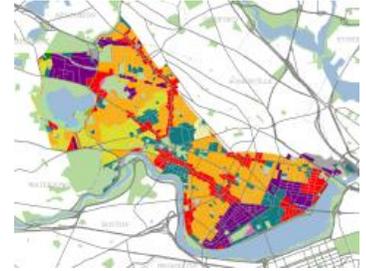


Using the ArcMap Data Frame Clip Option to Mask Features in a Map



Written by Barbara Parmenter, updated by Carolyn Talmadge October 22, 2015

An easy way to focus your map on a subject (e.g., land use in Cambridge) but still have good context is to use the Clip option available in the Data Frame Properties.

Suppose you are using data from MassGIS to create a map of land use in Cambridge. However the data available is for all of Massachusetts. Here we show you how to select out Cambridge and then use it to perform a virtual clip.

Using the interactive selection tool to create a layer file

Let's say you want to display on your map just the city boundary for Cambridge. You don't have a separate Cambridge city boundary shape file, but you DO have a TOWNS polygon layer from MassGIS with all the town boundaries in Massachusetts.

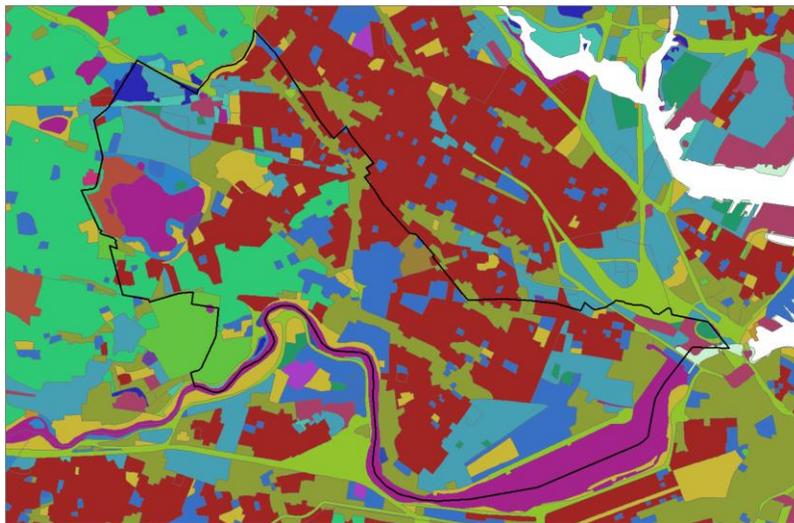
1. You can either search for this data in the M: drive or practice downloading it from Mass GIS.
 - a. You can find it in the M drive under M:\State\MA\MassGIS\Political_boundaries\TOWNS_POLY.shp.
 - b. Via Mass GIS, download "MassGIS Data – Community Boundaries (Towns)" as a shapefile, it will include multiple layers: <http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/towns.html>
2. Add the **TOWNS_POLY.shp** layer to your map.
3. Zoom in to Boston and locate Cambridge by using the identify tool.
4. In the *Tools* bar, click on the **Select Features** icon.
 
5. Once you've found it click somewhere inside Cambridge – it will be selected and highlighted in cyan. Alternatively, you could open the attribute table and manually select Cambridge.
6. *Right-click* on the TOWNS_POLY layer in the *Table of Contents*, and choose **Selection → Create Layer from Selected Features**.
7. You'll see at the top of your *Table of Contents* a new layer called **TOWNS_POLY selection**. Highlight this new layer and press the **F2** button to quickly change the name to "**Cambridge Boundary**".
8. Remove the selection by clicking on the *Clear Selected Features* icon. You don't want to leave things selected after you are done with them!
 
9. Zoom to Cambridge by *Right Clicking* on **Cambridge Boundary** and selecting **Zoom to Layer**.

Performing a virtual clip

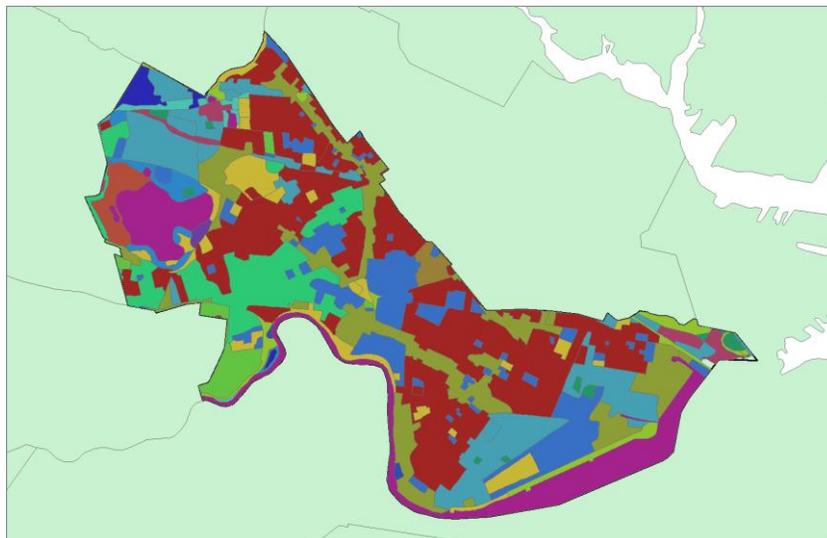
Now that you have a polygon shapefile which borders your area of interest, you can use it to define what is shown for other layers.

1. Add the **LANDUSE2005_POLY** shapefile - M:\State\MA\MassGIS\Physical_resources\LANDUSE2005_POLY.shp
2. Add some additional layers of your choice, such as hydrology, open space, roads, etc. Change the symbology for these layers so they accurately represent the features.
3. Open the LANDUSE2005_POLY layer's symbology. Change symbology to **Categories** and change the **Value Field** to *LU05_DESC*. Press Ok.

Now you would like to show land use using the MassGIS land use data set. But you only want to show it for Cambridge. In other words, you have this:



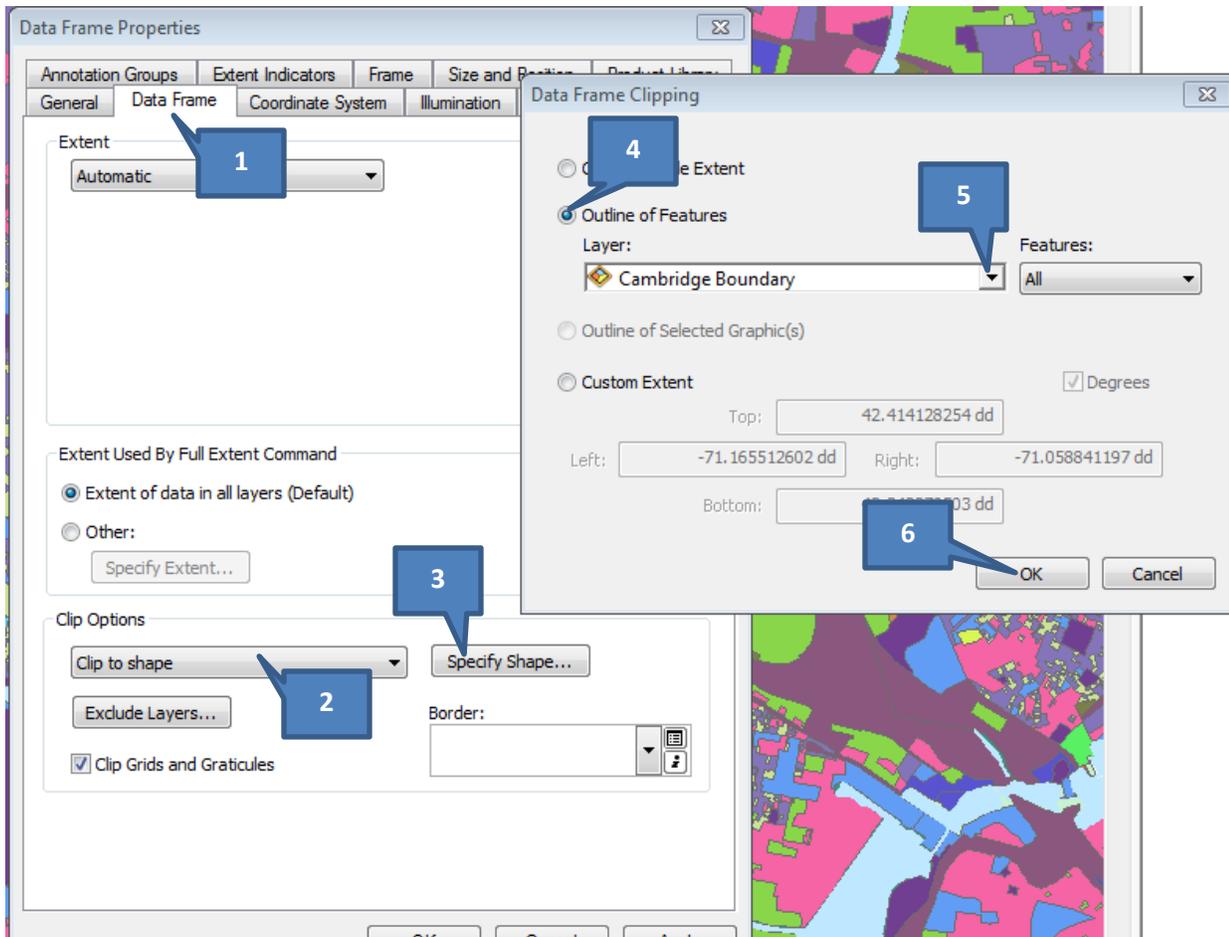
But want this:



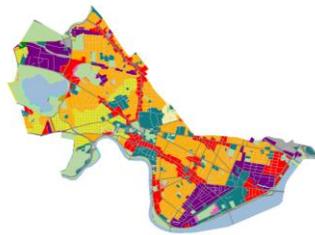
You could perform an actual **clip** of the MassGIS land use data set, using your **Cambridge boundary** to create a new shapefile. Or you could do a “virtual” clip using the **Data Frames Clip function**. That is an easy way that doesn't create any additional data sets – it merely appears clipped.

To use the Virtual Clip option:

1. Double click on “Layers” at the top of the *Table of Contents* to get to the **Data Frame Properties**.
2. Click on the **Data Frame tab** and follow the steps below to clip the data frame display to your *Cambridge Boundary Layer*.

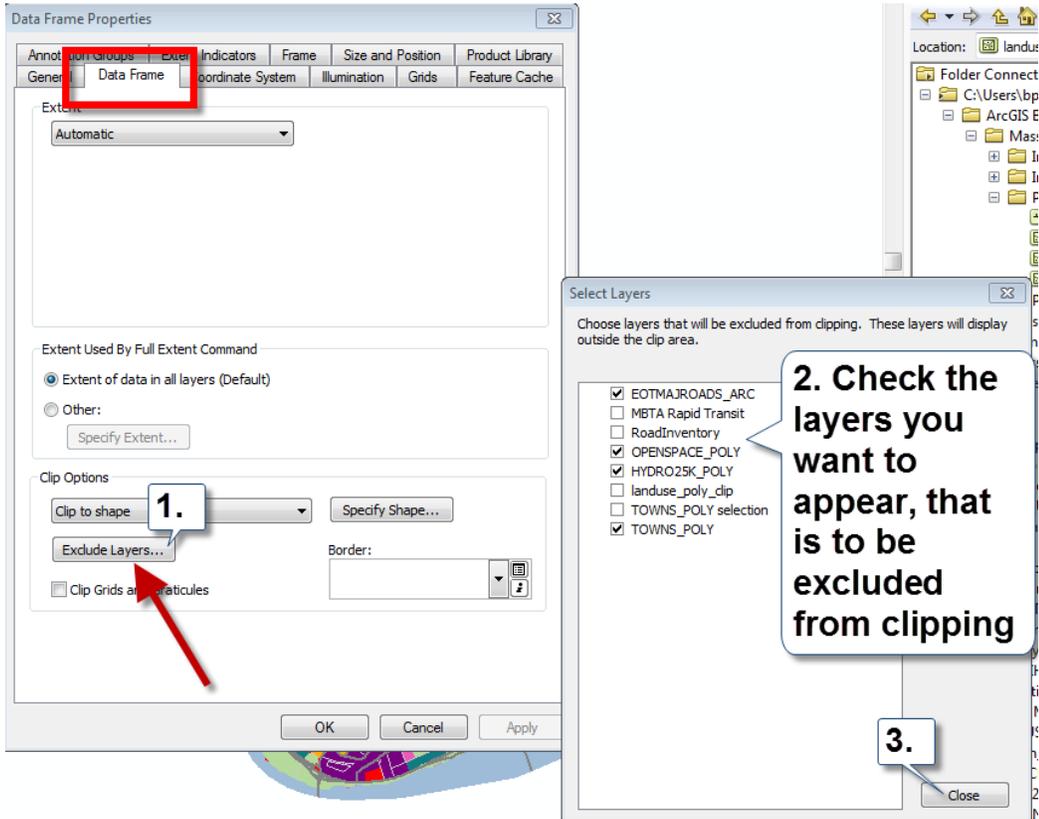


3. You’ll see the results as soon as you press ok – the selected town polygon (Cambridge in this example) masks everything else out, which isn’t a good thing – we don’t want Cambridge to look like an island!

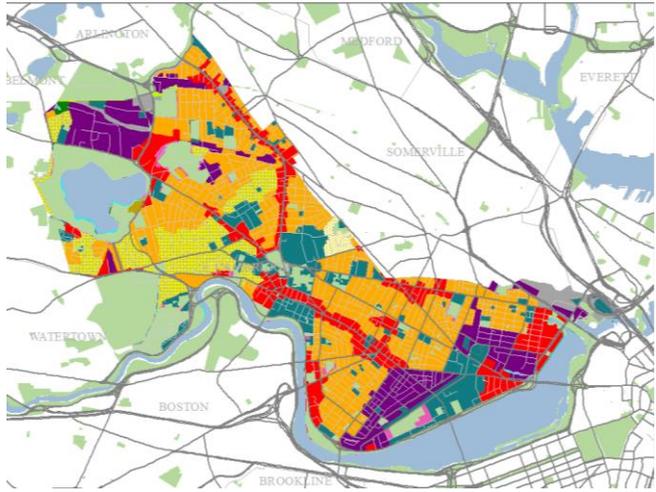


But there are options in the Data Frame clip function to exclude some layers from the clip – let’s use that to exclude our base map layers – major roads, town boundaries, open space, and water.

4. Go back to the **Data Frame Properties > Data Frame Tab**.
5. Click on **Exclude Layers** to exclude the layers you still want to be able to see:



6. In the example below, OPENSACES_POLY.shp and HYDRO25K_POLY.shp now are visible:



Note that this virtual clipping process slows down drawing so I recommend only doing it when you are ready to export a map rather than while you are still bringing in data and working on your maps.

[Click here to access ESRI's ArcGIS 10.2 Help section on this function.](#)