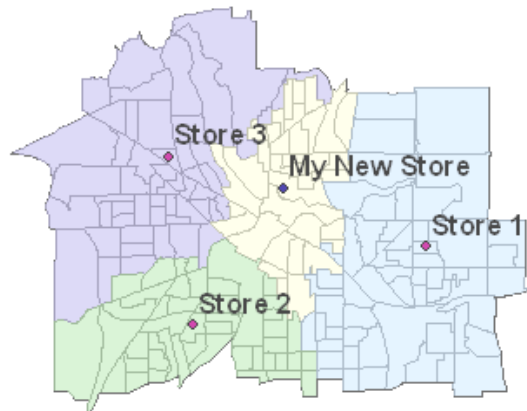
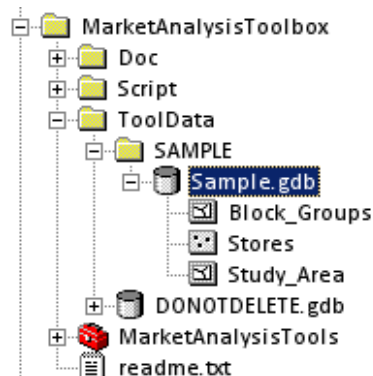


Market Analysis with the Huff Model tool



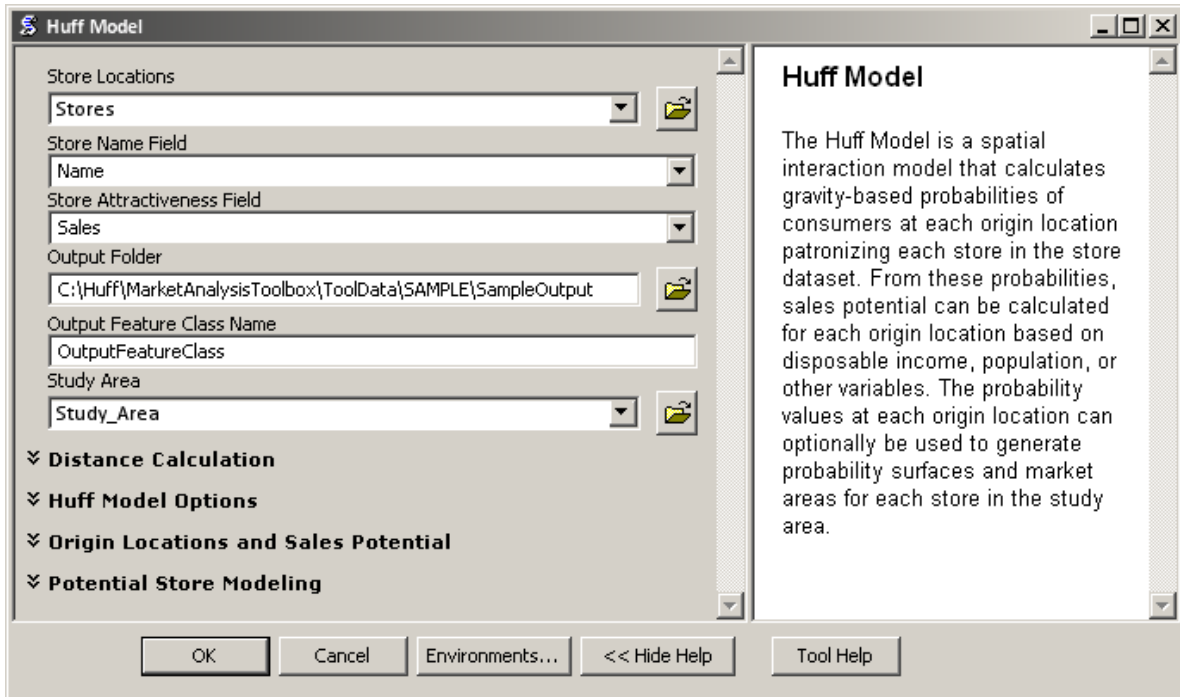
Sample Data

Sample data stored at ...MarketAnalysisToolbox\ToolData\SAMPLE\Sample.gdb




1. Feature Class 'Stores' contains three point features representing retail stores arbitrarily located in the study area for demonstration purposes – they do not represent real store locations. 'Stores' will be used in the "Store Locations" parameter of the Huff Model tool. 'Stores' contains fields "Name" and "Sales" which will be used in the "Store Name Field" and "Store Attractiveness Field" parameters of the Huff Model tool, respectively.
2. Feature Class 'Study_Area' contains a single polygon feature roughly centered on the urban area of Akron, Ohio, United States. 'Study_Area' will be used in the "Study Area" parameter of the Huff Model tool.
3. Feature Class 'Block_Groups' contains 189 polygon features which are U.S. Census Bureau block groups covering the same urban area of Akron, Ohio, United States. 'Block_Groups' can optionally be used in the "Origin Locations" parameter of the Huff Model tool (under the Origin Locations and Sales Potential category). 'Block_Groups' has a number of demographic indicator fields, one of which can optionally be used in the "Sales Potential Field" parameter of the Huff Model tool (under the Origin Locations and Sales Potential category). Suggested fields are "POP2007" or "HOUSEHOLDS".

2. If you have not yet read through tool help and documentation, please take the time to do so. Parameter assistance can also be viewed in the tool dialog help pane; simply click inside a parameter box.
3. From the above image, we can see that there are six required parameters indicated with a green dot that must be filled before tool execution. The remainder of the parameters are optional. Having already discussed which data will be used in many of the parameters, fill in the required parameters. The tool dialog should look something like this (optional parameters collapsed to allow more space):



4. The first set of optional parameters – “Distance Calculation” -- relates to the conceptualization of distance to be used in the modeling. Since a Street-Network Dataset layer is not provided with the sample data, and some users may not have the Network Analyst extension, we will leave the “Use Street-Network Travel Times” parameter unchecked. For this example, straight-line or Euclidean distance between stores and origin locations will be used in model calculations. If you have the Network Analyst extension and access to a Street-Network Dataset layer, please check the parameter to “Use Street-Network Travel Times” and locate the Street-Network Dataset, since travel time is a more realistic determining variable in market analysis than straight-line distance.
5. The second set of optional parameters – “Huff Model Options” – provides options to fine tune your modeling or enable the creation of additional outputs. For now, the default value of 2 is appropriate to use for the “Distance Friction Coefficient” parameter. For options beside “NONE” to be available in the “Generate Market Areas” parameter, Origin Locations must be entered, or the “Generate Probability Surfaces” parameter must be enabled. We will come back to this parameter when Origin Locations are set. Because the option to “Generate Probability Surfaces” requires ArcGIS Spatial Analyst extension, we will leave this parameter unchecked. If you have the Spatial Analyst extension feel free to enable this parameter.

6. The third set of optional parameters – “Origin Locations and Sales Potential” – provides an opportunity to use real-world data in the modeling process. As indicated above, we will use the feature class “Block_Groups” in the “Origin Locations” parameter. Census geographies or geocoded customer locations are appropriate examples of data that can be used in the “Origin Locations” parameter. In the “Sales Potential Field” parameter, we will select the field “POP2007” from the “Block_Groups” feature class to be used to calculate sales potential at each block group.
7. With the “Origin Locations” parameter set, we can now return to the “Generate Market Areas” parameter in the “Huff Model Options” category. While previously the only option in this parameter was “NONE”, we can now select to generate market areas from origin locations -- “ORIGINS”. This option will add a new field to the output feature class that identifies which store’s market area the origin location is within.
8. The fourth and final set of optional parameters – “Potential Store Modeling” – allows the use of the Huff Model tool for predictive modeling (i.e., how will the market areas or sales potential for stores in the study area be impacted if a new store is opened). The “Potential Store Locations” parameter is a Feature Set data type that allows for points on the map to be interactively selected as locations for new stores which will be included in the modeling. To use this Feature Set control, click the button , then click a location on the map within the study area. To complete this interaction, provide a store Name and Attractiveness value in the appropriate cells— NAME = My New Store, ATTRACTIVENESS = 500000.

Potential Store Modeling
Potential Store Locations (optional)

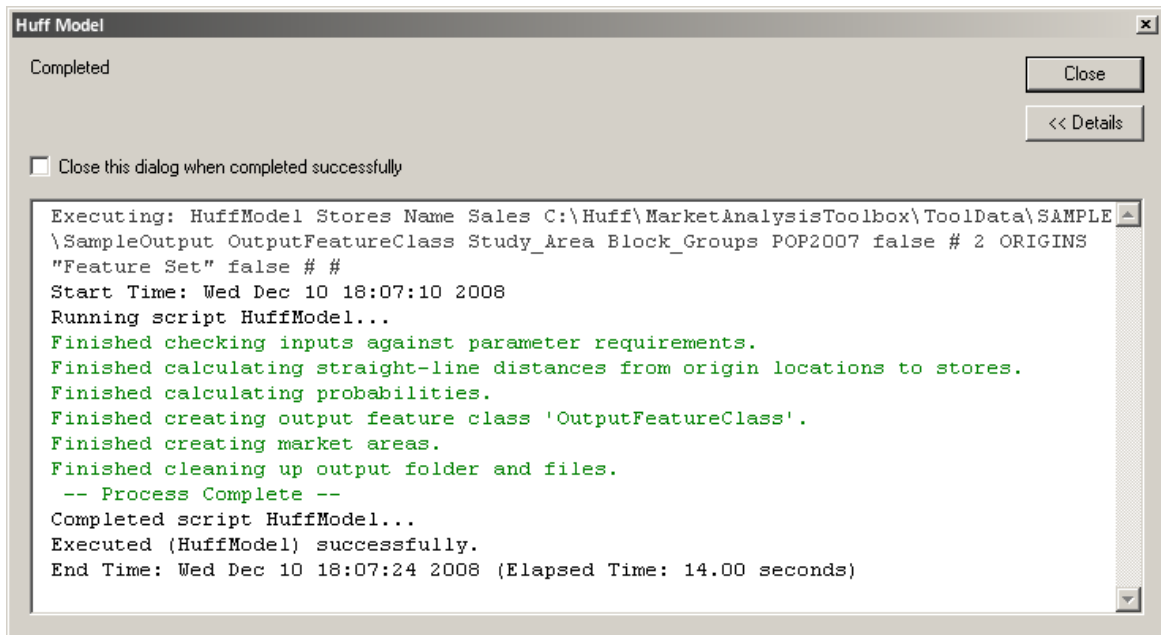
☒ Add records interactively:

	NAME	ATTRACTIVENESS
1	My New Store	500000

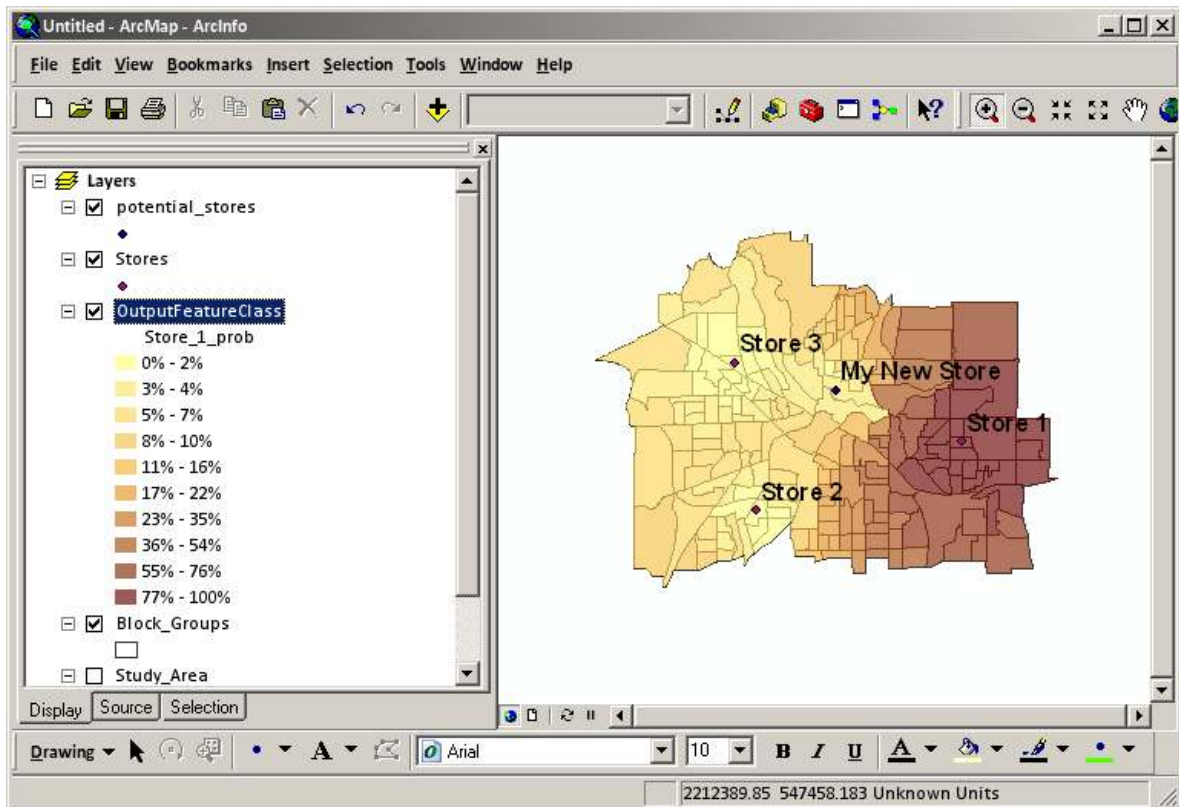
☐ Use records from:

You could also select to use a feature class or feature layer saved on disk, by selecting the “Use records from:” radio button and browsing to the dataset.

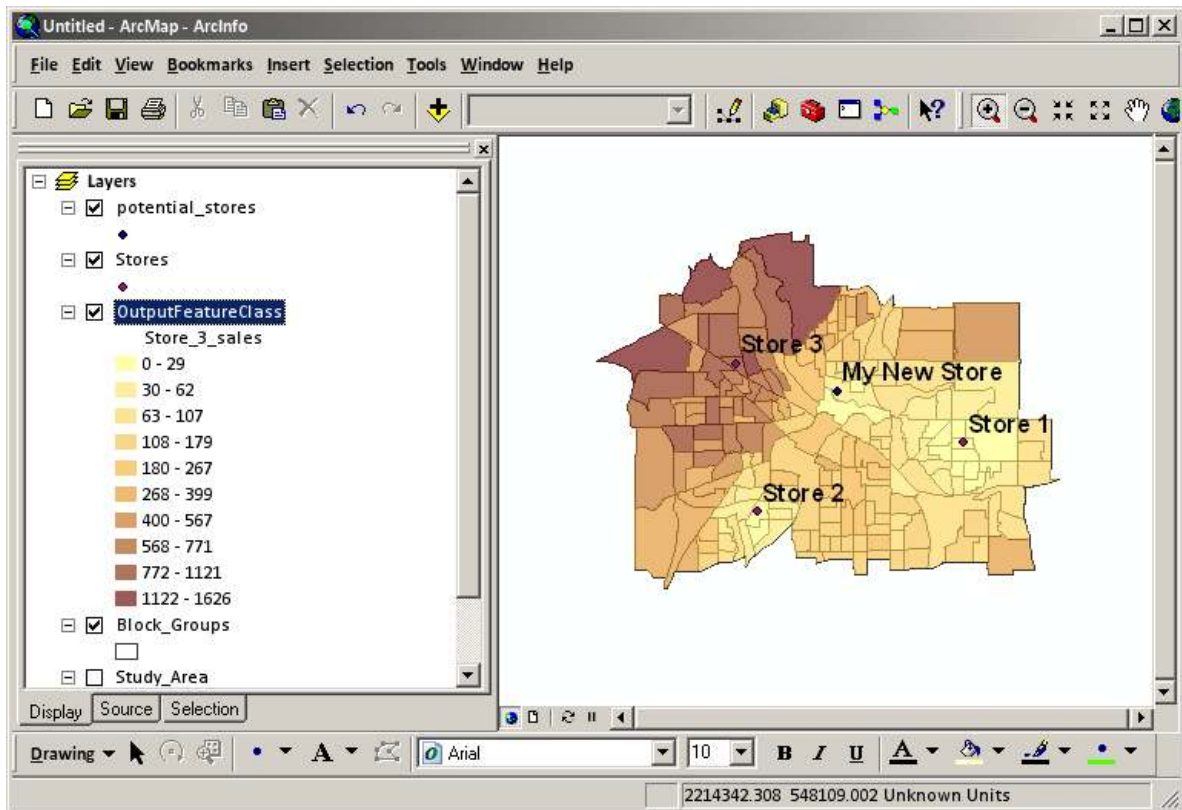
9. Click OK to run the Huff Model tool. The geoprocessing messages window will indicate when each part of the process has completed:



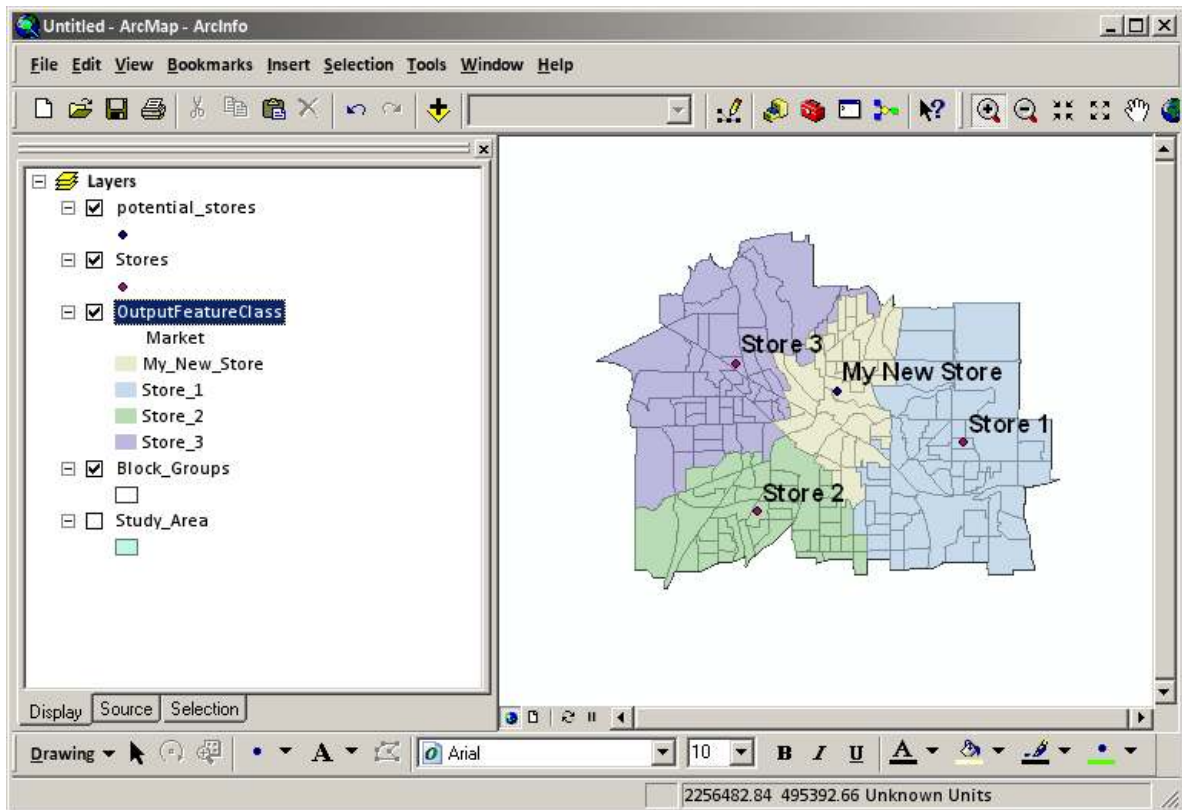
10. The output feature class will be added to the ArcMap display. Since you used the Potential Store Modeling parameter, layer "potential_stores" which is a copy of the feature that was added in the Feature Set control will also be added to the ArcMap display. Using the new fields added in the modeling process, the output feature class (named "OutputFeatureClass" in the above example) can be symbolized according to probabilities of going to each store, the sales potential for each store, or which store's market the output feature is within.



Probability of each block group going to Store 1



Sales Potential values for Store 3



Market Areas for each store