

Getting Started with ArcGIS ModelBuilder - Part 1

ArcGIS 10.4+

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

ModelBuilder is a visual programming language for building geoprocessing workflows. Geoprocessing models automate and document your spatial analysis and data management processes. You create and modify geoprocessing models in ModelBuilder, where a model is represented as a diagram that chains together sequences of processes and geoprocessing tools, using the output of one process as the input to another process. This task sheet will step you through the process of creating a new toolbox, and geoprocessing model in ArcMap to find all the highways within 10 miles of a hospital.

1. Download the Data

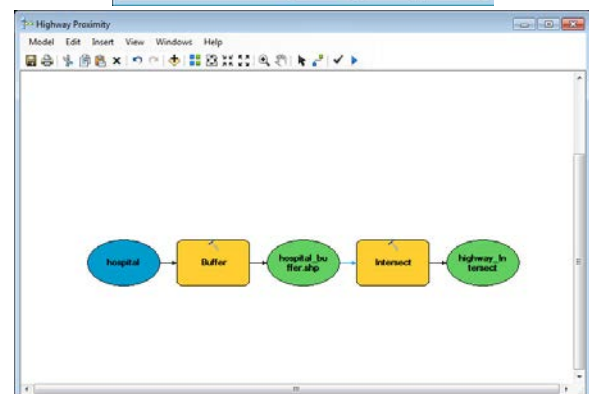
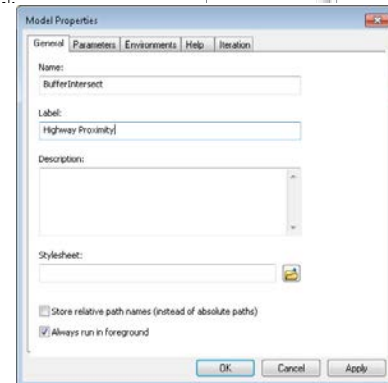
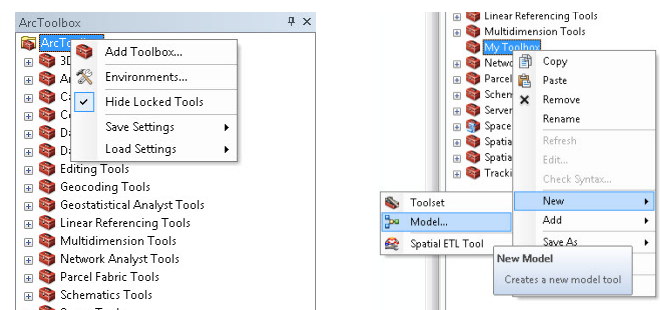
- To download the data used in this task sheet, navigate to www.extension.iastate.edu/communities/gis/quicktasksheets/data in a web browser. Click on the publication number: **PM2082-16m**.
- When the download is complete, you will need to unzip the folder in order to access the files in ArcGIS. The folder contains a the following shapefiles: highways, hospitals, and museums.

2. Create a New Toolbox and Model

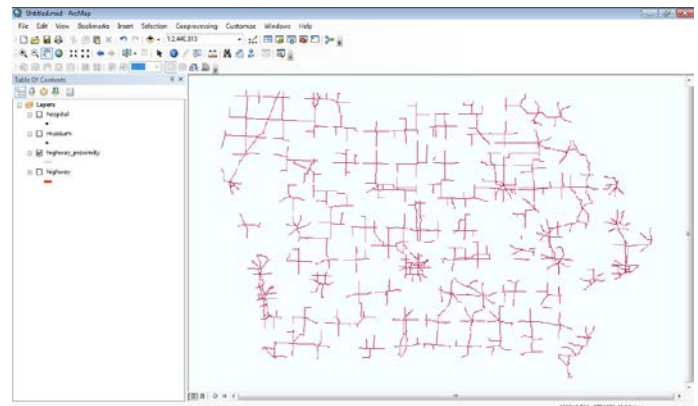
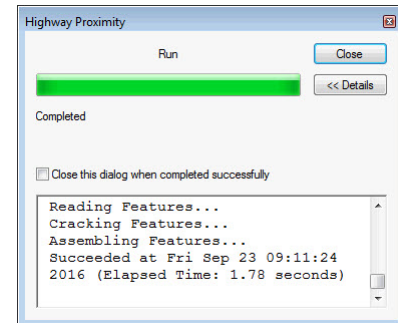
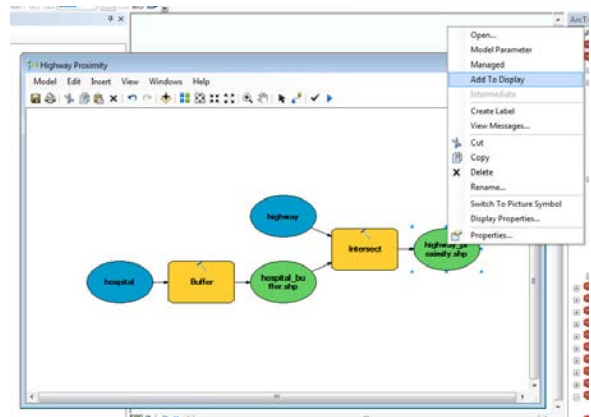
- In a blank ArcMap document, open **ArcToolbox**. Right-click **ArcToolbox** and select **New Toolbox**. Name the new toolbox **My Toolbox**. Right-click on **My Toolbox** and select **New > Model**.
- In the **Model** window select **Model > Model Properties**. In the **Model Properties** window type **BufferIntersect** under **Name** and type **Highway Proximity** under **Label**. Click **OK**.

3. Build a New Model

- With the **Highway Proximity** model still open, view the **ArcToolbox** and expand **Analysis Tools > Proximity** and click and drag the **Buffer** tool into the model window. Right-click the **Buffer** tool within the model and select **Open**.
- From the **Input Features** drop-down menu, select **hospital**. Under **Output Feature Class**, click the folder icon and browse and select an appropriate location for the output file. Under **Linear units**, type **10**, and select **Miles** as the units from the drop-down menu. Click **OK**.



- c. You will notice that the hospital layer get added to the model, with a line connecting it to the Buffer tool.
- d. From the **Table of Contents**, click and drag the **highway** layer into the **ModelBuilder** window. Select the **Add Connection** tool and use it to connect the highway layer to the **Intersect** tool, select **Input Feature**.
- e. Right-click on the output file **highway_proximity.shp** and select **Add to Display**. *Note: this will add the resulting file to the ArcMap display.*
- f. Save the model by selecting **Model > Save**. Then run the model by selecting **Model > Run Entire Model**. When the model is finished running click **Close** on the window. Close the model to see the highway proximity model results in ArcMap.



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