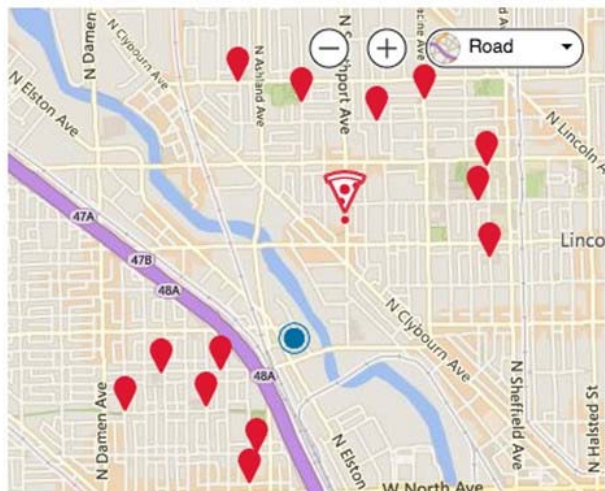




Day- and night-time populations and delivery hotspots?

DOMINO'S HOTSPOTS®

Tap to select the  hotspot where you'd like to receive your Domino's delivery



ST JOSAPHAT ELEMENTARY SCHOOL (0.38 MILES)

Available Su-Sa 10:00am-6:00pm

St Josaphat Elementary School



11.72 MIN WALK



4.48 MIN DRIVE

You can get directions to your Domino's Hotspot from your current location once you place your order.

A GIS application in Business

Troy, AL

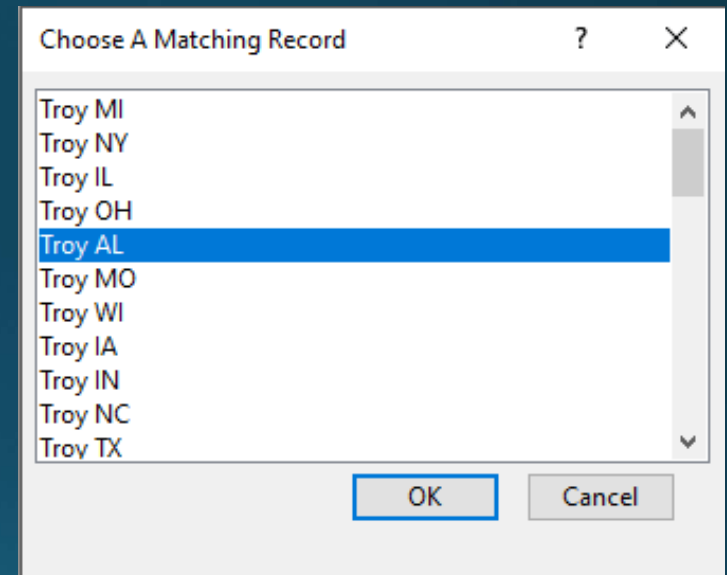
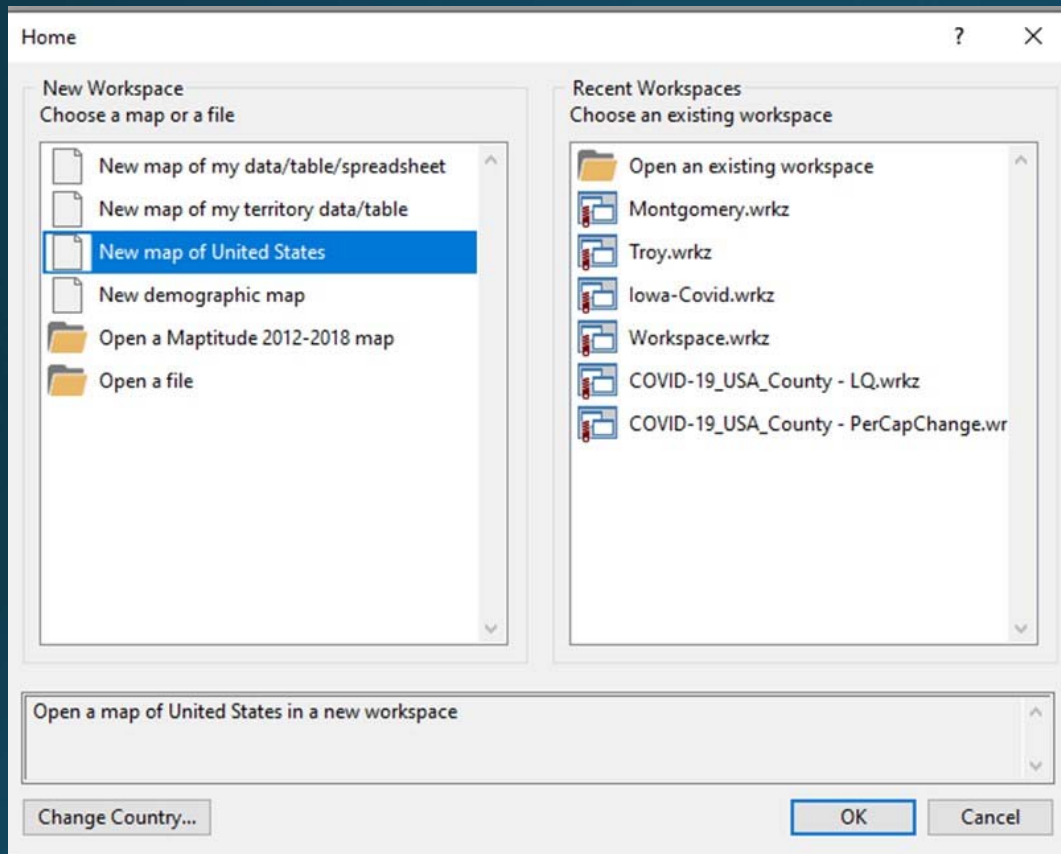
Brett Lucas – Spokane, WA

Presentation - Outline

- Case study – Domino's
- Future of GIS

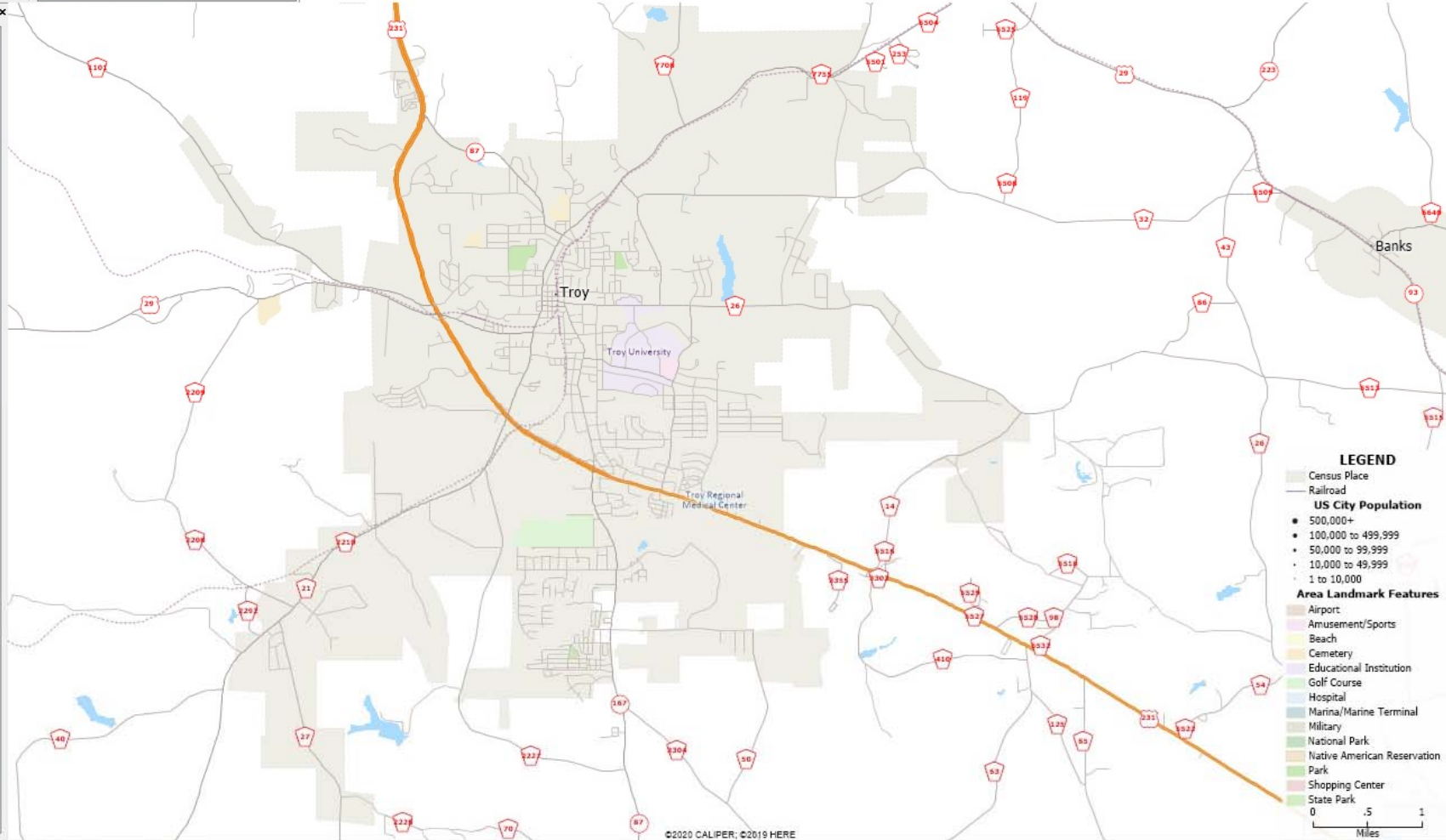
Purpose of Presentation

- Introduce the student to the Maptitude GIS software package
- Use some of the tools in Maptitude to solve a Business problem
- Case study of Domino's Pizza in Troy, Alabama
 - Use of several site selection indicators including population (day and night) household income, and consumer expenditure survey data
 - With GIS we can see where there is unmet potential or "service" gaps
- GIS is just one tool in the geographer's tool-belt
- Other tools include Google Maps (wealth of information including street view) and field observations



Display Manager

- 10 Degree Grid Area
- World Country
- World Province
- Census Place**
- Landmark Area
- Water Area
- Census Tract
- 5-Digit ZIP Code
- 3-Digit ZIP Code
- County Subdivision
- County
- State
- MSA
- Building Footprint
- River/Brook/Stream
- Street
- Highway/Freeway
- Railroad
- Time Zone
- 5-Digit ZIP Point
- Landmark
- World City
- City/Town



• This is how the map comes in

- 10 Degree Grid Area
- World Country
- World Province
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- Landmark Area
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- 3-Digit ZIP Code
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- Street
- Highway/Freeway
- Railroad
- Time Zone
- 5-Digit ZIP Point
- Landmark
- World City
- City/Town**

File Open

This PC > Windows (C:) > ccdata

Search ccdata

Name	Date modified	Type	Size
Block 2010	10/4/2018 8:45 PM	File folder	
Block Group 2019	4/17/2019 7:06 PM	File folder	
Block Group 2020	4/11/2020 2:32 PM	File folder	
Caliper Healthcare Data 2019	5/31/2020 1:32 PM	File folder	
Canada (HERE) - 2019 Quarter 4	5/23/2020 3:39 PM	File folder	
Canada 2019 Business Location Layers	8/29/2019 7:21 PM	File folder	
Canada 2019 Point of Interest (POI) Layers	8/29/2019 7:21 PM	File folder	
CanadaHighwayExit	9/29/2018 3:19 PM	File folder	
Consumer Expenditure	12/28/2019 3:23 PM	File folder	
Geodemographic Segmentation 2020	4/11/2020 2:30 PM	File folder	
HDMA 2010	4/22/2018 12:48 PM	File folder	
North America (HERE) - 2015	8/4/2018 5:25 PM	File folder	
Population Projections for US Counties	7/27/2020 6:33 AM	File folder	
Schools - 2019	5/14/2019 6:34 PM	File folder	
Segmentation	3/7/2020 1:15 PM	File folder	
USA (HERE) - 2019 Quarter 4	8/23/2020 1:24 PM	File folder	
USA 2017 Business Location Layers	6/25/2018 7:39 PM	File folder	
USA 2017 Point of Interest (POI) Layers	6/23/2018 7:01 PM	File folder	
USA 2018 Business Count Layers	11/2/2019 5:31 PM	File folder	
USA 2019 Banking	8/29/2019 5:46 PM	File folder	
USA 2019 Business Location Layers	6/12/2019 6:06 PM	File folder	
USA 2019 Point of Interest (POI) Layers	6/12/2019 6:32 PM	File folder	
USA 2019 Traffic Count Layer	4/26/2020 6:01 AM	File folder	
USA 2020 Business Count Layers	9/15/2020 7:34 PM	File folder	

File name: Caliper Data

Geographic File (*.cdf;*.dbd)

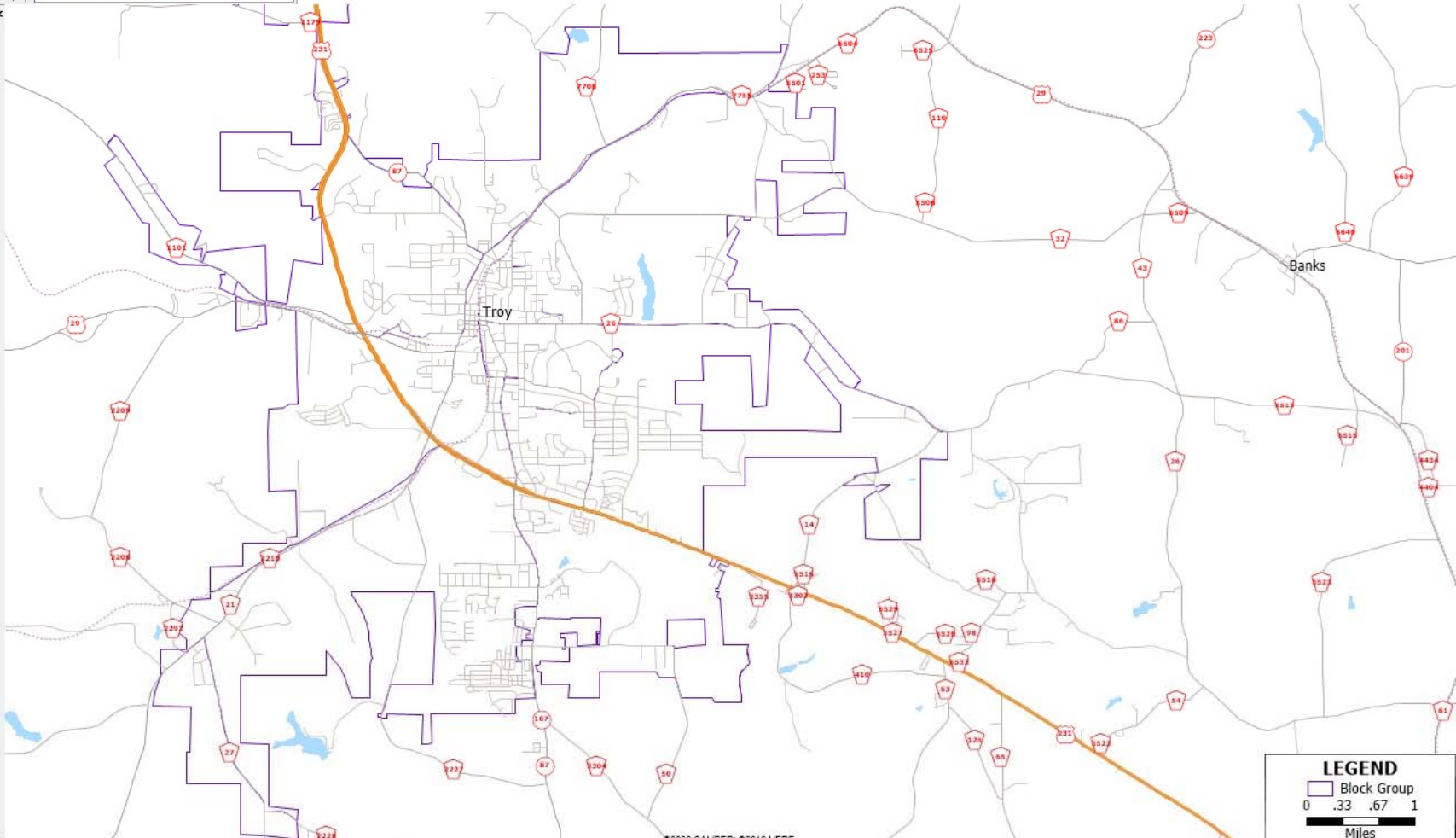
Open Cancel

LEGEND

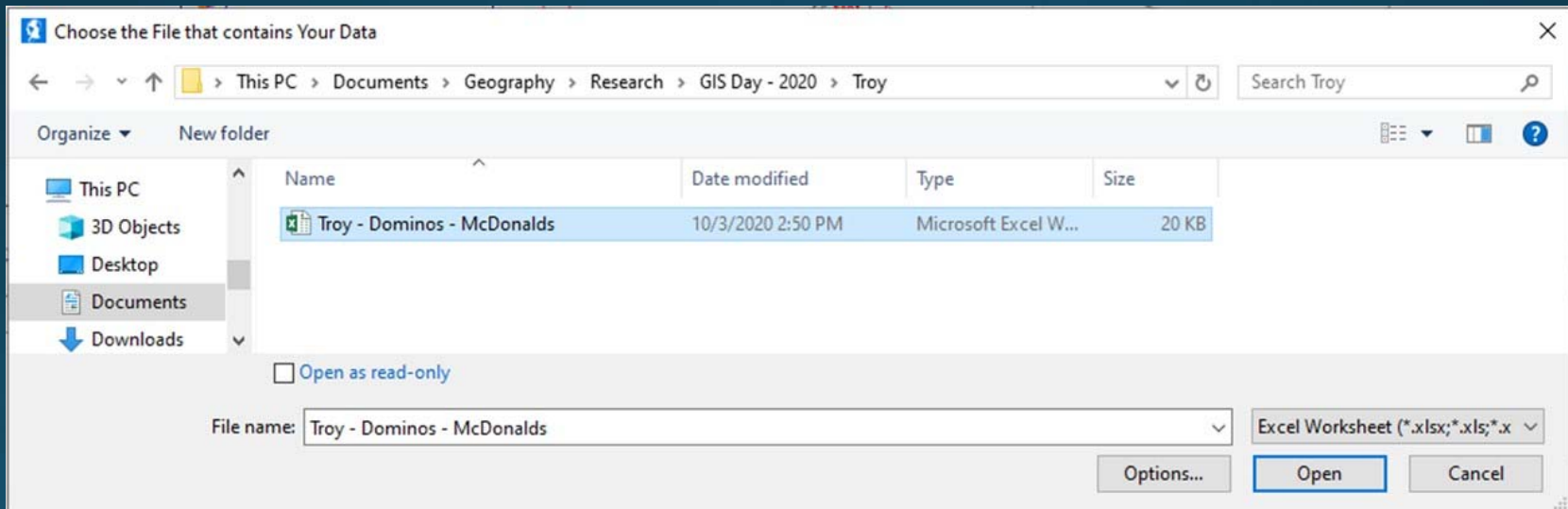
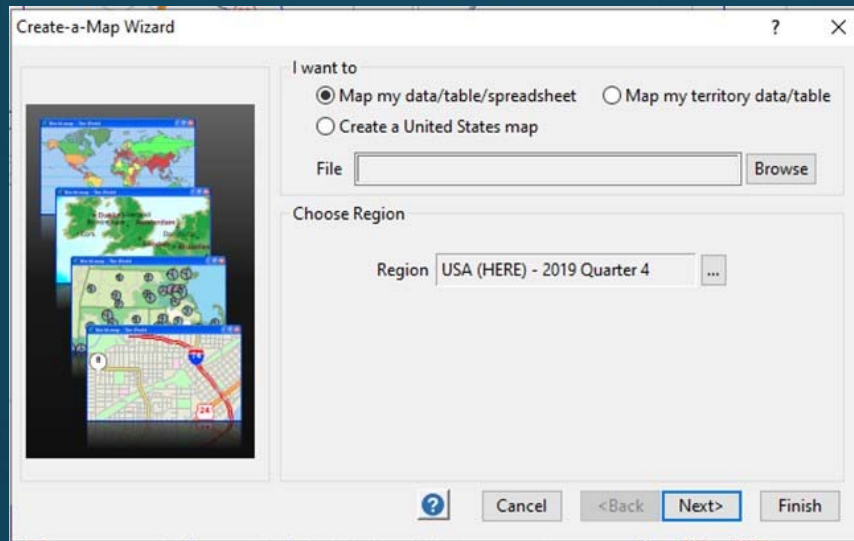
- Census Place
- Census Place selection sets**
- Selection:1
- 0 1 2 3 Miles

Display Manager

- 10 Degree Grid Area
- World Country
- World Province
- Census Place
- Landmark Area
- Water Area
- Block Group**
- Census Tract
- 5-Digit ZIP Code
- 3-Digit ZIP Code
- County Subdivision
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- State
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- Building Footprint
- River/Brook/Stream
- Street
- Highway/Freeway
- Railroad
- Time Zone
- 5-Digit ZIP Point
- Landmark
- World City
- City/Town



LEGEND
Block Group
0 .33 .67 1
Miles



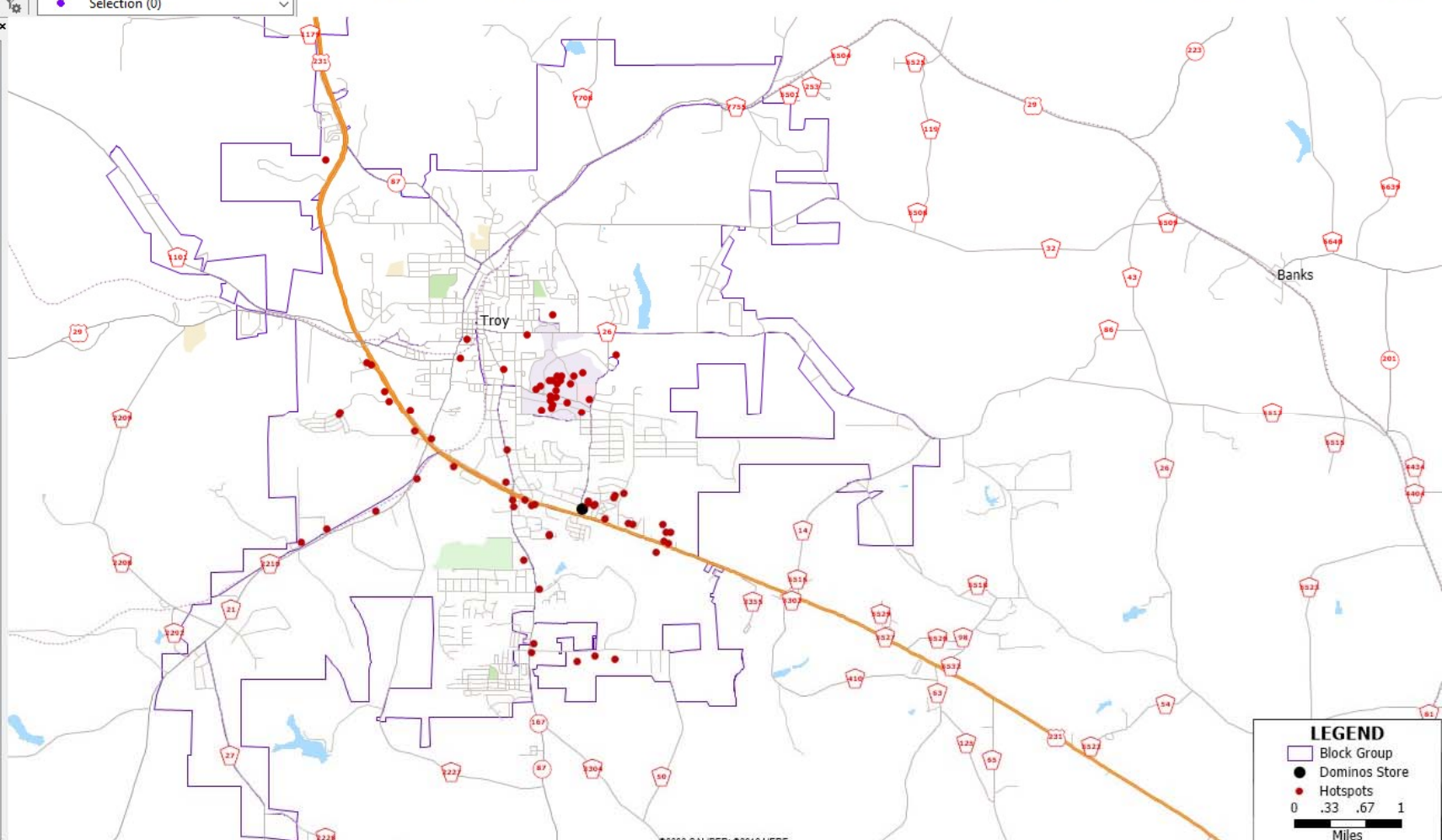
- Domino's hotpot locations
- 75 locations
- Pulled from Domino's and Google Maps and hand geocoded



	A	B	C	D	E	F
1	Latitude	Longitude	State	City	Address	Zip
2	31.783456	-85.953052	AL	Troy	808 S George Wallace Dr	36081

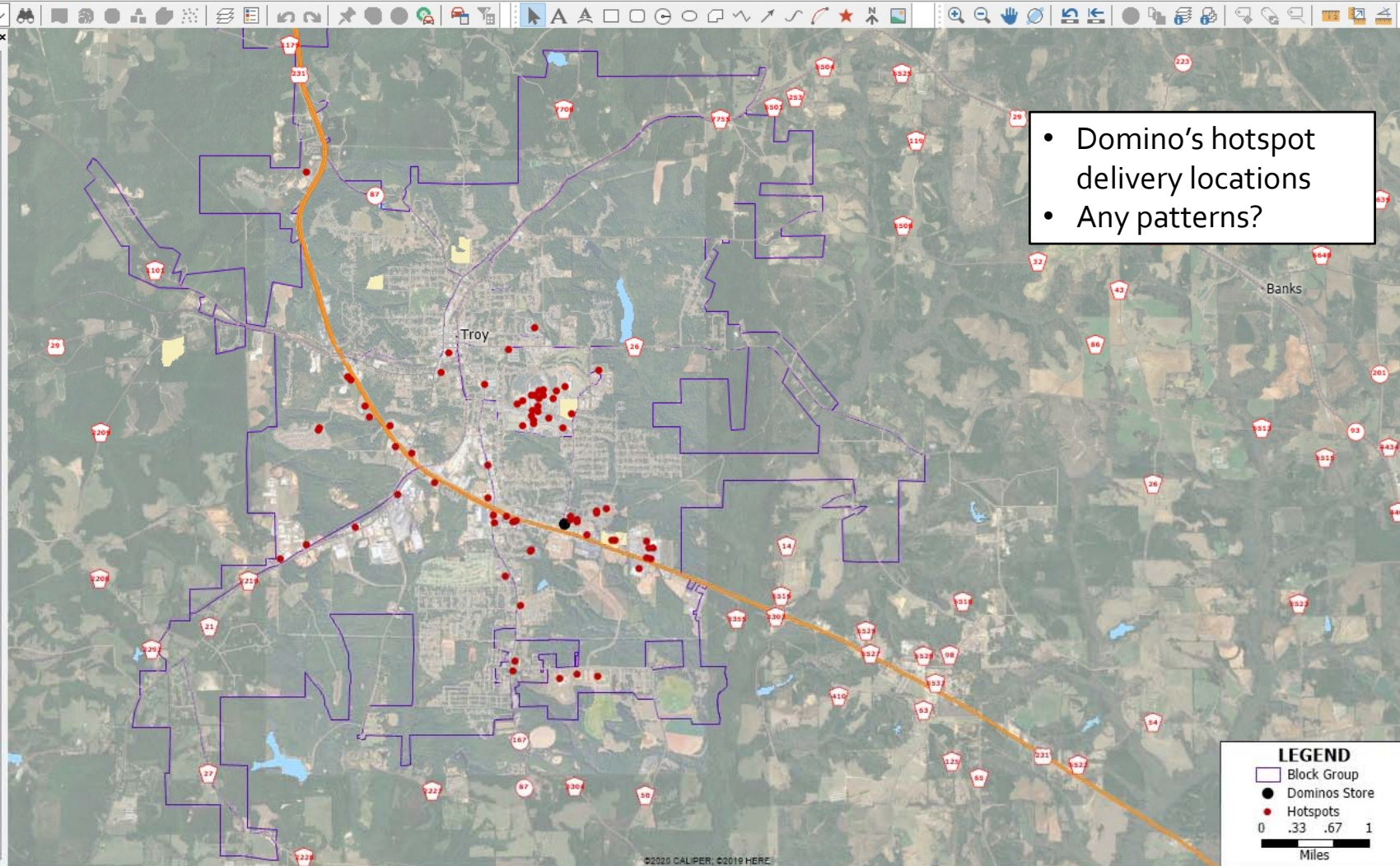
	A	B	C	D	E	F
1	Latitude	Longitude	State	City	Address	Zip
2	31.801438	-85.954291	AL	Troy	1 College Dr	36082
3	31.787473	-85.979279	AL	Troy	1 Sanders Rd	36079
4	31.784659	-85.964141	AL	Troy	100 Elba Hwy	36079
5	31.798022	-85.983803	AL	Troy	100 Hunters Mountain Pkwy	36079
6	31.799631	-85.960393	AL	Troy	100 Luther Dr	36081
7	31.800148	-85.959639	AL	Troy	100 Luther Dr	36081
8	31.792929	-85.976976	AL	Troy	100 US-231	36081
9	31.796548	-85.991537	AL	Troy	1000 Hunters Mountain Pkwy	36079
10	31.796201	-85.991752	AL	Troy	1000 Hunters Mountain Pkwy	36079
11	31.784561	-85.962085	AL	Troy	1007 US-231	36081
12	31.778912	-85.997785	AL	Troy	101 Hudson St	36079
13	31.78395	-85.960594	AL	Troy	1013 US-231 S	36081
14	31.78382	-85.951059	AL	Troy	103 Troy Plaza Loop	36081
15	31.784037	-85.951035	AL	Troy	103 Troy Plaza Loop	36081
16	31.780721	-85.99374	AL	Troy	107 Holmes St	36079
17	31.793914	-85.979681	AL	Troy	110 US 231 N	36081
18	31.803894	-85.97239	AL	Troy	112 W Madison St	36081
19	31.791416	-85.964998	AL	Troy	1122 S Brundidge St	36081
20	31.784131	-85.95209	AL	Troy	115 Troy Plaza Loop	36081
21	31.784491	-85.952015	AL	Troy	115 Troy Plaza Loop	36081
22	31.796762	-85.980407	AL	Troy	121 US-231	36081
23	31.782116	-85.949407	AL	Troy	1260 US-231 S	36081
24	31.787081	-85.965117	AL	Troy	1327 S Brundidge St	36081
25	31.781387	-85.945567	AL	Troy	1330 US-231	36081
26	31.781273	-85.944974	AL	Troy	1330 US-231	36081
27	31.779	-85.939945	AL	Troy	1410 US-231	36081
28	31.765236	-85.960693	AL	Troy	1414 Elba Hwy	36079
29	31.778809	-85.939358	AL	Troy	1416 US-231 S	36081
30	31.781257	-85.940089	AL	Troy	1420 US-231 S	36081

- 10 Degree Grid Area
- World Country
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- Street
- Highway/Freeway
- Railroad
- Time Zone
- 5-Digit ZIP Point
- Landmark
- World City
- City/Town
- Dominos Store
- Hotspots**



Display Manager

- Google Satellite
- 10 Degree Grid Area
- World Country
- World Province
- Census Place
- Landmark Area
- Water Area
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- Census Tract
- 5-Digit ZIP Code
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- Railroad
- Time Zone
- 5-Digit ZIP Point
- Landmark
- World City
- City/Town
- Dominos Store
- Hotspots



• Domino's hotspot delivery locations
• Any patterns?

LEGEND

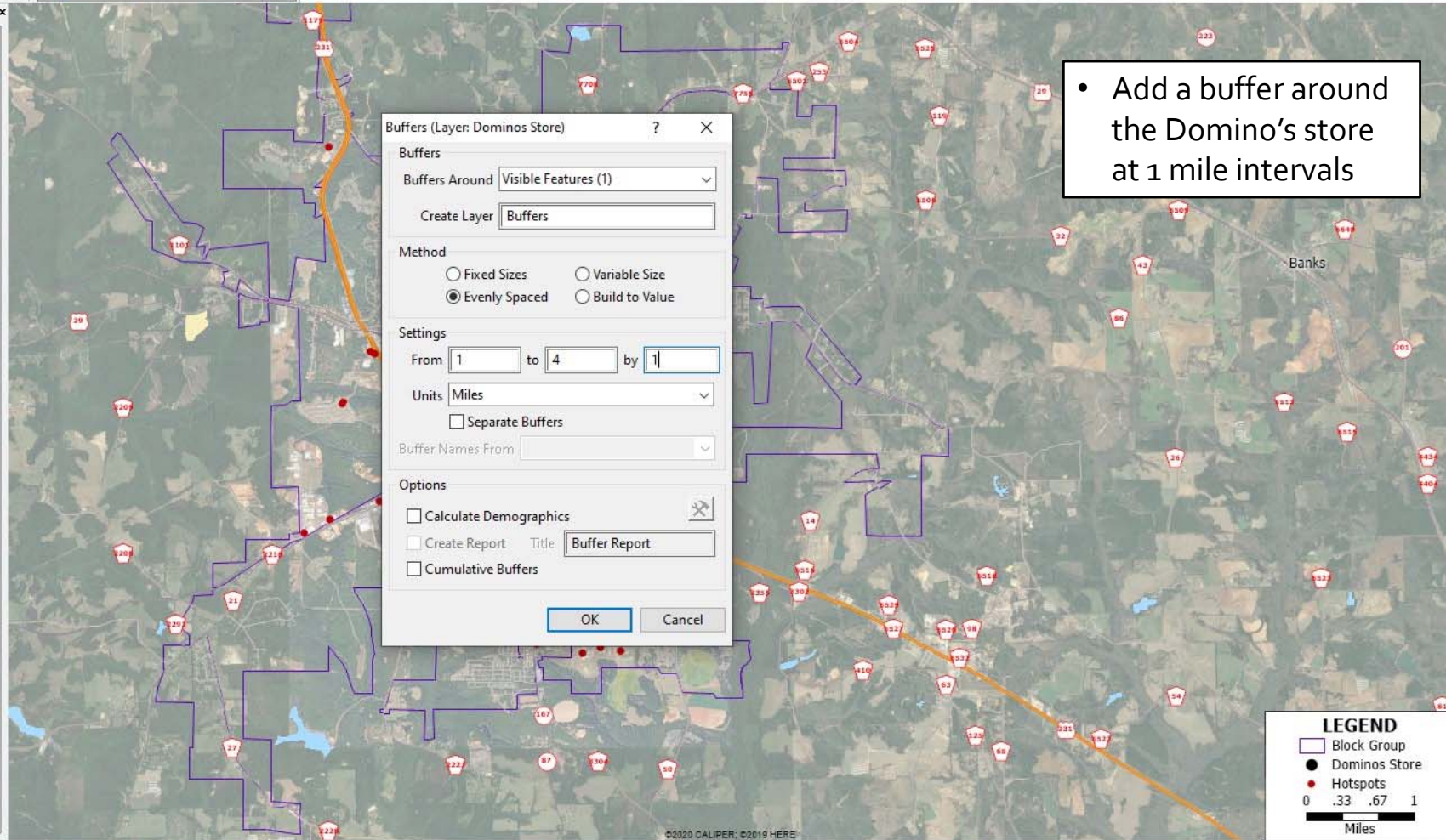
- Block Group
- Dominos Store
- Hotspots

0 .33 .67 1
Miles



Display Manager

- Google Satellite
- 10 Degree Grid Area
- World Country
- World Province
- Census Place
- Landmark Area**
- Water Area
- Block Group
- Census Tract
- 5-Digit ZIP Code
- 3-Digit ZIP Code
- County Subdivision
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- Building Footprint
- River/Brook/Stream
- Street
- Highway/Freeway
- Railroad
- Time Zone
- 5-Digit ZIP Point
- Landmark
- World City
- City/Town
- Domino's Store**
- Hotspots



• Add a buffer around the Domino's store at 1 mile intervals

Buffers (Layer: Domino's Store)

Buffers

Buffers Around: Visible Features (1)

Create Layer: Buffers

Method

Fixed Sizes Variable Size

Evenly Spaced Build to Value

Settings

From: 1 to 4 by 1

Units: Miles

Separate Buffers

Buffer Names From:

Options

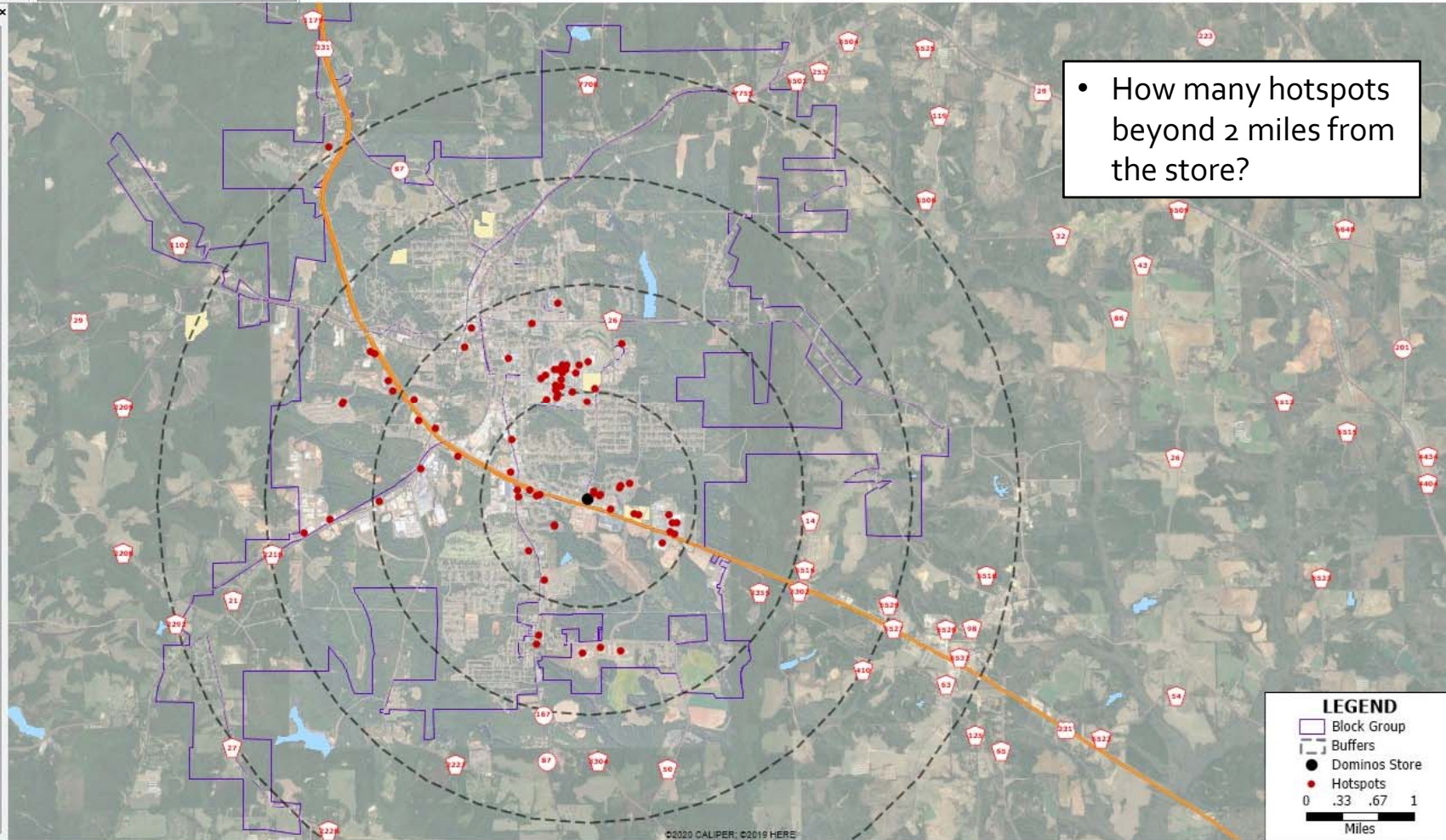
Calculate Demographics

Create Report Title: Buffer Report

Cumulative Buffers

OK Cancel

- Google Satellite
- 10 Degree Grid Area
- World Country
- World Province
- Census Place
- Landmark Area
- Water Area
- Block Group
- Census Tract
- 5-Digit ZIP Code
- 3-Digit ZIP Code
- County Subdivision
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- Time Zone
- 5-Digit ZIP Point
- Landmark
- World City
- City/Town
- Buffers
- Dominos Store
- Hotspots



• How many hotspots beyond 2 miles from the store?

LEGEND

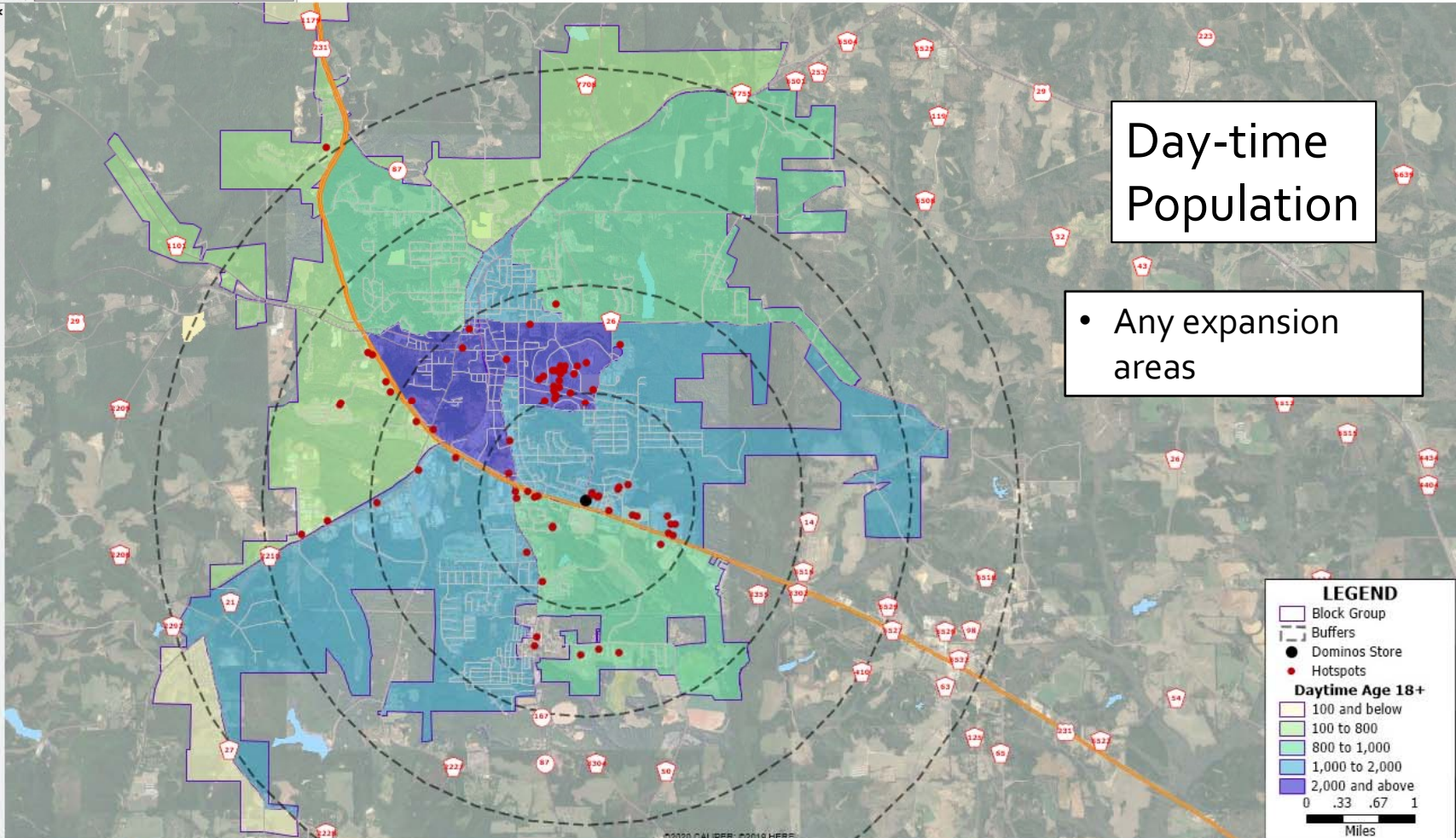
- Block Group
- Buffers
- Dominos Store
- Hotspots

0 .33 .67 1
Miles



Display Manager

- Google Satellite
- 10 Degree Grid Area
- World Country
- World Province
- Census Place
- Landmark Area
- Water Area
- Block Group
- Sets
- Theme: Daytime Age 18+
 - Other
 - 100 and below
 - 100 to 800
 - 800 to 1,000
 - 1,000 to 2,000
 - 2,000 and above
- Census Tract
- 5-Digit ZIP Code
- 3-Digit ZIP Code
- County Subdivision
- County
- State
- MSA
- Building Footprint
- River/Brook/Stream
- Street
- Highway/Freeway
- Railroad
- Time Zone
- 5-Digit ZIP Point
- Landmark
- World City
- City/Town
- Buffers
- Dominos Store
- Hotspots



Day-time Population

- Any expansion areas

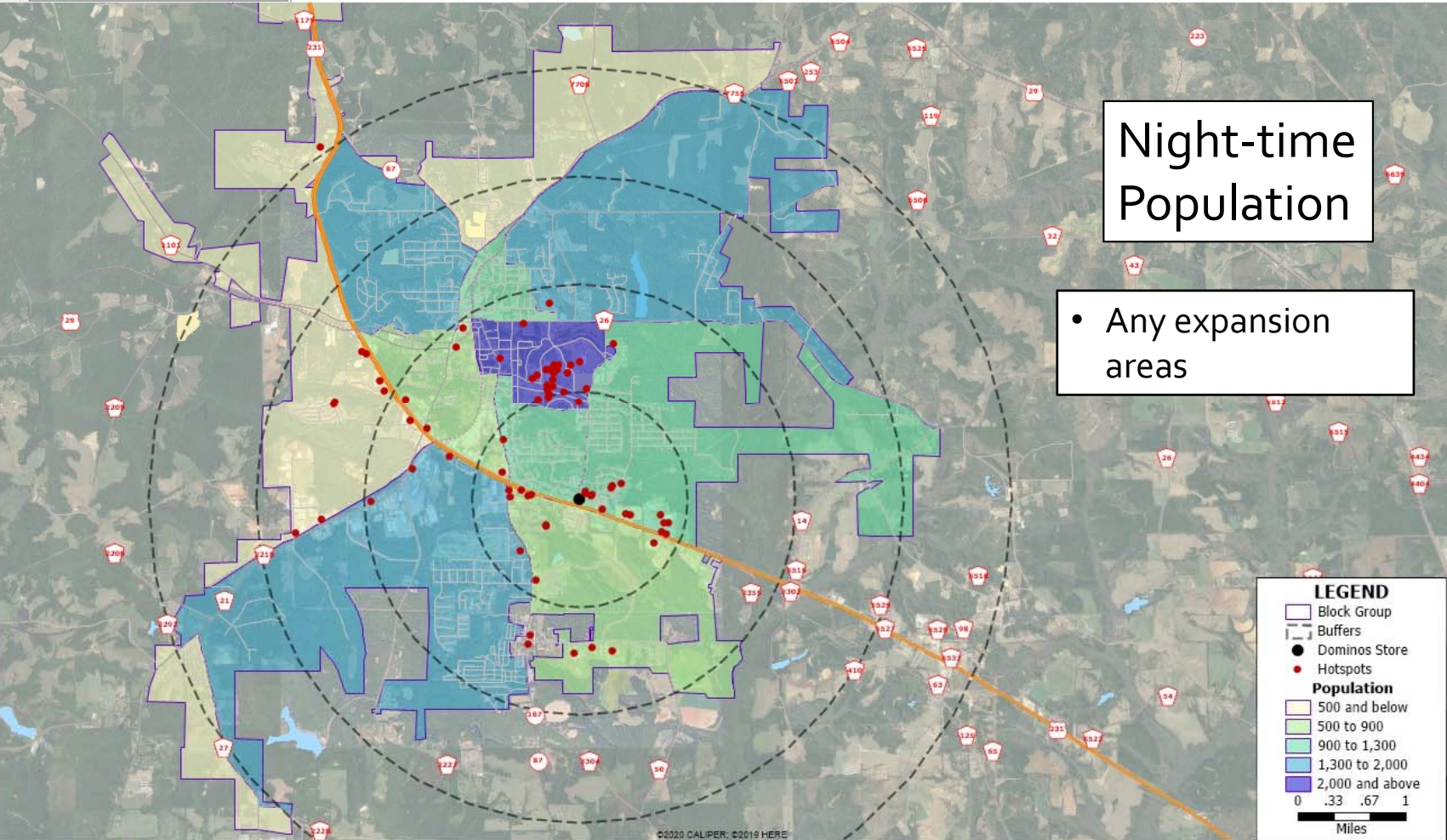
LEGEND

- Block Group
- Buffers
- Dominos Store
- Hotspots
- Daytime Age 18+**
 - 100 and below
 - 100 to 800
 - 800 to 1,000
 - 1,000 to 2,000
 - 2,000 and above

0 .33 .67 1
Miles

Display Manager

- Google Satellite
- 10 Degree Grid Area
- World Country
- World Province
- Census Place
- Landmark Area
- Water Area
- Block Group
- Sets
- Theme: Population
 - Other
 - 500 and below
 - 500 to 900
 - 900 to 1,300
 - 1,300 to 2,000
 - 2,000 and above
- Census Tract
- 5-Digit ZIP Code
- 3-Digit ZIP Code
- County Subdivision
- County
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- Street
- Highway/Freeway
- Railroad
- Time Zone
- 5-Digit ZIP Point
- Landmark
- World City
- City/Town
- Buffers
- Dominos Store
- Hotspots



Night-time Population

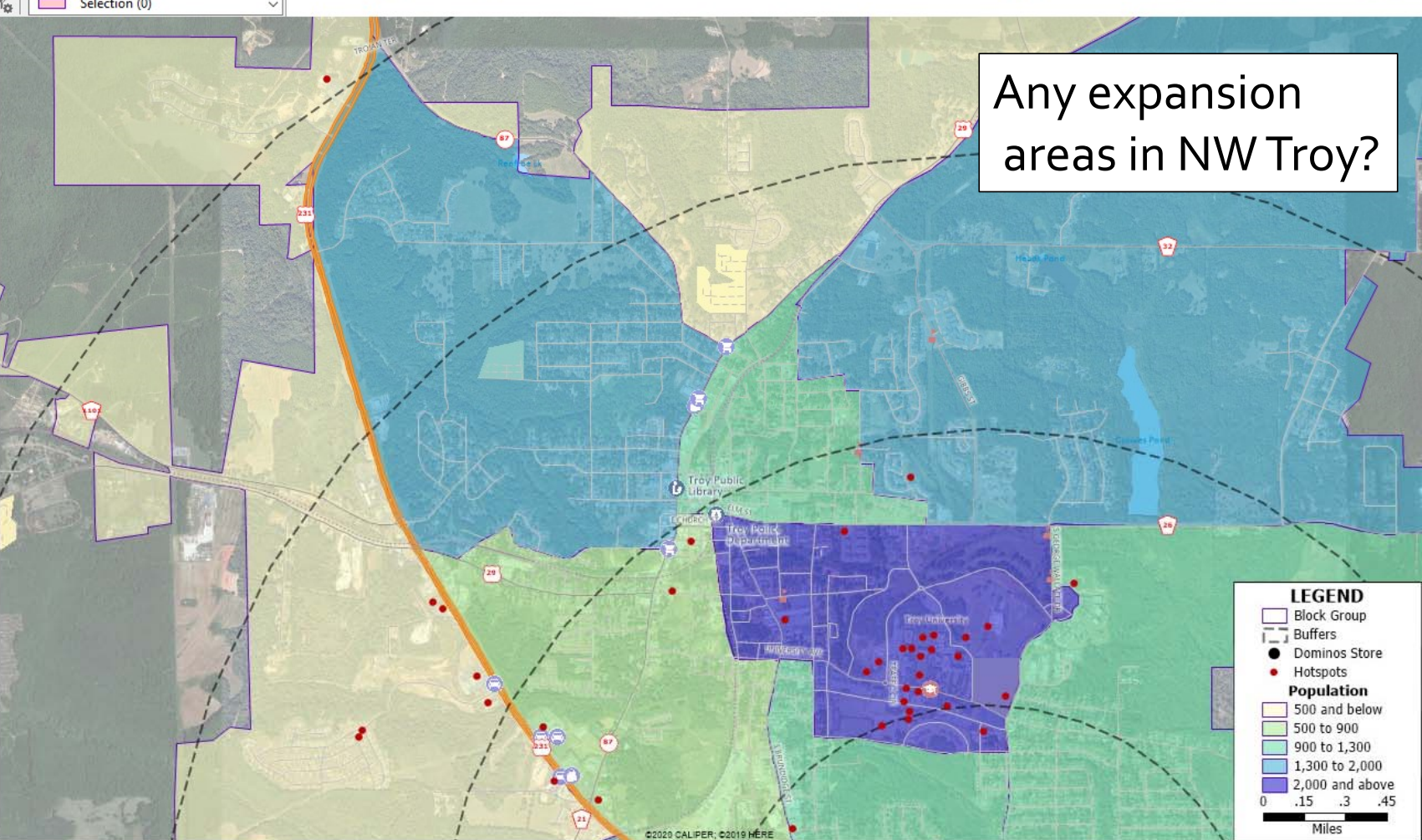
- Any expansion areas

LEGEND

- Block Group
- Buffers
- Dominos Store
- Hotspots
- Population**
- 500 and below
- 500 to 900
- 900 to 1,300
- 1,300 to 2,000
- 2,000 and above
- 0 .33 .67 1
- Miles

Display Manager

- Google Satellite
- 10 Degree Grid Area
- World Country
- World Province
- Census Place
- Landmark Area
- Water Area
- Block Group
- Sets
- Theme: Population
 - Other
 - 500 and below
 - 500 to 900
 - 900 to 1,300
 - 1,300 to 2,000
 - 2,000 and above
- Census Tract
- 5-Digit ZIP Code
- 3-Digit ZIP Code
- County Subdivision
- County
- State
- MSA
- Building Footprint
- River/Brook/Stream
- Street
- Highway/Freeway
- Railroad
- Time Zone
- 5-Digit ZIP Point
- Landmark
- World City
- City/Town
- Buffers
- Dominos Store
- Hotspots



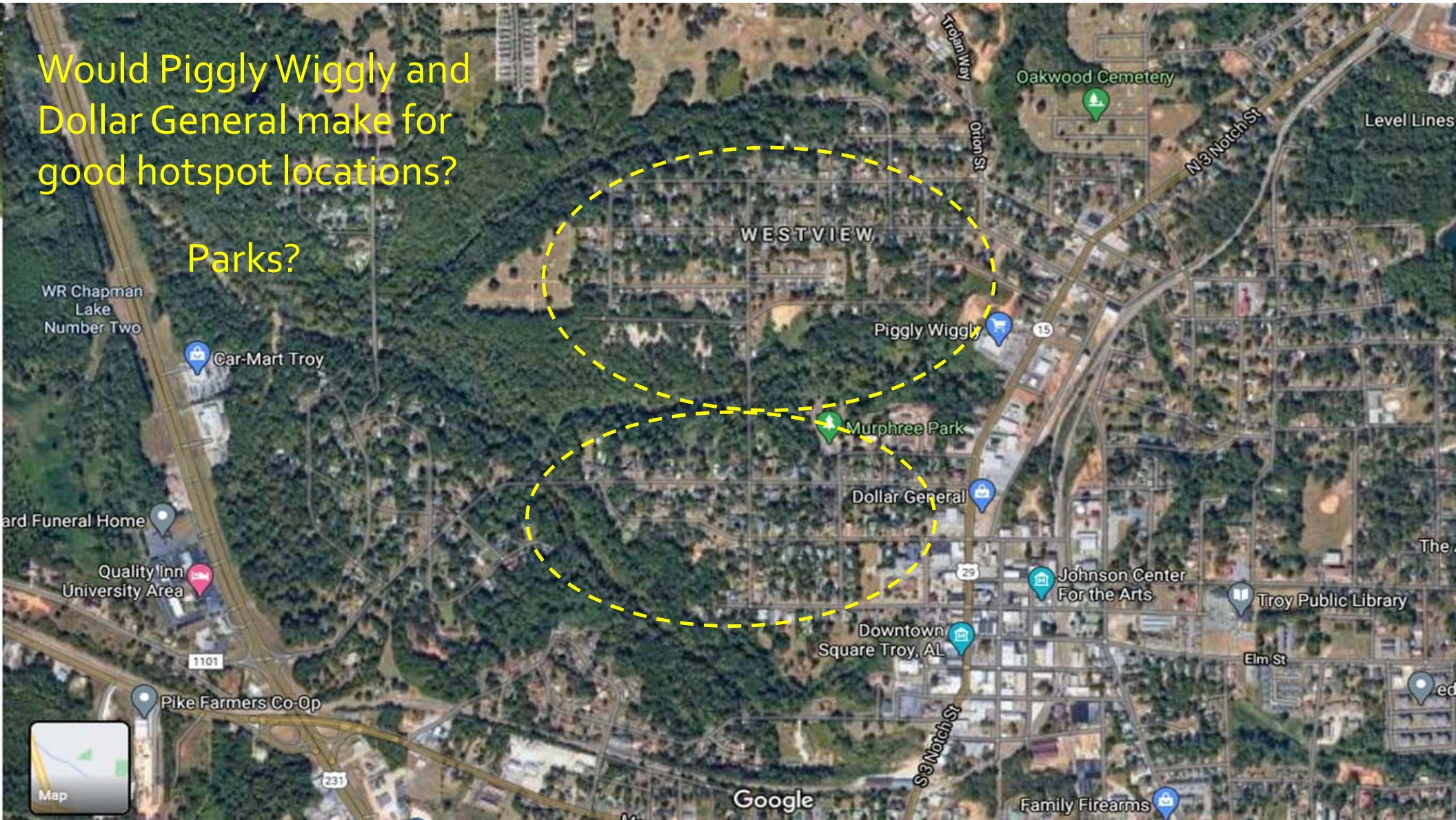
Any expansion areas in NW Troy?

LEGEND

- Block Group
- Buffers
- Dominos Store
- Hotspots
- Population
 - 500 and below
 - 500 to 900
 - 900 to 1,300
 - 1,300 to 2,000
 - 2,000 and above
- 0 .15 .3 .45 Miles

Would Piggly Wiggly and Dollar General make for good hotspot locations?

Parks?

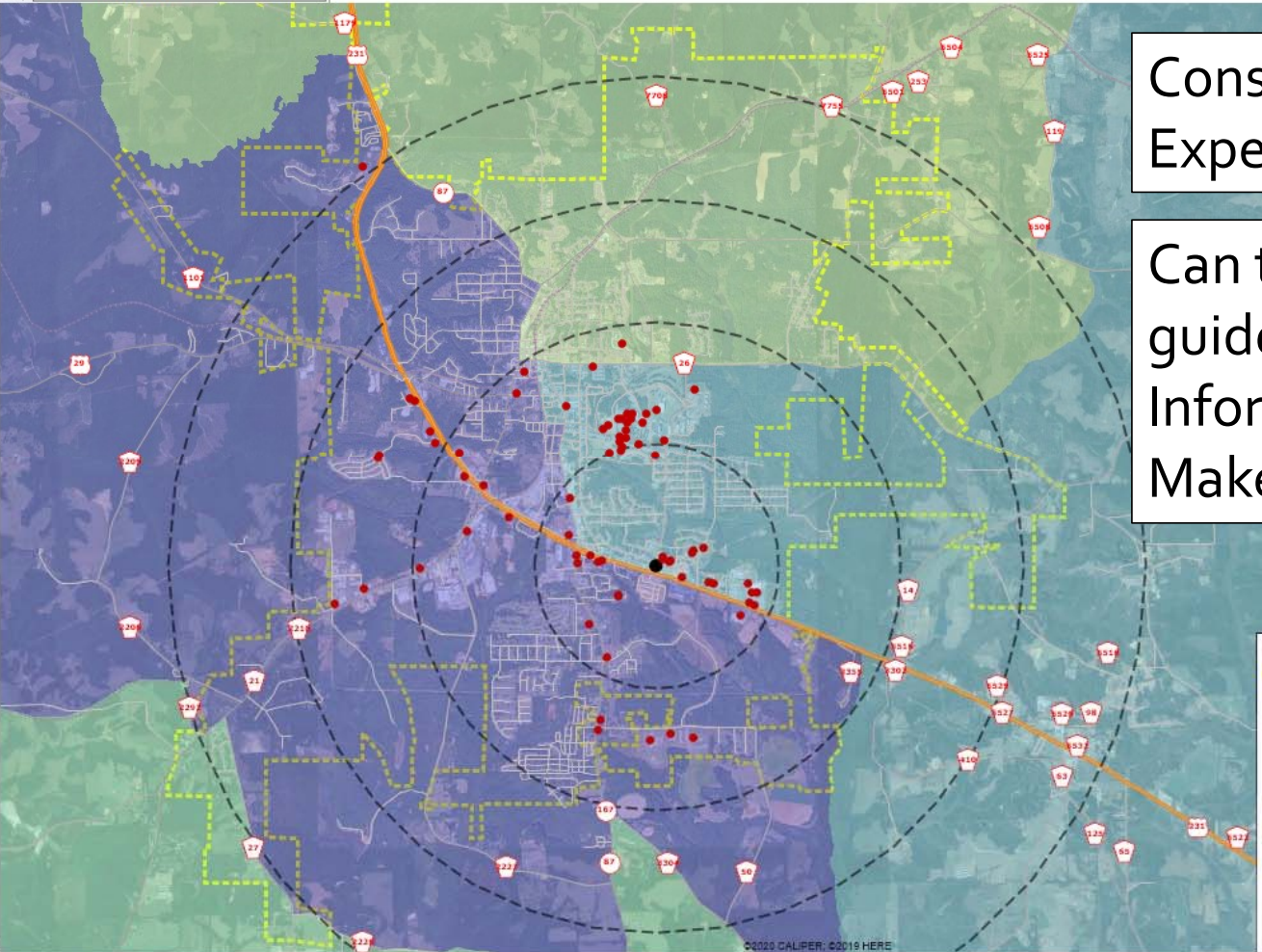


Consumer Expenditure

Selection (0)

Display Manager

- World Province
- Census Place
- Landmark Area
- Water Area
- Block Group
- Sets
 - Theme: Population
 - Other
 - 500 and below
 - 500 to 900
 - 900 to 1,300
 - 1,300 to 2,000
 - 2,000 and above
 - Consumer Expenditure**
 - Other
 - \$430.00 and below
 - \$430.00 to \$440.00
 - \$440.00 to \$447.00
 - \$447.00 to \$460.00
 - \$460.00 and above
 - Census Tract
 - 5-Digit ZIP Code
 - 3-Digit ZIP Code
 - County Subdivision
 - County
 - State
 - MSA
 - Building Footprint
 - River/Brook/Stream
 - Street
 - Highway/Freeway
 - Railroad
 - Time Zone
 - 5-Digit ZIP Point



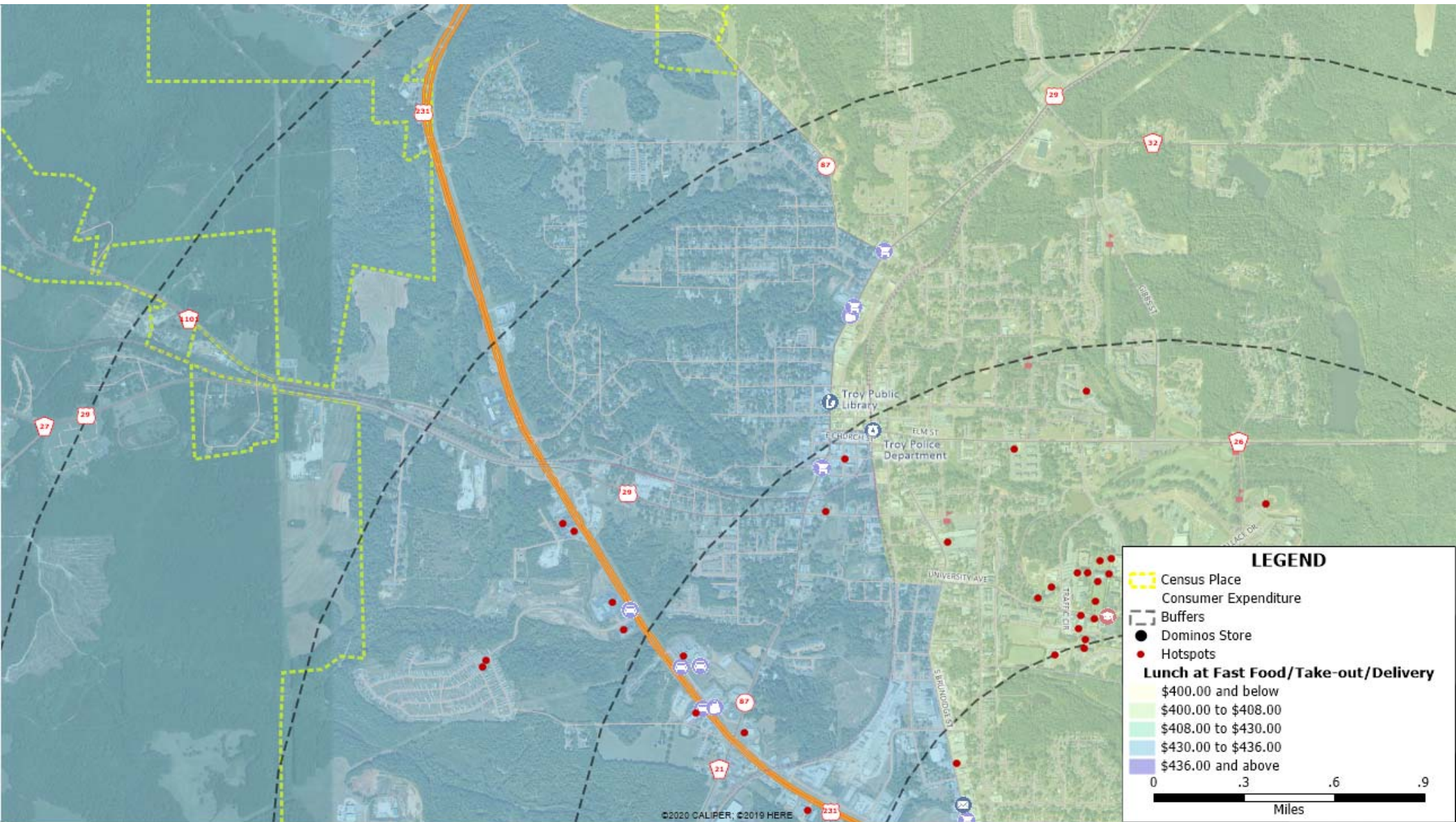
Consumer Expenditure Data

Can this be used as guide to help Inform decision Makers?

LEGEND

- Census Place
- Consumer Expenditure
- Buffers
- Domino's Store
- Hotspots
- Dinner at Fast Food/Take-out/Delivery**
 - \$430.00 and below
 - \$430.00 to \$440.00
 - \$440.00 to \$447.00
 - \$447.00 to \$460.00
 - \$460.00 and above

0 0.5 1 1.5 Miles



LEGEND

- Census Place
- Consumer Expenditure
- Buffers
- Dominos Store
- Hotspots

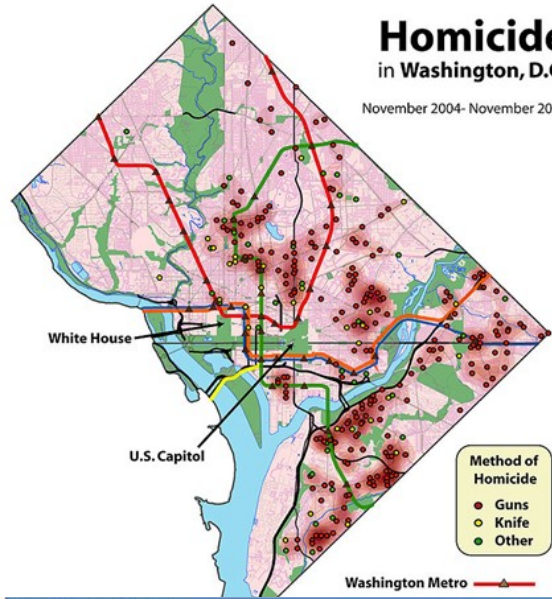
Lunch at Fast Food/Take-out/Delivery

- \$400.00 and below
- \$400.00 to \$408.00
- \$408.00 to \$430.00
- \$430.00 to \$436.00
- \$436.00 and above

0 .3 .6 .9
Miles

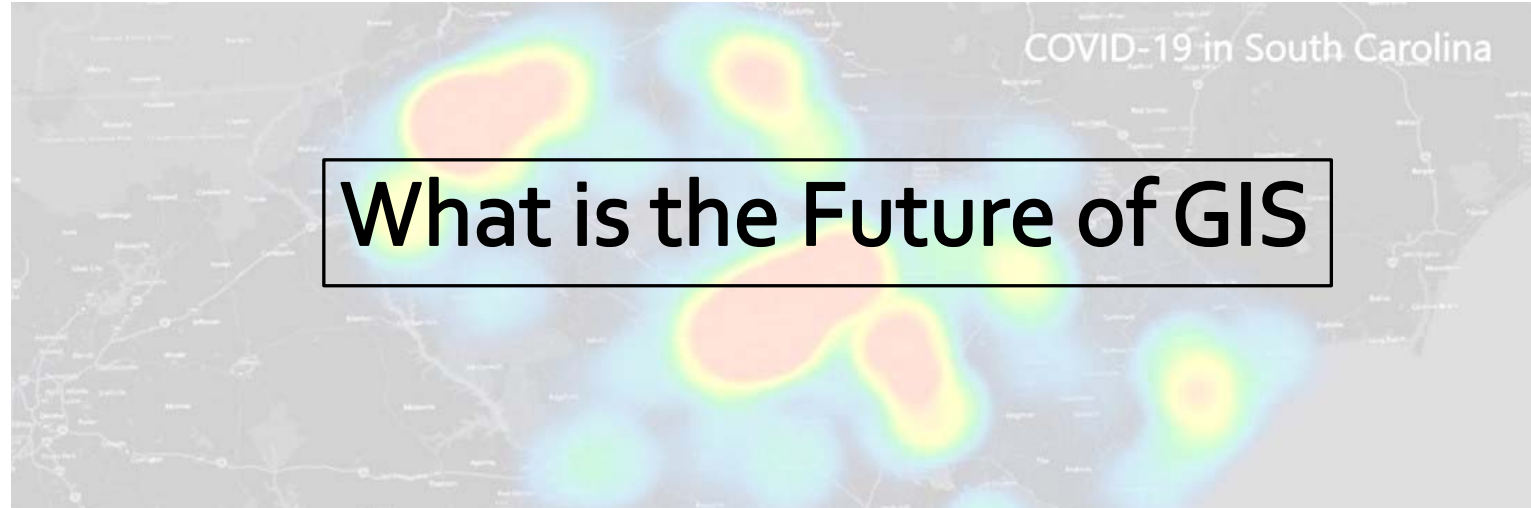
Homicide in Washington, D.C.

November 2004- November 2006



COVID-19 in South Carolina

What is the Future of GIS



COVID-19 Health Dashboard

Small area estimates derived from Statistics Canada's Canadian Community Health Survey modeled by Envrionics Analytics.

HOW TO READ THE MAP

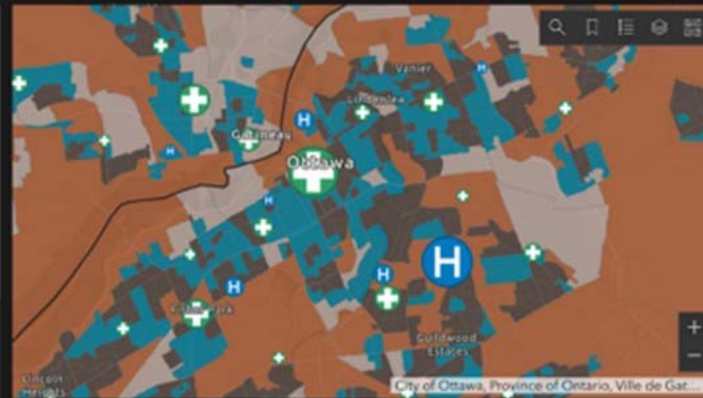
The map view starts at Ottawa. To see your city or other areas, select the bookmark icon, for quick zoom to major Canadian cities.

Relationship of Population over 70 years to Population density:

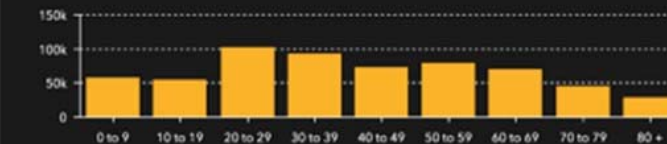
Zooming on the map to the cities level will change, showing the relationship between the percent population over 70, to the population density at the neighbourhood, or Dissemination Area.



Other Layers of Information:



AGE BREAK CHART (10 YRS BREAKS)



POPULATION

608,392 Population
74,277 Aged 70 +

HEALTH

94,989 Hypertension	27,734 Heart Disease
90,388 Arthritis	30,663 Diabetes
54,114 Asthma	15,927 COPD
13,077 Cancer	30,237 Had Cancer

Health Conditions Numbers

Growth of GIS



- Will continue to see more data visualization software packages (Tableau, Power BI, etc.) offer more robust geographic components
- More GIS packages will start to offer more “interactive” data sharing tool such as software-as-a-service (SaaS)
- More data enhancement and tools
 - Customer Analytics by Market Area
 - Site Selection
 - Market Area Delimitation & Analysis
 - Predictive Modeling
 - Some data blending tools (Alteryx light)

Opportunities in the Industry

- Micro scale and making better models of the future
 - According to the folks at Maptitude, “Micro geo simulation” is bleeding edge technology that merges transportation, traffic simulation, demographic forecasting, choice models, and land use models (similar to concept of Sim City or Roller Coaster Tycoon)
 - It supports “what if” scenarios where you can see the impact of a new development such as a sports stadium, or a new intersection, or a new restaurant.

Opportunities in the Industry

- Micro scale and making better models of the future
 - This is built on aggregate data sets, anonymized census data, land use/zoning data, and localized surveys
 - Through the visualization process, synthetic people (mapping human dynamics) are demographically and economically aged one year at a time
 - As the “synthetic people,” grow older, marry, have kids, move house, change living situations, change place of work, and die, as these events are shown via the predictive modeling and graphic visualization

Opportunities in the Industry

- Micro scale and making better models of the future
 - Land use changes are simulated and impact the choices the sims make, and the type of transportation the sims choose is also modeled
 - Future scenarios are then simulated to explore increases in the use of public transportation or increased use of more rational self driving vehicles
 - Basically start imputing different “what if” scenarios and see how the model reacts
 - This can be useful to see how a certain type of land use development impact may have on crime or demands on medical services.
 - Via “Micro Geo simulation” and geographic data this is the future of GIS

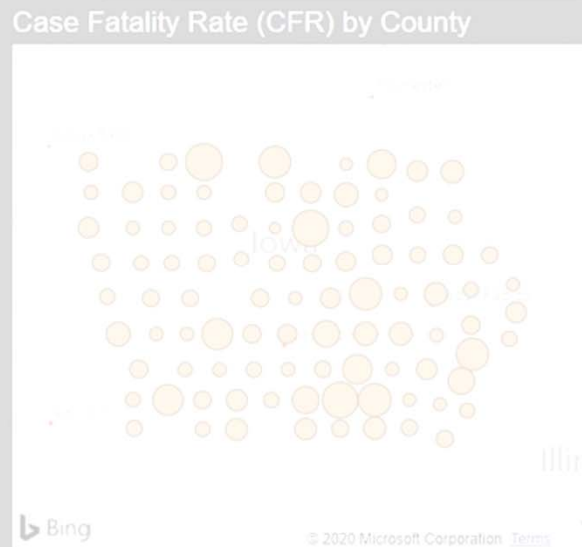
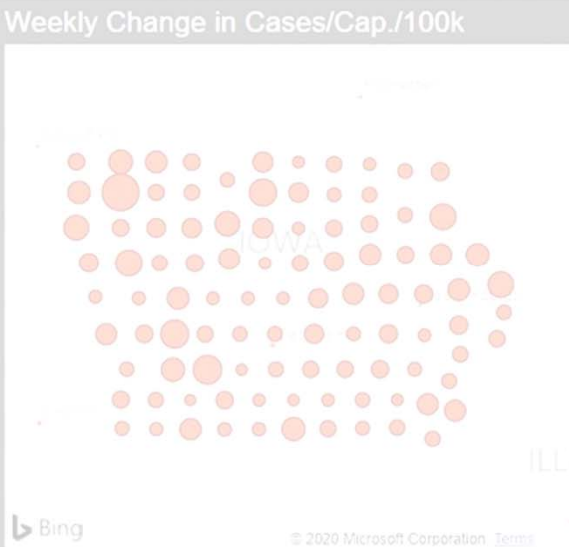
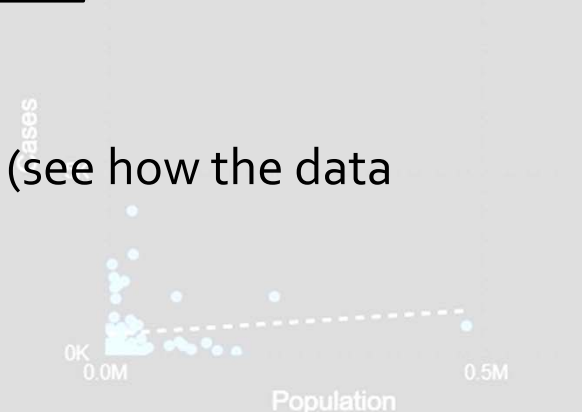
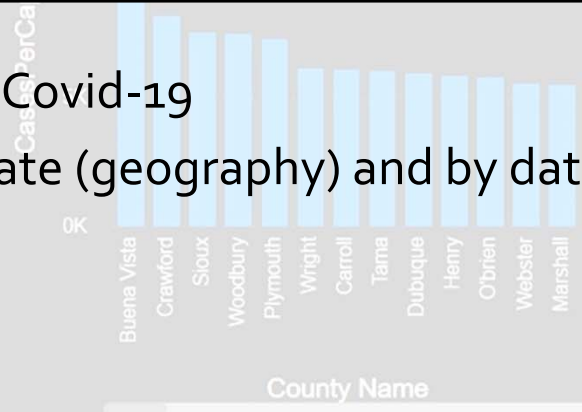
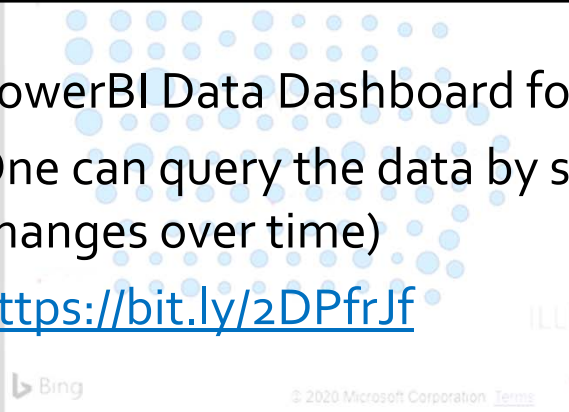
Power BI – Interactive Mapping

- PowerBI Data Dashboard for Covid-19

- One can query the data by state (geography) and by date (see how the data changes over time)

- <https://bit.ly/2DPfrJf>

- | State | Date |
|--|----------|
| S. | 04/18/20 |
| <input type="checkbox"/> AK | 04/25/20 |
| <input type="checkbox"/> AL | 05/02/20 |
| <input type="checkbox"/> AR | 05/09/20 |
| <input type="checkbox"/> AZ | 05/16/20 |
| <input type="checkbox"/> CA | 05/23/20 |
| <input type="checkbox"/> CO | 05/30/20 |
| <input type="checkbox"/> CT | 06/06/20 |
| <input type="checkbox"/> DC | 06/13/20 |
| <input type="checkbox"/> DE | 06/20/20 |
| <input type="checkbox"/> FL | 06/27/20 |
| <input type="checkbox"/> GA | 07/04/20 |
| <input type="checkbox"/> HI | 07/11/20 |
| <input checked="" type="checkbox"/> IA | 07/18/20 |
| <input type="checkbox"/> ID | 07/25/20 |
| <input type="checkbox"/> IL | 08/01/20 |
| <input type="checkbox"/> IN | 08/08/20 |
| <input type="checkbox"/> KS | 08/15/20 |
| <input type="checkbox"/> KY | 08/22/20 |
| <input type="checkbox"/> LA | 08/29/20 |
| <input type="checkbox"/> MA | 09/05/20 |
| <input type="checkbox"/> MD | 09/12/20 |
| <input type="checkbox"/> ME | 09/19/20 |
| <input type="checkbox"/> MI | 09/26/20 |
| <input type="checkbox"/> MN | 10/03/20 |
| <input type="checkbox"/> MO | 10/10/20 |
| <input type="checkbox"/> MS | 10/17/20 |
| <input type="checkbox"/> MT | 10/24/20 |
| <input type="checkbox"/> NC | 10/31/20 |
| <input type="checkbox"/> ND | |
| <input type="checkbox"/> NE | |
| <input type="checkbox"/> NH | |
| <input type="checkbox"/> NJ | |
| <input type="checkbox"/> NM | |
| <input type="checkbox"/> NV | |
| <input type="checkbox"/> NY | |
| <input type="checkbox"/> OH | |
| <input type="checkbox"/> OK | |



- Any questions ?
- Maptitude: <https://www.caliper.com/maptovu.htm>
 - Free student license!! – **Use your .edu email address to make the request**
- My contact email: brett.lucas@yahoo.com



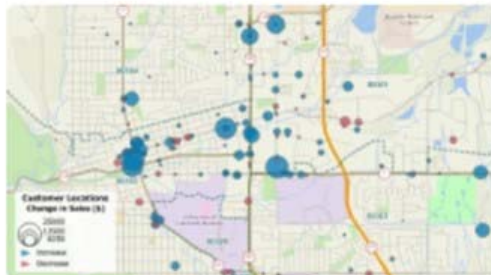
Use aerial and satellite images for geographic editing and reference



Analyze sales and customer data by postal code or ZIP Code



Perform nationwide Census demographic analysis



Locate your customers and facilities



Find Crime hot spots



Create territories based on drive time or distance