

Hands-On MapGuide Exercises

March 10, 2011

1. Getting started (2 minutes)

- a. Use the provided links on the *gis.pima.gov* home page to navigate to *gis.pima.gov/maps/mapguide/*
- b. Notice the maps available on that page.
- c. Display the Main MapGuide Map.

2. Accessing commands (2 minutes)

Try a few commands with the tool bar and right-click menu.

3. Moving around (I.E. Navigating) (10 minutes)

- a. Practice zooming in and out.
- b. Use the Zoom tool and click to zoom in and zoom out by a factor of two.
- c. Zoom by dragging a rectangle.
- d. Try Zoom Previous.
- e. Try zooming by rolling the mouse wheel.
- f. Use the pan tool to follow a road.
- g. Try panning by clicking the mouse wheel and dragging.
- h. Zoom in close to where you live.
- i. Get lost zooming way in somewhere in the desert. *Unzoom* all to start over.
- j. Measure a few things with single segment and multiple segment measuring.

4. Viewer preferences (3 minutes)

- a. Change preferences to activate all Status Bar items, if they aren't already.
- b. View *Units* options and choose Latitude, Longitude.
- c. Observe the map scale and map width on the status bar.
- d. Zoom in and out and see the scale and width change in the status bar.
- e. Move the mouse over the map and see the latitude, longitude change.

5. Using bookmarks (5 minutes)

- a. Zoom to where you live, and turn on a layer such as zoning or orthophotos.
- b. Make a bookmark for where you live.
- c. Exit the web browser, start up again and use the bookmark.
- d. What happened to the layer you had turned on?
- e. Make at least one more bookmark.
- f. Delete one or more bookmarks.

6. The map legend and map layer order. (15 minutes)

- a. Complete this exercise in the middle of the city where you are certain to find plenty of parcels and other map features. Remember that if you want to get the layers back to the default (streets and parcels) you can use the browser's "refresh" button to start over.
- b. Zoom way in and see the alphabetic grouping of layers in the legend
 1. Points
 2. Lines
 3. Transparent Polygons
 4. Translucent Polygons (or hatched)
 5. Solid Polygons (color filled)
 6. Imagery
- c. Click in the legend to give it "focus" (no gray line around map).
- d. Search for a few layers by typing the first one or two characters (i.e. parcels, subdivisions or zoning)
- e. Zoom out and notice that there are fewer layers available.
- f. Zoom in within the city (closer than 1:15,000), turn on the Sanitary Sewer Pipes layer, then zoom out (beyond 1:15,000) and look for Sanitary Sewer Pipes in the legend.
- g. Why can't you see Sanitary Sewer Pipes in the legend?
- h. Zoom in and turn off Sanitary Sewer Pipes.
- i. Zoom in (about 1:150,000) within the city and turn on "Geology" and also "School Districts". Which do you see and why?
- j. Turn off "Geology" to see the School Districts layer. Turn off School Districts.
- k. Zoom in (closer than 1:25,000). Parcels are on by default. Turn on and view the Subdivisions layer.
 - l. Why are Subdivisions visible under Parcels?
- m. Leave Subdivisions on and turn on "Stress Index 2000". Why can you see the stress index?
- n. Leaving those layers on, turn on "2002 PAG Color Orthophoto Imagery". Why can't you see it?
- o. Turn off "Stress Index 2000" and observe the change, then turn off Subdivisions and observe the change.

7. Orthophotos (10 minutes)

- a. Experiment with the various years of photos on the Main Map, realizing they cover each other. It's best to turn off each orthophoto layer after you use it.
- b. Measure your house using the "All PAG Color Orthophoto Imagery" layer.
- c. Use the "Oblique Aerial Photos" drop-down tool to see angled views of your house from the north, south, east and west.
- d. Zoom to a hilly area, such as the Catalina Mountains.
- e. View the Hillshaded Relief Map.
- f. View the "USGS Quad Maps".
- g. Go to the Arizona MapGuide Map and zoom in to an area you know, preferably outside of Pima County. See the "2007/06 USGS (NAIP) Natural Color Imagery" orthophoto for that area.
- h. If you have time, try the other orthophotos on the Arizona map.

8. Identifying features (20 minutes)

- a. Use your cursor to view map tips on parcels, streets, and the street area between parcels.
- b. Choose a few other layers (one at a time) and observe the map tips.
- c. Zoom in over the city area and turn on the Libraries layer.
- d. Find a library and zoom in close so you can see the parcel the library is on as well as the library symbol.
- e. Observe the map tip on the library symbol and the parcel. The library layer is over parcels so its map tip shows rather than the parcel's map tip.
- f. Turn off the Library layer.
- g. Zoom in fairly close and turn on Parcel Addresses.
- h. Notice how the map tip differs on the address itself and the surrounding parcel. The address may make it difficult or impossible to get the map tip for small parcels.
- i. Turn off Parcel Addresses.
- j. Turn on the Section Grid layer. Notice the labels that are on by default.
- k. Turn off the Section Grid layer.
- l. Zoom in close enough to see all streets and turn on "Streets – All – With Names"
- m. Turn off "Streets – All – With Names"
- n. Zoom in close to parcels.
- o. View layers "Parcel Addresses", "Parcel IDs", and "Parcel Lot Numbers" one at a time. Then view them together. What happens?
- p. Turn off "Parcel IDs", and "Parcel Lot Numbers" as well as "Parcels (Landbase)". Leave "Parcel Addresses" turned on so you can see only the addresses.
- q. Use Internet Explorer's Refresh tool (or select View, Refresh) to re-load the map, resetting layers back to the default streets and parcels.
- r. Zoom in until parcels display (1:25000 or closer), and then turn on Subdivisions.
- s. Move the cursor over parcels in a subdivision. What map tip do you get?
- t. Turn off "Parcels - Pima". Now what map tip do you get? (Even though you could see through the parcels, they were still "on top" of Subdivisions).
- u. Turn on "Subdivision Names" (1:20000 or closer), observe the change, and then turn off "Subdivisions". Notice that the names display separately from the Subdivisions layer that shows the subdivision outlines.
- v. Refresh the map to return to default layers.

9. Getting Help (3 minutes)

- a. Click on the "Tips and Help" link just above the map window.
- b. Read the topic list at the top of the "Tips and Help" to see what's included.
- c. Read the "Getting MapGuide help" section and try three of the options for getting help: "Tips and Help" link, Question mark map tool, right-click Help.

10. Double-clicking map features linked to other data (10 minutes)

- a. Double-click on your house's parcel and a few other parcels to see parcel details, dismissing each new window with the "X".
- b. Review the available links on the parcel detail page.
- c. Click on "Assessor Parcel Detail" under "Information for this parcel" and see what's there. Use the browser's "back" button to return to the parcel detail page.
- d. Click on "Subdivision Plat Map" to view the plat map links. (If there is no plat map for the parcel, try another parcel in a subdivision.)
- e. Try a few other links on the parcel detail page.
- f. Turn on the Subdivisions layer. Double-click on the subdivision to see the subdivision plat map. (If parcel detail was displayed, turn off the Parcels layer first.)
- g. Try double-clicking on other layers that show the "pointing hand" such as Annexations, or Wards - Tucson.

11. Selecting map objects (5 minutes)

- a. Zoom in until you see parcels.
- b. Observe the grayed-out “View Report” tool (single paper icon above the map window)
- c. Click on a parcel and use shift-click to add and remove selections from your selection set.
- d. The “View Report” tool should have turned darker.
- e. Pick the “View Report” tool (or right-click View, View Reports...) then choose and view the Parcel Summary report for your selected features.
- f. Dismiss the report (“X”) then use the Esc key to clear your selection.
- g. If Esc doesn’t work, right-click and choose “Clear Selected Objects”.
- h. Try more selections if you have time.

12. Advanced object selection (5 minutes)

- a. Select parcels by dragging a rectangle.
- b. Change the Selection Mode by right-clicking Preferences... and change the Selection Mode from Intersection to Centroid (or vice versa).
- c. Select parcels by dragging a rectangle over the same area as best you can.
- d. View and understand the difference between selections with Intersection mode and Centroid mode.
- e. Try right-click Select, Select Radius and right-click Select, Select Polygon.

13. Viewing reports (5 minutes)

- a. Select parcels and try the various parcel reports.
- b. Notice that the “Owner mailing addresses” reports are not suitable for making labels. (The number of lines varies for some addresses).
- c. Select several parcels and show the “Owner adr, situs and values (comma delimited with header)” report.
- d. Use File, Save As... to save as a text file with the .txt extension where you can find it on the hard disk.
- e. Open and view the text file you saved with Notepad to see what it looks like. (Start, Programs, Accessories, Notepad.)
- f. Pick “Tips and Help” at the top of the map and notice the available tutorials for making reports and mailing labels at the bottom of the Tips and Help page. (Read and practice them later.)

14. Parcel Information Search: Tabular lookup. Zoom to parcel. (5 minutes)

- a. Go to the main map page at gis.pima.gov/maps/mapguide/
- b. Pick “Search for a parcel” near the bottom of the page.
- c. Try each of the parcel searches: Taxpayer Name, Street Address Number, Parcel Code, and Detailed Street Address Search. If you don’t know a parcel code, use one of the example parcel codes.
- d. Search for a friend’s house, drill down to the parcel detail, and then zoom to that parcel by picking “Main map” under “Zoom to maps” on the parcel detail page.

15. Printing a map (7 minutes)

- a. Zoom to any location you want and turn on another layer of interest.
- b. Right-click, then select "Page Setup...". Check "Title" and change the map Title to your name.
- c. Without making any other changes to "Page Setup...", print the map with the right-click "Print Current View" option. An instructor will get the prints and pass them out.
- d. Right-click, then select "Page Setup..." to turn on all map options in the "Include" box. Type in your name as the title if it's not there already.
- e. Pick "Print Setup..." on that page to change the printer to landscape mode.
- f. Right-click "Print Current View" and print to send your map to the printer. An instructor will get the prints and pass them out.
- g. Compare your two printouts and see how you can have the map fill the page by using landscape mode and turning off "Page Setup..." map options.

16. Printing to scale (5 minutes)

Read "Printing to Scale" in the "Tips and Help" and try printing to scale.

17. Copy to clipboard and copy as URL (10 minutes)

- a. Copy a map with right-click "Copy, Copy Map" to the clipboard and paste it into the Paint program. (Start, Programs, Accessories, Paint.) Try annotating the image.
- b. Start a new WordPad document (Start, Programs, Accessories, WordPad). Type a couple of lines in two paragraphs, then paste in the map image between the two lines. Resize the pasted image.
- c. Turn on a layer of interest, then copy a map with right-click "Copy, Copy as URL" to put the map URL on the clipboard.
- d. Close Internet Explorer, then open Internet Explorer and paste the URL into Internet Explorer's "Address" field using Control-V or right-click paste. Notice that the displayed map went to the same location, but does not have your added layer of interest turned on.
- e. Notice this map doesn't have the title bar. Go back to gis.pima.gov/maps/mapguide/ to reopen the Main map with all features.

18. Zoom Goto (5 minutes)

- a. Use right-click Zoom, Zoom Goto, to zoom to your house by 'Street Number'. Don't forget to set the width close, such as .1 miles or 500 feet.
- b. Unzoom and zoom to your house by entering your street address number and picking the "Adr Num" button at the top of the map. It should work like right-click Zoom Goto, except with fewer clicks.
- c. Use right-click Zoom, Zoom Goto to zoom to a friend's house by Owner Name.
- d. Use right-click Zoom, Zoom Goto to try zooming by Street Name (DSD Situs Address).
- e. Use Zoom Goto to zoom to a school you know. Turn on the "Schools" layer to prove that you zoomed to the right place.
- f. Find "Zoom to Lat/Lon" under the "Map Tools & Map Info." drop-down list in the map title frame. Zoom to 32.2288 degrees latitude and -110.9486 degrees longitude with a width of 2000 feet. Turn on the orthophotos. What's there?
- g. Using the "Zoom to Lat/Lon" tool, zoom to latitude 32 degrees, 7 minutes, 15 seconds, and longitude -110 degrees, 56 minutes and 42 seconds with a width of 15000 feet. What's there?

19. Creating buffers (10-15 minutes)

- a. Zoom in and select several parcels with most or all being adjacent parcels.
- b. Create a 300-foot buffer around those parcels using right-click Buffers, Create Buffer...
- c. Select the buffer. You may need to turn off the Parcel layer.
- d. Turn on the Parcel layer.
- e. Right-click Buffers, Select Layer Within Buffer..., choose "Parcels - Pima" and click OK.
- f. Make a report of the selected parcels.
- g. Was your selection mode Intersection or Centroid?
- h. Reverse the selection mode, then right-click Buffers, Select Layer Within Buffer..., choose "Parcels - Pima" and compare the results.
- i. Try to get a report of all the parcels along a road:
 - a. Select several road segments in a subdivision (Remember shift-click).
 - b. Set the selection mode to Intersection and create a buffer that should cut through the parcels along the road.
 - c. Right-click Buffers, Select Layer Within Buffer..., choose "Parcels - Pima" and click OK.
 - d. Use shift-click to add or remove parcels as desired.
 - e. Make a report of the selected parcels.

20. Drawing and Calculate Area tools (10 minutes)

- a. Zoom in to a neighborhood area.
- b. Create at least two objects each with the Draw Point, Draw Line, Draw Circle, Draw Polygon and Draw Text tools.
- c. Turn the new drawing layers off and on in the legend.
- d. Create a buffer around the lines and polygons you have drawn as well as one or more parcels.
- e. Select the buffer area(s) you created and get a list of the parcels in that area.
- f. Select a few of the map object you have drawn and delete them with the drawing tools.
- g. Use one of the drawing tools to delete all map objects of that type.
- h. Refresh or restart the map. What happened to your drawings?
- i. Zoom in to a neighborhood area
- j. Select one or more polygons (either existing map objects or a polygon you have drawn) and use the Calculate Area tool to get the areas and totals.
- k. Draw a few points with the Draw Point Symbol tool, select them, and then use the Get Lat/Lon tool to find their latitude and longitude.