

# Hands-On Map Projection

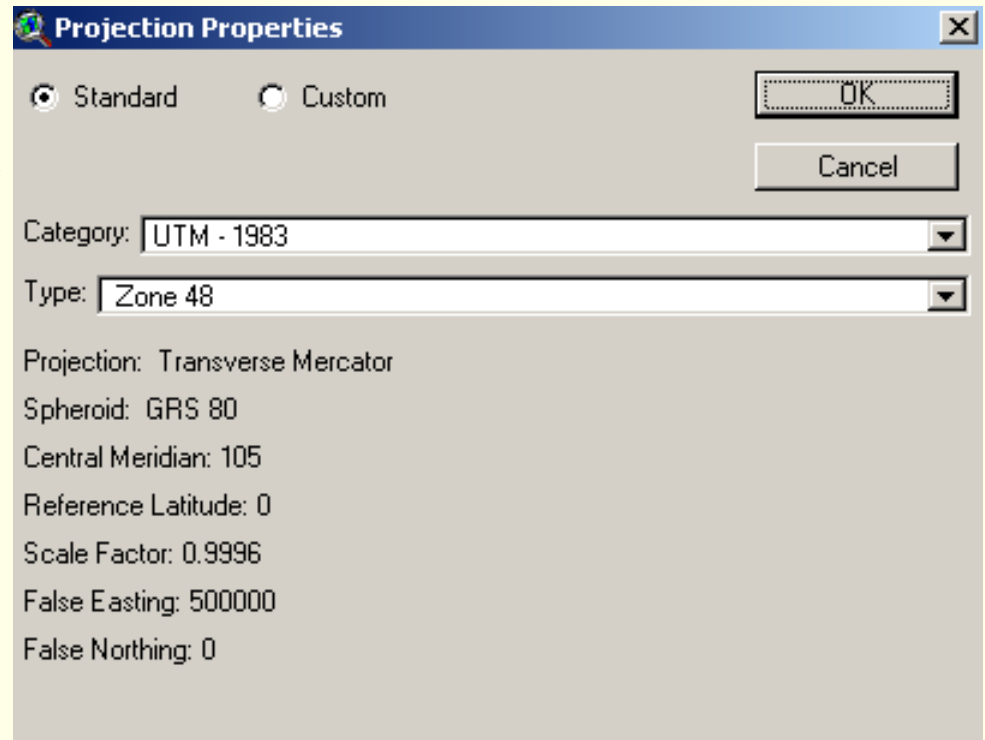
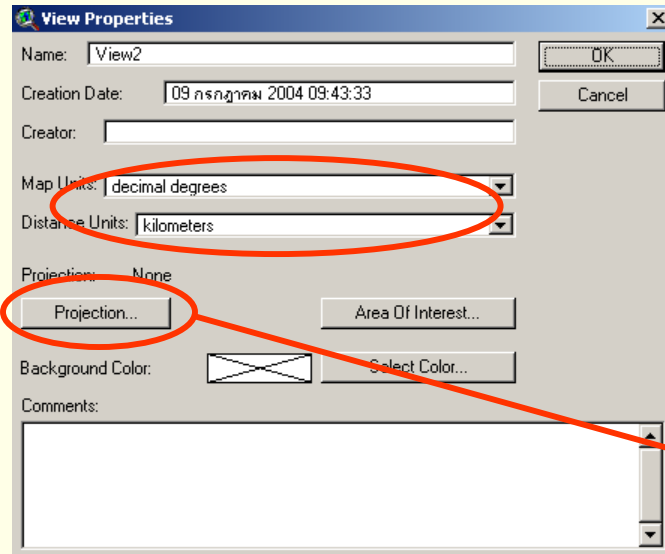
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A horizontal line with a grey shadow below it, and a grey rectangular block to the right of the line.

# *Hands-On*

- **Specify Projection**
- **Customizing Projection**
- **Changing Projection**

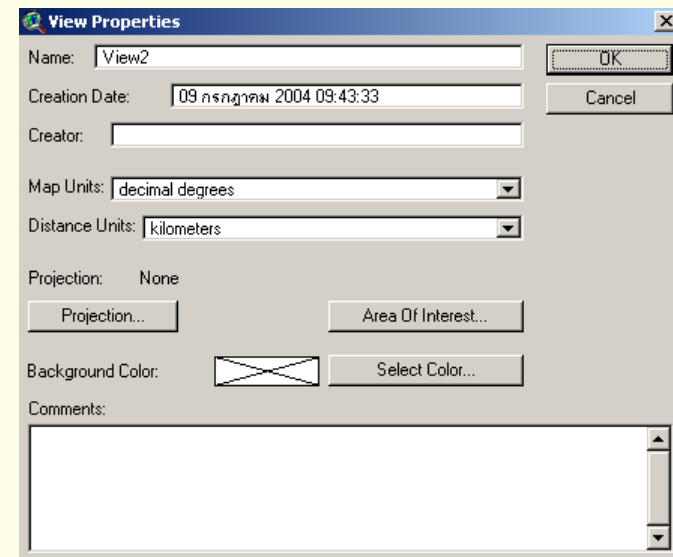
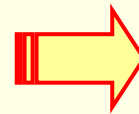
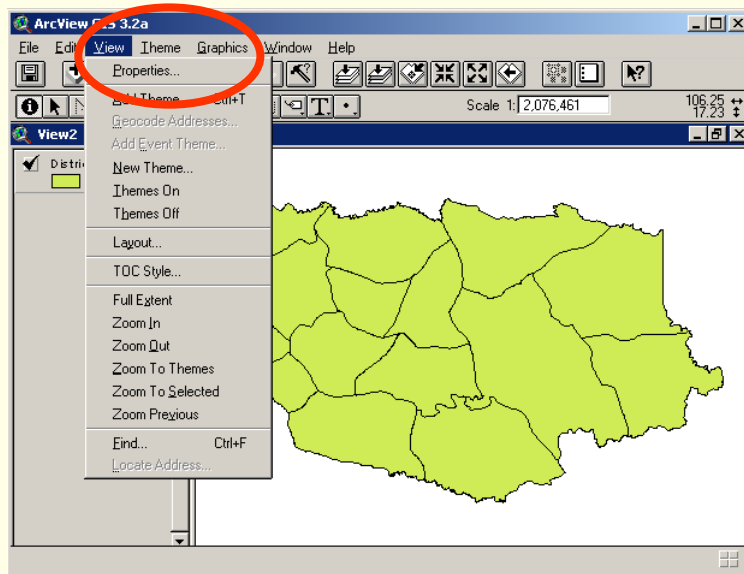
➤ Click the Projection button



FYI To select zone pls see the next slide

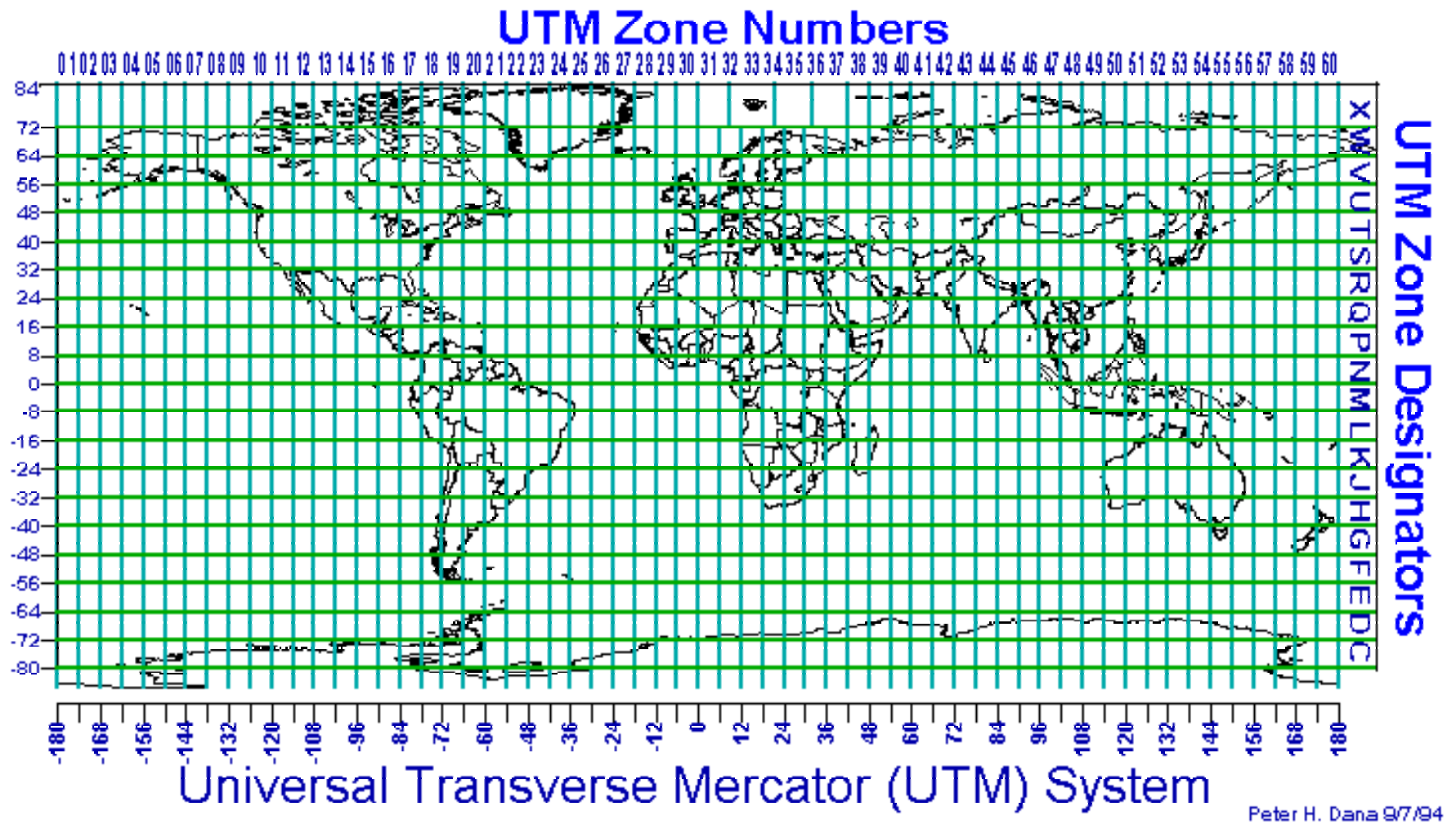
# Specify the Map Projection

- From the View Menu, Choose Properties



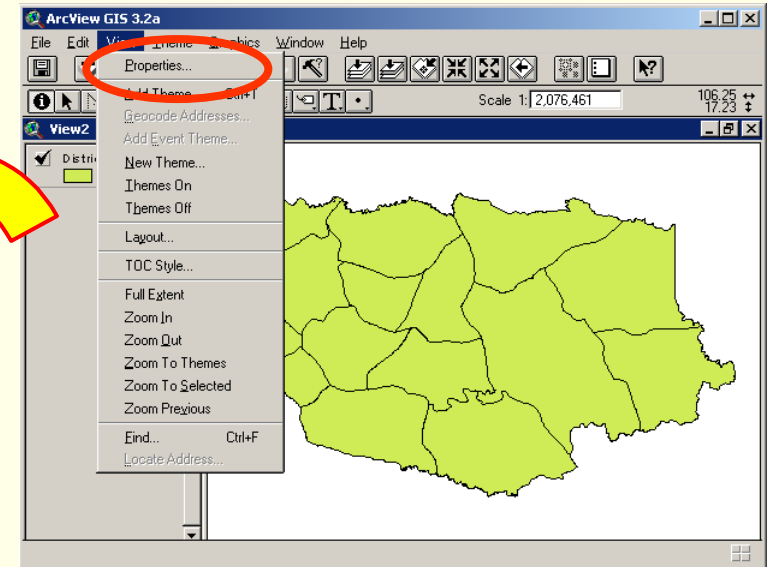
***If a projection has already been set, the name of the projection will appear. If no projection is currently specified for the view, set the Map Units to decimal degree for the projection to work correctly.***

# Reference

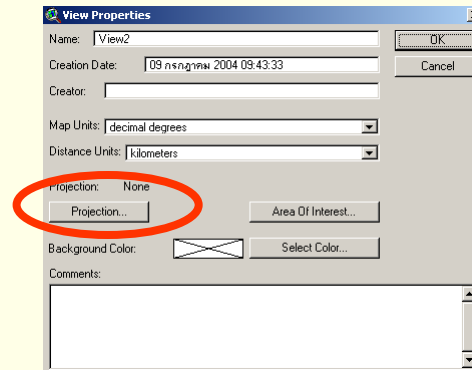


# Customizing a Map Projection

➤ From the View Menu, Choose Properties

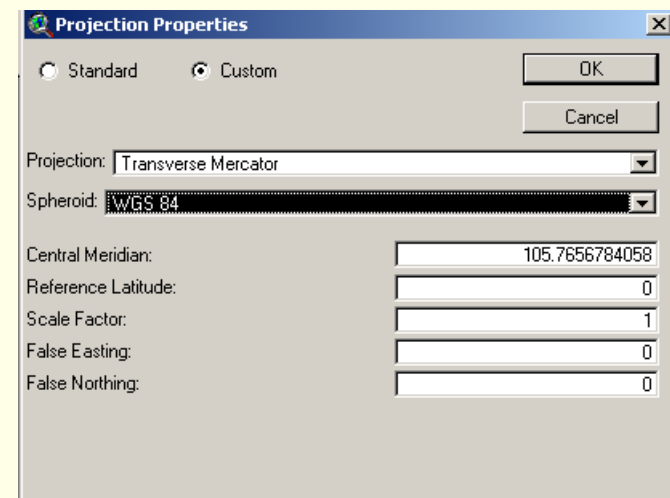
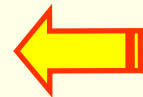


➤ Click the Projection



➤ Select Custom

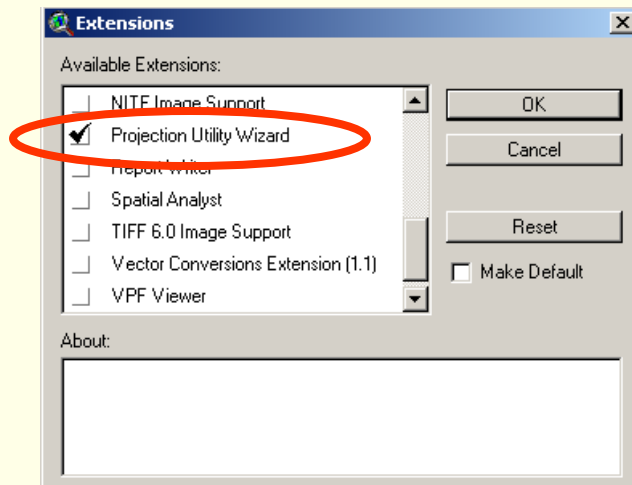
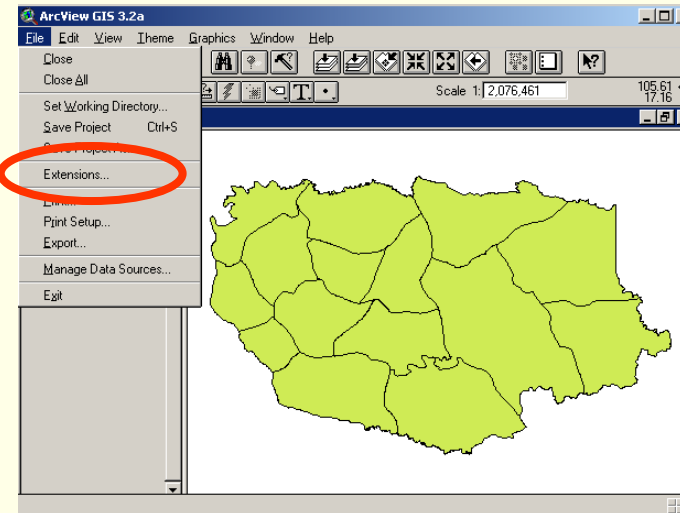
**Projection: Transverse Mercator**  
**Spheroid: GRS 80**  
**Central Meridian: 105**  
**Reference Latitude: 0**  
**Scale Factor: 0.9996**  
**False Northing: 500000**  
**False Easting: 0**



# Changing Projection for a Theme

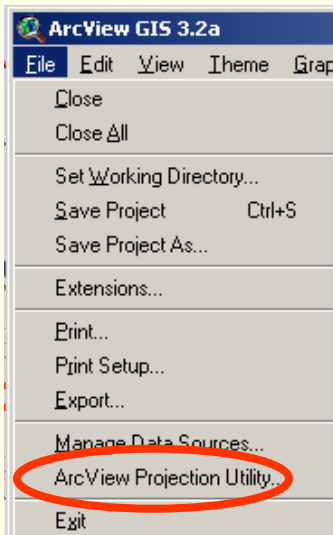
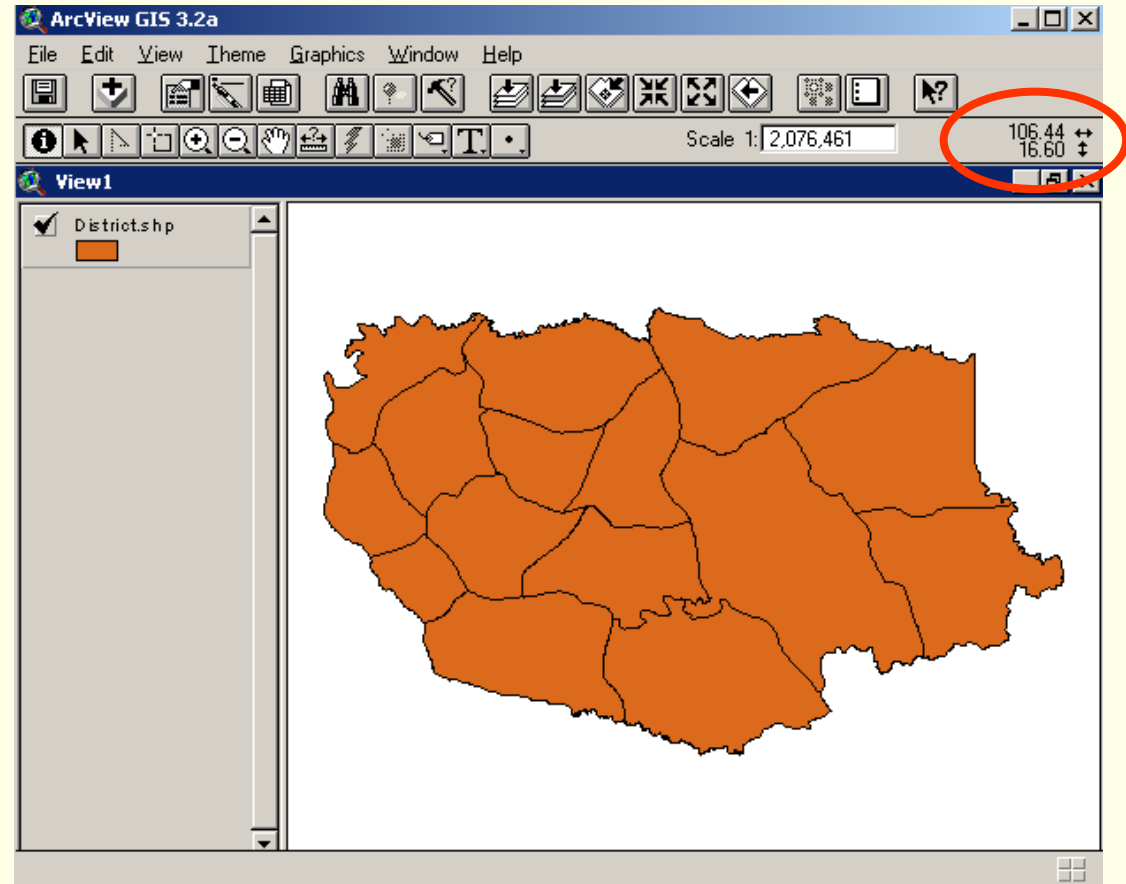
*The ArcView Projection Utility -- Project shapefile from one coordinate system to another and save it as a new Shape file*

➤ From the File Menu, Extension



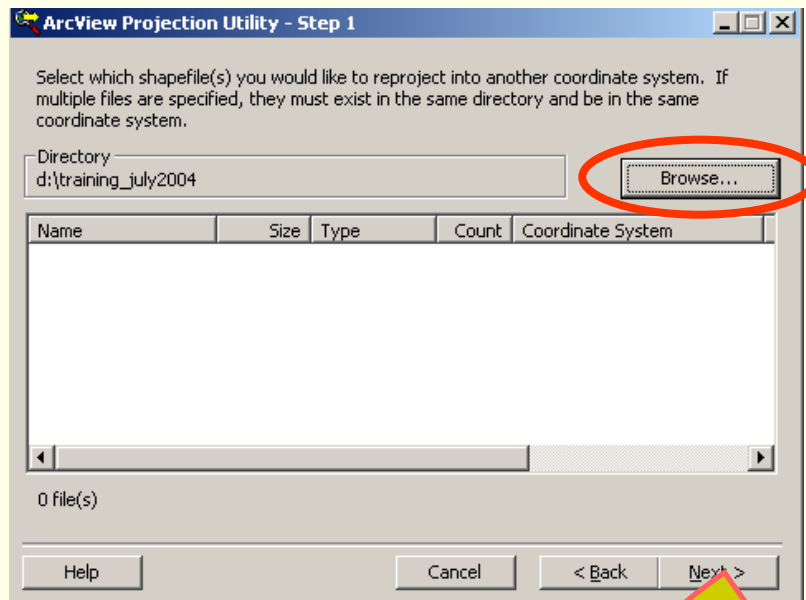
➤ Click Projection Utility Wizard

➤ From the File View Window,  
Add theme “district.shp”

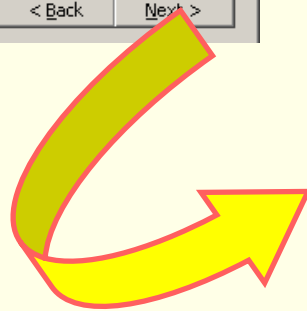


➤ From File Menu, Select ArcView Projection Utility

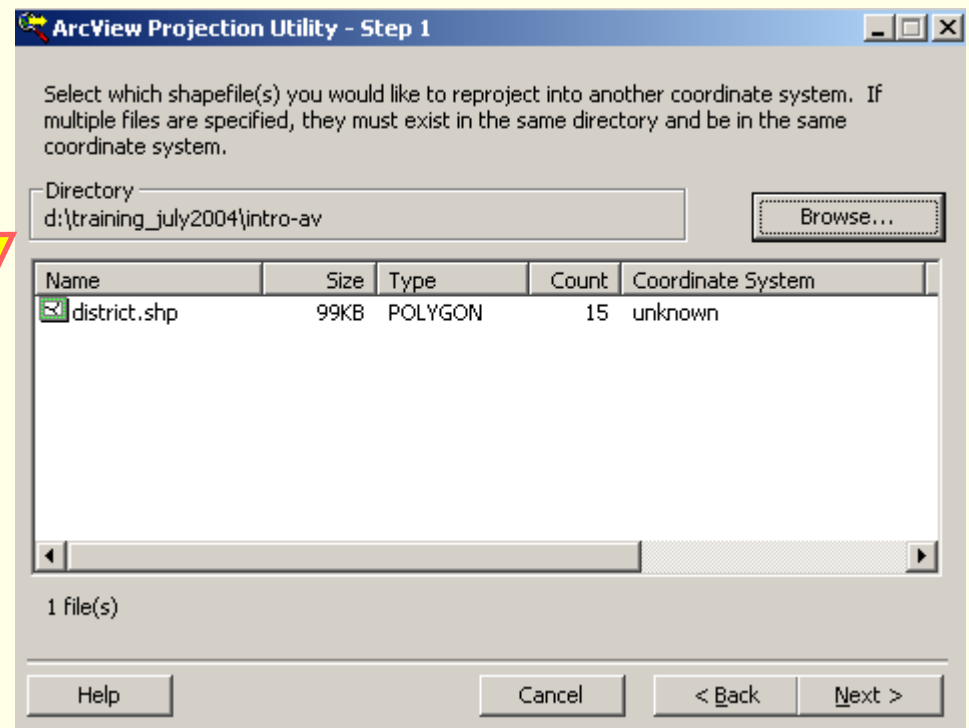


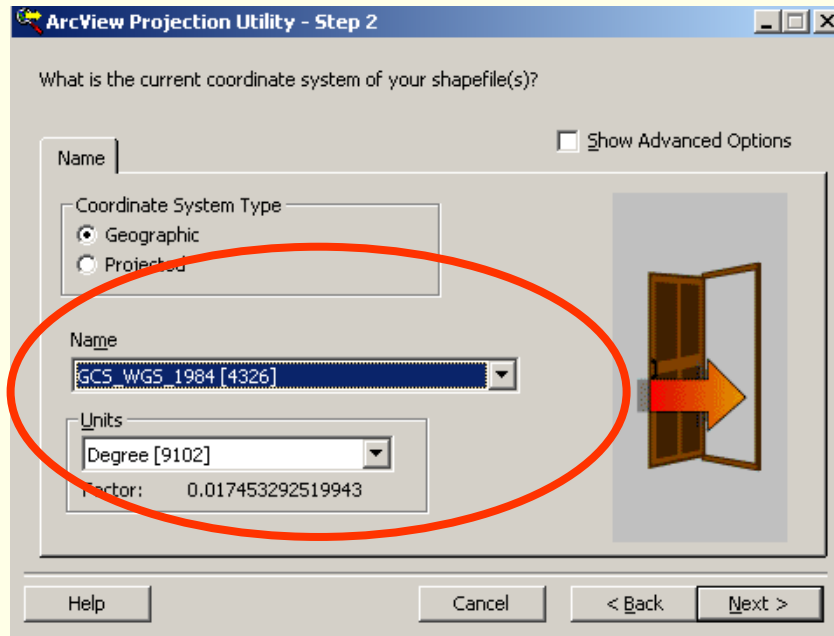


- Browse “shape file” you want to change the projection (district.shp)
- Click Next

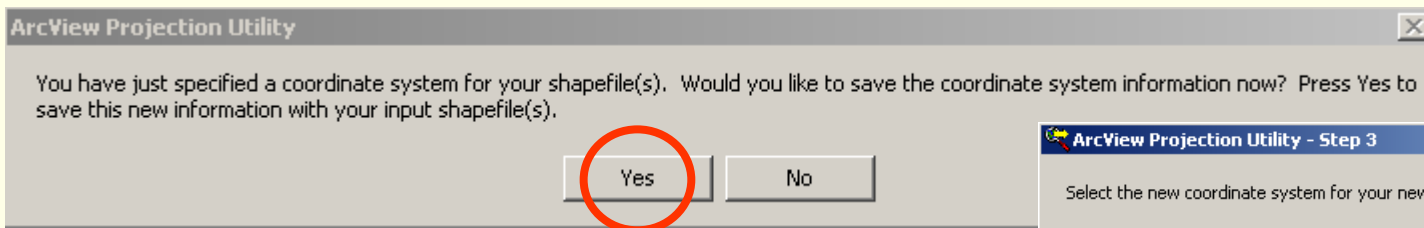


*The File has been selected will appear*

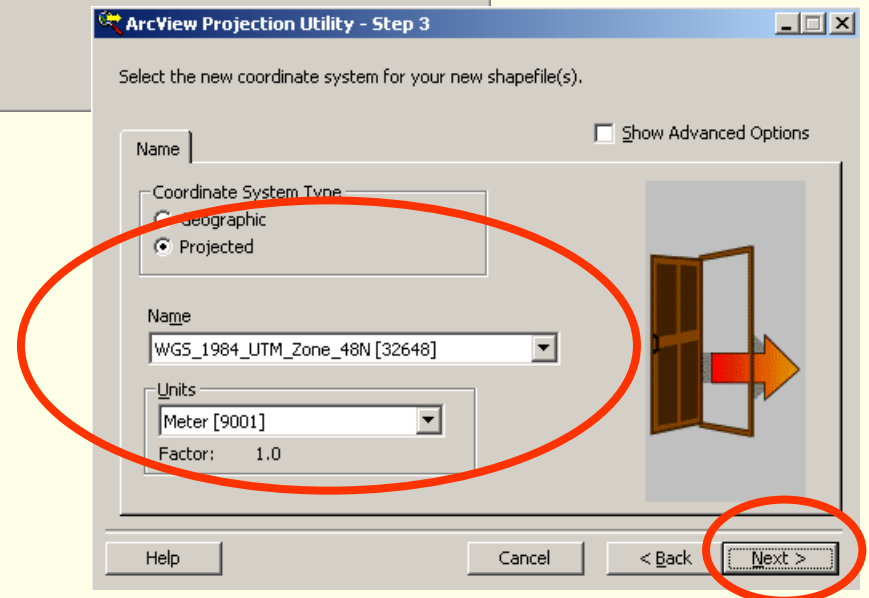


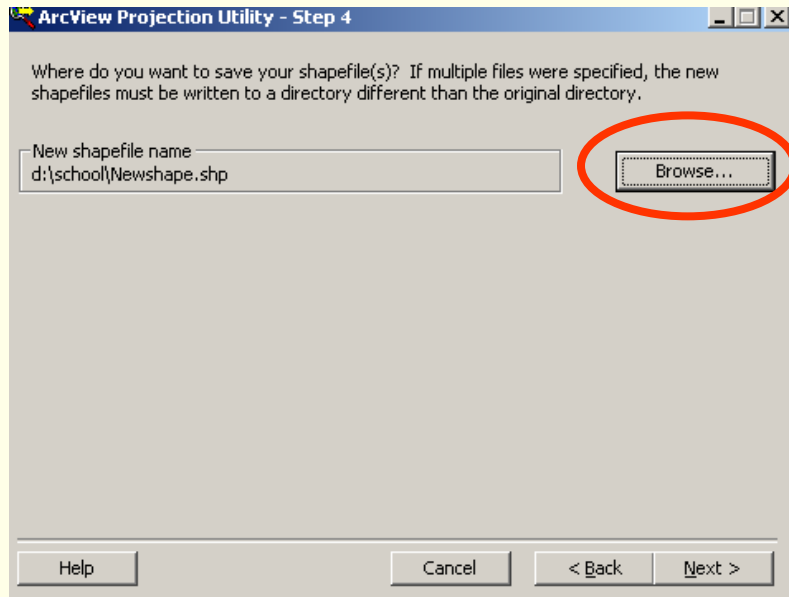


- Specify current coordinate system
  - WGS\_1984
  - Unit as Degree
- Click Next

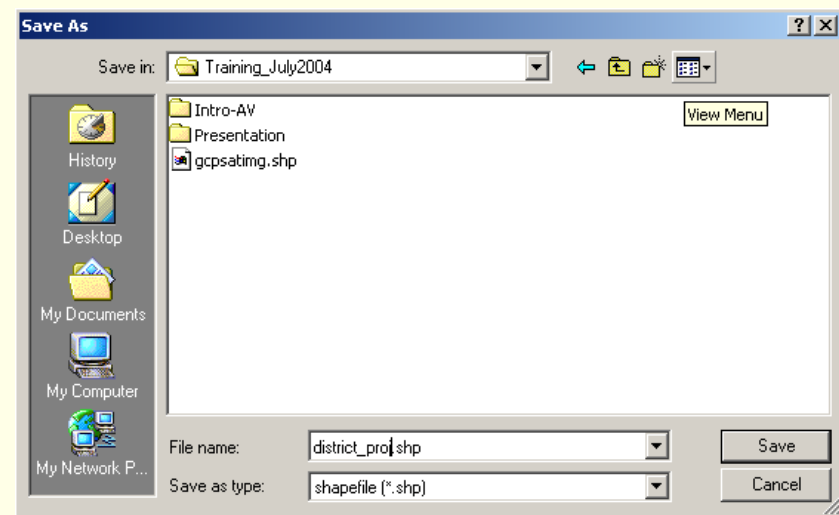


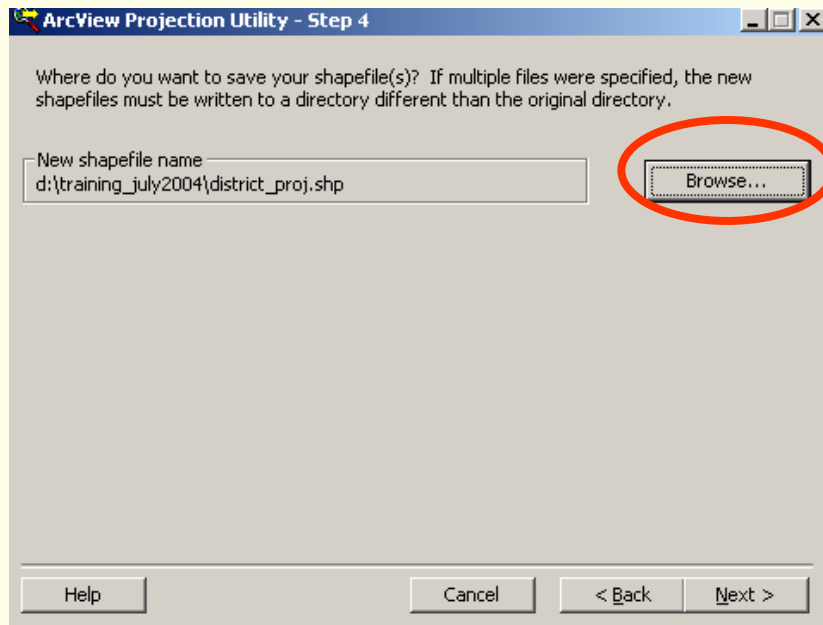
- Specify New Coordinate system
  - WGS\_1984\_Zone48
  - Unit as Meter
- Click Next



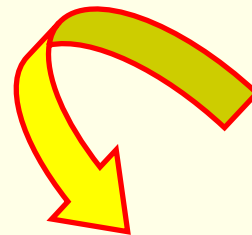
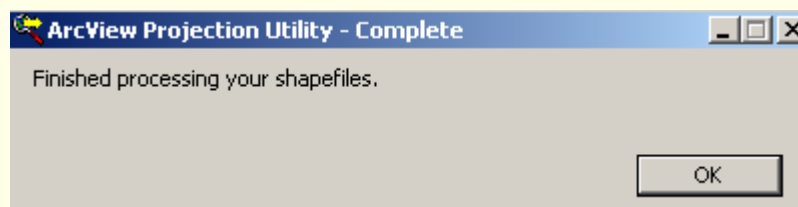
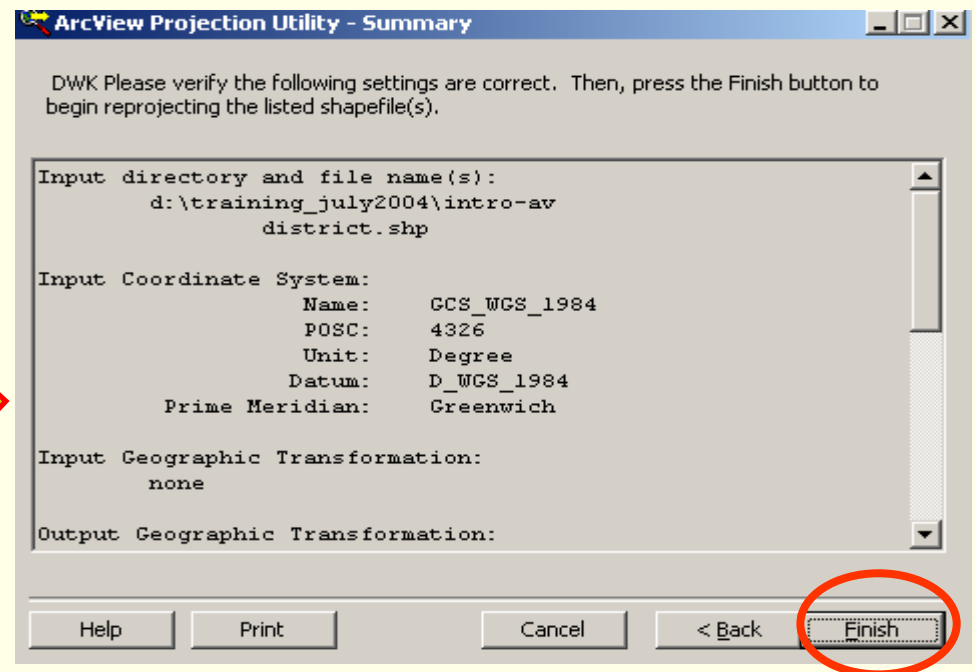


- **Browse directory where you want to save your file**  
**(d:\training\district\_prj.shp)**

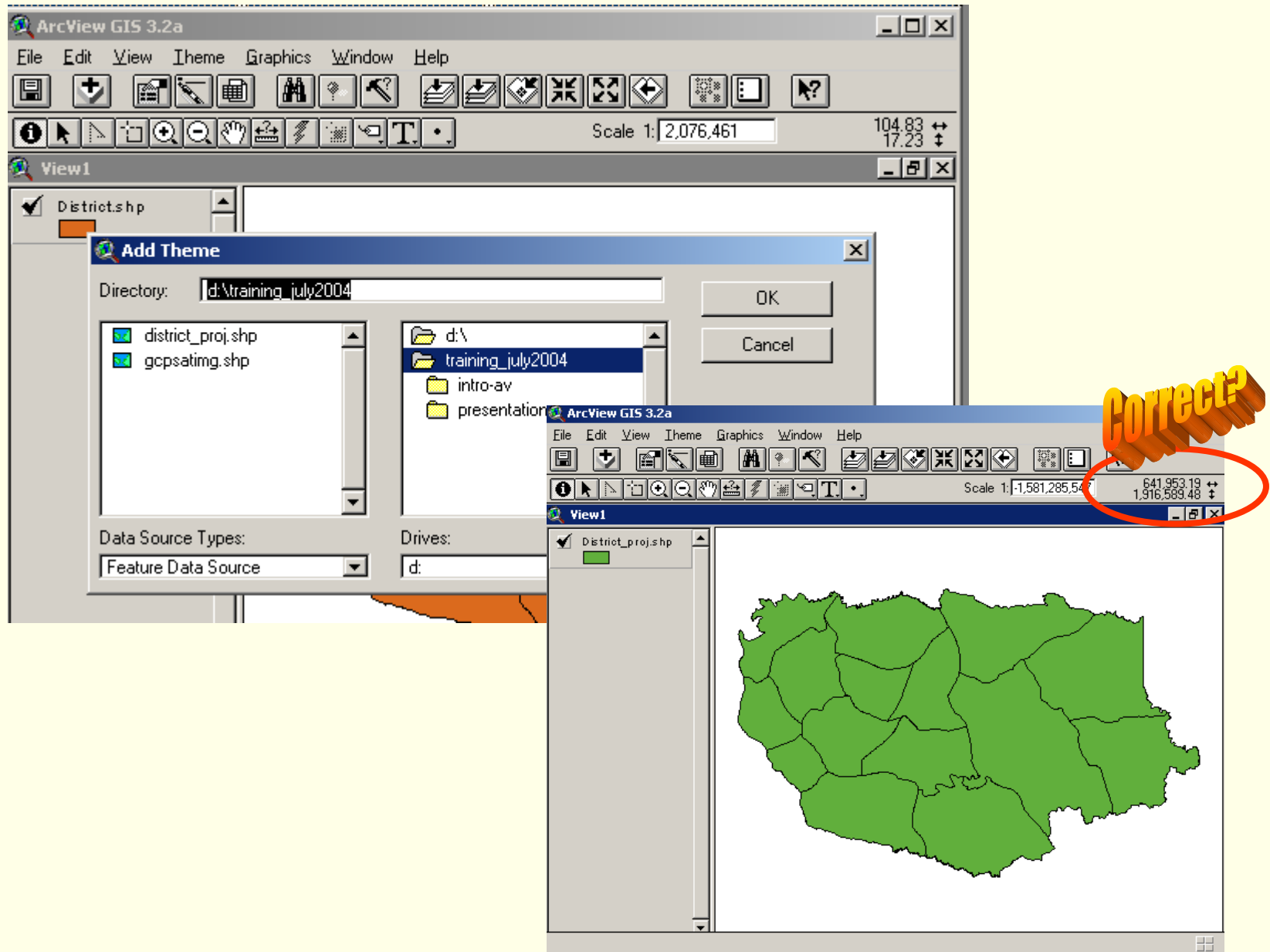




- Click Save
- Then Next
- ArcView Projection Utility Summary Page will appear
- Finish



➤ Add theme (district\_proj.shp)



# Hands-On Geo-Metric Correction & Raster to Vector

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# *Hands-On*

- **Geometric Correction**
- **Raster to Vector conversion**

# Geometric Correction

*Assume you have Satellite image as a base and you need to create data from scanned map, now you have to set geocorrection for your scanned map in order to work with other data layers.*

*Extension: Image to Map World File Creator uses to register the coordinate system with Ground Control Point*

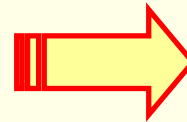
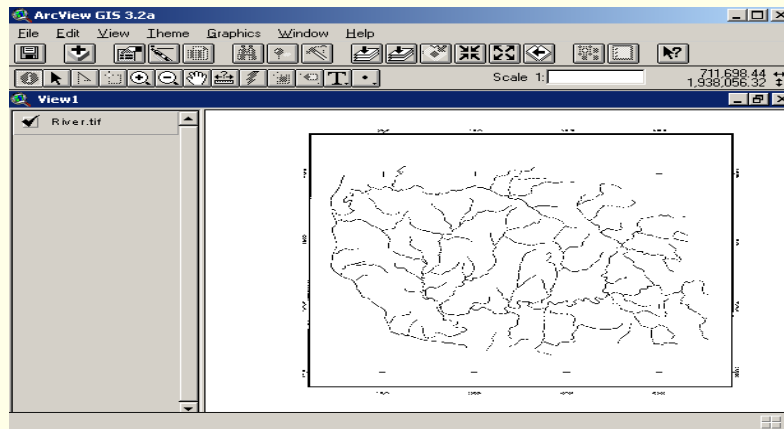
- I. Scanned Map ----- Image to be rectified
- II. Landsat Image ----- Based Map
- III. GCP from map to be rectified as “gcpmap.txt”
- IV. GCP from Based Map as “gcpsatimg.txt”



# How to get GCP from the map

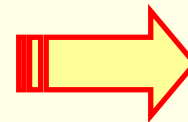
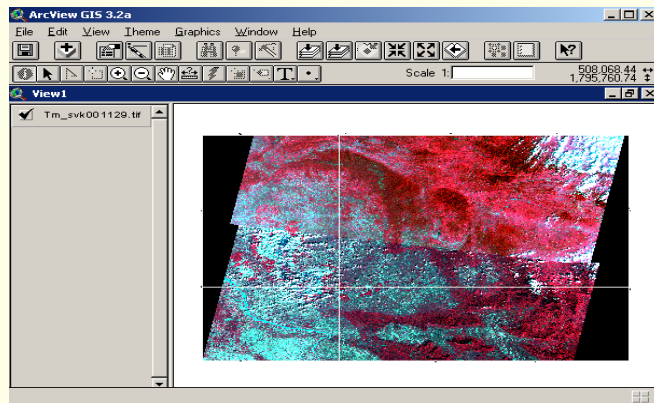
**FYI: Read the coordinate on View Window and save in notepad as txt file**

**The marks will be the same point on both map need to be rectified and based map**



gcpmap.txt - Notepad  
File Edit Format Help

| ID  | X_TIC   | Y_TIC   |
|-----|---------|---------|
| 101 | 2059.85 | 3520.25 |
| 102 | 6310.85 | 3520.25 |
| 103 | 2059.85 | 2104.80 |
| 104 | 6310.85 | 2104.80 |
| 105 | 4884.85 | 3520.25 |
| 106 | 3477.85 | 2104.80 |

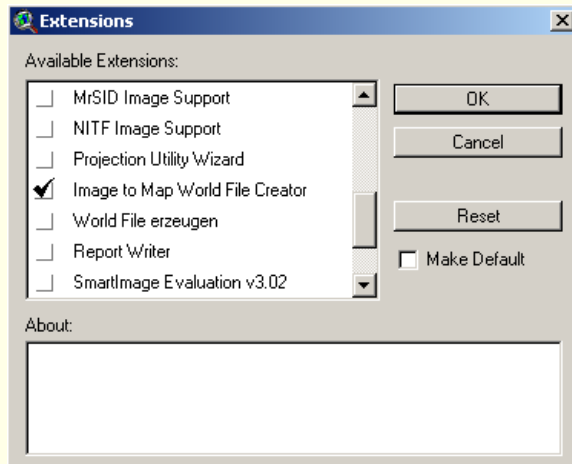
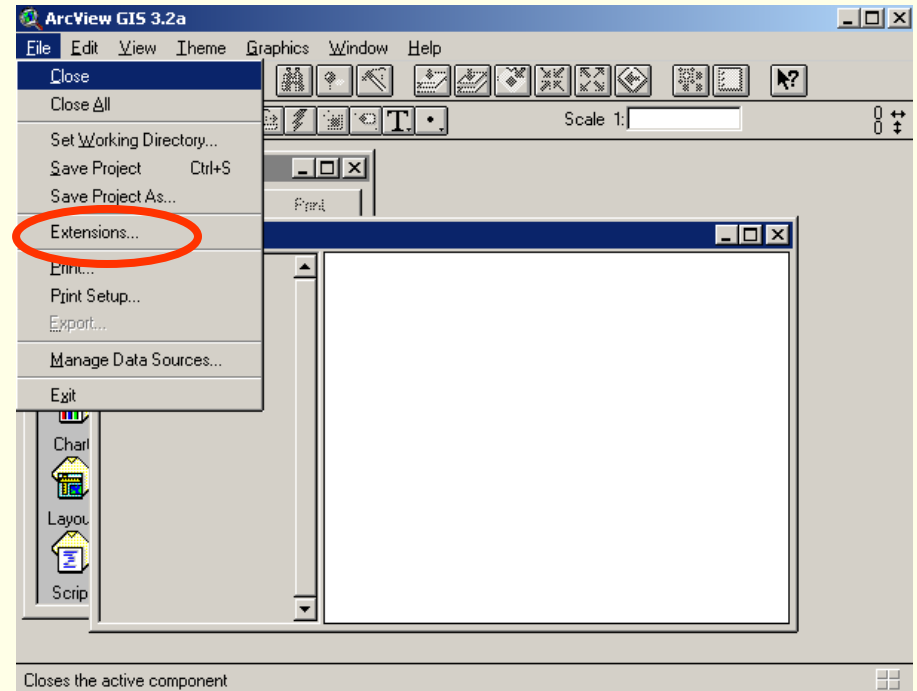


gcpsatimg.txt - Notepad  
File Edit Format Help

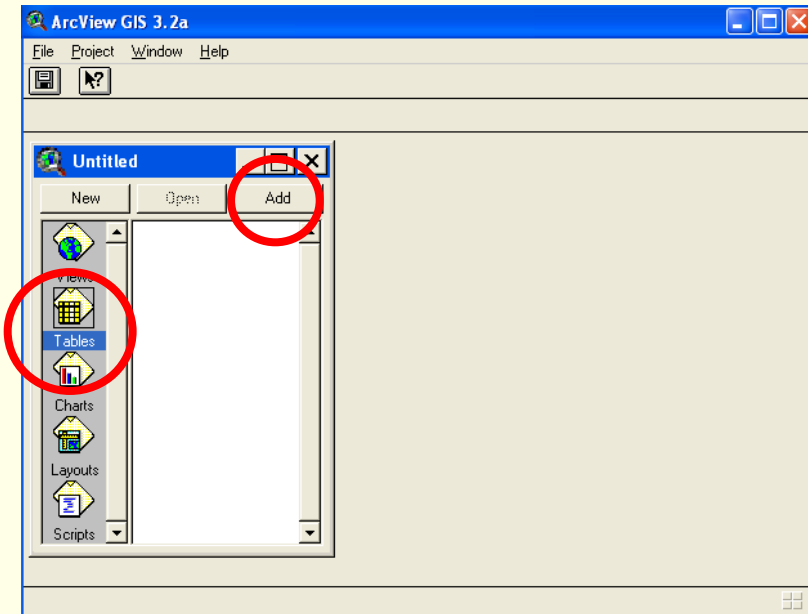
| ID  | X_TIC  | Y_TIC   |
|-----|--------|---------|
| 111 | 500000 | 1850000 |
| 112 | 650000 | 1850000 |
| 113 | 500000 | 1800000 |
| 114 | 650000 | 1800000 |
| 115 | 600000 | 1850000 |
| 116 | 550000 | 1800000 |

**FYI: Nothing to do with this slide, gcpmap.txt and gcpsatimg.txt are in d:\training\_july2004**

➤ From the File Menu, Extension



➤ Click Image to Map World File Creator

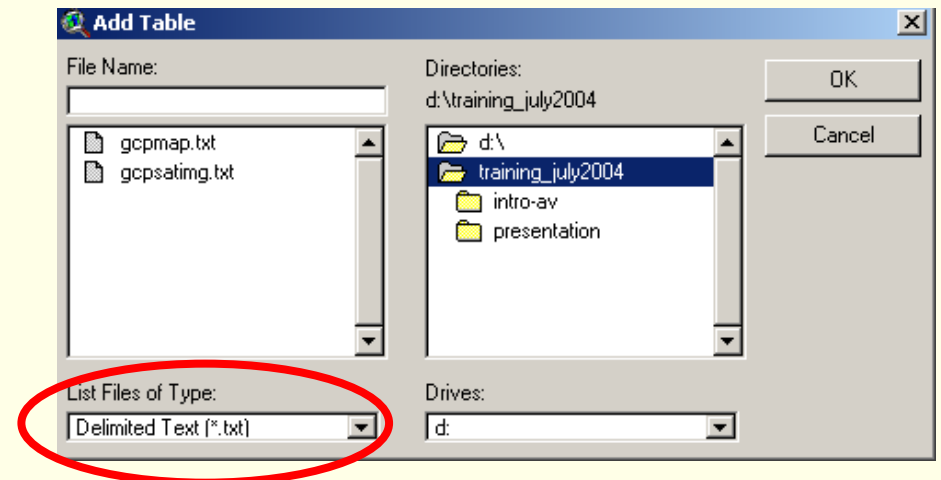


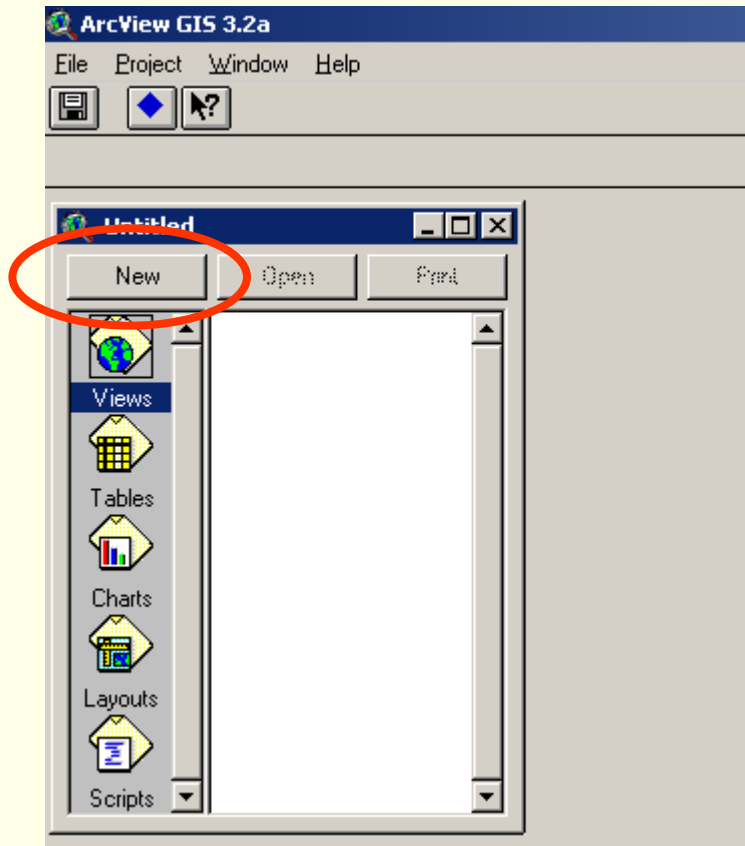
- **Make Project Window Active**
  - **Select Table Icon**
  - **Click Add Button to Add**
- “gcpsating.txt” (based map)**
- **Select File Type from List Files of Type as Text**

- **Go to Directory that you stored file**
- **Click gcpsating.txt)**

The screenshot shows a text file named 'gcpsating.txt' with a table of coordinates. The table has three columns: 'id', 'X\_coor', and 'Y\_coor'. The data is as follows:

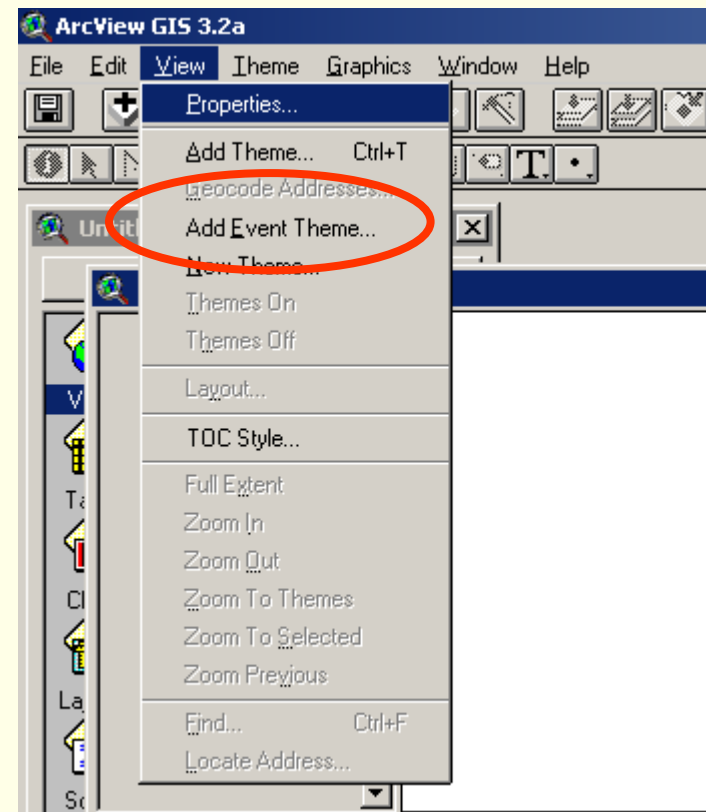
| id  | X_coor | Y_coor  |
|-----|--------|---------|
| 111 | 500000 | 1850000 |
| 112 | 650000 | 1850000 |
| 113 | 500000 | 1800000 |
| 114 | 650000 | 1800000 |
| 115 | 600000 | 1850000 |
| 116 | 550000 | 1800000 |





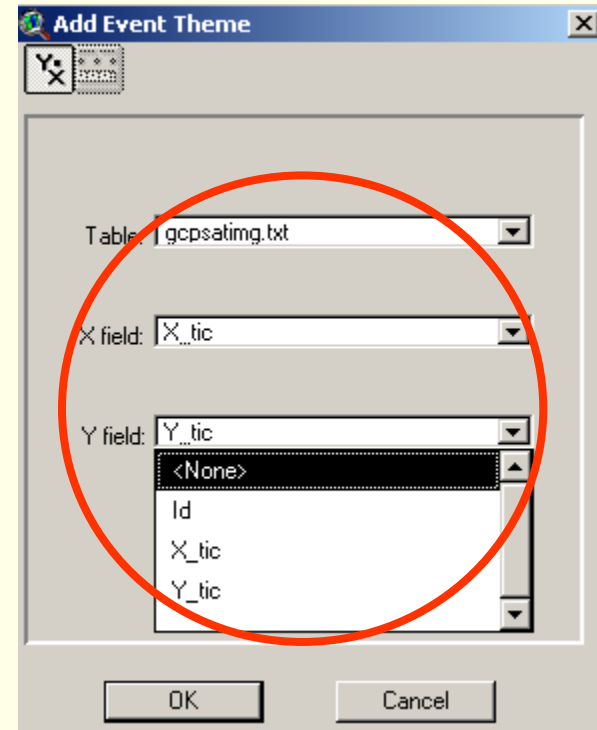
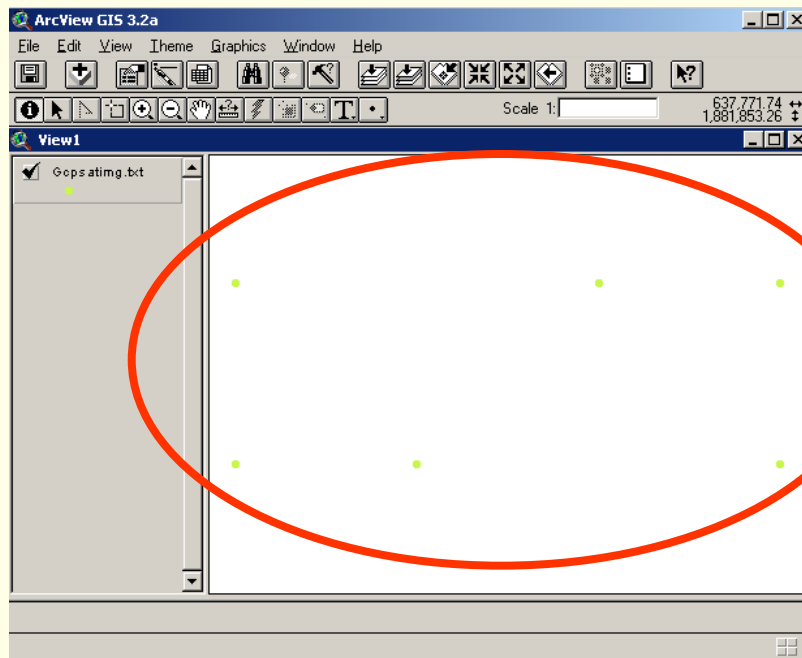
- **Make Project Window Active**
- **Select New View**

- **Go to View Menu, Click Add Event Theme**

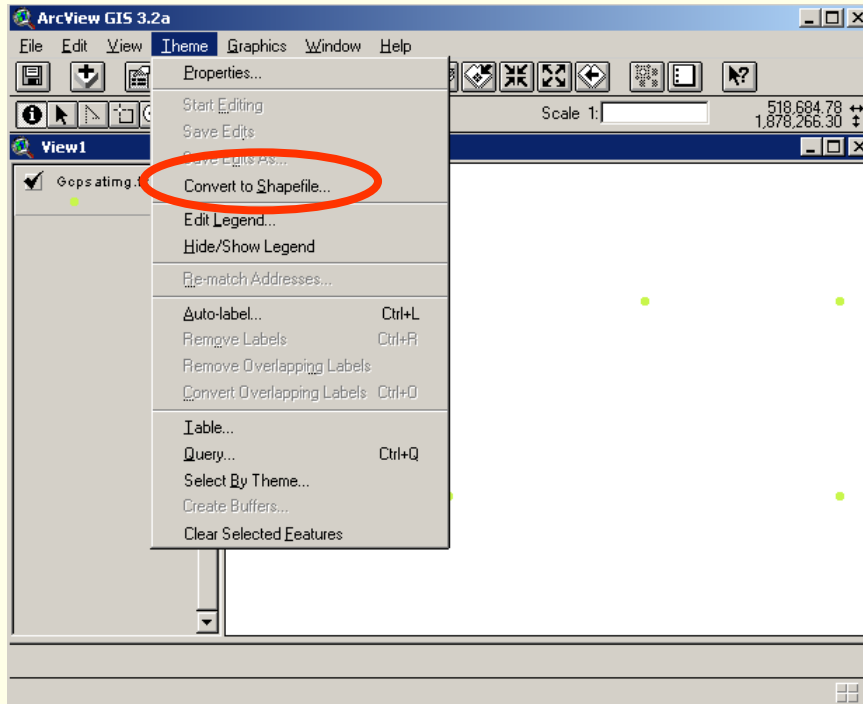


➤ **Select**

- **Table as gcpsatimg.txt**
- **X field: X\_tic**
- **Y field: Y\_tic**

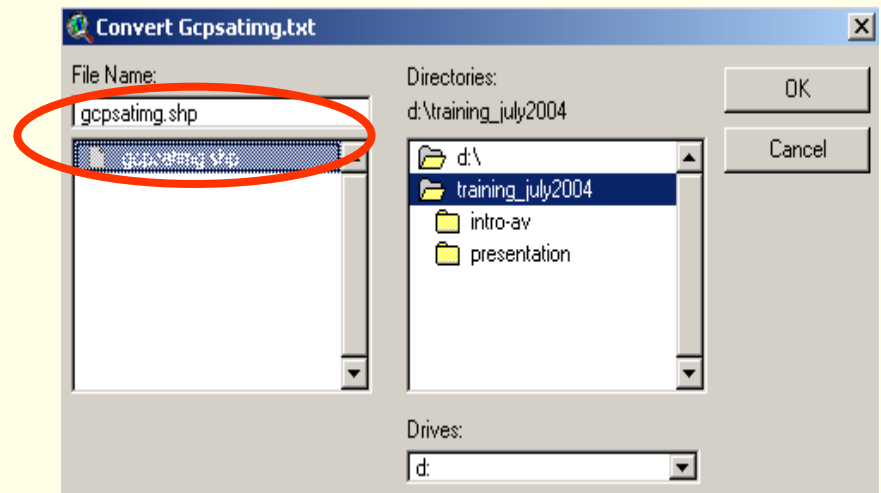


- **Point correspond to X, Y  
Coordinate will appear in View**

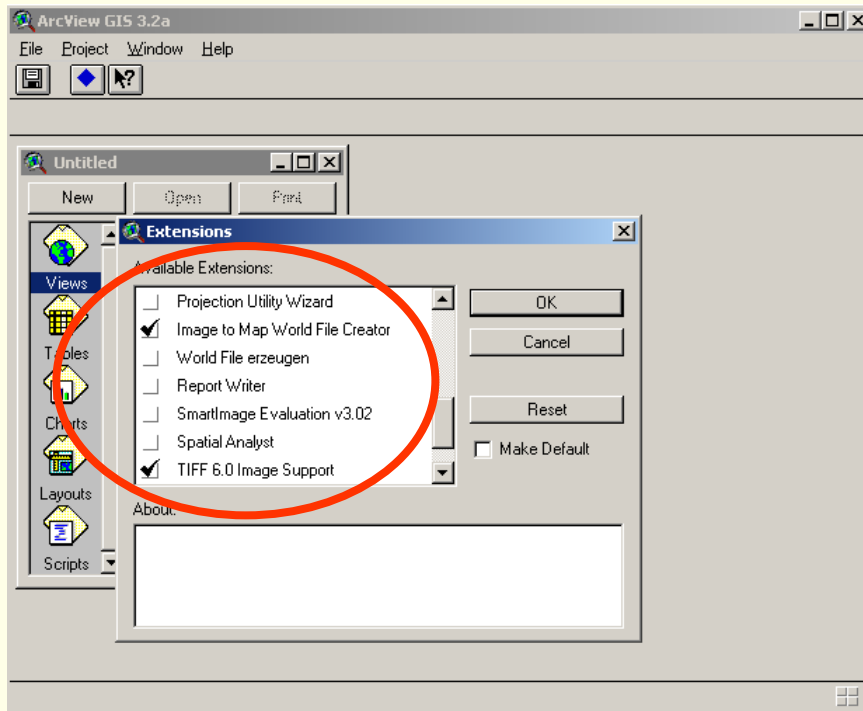


➤ Go to Theme Menu, Click Convert to shapefile

- Save as gcpsatimg.shp
- Click OK
- Close all

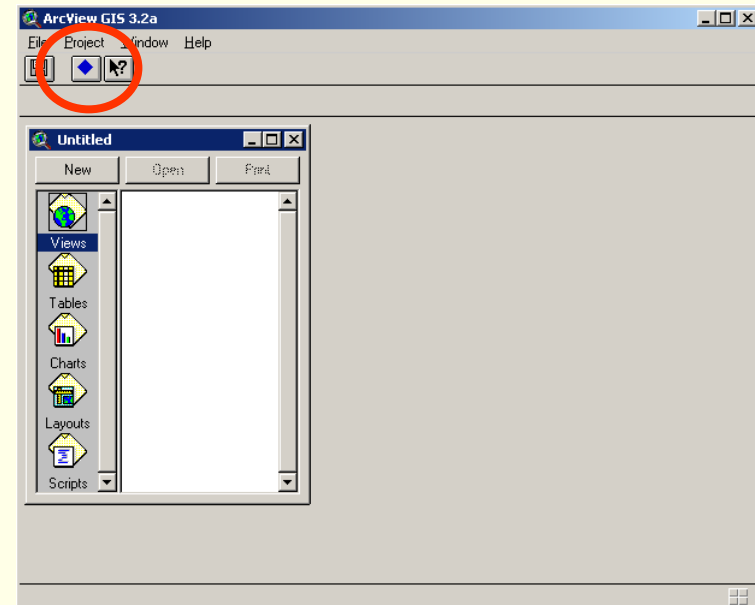


**Note: Check Point with Coordinate System on the View whether it is correct**

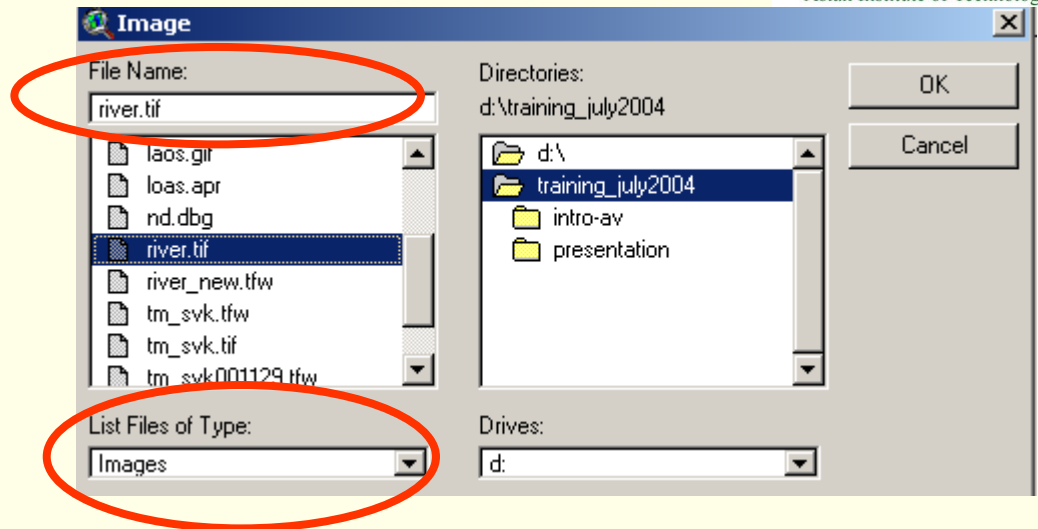


- Open New Project
- Go to File, Extension check
  - Image to Map World File Creator
  - TIFF

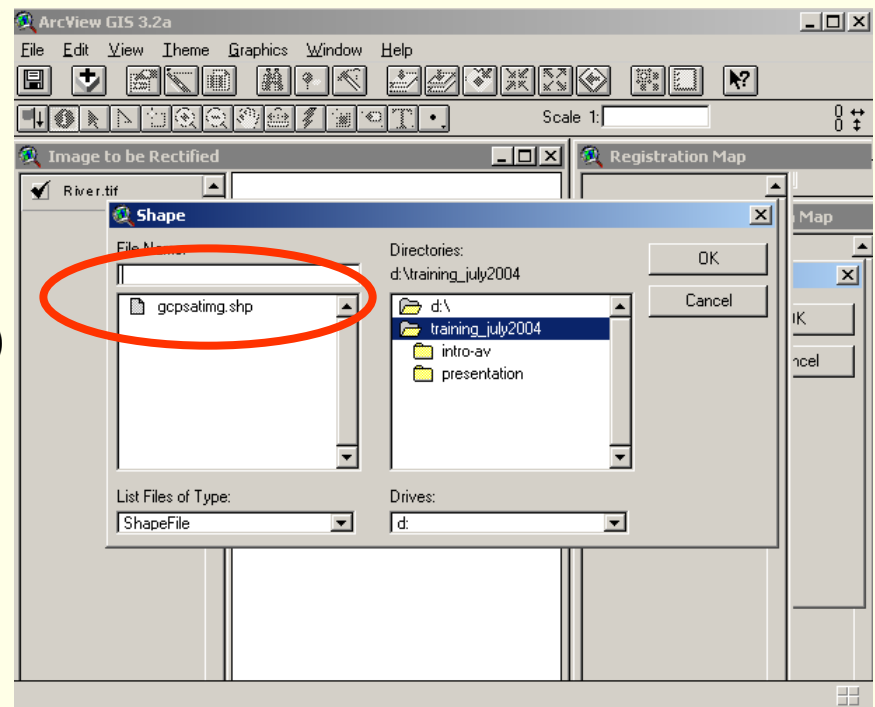
➤ Click 



➤ Dialog will appear, Select the map that you want to change the coordinate (river.tif)

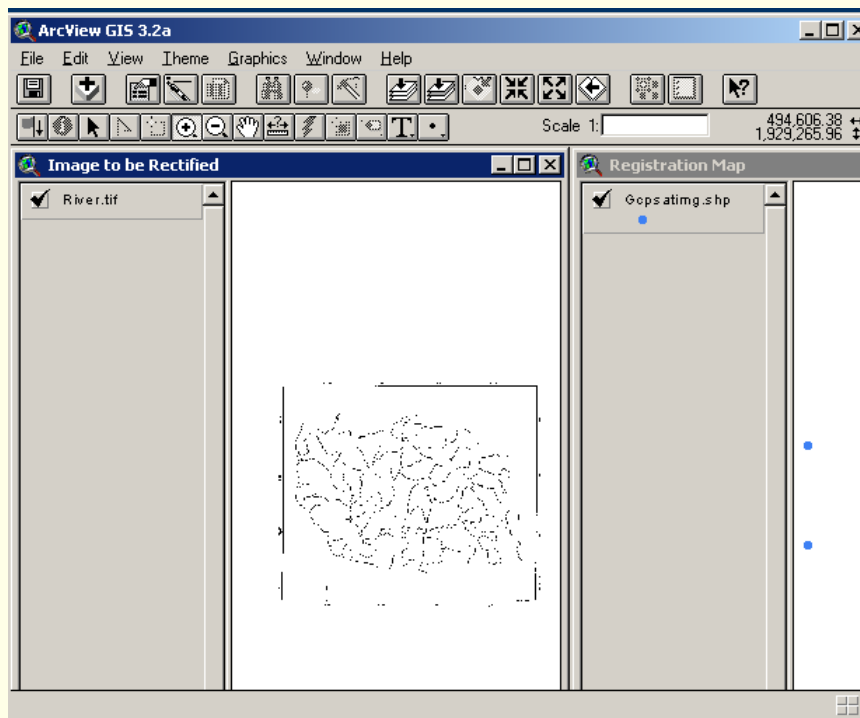
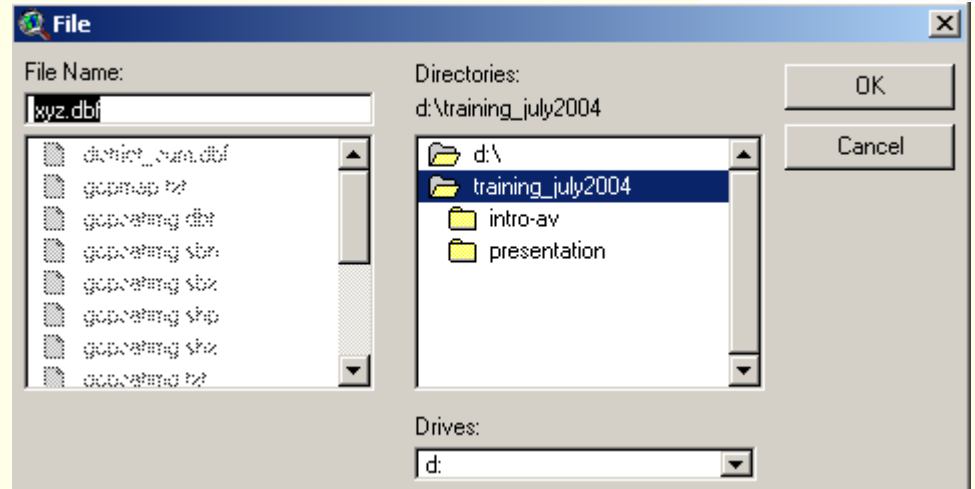



➤ Select Point shapefile (gcpsatimg.shp)

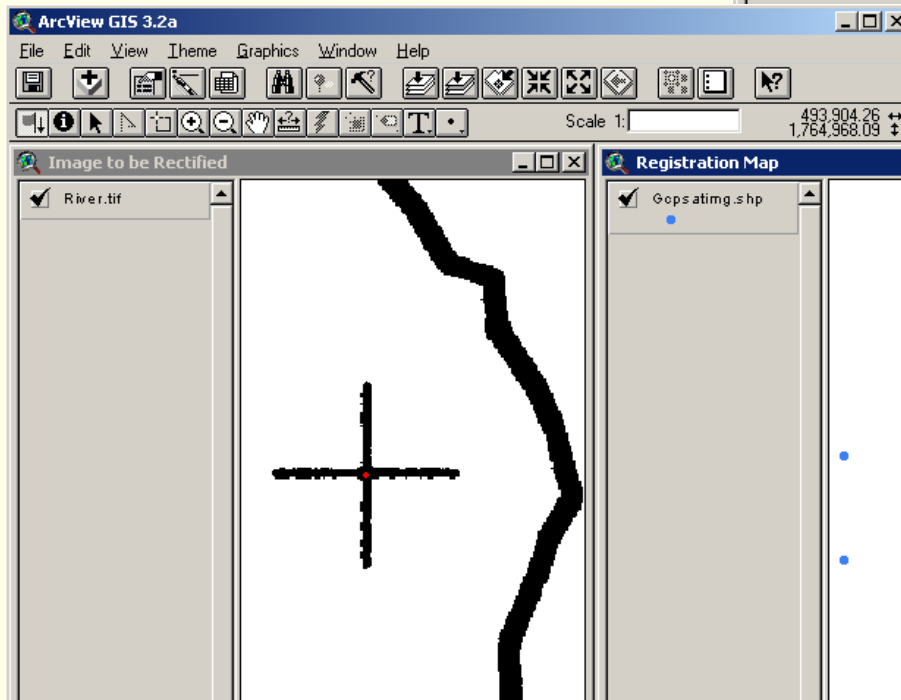
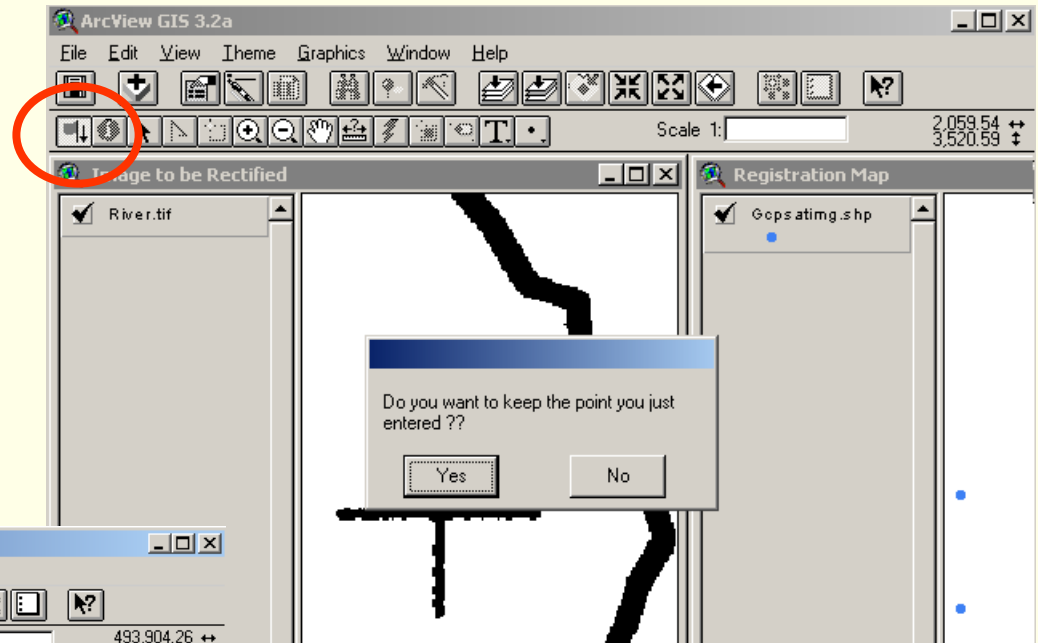





- Save as xyz.dbf
- Click OK

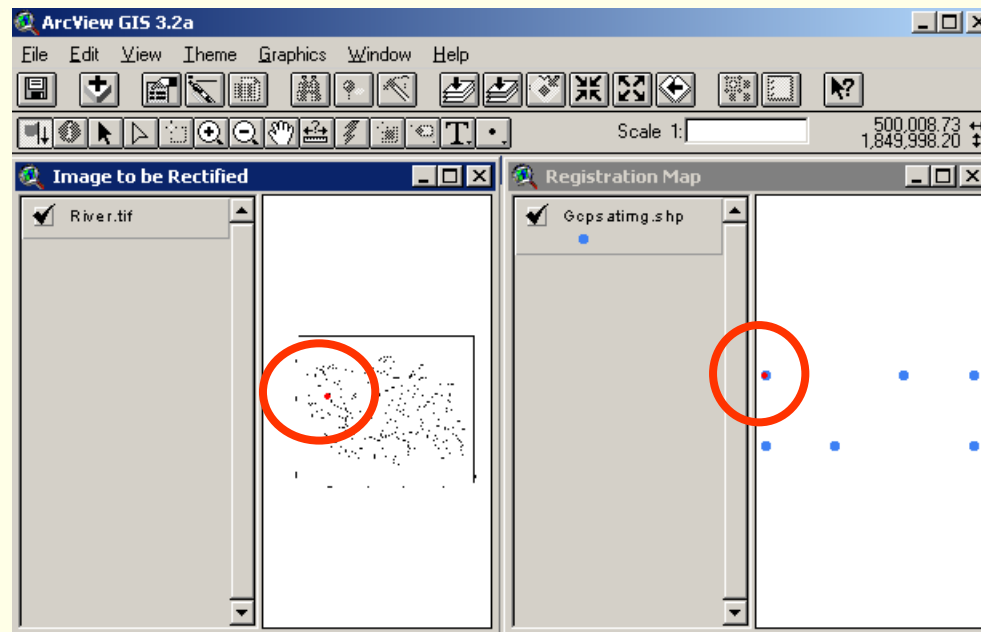
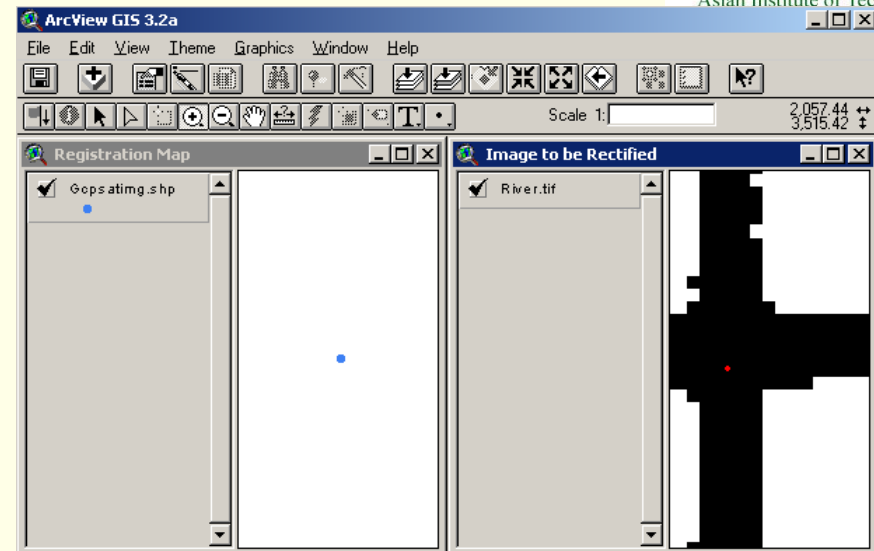


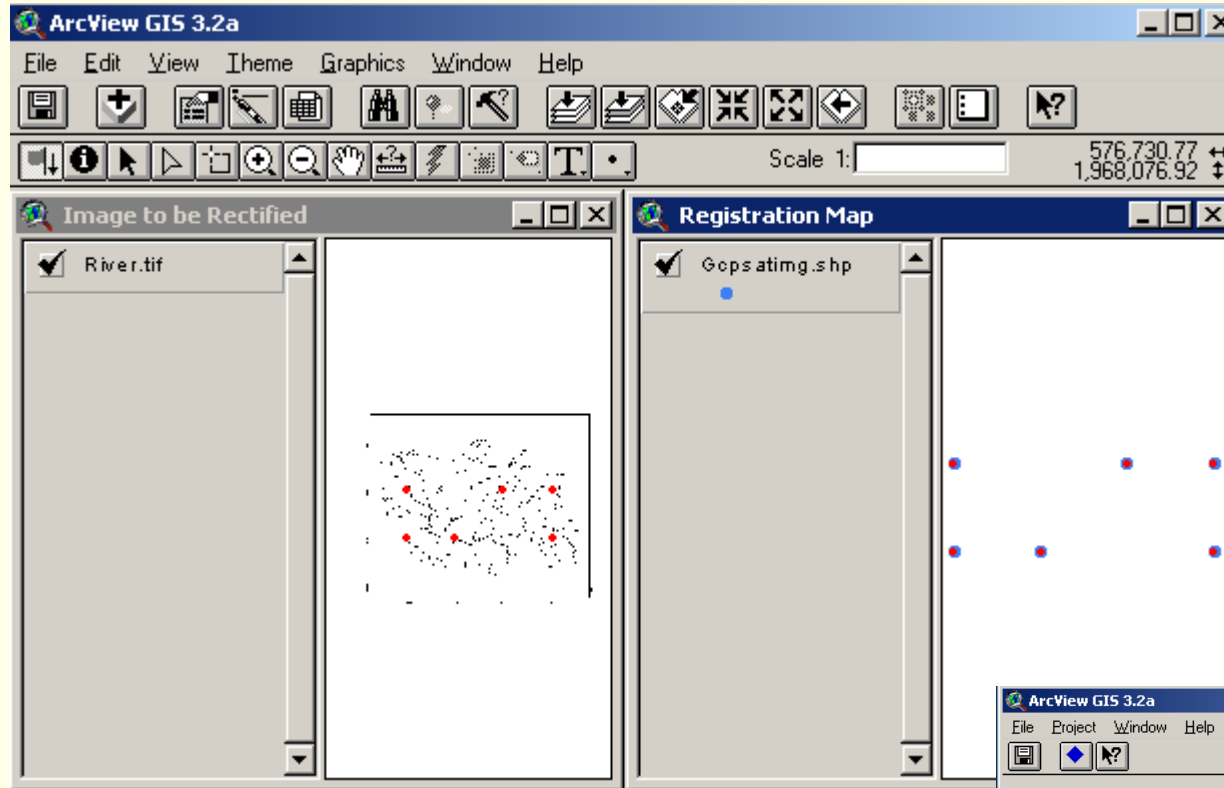
- From Image to be Rectified View, Click  to pick Ground Control Point
- Go to First Point and click at the point
- From Dialog, Click Yes



- Red Spot will appear

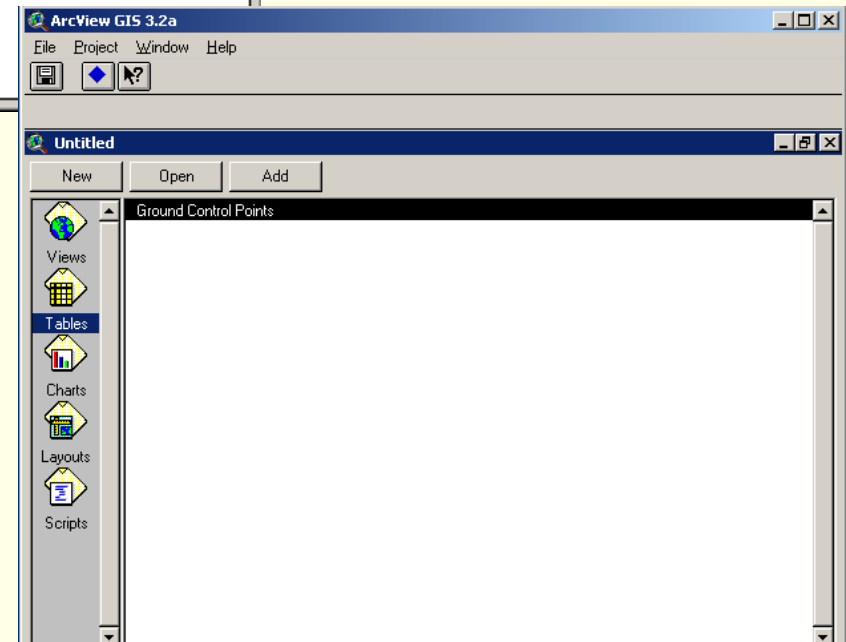
- Go to Registration View,  
Click  to pick Ground  
Control Point
- Go to First Point and click  
at the point
- From Dialog, Click Yes
- Red Spot will appear



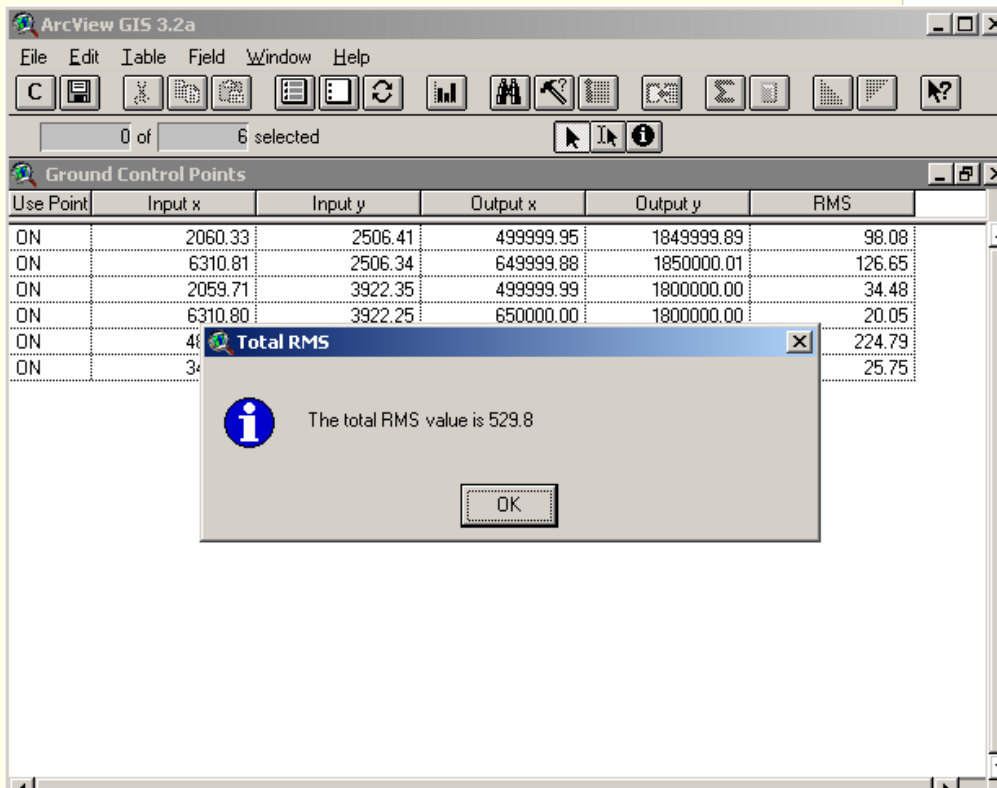
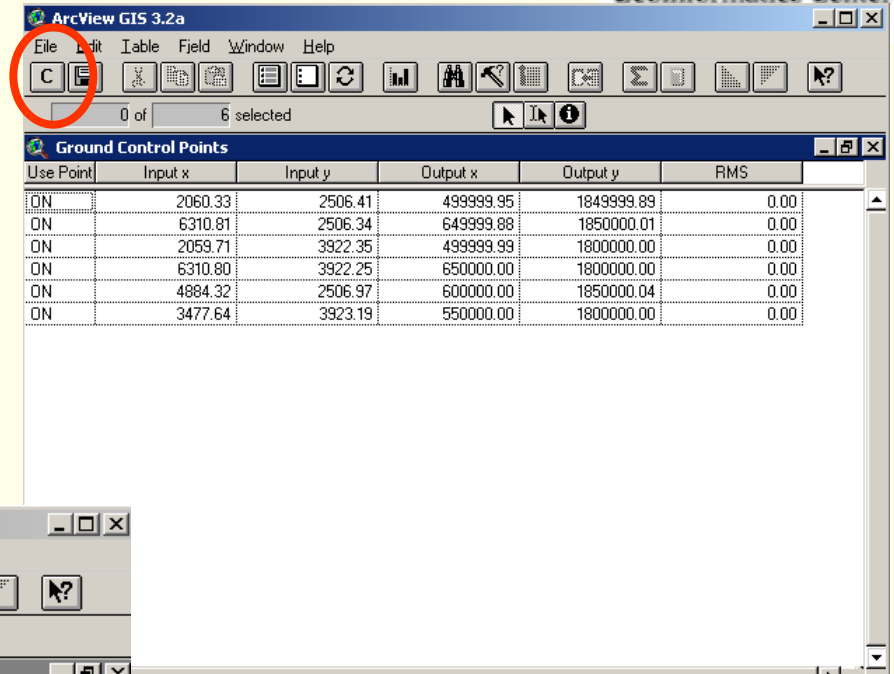


➤ finish 6 points on both Views

➤ Then Minimize views and Open Ground Control Points table




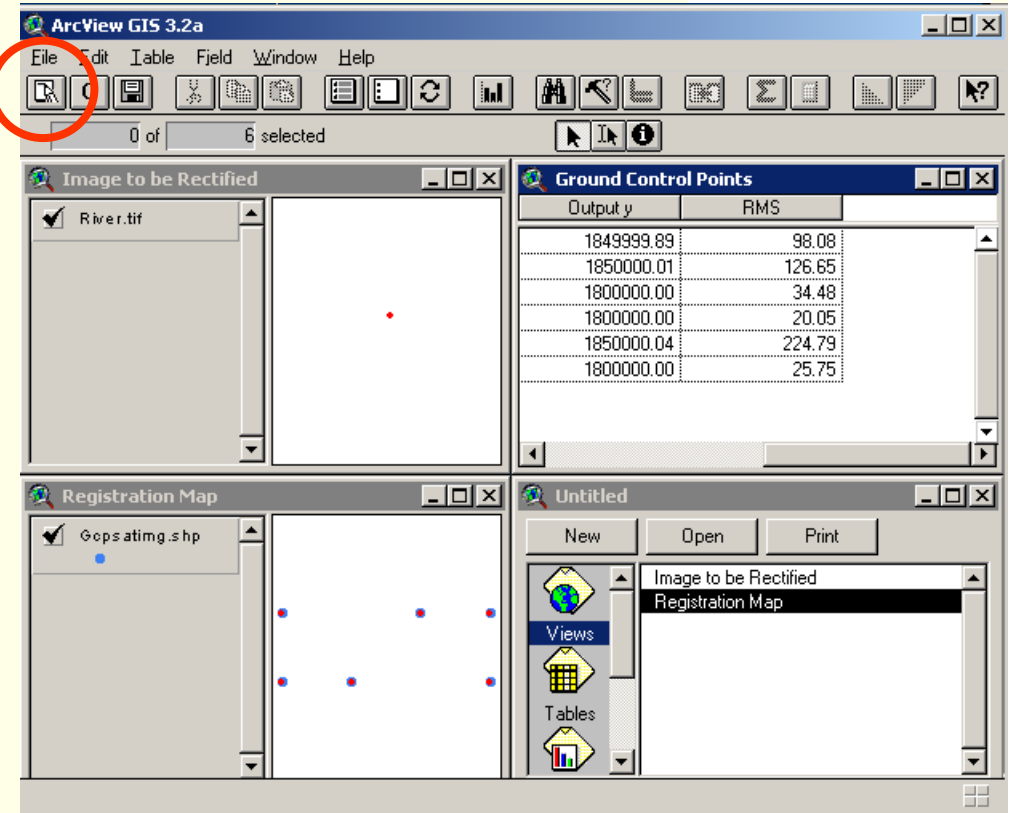
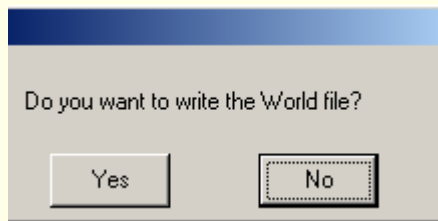
- Ground Control Points table appear,
- Click **C** to calculate RMS value
- Total RMS value will appear, Click Ok



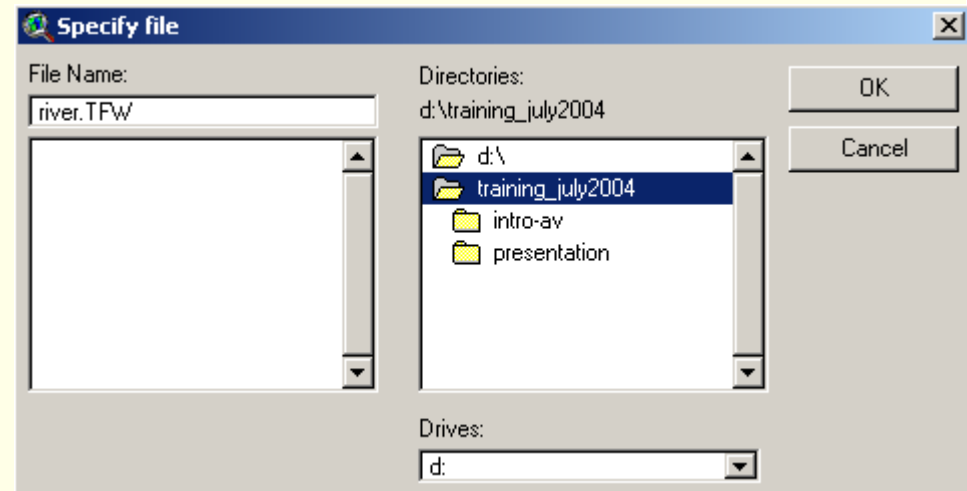
- You can also edit the point to less the error



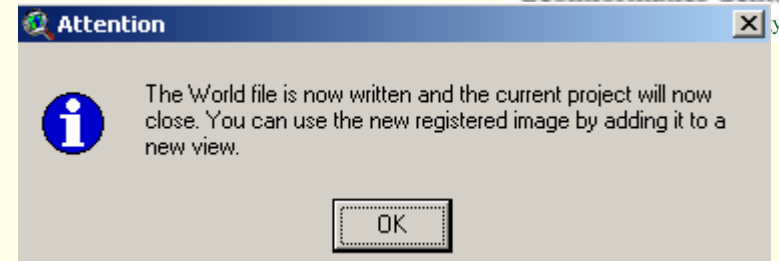
- IF you satisfy the error, Click  to write the file to disk
- Dialog appear, Click Yes



- Specify File name “river.TFW”
- Click OK

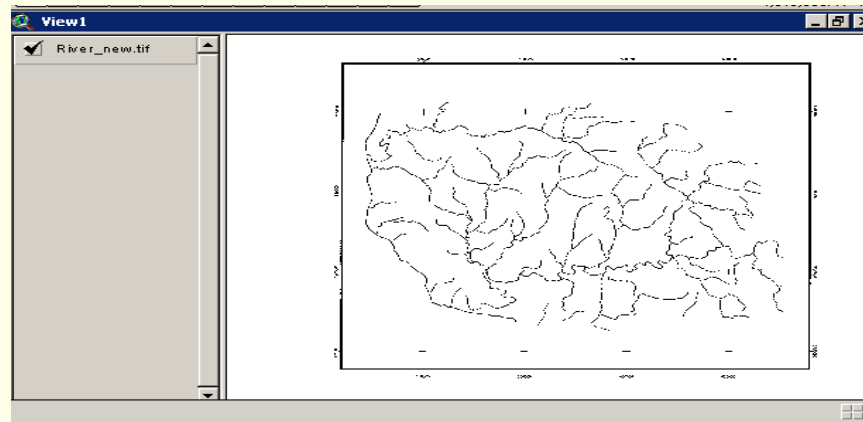
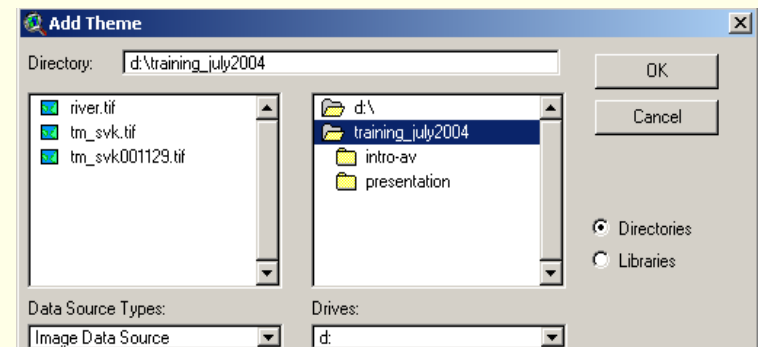


- The Dialog appear, confirmed --- Click OK

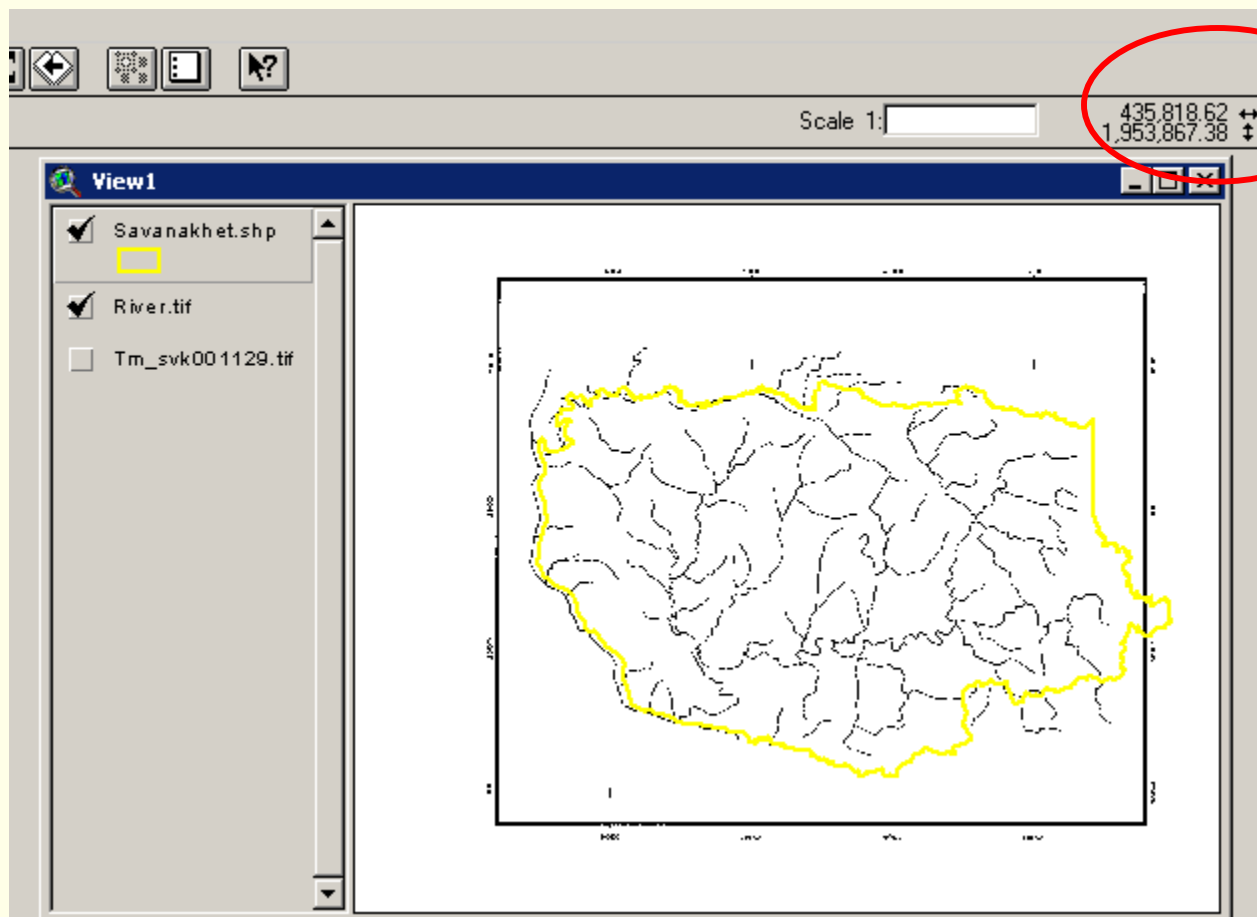


*Your "tif file" will be ready to open as the coordinate system that you specified*

- Open New View
- Add theme
- Select Data Source type "Image Data Source"
- Select "river.tif"



# Projected Image

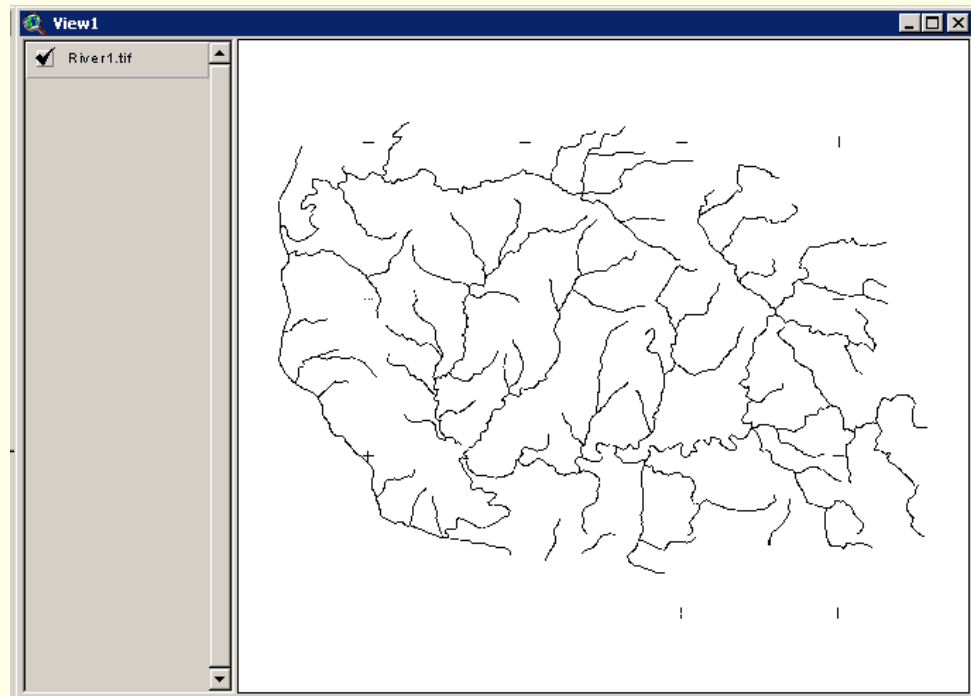
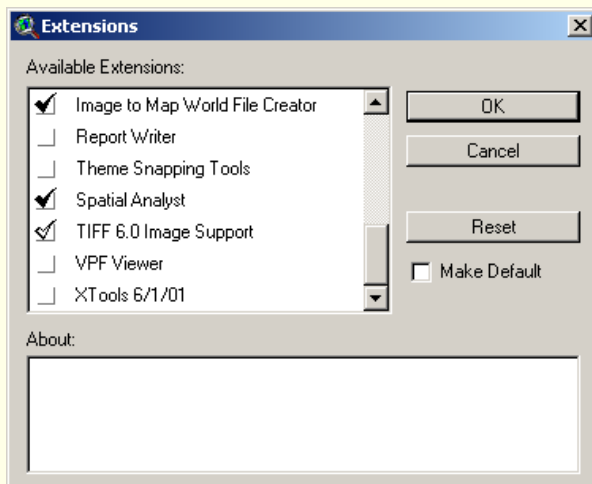




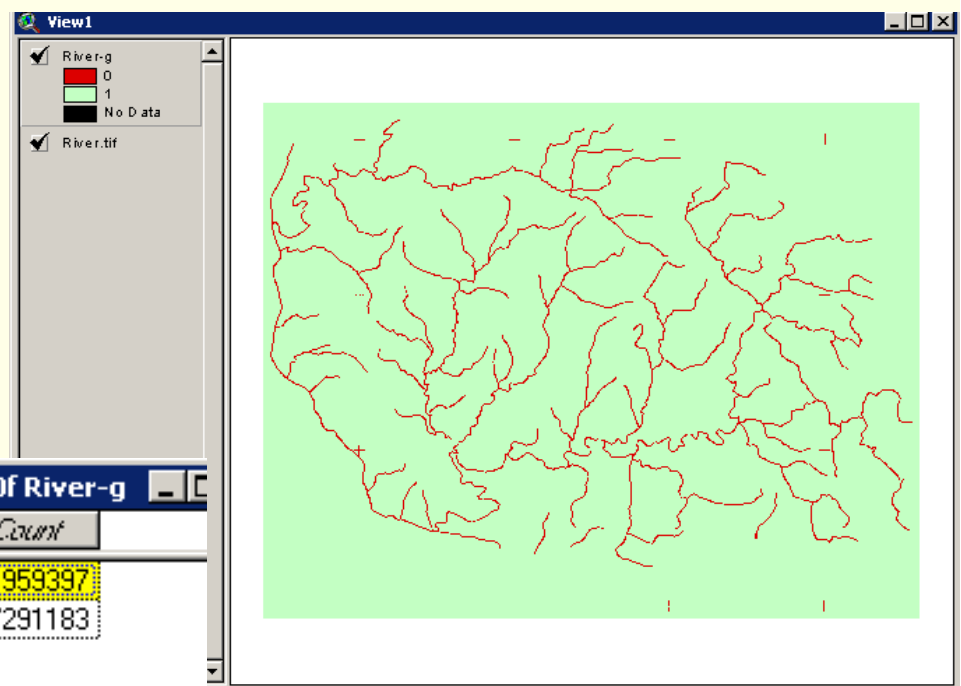
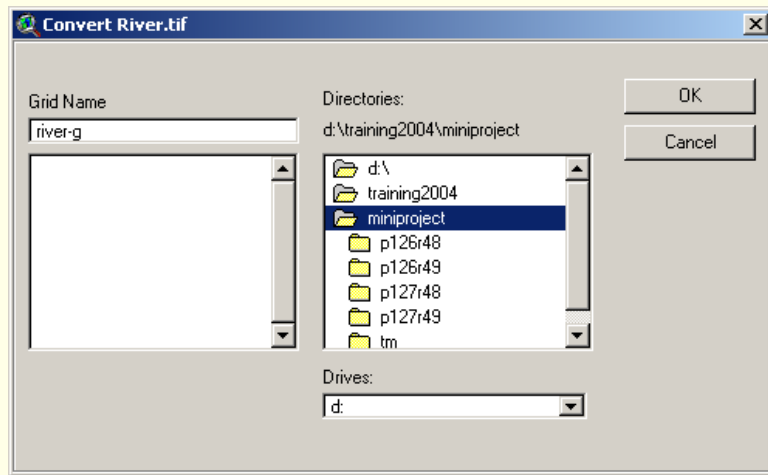
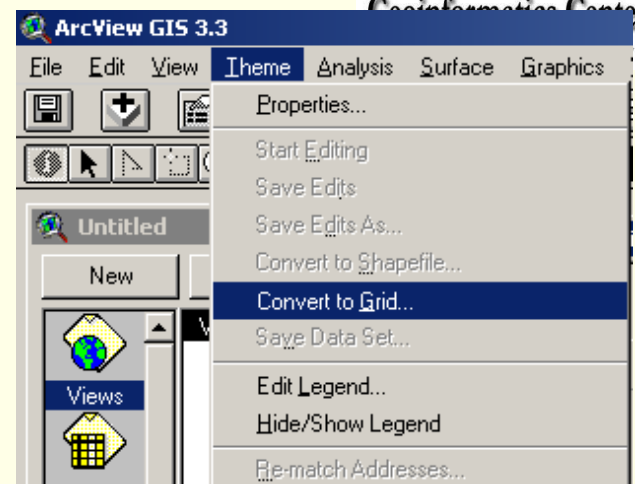
# Raster To Vector conversion

**This process we will use the projected scanned image from previous steps as input file to be converted to vector file.**

- Open new view,**
- Add image “river.tiff”**
- Check box in Spatial Analyst**
- At Extensions in File menu**



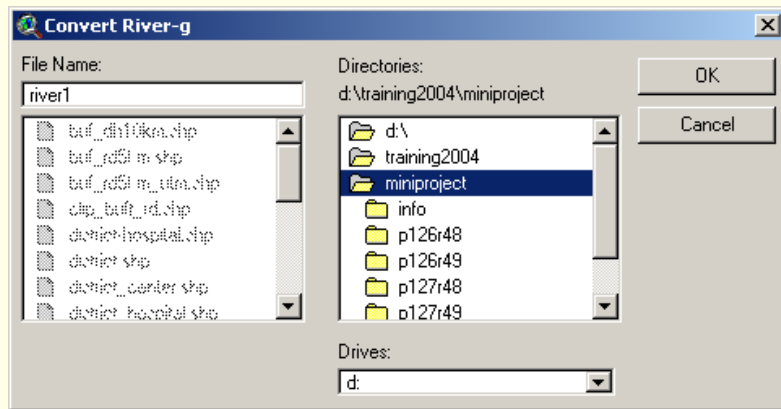
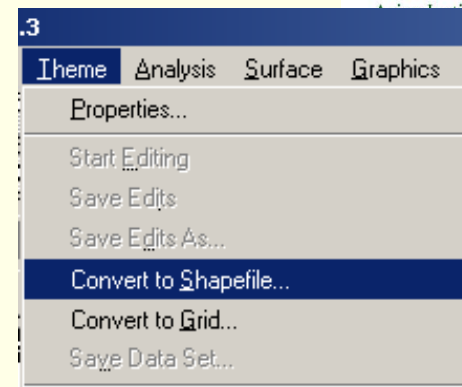
- Activate "River.tiff", select Covert to Grid in Theme menu
- Save new grid file name "river-g" at your working directory
- Click OK



| Value | Count    |
|-------|----------|
| 0     | 959397   |
| 1     | 27291183 |

- Open attribute table of "river-g" and click Select at "0" value

**-Select Convert to Shapefile  
In Theme menu**



**-Define a new shape file's name  
In the working directory  
-Add the new theme and display**

