Clip and Ship Tools Description

The “Clip and Ship” (C&S) tool developed for this project was built utilizing the ArcGIS geoprocessing framework. The purpose of this tool is to allow the end-user to download sub-sections of the geographic data underlying the **[name of website/service here]**. As described in section **[Section I wrote about the Clip and Ship tool with the screen shots]** a user interacts with this tool to identify an area of interest by drawing an area on the map, select the desired layers for download, and pick the output format (shapefile, geodatabase, etc.). Upon selecting an area and preferences, the C&S request is sent to the server which processes the request and sends the resulting geographic data back to the user who then saves these data to his/her local computer. The complete tool consists of two main components that work together to enable this functionality: (a) the web-based front-end that the user interacts with to select the area of interest and her/his preferences; and (b) the back-end geoprocessing tools that perform the data extraction and send the resulting geographic data back to the client.

The web-based front-end component is implemented as a set of interactive tools embedded in the **[name of website/service here]** web interface. These tools are currently based on the ArcGIS JavaScript application programmer interfaces (APIs) that provide the built-in abilities to: (a) draw an area of interest; and (b) list the layers available for download (drawn from the set of geographic data layers underlying the **[name of website/service here]**). In addition to these built-in tools, the **[name of website/service here]** C&S implementation provides the ability to convert the user-drawn area into a projected version consistent with the geographic projection of the underlying data or the **[name of website/service here]**. This function is required because the back-end geoprocessing services (described below) enforce that the geographic projection of the boundary used as the clip area (i.e., the area of interest drawn on the map by the user) be the same as the projection of the underlying data used to support the **[name of website/service here]**.

The back-end geoprocessing framework used to perform the clip is hosted on the server running the **[name of website/service here]** and is based on the “Extra Data Task” geoprocessing service provided within the ArcGIS Server framework. This service is published as a geoprocessing service using the ArcServer infrastructure and performs the data manipulation on the geographic data underlying the **[name of website/service here]** to derive the subsections of data relevant to the user’s selected area. It accepts as input the boundary of the area of interest and the list of layers to be clipped and outputs a zip file containing the resulting portions of the geographic data sets of interest.

The web-based front-end prototype implementation of the C&S tool currently works only within the web maps created using the ArcGIS JavaScript API. This limitation is due to the requirement of the geoprocessing engine that the projection of the input data must match the projection of the underlying data. The Flex viewer currently used as the web interface for the **[name of website/service here]** does not support a combination of clip and on-the-fly projecting of the clip area as implemented in the JavaScript version. Future work will extend the Flex viewer implementation to develop this additional capability.

Files:

1. clipAndShipFrontEnd.html – web-based front-end for interacting with the map to select an area, download preferences, and submit a C&S request to the server
2. ClipAndShip.zip
   1. TestNonProjected\_2011-11-22.mxd – Map underlying the ArcServer Map Service which displays the data on the web-based front-end
   2. TestNonProjected\_2011-11-22\_Extract.mxd – Map underlying the ArcServer Geoprocessing Service which performs the C&S task
   3. Folder ToolData – the folder that contains the sample geographic data used in bot the Map service and the Geoprocessing Service.