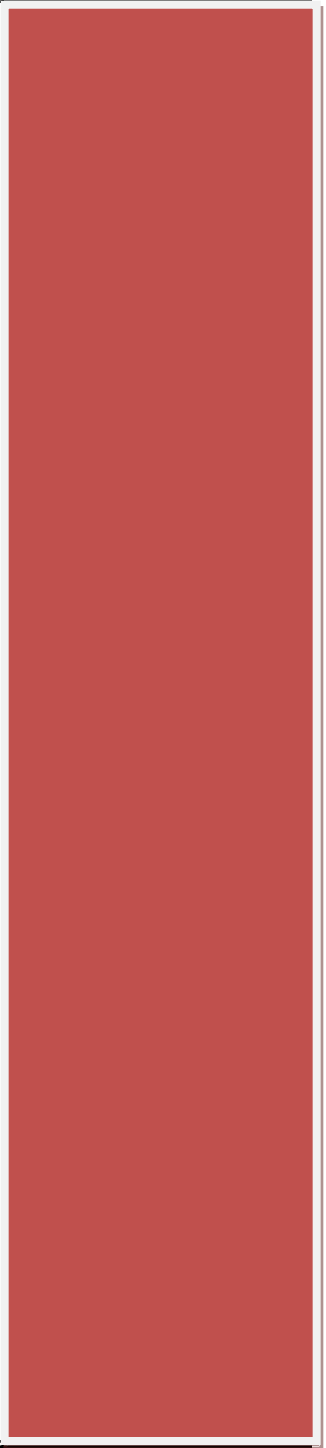


**Attachment C: School District Review Program  
How to Add Lines in the MTPS**

**2013 - 2014**



## Adding Lines in the MTPS

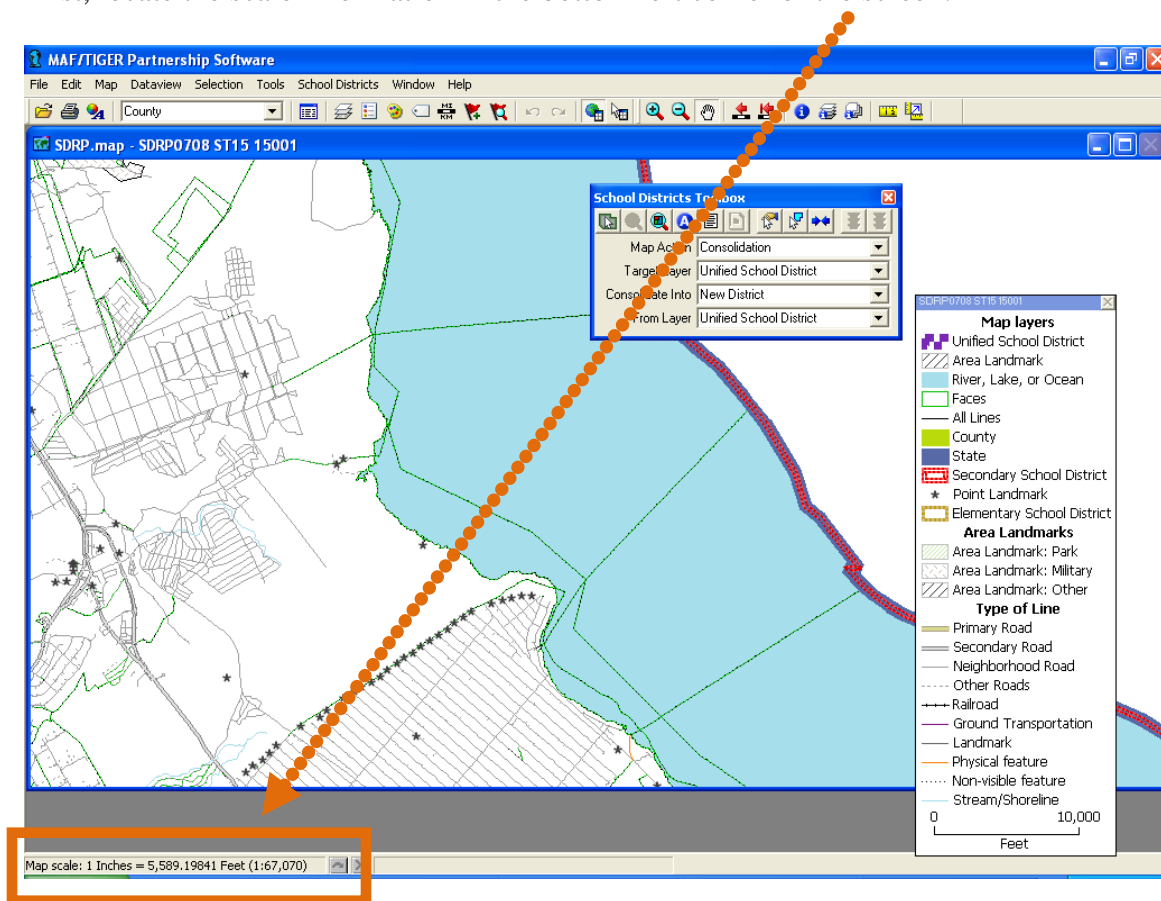
If you have not read the “Quick Start” guide, please read it for important information about when it is appropriate to add a line.

After reviewing the “Quick Start” guide, if you determine that you need to add a line, this document, along with attachment A, will provide guidelines on adding a line in the MTPS.

### What scale is appropriate to use in order to add a line?

The scale at which you view your map when adding a line is important! However, what scale to use depends on the geography that you are viewing. Here are some guidelines to consider:

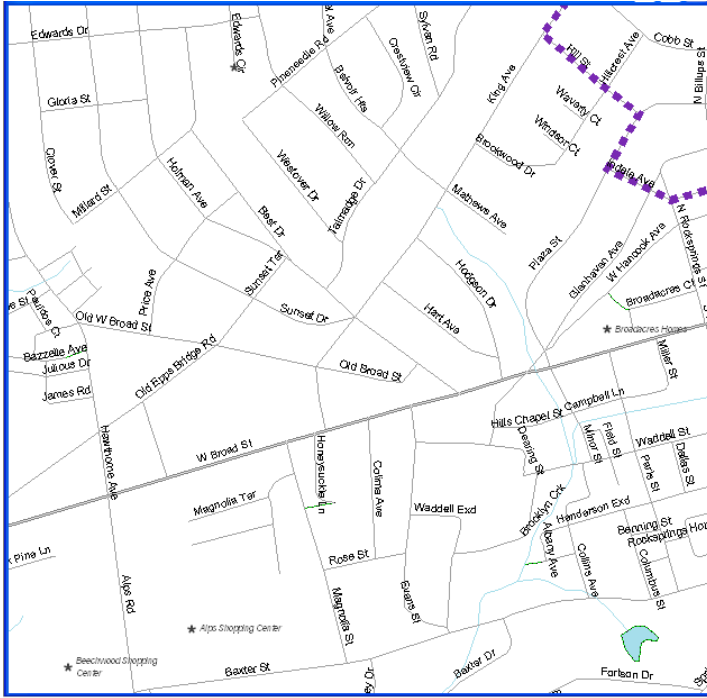
First, locate the scale information in the bottom left corner of the screen:



**It important to know that a smaller number (1:1000) means the map is more zoomed in and a larger number (1:100,000) means less zoomed in.**

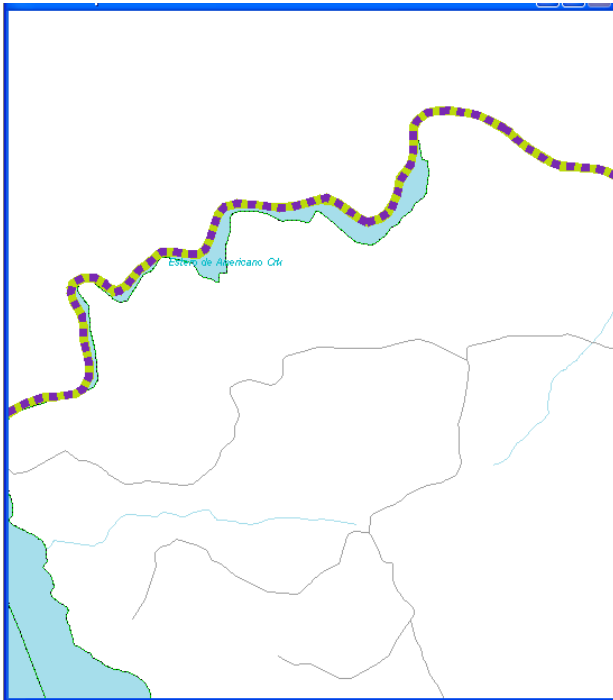
A ratio scale like 1:1000 means that 1 unit on the map represents 1000 of the same units on the earth. So, for example, at a 1:1000 scale, one inch on the map represents 1000 inches (about 81 feet) in reality on the earth.

### Urban and Suburban Areas (densely populated)



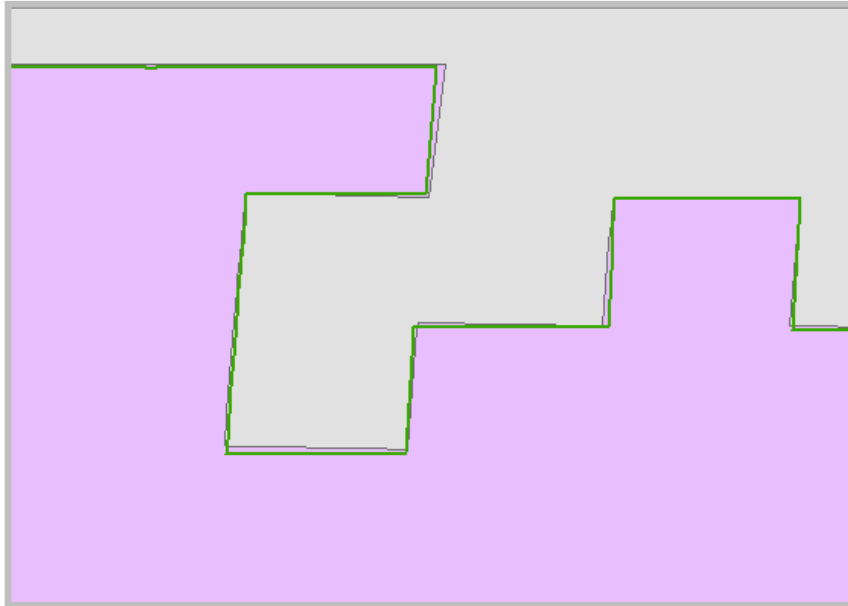
For urban and suburban areas, where there are many roads, you should zoom in to add your line. Generally, a scale of 1:1,000 to 1:5,000 is best to add lines in an urban or suburban area like the one shown here.

### Rural Areas (less population and roads)



For rural areas, generally you can zoom out more to add a line, providing that you carefully draw it. Generally, a scale of 1:5,000 to 1:20,000 should work well for adding lines in rural areas.

## Further Information about choosing the appropriate line for your boundary



When you compare your boundaries to Census Bureau School District shapefiles, your shapefiles and Census Bureau shapefiles will probably not match perfectly as demonstrated in the example to the left. The purple and grey school districts represent the Census Bureau's records.

Your shapefile may look like the green boundary line, which does not perfectly match the boundaries.

Here are four important points to keep in mind:

- a. **Which file is right? For this program, the “right” representation of a road (or other feature) is not generally of vital importance because the spatial accuracy of roads is not updated through the school district review program.** The Census Bureau updates its road network via programs like the Boundary and Annexation Survey (BAS). You may, however, add a new road if you will use it as a school district boundary.
- b. Your road file may indeed be more spatially accurate, but your school district and poverty data will be tabulated using Census Bureau features, including roads. **Therefore, it is very important that you use Census Bureau features for your boundaries.**
- c. When you designate a road for your boundary, that information is attached to the road in our geographic database. If the road is spatially inaccurate, it will likely soon be adjusted in our geographic database. When that happens, your school district boundary will be moved along with the road because the road is the boundary of the school district. If you didn't use the Census Bureau's road and digitized your own representation of the same road, your boundary would not be corrected when the Census Bureau corrects its road and there would likely be a sliver of land between your school district boundary and the newly corrected road

in our database. This can compromise data quality and possibly your Title I Estimates.

- d. The Census Bureau receives updates to roads and boundaries (such as school districts, cities, voting districts, Census tracts, American Indian reservations and more) from thousands of local governments as often as every year! In order to produce quality files for accurate data tabulation every program must use the same lines as building blocks for their boundaries. We are constantly updating our database with improvements and continuing to improve the spatial accuracy of our roads and other features. **If you have questions, please contact us, we are happy to address any concerns you have. (See page 24 for contact information.)**

**Below are some examples on how to choose the appropriate line or decide to add a line for your school district boundary.**

### **Boundary Examples:**

#### **I. Roads as Boundaries, II. Other Boundaries and III. PLSS**

##### **Example I: Roads as Boundaries**



This is an example where the state mapping coordinator has added his or her own boundary line shown here in orange. The existing road is shown here in blue.

In a scenario like this one, the Census Bureau will use the existing road boundary (in blue) for the school district boundary and will delete the orange line because there are no housing units between the two boundaries and the distance is less than 30 feet.

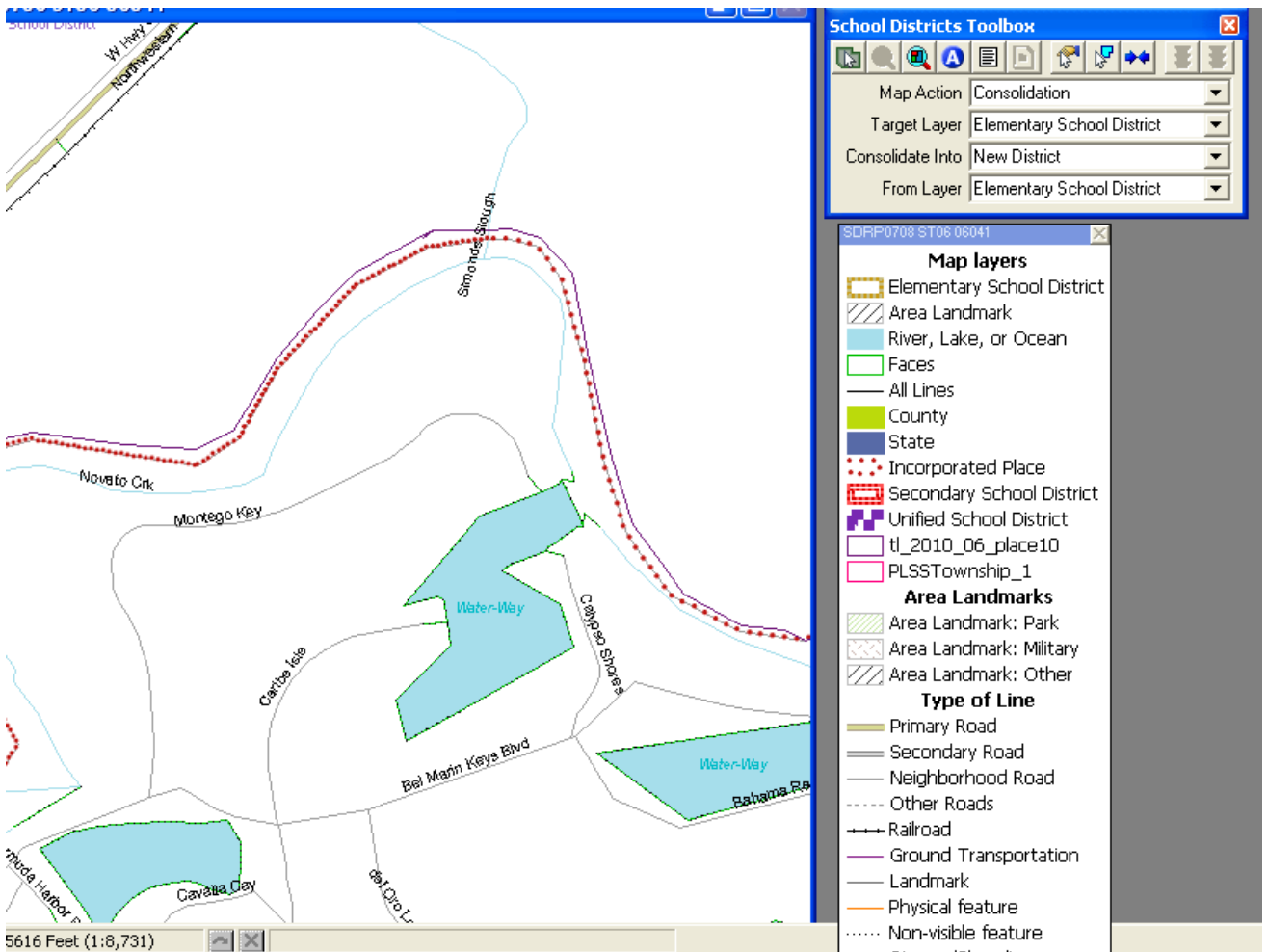
Unfortunately, drawing in new lines is time consuming for the mapping coordinator, and in this case, it is just deleted in the end. Please be aware of these situations so that you don't spend time adding unnecessary lines. The only reason to add a line like this one is if your school district boundary is not the road AND there's housing between the road and your boundary, or there's at least 40 feet between your boundary and the road.

**We will NOT modify roads though the School District Review Program.**

Please do not use your time to correct roads. If you find roads that need to be adjusted in our database, contact your local BAS official and they can submit updates through the BAS program. There are specific procedures and legal requirements for updating roads and features and because these are not components of the SDRP program, we cannot accept any road or feature modifications from you though the SDRP program.

However, you may add a road if: 1. It is not already in our database and 2. You will use the road for your school district boundary. Please contact us if you have any questions.

## Example II: Matching School District and Other Boundaries (for example, incorporated place)



In this example, the purple line represents your shapefile of the school district boundary. Should you add it to use as a boundary? Let's look at a few different scenarios:

1. **Scenario A:** Your files show your school district boundary north of the river and not the boundary of the river. Should you add a new line? It's important to look at the already existing lines in this scenario. The MTPS has additional layers for reference including incorporated places, townships, towns, villages, boroughs, and county divisions. The red line here is an incorporated place boundary. If your school district boundary is supposed to be coincident with the incorporated place boundary, even just for a section of the boundary, you should put the school district boundary on the same line as the incorporated place boundary.
2. **Scenario B:** The boundary of the school district is the river and your file shows the river as 15 feet away from where the Census Bureau's files show the river.

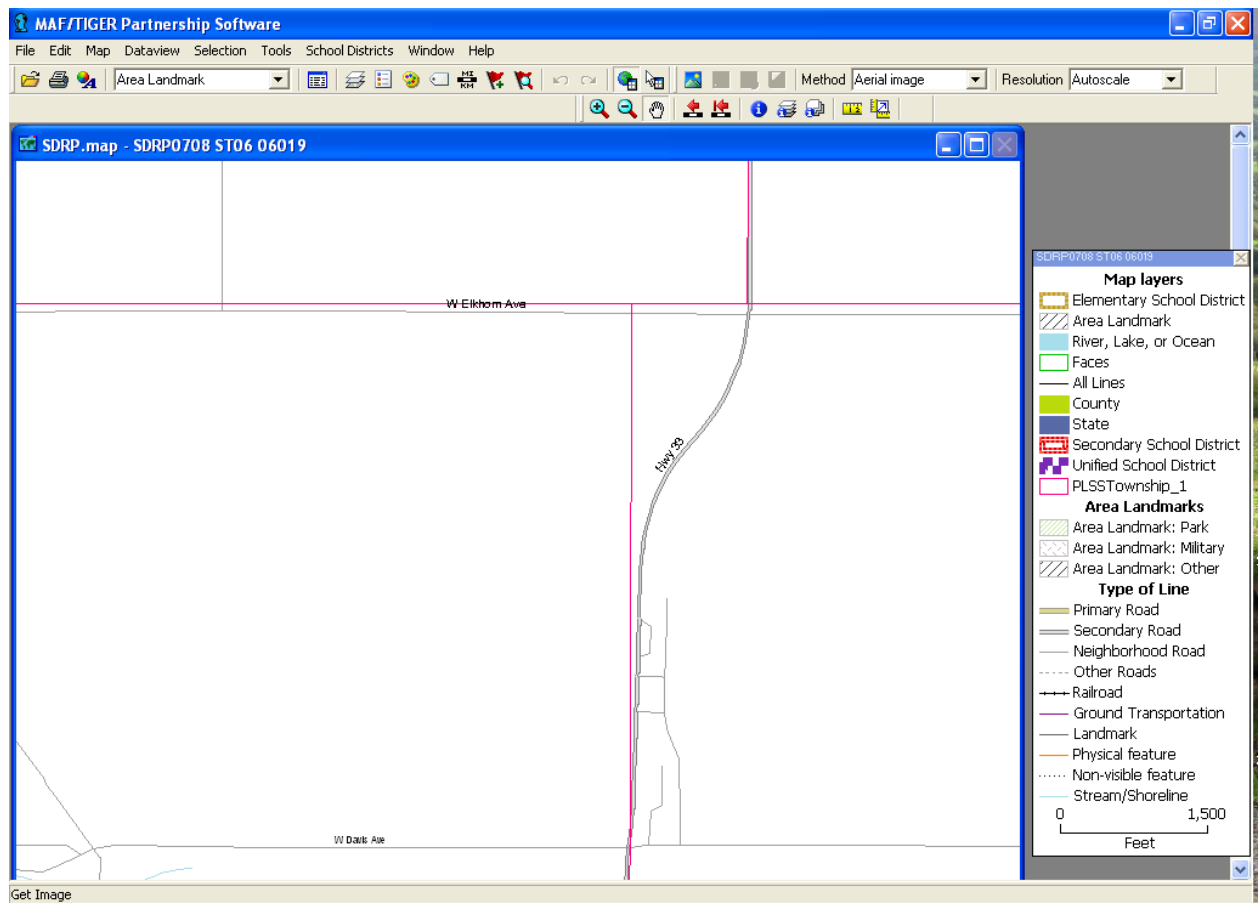
Remember, in the decision flow chart (in the Quick Start Guide) the first question is “do your records show the school district boundary on a road or feature or another boundary?” Since your school district boundary is on a river, you need to find the same river in the MTPS and use that as the boundary. It does not matter that your files show the same river 15 feet away from where the MTPS shows the river. Since population counts will be tabulated based on our database, your estimates will be accurate even if the location of our river is spatially inaccurate.

3. **Scenario C:** The boundary of the school district is not the river but is about 30 feet north of the river. Refer to the decision flow chart, question one: Do your records show the school district boundary on a road or feature? Using the decision flow chart, the answer to the first question is “no” (because your boundary is not on the river but north of the river) so move onto the second question: Are there housing units between the river and your boundary? If your records do not show the location of housing, you may be able to use imagery in the MTPS or through internet mapping websites such as Google maps. If the imagery does show housing between the two boundaries, you would add your non-visible boundary and use that as the boundary. If the imagery does not show housing or you can’t determine if there’s housing from the imagery, move on to the third question: Is the difference significant? Since your non-visible boundary is 30 feet north of a feature, in this case a river, you would answer “no” and accordingly use the nearest Census Bureau road or feature, in this case the river, as your boundary.



### Example III: Using PLSS (Public Land Survey System) Township and Section Lines

In some parts of the country, especially in the Mid-West and West, land was surveyed and divided into sections under the Public Land Survey System or PLSS. PLSS lines often match visible features such as roads. Look at the screenshot below. The pink PLSS reference shapefile closely follows much of the road network.



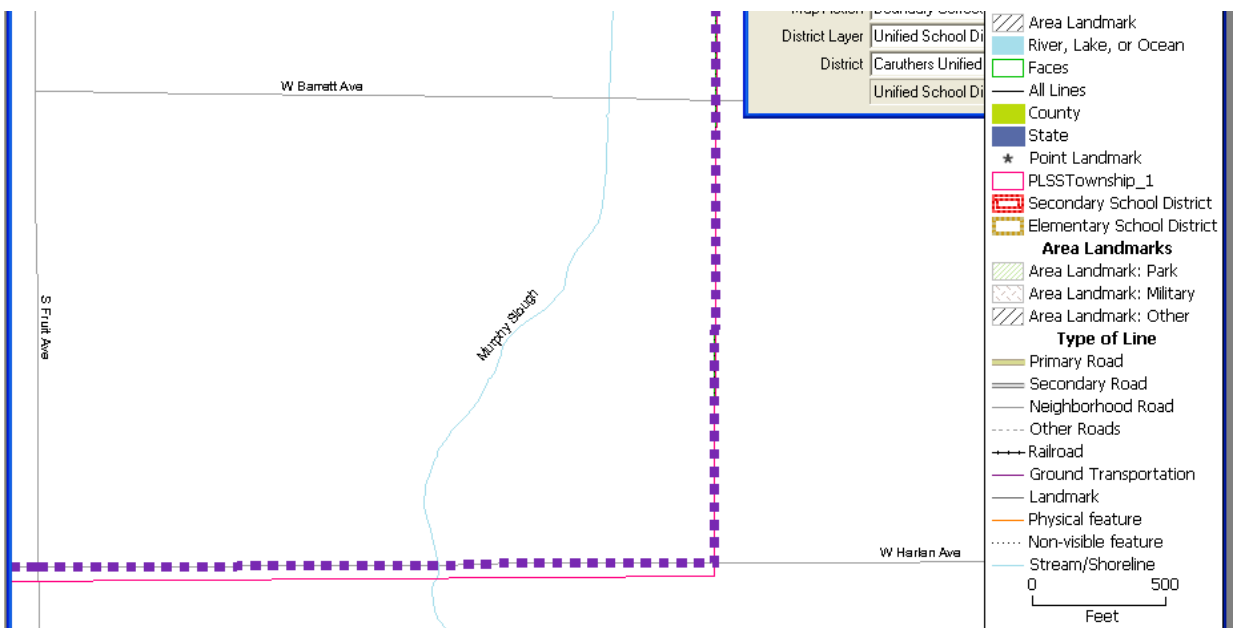
Unfortunately, at this time, the Census Bureau does not have PLSS layers in our database. We are working to incorporate these into our database and products. When your school district boundaries follow a PLSS line, it is important to view your PLSS shapefile lines **relative** to the other Census Bureau geography. This means that you will use your PLSS lines as a guide but consider existing Census Bureau lines when choosing your school district boundaries.

For example, in the screenshot below, the pink line is a PLSS shapefile layer imported into the MTPS. If your school district boundary follows this PLSS line, you will need to add a new line for the portion of this line that runs north-south because there is not any road or other features in the Census Bureau database near the PLSS line. The portion of the line that runs east-west is parallel with the road (W Harlan Road) shown here. In most

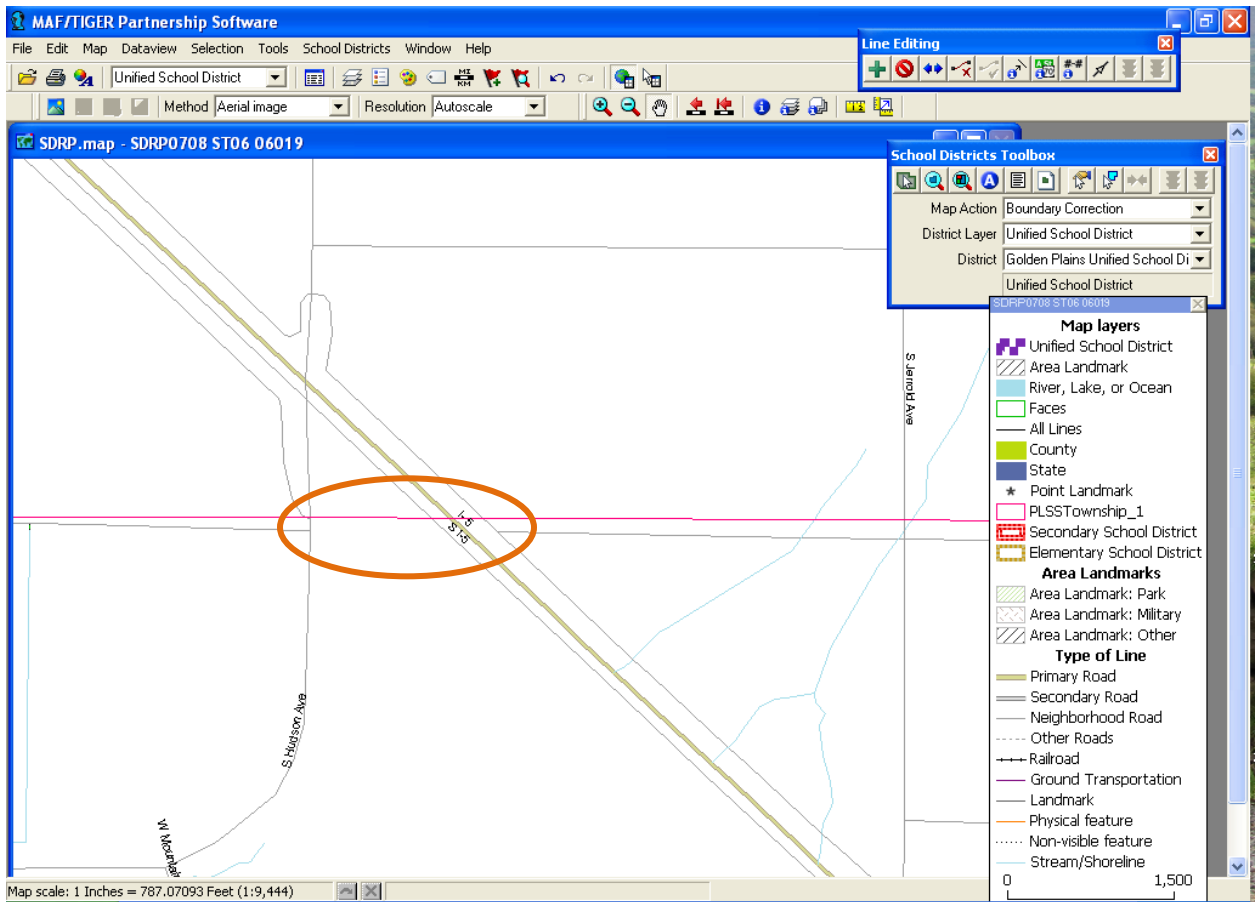
cases, roads like this are on the PLSS line. Therefore, although your files show the PLSS line as the school district boundary (rather than the road) you would still use the road as your school district boundary because the road likely follows the PLSS line in reality.



The final boundary would look like this: (notice the east-west part of the boundary uses the road rather than adding a line to follow the pink PLSS shapefile.) Please don't hesitate to call us if you have any questions.

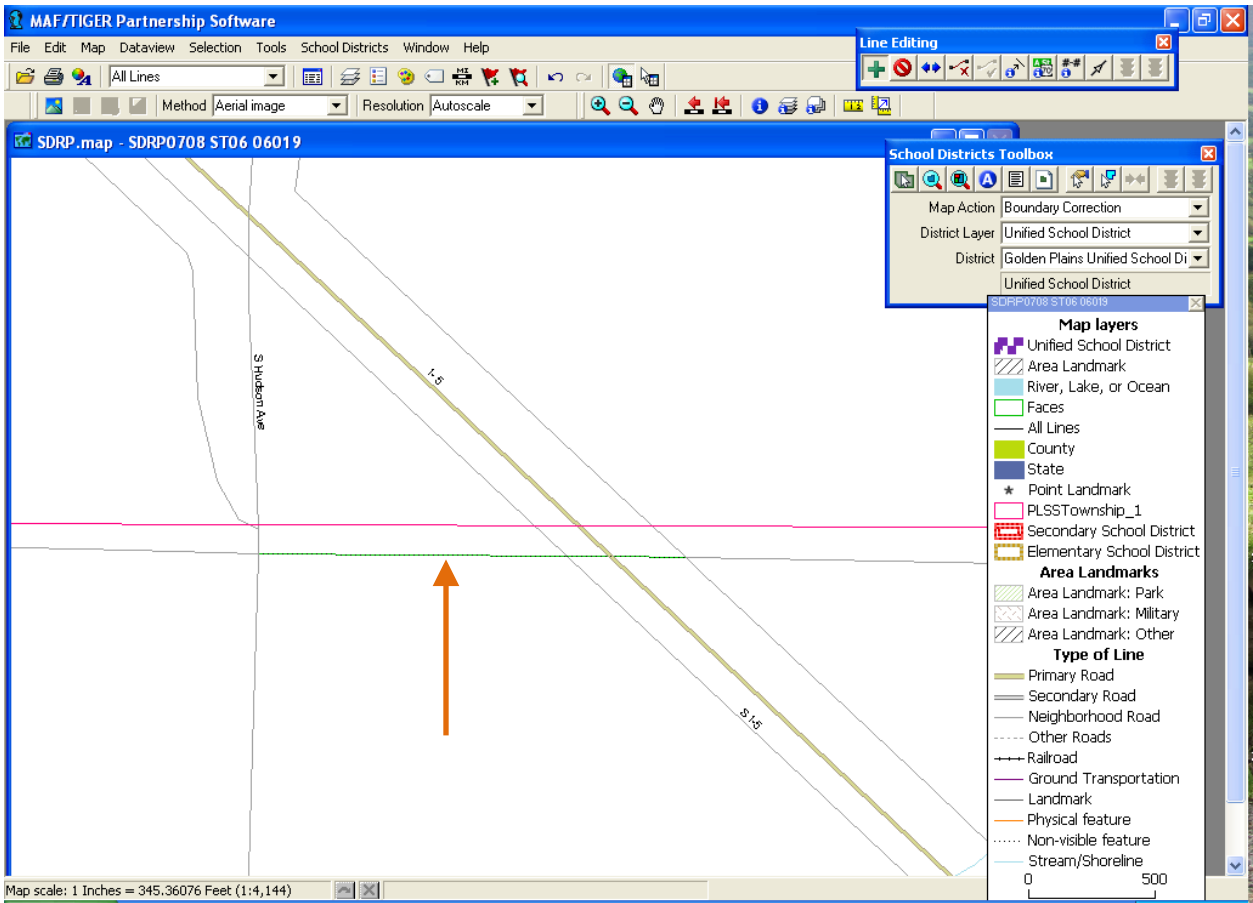


Here is another example of adding lines using a PLSS layer:

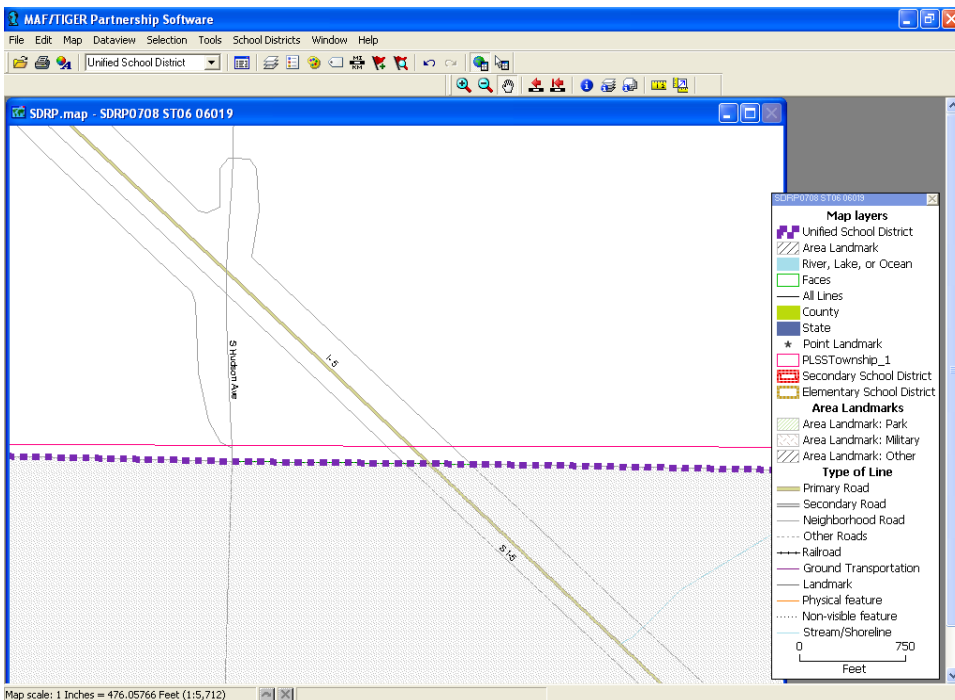


Suppose you needed to use the pink PLSS line as your school district boundary. The nearby parallel road is very likely the PLSS boundary. Rather than adding a new line following your PLSS shapefile, you should use the existing road and add a line where the road has a gap.

**In situations like these, use the road as reference to add the PLSS line rather than the PLSS shapefile itself,** as long as the road and the PLSS line are not more than 45 feet away from each other. The green line (shown below) will be used for the boundary along with the roads on either side. Although the boundary will be slightly spatially off from your PLSS shapefile, using the road (which very likely follows the real PLSS line) will ensure correct boundaries and data. Remember, all data will be tabulated using the Census Bureau's geographic database and therefore adding a new line to represent a line that already exists in the database will make the boundary "off" in the Census Bureau database and could affect your estimates. Again, we are happy to answer any questions you may have.



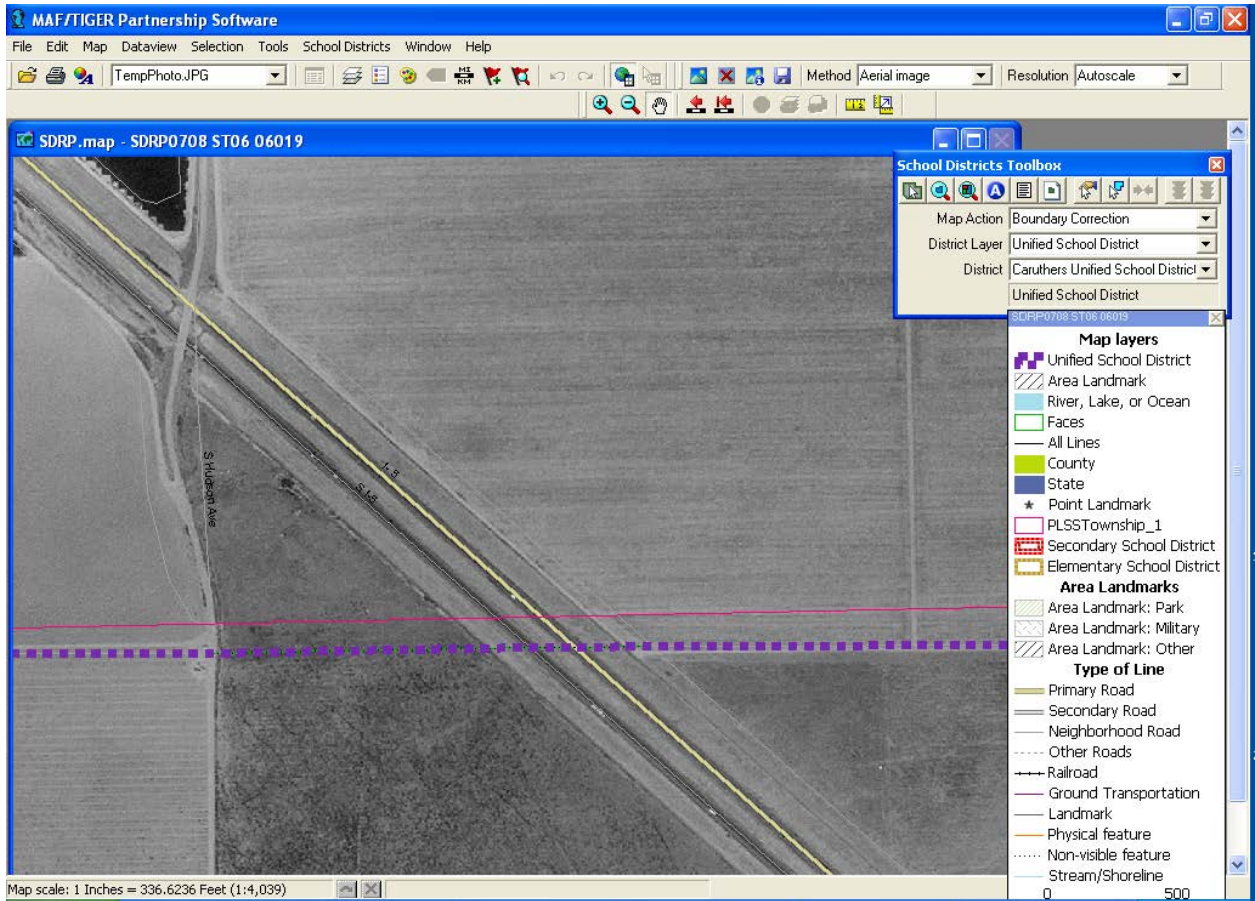
Above, a line is added to connect the existing roads. Rather than adding the PLSS line along the PLSS shapefile, use the roads that match the PLSS lines and add the new line according to the roads.



The final new boundary will look like this. Notice, the school district boundary is on the road rather than the pink PLSS shapefile line.

Here is the MTPS showing imagery for the same area. Imagery can help you make boundary decisions because it will give you an idea about land use, housing and distance. Use imagery when possible to help you make your boundary decisions.

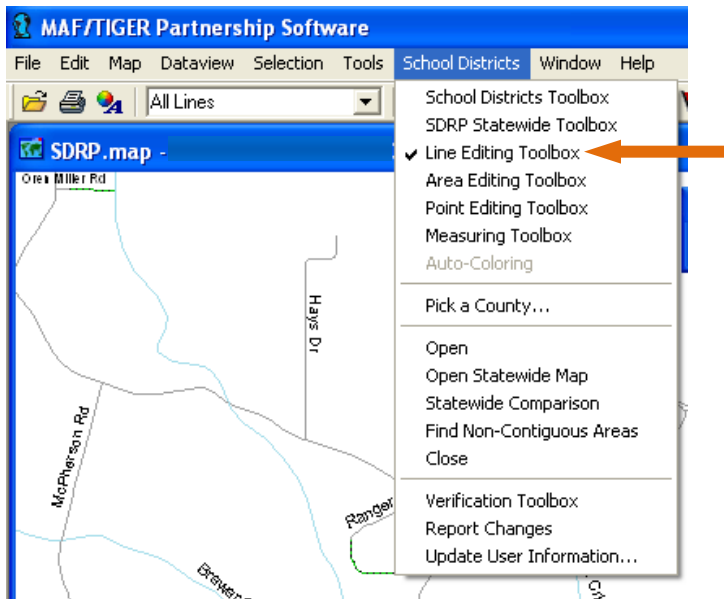
Refer to attachment A for more information on adding imagery to your MTPS project.



## Adding a New Line in the MTPS

Attachment A describes the basics of adding a new line in the MTPS. Below are some tips to help make the process more efficient.

To open the line editing toolbox, click the School District Menu, and select “Line Editing Toolbox” as shown below.



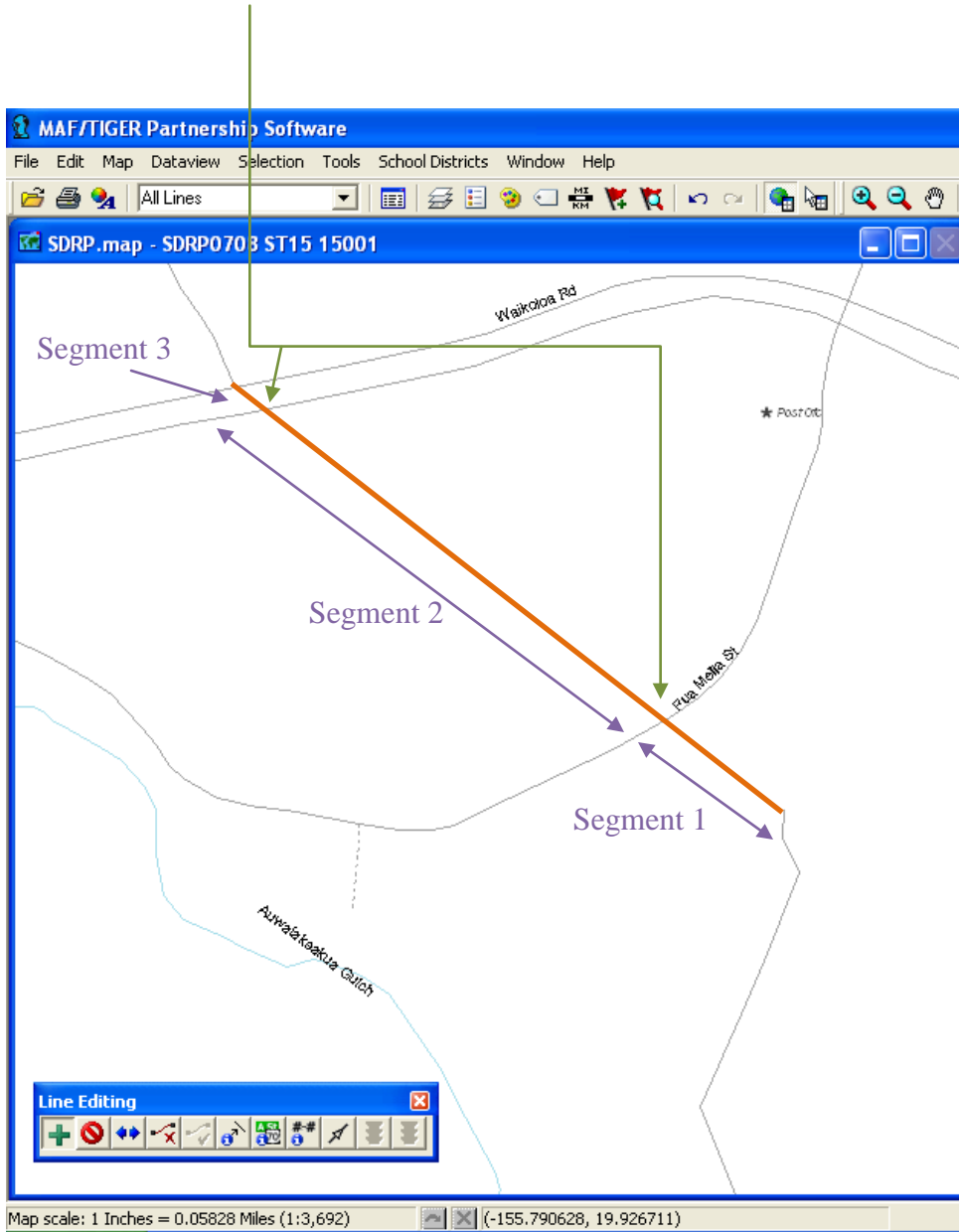
Once the toolbox appears on your screen, use the green “plus” icon to add a line.

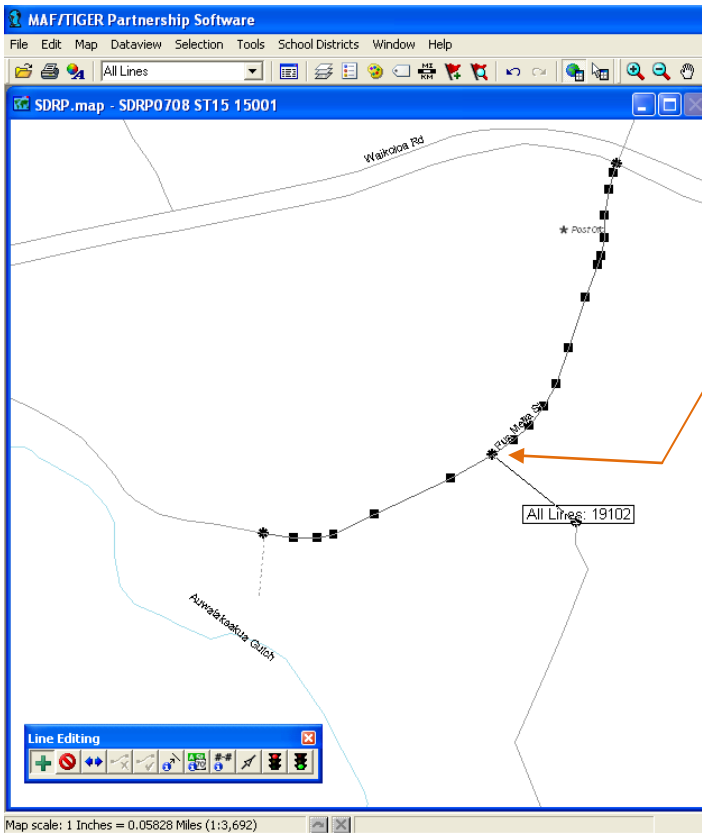


In order to add a line, **you must “stop” at every feature that the new line will intersect.** This will insure that you properly create a node (a connection point between two lines) at every “intersection” your new line will cross.

### Example: Adding a line and how to “stop” at every intersection

For example, you may need to add a line like the one shown below in orange. Notice that the line intersects two roads. Therefore, you will have to add the line in three segments.



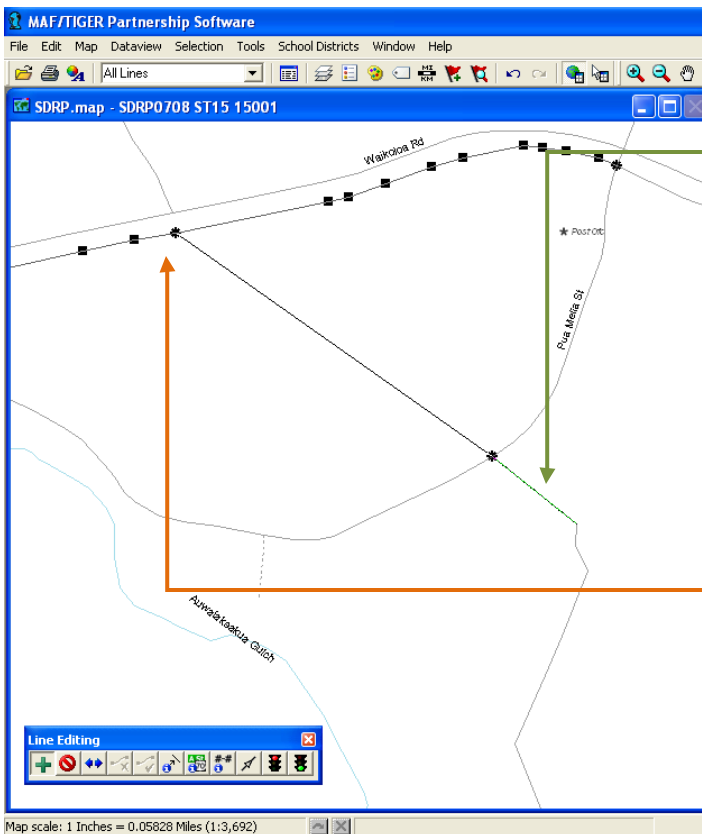


To add this line, draw the first segment, stopping at the first line your segment intersects as shown here.

Make sure that the line your segment intersects highlights with vertices (squares) and nodes (circles) to ensure that you properly connected the line you are drawing to the intersecting line. Once you have done this, click the “green light” to create the line.



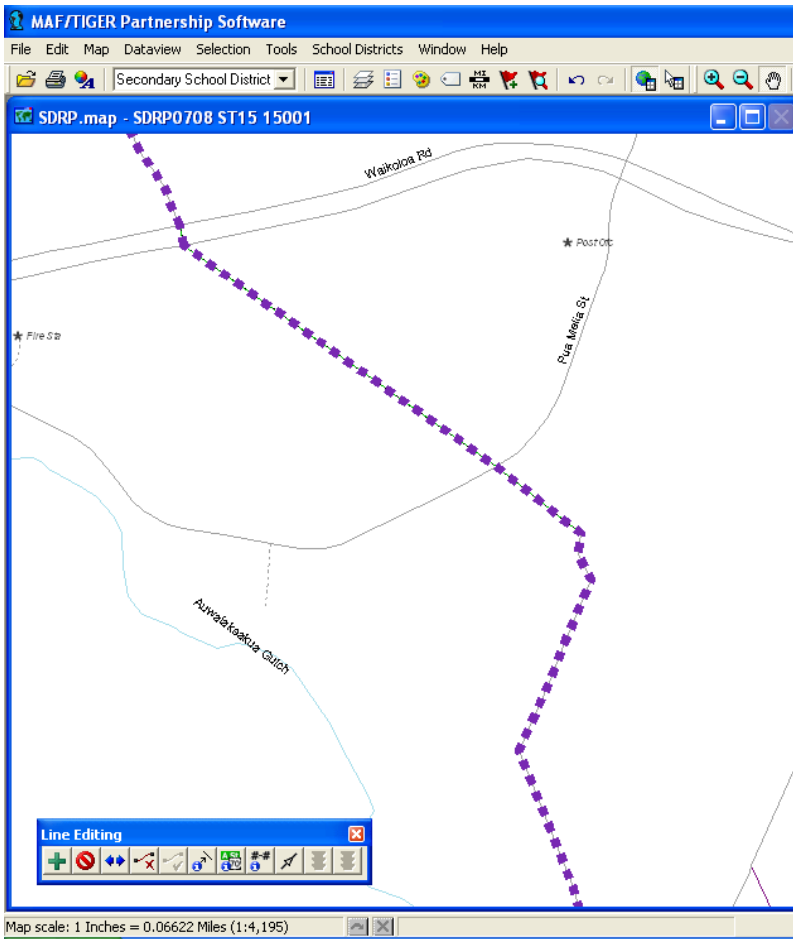
After your first line has been saved (by clicking the “green light” button.) it will turn green.



Now you can add and save the next segment. Carefully draw the next segment of your new line. Again, make sure to stop at the next intersecting line. Also check that the intersecting line “highlights” with vertices and nodes.

Finally, add the final line segment. (Not shown here.)

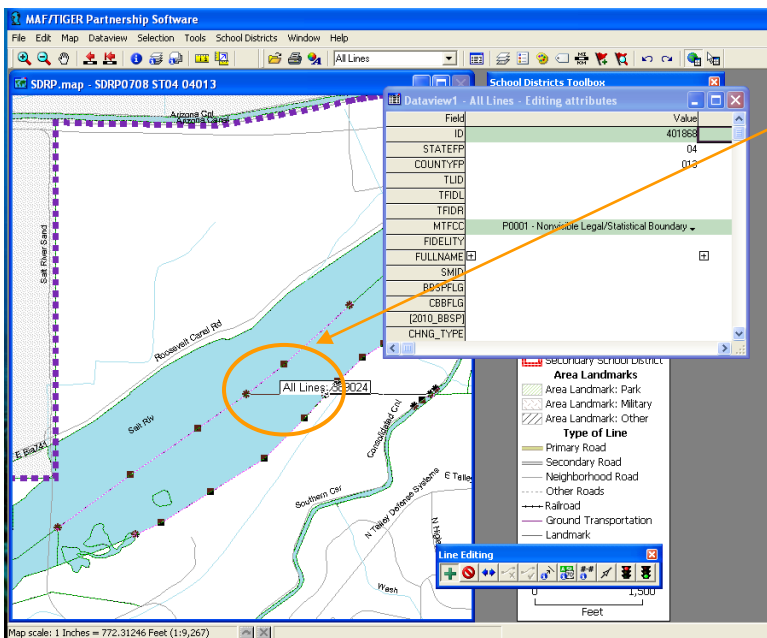
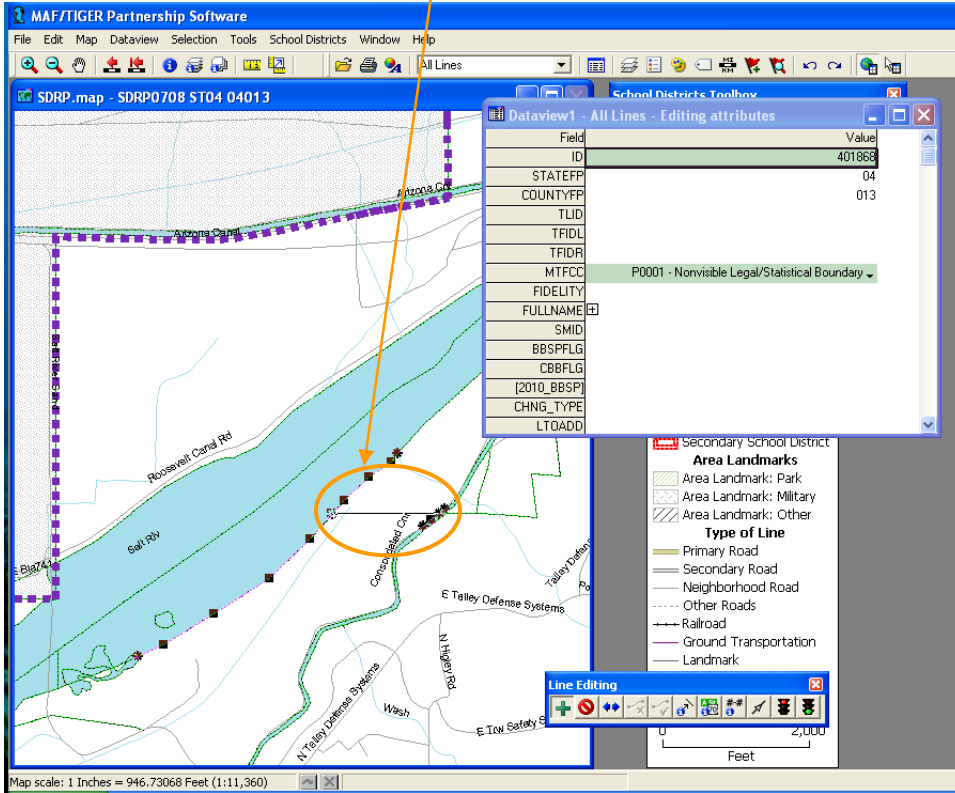




Now that all the line segments have been added, you can complete your boundary change, using your new line as the boundary.

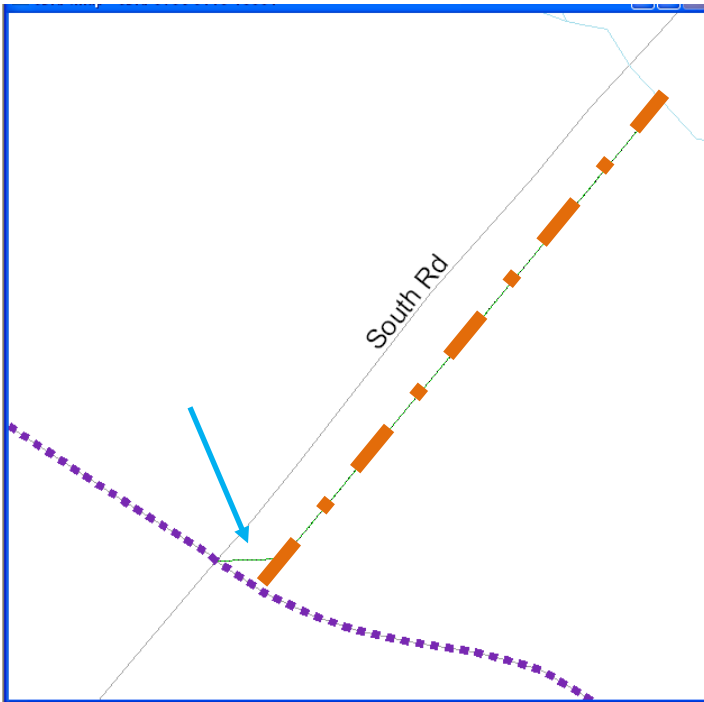
If you cannot use your new line as a boundary, you may have incorrectly added your line segment. Please call us if you have any questions. (See page 24 for contact information.)

The “stopping” at intersections principle applies if you add a line that crosses other features as well, not just roads. You will need to stop and click at the intersection with any feature to create a node and label the line. In this example, the user has stopped at a face boundary (purple line at the edge of the river) to create a segment of a line. (See screenshot below)

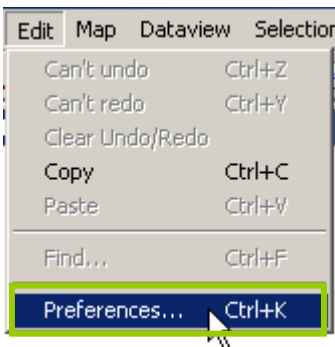


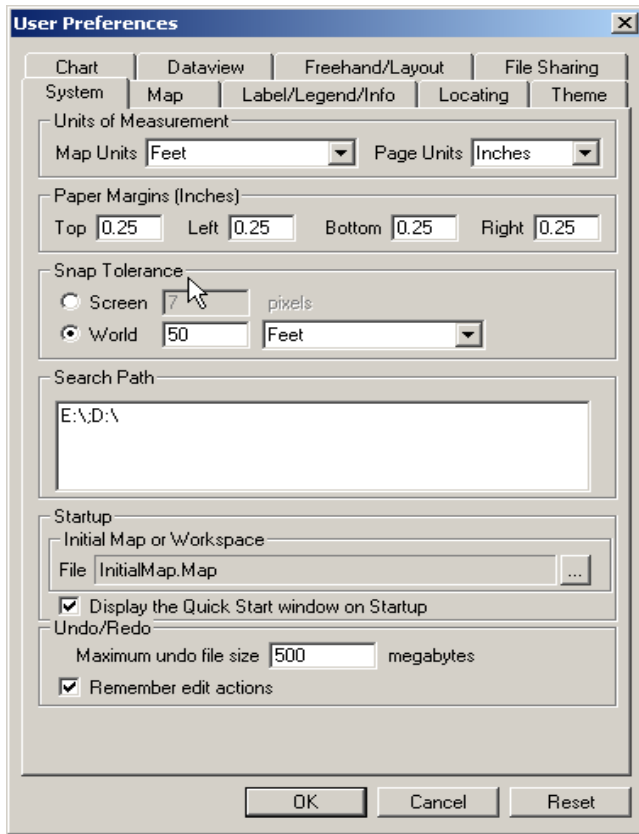
Then add another segment of the line stopping at the next face boundary (purple line in the center of the river.)

Note, the MTPS has a predefined snapping tolerance of 50 feet, so if you find that your new line is not snapping exactly where you would like, it's because there are existing nodes on our lines within 50 feet of the line that you are adding. For example, if you intend to add a line following the orange dashed line, and the end of your line “veers off course” (as shown here by the blue arrow) you may need to zoom in closer or adjust the snapping tolerance.



To change the snapping tolerance, click 'Edit' from the top menu bar, and select 'Preferences'.

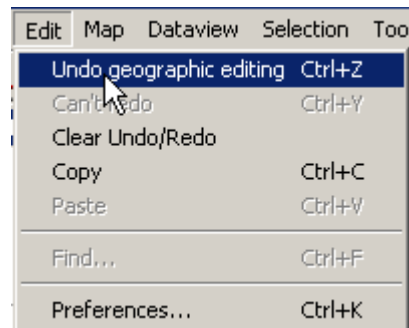




Ensure that the open tab is set on 'System' and locate the section labeled 'Snap Tolerance'.

Set the snapping tolerance to your desired unit of measurement and click 'OK'.

**Note, if you have inadvertently added a new line that you wish to delete, please do not use the 'Delete Line' tool in the Line Editing Toolbox!** In fact, you will never use this tool as part of the 2013-2014 School District Review Program. The 'Delete Line' tool is used by other Census Bureau program participants to flag lines for deletion (e.g., a road that no longer exists). The tool does not actually physically remove lines from the line coverage; it only flags them. **If you wish to remove a line that you would like to redo or just undo, please use the 'Undo Geographic Editing' tool located within 'Edit' on the menu bar to remove your last line edit.**



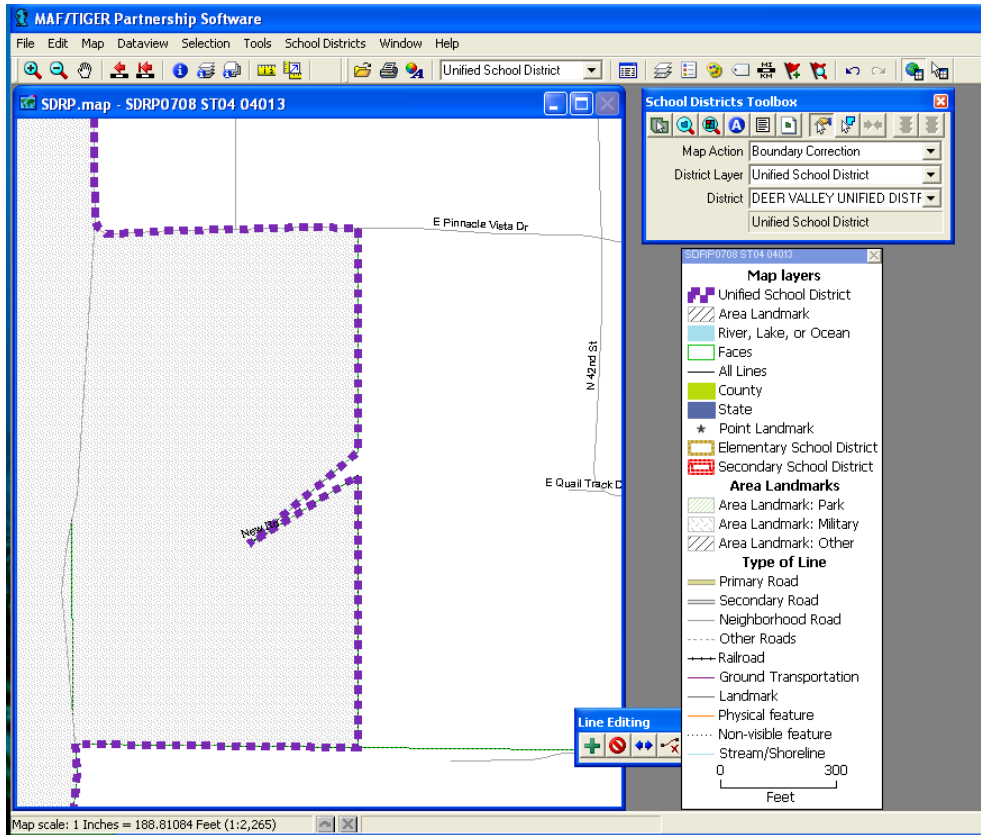
## Lines with “daggers”

You may encounter lines that are distorted due to various issues that the Census Bureau encountered when we uploaded spatially enhanced features using a new upload process. The Census Bureau is in the process of repairing these lines in the Census Bureau geographic database. **Please do not attempt to straighten or fix the line in the MTPS software.** If you need to use a road with a “dagger” for a boundary, use the road as shown in the MTPS and the Census Bureau will repair the road in their geographic database, keeping the school district boundary on that road. **Please do not attempt to repair a road or feature in the MTPS.** See the example of using a road with a “dagger” as a school district boundary on the next page.

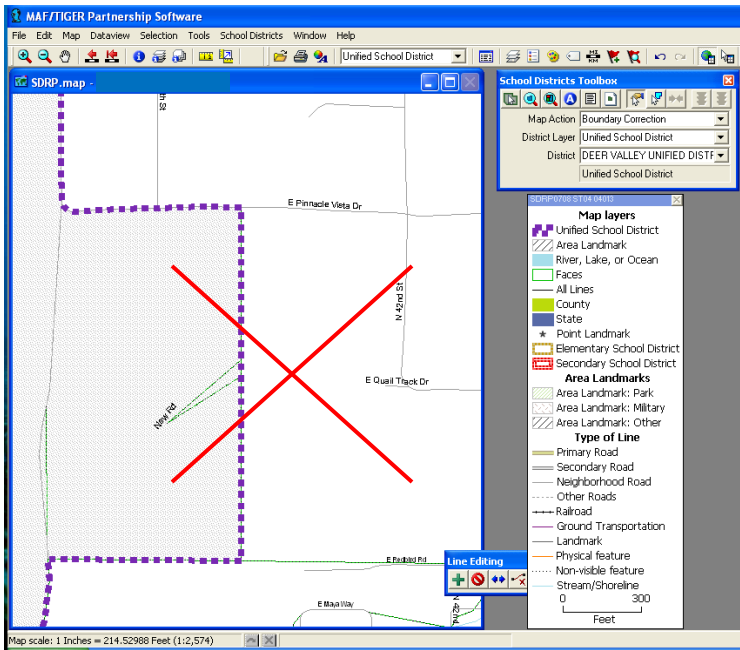
In this example, the road pictured below is actually straight in reality but appears to have a “dagger” in the MTPS. If this road is a boundary for a school district, please follow the directions below to use the road as a boundary.



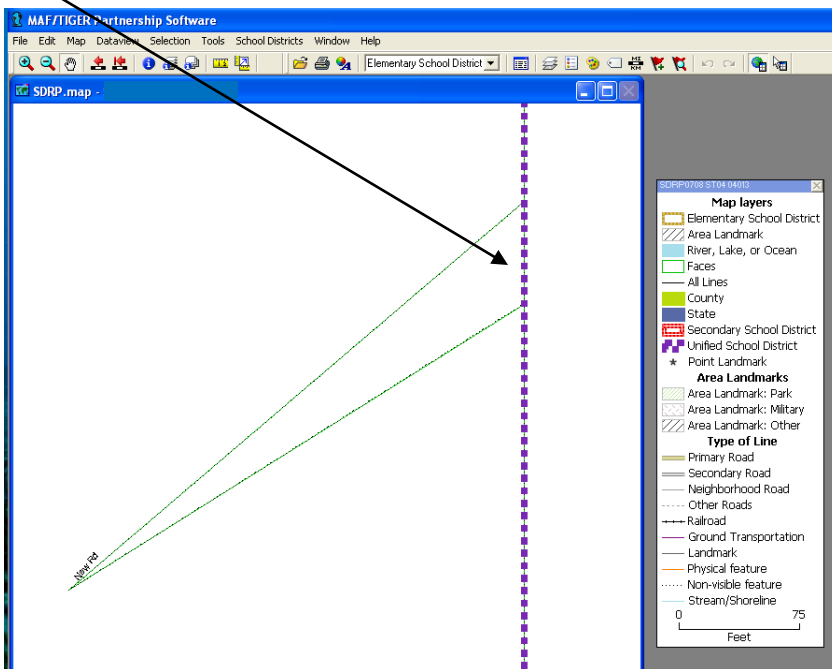
Add the area necessary to use “New Road” as the boundary for the school district and complete the boundary change. The boundary may look odd, but it shows “New Road” as the boundary for the school district. The Census Bureau determines its population counts using the real road as the boundary, and the Census Bureau will correct the road and the school district boundary that follows it, in their geographic database.



**Do not attempt to straighten the road as displayed below.** This may cause an error in the MTPS, which will require you to send your file to the Census Bureau for repair before you can continue your work.

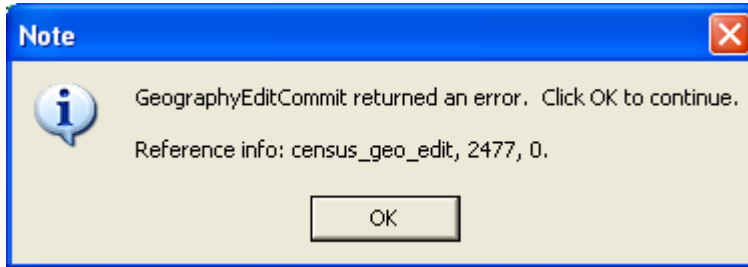


Below, the user has **incorrectly** added a line segment to correct a distorted line. **Do not attempt to do this.**



**If the MTPS shows the following error message, please stop working immediately.**

This error will not resolve itself and continuing your work after receiving an error message often will make the problem worse. Please contact the Census Bureau as soon as you receive an error message.



If you see an error message, or have any questions, please contact the following Census Bureau staff by phone at: 301.763.1099, or by email to: **[geo.school.list@census.gov](mailto:geo.school.list@census.gov)**

- Mr. Ian Millett
- Ms. Pat Ream
- Mr. Nathan Jones
- Mr. Ryan Short