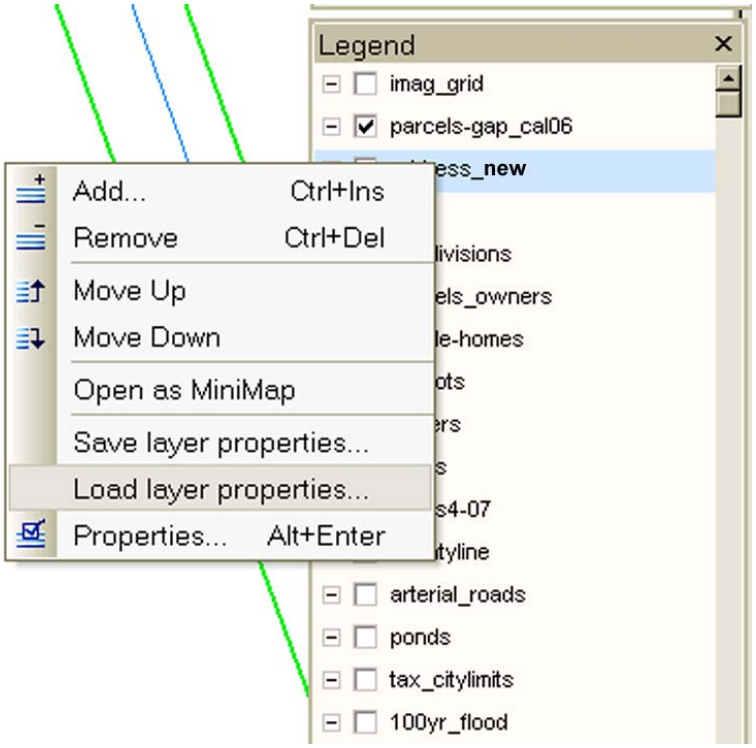
The **Save As** window opens -



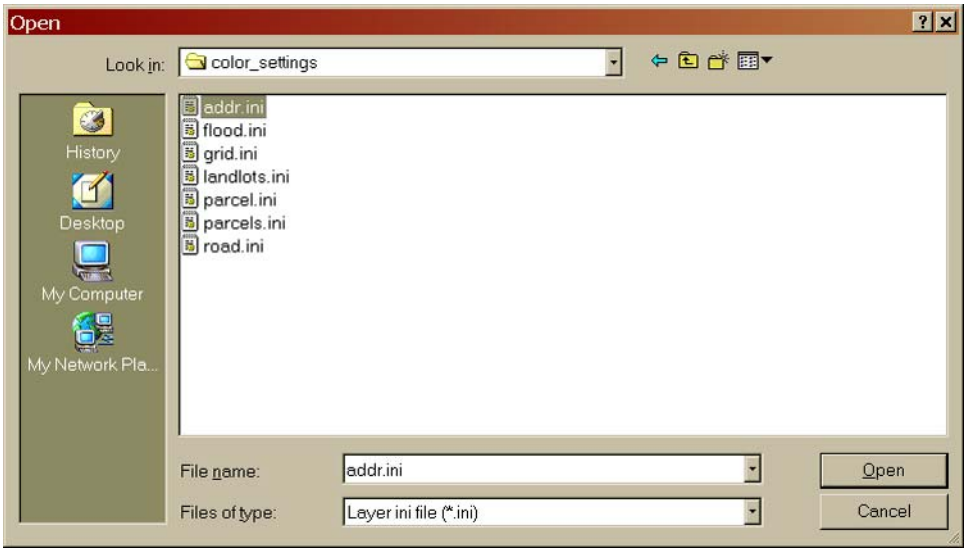
Choose a place to save the color settings **.ini** file

Give the **.ini** file a name related to the layer

Then select the **layer** to which you want to apply the color & label settings
Right-click on the layer and choose **Load layer properties** -



The **Open** window appears
Select the appropriate **.ini** file



Hit the **Open** button to apply the settings.