U.S. Pat. No. 6,604,083

Wendy’s

Retail Site Selection Based on Drive Time Areas

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U.S. Pat. No. 6,604,083

(12) **United States Patent**
Bailey

(10) **Patent No.: US 6,604,083 B1**
(45) **Date of Patent: Aug. 5, 2003**

(54) **MARKET DETERMINATION BASED ON TRAVEL TIME BANDS**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/095,802**

(22) Filed: **Jun. 11, 1998**

Related U.S. Application Data

(60) Provisional application No. 60/049,448, filed on Jun. 12, 1997.

(51) **Int. Cl.**[7] **G06F 17/60**
(52) **U.S. Cl.** **705/10**; 701/201
(58) **Field of Search** 705/1, 10, 14; 700/200, 201; 707/10; 701/201

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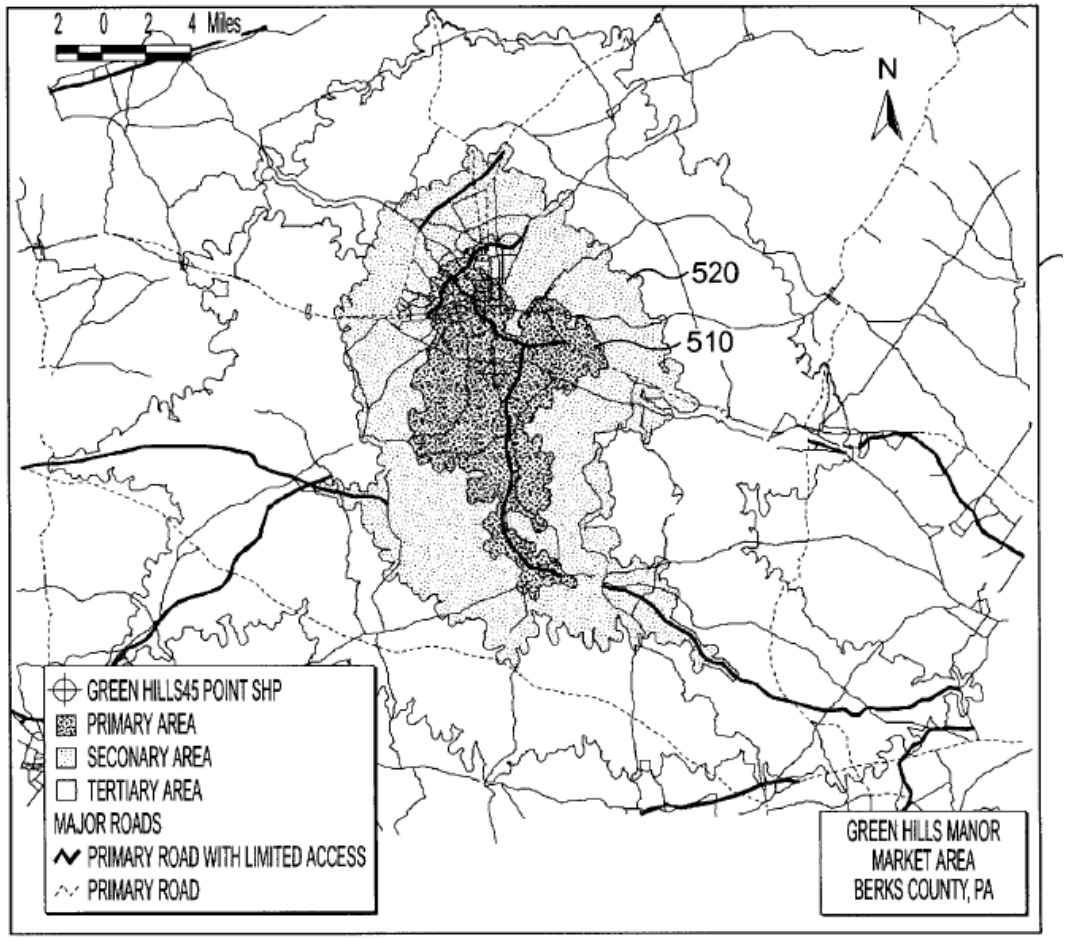
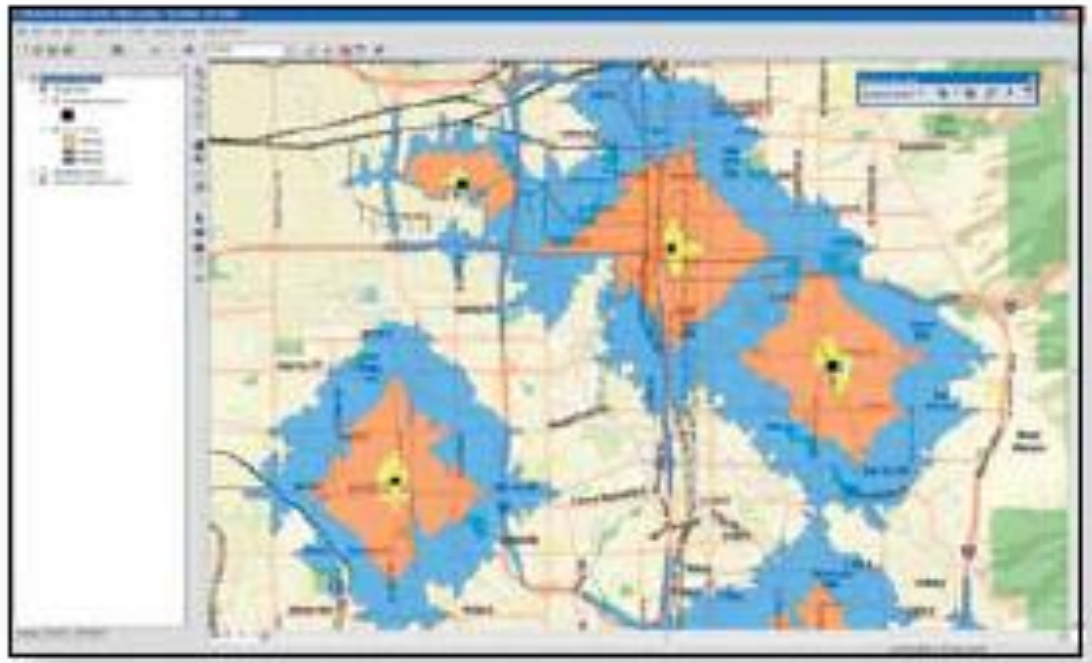


FIG. 5b



Multiple Drive Times in Salt Lake City, Utah

http://www.esri.com/library/brochures/pdfs/esri-busanalyst.pdf

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Claim 5

A method for preparing a market study comprising:

defining a geographic area around a selected location, the geographic area corresponding to a market based on a selected maximum travel time;

defining a plurality of bands based on increasing travel time from the location;

selecting geographic units in the bands;

defining market-related variables for the market;

calculating values corresponding to the market-related variables for each of the selected geographic units; and

calculating a net demand for a service or a commodity in the market based on the values.

Improving Site Selection

What did they do?

The Wendy's Company streamlined its reporting and market analysis workflow for restaurant development by working with Esri partner GISi to integrate the Esri® location platform into its corporate IT systems. Now, an intuitive mapping interface provides staff with easy access to The Wendy's Company proprietary restaurant information. Demographic, competitor, and business data is also available for any of the more than 6,500 existing chain locations and prospective sites. The Esri platform allows staff to incorporate a proprietary sales forecasting model when making decisions on opening new restaurants and closing or relocating restaurants.

"Demographic data and location analytics are critical components when making investment decisions to build new restaurants. Now, everything we need—including mapping, analytics, and modeling—can be done on one platform that is scalable across our organization."

Dennis Hill
Vice President of Real Estate
The Wendy's Company

Wendy's

http://www.esri.com/library/casestudies/wendys.pdf

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Tip

Drive time

Drive time trade areas are created around your stores, including all areas accessible along the street network given your maximum travel time or distance.

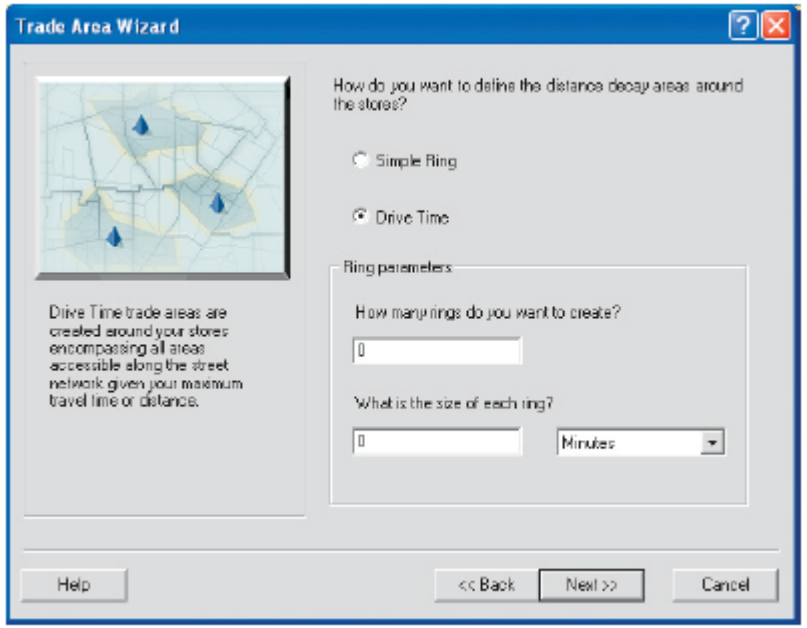
b. If you choose Drive Time, do the following:

Choose how many drive time trade areas you want to create.

Choose the size of the rings you want to create for each store.

Click the Measure Units drop-down menu to choose a time or distance from the list.

Click Next.



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http://downloads2.esri.com/support/documentation/other_/1473Using_ArcGIS_Business_Analyst.pdf

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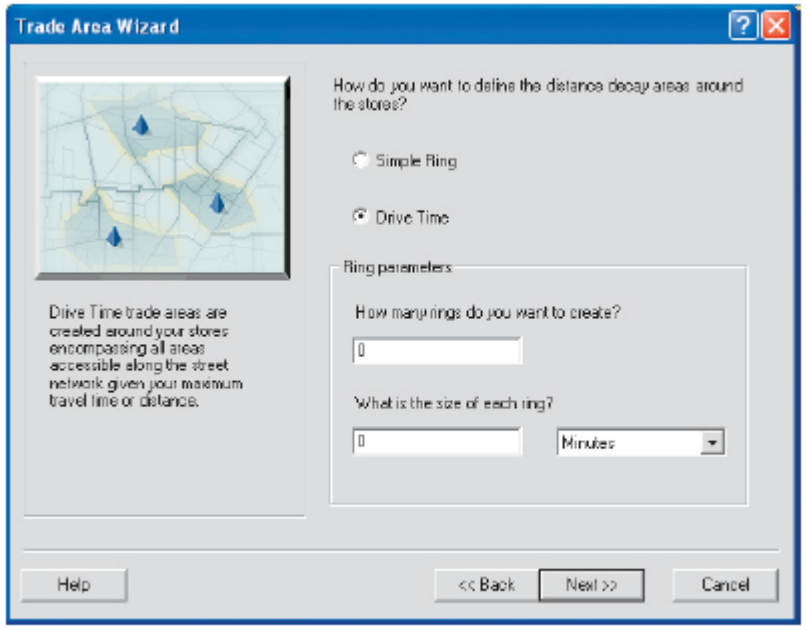

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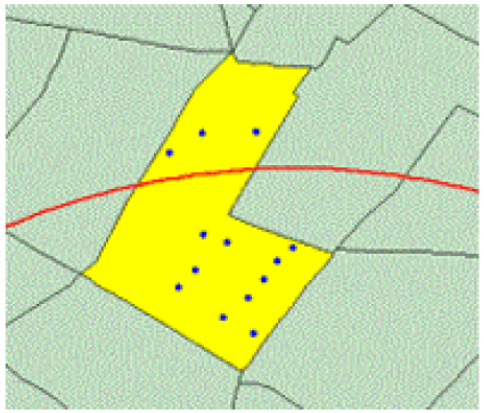
Business Analyst

1. **How is data calculated for a trade area?**

ESRI uses a sophisticated Weighted Block Centroid geographic retrieval methodology to calculate data for rings and other trade areas. This method provides the most accurate information for rings and polygons.

The basic principle - A geographic retrieval methodology determines how data is gathered and then summarized or aggregated for each ring. For standard geographic units, such as counties or ZIP Codes, the link between a designated area — called a trade area — and its attribute data is a simple one-to-one relationship; if a trade area contains a selection of ZIP Codes, the data retrieval is a simple process of gathering the data for those ZIP Codes.

Census Blocks are the smallest unit of census geography. They are used to create all other levels of census geography. For example, one or many blocks are aggregated to create a Block Group. In the third map, the blue dots represent the geographic centroids for the 13 blocks that make up the highlighted (yellow) Block Group. Unfortunately, only a small subset of data (households, population, housing units, and number of businesses) is available at the Census Block level and, therefore, cannot be used to aggregate most data for a trade area.



Block centroids within a trade area are used to calculate a weight for the highlighted Block Group. These weights are then used to more accurately gather and aggregate demographic data for rings and other polygons.

http://downloads.esri.com/support/documentation/other_/BA91_Block_Group_Centroid_Aggregation_FAQ.pdf

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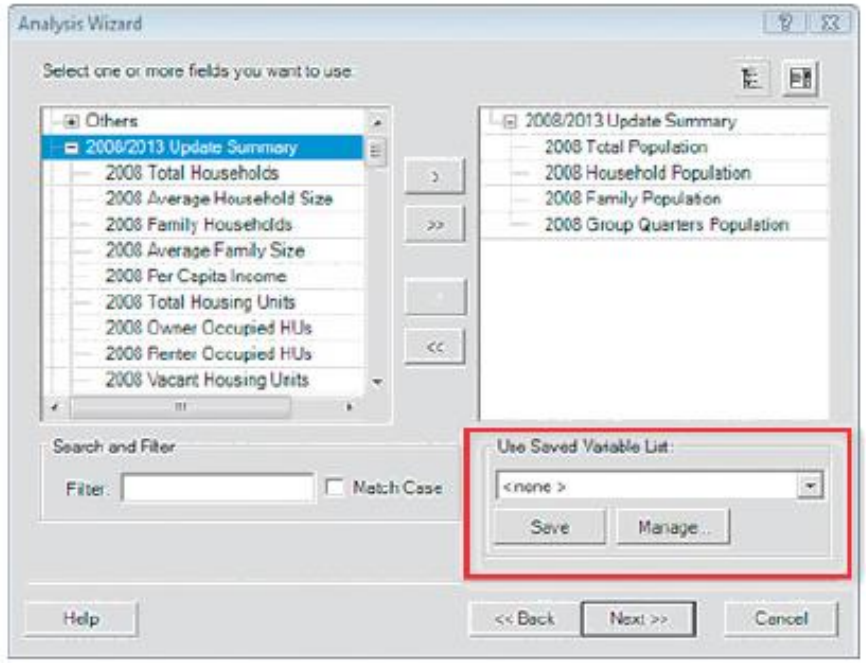
About custom variable lists

In various dialog boxes, you can create and save custom variable lists for use in reports, analyses, trade areas, and tools. This is helpful when you are repeating tasks with the same demographic variable outputs. In addition to creating customized lists, the variables are provided in each standard Summary Report—for example, you can run a Spatial Overlay for a trade area and use every variable included in the Demographic and Income Report. The variables will appear as fields in the attribute table so you don't have to manually load each variable individually.



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Analysis layer setup

Business Analyst allows your data to be used in any of the wizards and creates reports with this data. All layers included with Business Analyst are already set up; however, you can revise setup on layers on your map by using the Analysis Layer Setup Wizard.

Analysis layer setup is often used to import custom data, such as sales volumes, and joins it to a standard level of geography such as ZIP Codes. You can also use your own demographic data, estimates, projections, business statistics, or consumer expenditure information. This data must have a geographic identifier associated with it since this tool is designed to join your custom data with an existing polygon or point layer—for example, if you want to report on your sales data at the ZIP Code level, make sure that a valid ZIP Code field was included in your database. This allows you to join your database to our ZIP Code boundary or your own ZIP Code boundary file, if added in the table of contents. ▸

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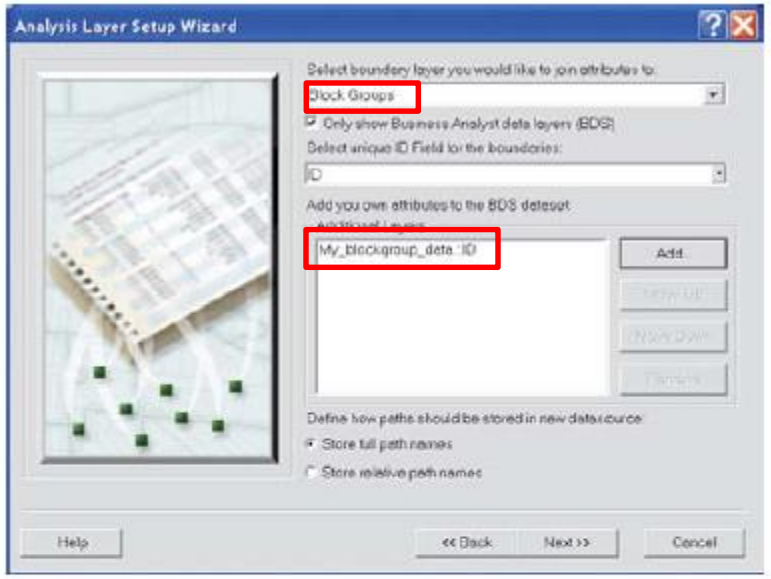
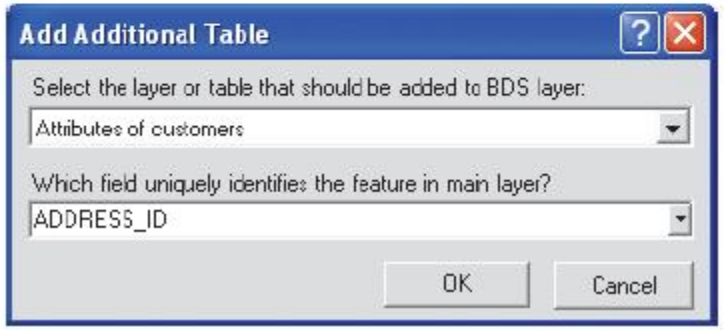
Field descriptions

Variable: Shows all variables you have selected for setup.

3. Click the drop-down menu and click the boundary layer for which you want to join attributes.
4. Click the second drop-down menu and click the unique ID field for the boundaries.
5. Add your own attributes to the BDS dataset. Click the Add button and the Add Additional Table dialog box opens. Click the first drop-down menu and click the layer or table that you want to add to the BDS layer. Click the second drop-down menu and click the field that uniquely identifies the feature in the main layer, then click OK.





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Field descriptions

Variable: Shows all variables you have selected for setup.

Aggregation method: Combines variable values. The options are to sum the value; average the values; use the min value; use the max value; or calculate the median, standard deviation, or variance.

Weight: Weight the variable based on another variable that is in the Block Group layer. You could choose to weight consumer expenditures on furniture by 2003 Total Households. This provides you with the amount spent per household on furniture in a trade area.

Apportionment method: Use in apportioning a variable to a portion of geography when an analysis cuts across a geography. The analysis includes only the value of the variable that falls inside the analysis area. Depending on the variable, you have the choice of apportioning by AREA or one of the three primary demographics at the block point level (Population, Households, or Housing units).

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