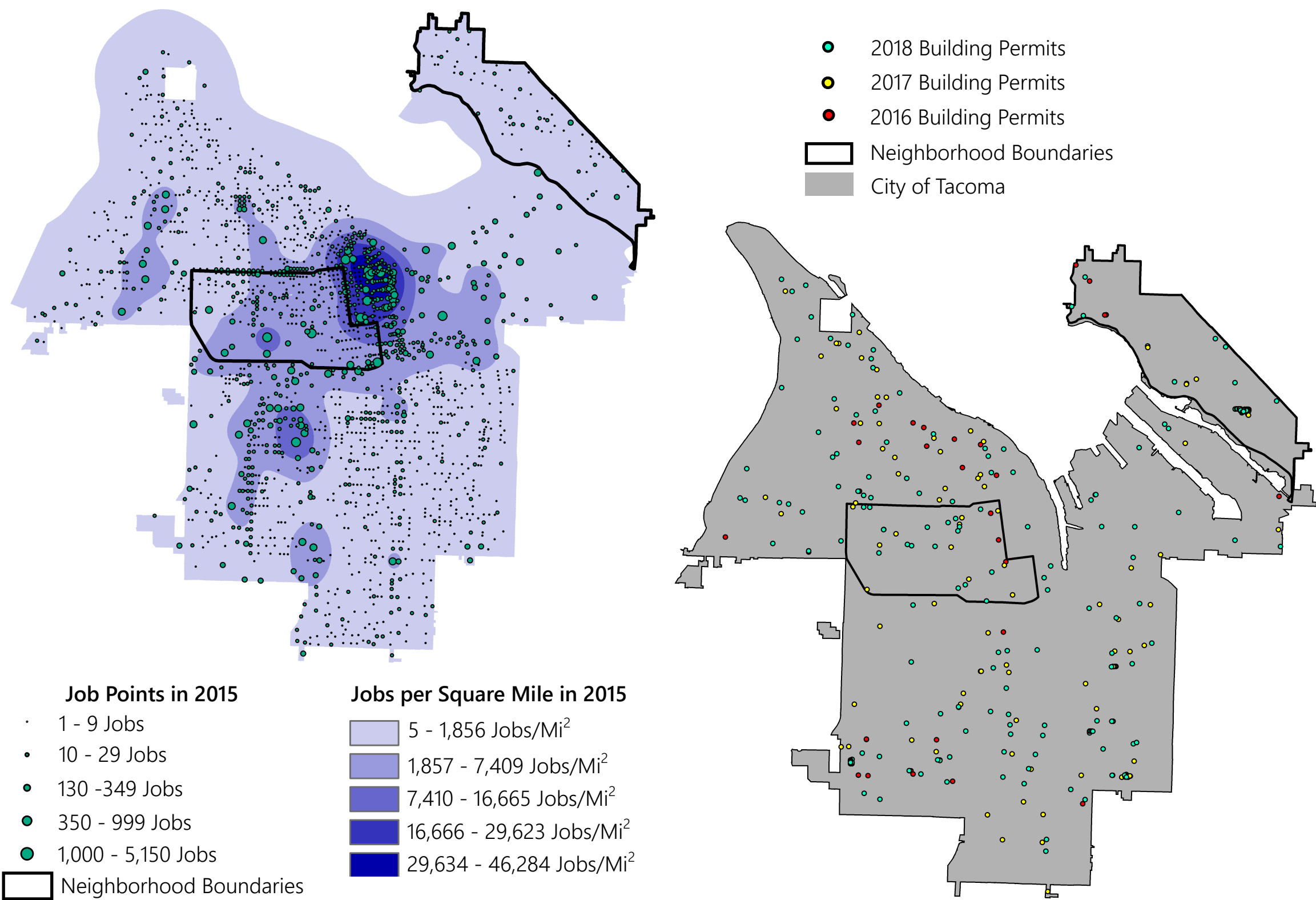# Comparison Between Central and Northeast Tacoma

Purpose

The purpose is to show how two neighborhoods and the city changed during the recovery of the Great Recession by studying some common variables that determine home values. The variables are percentage of residencies that are owner-occupied, job per resident, building permit density, percentage of roads that are high-traffic, and the percentage of area that are parks and open space. The timeframe studied is from 2012 to 2018, in the years where data is available for certain variables. I chose these two neighborhoods because the median home value of these two neighborhoods appreciated from 2012 to 2018 at opposite ends of the scale when comparing all eight Tacoma Neighborhood Council districts. Between 2012 and 2018, the median home value in Central Tacoma appreciated from $142,600 in January 2012 to $301,800 in December 2018. The median home value in Northeast Tacoma appreciated from $242,200 in January 2012 to $422,100 in December 2018. This is an 111.6% increase in Central Tacoma, the highest of all neighborhoods, and a 74.3% increase in Northeast Tacoma, the lowest of all neighborhoods, and the median home value for the whole city increased from $157,200 to $305,100 in the same time frame, an appreciation of 94.1%.

Objective

My hypothesis was that in the period of 2012 to 2018, Central Tacoma would have more building permits per parcel, a higher increase in jobs per resident, and a significant increase in homeownership rates in comparison to Northeast Tacoma.

Project Methods

I selected permits from the City of Tacoma database that were classified as "building" with a "finalized" status from 2012 to 2018. I aggregated the building permits in this time period in each analysis area and normalized the number by the population.

To calculate the percentage of residencies in each neighborhood, I only selected block groups to include in the analysis that were mostly located in the neighborhood boundary. I divided the number of owner-occupied by residences by the total number of residences in the selected block groups to calculate them.

I define the speed limit of a high-traffic street as 30 miles per hour or above. I divided the total length of high-traffic streets by the total length of all streets in each analysis area to find the percentage of streets that are high-traffic in each area.

To calculate the density of parks and open space in each analysis area, I divided the total square feet of parks and open space by the area's total square footage.

To calculate the number of jobs per resident, I aggregated the total numbers of jobs in each analysis area and normalized it by population. The years that I analyzed were 2012 and 2015. The data from the Census Bureau, extracted using the OnTheMap tool, were in points format, with a specific number of jobs in each point. I symbolized these using graduated symbols. The data also included thermal rasters that represented a range of jobs in each color. I georeferenced these rasters to include them in my analysis. I used the population statistics from the Census Bureau for the zip codes 98422 and 98405 because the boundaries lined up very closely with the neighborhood boundaries.

To calculate the average drive time from each neighborhood to the central business district, I created a service area layer with Network Analysis. I set breaks at one minute, which created a raster of cells that were classified from one minute to 18 minutes. The central business district is a point, which I placed in the intersection of Pacific Ave and S 11th St.

Job Points in 2015
- 1 - 9 Jobs
- 10 - 29 Jobs
- 130 - 349 Jobs
- 350 - 999 Jobs
- 1,000 - 5,150 Jobs
- Neighborhood Boundaries

Jobs per Square Mile in 2015
- 5 - 1,856 Jobs/Mi²
- 1,857 - 7,409 Jobs/Mi²
- 7,410 - 16,665 Jobs/Mi²
- 16,666 - 29,623 Jobs/Mi²
- 29,634 - 46,284 Jobs/Mi²

- 2018 Building Permits
- 2017 Building Permits
- 2016 Building Permits
- Neighborhood Boundaries
- City of Tacoma

- High-Traffic Streets
- Low-Traffic Streets
- Neighborhood Boundaries
- City of Tacoma

- Central Business District
- High: 18 Minute Drive
- Low : 1 Minute Drive
- Neighborhood Boundaries

- Parks and Open Space
- Neighborhood Boundaries
- City of Tacoma

Results

I did not have the results that I expected, Northeast Tacoma had more building permits per parcel, a much higher increase in jobs per person, and neither neighborhood had any significant change in percentage of owner-occupied residencies. What I infer from my results is that despite having a smaller percentage of area being parks and a higher percentage of streets being high-traffic, the median home value in increased between 2012-2018 much higher in Central Tacoma than it did in Northeast Tacoma because amenities such as closeness to the central business district, and access to freeways increased in popularity in this time frame. These results can explain gentrification that is occurring in Tacoma, especially in Central neighborhood near Hilltop.

Location	Park and Open Space (acres)	Total Area (acres)	Percentage of Area Parks and Open Space
Northeast Tacoma	876	2,880	30%
Central Tacoma	392	2,441	16%
Tacoma	5,360	31,789	17%

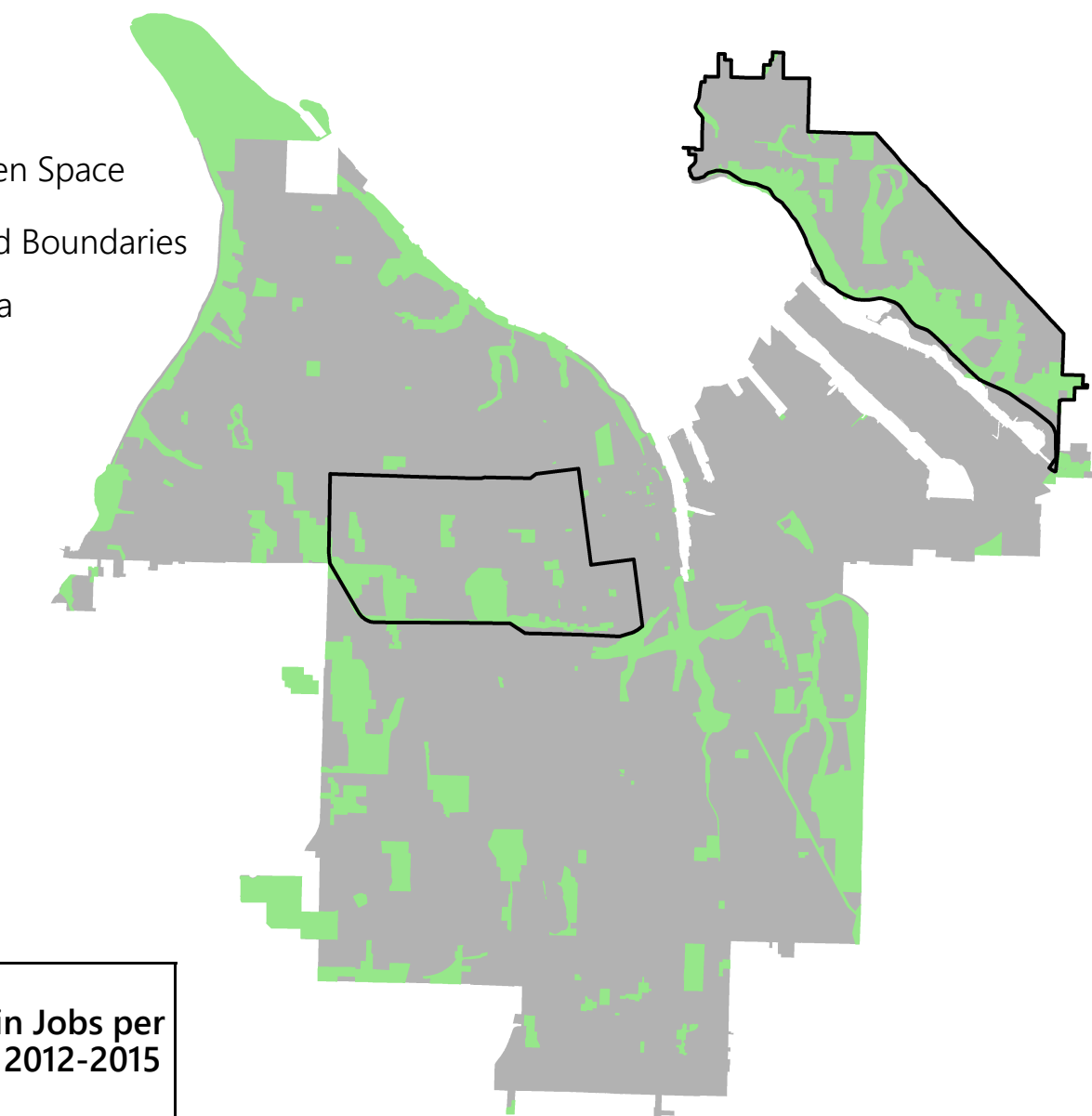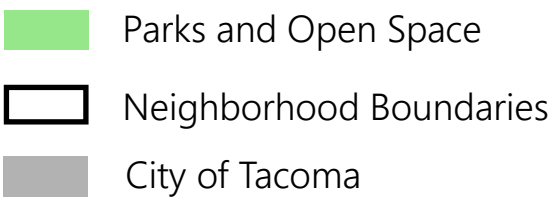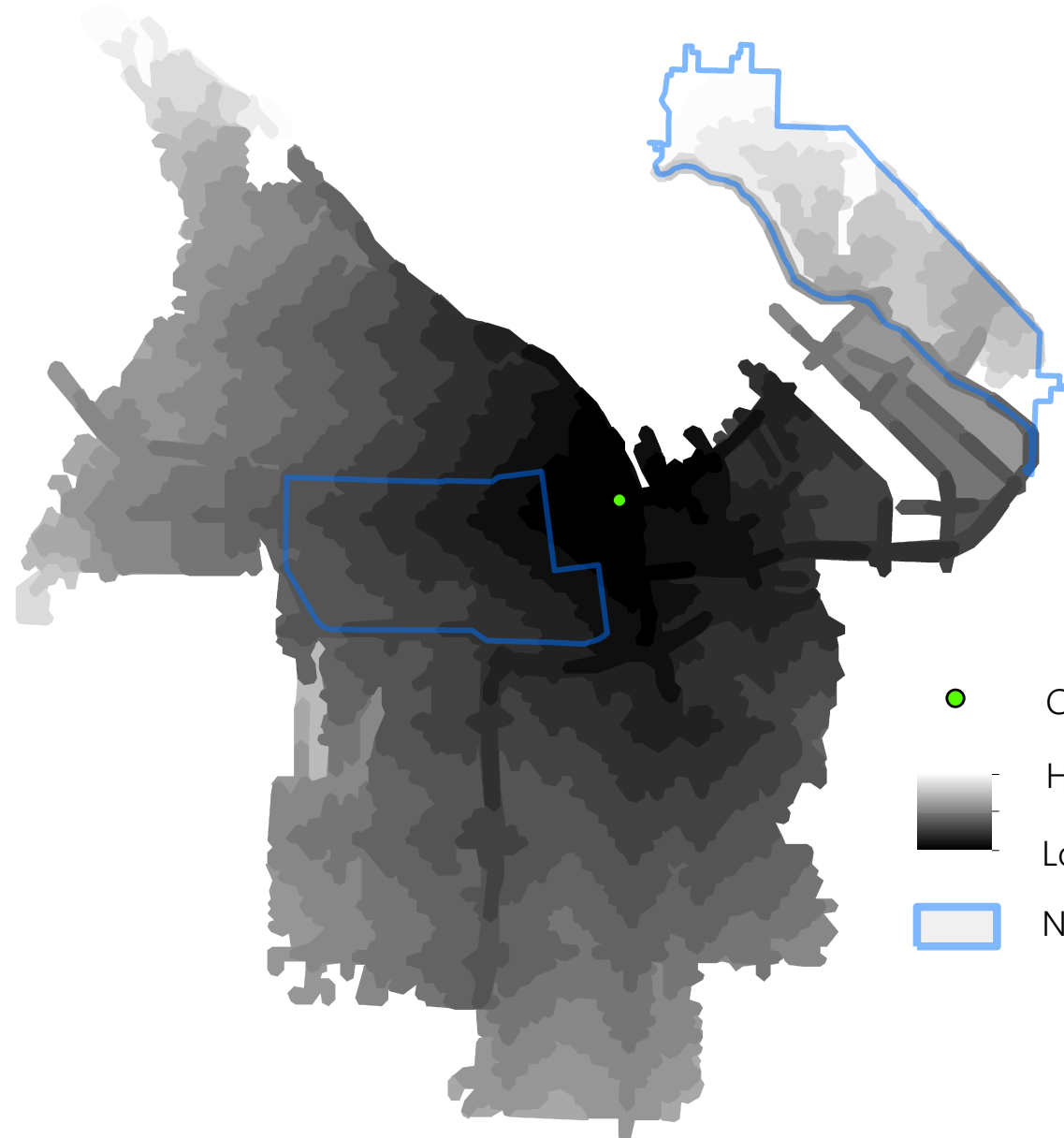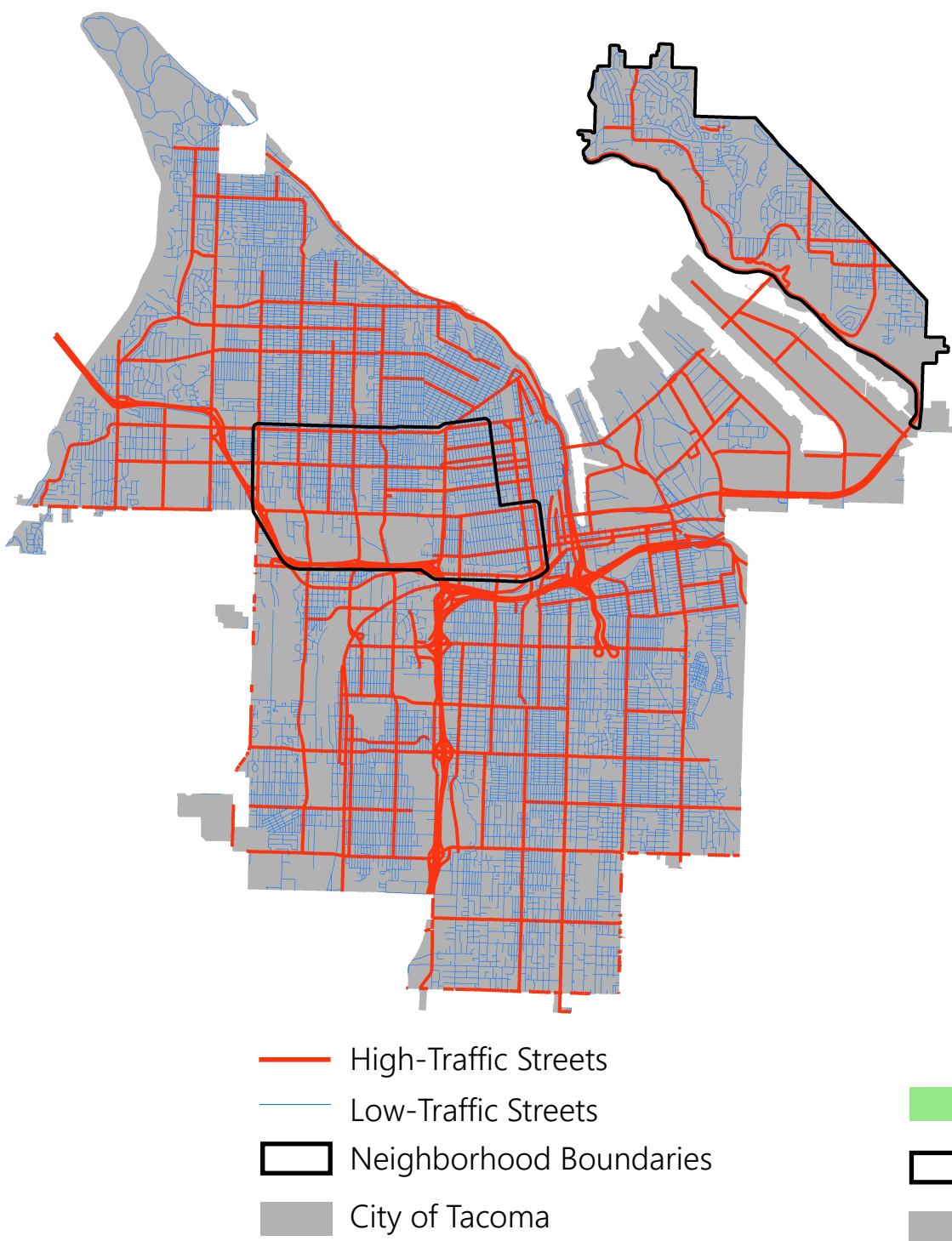| Location	Average Drive Time to CBD (minutes)
Central Tacoma	3.275976
Northeast Tacoma	6.359172
City of Tacoma	8.008068

Location	2016 Building Permits	2017 Building Permits	2018 Building Permits	2016-2018 Building Permits	Total Parcels	Building Permits per Parcel 2016-2018
Northeast Tacoma	6	34	34	74	6,722	0.01101
Central Tacoma	4	13	21	38	7,850	0.00484
Tacoma	40	131	197	368	754,541	0.00049

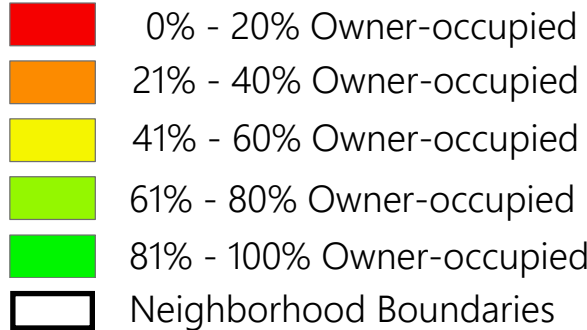| Location	Jobs 2012	Population 2012	Jobs Per Resident 2012	Jobs 2015	Population 2015	Jobs Per Resident 2015	Increase in Jobs per Resident 2012-2015
Northeast Tacoma	932	20,523	0.0454	1,082	20,558	0.0526	16%
Central Tacoma	11,351	22,838	0.4970	2,797	23,834	0.5369	8%
City of Tacoma	99,388	200,013	0.4969	06,026	203,481	0.5211	5%

Location	Total Number of Owner Occupied Residencies in 2013	Total Number of Residencies in 2013	Total Number of Owner Occupied Residencies in 2017	Total Number of Residencies in 2017	Percentage Owner Occupied 2013	Percentage Owner Occupied 2017
Northeast Tacoma	5,759	7,517	5,835	7,597	76.6%	76.8%
Central Tacoma	4,147	9,255	4,263	9,614	44.8%	44.3%
City of Tacoma	40,486	78,681	41,311	82,016	51.5%	50.4%

Location	Total Length of High-Traffic Streets (miles)	Total Length of All Streets (miles)	Percentage of Streets that are High Traffic
Central Tacoma	36	134	27%
Northeast Tacoma	14	72	19%
City of Tacoma	268	1,140	24%

Percentage of Residencies Owner-occupied in 2017
- 0% - 20% Owner-occupied
- 21% - 40% Owner-occupied
- 41% - 60% Owner-occupied
- 61% - 80% Owner-occupied
- 81% - 100% Owner-occupied
- Neighborhood Boundaries