

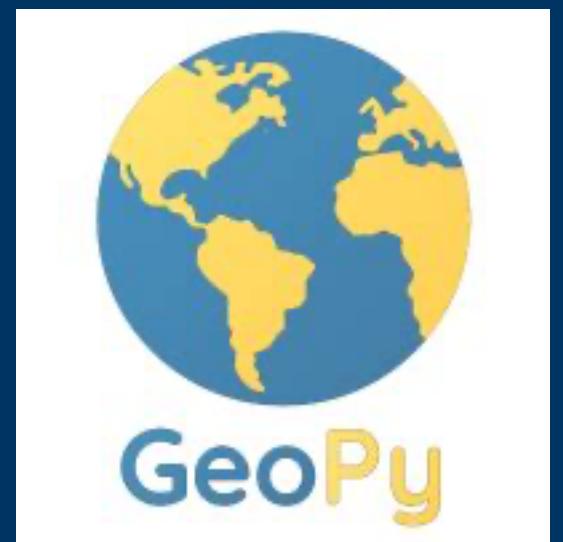
Find the Best Location for a new Coffee Shop in Mount Pleasant, SC

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Source Data & Tools

- **BeautifulSoup** was used with a Charleston real estate website to extract the neighborhoods: <https://www.buyingcharlestonrealestate.com/mount-pleasant-neighborhoods.php>
- **Geopy** was used to determine the coordinates of the neighborhoods.
- **Foursquare** was used to identify and quantify existing coffeeshops in proximity to the neighborhoods; these results will be used later to prioritize which neighborhoods are least to best served (least served will influence potential locations).
- **Folium** was used to publish maps of the neighborhood and coffee shops in addition to analysis results (i.e., k-means centroids of these features).



FOURSQUARE



Neighborhoods from BeautifulSoup



neighborhoods	
0	Alston Point, Mount Pleasant, SC
1	Back Bay Village, Mount Pleasant, SC
2	Bayview Acres, Mount Pleasant, SC
3	Belle Hall, Mount Pleasant, SC
4	Bentley Park, Mount Pleasant, SC

- Charleston Real Estate Website
- Searched on tags of neighborhood List
- 78 Neighborhoods discovered

Neighborhood Coordinates from Geopy



	neighborhoods	latitude	longitude
0	Alston Point, Mount Pleasant, SC	None	None
1	Back Bay Village, Mount Pleasant, SC	51.0065	-2.28742
2	Bayview Acres, Mount Pleasant, SC	32.7954	-79.8909
3	Belle Hall, Mount Pleasant, SC	None	None
4	Bentley Park, Mount Pleasant, SC	None	None

Geopy Returned

- Accurate coordinates (~50%)
- None
- Erroneous coordinates

Data Cleanup

	Unnamed: 0	neighborhoods	latitude	longitude
0	0	Alston Point, Mount Pleasant, SC	32.845053	-79.854121
1	1	Back Bay Village, Mount Pleasant, SC	32.829698	-79.806596
2	2	Bayview Acres, Mount Pleasant, SC	32.795410	-79.890948
3	3	Belle Hall, Mount Pleasant, SC	32.843173	-79.859902
4	4	Bentley Park, Mount Pleasant, SC	32.833038	-79.805575

Cleanup Activities

- Search for neighborhoods
- Determine location by roads
- Use Apple Maps for coordinates

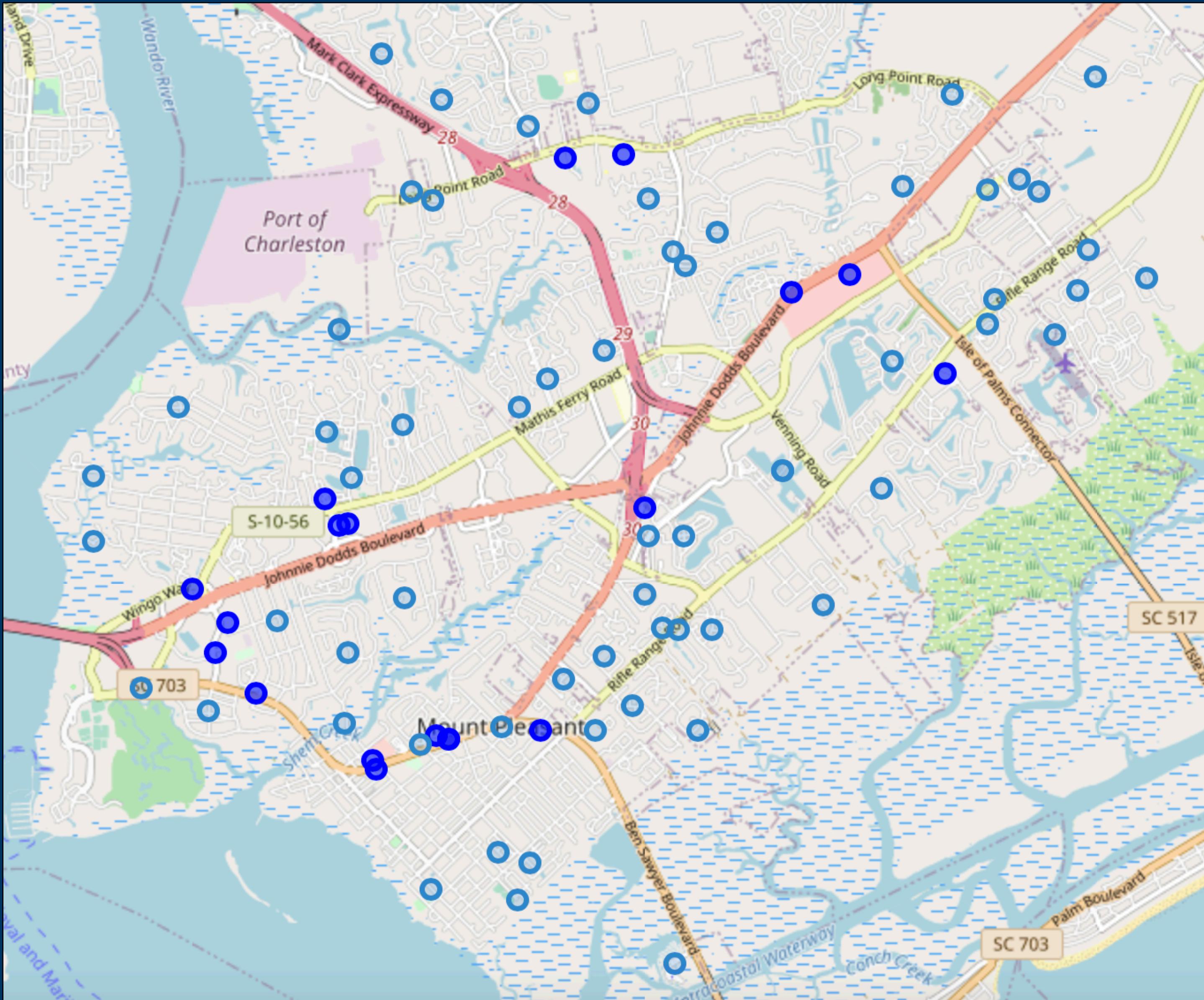
Coffee Shops in MP from Foursquare

	name	categories	address	lat	lng
0	Metto Coffee & Tea	Coffee Shop	354 W Coleman Blvd	32.80	-79.89
1	Coffee & Cars (new location)	Racetrack	Nan	32.79	-79.87
2	Cooper River Coffee Roasters	Coffee Shop	1303 Ben Sawyer Blvd Ste 5	32.79	-79.86
3	cars and coffee	Other Great Outdoors	Nan	32.79	-79.87
4	Brownfox Coffee Co	Food Truck	Nan	32.79	-79.87

Foursquare

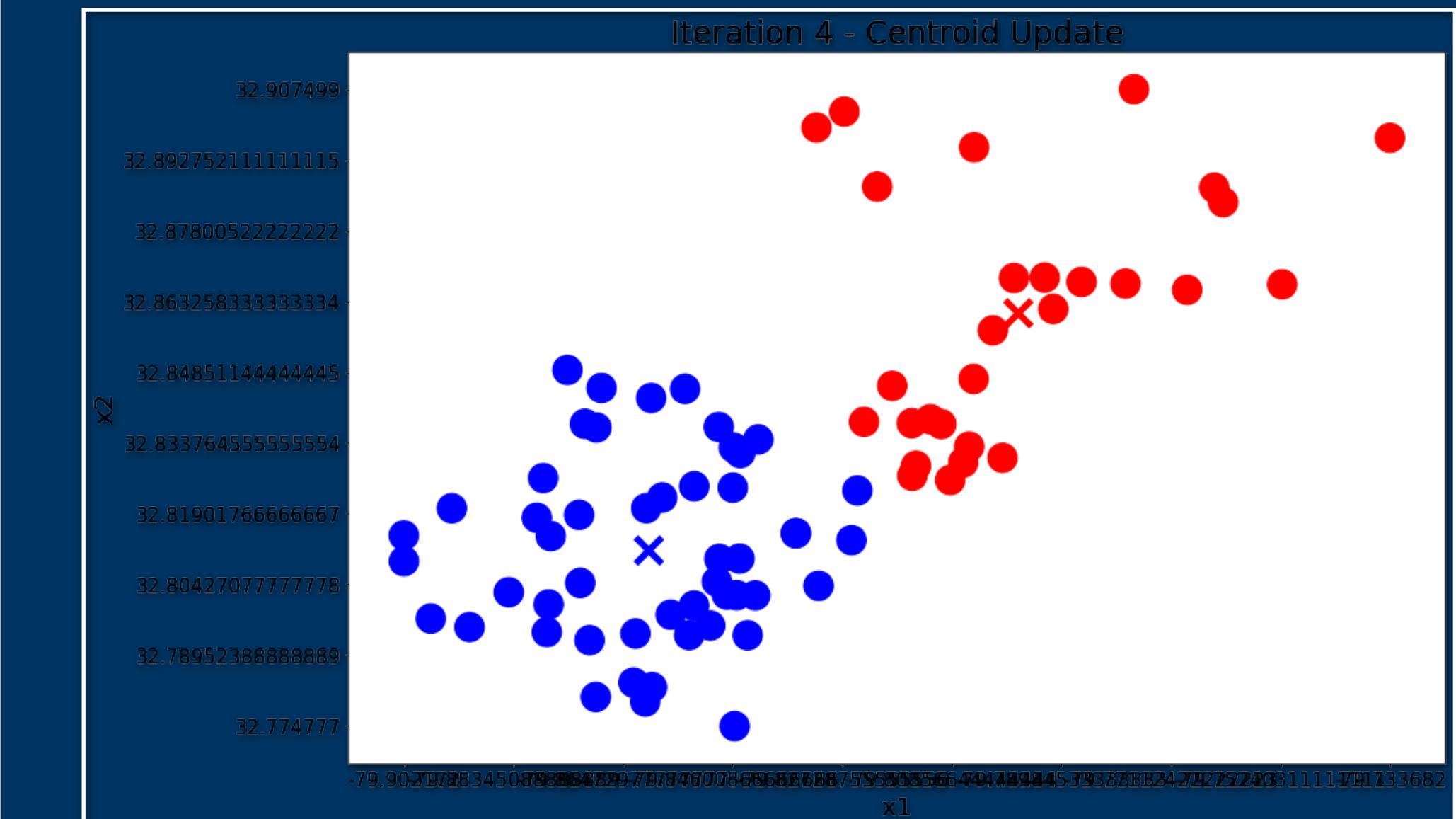
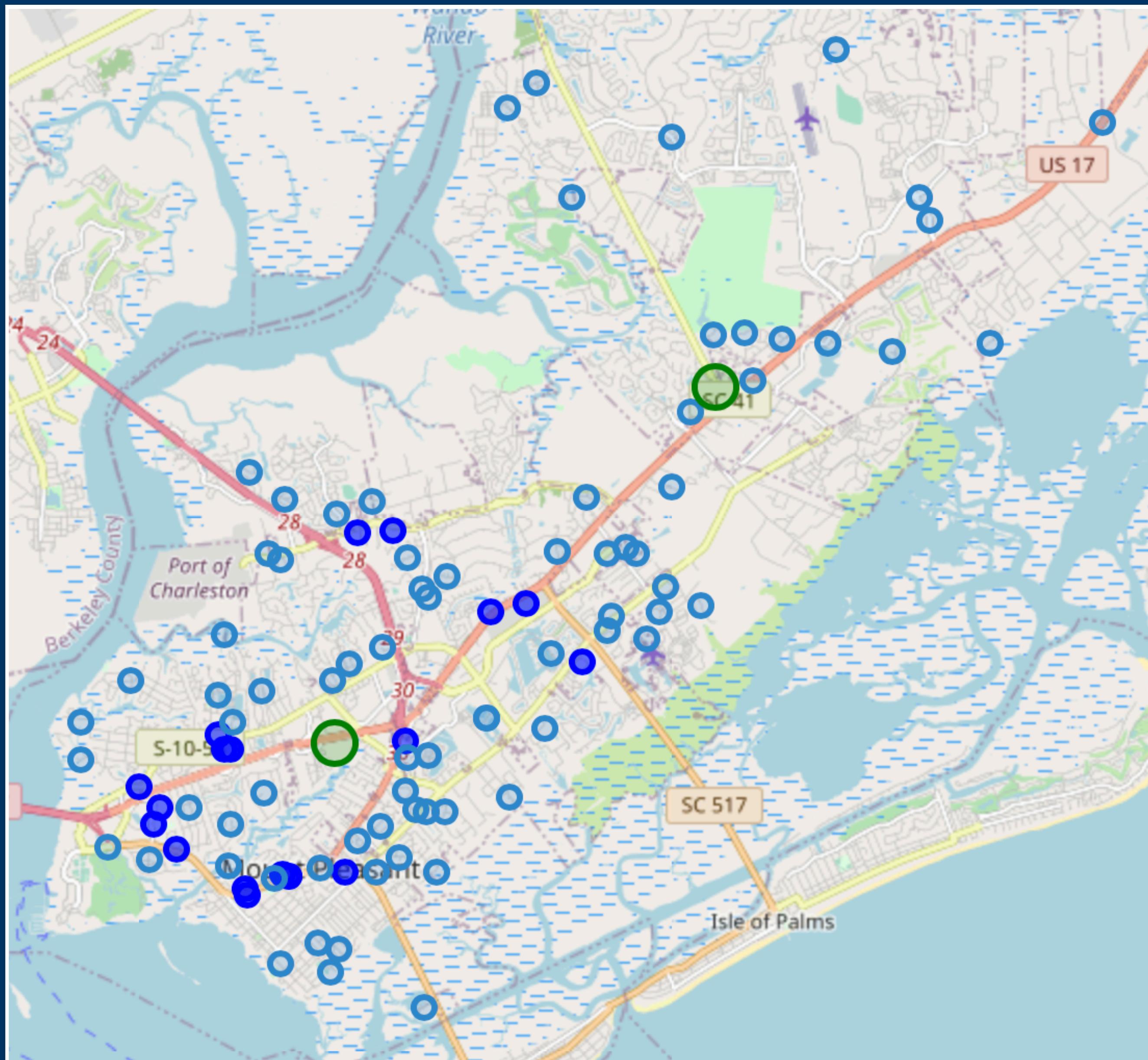
- Found 18 coffee shops
- Provided 100% accurate coordinates
- Flexible coding

Neighborhoods & Coffee Shops plotted w/Folium



Circles:
Light Blue - Neighborhoods
Dark Blue - Coffee Shops

Neighborhood Centroids from K-Means Clustering



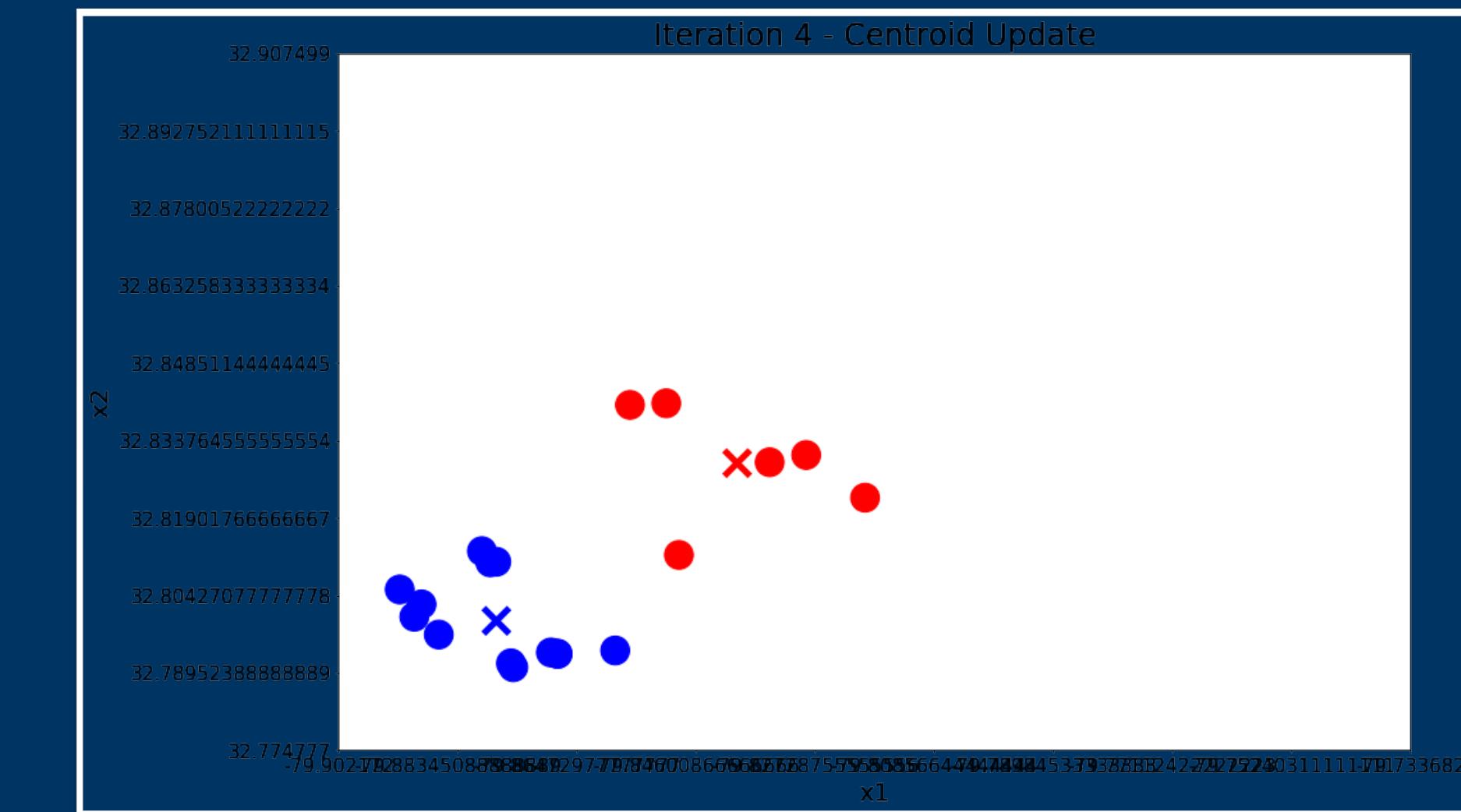
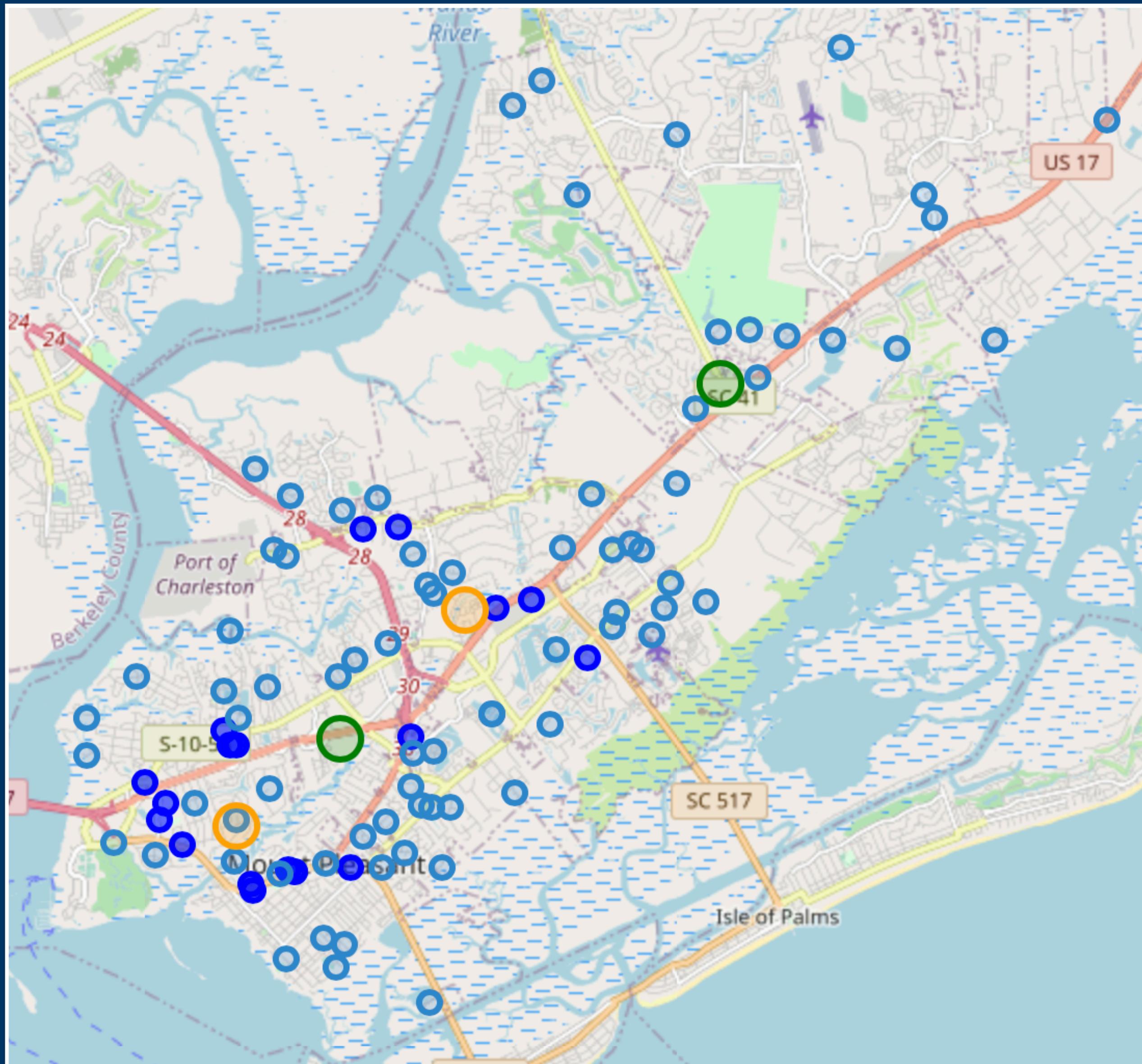
K-Means Results

- Two neighborhood centroids
- Southern centroid
- Northern centroid

Circles:

- Light Blue - Neighborhoods
- Green - Neighborhood Centroids
- Dark Blue - Coffee Shops

Coffee Shop Centroids from K-Means Clustering



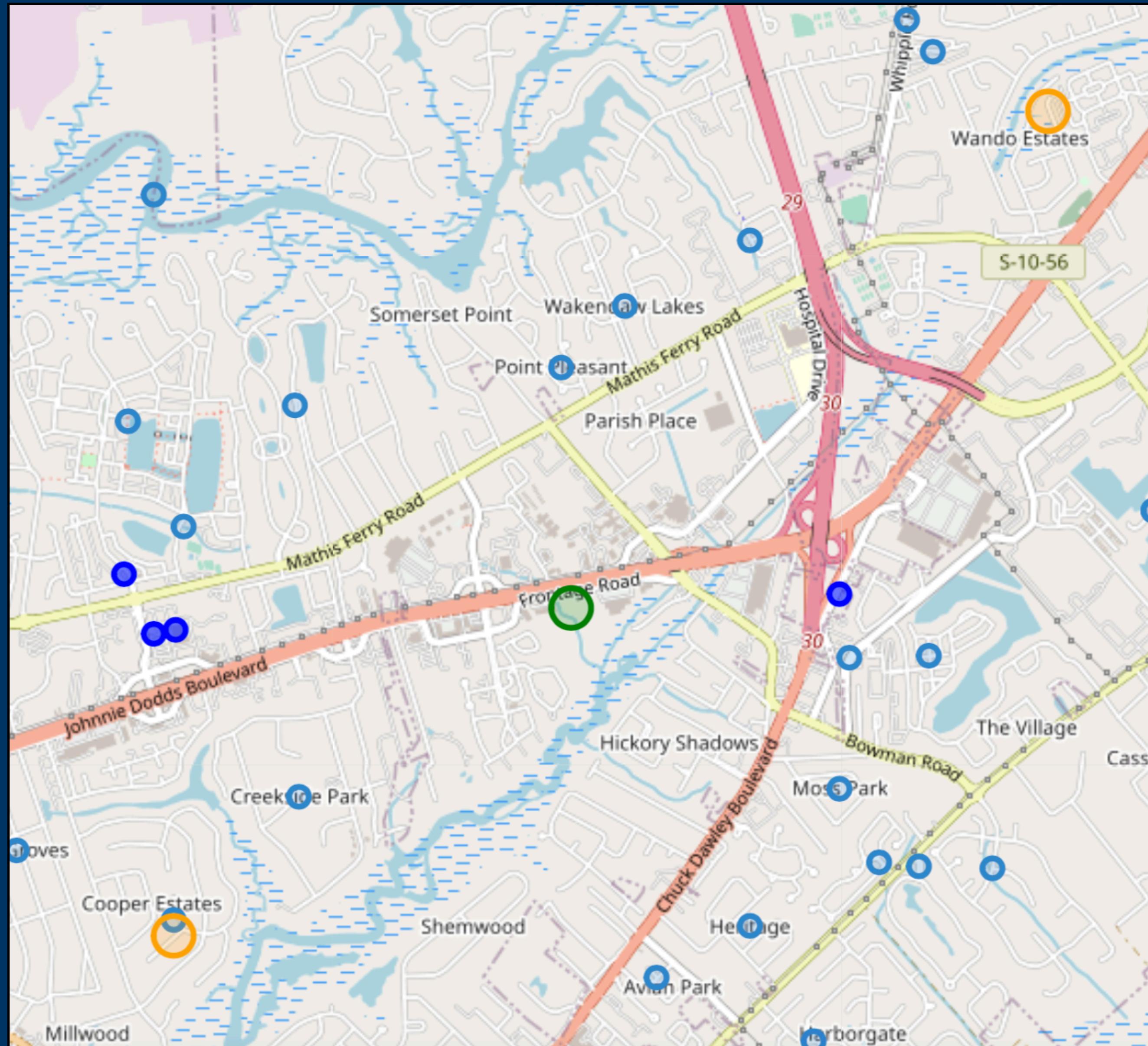
K-Means Results

- Two coffee shop centroids
- South below I-526
- North just above I-526
- No coffee shops in upper MP

Circles:

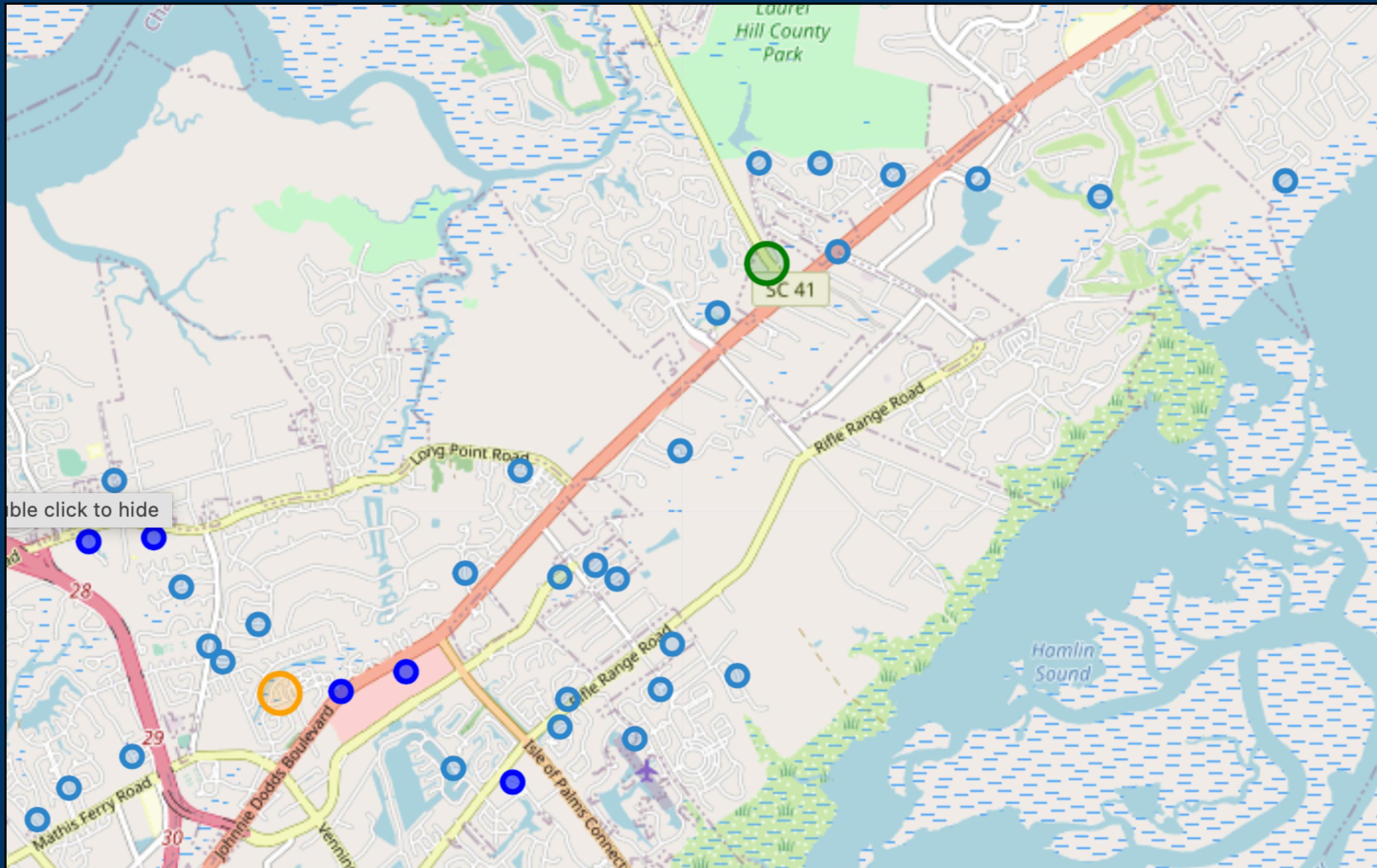
- Light Blue - Neighborhoods
- Green - Neighborhood Centroids
- Dark Blue - Coffee Shops
- Orange - Coffee Shop Centroids

New Coffee Shop - South Mount Pleasant



- New Coffee Shop - South**
- Located between coffee shop centroids
 - Bowman Road
 - Anna Knapp Boulevard
 - North side Highway 17 best

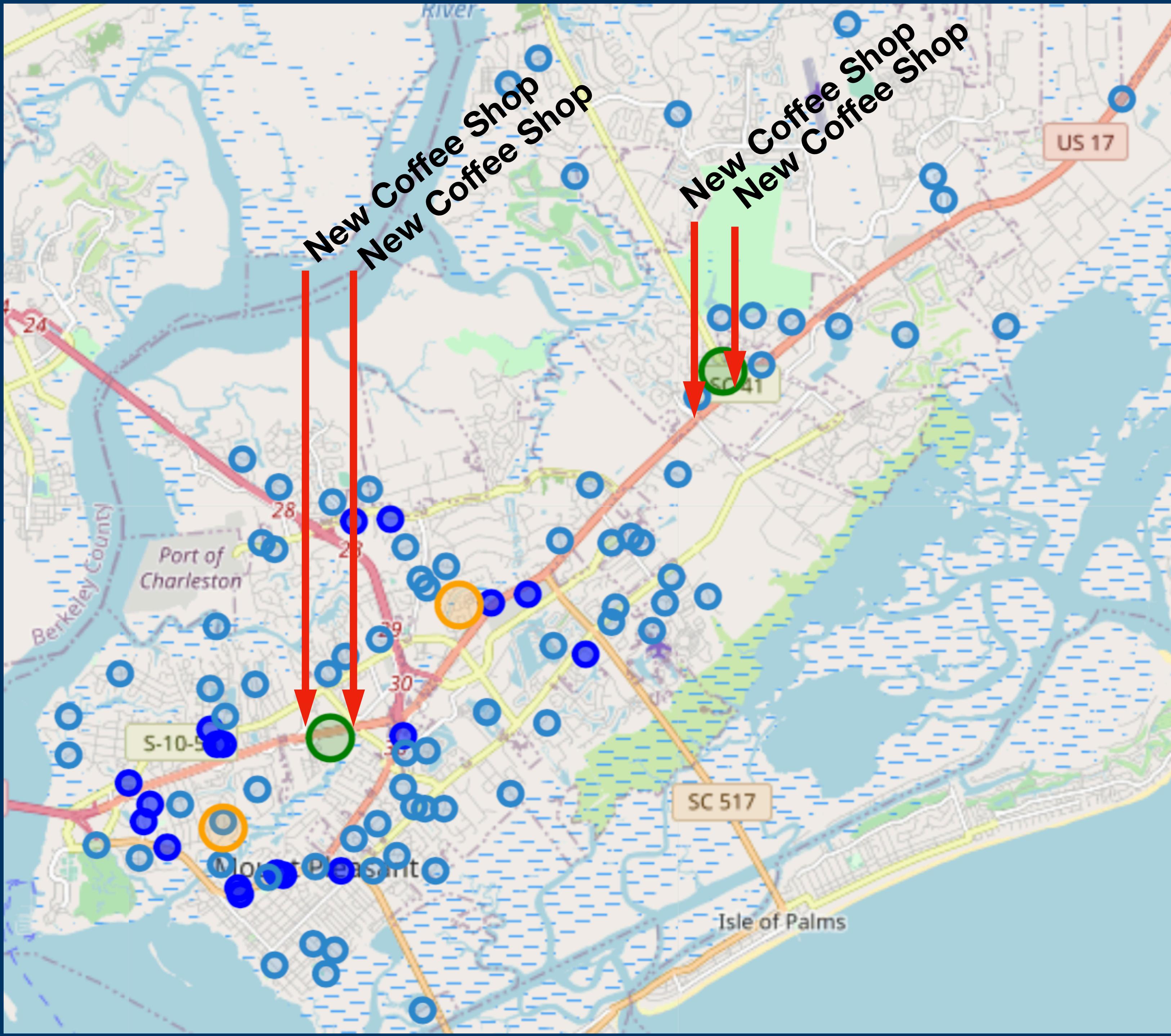
New Coffee Shop - North Mount Pleasant



New Coffee Shop - North

- Located north of northernmost coffee shop centroid
- SC Highway 41
- Hamlin Road

New Coffee Shop Locations



New Coffee Shops

- Four options
- Anna Knapp
- Bowman Road
- SC Highway 41
- Hamlin Road
- Based on k-means analysis

Circles:

- Light Blue - Neighborhoods
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- Dark Blue - Coffee Shops
- Orange - Coffee Shop Centroids

Traffic Volumes - evaluate traffic volumes in all directions especially in the mornings when many consumers would want coffee. This would inform which side of Highway 17 or Coleman Boulevard might be better for siting a coffee shop based on consumer access.

Neighborhood Populations - could be used to weight the neighborhood by the number of potential customers it could provide to a coffee shop in the area or along a commute route. The neighborhood weighting could be based additionally on additional centroid analyses by subdividing the relative regions of Mount Pleasant.

Traffic Route Analysis - might provide an indication of access (i.e., people who would rather take a right turn at an intersection (less wait time) versus a left turn (more time).