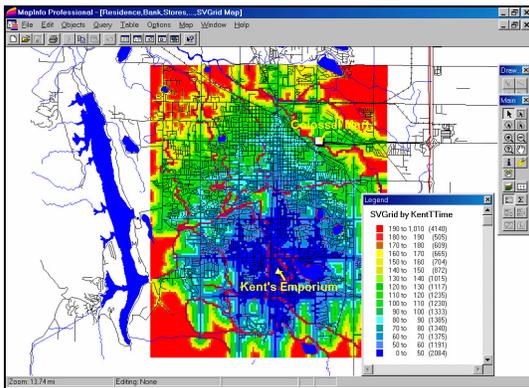


# Applying MapCalc Map Analysis Software

**Transferring Data to MapInfo Tables:** A market analyst needs to transfer information on travel-time from a client's store that was derived in MapCalc to a MapInfo table identifying the residences of customers. This information will be invaluable in geo-query and statistical summary of customer characteristics within specified zones of proximity.

[click here](#) for a printer friendly version (.pdf)

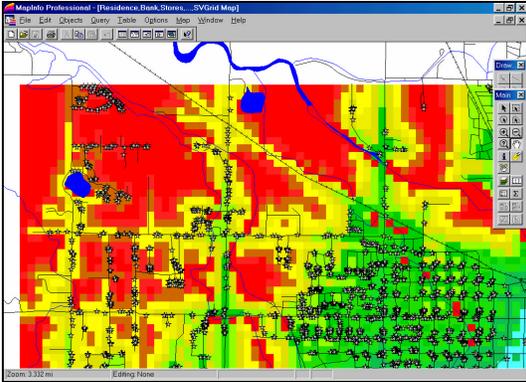
**Base Data.** See the **Travel-Time and Customer Access** application for procedures used to append travel-time data derived in MapCalc to a "pseudo grid" stored in MapInfo.



**Kent's\_TTime Map.** The background colors identify the quickest (shortest lapsed time) from Kent's Emporium to all other locations respecting the inability to traverse open water (absolute barrier), the relative ease of travel along primary and secondary roads, and the much slower travel by walking where there are no roads (relative barriers).

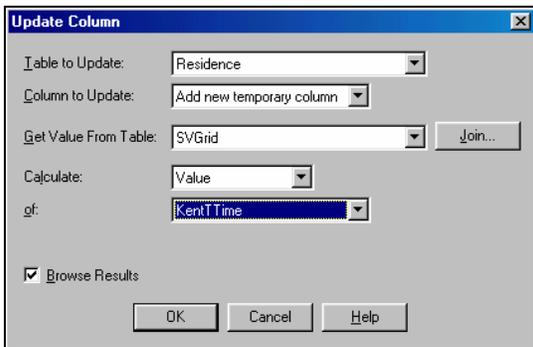
LOCATION	COLUM	ROW	ATMTTime	MainTTime	BranchTTime	KentTTime	C
Column 18,Row 9	18	9	88.000000000	157.000000000	225.000000000	199.000000000	
Column 19,Row 9	19	9	103.000000000	172.000000000	240.000000000	214.000000000	
Column 20,Row 9	20	9	118.000000000	186.000000000	255.000000000	229.000000000	
Column 21,Row 9	21	9	103.000000000	171.000000000	240.000000000	214.000000000	
Column 22,Row 9	22	9	9.999.000000000	999.000000000	999.000000000	1.000.000000000	
Column 23,Row 9	23	9	9.999.000000000	999.000000000	999.000000000	1.000.000000000	
Column 24,Row 9	24	9	45.000000000	113.000000000	182.000000000	156.000000000	

**SVGrid Browser.** The MapInfo table for the "pseudo grid" identifies the travel-time for each cell in the grid. For example, the farthest away location on a street is nearly 20 minutes (199 units \* 6 sec per unit= 1194 sec / 60 sec per min= 19.9 min)... top row in the table under the column "KentTTime." Potential customers at this location need strong motivation to visit the store.



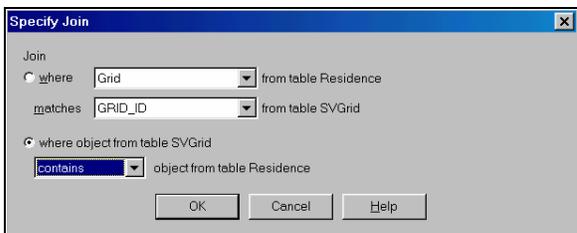
**Residence Map.** The residences of customers and related information are stored as “point features.”

**Step 1.** The information on travel-time derived in MapCalc and transferred to the pseudo grid in MapInfo can be easily appended to other maps.



**Update Column Dialog Box.** From MapInfo’s main menu, select *Table* → *Update Column* to access the update form. The Residence map is specified as the table to update and the SVGrid map (pseudo grid) is specified as the table providing the values. The values for KentTTime in the SVGrid table will form a new column in the Residence table.

**Step 2.** Pressing the “Join...” button in the Update Column dialog box pops-up a form for specifying the spatial conditions used to link the two tables.

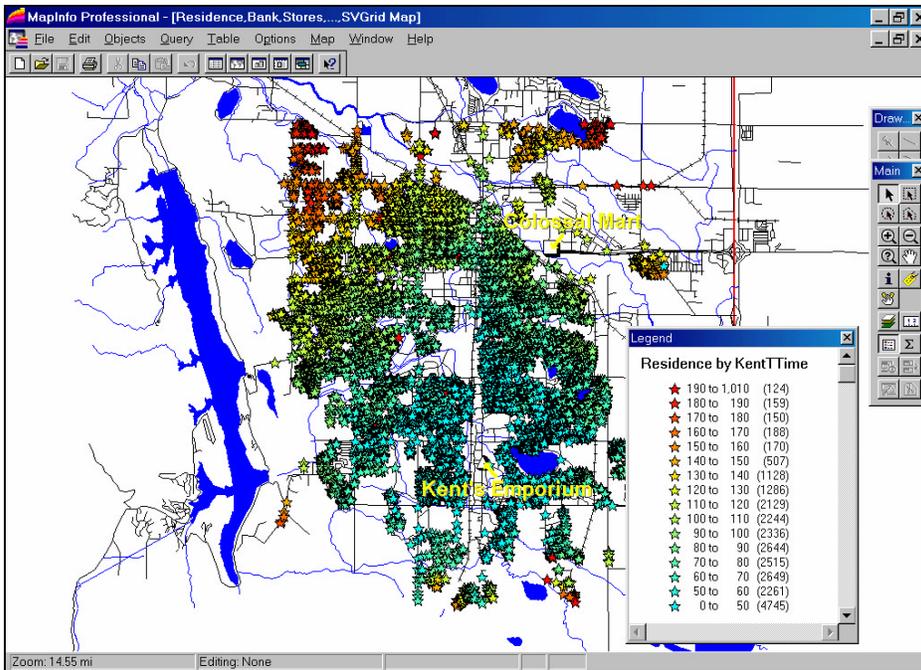


**Join Dialog Box.** The “contains” option is specified for the spatial join. This directs the computer to identify which pseudo grid cell (square polygon) a point falls within then extracts the travel-time value for that cell and records it in the new column of the Residence table.

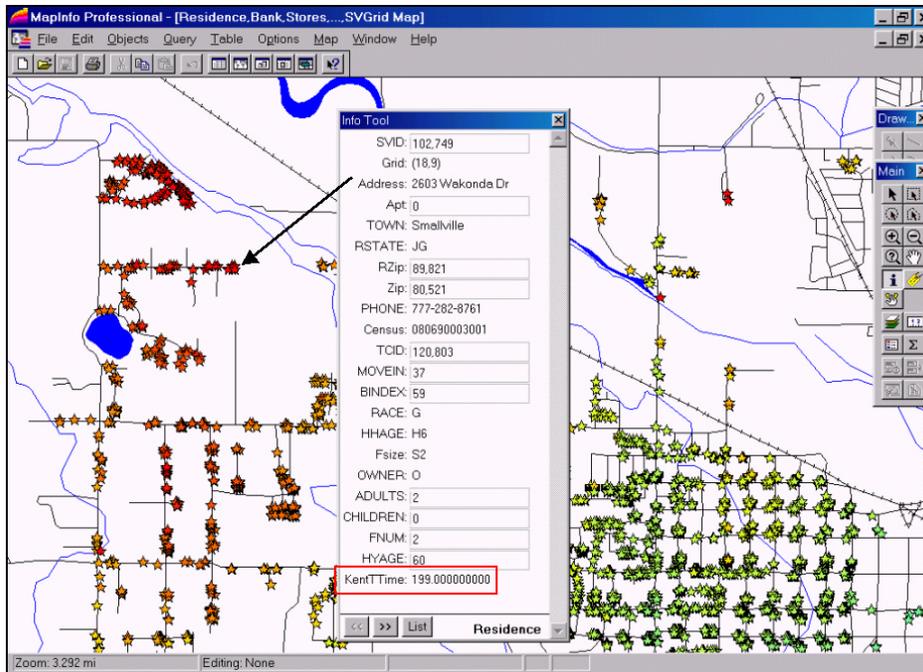
CHILDREN	FNUM	HYAGE	KentTTime	
<input type="checkbox"/>	0	2	60	199.000000000
<input type="checkbox"/>	0	2	63	161.000000000
<input type="checkbox"/>	0	3	29	161.000000000
<input type="checkbox"/>	1	3	34	161.000000000
<input type="checkbox"/>	0	2	64	155.000000000
<input type="checkbox"/>	0	4	56	155.000000000
<input type="checkbox"/>	0	3	63	165.000000000
<input type="checkbox"/>	0	2	64	148.000000000
<input type="checkbox"/>	0	2	55	148.000000000
<input type="checkbox"/>	2	5	60	148.000000000
<input type="checkbox"/>	0	4	58	148.000000000
<input type="checkbox"/>	0	2	62	148.000000000
<input type="checkbox"/>	0	5	62	148.000000000

**Updated Residence Table.** The

“KentTTime” values form a new column in the Residence table. This information can be used in the same manner as any of the other demographic information directly encoded into the table.



**Residence Themed by KentTTime.** The spatially derived attribute identifying the travel-time from each residence to the store can be themed and displayed for visual analysis of the pattern.



**Information for a Residence.** The travel-time information “joined” to the Residence map and can be interactively queried using the Info Tool. SQL queries, such as customers above a certain income level, can be summarized by their effective distance from the store—are pockets of targeted customers near or far from the store?

**Summary.** Travel-time analysis is an important part of GIS technology but until recently grid-based tools have not been available in desktop mapping systems. Information exchange is easily accomplished between MapInfo and MapCalc by simply transferring maps between the matching pseudo grid and analysis grid in the respective systems. In addition to serving as graphical backdrops, the calculated values in MapCalc derived maps, such as viewsheds, population density and proximity maps, can be used in geoquery and advanced GIS models developed within MapInfo.

*Note: A similar exchange of information between MapCalc and ArcView, ArcInfo or ArcGIS can be made. A detailed listing of the steps used in the [“Point-in-Polygon” data transfer](#) within MapInfo is attached.*