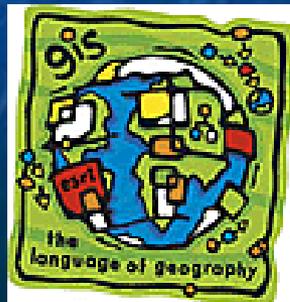


# Desktop Wireless Design Merged with ArcView and Business Analyst

ESRI International User Conference  
August 2004



# Combine RF and Market Data

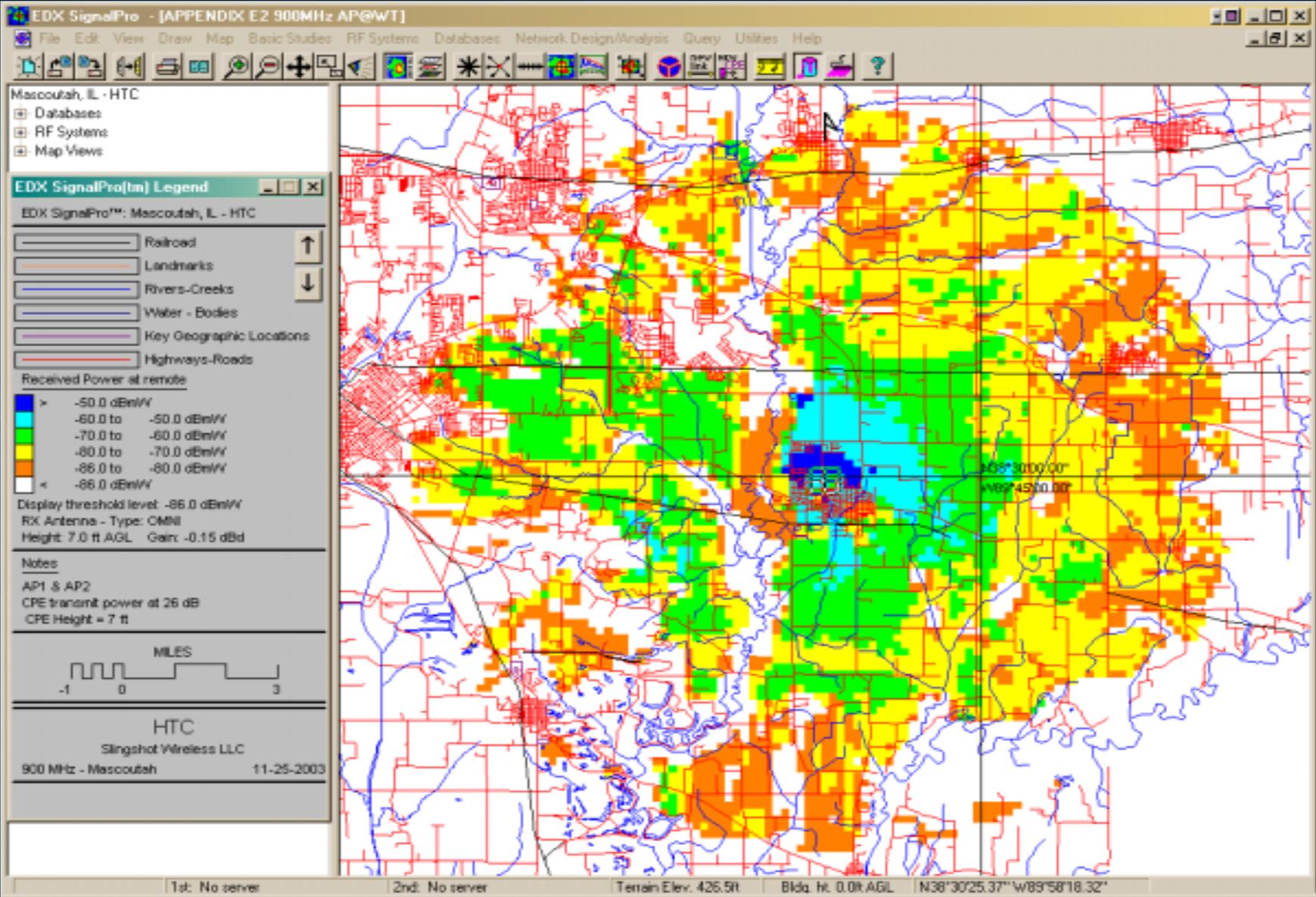
- More Effective Business Decisions
  - Decrease Risk
  - Balance Transmitter location and equipment choices balanced with market and technology
- Improve Customer Satisfaction
  - Set Proper Expectations
  - Only send promotional material to those within the service area
  - Marketing materials are specific to demographics

# Combine RF and Market Data

- Improve ROI
  - Target areas of maximum potential
  - Limit marketing and sales to areas of potential coverage
  - Network investment compared to potential return
- Accelerate Profitability
  - Better Business Decisions maximize profit potential
  - Improve Customer Satisfaction increases word of mouth and customer referrals
  - Improved ROI allows for quicker expansion or additional buildouts

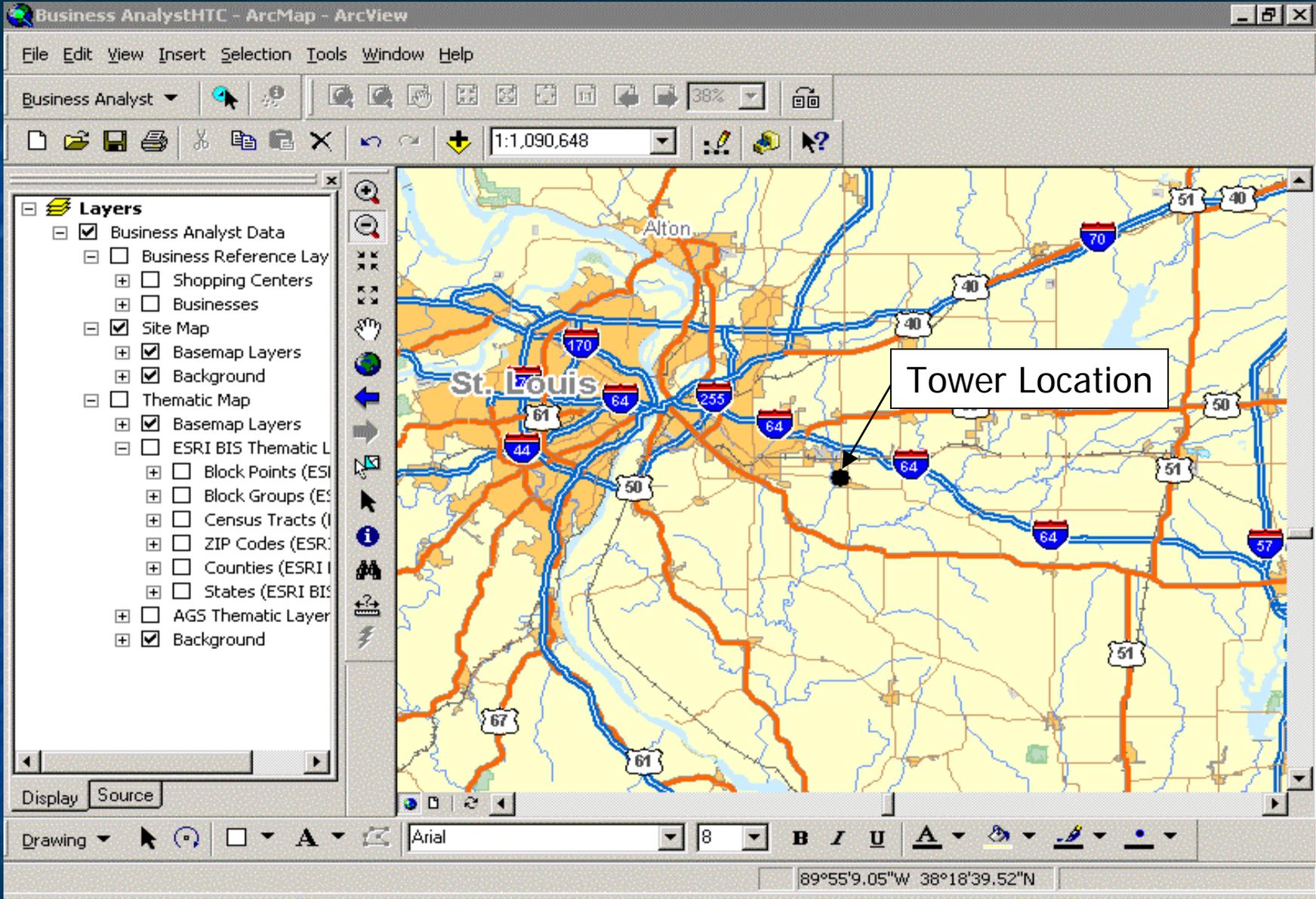
# RF Engineering

- EDX Signal Pro 5.x<sup>®</sup> used to model Area Coverage
- Transmitter(s) location and tower height
- Area Study to depict coverage at a distinct frequency, transmitter power level, and range of receiver power levels, etc.
- Selection based on technology – no consideration given to market potential
- Export coverage map

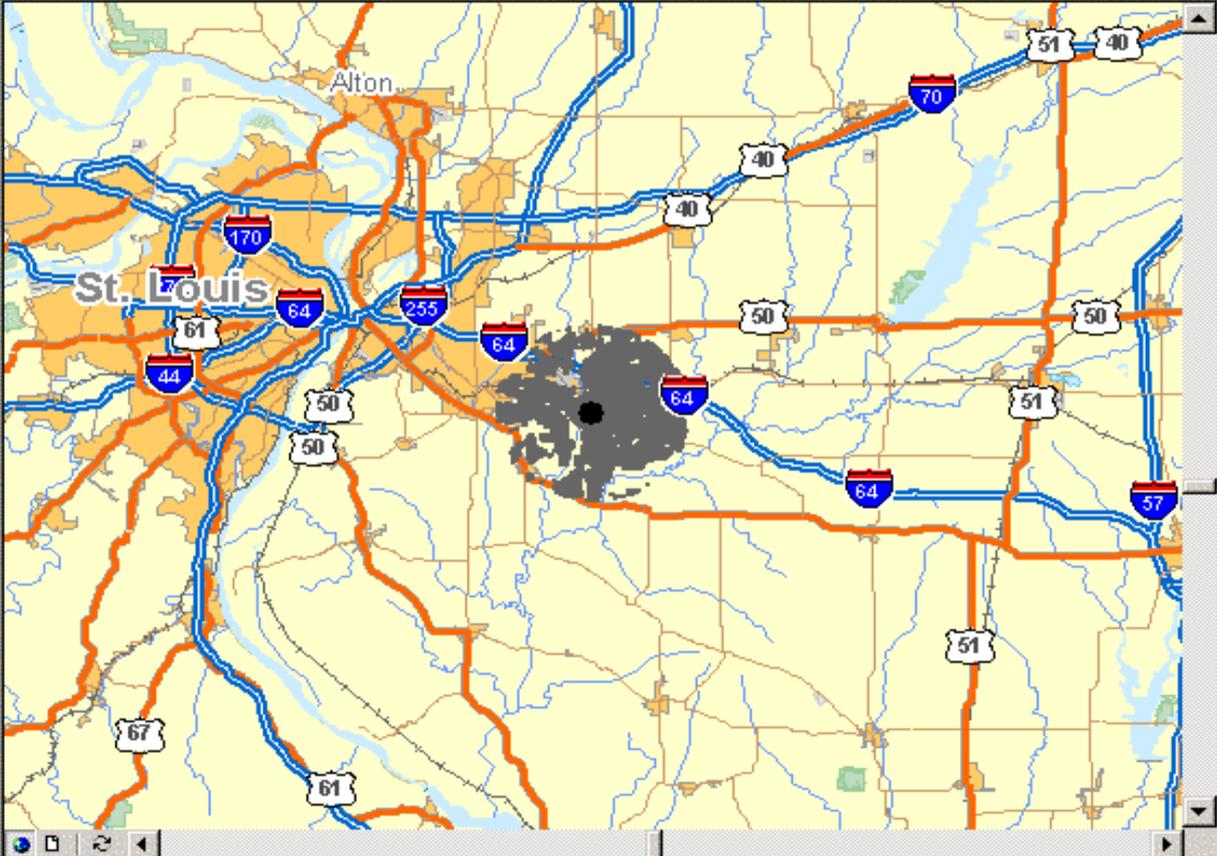


# Transfer to ArcView

- Coverage Area Study used in ArcView 8.x or ArcView 3.x
- Locate Tower or Transmitter location
- Load Coverage Area for mapping and ESRI Business Analyst analysis and reporting
- All examples using ArcView 8.x
- Preliminary market analysis can be performed in Business Analyst

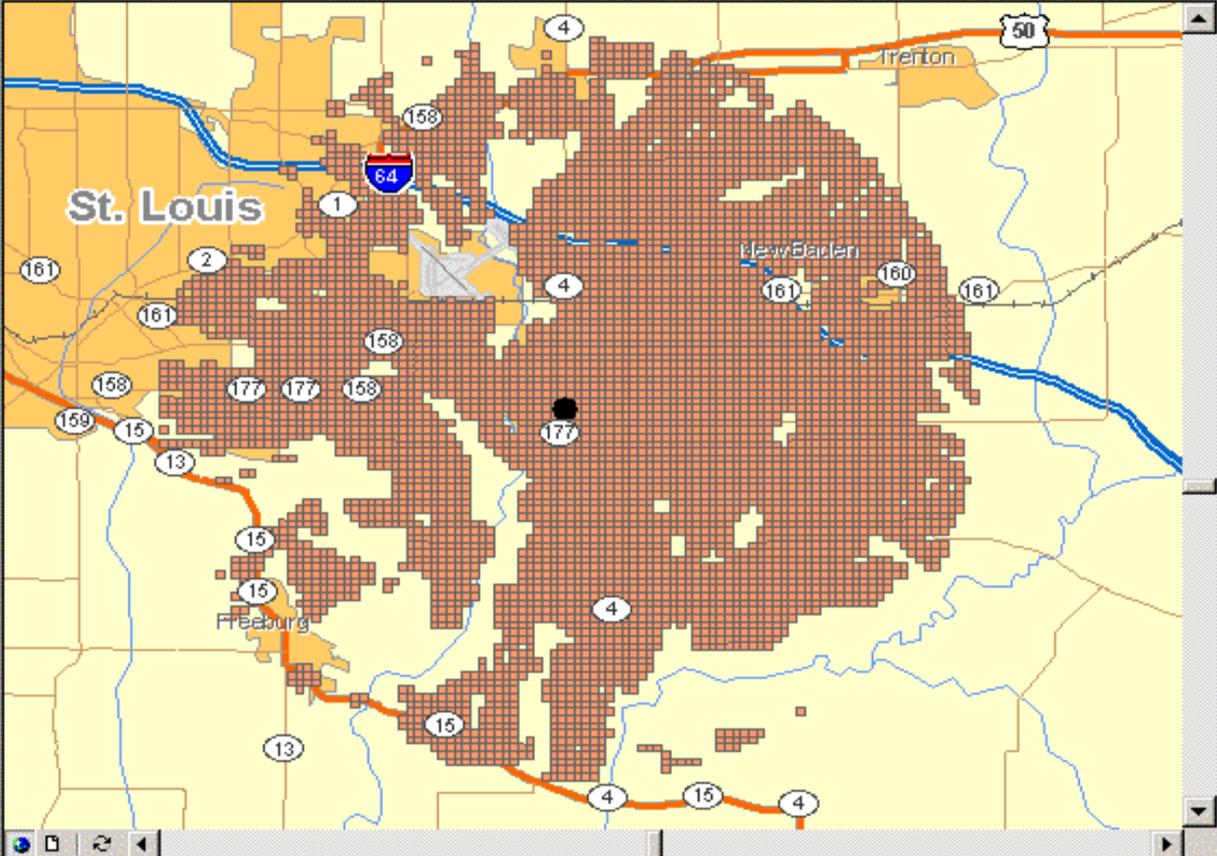


- Layers
  - test
  - Business Analyst Data
    - Business Reference Lay
    - Shopping Centers
    - Businesses
  - Site Map
    - Basemap Layers
    - Background
  - Thematic Map
    - Basemap Layers
    - ESRI BIS Thematic L
      - Block Points (ES
      - Block Groups (E
      - Census Tracts (
      - ZIP Codes (ESR
      - Counties (ESRI I
      - States (ESRI BI
    - AGS Thematic Layer
    - Background



Layers

- Area Study
- Business Analyst Data
  - Business Reference Lay
  - Shopping Centers
  - Businesses
- Site Map
  - Basemap Layers
  - Background
- Thematic Map
  - Basemap Layers
  - ESRI BIS Thematic L
    - Block Points (ESR
    - Block Groups (ES
    - Census Tracts (I
    - ZIP Codes (ESR
    - Counties (ESRI I
    - States (ESRI BI
  - AGS Thematic Layer
  - Background



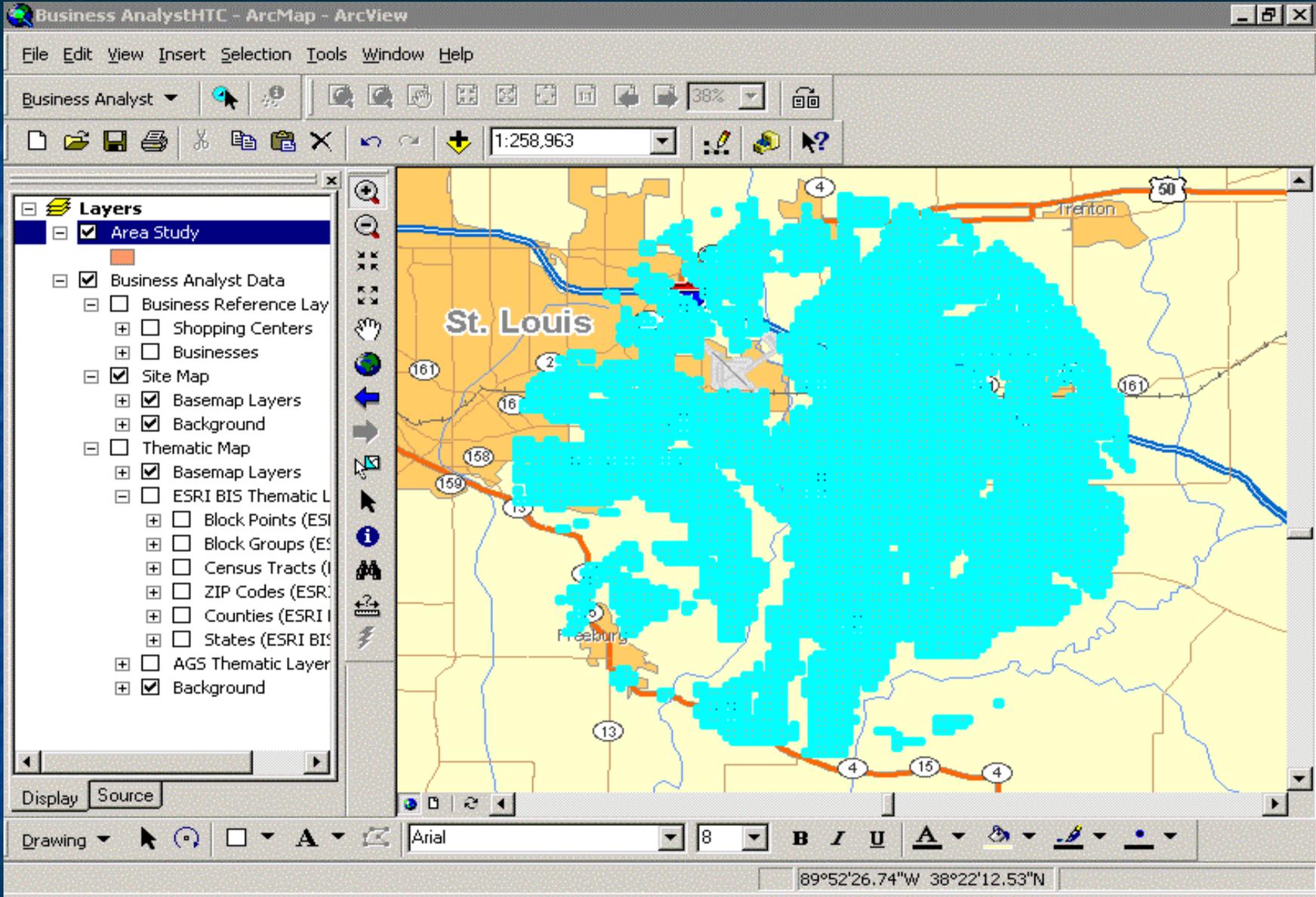
Display Source

# Coverage Area as Polygons

- The data values and symbology require revision to accurately display the same coverage area in ArcView
- Each polygon has an assigned power level
- Select coverage and use as a Study Area in Business Analyst

The screenshot shows the ArcMap interface with a map of St. Louis. A context menu is open over a brown grid layer. The menu options are:

- Copy
- Remove
- Open Attribute Table
- Joins and Relates
- Zoom To Layer
- Visible Scale Range
- Selection
  - Zoom To Selected Features
  - Clear Selected Features
  - Switch Selection
  - Select All
  - Copy Records For Selected Features
  - Annotate Selected Features
  - Create Layer From Selected Features
- Label Features
- Convert Labels to Annotation...
- Convert Features to Graphics...
- Data
- Save As Layer File...
- Properties...



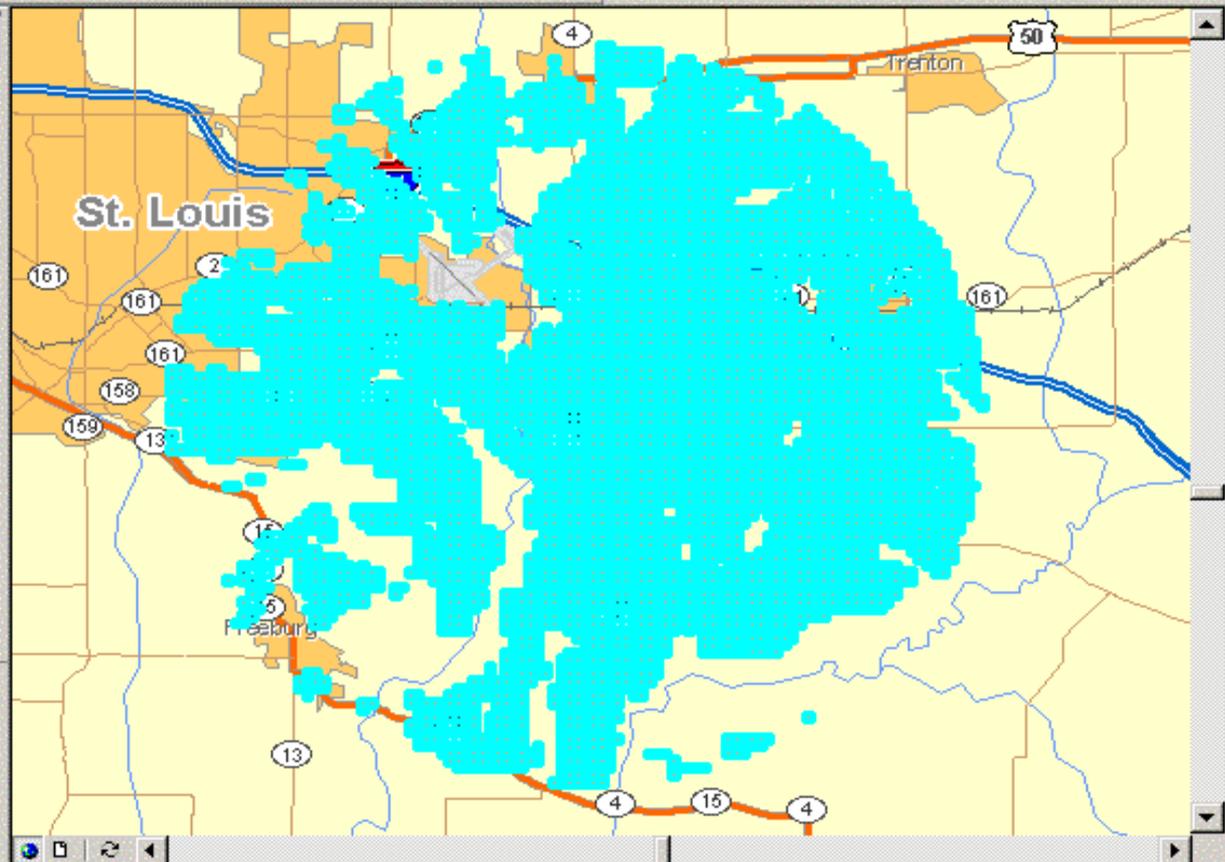
- Add Business Listings...
- Add Business Data From Internet...
- Create Study Area...**
- Set Analysis Extent
- Customer Setup...
- Store Setup...
- Assign Customers To Stores...
- Analysis Layer Setup...
- Analysis...
- Spatial Overlay...
- Find Similar...
- Site Prospecting
- Find Route...
- Reports...
- Thematic Mapping...
- Preferences...

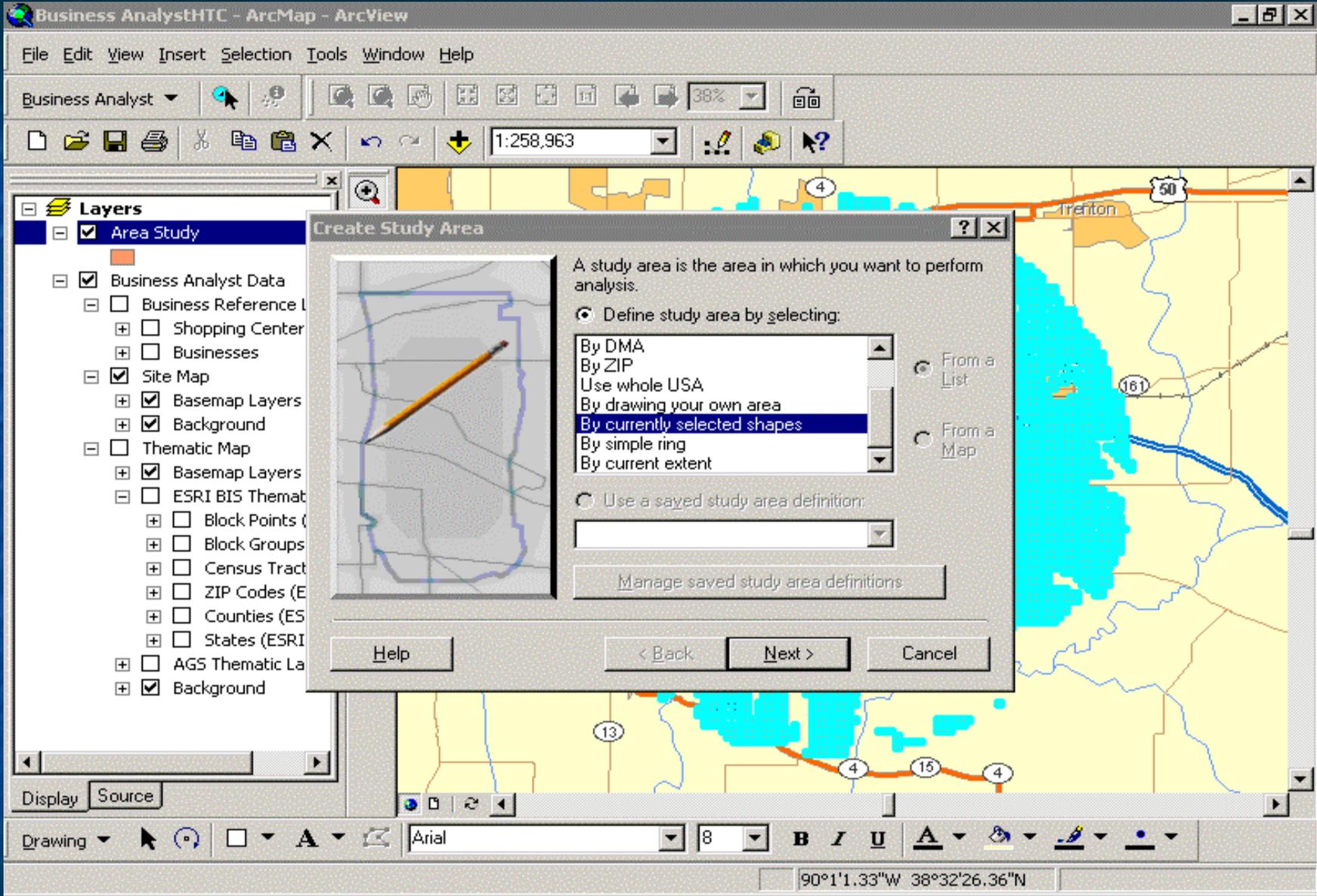
Background

Display Source

Drawing

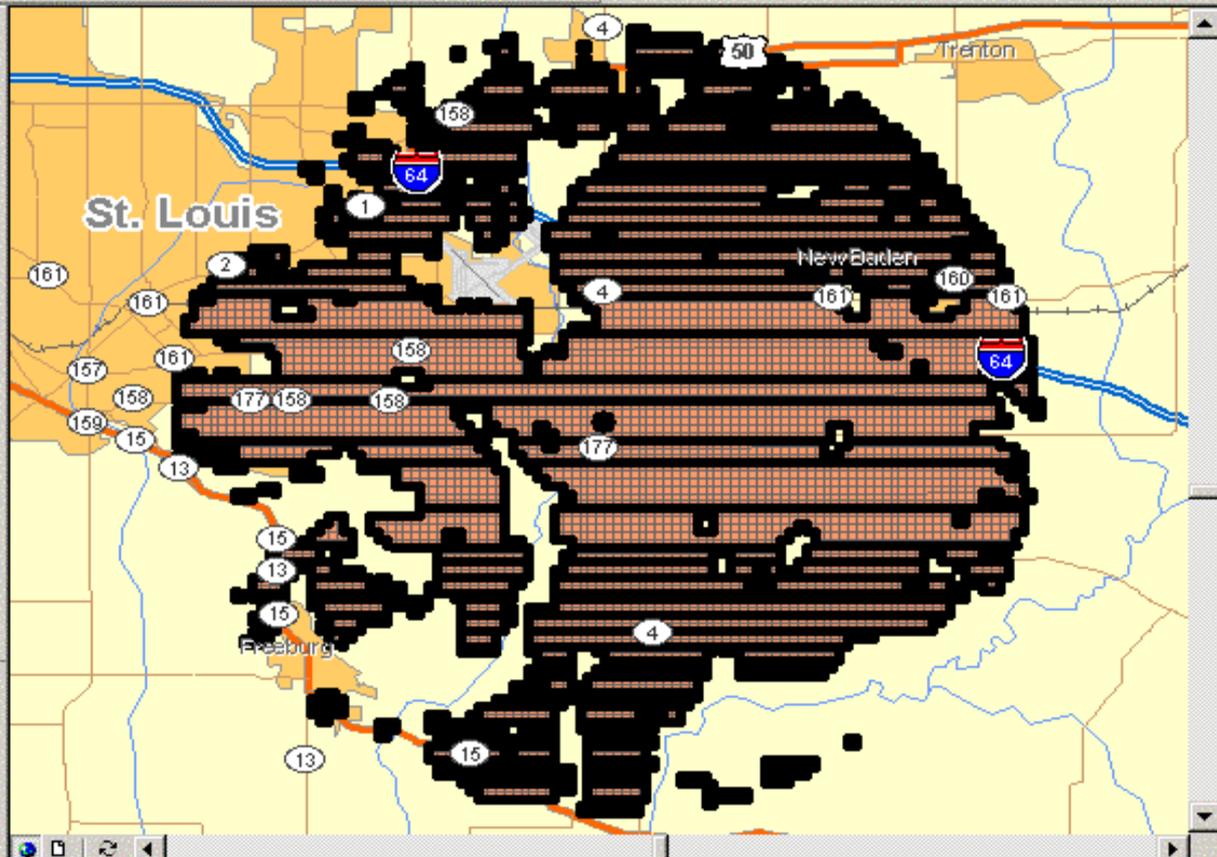
1:258,963 38%





Layers

- Analyses created for Area S
  - Area Study 1
- Area Study
- Business Analyst Data



Display Source

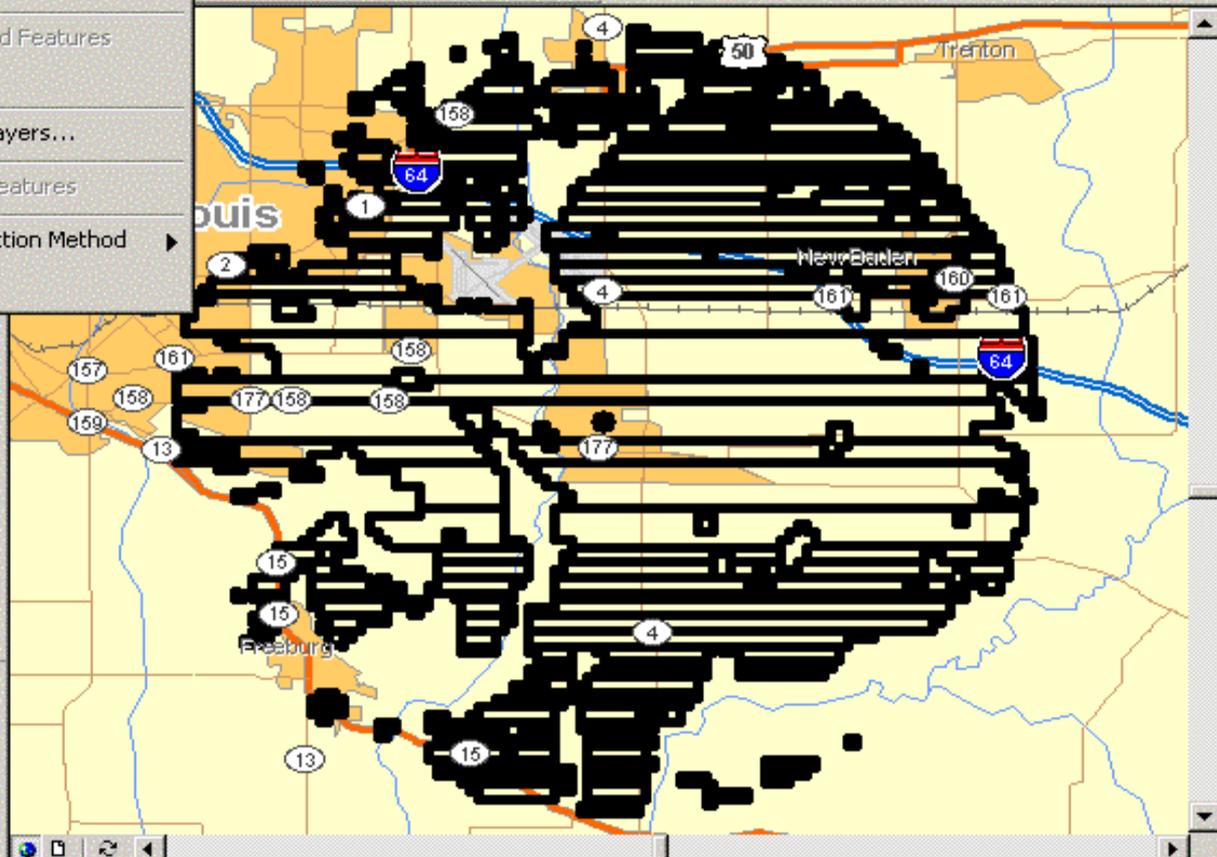
# Study Area

- Various analyses are conducted for the specific study area
- Extract the businesses within the coverage area to consider market area
- Export selected records in Attribute table
- Use data to purchase addresses for marketing campaign

- Select By Attributes...
- Select By Location...
- Select By Graphics
- Zoom To Selected Features
- Statistics...
- Set Selectable Layers...
- Clear Selected Features
- Interactive Selection Method
- Options...

Layers

- Analyses created
- Area Study
- Area Study
- Business Analyst



Display Source

File Edit View

Business An...



Layers

- Area Study 1
- Businesses
- Large Cities (National)

### Select By Location

Lets you select features from one or more layers based on where they are located in relation to the features in another layer.

I want to:

select features from

the following layers:

- Shopping Centers
- Businesses
- Large Cities (National)

that:

are completely within

the features in this layer:

Area Study 1

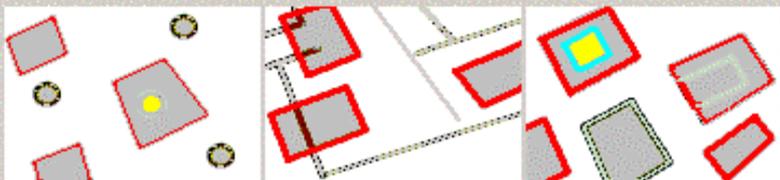
Use selected features (0 features selected)

Apply a buffer to the features in Area Study 1

of: 0.000000 Decimal Degrees

#### Preview

The red features represent the features in Area Study 1. The highlighted cyan features are selected because they are completely within the red features.



Points

Lines

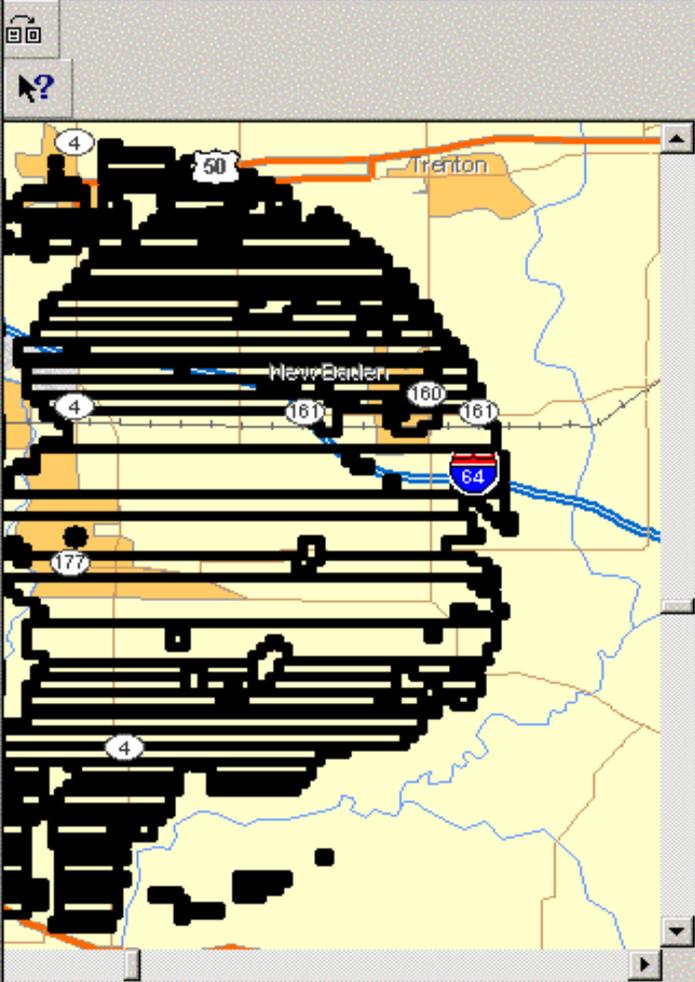
Polygons

Apply

Close

Display So...

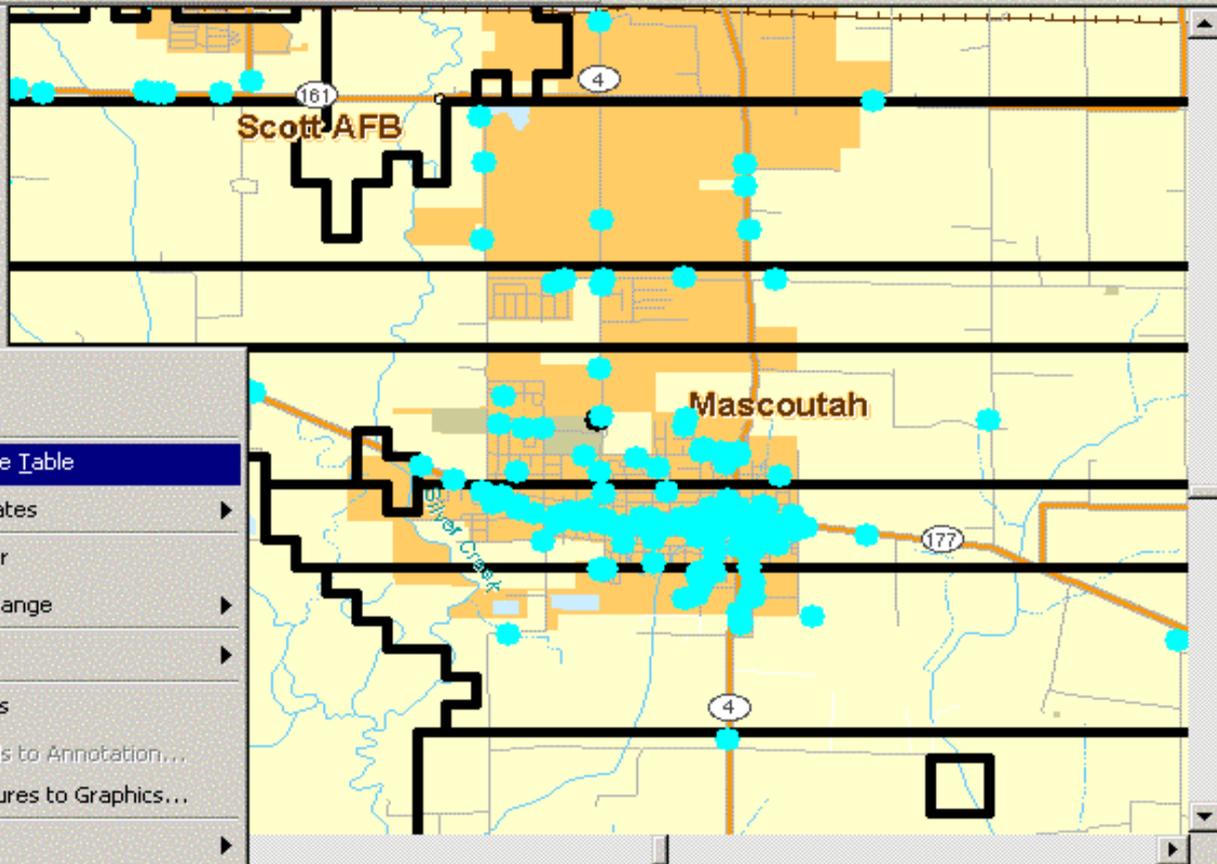
Drawing



89°49'3.33"W 38°23'23.53"N

- Layers
  - Analyses created for ArcView
    - Area Study 1
  - Area Study
  - Business Analyst Data
    - Business Reference Layer
    - Shopping Center
    - Businesses
  - Site Map
  - Basemap
  - Background
  - Thematic Map
  - Basemap
  - ESRI Business Analyst Data
    - Block
    - Block
    - Center
    - ZIP
    - County
    - State
  - AGS The

- Copy
- Remove
- Open Attribute Table
- Joins and Relates
- Zoom To Layer
- Visible Scale Range
- Selection
- Label Features
- Convert Labels to Annotation...
- Convert Features to Graphics...
- Data



Display Source

Drawing

Open attribute table for this layer

89°51'37.09"W 38°29'14.41"N

Selected Attributes of Businesses

ObjectID	CONAME	CITY16	STATE	ZIP	ZIP4	SIC	SALVOL	HDBRCH	EMPSI
358514969	BERNREUTER SOD FARMS	O FALLON	IL	62269	4121	078203	5		5
358514982	OLD WHISKERS BAIT CO	O FALLON	IL	62269	4122	394914	5		5
358514983	B C SIGNS	O FALLON	IL	62269	4122	399302	5		5
358515022	C M REBUILDERS	O FALLON	IL	62269	4122	753801	5		5
358547459	HITE'S AUTO BODY & REPAIR	BELLEVILLE	IL	62221	7706	753201	5		5
358547460	M & M MOBILE HOME SALES & SVC	BELLEVILLE	IL	62221	7708	154212	25		5
358547461	U-HAUL CO	BELLEVILLE	IL	62221	7708	751303	25	2	10
358547464	D & S VENDING	FREEBURG	IL	62243	2725	596201	5		5
358547465	ADAM'S AUCTION SVC	FREEBURG	IL	62243	2445	738901	5		5
358547466	ADAM'S AUCTION & REAL ESTATE	FREEBURG	IL	62243	2444	738901	5		5
358547605	BRENT BERGHEGER AUTO NETWORK	MASCOUTAH	IL	62258	1829	999977			
358547607	SALJO ENTERPRISES INC	MASCOUTAH	IL	62258	3741	999977			
358547608	R J BUILDERS INC	MASCOUTAH	IL	62258	2232	999977			
358547610	MASCOUTAH SENIOR SVC PROGRAM	MASCOUTAH	IL	62258	2147	832218			5
358547611	MDDOSE HOME	MASCOUTAH	IL	62258		861102			5
358547612	LABORERS OFFICE	MASCOUTAH	IL	62258	2138	863101			5
358547613	JON CANNON	MASCOUTAH	IL	62258	1309	866106			5
358547614	RON MELZER	MASCOUTAH	IL	62258	1340	866106			5
358547615	MASCOUTAH FIRST ASSEMBLY-GOD	MASCOUTAH	IL	62258	2032	866107			5
358547616	HOLY CHILDHOOD CAFETERIA	MASCOUTAH	IL	62258	2299	866107			5
358547617	HOLY CHILDHOOD CHURCH	MASCOUTAH	IL	62258	2102	866107			5

Record: 1 Show: All Selected Records (744 out of 12747350) Options



Drawing [Cursor] [Eraser] [Text] [Font: Arial] [Size: 10] [Bold] [Italic] [Underline] [Color] [Stroke] [Fill]

89°51'1.29"W 38°28'3.01"N

Selected Attributes of Businesses

ObjectID	CONAME	CITY16	STATE	ZIP	ZIP4	SIC	SALVOL	HDBRCH	EMPSI
358514969	BERNREUTER SOD FARMS	O FALLON	IL	62269	4121	078203	5		5
358514982	OLD WHISKERS BAIT CO	O FALLON	IL	62269	4122	394914	5		5
358514983	B C SIGNS	O FALLON	IL	62269	4122	399302	5		5
358515022	C M REBUILDERS	O FALLON	IL	62269	4122	753801	5		5
358547459	HITE'S AUTO BODY & REPAIR	BELLEVILLE	IL	62221	7706	753201	5		5
358547460	M & M MOBILE HOME SAL	BELLEVILLE	IL	62221	7706	154212	25		5
358547461	U-HAUL CO					751303	25	2	10
358547464	D & S VENDING					596201	5		5
358547465	ADAM'S AUCTION SVC					738901	5		5
358547466	ADAM'S AUCTION & REAL					738901	5		5
358547605	BRENT BERGHEGER AUT					999977			
358547607	SALJO ENTERPRISES INC					999977			
358547608	R J BUILDERS INC					999977			
358547610	MASCOUTAH SENIOR SV					832218			5
358547611	MDDSE HOME					861102			5
358547612	LABORERS OFFICE					863101			5
358547613	JON CANNON					866106			5
358547614	RON MELZER					866106			5
358547615	MASCOUTAH FIRST ASSEMBLY-GOD	MASCOUTAH	IL	62258	2032	866107			5
358547616	HOLY CHILDHOOD CAFETERIA	MASCOUTAH	IL	62258	2299	866107			5
358547617	HOLY CHILDHOOD CHURCH	MASCOUTAH	IL	62258	2102	866107			5

**Export Data** [?] [X]

Export: Selected records [v]

Use the same Coordinate System as this layer's source data.

Use the same Coordinate System as the data frame.

Output table:

C:\My Output Data\StudyAreas\Area Study 1\Export\_Ou [v]

OK Cancel

Record: [1] Show: All Selected Records (744 out of 12747350) Options [v]



Drawing [v] [pencil icon] [eraser icon] [text icon] Arial [v] 10 [v] **B** *I* U [v] [color icon] [line icon] [fill icon]

89°51'28.84"W 38°28'11.78"N

Business AnalystHTC - ArcMan - ArcView

Microsoft Excel - Export\_Output

File Edit View Insert Format Tools Data Window Help

Type a question for help

Busine: Arial 10 B I U

	A	B	C	D	E	F	G	H	I
1	ObjectID	CONAME	CITY16	STATE	ZIP	ZIP4	SIC	SALVOL	HDI
2	358514969	BERNREUTER SOD FARMS	O FALLON	IL	62269	4121	078203	5	
3	358514982	OLD WHISKERS BAIT CO	O FALLON	IL	62269	4122	394914	5	
4	358514983	B C SIGNS	O FALLON	IL	62269	4122	399302	5	
5	358515022	C M REBUILDERS	O FALLON	IL	62269	4122	753801	5	
6	358547459	HITE'S AUTO BODY & REPAIR	BELLEVILLE	IL	62221	7706	753201	5	
7	358547460	M & M MOBILE HOME SALES & S	BELLEVILLE	IL	62221	7708	154212	25	
8	358547461	U-HAUL CO	BELLEVILLE	IL	62221	7708	751303	25	2
9	358547464	D & S VENDING	FREEBURG	IL	62243	2725	596201	5	
10	358547465	ADAM'S AUCTION SVC	FREEBURG	IL	62243	2445	738901	5	
11	358547466	ADAM'S AUCTION & REAL ESTATE	FREEBURG	IL	62243	2444	738901	5	
12	358547605	BRENT BERGHEGER AUTO NETW	MASCOUTAH	IL	62258	1829	999977	0	
13	358547607	SALJO ENTERPRISES INC	MASCOUTAH	IL	62258	3741	999977	0	
14	358547608	R J BUILDERS INC	MASCOUTAH	IL	62258	2232	999977	0	
15	358547610	MASCOUTAH SENIOR SVC PROGF	MASCOUTAH	IL	62258	2147	832218	0	
16	358547611	MOOSE HOME	MASCOUTAH	IL	62258		861102	0	
17	358547612	LABORERS OFFICE	MASCOUTAH	IL	62258	2138	863101	0	
18	358547613	JON CANNON	MASCOUTAH	IL	62258	1309	866106	0	
19	358547614	RON MELZER	MASCOUTAH	IL	62258	1340	866106	0	
20	358547615	MASCOUTAH FIRST ASSEMBLY-G	MASCOUTAH	IL	62258	2032	866107	0	
21	358547616	HOLY CHILDHOOD CAFETERIA	MASCOUTAH	IL	62258	2299	866107	0	
22	358547617	HOLY CHILDHOOD CHURCH	MASCOUTAH	IL	62258	2102	866107	0	
23	358547618	HARVEST TABERNACLE	MASCOUTAH	IL	62258	2321	866107	0	

Export\_Output

Display Ready

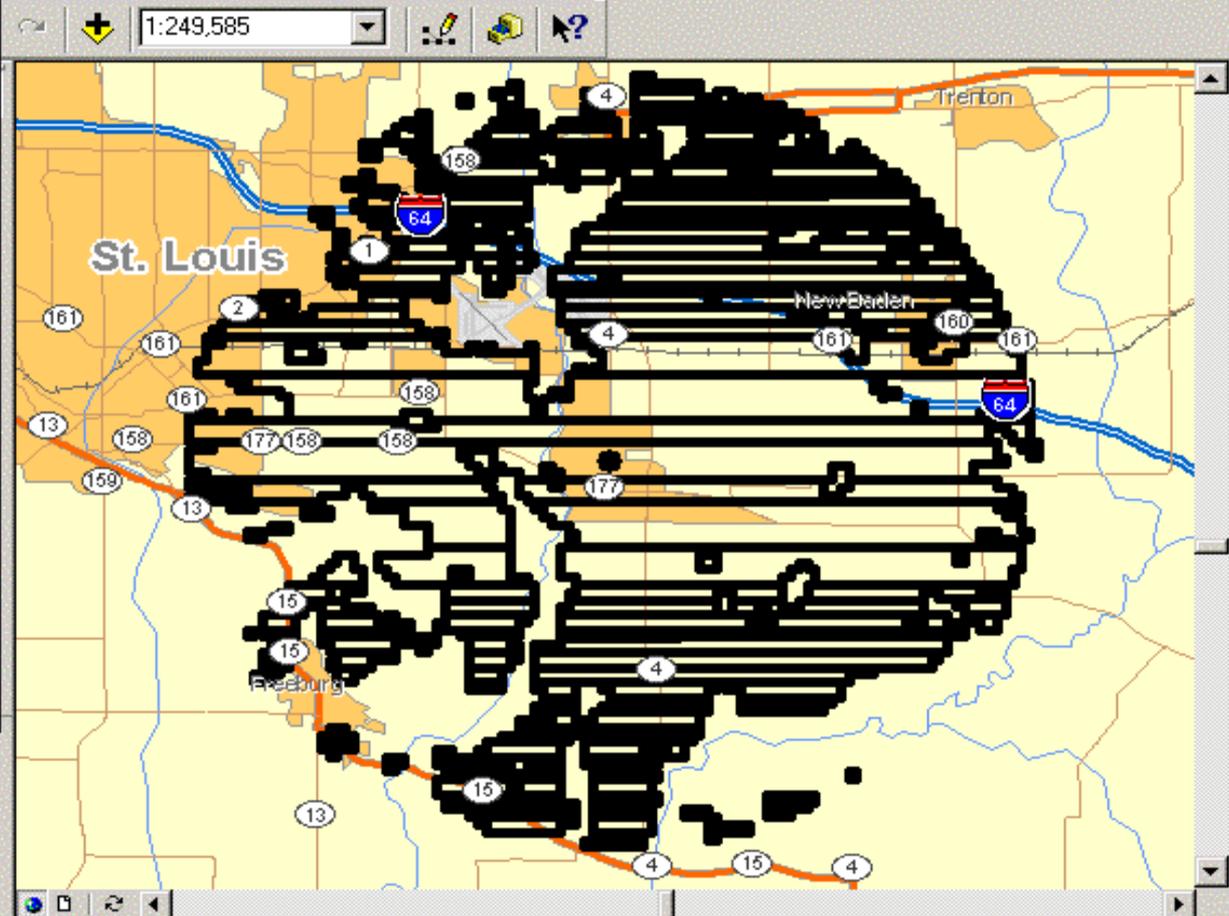
Drawing Arial 10 B I U

89°44'23.89"W 38°22'22.04"N

# Business Analyst Reports

- A variety of reports are available to examine the market within the coverage area
- The reports can be saved and printed
- The demographic data is specific to the coverage area
- Other types of analysis are available within Business Analyst

- Add Business Listings...
- Add Business Data From Internet...
- Create Study Area...
  - Set Analysis Extent
- Customer Setup...
- Store Setup...
- Assign Customers To Stores ...
- Analysis Layer Setup...
- Analysis...
- Spatial Overlay...
- Find Similar...
  - Site Prospecting
- Find Route...
- Reports...
- Thematic Mapping...
- Preferences...



Business AnalystHTC - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

Business Analyst 100%

1:249,585

Layers

- Analyses created for Area Study 1
  - Area Study 1
- Area Study
- Business Analyst Data

Reports

To summarize by geography, choose a layer which contains the boundaries defining the data you want to summarize (such as ZIP codes, counties, or trade areas).

Which layer contains the boundaries?

Area Study 1

Use only selected boundaries

Which field uniquely identifies each boundary?

Id

Help < Back Next > Cancel

Display Source

Drawing Arial 10 B I U

90°0'43.65"W 38°26'5.18"N

Business AnalystHTC - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

Business Analyst 100%

1:249,585

Layers

- Analyses created for Area Study
- Area Study 1
- Area Study
- Business Analyst Data

Reports

Which layer do you want to summarize?

Block Groups (ESRI BIS)

Attach summarized values to analysis layer

Use existing report template

- Age Report
- Age Report
- General Report**
- Household Report
- Income Report
- Multi-Area Report
- Population Report
- Race Report
- Comprehensive Report (Excel Output)

Help < Back Next > Cancel

Display Source

Drawing Arial 10 B I U

90°0'43.65"W 38°26'5.18"N

Business AnalystHTC - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

Business Analyst 100%

1:249,585

Layers

- Analyses created for Area Study 1
  - Area Study 1
- Area Study
- Business Analyst Data

Reports

What do you want to name this report?

Area Study 1

Help < Back Finish Cancel

Display Source

Drawing Arial 10 B I U

90°0'43.65"W 38°26'5.18"N

Business Information Solutions

Area Study 1 (General Report)

powered by crystal

File Edit

Business

Preview

0

75%

1 of 1

Area Study 1  
General Report

April 1, 2004

ESRI Business Information Solutions

ID: 0

Demographic 0

---

Total Population:

2003	12,395
2008 (Five-year projection)	12,412
Projected five-year growth	0.03%

Percent by Age

0 - 4	7.0%
5 - 14	15.1%
15 - 24	14.4%
25 - 34	13.1%
35 - 44	13.8%
45 - 54	13.9%
55 - 64	8.8%
65 & Over	11.7%

Percent by Race

White	82.7%
Black	12.4%
Asian/Pac-Fic Islander	1.7%
Native American	0.3%
Other	1.1%
Hispanic	2.7%

Total Households:

2003	4,574
2008 (Five-year projection)	4,641

# Area Study 1

## Demographic and Income Profile Report

**ID: 0**
**Description: 0**

<b>Summary</b>	<b>2000</b>		<b>2003</b>		<b>2008</b>	<b>2003-2008 Annual Rate</b>	
Population:	12,169		12,395		12,412		0.03%
Households:	4,471		4,574		4,661		0.38%
Families:	3,298		3,332		3,367		0.21%
Average Household Size:	2.63		2.61		2.56		
Owner-occupied HUs:	2,918		2,981		3,032		
Renter-occupied HUs:	1,564		1,601		1,635		

<b>Households by Income</b>	<b>2000</b>		<b>2003</b>		<b>2008</b>	
	Number	Percent	Number	Percent	Number	Percent
<\$15,000	470	10.5%	420	9.2%	360	7.7%
\$15,000 - \$24,999	512	11.4%	492	10.8%	438	9.4%
\$25,000 - \$34,999	699	15.6%	615	13.4%	523	11.2%
\$35,000 - \$49,999	733	16.4%	758	16.6%	683	14.7%
\$50,000 - \$74,999	1,098	24.5%	1,094	23.9%	1,113	23.9%
\$75,000 - \$99,999	511	11.4%	592	12.9%	679	14.6%
\$100,000 - \$149,999	334	7.5%	441	9.6%	603	12.9%
\$150,000 - \$199,999	56	1.3%	78	1.7%	142	3.0%
\$200,000+	63	1.4%	83	1.8%	119	2.6%
Average Household Income:	\$58,265		\$62,108		\$71,264	
Per Capita Income:	\$21,271		\$23,679		\$27,631	

<b>Population by Age</b>	<b>2000</b>		<b>2003</b>		<b>2008</b>	
	Number	Percent	Number	Percent	Number	Percent
0 - 4	865	7.1%	867	7.0%	859	6.9%
5 - 14	1,927	15.8%	1,869	15.1%	1,699	13.7%
15 - 19	895	7.4%	931	7.5%	934	7.5%
20 - 24	776	6.4%	879	7.1%	1,005	8.1%
25 - 34	1,618	13.3%	1,621	13.1%	1,582	12.7%
35 - 44	2,128	17.5%	1,961	15.8%	1,692	13.6%
45 - 54	1,569	12.9%	1,722	13.9%	1,669	15.1%
55 - 64	971	8.0%	1,093	8.8%	1,264	10.3%
65 - 74	739	6.1%	750	6.1%	768	6.2%
75 - 84	518	4.3%	519	4.2%	515	4.1%
85+	165	1.4%	184	1.5%	209	1.7%

<b>Race and Ethnicity</b>	<b>2000</b>		<b>2003</b>		<b>2008</b>	
	Number	Percent	Number	Percent	Number	Percent
White Alone	10,261	84.3%	10,249	82.7%	10,108	81.4%
Black Alone	1,370	11.3%	1,564	12.6%	1,675	13.5%
American Indian Alone	38	0.3%	38	0.3%	39	0.3%
Asian Alone	172	1.4%	184	1.5%	196	1.6%
Pacific Islander Alone	11	0.1%	10	0.1%	10	0.1%
Some Other Race Alone	112	0.9%	131	1.1%	153	1.2%
Two or More Races	205	1.7%	220	1.8%	232	1.9%
Hispanic Origin (Any Race)	307	2.5%	335	2.7%	366	2.9%

# Area Study 1 Market Profile Report

ID: 0

0



<b>2000 Total Population</b>	12,171
2000 Group Quarters	273
<b>2003 Total Population</b>	12,396
<b>2008 Total Population</b>	12,414
2003 - 2008 annual Rate	0.03%



<b>2000 Households</b>	4,471
2000 Average Household Size	2.63
<b>2003 Households</b>	4,574
2003 Average Household Size	2.61
<b>2008 Households</b>	4,661
2008 Average Household Size	2.58
2003 - 2008 Annual Rate	0.38%
<b>2000 Families</b>	3,298
2000 Average Family Size	3.06
<b>2003 Family</b>	3,332
2003 Average Family Size	3.06
<b>2008 Family</b>	3,367
2008 Average Family Size	3.04
2003 - 2008 Annual Rate	0.21%



<b>2000 Housing Units</b>	4,744
Owner Occupied Housing Units	61.5%
Renter Occupied Housing Units	33.0%
Vacant Housing Units	5.5%
<b>2003 Housing Units</b>	4,665
Owner Occupied Housing Units	59.8%
Renter Occupied Housing Units	32.1%
Vacant Housing Units	8.1%
<b>2008 Housing Units</b>	5,114
Owner Occupied Housing Units	59.3%
Renter Occupied Housing Units	32.0%
Vacant Housing Units	8.7%

**Per Capita Income**

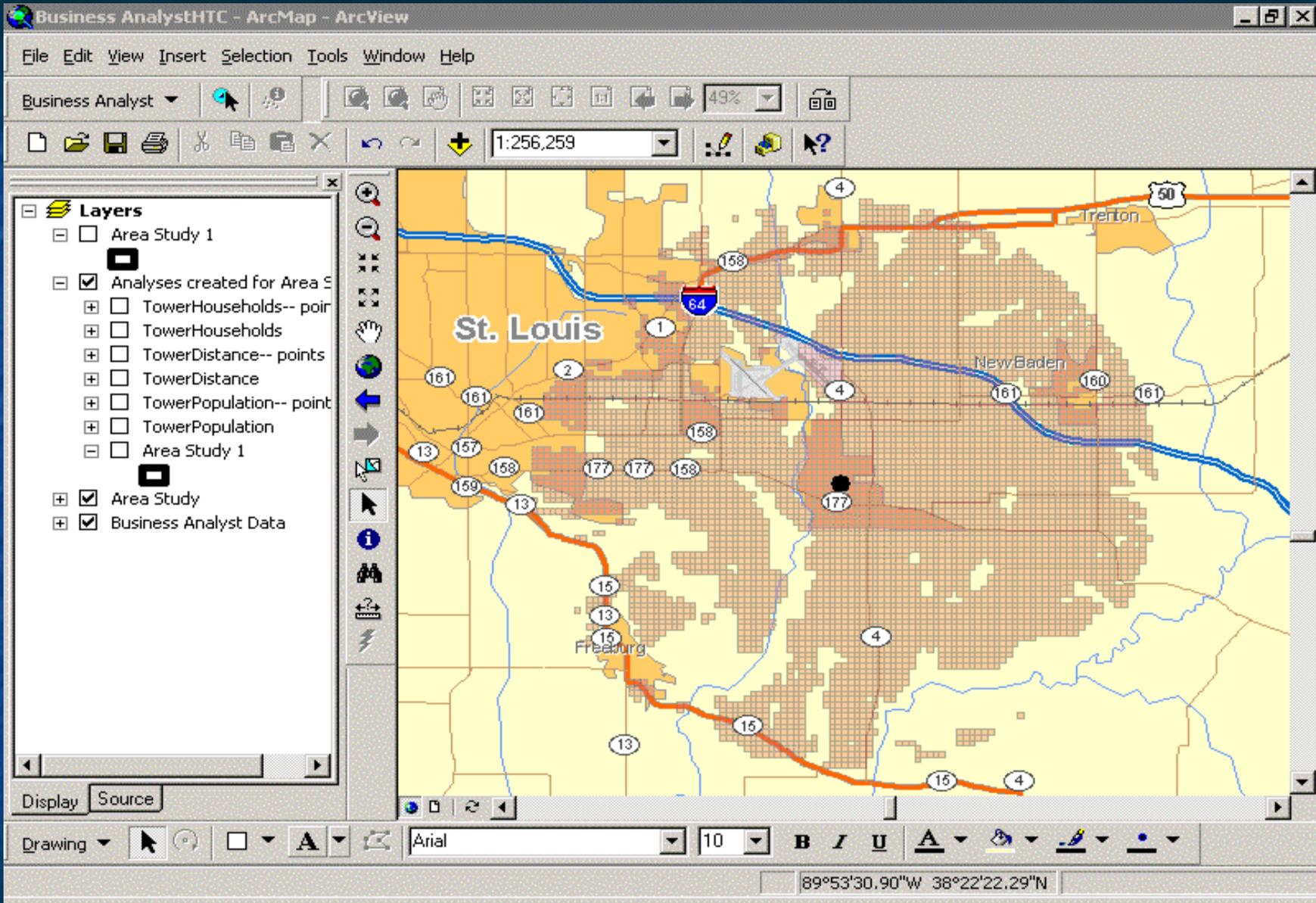
2000	\$21,271
2003	\$23,679
2008	\$27,631

**Data Note:** Household population includes persons not residing in group quarters. Average Household Size is the household population divided by total households. Persons in families include the householder and persons related to the householder by birth, marriage, or adoption. Per Capita Income represents the income received by all persons aged 15 years and over divided by total population. Detail may not sum to totals due to rounding.

**Source:** U.S. Bureau of the Census, 2000 Census of Population and Housing. ESRI BIS forecasts for 2003 and 2008.

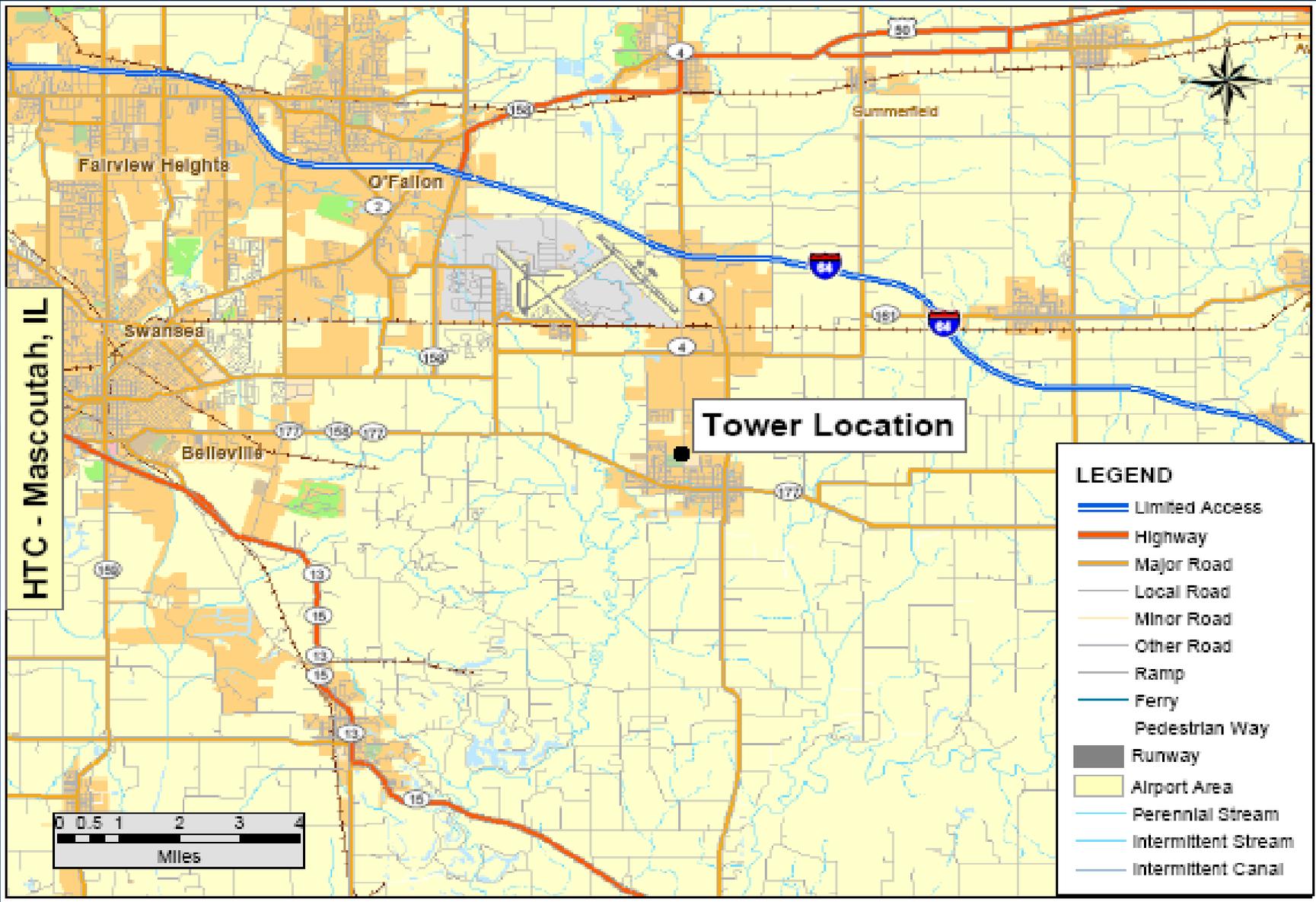
# Business Analyst Mapping

- Maps can be produced to display the coverage area for marketing literature
- Prospecting features and maps based on the tower location can be used to further exam the area and geography
- Ring studies based on population, miles, or households can be analyzed for the market area





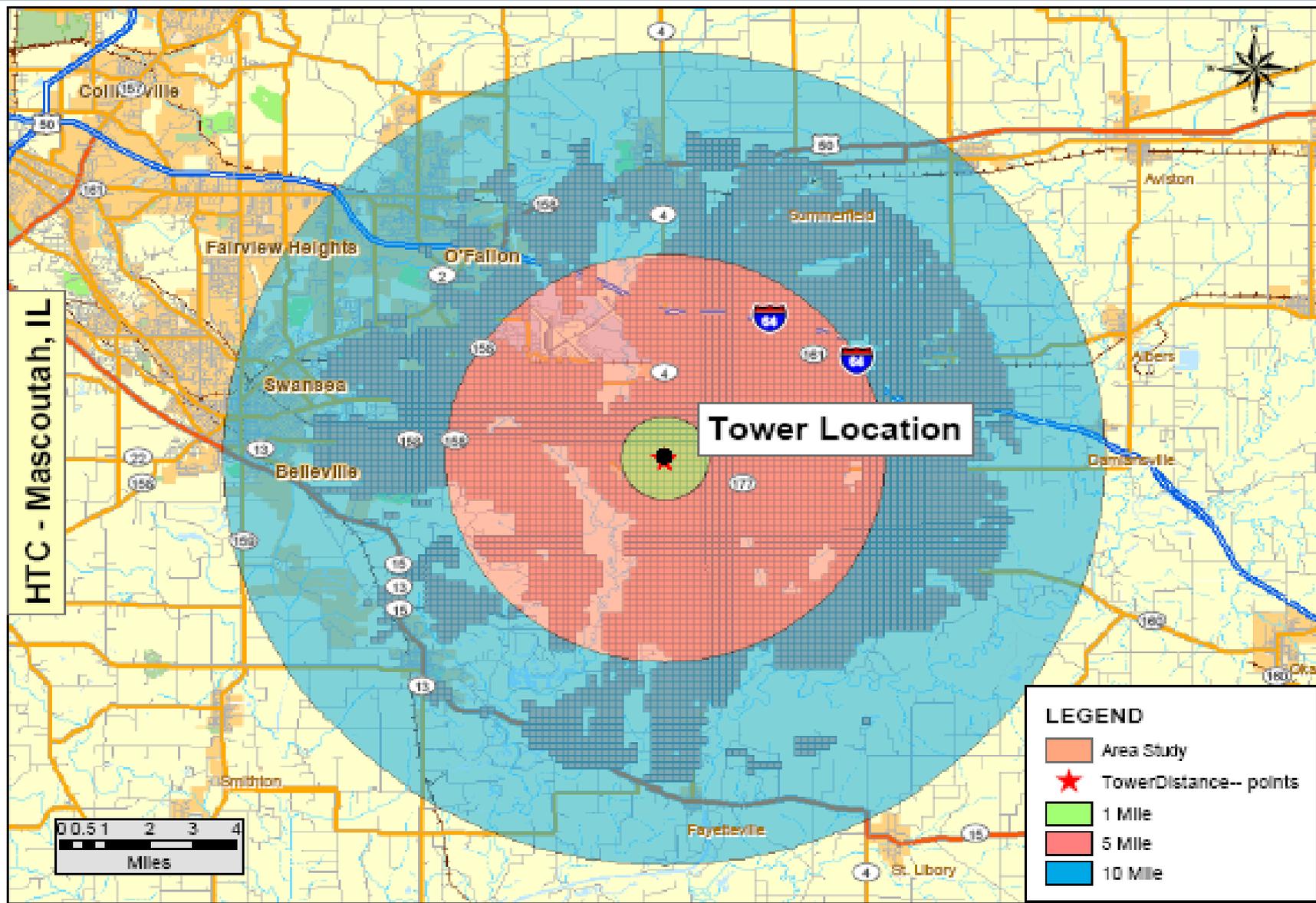
**HTC - Mascoutah, IL**



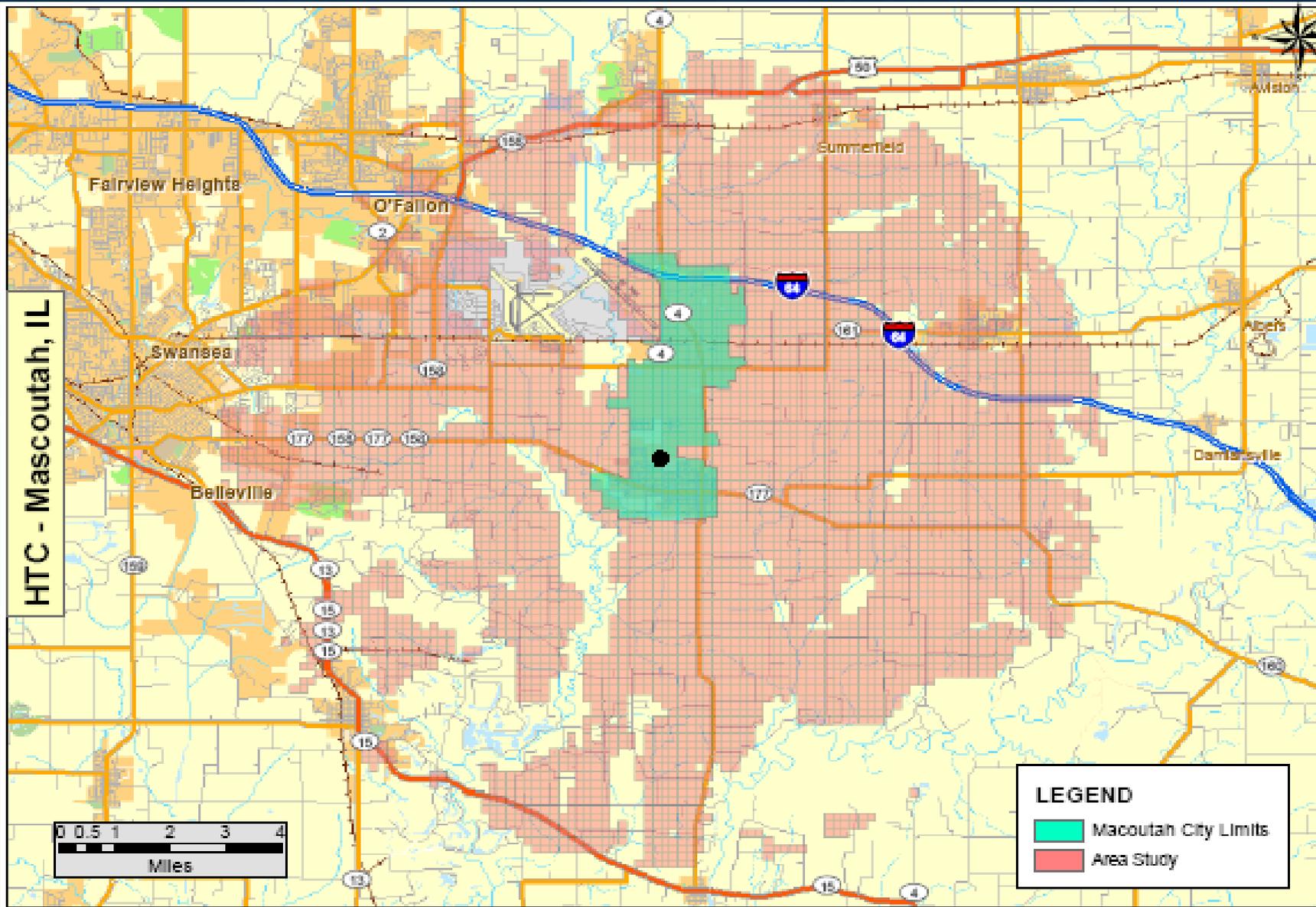
**Tower Location**

- LEGEND**
- Limited Access
  - Highway
  - Major Road
  - Local Road
  - Minor Road
  - Other Road
  - Ramp
  - Ferry
  - Pedestrian Way
  - Runway
  - Airport Area
  - Perennial Stream
  - Intermittent Stream
  - Intermittent Canal

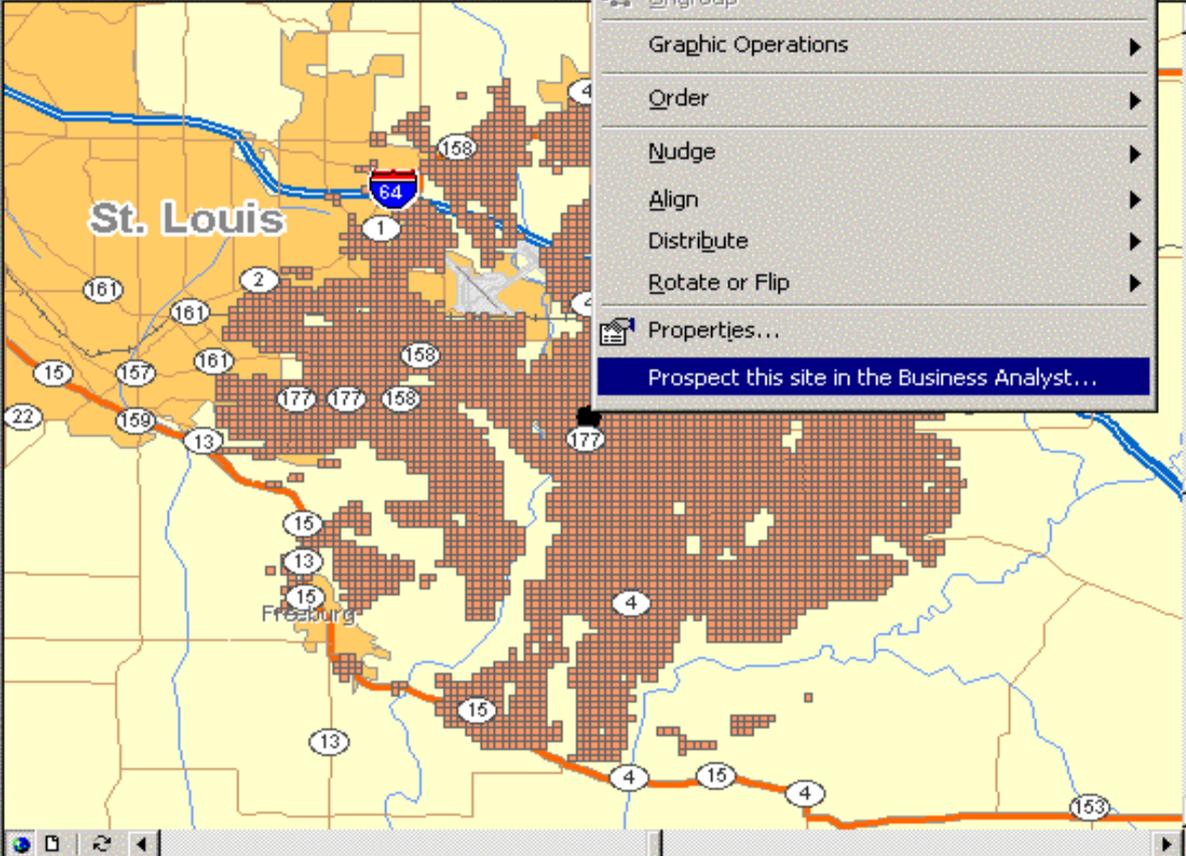
HTC - Mascoutah, IL



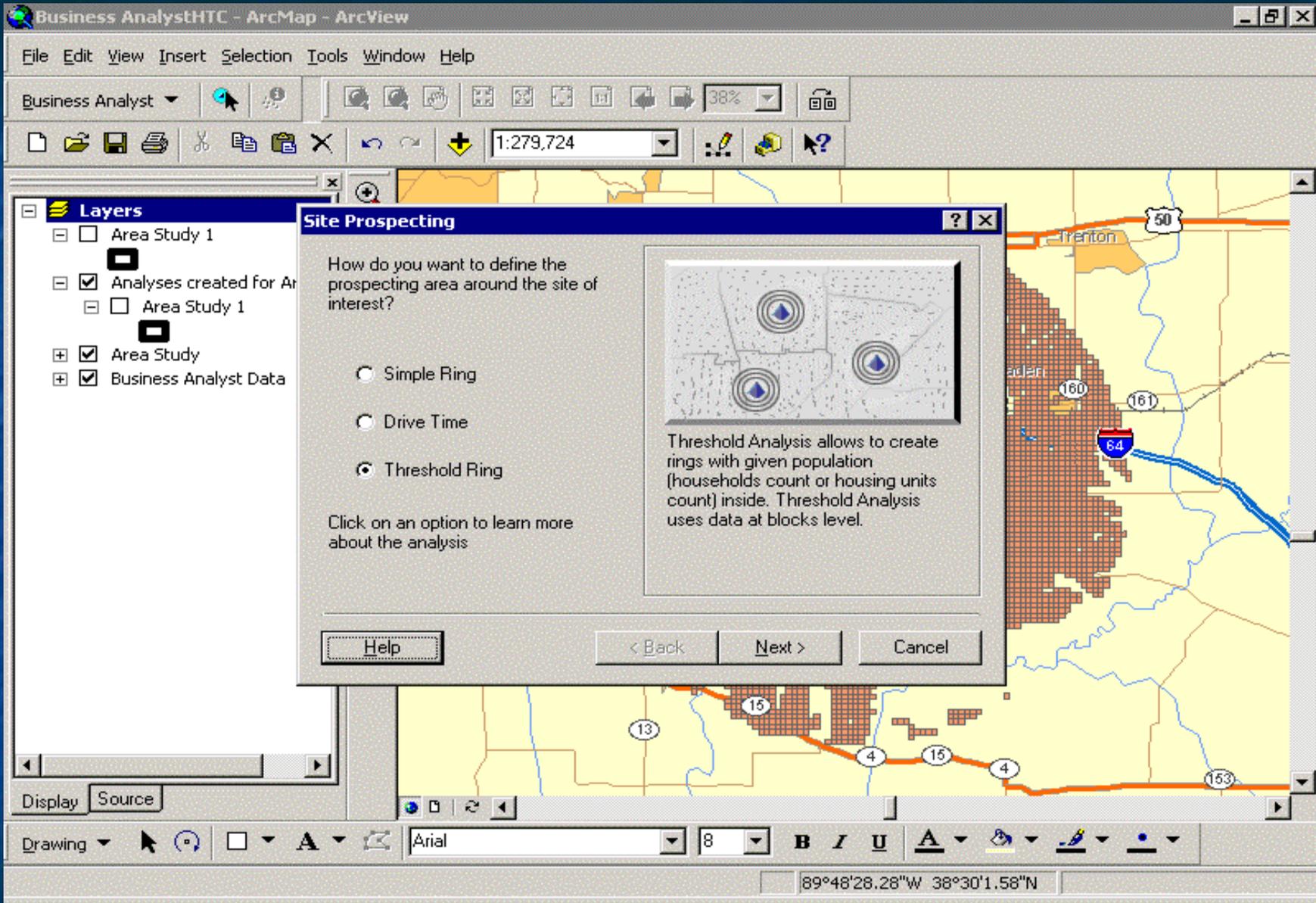
# HTC - Mascoutah, IL



- Layers
  - Area Study 1
  - Analyses created for Area S
    - Area Study 1
  - Area Study
    - Business Analyst Data



- Delete
- Convert To Graphics
- Group
- Ungroup
- Graphic Operations
- Order
- Nudge
- Align
- Distribute
- Rotate or Flip
- Properties...
- Prospect this site in the Business Analyst...**



File Edit View Insert Selection Tools Window Help

Business Analyst

38%

1:279,724

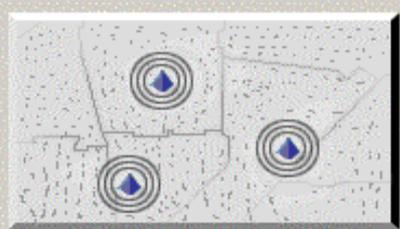
- Layers
  - Area Study 1
  - Analyses created for Area Study 1
    - Area Study 1
  - Area Study
  - Business Analyst Data

### Site Prospecting

How do you want to define the prospecting area around the site of interest?

Simple Ring  
 Drive Time  
 Threshold Ring

Click on an option to learn more about the analysis



Threshold Analysis allows to create rings with given population (households count or housing units count) inside. Threshold Analysis uses data at blocks level.

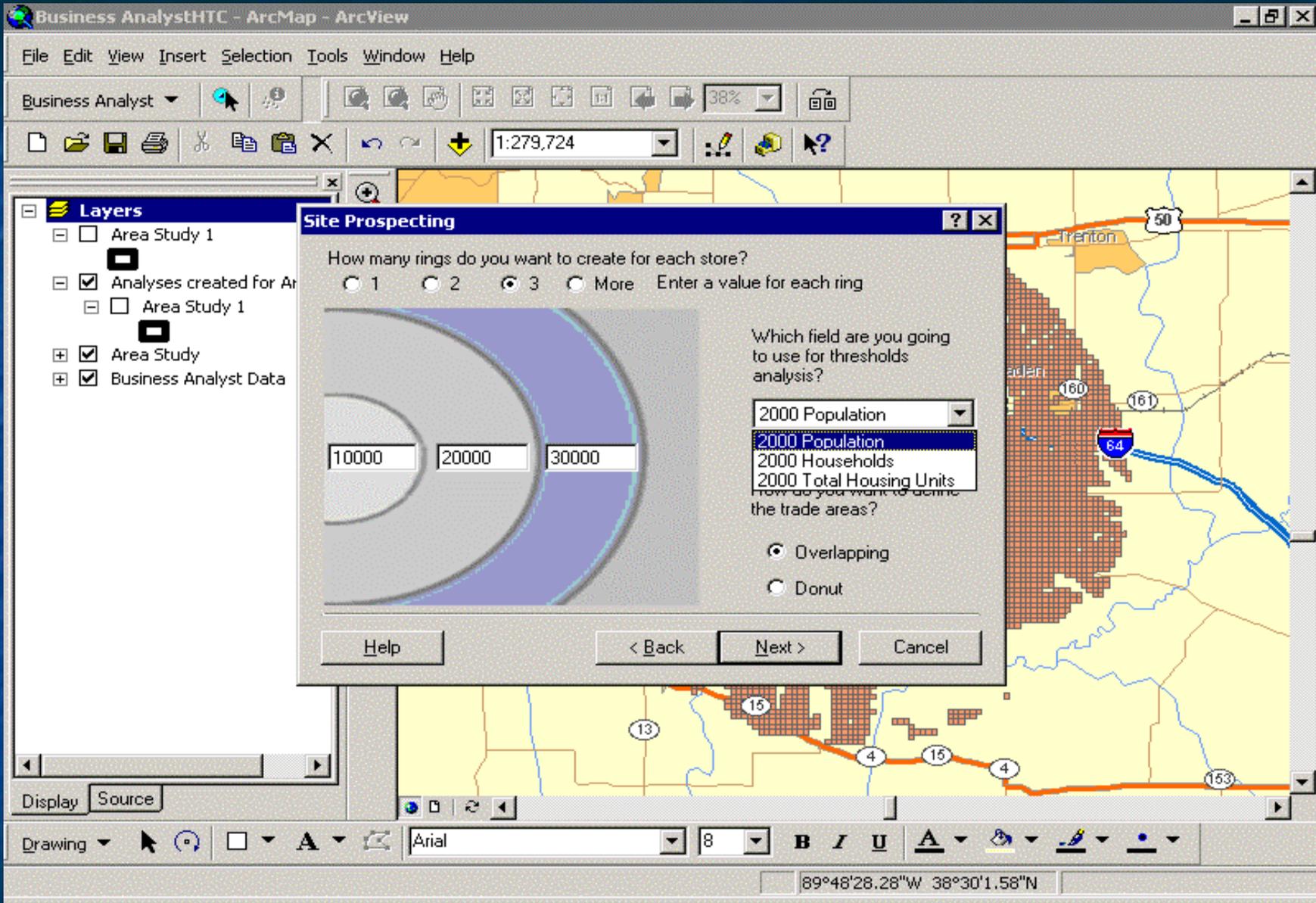
Display Source

Drawing

Arial

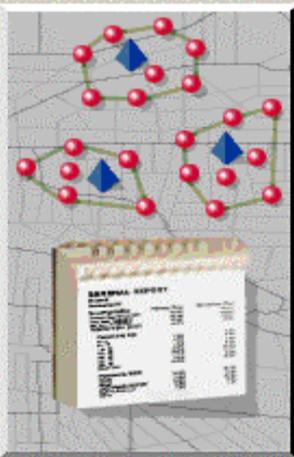
8

89°48'28.28"W 38°30'1.58"N



- Layers
  - Area Study 1
  - Analyses created for Ar
    - Area Study 1
  - Area Study
  - Business Analyst Data

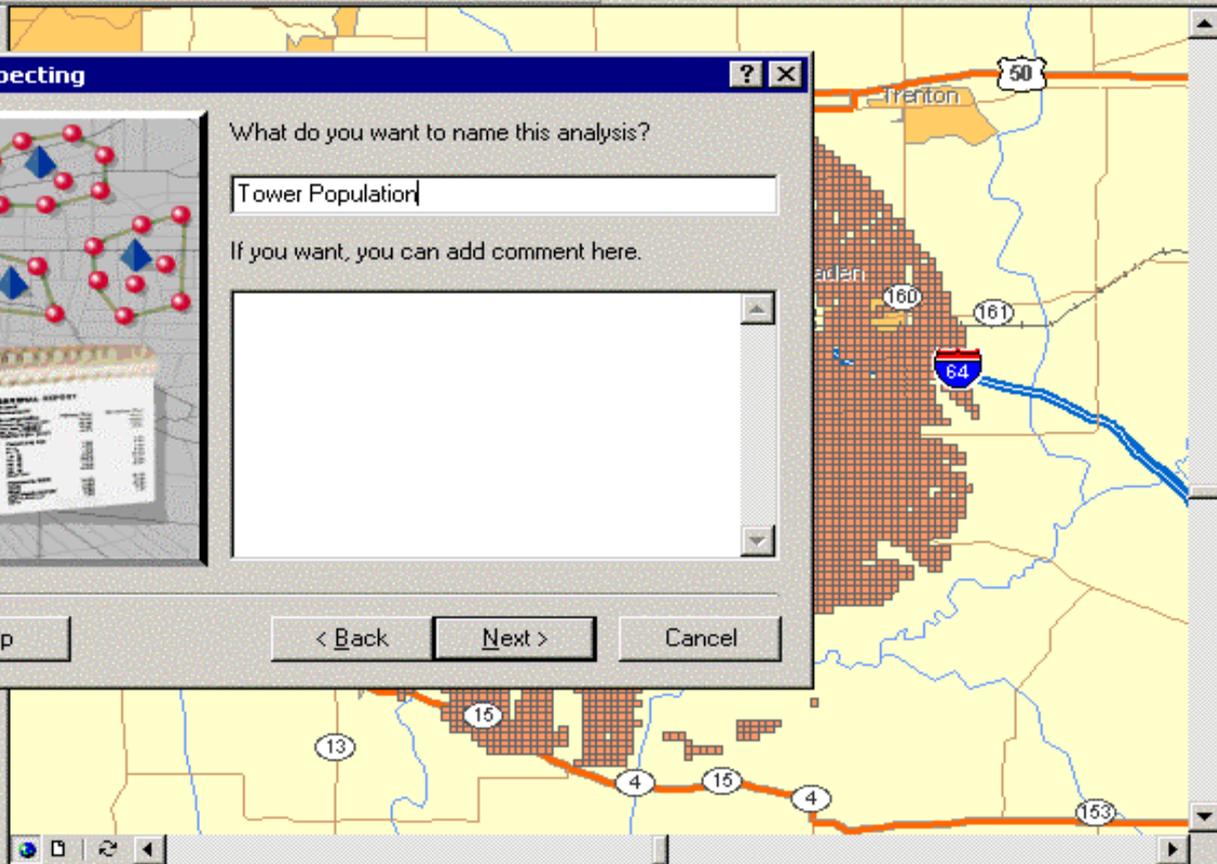
### Site Prospecting



What do you want to name this analysis?

If you want, you can add comment here.

Help < Back Next > Cancel



- Layers
- Area Study 1
- Analyses created for Ar
  - Area Study 1
- Area Study
- Business Analyst Data

### Reports



Report

Which layer do you want to summarize?

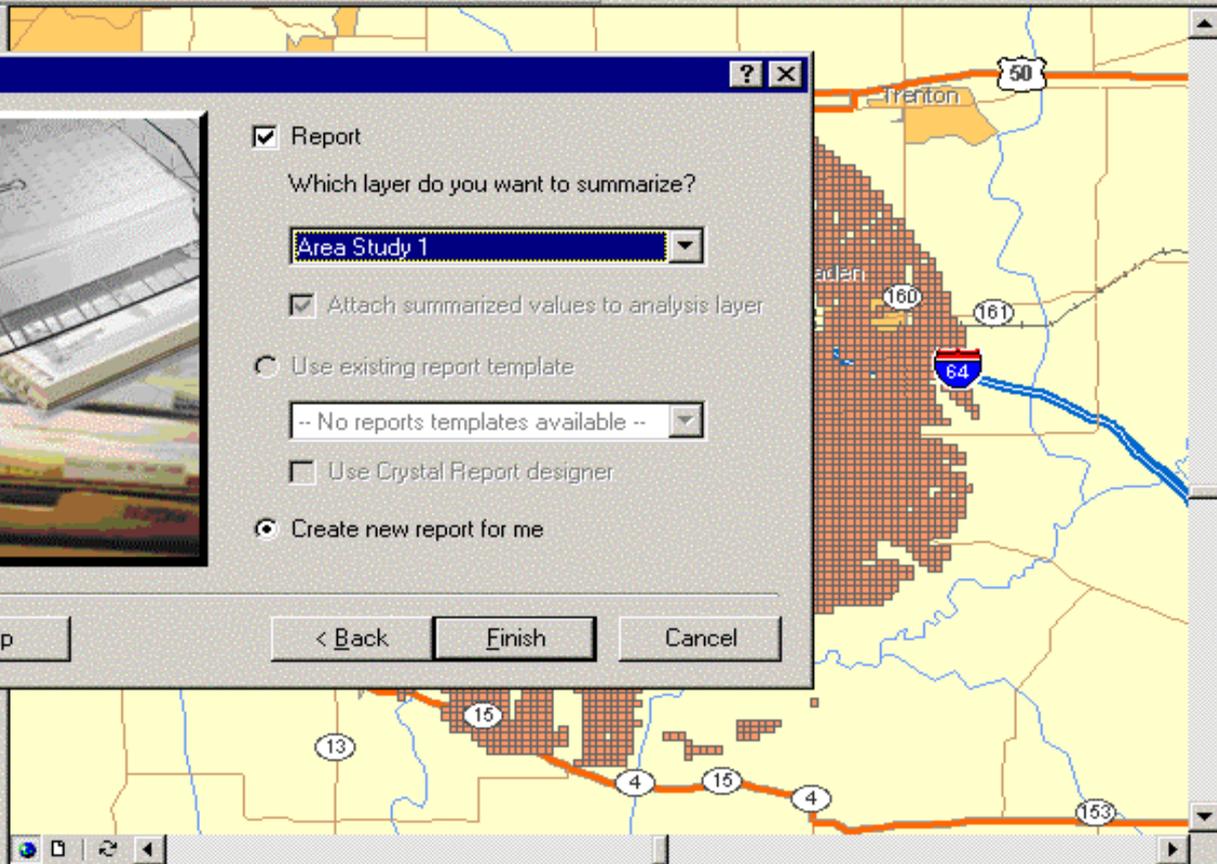
Attach summarized values to analysis layer

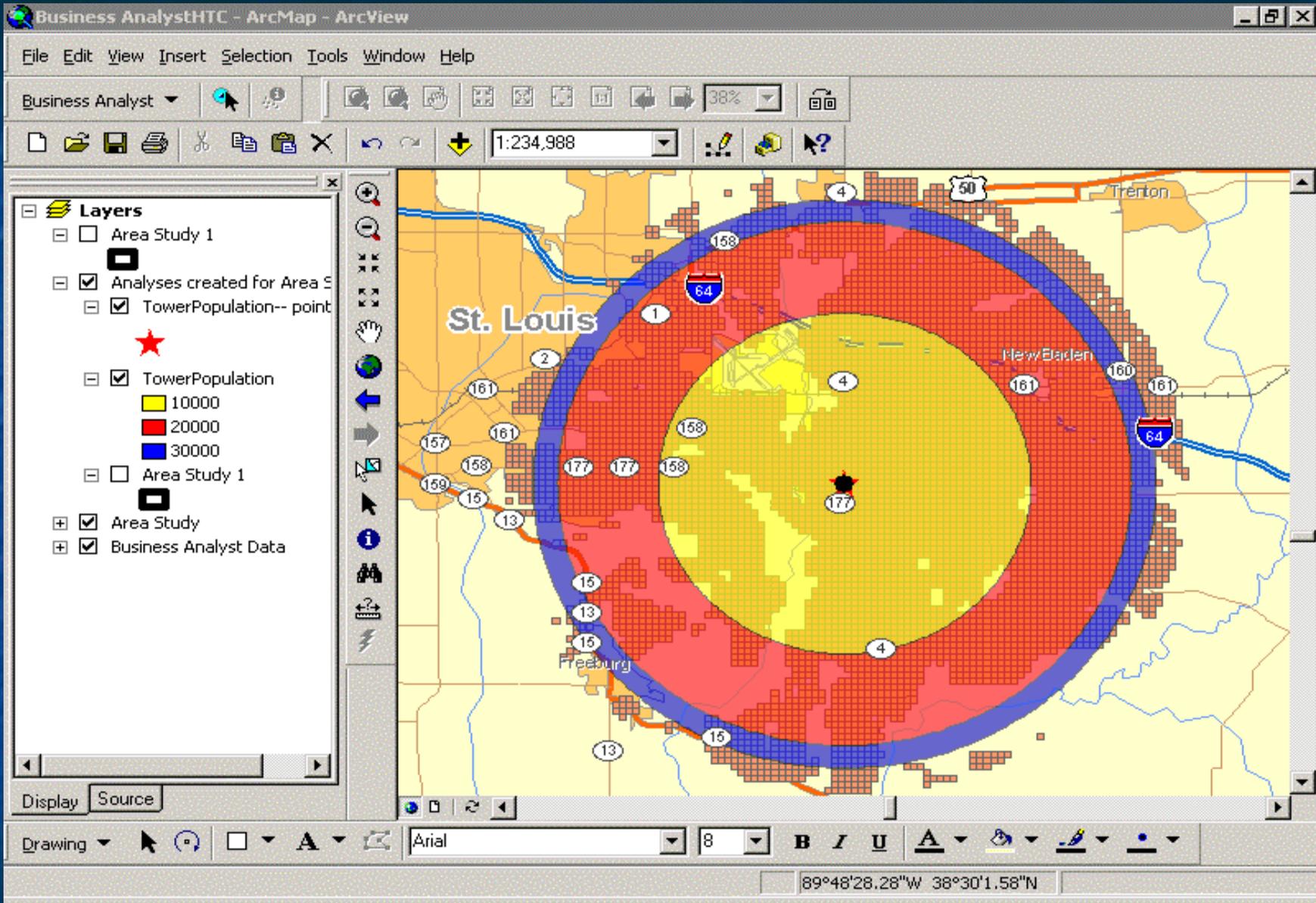
Use existing report template

Use Crystal Report designer

Create new report for me

Help < Back Finish Cancel





# Extract Businesses within city limits

- The client may only want to determine the number of businesses within the area coverage and the city limits
- Layer is added based on the city limits
- Select Businesses within city limits and area study
- Export selected businesses for data and possible use for address information

### Select By Location

Lets you select features from one or more layers based on where they are located in relation to the features in another layer.

I want to:

select features from

the following layers:

- Area Study
- Shopping Centers
- Businesses

that:

are completely within

the features in this layer:

Macoutah City Limits

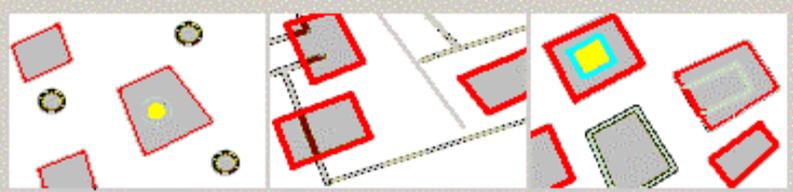
Use selected features (0 features selected)

Apply a buffer to the features in Macoutah City Limits

of: 0.000000 Meters

#### Preview

The red features represent the features in Macoutah City Limits. The highlighted cyan features are selected because they are completely within the red features.



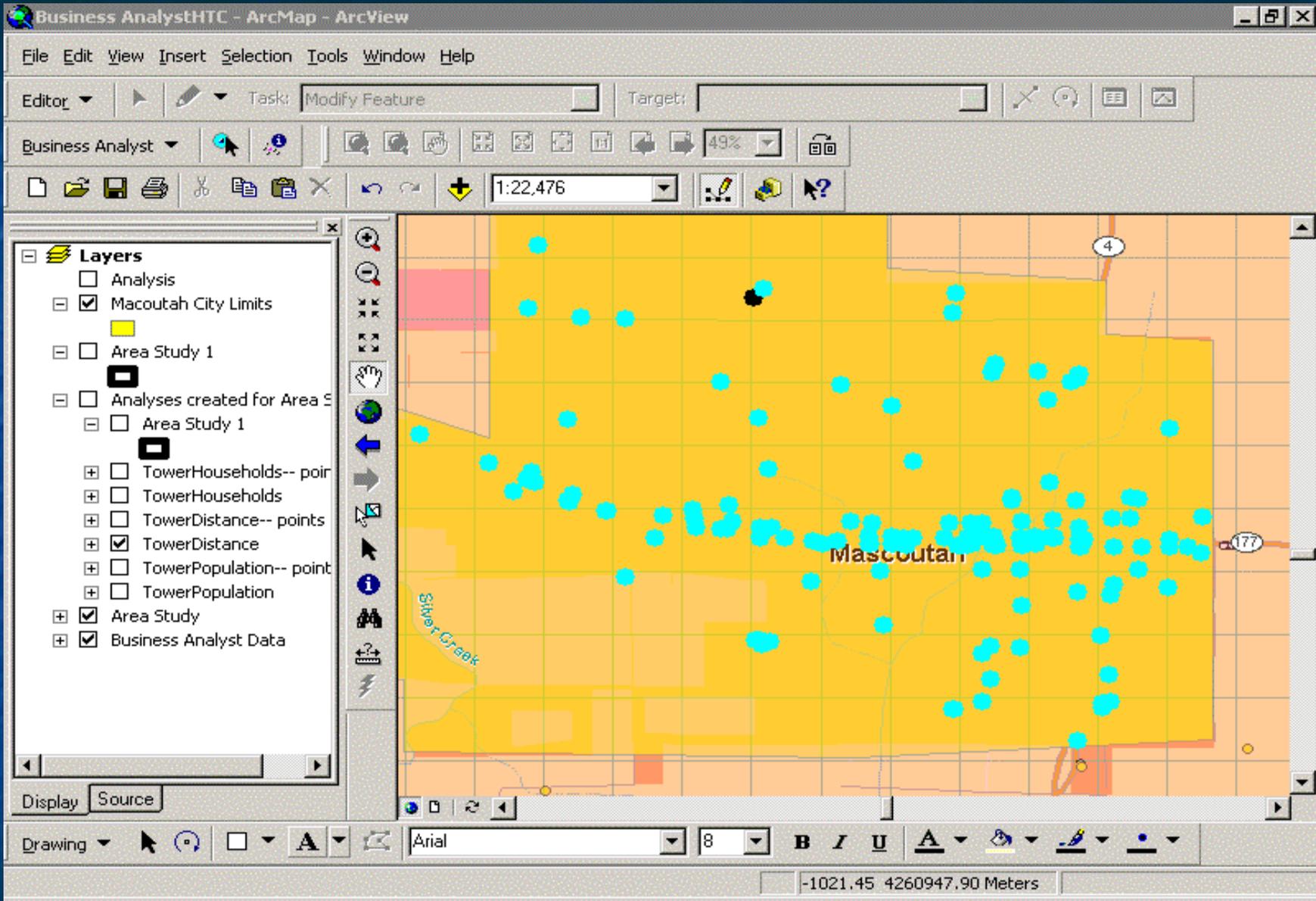
Points

Lines

Polygons

Apply Close

-6548.03 4262432.83 Meters



Selected Attributes of Businesses

ObjectID	CONAME	CITY16	STATE	ZIP	ZIP4	SIC	SALVOL	HDBRCH	EMPSI
358547605	BRENT BERGHEGER AUTO NETWORK	MASCOUTAH	IL	62258	1829	999977			
358547608	R J BUILDERS INC	MASCOUTAH	IL	62258	2232	999977			
358547610	MASCOUTAH SENIOR SVC PROGRAM	MASCOUTAH	IL	62258	2147	832218			5
358547611	MOOSE HOME	MASCOUTAH	IL	62258		861102			5
358547612	LABORERS OFFICE	MASCOUTAH	IL	62258	2138	863101			5
358547613	JON CANNON	MASCOUTAH	IL	62258	1309	866106			5
358547614	RON MELZER	MASCOUTAH	IL	62258	1340	866106			5
358547615	MASCOUTAH FIRST ASSEMBLY-GOD	MASCOUTAH	IL	62258	2032	866107			5
358547616	HOLY CHILDHOOD CAFETERIA	MASCOUTAH	IL	62258	2299	866107			5
358547617	HOLY CHILDHOOD CHURCH	MASCOUTAH	IL	62258	2102	866107			5
358547618	HARVEST TABERNACLE	MASCOUTAH	IL	62258	2321	866107			5
358547621	HOLY CHILDHOOD CONVENT	MASCOUTAH	IL	62258	2211	866109			5
358547622	MAIN STREET MASCOUTAH INC	MASCOUTAH	IL	62258	2136	869907			5
358547623	MASCOUTAH CITY MANAGER	MASCOUTAH	IL	62258	2044	911104			5
358547624	MASCOUTAH TOWNSHIP OFFICE	MASCOUTAH	IL	62258	1179	912104			5
358547625	US CIVIL DEFENSE	MASCOUTAH	IL	62258	2030	922904			5
358547627	MASCOUTAH FIRST BAPTIST CHURCH	MASCOUTAH	IL	62258	1160	866107			5
358547628	MASCOUTAH FIRST BAPTIST CHURCH	MASCOUTAH	IL	62258	1130	866107			5
358547629	MESSIAH FULL GOSPEL BAPTIST	MASCOUTAH	IL	62258	2518	866107			5
358547630	VICTORY FREE WILL BAPTIST CHR	MASCOUTAH	IL	62258	1154	866107			5
358547631	ZION LUTHERAN CHURCH	MASCOUTAH	IL	62258	1935	866107			5

Record: 1 Show: All Selected Records (210 out of 12747350) Options

Display Source

Drawing Arial 8 **B** *I* U

-1689.81 4262221.56 Meters

Selected Attributes of Businesses

ObjectID	CONAME	CITY16	STATE	ZIP	ZIP4	SIC	SALVOL	HDBRCH	EMPSI
358547605	BRENT BERGHEGER AUTO NETWORK	MASCOUTAH	IL	62258	1829	999977			
358547608	R J BUILDERS INC	MASCOUTAH	IL	62258	2232	999977			
358547610	MASCOUTAH SENIOR SVC PROGRAM	MASCOUTAH	IL	62258	2147	832218			5
358547611	MOOSE HOME	MASCOUTAH	IL	62258		861102			5
358547612	LABORERS OFFICE	MASCOUTAH	IL	62258	2138	863101			5
358547613	JON CANNON	MASCOUTAH	IL	62258	1300	866106			5
358547614	RON MELZER	MASCOUTAH	IL	62258		866106			5
358547615	MASCOUTAH FIRST ASSE	MASCOUTAH	IL	62258		866107			5
358547616	HOLY CHILDHOOD CAFET	MASCOUTAH	IL	62258		866107			5
358547617	HOLY CHILDHOOD CHURI	MASCOUTAH	IL	62258		866107			5
358547618	HARVEST TABERNACLE	MASCOUTAH	IL	62258		866107			5
358547621	HOLY CHILDHOOD CONVE	MASCOUTAH	IL	62258		866109			5
358547622	MAIN STREET MASCOUTA	MASCOUTAH	IL	62258		869907			5
358547623	MASCOUTAH CITY MANA	MASCOUTAH	IL	62258		911104			5
358547624	MASCOUTAH TOWNSHIP	MASCOUTAH	IL	62258		912104			5
358547625	US CIVIL DEFENSE	MASCOUTAH	IL	62258		922904			5
358547627	MASCOUTAH FIRST BAPT	MASCOUTAH	IL	62258		866107			5
358547628	MASCOUTAH FIRST BAPT	MASCOUTAH	IL	62258		866107			5
358547629	MESSIAH FULL GOSPEL BAPTIST	MASCOUTAH	IL	62258	2518	866107			5
358547630	VICTORY FREE WILL BAPTIST CHR	MASCOUTAH	IL	62258	1154	866107			5
358547631	ZION LUTHERAN CHURCH	MASCOUTAH	IL	62258	1935	866107			5

**Export Data** [?] [X]

Export: Selected records

Use the same Coordinate System as this layer's source data.

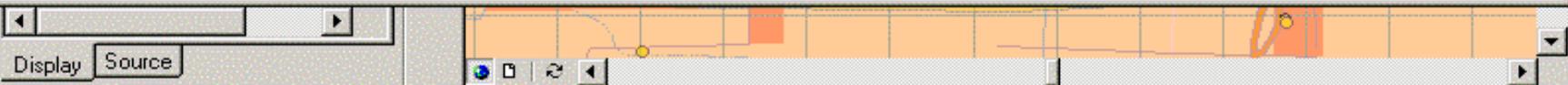
Use the same Coordinate System as the data frame.

Output table:

U:\OnTargetTest\Export\_Output.dbf

OK Cancel

Record: [Navigation icons] 1 [Navigation icons] Show: All Selected Records (210 out of 12747350) Options

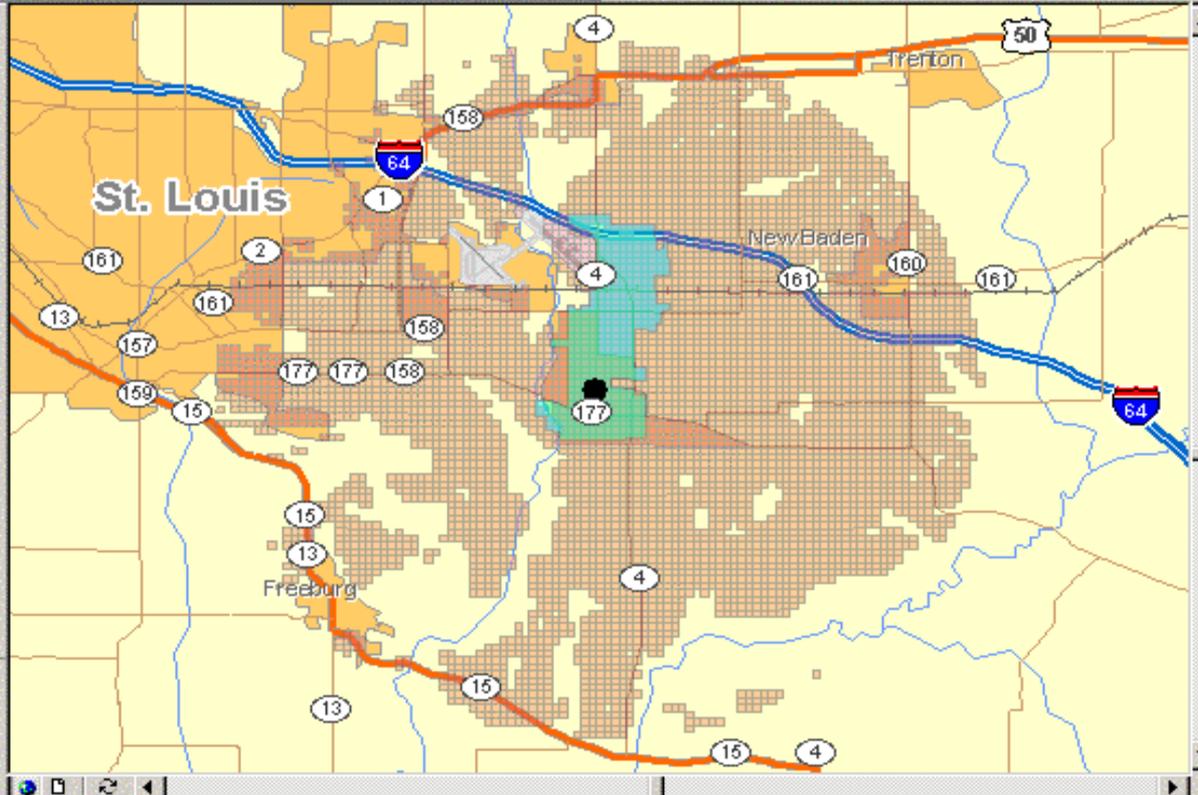


Drawing [Navigation icons] Arial 8 B I U A [Color selection icons]

195.46 4260973.12 Meters

**Layers**

- Macoutah City Limits
- Area Study 1
- Analyses created for Area S
- Area Study
- Business Analyst Data



# Geocoding

- Utilize a table of possible client data
- Use name, address, city, state and zip code data to obtain coordinates
- Latitude and Longitude are added
- Customer locations can be compared to the coverage area on the coverage map

	A	B	C	D	E
1	NAME	ADDRESS	CITY	STATE	ZIP
2	BRENT BERGHEGER AUTO NETWORK	204 West Main Street	MASCOUTAH	IL	62258
3	R J BUILDERS INC	501 West Main Street	MASCOUTAH	IL	62258
4	MASCOUTAH SENIOR SVC PROGRAM	227 North Market Street	MASCOUTAH	IL	62258
5	MOOSE HOME	111 North 2nd Street	MASCOUTAH	IL	62258
6	LABORERS OFFICE	323 East Main Street	MASCOUTAH	IL	62258
7	MASCOUTAH FIRST ASSEMBLY-GOD	135 West Main Street	MASCOUTAH	IL	62258
8	HOLY CHILDHOOD CHURCH	104 North Independence	MASCOUTAH	IL	62258
9	COMMUNITY CARE CENTER-MSCTH	201 South 10th Street	MASCOUTAH	IL	62258
10	FIRST FEDERAL SAVINGS BANK	101 West Main Street	MASCOUTAH	IL	62258
11	DMS CONTRACTING INC	PO Box 122	MASCOUTAH	IL	62258
12	QUALITY PAINTING		MASCOUTAH	IL	62258
13	LINDER'S CUSTOM WALLPAPERING	609 South Independence	MASCOUTAH	IL	62258
14	Residence A	500 North 6th Street	MASCOUTAH	IL	62258
15	Residence B	100 East Green Street	MASCOUTAH	IL	62258
16	Residence C	200 South Railway Street	MASCOUTAH	IL	62258
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					

### Customer Setup

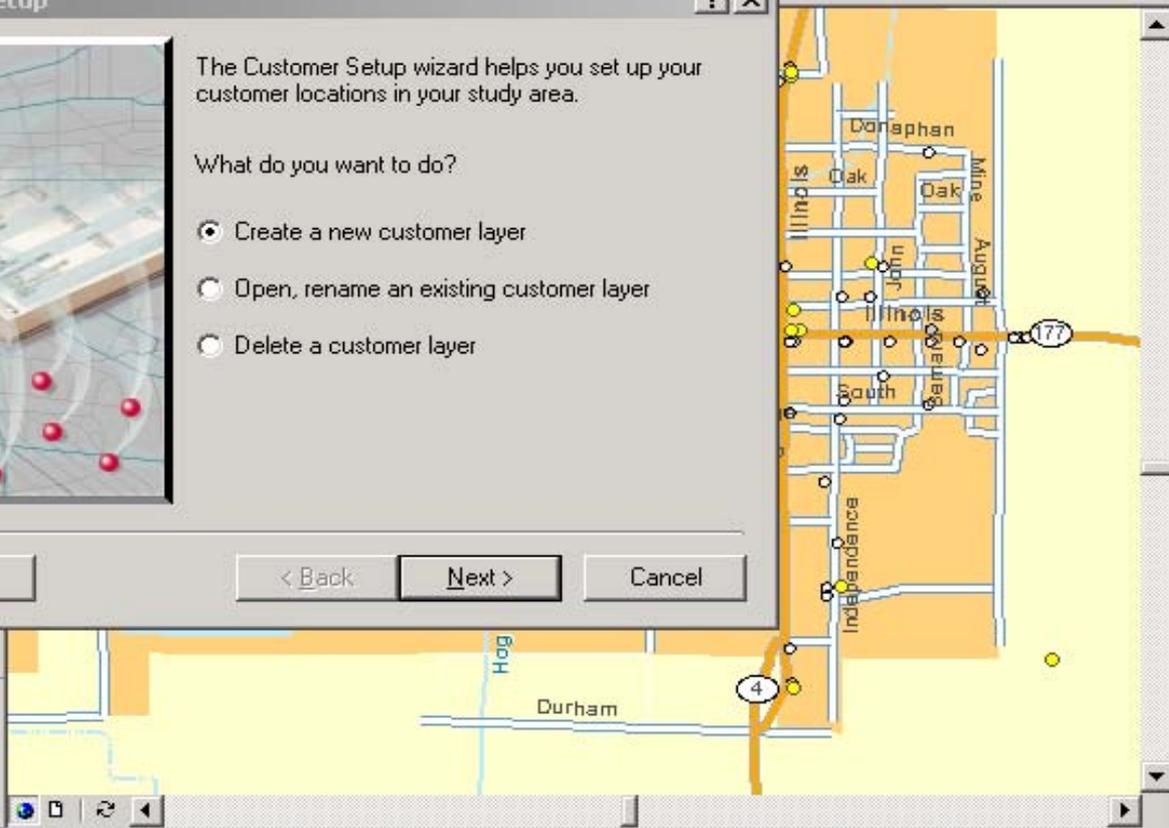


The Customer Setup wizard helps you set up your customer locations in your study area.

What do you want to do?

- Create a new customer layer
- Open, rename an existing customer layer
- Delete a customer layer

Buttons: Help, < Back, Next >, Cancel



**Customer Setup**

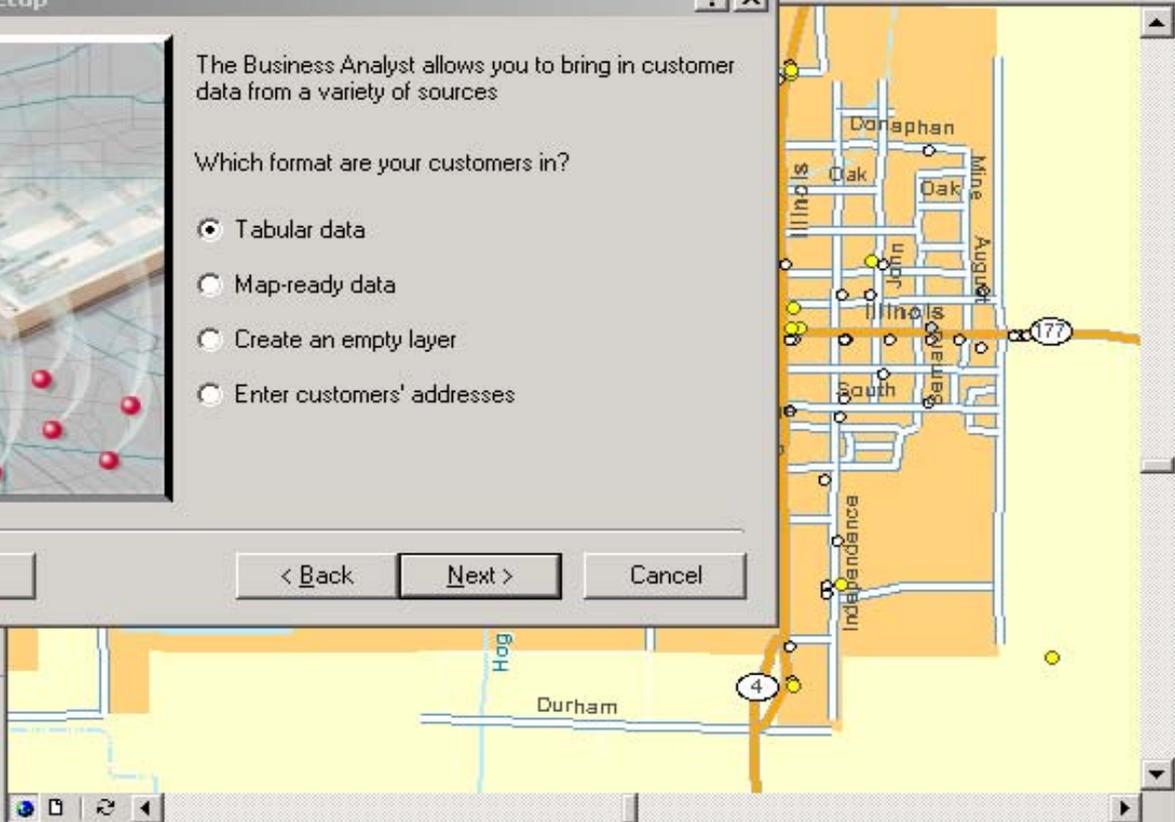


The Business Analyst allows you to bring in customer data from a variety of sources

Which format are your customers in?

- Tabular data
- Map-ready data
- Create an empty layer
- Enter customers' addresses

Help < Back Next > Cancel



- Layers
  - Macoutah City Limits
  - Area Study 1
  - Analyses created for Area Study 1
  - Area Study
  - Business Analyst Data

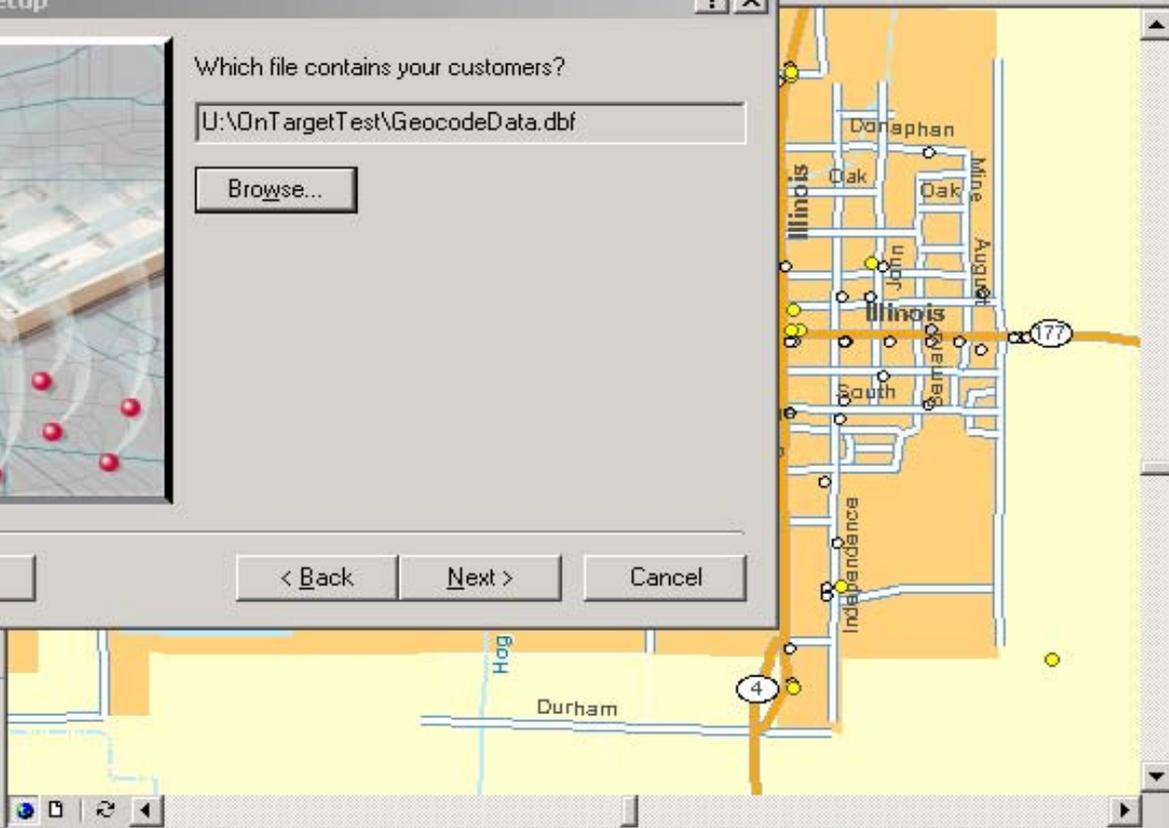
**Customer Setup**

Which file contains your customers?

U:\OnTargetTest\GeocodeData.dbf

Browse...

Help < Back Next > Cancel



- Layers
  - Macoutah City Limits
  - Area Study 1
  - Analyses created for Area Study 1
  - Area Study
  - Business Analyst Data

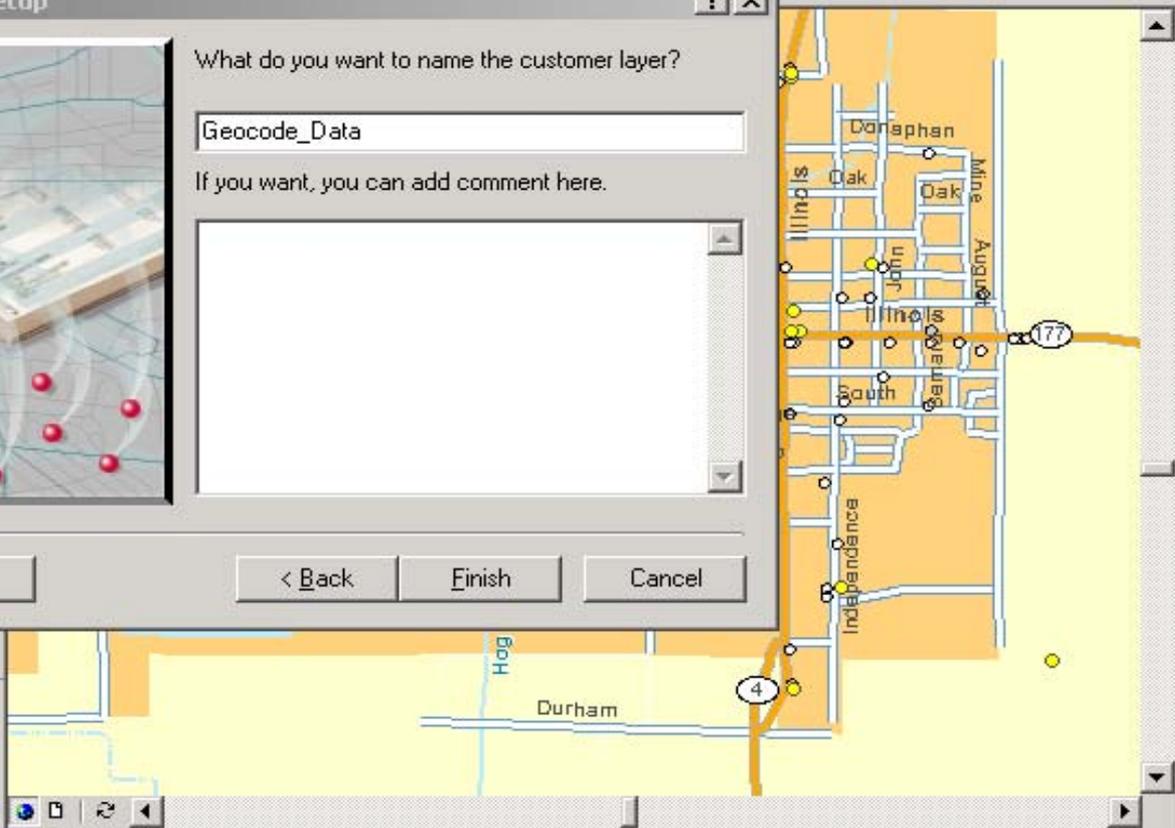
### Customer Setup

What do you want to name the customer layer?

Geocode\_Data

If you want, you can add comment here.

Help < Back Finish Cancel





- Layers
  - Macoutah City Limits
  - Area Study 1
  - Analyses created for Ar
  - Area Study
  - Business Analyst Data

### Centrus Geocoding Progress

Input Address

Firm: BRENT BERGHEGER AUTO NETWORK

Address: 204 West Main Street

Address 2:

Last Line: MASCOUTAH IL 62258

Find

Query...

Reload

Results

- Centrus Geocoding Results
  - Codes
    - Match Code: S80
    - Location Code: AS0
  - Outputs
    - City Name: Mascoutah

Records

Current:	1	of 15
Standardized:	1	100.00%
Geocoded:	1	100.00%

Time: 00:00 Time To Complete: 00:00

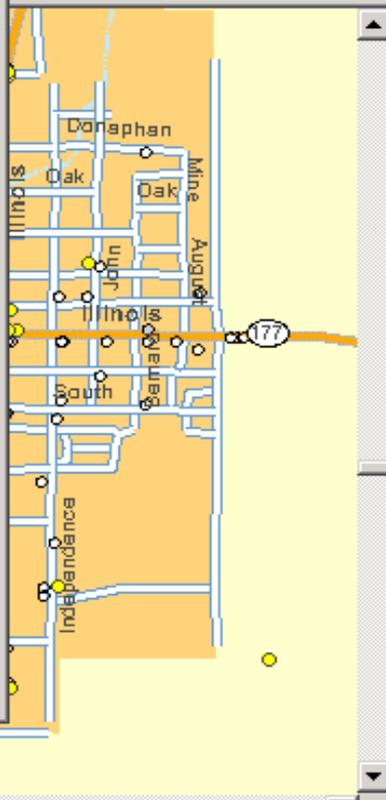
Next

Next Error

Goto...

Batch

Close



## Centrus Address Coding Report

-----  
Output Table..... GeocodeData3  
Process Completed..... 04/19/2004 04:36:47 PM

## Options:

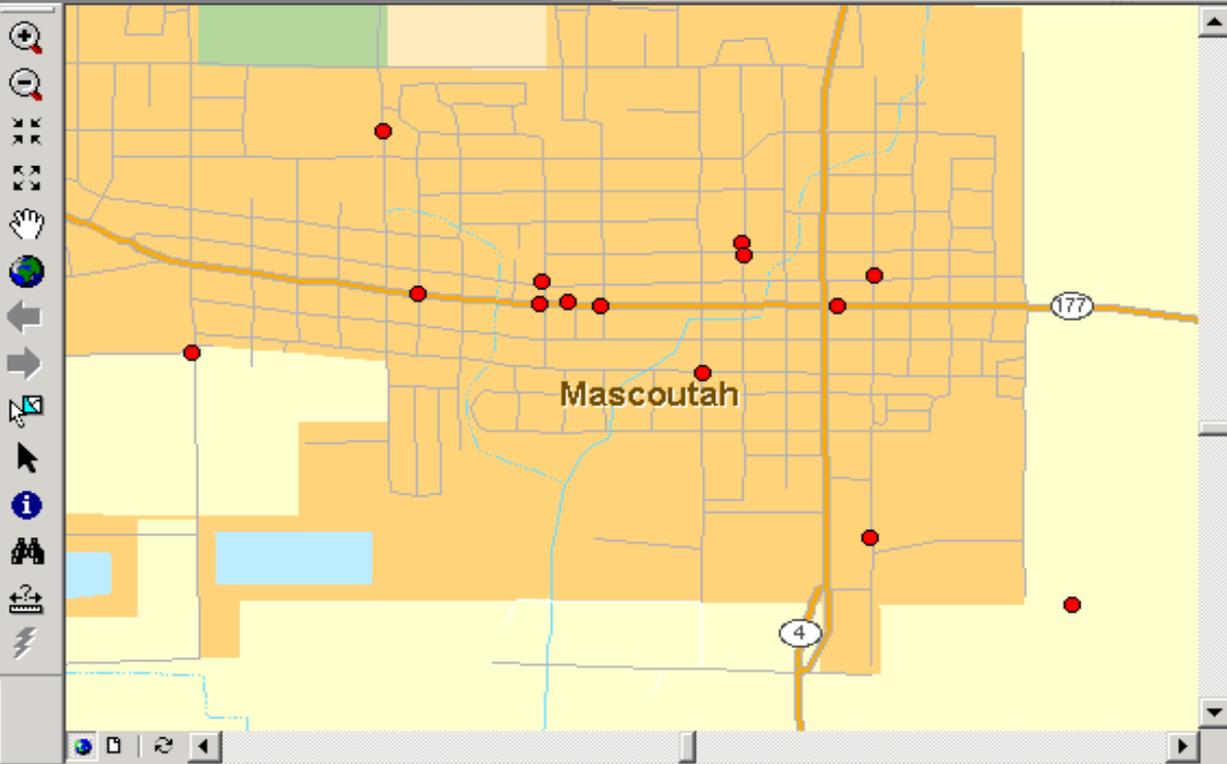
Search Path for Address Geocoding..... C:\arcgis\arcexe83\Business Analyst\Data\Sagent Geocodi  
Address Geocoding Z9 File..... C:\arcgis\arcexe83\Business Analyst\Datasets\Generalize  
Address Matching..... YES  
Matching Tolerance..... Close  
ZIP Centroid Matching..... YES  
Minimum quality..... Best Centroid  
Census ID Format..... Digits only

## ADDRESS STATISTICS:

Records Processed.....	15
Addresses Matched.....	14 (93.33%)
standardized.....	14
Intersections.....	0
Non-USPS.....	0
Unmatched.....	1 (6.67%)
Valid unmatched Zips.....	0
E001: Low level error.....	0
E002: State file not found.....	0
E003: Invalid file.....	0
E004: File is out of date.....	0
E010: Unrecognized last line.....	0
E011: ZIP not found.....	0
E012: City not found.....	0
E013: City not unique.....	0
E014: Out of licensed area.....	0
E020: No matching streets.....	1
E021: No cross streets.....	0
E022: No matching ranges.....	0
E023: Match is unresolved.....	0
E025: Too many cross streets.....	0
E026: Unable to find Address input...	0
E027: Invalid Directional attempted..	0
E028: Also matched to EWS data.....	0

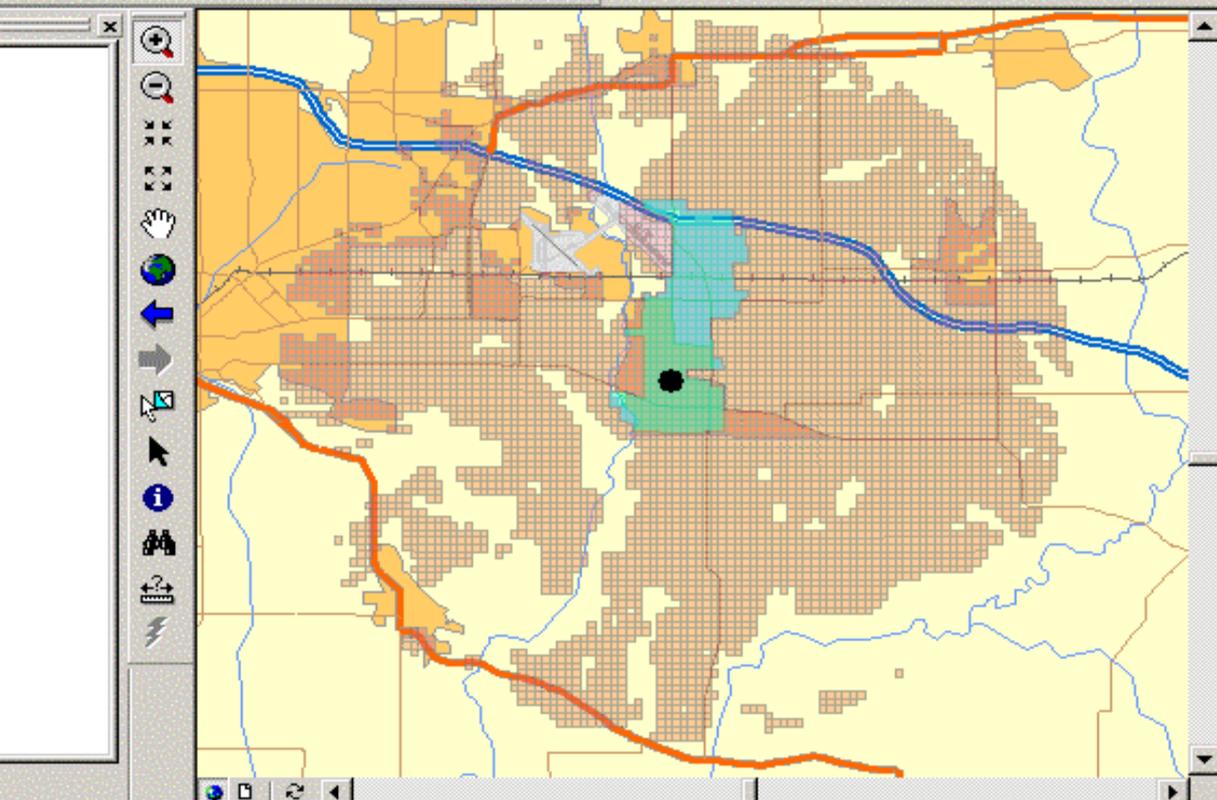
**Layers**

- Geocode Data
- Macoutah City Limits
- Area Study 1
- Analyses created for Area Study
- Area Study
- Business Analyst Data



- Add Business Listings...
- Add Business Data From Internet...
- Create Study Area...
  - Set Analysis Extent
- Customer Setup...
- Store Setup...
- Assign Customers To Stores ...
- Analysis Layer Setup...
- Analysis...**
- Spatial Overlay...
- Find Similar...
  - Site Prospecting
- Find Route...
- Reports...
- Thematic Mapping...
- Preferences...

1:267,619



Display Source

# Add in other data or maps

- Drive Test analysis results
- Dots represent field test data – data and symbology are formatted
- Area Study model data representation is modified to follow drive test data range
- Drive Test compared to Area Study model



# ESRI Business Analyst

- Merging Business Analyst with RF Engineering modeling provides businesses a different tool for clients
- ArcView and Business Analyst data provide powerful mapping and demographic data capabilities
- The sum total of both tools; RF modeling and GIS is greater through synergy

# Questions?

