

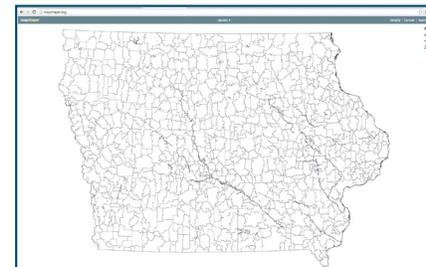
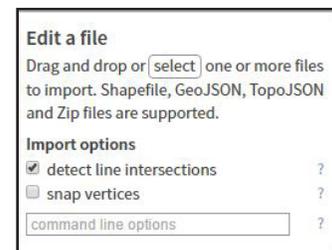
## Simplifying and Editing Vector Data with mapshaper.org

Welcome to the Essential ArcGIS Task Sheet Series. This series supplements the Iowa State University Geospatial Technology Training Program short course series. The task sheets are designed to provide quick, easy instructions for performing mapping tasks.

MapShaper.org is a free-to-use web service that allows users to simplify vector data and export to a variety of file types. Simplifying shapes can be beneficial because it lessens the number of vertices in a shape, which ultimately reduces the file size. This might be desirable if you're working with a very large dataset, such as zip codes for the entire United States. Simplifying vector will make your file size smaller, which is great if you're working with the GeoJSON format to create web maps. Mapshaper also offers a console for running tools through a command-line interface (CLI) which allows users to edit data and instantly visualize the results.

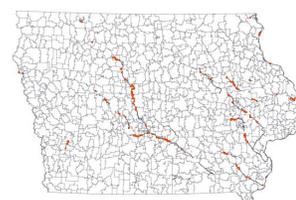
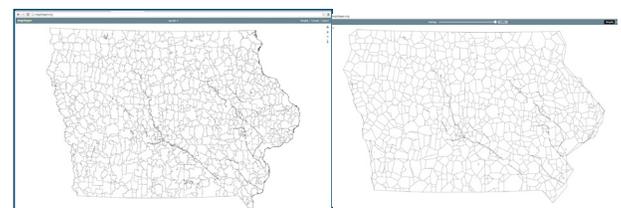
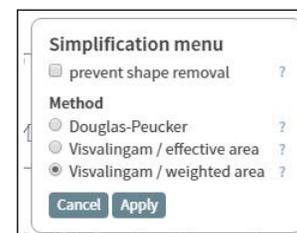
### 1. Download and Import Data

- To download the data used in this task sheet, navigate to [www.extension.iastate.edu/communities/gis/quicktasksheets/data](http://www.extension.iastate.edu/communities/gis/quicktasksheets/data) in a web browser. Click on the publication number **PM2082-16g**.
- In a web browser, navigate to the mapshaper website at [www.mapshaper.org](http://www.mapshaper.org).
- Note the variety of file types that mapshaper supports, such as Shapefile, GeoJSON, TopoJSON, and Zip files.
- Drag and drop, or select the compressed file **zipcodes.zip** that you downloaded in **step 1a**.
- Leave the default import options and click **Import**.



### 2. Simplifying Data

- Once the shapefile of Iowa zipcodes is imported, you are able to zoom and pan to explore the data.
- Now, click **Simplify** in the top, right-hand corner to start simplifying the data.
- In the **Simplification menu**, there are three methods for generalizing lines. The Douglas-Peucker method is a good choice for simplifying lines with dense vertices, while the Visvalingam methods are better for creating smoother lines. Let's choose the **Visvalingam / weighted area** method. This method prioritizes the removal of more acute angles, making smoother lines.
- Also check the **prevent shape removal** box. This will prevent small polygons from being deleted.
- Click **Apply** and then move the slider on the top of the page left and right and observe. Zoom in to a few



polygons and move the slider to see how the lines are simplified by removing vertices. Pretty cool, eh?

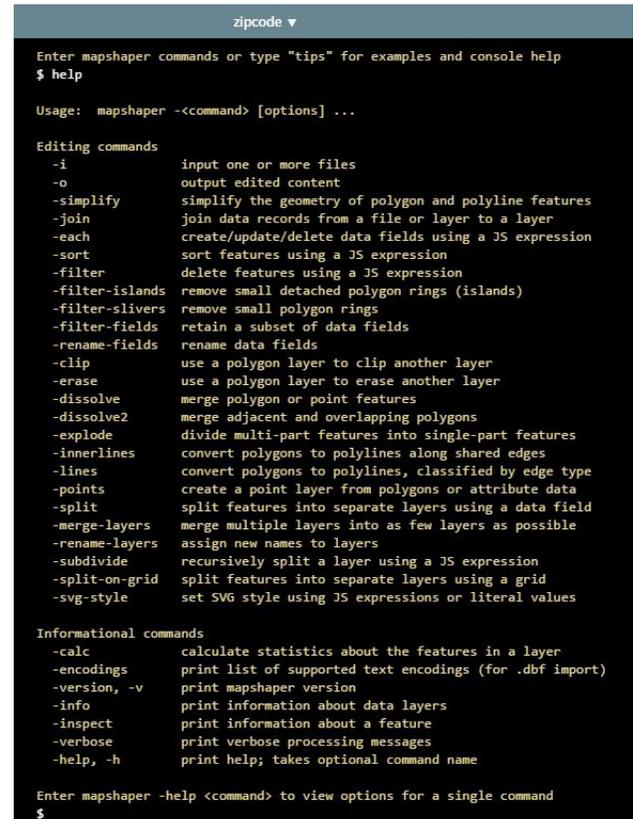
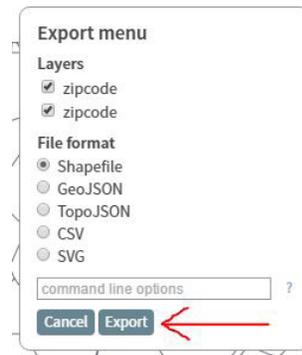
- f. You will notice that some spots are highlighted in red; this is where line simplification has resulted in line intersections. Repair these by clicking **Repair** in the top-left corner.

### 3. Export Data

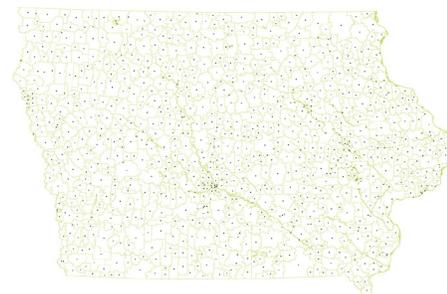
- a. In the top-right corner, click on **Export**. You have the option to export in the following file formats: ESRI shapefile, GeoJSON, TopoJSON, CSV, and SVG.
- b. Upon clicking Export, a download should begin automatically. Sweet! *Note: the export feature is not supported by the Safari web browser.*

### 4. Console Functions

- a. In addition to simplifying vector features, mapshaper also offers a number of other tools. To explore these tools, let's re-import the **zipcode.zip** so we can start with a fresh shapefile.
- b. Click **Console** in the top-right corner. This will open a console where you can enter a number of commands.
- c. First, type **help** and then hit the **Enter** key. This will return a guide of editing and informational commands
- d. Next, we can learn more about a specific command by typing **help** followed by the name of the command. For example type **help points** and we can see the options associated with that command.
- e. Try an editing command with our zipcode data. Type **points centroid** and hit the **Enter** key. Close the console.
- f. Points for the centroid of each zipcode polygon have been calculated, and now we have a layer of points instead of polygons.
- g. You can export the zipcode point layer using the process described in **step 3a**.



**\$ points centroid**



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