

Healthy and Safe Neighborhoods

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Executive Summary

For this project the Healthy and Safe Neighborhoods group worked with Baltimore's Southwest Partnership (SWP) to create mapping resources for their seven partnering neighborhoods. The primary focus was to investigate the health and safety of Southwest Baltimore's current neighborhood using the most recent ACS (American Community Survey) and Census Data as well as open source data provided by the City and the SWP, to determine if certain conditions influence one another.

Like much of Baltimore, the Partnership's neighborhoods have been isolated and neglected due to white flight, racially restrictive zoning, redlining, and "decades of disinvestment."¹ By using GIS mapping to visualize the neighborhood conditions and GIS analysis to pinpoint areas of opportunity and concern, we hope to help SWP focus their resources to attract new residents and investment, particularly from its neighboring partners and anchor institutions.

Recently planners have used GIS to map areas of opportunity and spatial mismatch where, for example, employment needs do not match resident skills. Using crime data provided by the SWP and the City, this report compares street conditions and demographics in Southwest Baltimore with contributing factors or variables that would affect the neighborhoods' health and safety. The following variables were mapped: racial demographics, median household income, vacant houses, crime density by type and time of day, urban tree canopy, street conditions, street lights, and illegal dumping sites. Analysis showed that the neighborhood trends reflected issues facing Baltimore City as a whole, so the study area was expanded to provide context and draw comparisons between the City and the SWP area. Both Baltimore City and the SWP area have overlapping clusters of aging infrastructure, low income, crime, and vacancies abutting areas of wealth and security. In the end, the limiting factors on the analysis were due to incomplete data sets, which SWP recognizes and continues to build.

Background

Baltimore is the largest city in the state of Maryland, and the 26th-most populous city in the United States. The SWP area includes the neighborhoods of Barre Circle, Hollins Market, Mount Clare, Poppleton, Pigtown, Union Square, and Franklin Square. The entire SWP area covers approximately one square mile, with a population of 15,375 residents and containing 5,700 jobs. The construction of the

¹ <https://www.washingtonpost.com/news/wonk/wp/2015/04/29/the-long-painful-and-repetitive-history-of-how-baltimore-became-baltimore/>

B&O Railroad anchored the SWP area as a major part of Baltimore City and its neighborhoods have a rich history. They are closely connected to downtown, the Harbor, the stadiums, and several major institutions.²

According to the SWP's Vision Plan, the neighborhoods have experienced "decades of disinvestment, failed redevelopment and negative press." The SWP's goal for streets and public space is to "tell the story of Southwest by connecting the neighborhoods and residents through safe and attractive streets." To achieve these goals the SWP has identified the following key issues with respect to neighborhood health and safety:

- Aging infrastructure needing upgrades and repairs
- Underpass and overpass improvement needs
- Dangerous street intersections
- Lack of bike lanes and trail connections
- Poor lighting, signage, and wayfinding features
- Trash and lack of cleanliness
- Perception of crime³

This report will focus on demographics, vacancies, infrastructure in need of repairs, poor lighting, trash and lack of cleanliness, urban tree canopy, and where crime occurs in order to investigate the key health and safety issues identified by SWP.

Neighborhood Demographics

The SWP area's racial composition is similar to Baltimore City. The SWP neighborhoods have a 1.19 percent Asian population, 4.2 percent Latino population, 22.2 percent White population, 72.35 percent Black population, and 0.37 percent American Indian population.⁴ Southwest Baltimore's median household income is approximately \$29,875⁵, while Baltimore City's median household income is \$39,386.⁶ Of the area's 9,570 housing units, 71.11 percent are occupied, with 65.94 percent renter

² Southwest Partnership Vision Plan

³ Southwest Partnership Vision Plan

⁴ 2010 U.S. Census Data

⁵ Baltimore Retail Development Strategy Report

⁶ 2009-2013 ACS Data

occupied and 34.1 percent owner occupied, while 28.89 percent are vacant.⁷ As of the 2010 decennial census, Baltimore City has 2.3 percent Asian alone population, 4.2 percent Hispanic or Latino population, 28 percent white alone population, 63.7 percent Black or African American alone population, and 0.4 percent American Indian and Alaska Native alone population.⁸ Of the city's 296,984 housing units, 47.2 percent are owner occupied⁹ and 16 percent are vacant.¹⁰

Transit

The SWP area has not seen the type of resurgence that has occurred in other Baltimore neighborhoods, in part because of its geographic isolation and lack of transit options.¹¹ According to the SWP Vision Plan, Southwest Baltimore is well positioned to take advantage of the revitalization of downtown Baltimore. Considering the area's proximity to the Inner Harbor and downtown central business district, its architectural significance, its dense housing stock, and high vacancy rate, the SWP area has the potential to become a desirable pocket of Baltimore, like Canton, Fells Point, and Federal Hill. The B&O Railroad that originally brought prominence to the SWP area now acts as a major geographic barrier that has isolated Southwest from infrastructure improvements, redevelopment, commercial foot traffic, and new residents.¹²

Per capita traffic casualty rates tend to decline as public transportation travel increases in an area,¹³ and transit-oriented communities have only about a quarter of the per capita traffic fatality rate as automobile-dependent, low-density communities. The U.S. Centers for Disease Control and Prevention recommend that adults average at least 22 minutes daily of moderate physical activity, to stay healthy. Less than half of American adults achieve this target, while most public transportation users do reach the CDC exercise threshold simply by walking to and from transit stops.¹⁴

⁷ 2009-2013 ACS Data

⁸ 2010 Decennial Census Data

⁹ 2010-2014 ACS Data

¹⁰ https://www.washingtonpost.com/local/baltimore-has-more-than-16000-vacant-houses-why-cant-the-homeless-move-in/2015/05/12/3fd6b068-f7ed-11e4-9030-b4732caefe81_story.html

¹¹ Southwest Partnership Vision Plan

¹² Southwest Partnership Vision Plan

¹³ <http://www.vtpi.org/safer.pdf>

¹⁴ http://www.apta.com/resources/reportsandpublications/Documents/APTA_Health_Benefits_Litman.pdf

As stated in the Southwest Partnership Vision Plan, Southwest Baltimore already possesses many compact, walkable blocks reflective of 19th century design and other features that encourage active transportation including its many squares, nearby parks, and some bike infrastructure. However, the area suffers from irregular services, low visibility and poor lighting in certain areas, and a lack of connectivity across the pedestrian barrier created by Martin Luther King Jr. Boulevard to the east and US 40 to the north. In addition, there are only two roads providing access from the north into Pigtown, because of the barrier created by the B&O Railroad line.

The only form of public transit currently in SWP is bus service. The MTA Light Rail line serves a north-south route, and the Metro Subway runs from the northwest section of the city to John's Hopkins in the east; neither of these lines crosses through the SWP area. In June, Maryland Governor Larry Hogan rejected Baltimore's Red Line Light Rail project, and cut the state's funding for the proposed Purple Line. He also proposed a new state transportation budget dedicating less than 1% of funding for Baltimore city.¹⁵ Some argued that the Red Line would have provided a critical east-west link through the City, and connected with the other light rail lines, Metro subway, and the MARC train.¹⁶ The Red Line would have had one stop in Poppleton and a stop two blocks north of Franklin Square, just outside the SWP boundary.¹⁷ In October, Hogan unveiled a new transportation plan for Baltimore, which would redesign the City's bus system to make bus service more frequent, efficient, and better connected. The announcement produced mixed reactions with many residents agreeing that the bus network needs extensive improvements, but that this was not quite the transformative plan that many had hoped for to help spur much needed economic growth in the City.¹⁸ More research is needed into how Hogan's new transportation plan will affect Southwest Baltimore.

The transit, pedestrian, and bike infrastructure improvements advocated for in the SWP Vision Plan—including creative crosswalks, lighting around the Carey Street Bridge underpass and in other poorly-lit areas, an at-grade pedestrian crossing and/or a pedestrian bridge connecting the Southwest Baltimore neighborhoods with Carroll Park, and complete streets improvements—would improve public health and welfare by reducing traffic crashes and pollution emissions, increasing residents' physical fitness,

¹⁵ <http://www.baltimoresun.com/news/maryland/bs-md-hogan-highways-20150718-story.html>

¹⁶ <http://t4america.org/maps-tools/maryland-transit-report/>

¹⁷ <http://gobaltimoredline.com/>

¹⁸ <http://www.wbaltv.com/news/maryland-governor-to-make-transportation-announcement/35968412>

improving mental health,¹⁹ improving access to medical care and healthy food, and reducing transportation costs.²⁰ These improvements would also spur economic development in the area.²¹

Street Conditions

Baltimore's population has been declining for decades, and this loss of its tax base combined with an extensive and aging infrastructure has made it increasingly difficult for the city to maintain its roads. The largest source of Maryland's population growth has come from international immigration, but to reach Mayor Stephanie Rawlings-Blake's ambitious goal of attracting 10,000 families to the City in a decade, it will need to compete with Montgomery and Prince George's Counties. To retain its existing population and attract new immigrants, Baltimore is planning capital improvements to its school system, reducing the property tax, and allowing some transfer of the Homestead Property Tax Credit from one house in the City to another to make it easier for families to move within the City as they grow. However, more will need to be done to attract businesses and jobs to Baltimore.²²

Poor sidewalk and street conditions discourage active transportation and prohibit mobility. Potholes and other street deficiencies can severely damage cars, cause traffic accidents from motorists swerving to avoid problem areas, and injure pedestrians and bicyclists. Areas without proper street markings increase motorists' collisions with pedestrians, and ADA-inaccessible areas reduce mobility for seniors and persons with disabilities. Potholes should be repaired within days to prevent further damage to the street, and a street with many potholes needs to be resurfaced. There are some cost-saving techniques that the City could use to fund its resurfacing program.²³ The historical problem of street conditions in Southwest Baltimore is neglect;²⁴ all parts of the City should receive equal services and not favor wealthier neighborhoods over poorer ones.

Street Lights

Providing adequate street lighting is important in encouraging outdoor recreation and increasing the sense of safety in a neighborhood. Baltimore is in the process of converting its approximately 70,000

¹⁹ <http://www.smartgrowthamerica.org/documents/cs/factsheets/cs-health.pdf>

²⁰ http://www.cdc.gov/healthyplaces/transportation/promote_strategy.htm

²¹ <http://www.smartgrowthamerica.org/documents/safer-streets-stronger-economies.pdf>

²² <http://www.baltimoresun.com/news/opinion/editorial/bs-ed-baltimore-population-20150327-story.html>

²³ <http://publicsource.org/investigations/potholes-health-indicators-of-city-streets#.VnbbhFnYBUw>

²⁴ http://www.nytimes.com/2015/04/29/us/baltimore-riots-are-another-scar-on-a-city-battered-by-neglect.html?_r=0

sodium vapor lights to LED bulbs. This would save the city \$1.9 million on electricity and \$275,000 in maintenance costs. Proponents of the LED lights say that they produce less light pollution and glare, and provide more focused lighting. The more targeted lighting provided by LED lights makes it easier for motorists to see pedestrians, but some are concerned about the loss of peripheral lighting that was generated in the past by sodium vapor lights and their effect on crime.²⁵ To address this issue, the City could install new light posts in certain areas, in addition to replacing the bulbs in existing ones.

Illegal Trash Dumping

Code Enforcement, a division of Baltimore Housing that investigates illegal dumping, receives between 20 and 40 dumping calls per day, and reported the existence of 50 illegal dumping hotspots in the City. The stereotypical Baltimore City dumper is a small hauler or works in construction. They dump illegally because the fees they pay at the landfill are typically greater than their wages. Baltimore's dumping problems have improved in some neighborhoods, such as in Oliver, partially due to programs like "Vacants to Value," and in the East Side where there are a lot of new development projects.²⁶ Illegal dumping represents a chicken and egg scenario for Southwest Baltimore. It might be difficult to attract investment because of the illegal dumping activity, but the trash will never disappear completely until neighborhoods are rehabilitated and redeveloped.

Tree Canopy

The term tree canopy refers to an area that is shaded by trees, including the tree leaves and branches covering the ground. Forty-three percent of Baltimore is hard surfaces like streets, buildings and parking lots, and 19 percent is grassland (potential land to be planted). TreeBaltimore is the umbrella organization for all City agencies and private organizations in their efforts to increase Baltimore's tree canopy. The organization strives to increase the urban tree canopy to 40 percent cover by 2037 through partnerships with individual homeowners, communities, schools, and businesses.²⁷

According to TreeBaltimore, Baltimore has 2.8 million trees with a value of \$3.4 billion. This does not take into account the valuable health services that trees also provide. The presence of trees in the community has both public health and social benefits. Trees keep the air in neighborhoods clean by

²⁵ http://articles.baltimoresun.com/2012-08-16/news/bs-md-city-street-lights-20120816_1_new-lights-led-lights-northeast-baltimore

²⁶ <https://www.baltimorebrew.com/2015/04/06/on-the-streets-and-in-the-dumps-with-batimores-trash-cops/>

²⁷ <http://www.treebaltimore.org/about/>

producing oxygen, intercepting airborne pollutants, and reducing smog. As a result, the presence of trees can enhance the community's overall respiratory health. Additionally, access to trees and green spaces in general promotes physical activity and reduces stress. With respect to environmental benefits, trees remove greenhouse gases from the atmosphere and lower ambient temperatures, especially in dense cities. Mapping the urban tree canopy for the SWP area helps determine those areas with ideal tree cover, as well as those which can be further developed all in the interest of improving the quality of life for SWP residents.²⁸

Crime

Baltimore is infamous for its high crime rate, ranking above the national average. This is not a new issue; the City has struggled with crime for years. According to the Baltimore Sun article, "Violence is an old story in 'Mob Town.'" The fear of crime has been a constant in Baltimore's history and has kept pace with the population. However, since Freddie Gray's controversial death, the relationship between the police and the public has taken a turn for the worse, further contributing to high crime rates and giving Baltimore negative publicity.²⁹ A December 15, 2015 article, also in the Baltimore Sun, discussed how violence in Baltimore had escalated since spring and the City had already logged the highest per capita murder rate in its history. Governor Hogan attributes the escalating crime rate to issues like drugs, namely heroin, and gangs plaguing the streets.³⁰

For a study on the health and safety of the neighborhoods within the Southwest Partnership's area, it is therefore useful to map crime trends to target the most crime stricken areas and recommend improvements. Additionally, the crime maps can be compared to other areas of concern for the health and safety of residents, such as burnt out street lights, illegal trash dumping, etc. to see if disinvestment in these areas fuels crime, as supposed in the Broken Windows Theory. Also, if people are fearful of becoming a victim of crime, they are more likely to stay inside, which takes eyes off of the street and can cause crime to flourish.

Research Questions

²⁸ <http://canopy.org/about-trees/the-benefits-of-trees/>

²⁹ http://articles.baltimoresun.com/1992-11-01/news/0012150458_1_violence-mob-town-baltimore

³⁰ <http://www.baltimoresun.com/news/maryland/politics/blog/bal-gov-larry-hogan-says-baltimore-crime-is-out-of-control-20151215-story.html>

This project's goal was to map the variables of healthy and safe neighborhoods established by the Southwest Partnership and help them pinpoint areas of opportunity and areas of concern to more efficiently and effectively use their resources. Mapping these variables visually represents their geographic distributions, establishes any trends or correlations, provides context by comparing the results to the City as a whole, and draws conclusions and recommendations that would help the SWP further their mission of building a cohesive community.³¹

Mapping Variables

Neighborhood Demographics Variables

Racial demographics were determined from 2010 Census data and dot density maps to show concentrations of white, black, and Hispanic populations. Median household income came from 2009-2013 ACS data and quantile classification to show Median Household Income at the Block Group level. Vacancies were also determined using 2009-2013 ACS data and quantile classification to show Vacant Houses at the Block Group level.

Transit Variables

Transit variables came from shapefiles of transit lines and stops/stations in Baltimore and Maryland, from Open Baltimore and MD iMap which included the Charm City Circulator, MTA Bus service, Baltimore Metro Subway, Light Rail, MARC, and on-street bike facilities. Landmarks and anchor institutions, were mapped using shapefiles of Landmarks and Hospitals from Open Baltimore; in addition, a spreadsheet of Southwest Partnership's anchor institutions was created with information from the Vision Plan. For the mini project, all these variables were mapped in ArcGIS for Desktop³², with final report files uploaded into an ArcGIS online map.³³ The online map contains only bike lanes for Southwest Baltimore because the file was too large for the entire City. MTA bus stops are only shown for Southwest Baltimore for easier viewing.

³¹ Southwest Partnership Vision Plan

³² Appendix 1 - Landmarks GIS Map

³³ Appendix 2 - Transit & Landmarks Online Map

Street Conditions Variables

To show street conditions issues throughout Baltimore City and specifically in Southwest Baltimore, the following service requests were mapped from Baltimore's 311 service request system:

- code: TRTWOSTR, Code Description: TRM-WO Street Markings
- code: TRMXWWO, Code Description: TRM-WO Crosswalk Markings
- code: STREETRE, Code Description: TRM-Street Repairs
- code: GSSTREET, Code Description: TRM-Street Cut Issues
- code: POTHOLES, Code Description: TRM-Potholes
- code: HANDICAP, Code Description: TRM-Potholes
- code: CURBREPA, Code Description: TRM-Curb Repair.

Service requests that were missing zip codes were stripped from the dataset, along with some of the addresses with zip codes that couldn't be matched. For Baltimore City as a whole, service requests were mapped by Kernel Density and Block Group. For Southwest Baltimore, service requests were mapped by Kernel Density and show each service request by a colored dot, categorized by service request type.

Using data provided by Southwest Partnership from their Hollins Market, Union Square, and Barre Circle neighborhood surveys, the records were cleaned, including looking up zip codes. The category types were Uneven Street, Pothole, Sunken Street, Crosswalk Marking Faded, Raised Patch in Street, Handicap Ramp not Ok, and Manhole Cover Missing. This data was uploaded as an excel file into an ArcGIS online map.³⁴ Each incident is represented by a colored dot, categorized by service request, and all reported street conditions issues are showed on a heat map indicating areas of concentration.

Street Lights Variables

Service requests with the code "BGESTLI1" and Code Description "BGE-StLight(s) Out" were mapped from Baltimore's 311 service request system to show street light issues throughout Baltimore City and specifically in Southwest Baltimore. There were also service requests for TRM-StLighting Inadequate/too bright, StLight Damaged/Knocked Down/Rusted, and StLight Pole Missing, but there weren't nearly as many of these records as street light out requests, and there wasn't sufficient time to include these in the final map. For Baltimore City as a whole, we created a Kernel Density map of street light out service

³⁴ Appendix 3 - Street Conditions Online Map

requests. For Southwest Baltimore, we mapped these service requests by Point Density, and by points (1:1) including the Baltimore City kernel density layer.

Using data provided by Southwest Partnership in their Hollins Market, Union Square, and Barre Circle neighborhood surveys the records were cleaned, including zip codes. The category types were: historic post, regular post, leaning post, and light not bright enough. This data was uploaded as an excel spreadsheet into an ArcGIS online map.³⁵ Each incident is represented by a colored pin symbol, categorized by type.

Illegal Trash Dumping Variables

From Baltimore's 311 service request system, service requests with the code "ECEUILLE" and Code Description "HCD-Illegal Dumping" were mapped. Not all service requests had zip codes, which were then looked up individually, and some of the addresses with zip codes couldn't be matched. For Baltimore City as a whole, these service requests were mapped by points (1:1) and Block Group. For Southwest Baltimore, these service requests were mapped by Point Density and Block Group. For the SW Baltimore block group map, the block groups that extended beyond the boundary of the Southwest Partnership were clipped, and showed each service request symbolized by a point to better show the distribution.

Tree Canopy Variables

"Baltimore City Open GIS Data" was the source for mapping the Urban Tree Canopy of the SWP Area. The maps include a view that focuses on the SWP area, as well as one which shows the full extent of Baltimore City.

Crime Variables

"Open Baltimore" police reports were the data source to map incidents of 2014 property and violent crime in the SWP area. These crime maps include a map of crime by census tract, a kernel density map for all crime within the SWP area, kernel density maps that indicate crime by specific times of day, and a

³⁵ Appendix 4 - Street Lights Online Map

map that overlays crime types with crime density. Three additional maps also zoom into areas of particular concern so that crime types in those areas can be identified.³⁶

Quantity of crimes in Baltimore and Southwest Baltimore

It was important to display quantitative data in a map so the audience could have some reference of how many crimes were occurring. This was done with a choropleth map which assigned a range of colors from light to dark with each color representing a range of quantities of crime. For example, light blue represents 34-70 crimes that occurred in one census tract vs. the darkest blue representing 690-1543 crimes that occurred in another tract. A map of Southwest Baltimore allows an up close view of the data, and a map of all of Baltimore puts Southwest in context to identify if its neighborhoods have similar crime density as other areas of the City.

Types of crimes in Southwest Baltimore

It was important to map what types of crimes were occurring to see if there were any trends of what crimes occurred in what locations. A Violent Crime map and a Property Crime map placed points of different shapes and colors based on specific crime types (ex. aggravated assault) in Southwest Baltimore, based on the geographic coordinates in the police log. For these maps, one dot is equal to one crime.³⁷

Crime "hot spots" in Southwest Baltimore

It was hard to distinguish trends or clusters from point density maps that display the types of crimes and where they were occurring in Southwest Baltimore. As a result, a kernel density map of all of the crimes that occurred in 2014 in Southwest Baltimore was used to show areas that had a high concentration of crimes. It should be noted that the data for this map does not include homicides or shootings, as there was no time stamp listed for these crimes in the police log.

Crime "hot spots" in Southwest Baltimore by time of day

Building off of the kernel density map showing all crimes in Southwest Baltimore, a map of where concentrations of crime occurred based on time of day was created arraying data into four different

³⁶ Appendix 5 - Zoomed in Crime Density Overlaid by Type Maps

³⁷ Appendix 6 - Property and Violent Crime Dot Density Maps

time blocks: 6:00am-11:59am, 12:00pm-5:59pm, 6:00pm-11:59pm, and 12:00am-5:59am. It should be noted that the data for these maps does not include homicides or shootings, as there was no time stamp listed for these crimes in the police log.

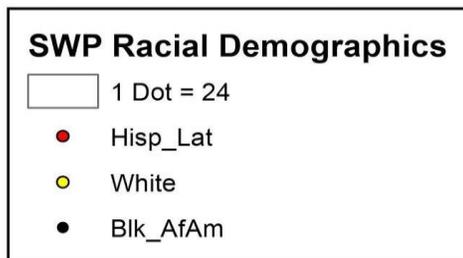
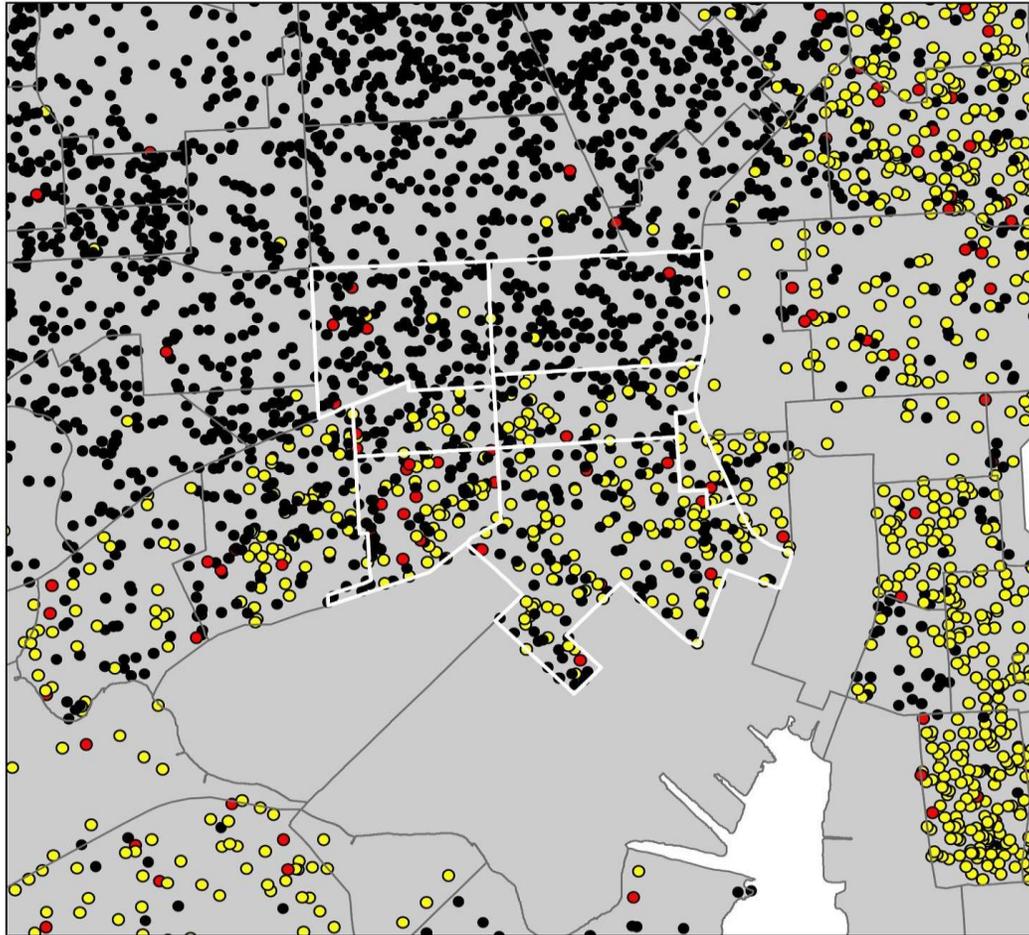
Analysis of Results

In the maps that follow, the thicker white or black outlines indicate the boundaries of Southwest Baltimore and the individual neighborhood boundaries within it.

Neighborhood Demographics

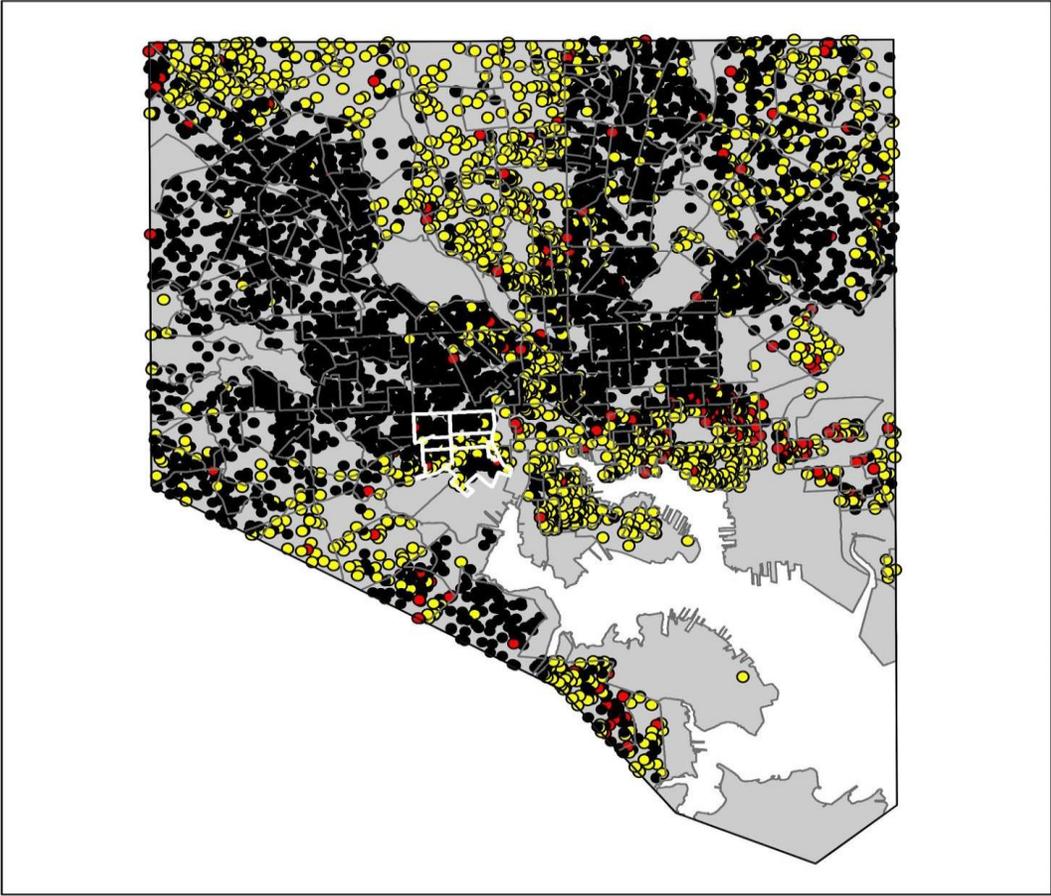
The racial demographics maps show a mix of races in the lower portion of Southwest Partnership's seven neighborhoods and a concentration of Black residents to the north. In the City as a whole, there are clearer concentrations of Black residents on the east and west sides of Baltimore with White populations around the Inner Harbor and in northern Baltimore.

Southwest Baltimore Racial Demographics



Source: 2010 Census Profile <https://data.baltimorecity.gov/Neighborhoods/2010-Census-Neighborhoods-Shape/6jyd-xzp7>

Baltimore Racial Demographics



City Racial Demographics

1 Dot = 119.513

- Hisp_Lat
- White
- Blk_AfAm



Source: 2010 Census Profile <https://data.baltimorecity.gov/Neighborhoods/2010-Census-Neighborhoods-Shape/6jyd-xzp7>

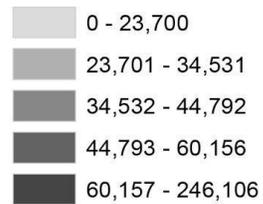
The median household income maps reveal that Southwest Baltimore’s median income is between \$20-50,000, similar to the City. The pockets of wealth are again in the neighborhoods around the Inner Harbor, northern Baltimore, and on the border between the City and Baltimore County.

Southwest Baltimore Median HH Income



SWP Block Group 2013 Med HH Income

Median_HH

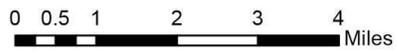
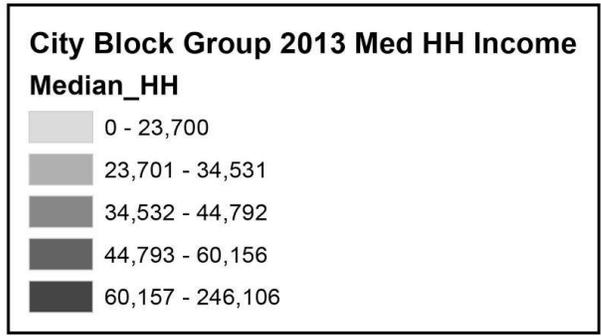


0 0.1 0.2 0.4 0.6 0.8 Miles



Source: BG ACS 2013 5YR B19013

Baltimore Median HH Income



Source: BG ACS 2013 5YR B19013

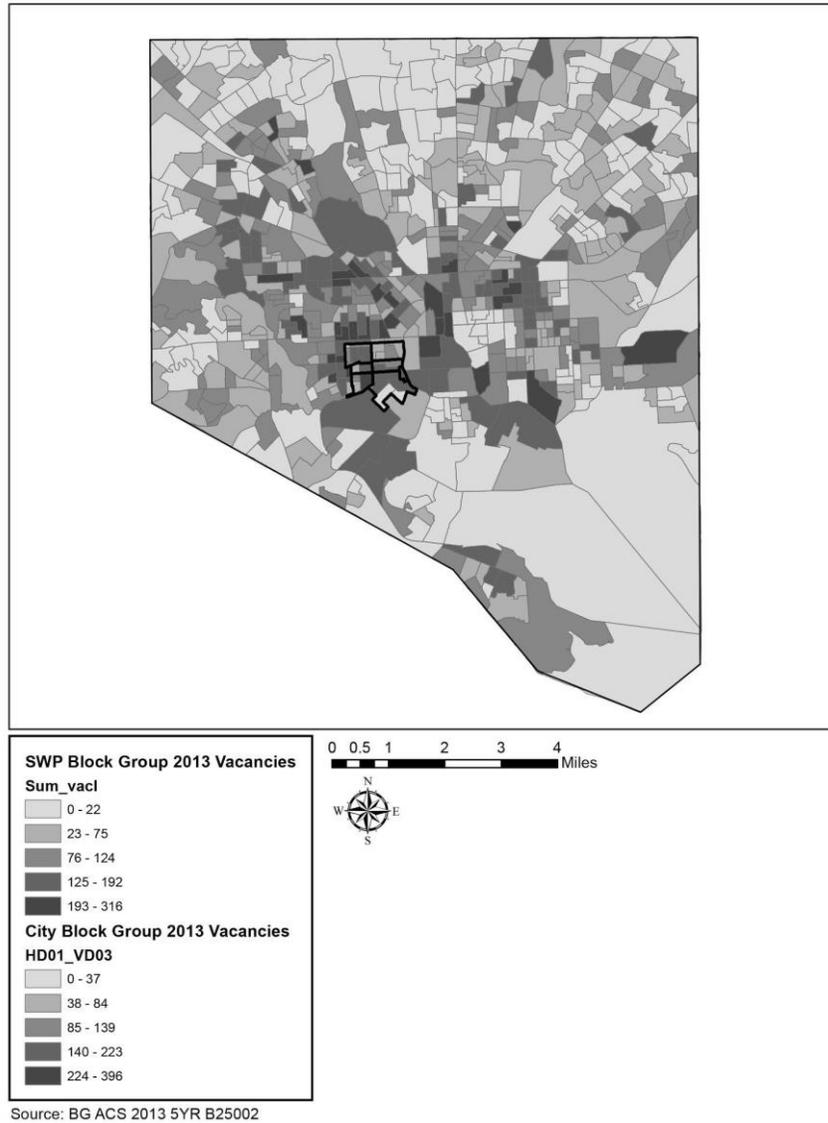
Not surprisingly, the vacancies maps are the inverse of the racial demographics and income maps. Vacancies are concentrated in the inner city, especially in Southwest Baltimore, and there are almost no vacancies around the Inner Harbor and near Baltimore County to the north.

Southwest Baltimore Vacancies



Source: BG ACS 2013 5YR B25002

Baltimore Vacancies



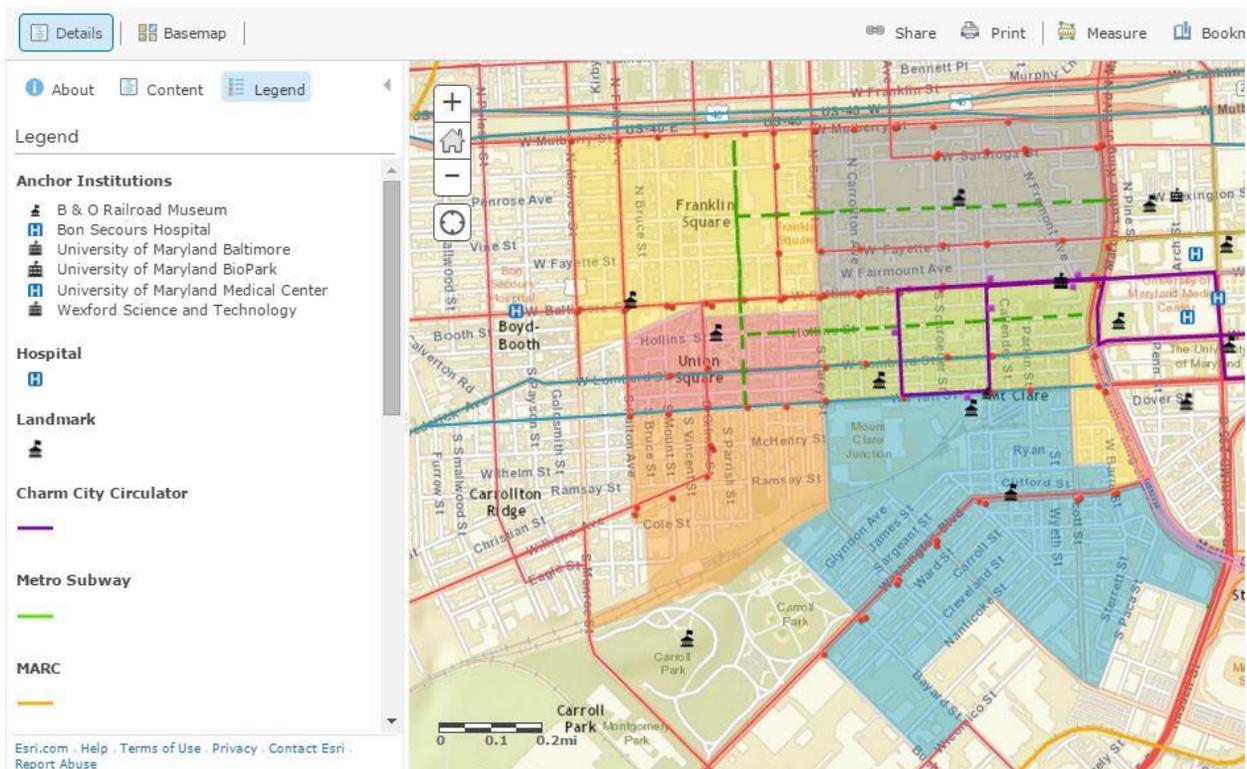
As the maps show, the areas of economic growth and redevelopment tend to be wealthy, predominantly white neighborhoods with low vacancy rates. Areas with disinvestment tend to be lower income, minority neighborhoods with high vacancy rates. Baltimore, like D.C., has seen a resurgence, and as millennials move back to the city some Baltimore neighborhoods have begun to prosper. Yet this prosperity has been unevenly distributed across the Baltimore. While the Inner Harbor and its surrounding neighborhoods have become hotspots for home buyers and redevelopment, the neighboring SWP area experiences crime, vacancy, and disinvestment. This disparity and its link to

Baltimore’s demographics reflects the City’s historic institutional and systemic socio-economic and racial issues.

Transit

Southwest Baltimore has several local MTA bus lines running through it, in addition to the Charm City Circulator, and some bike lane infrastructure. There are light rail, Metro Subway, and MARC stops within walking distance to the east, although Martin Luther King Jr. Boulevard acts as a barrier to these modes for pedestrians. The northern half of the partnership—Franklin Square, Poppleton, Union Square, and Hollins Market—benefits from greater transportation options. There are several historic landmarks within and just outside of Southwest Baltimore’s borders, and at least three of these: the Edgar Allan Poe House, the Carleton Street Stables, and the B&O Railroad museum, are within three blocks of a Charm City Circulator stop, which the Partnership could market to attract tourism revenue to the area.

ArcGIS ▾ SWP Transit & Landmarks

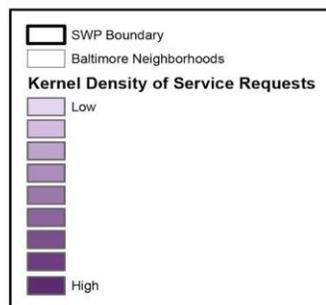
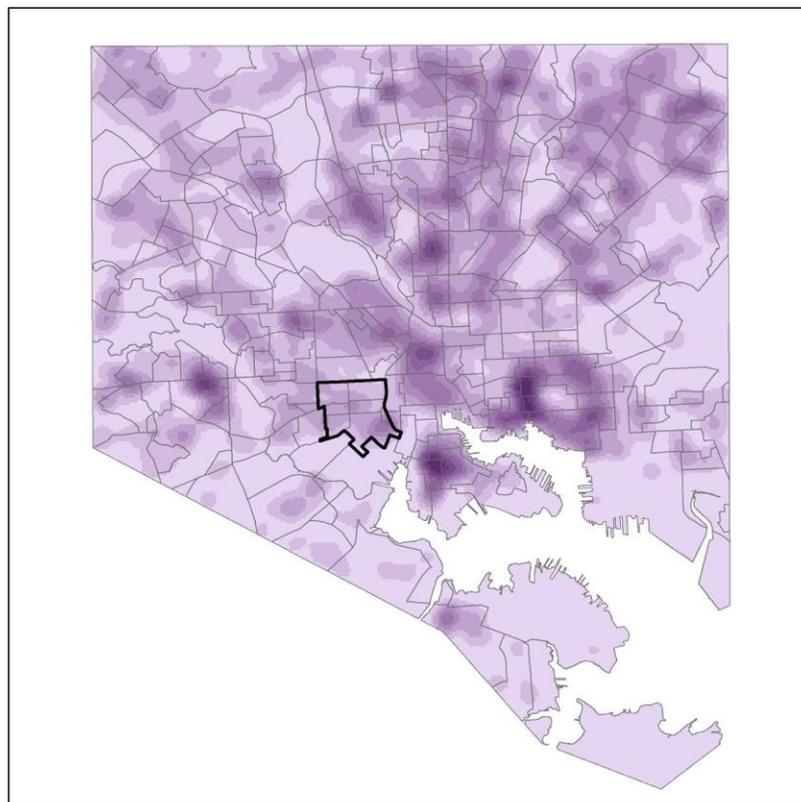


<http://www.arcgis.com/home/webmap/viewer.html?webmap=91d0f178d6e24d51bd7ea8d8a7fe4629>

Street Conditions

As shown in the kernel density, which calculates the density of features around each output raster cell, and block group maps of the City of Baltimore, Southwest Baltimore did not have the highest number of street conditions issue reports. There were 463 service requests related to street conditions in the dataset that were mapped in Southwest Baltimore (reported from December 2014, to November 2015). Potholes were the most frequently reported issue. Within Southwest, the highest density of these issues were reported near the border of Barre Circle and Pigtown (the intersection of Washington Boulevard and West Barre Street).

Baltimore 311 Street Condition Service Requests



0 0.5 1 2 3 4
Miles

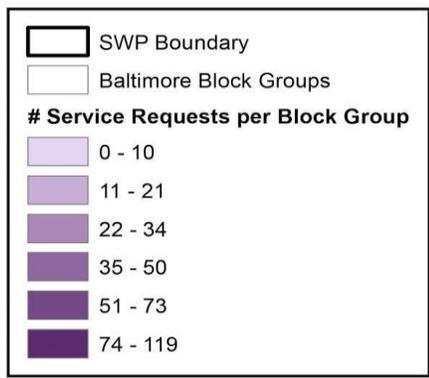
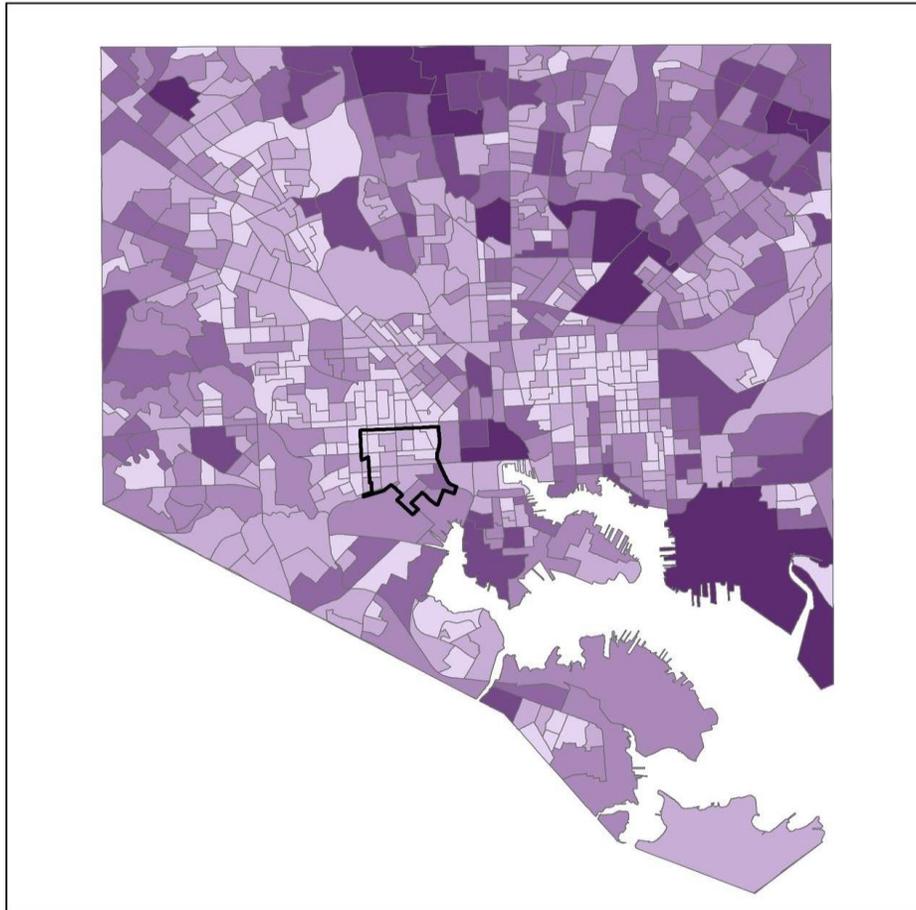


Sources:

"TRM-WO Street Markings," "TRM-WO Crosswalk Markings,"
"TRM-Street Repairs," "TRM-Street Cut Issues," "TRM-Potholes,"
"TRM-Handicap Ramp Repair," and "TRM-Curb Repair" Data.Gov
City of Baltimore 311 Service Requests, last updated April 09 2015.

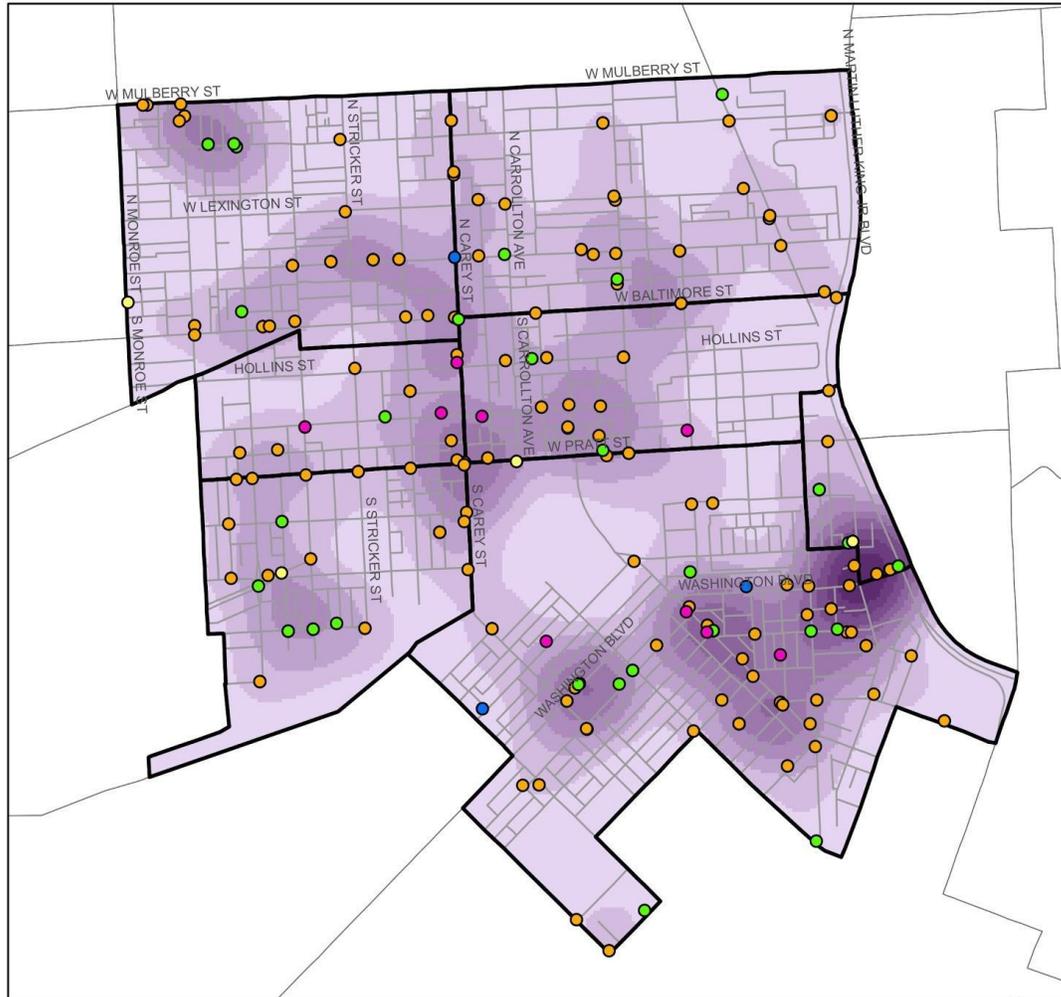
Baltimore Neighborhoods as of 2010: Open Baltimore City
Neighborhoods Shapefile, last updated March 27, 2014

Baltimore 311 Street Condition Service Requests



Sources:
 "TRM-WO Street Markings," "TRM-WO Crosswalk Markings,"
 "TRM-Street Repairs," "TRM-Street Cut Issues," "TRM-Potholes,"
 "TRM-Handicap Ramp Repair," and "TRM-Curb Repair" Data.Gov
 City of Baltimore 311 Service Requests, last updated April 09 2015.
 Block Groups: 2014 TIGER/Line® Shapefiles: Maryland Block Groups

Southwest Baltimore 311 Street Condition Service Requests

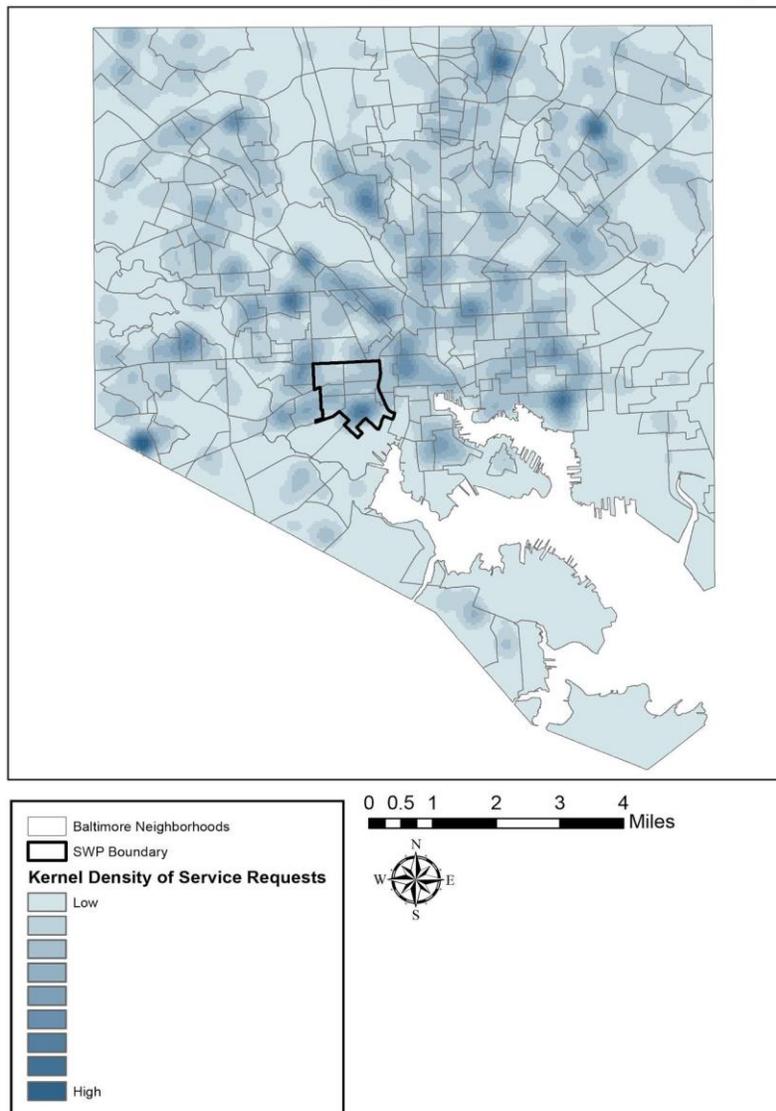


Sources:
 "TRM-WO Street Markings," "TRM-WO Crosswalk Markings,"
 "TRM-Street Repairs," "TRM-Street Cut Issues," "TRM-Potholes,"
 "TRM-Handicap Ramp Repair," and "TRM-Curb Repair" Data.Gov
 City of Baltimore 311 Service Requests, last updated April 09 2015.

Street Lights

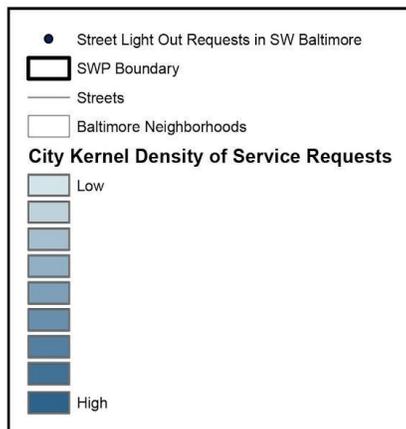
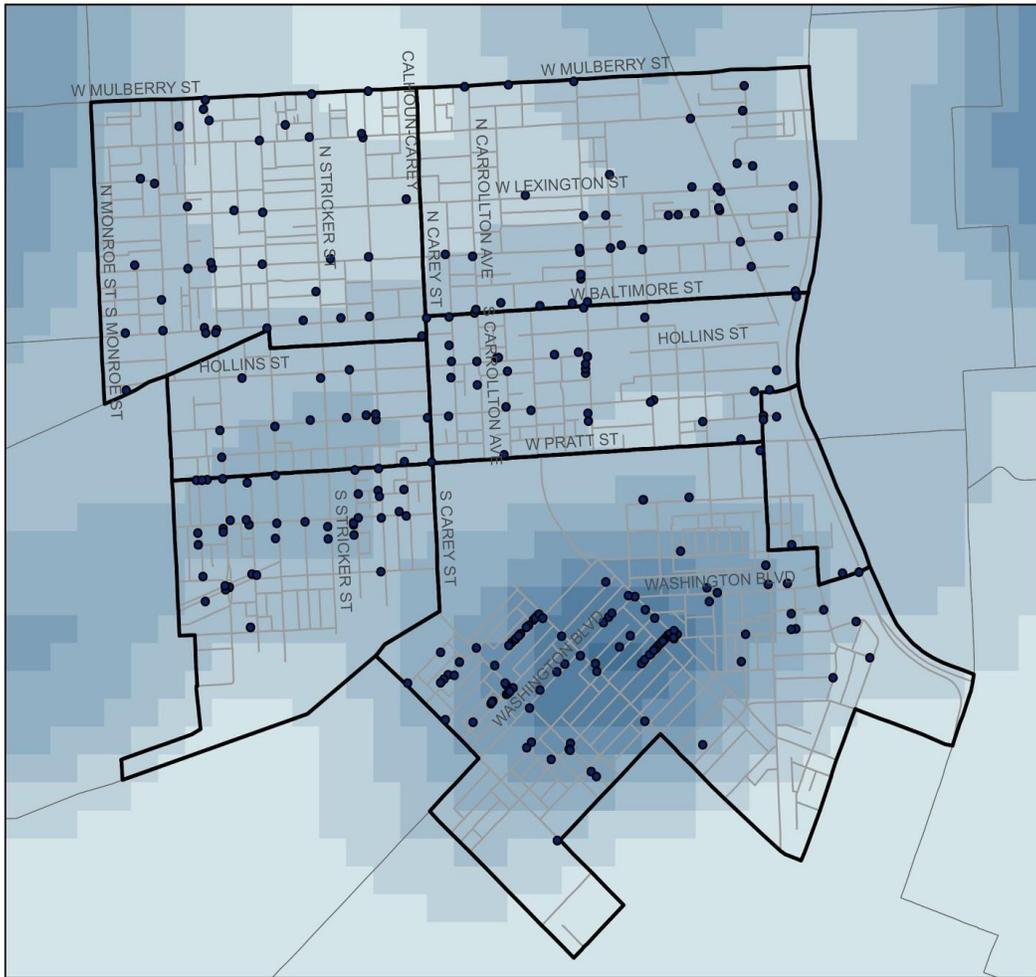
The Baltimore City kernel density map of 311 “street light out” service requests shows that a section of Pigtown, along with several other nodes in Baltimore, have a high density of these service requests. The dataset for Southwest Baltimore contained 441 “street light out” requests, reported from December 2014 to November 2015 that matched or tied for an address. The highest density of these service requests within Southwest Baltimore was in Pigtown at the intersection of West Cross Street, Ward Street, and Carroll Street.

Baltimore 311 Street Light Out Service Requests



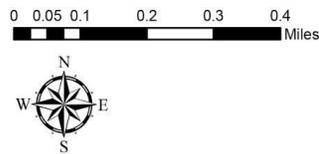
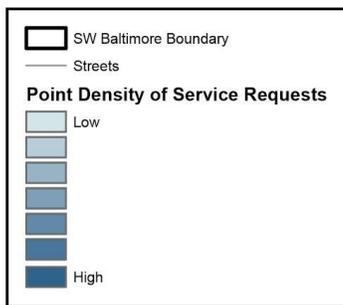
Source: "BGE-StLights Out" Data.Gov City of Baltimore 311 Service Requests, last updated April 09 2015.

Southwest Baltimore 311 Street Light Out Service Requests



Source: "BGE-StLights Out" Data.Gov City of Baltimore 311 Service Requests, last updated April 09 2015.

Southwest Baltimore 311 Street Light Out Service Requests

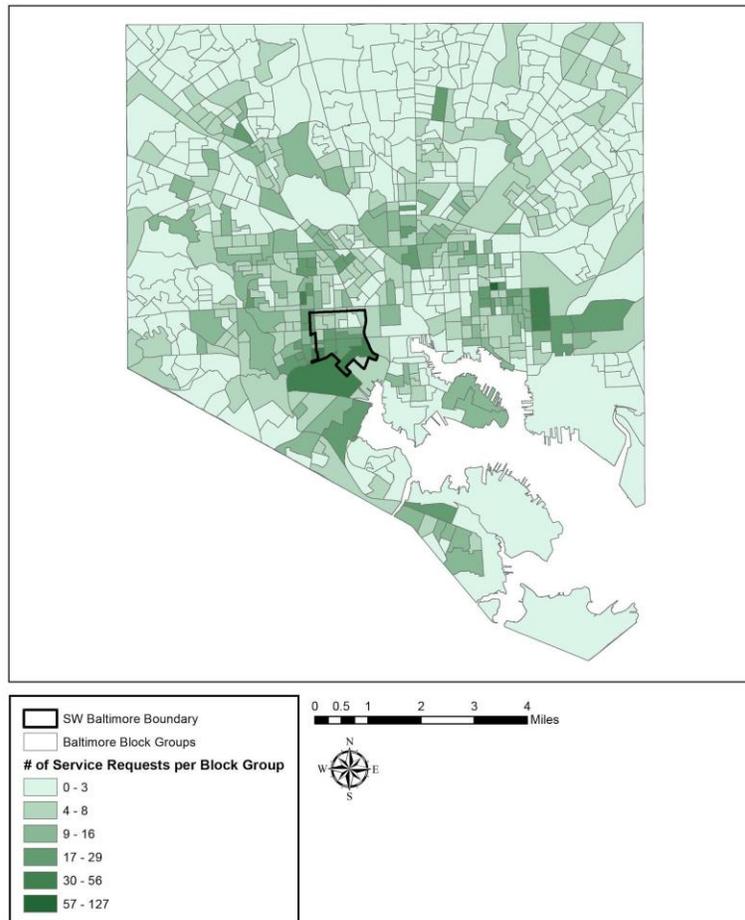


Source: "BGE-StLights Out" Data.Gov City of Baltimore 311 Service Requests, last updated April 09 2015.

Illegal Trash Dumping

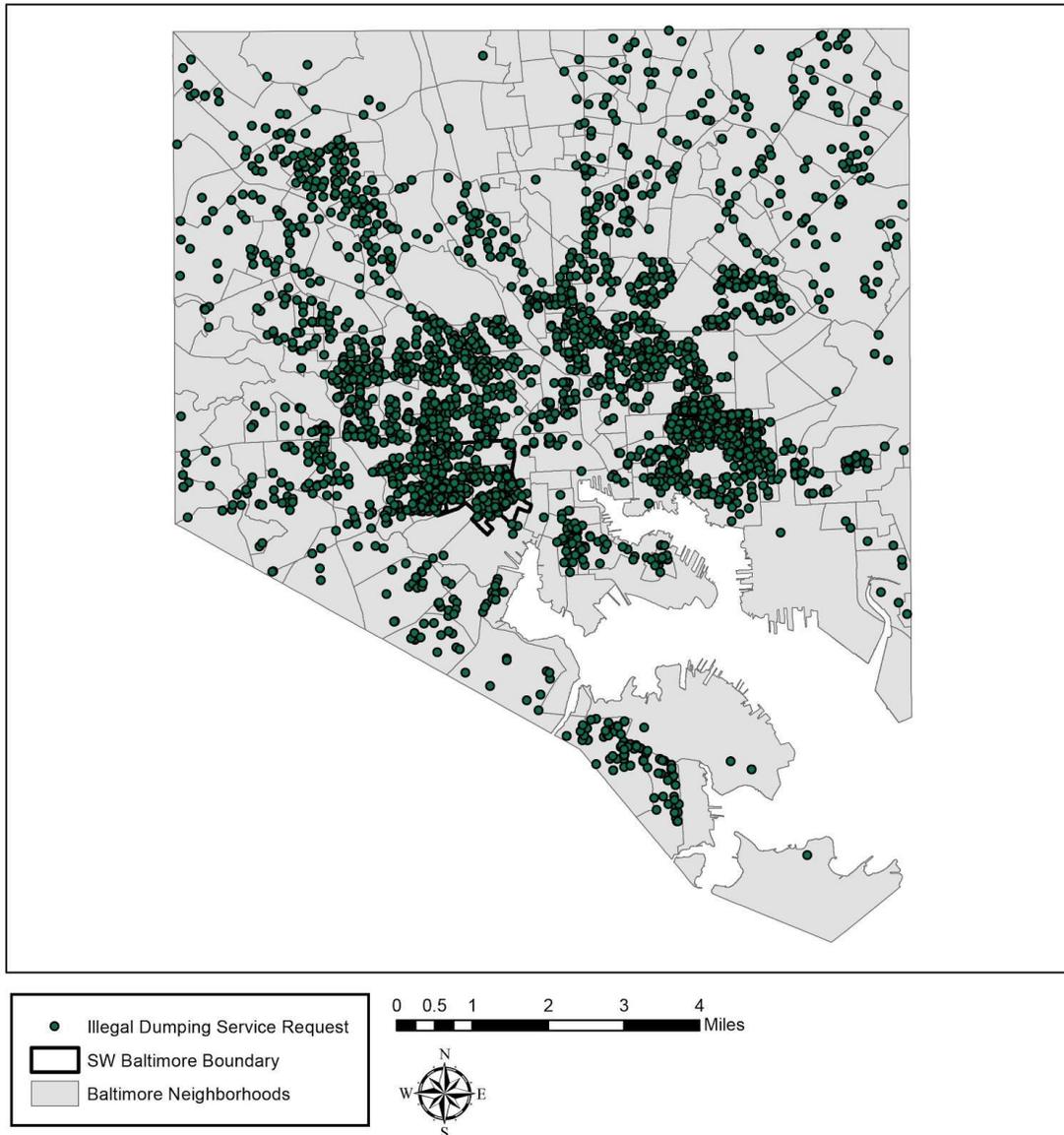
The number of 311 illegal dumping service requests in Southwest Baltimore was one of the highest in the City (in the 30-56 range for southern Mount Clare and Pigtown). The dataset for Southwest Baltimore contained 289 illegal dumping service requests, reported from August 2014 to August 2015 that matched or tied for an address. Most of these service requests were concentrated in Mount Clare and Pigtown. The area with the densest concentration of illegal dumping sites was near the intersection of Cole Street and South Vincent Street in the Mount Clare Neighborhood, which is not surprising as this area borders the B&O Railroad. Other hotspots were found in Pigtown along Washington Boulevard as well as the intersection of Cleveland and West Ostend Streets, Union Square at the intersection of South Carey Street with West Lombard and Hollins Streets, Mount Clare at the intersection of South Bruce Street with West Pratt and McHenry Streets, Barre Circle at the intersection of Scott and West Pratt Streets, and Franklin Square at the intersection of West Mulberry and North Monroe Streets.

Southwest Baltimore 311 Illegal Dumping Service Requests



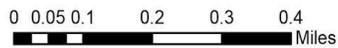
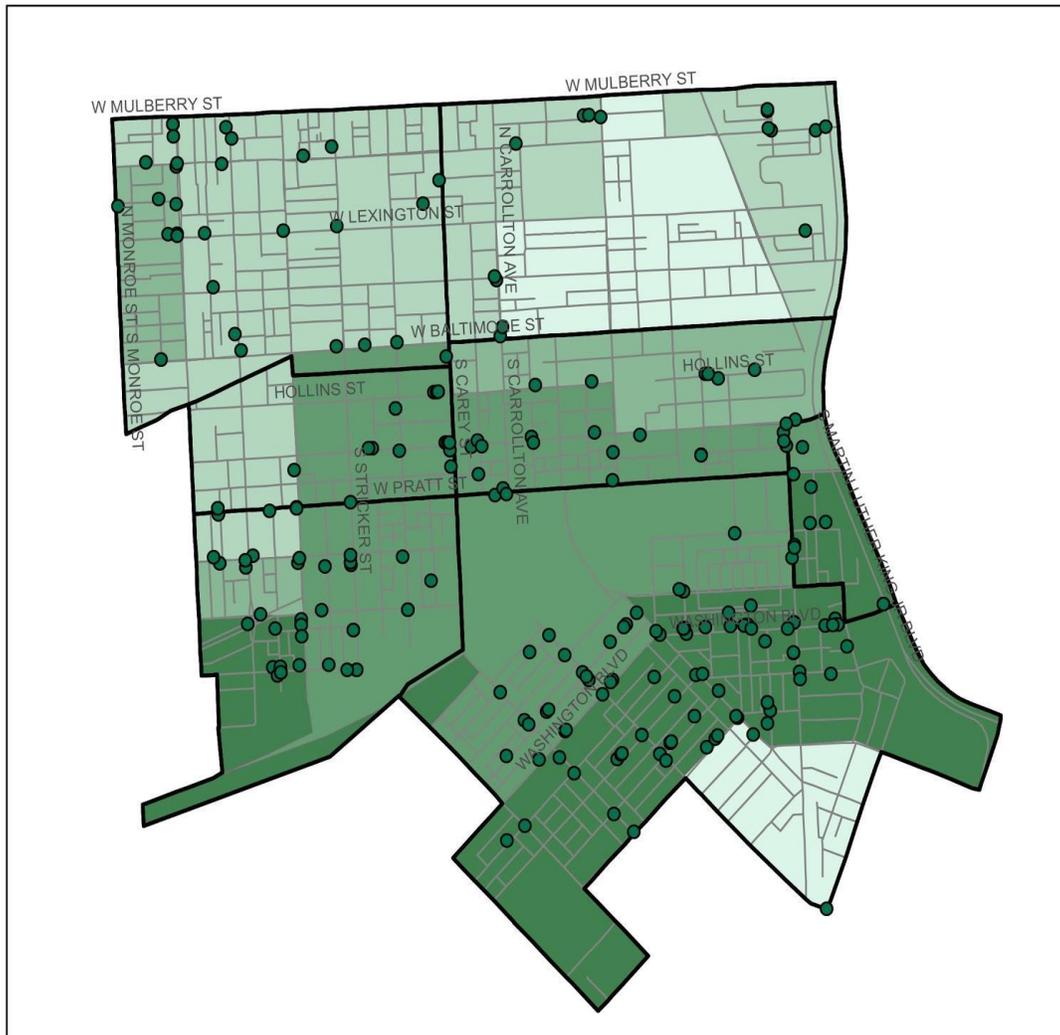
Source: "HCD-Illegal Dumping" Data.Gov City of Baltimore 311 Service Requests, last updated April 09 2015.

Southwest Baltimore 311 Illegal Dumping Service Requests



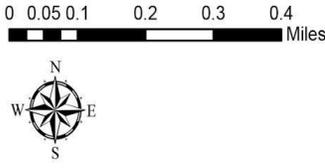
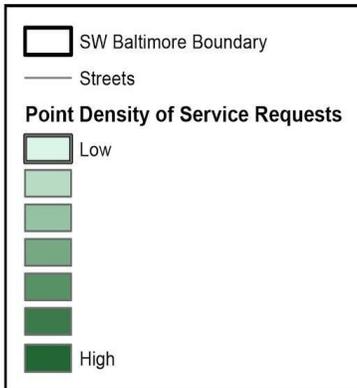
Source: "HCD-Illegal Dumping" Data.Gov City of Baltimore 311 Service Requests, last updated April 09 2015.

Southwest Baltimore 311 Illegal Dumping Service Requests



Sources: "HCD-Illegal Dumping" Data.Gov City of Baltimore 311 Service Requests, last updated April 09 2015.

Southwest Baltimore 311 Illegal Dumping Service Requests

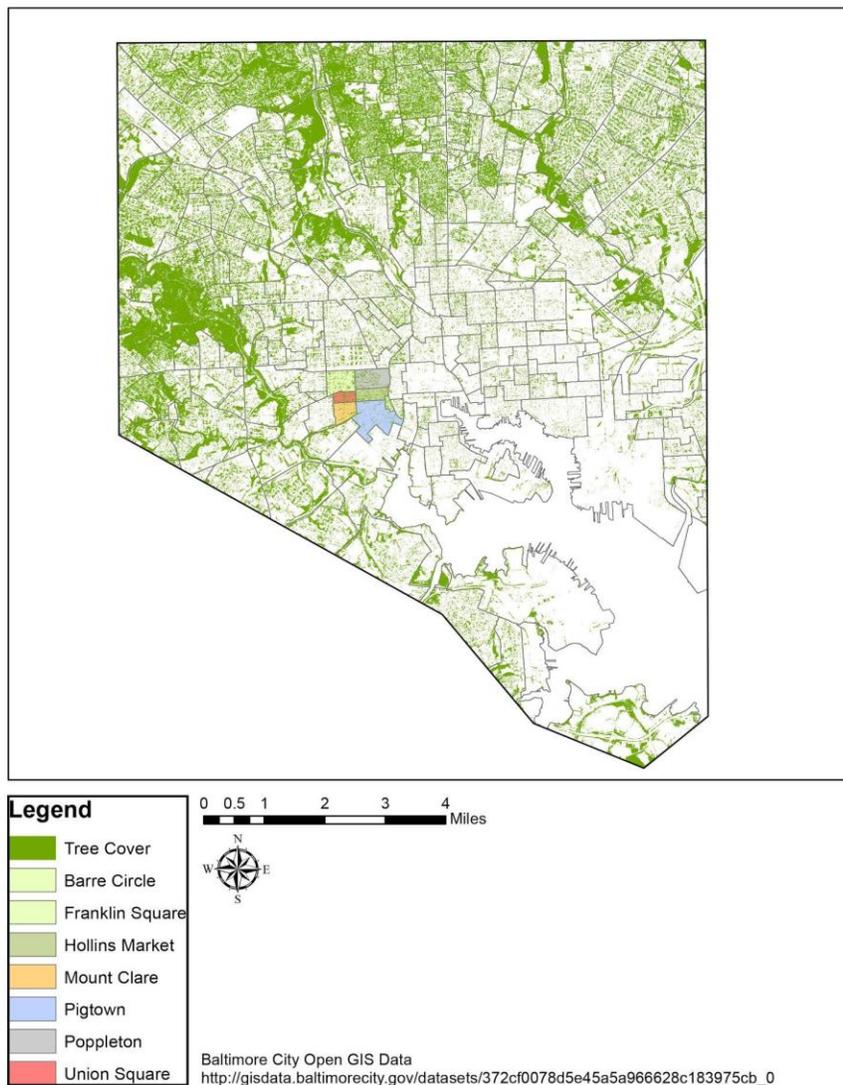


Source: "HCD-Illegal Dumping" Data.Gov City of Baltimore 311 Service Requests, last updated April 09 2015.

Tree Canopy

Mapping shows that the SWP area does not contribute a large portion of the overall Baltimore tree canopy and its tree cover is much less dense than that of the entire City. This indicates that there is a need for the SWP area to increase its tree cover to work toward the City's goal of 40 percent cover by 2037. Many of the existing trees in the SWP area are located on private property in front and back yards, while others are street trees in residential areas.

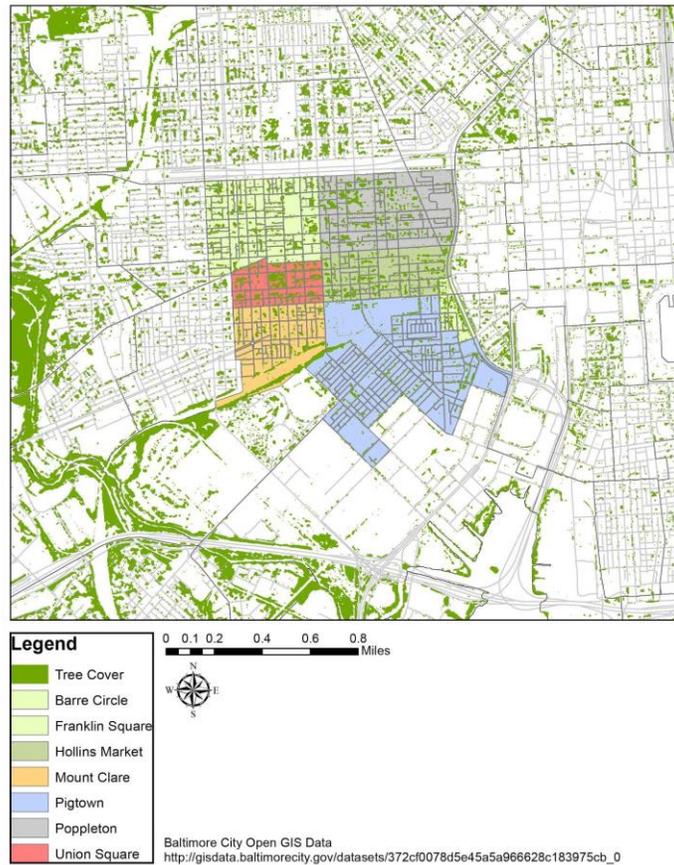
Baltimore Urban Tree Canopy



Areas with the most dense tree cover include the open spaces adjacent to the B&O Railroad, the Union Square Park, and the lot of the Francis M. Wood High School. Areas with the least dense tree cover

include the residential area to the east of North Fremont Avenue in Poppleton, the parking lot and large scale commercial buildings at the intersection of South Carey Street and West Pratt Street in Pigtown, and the areas in southeast and southwest Pigtown. Commercial-industrial uses make up most of the land use with companies like Housewerks Salvage, ABC Supply Co., and Capital Lighting and Supply.

SW Baltimore Urban Tree Canopy

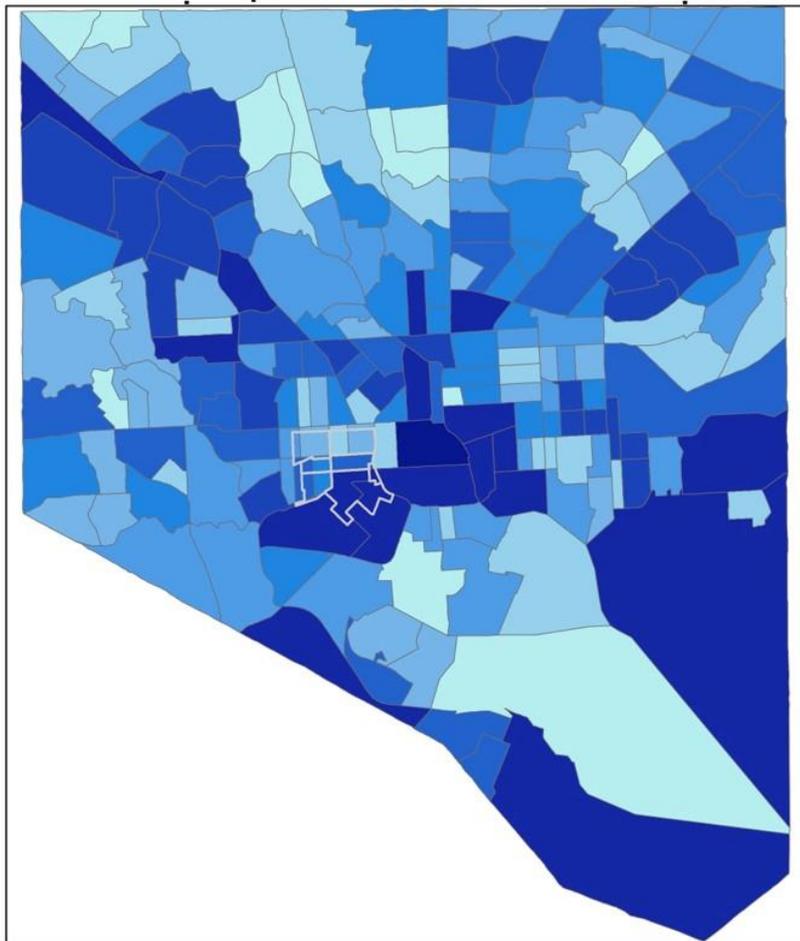


Tree planting should therefore be encouraged in these areas, especially in Pigtown which, according to the data, faces high crime rates, low overall household income, the most lights out service requests, and the poorest street conditions. Medians can be built in the parking lot in which trees can be planted, and tree plantings can help boost the neighborhood's morale by giving it a new character by providing shade, color, and texture. Overall, while trying to maintain and increase the SWP tree canopy, trees should be planted around homes to help increase property values, vacant lots should be used to create gardens (as SWP has already begun to do) and neighborhood residents should be recruited for upkeep of the parks.

Crime (Quantity in Baltimore and Southwest Baltimore)

These maps revealed that the amount of crime in Southwest Baltimore is similar to other parts of the City with amounts that fall in the middle of the low-to-high scale. It should be noted that the Pigtown neighborhood shows the highest quantity of crimes for Southwest Baltimore, but that is because the census tract includes areas outside of Pigtown to the south, like Camden.

Baltimore Crime in 2014 per Census Tract



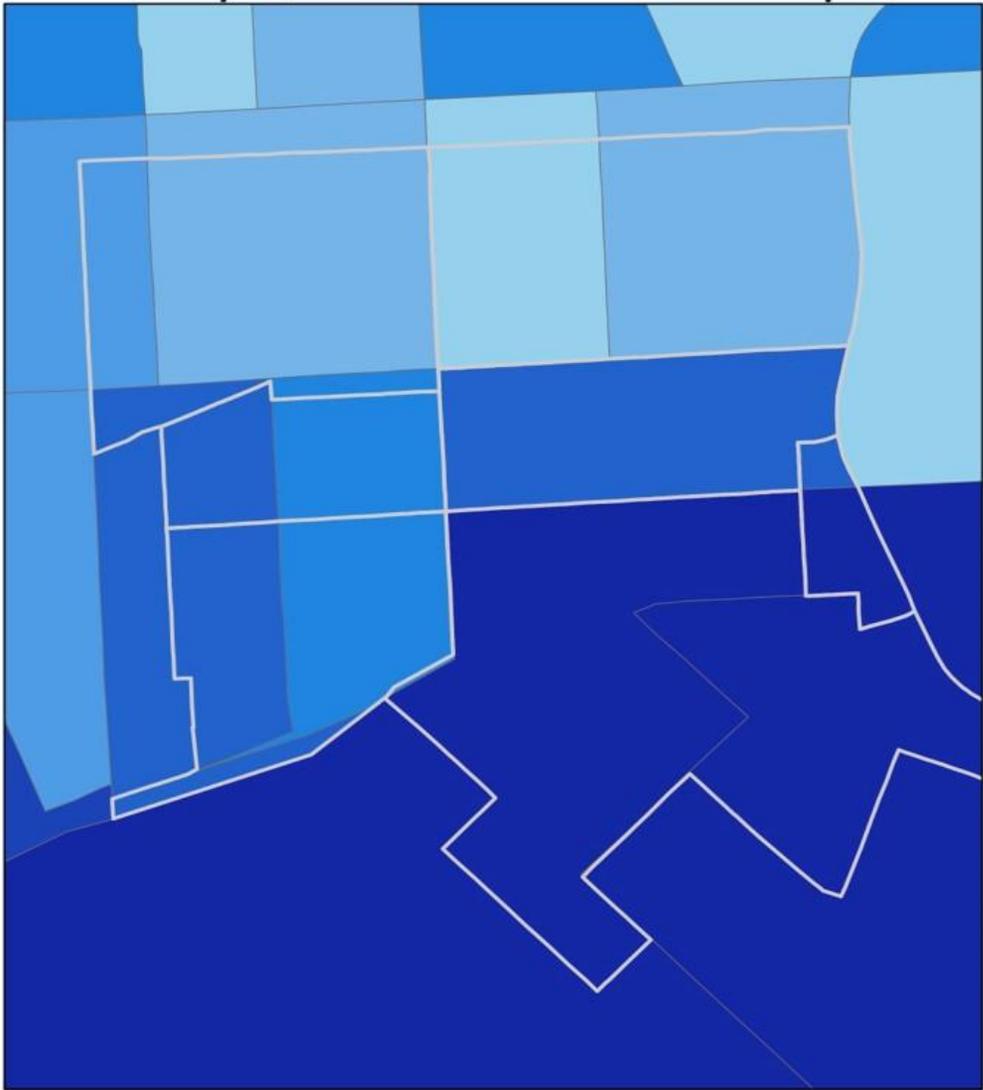
Amount of Crimes	
34 - 70	Lightest Blue
71 - 122	Light Blue
123 - 160	Medium-Light Blue
161 - 197	Medium Blue
198 - 245	Dark-Medium Blue
246 - 302	Dark Blue
303 - 396	Very Dark Blue
397 - 689	Darkest Blue
690 - 1543	Black

0 0.5 1 2 3 4 Miles



Source: https://data.baltimorecity.gov/d/wsfq-mvij?category=Public-Safety&view_name=BPD-Part-1-Victim-Based

Southwest Baltimore Crime in 2014 per Census Tract



Amount of Crimes

34 - 70
71 - 122
123 - 160
161 - 197
198 - 245
246 - 302
303 - 396
397 - 689
690 - 1543

0 0.05 0.1 0.2 0.3 0.4 Miles



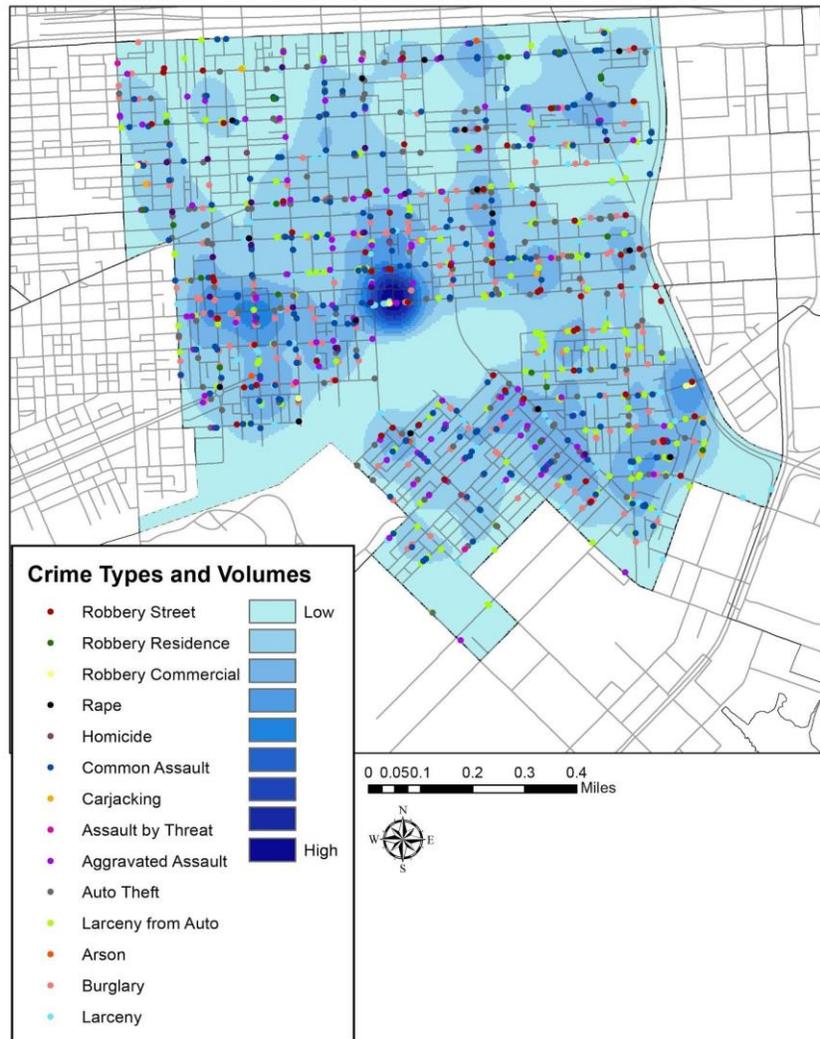
Source: https://data.baltimorecity.gov/d/wsfq-mvij?category=Public-Safety&view_name=BPD-Part-1-Victim-Based

Crime (Types in Southwest Baltimore)

On the following crime-by-type map, no clear trends emerge about what types of crime occur where.

There are clusters where certain crimes occur, such as the south border of Barre Circle where a 7/11 on Washington Boulevard was the site of numerous crimes. The Mt. Clare Shopping Center and the intersection of West Pratt and South Carey Streets are also crime clusters. Common Assaults and Assaults are the most frequent crimes. Street Robbery is also common, but it was spread throughout the neighborhood. From the data available, there is no way to tell which crimes occurred in homes and which crimes occurred on the streets.

Crime Types Overlaid with Density of Crime in Southwest Baltimore-2014

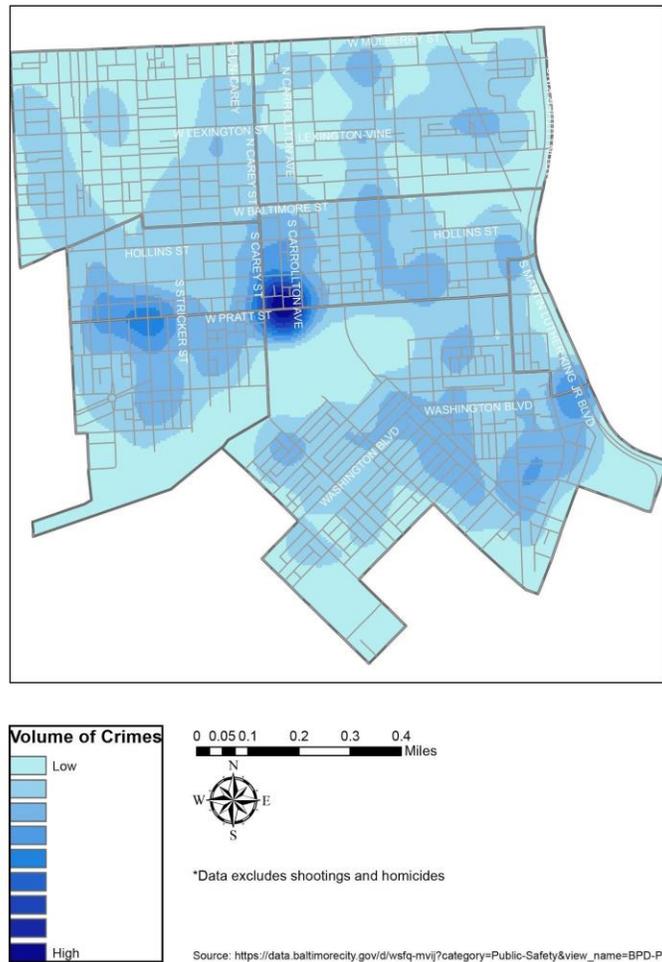


Open Baltimore
<https://data.baltimorecity.gov/browse?q=crime&sortBy=relevance&utf8=%E2%9C%93>

Crime ("Hot spots" in Southwest Baltimore)

Like the crime-by-type map, the kernel density maps showed concentrations of crime at the intersection of West Pratt and South Carey Streets. This intersection has a cluster of commercial businesses, including: a Rent-a-Center, Price Rite, Family Dollar, and Capital One Bank. This suggests that areas dominated by commercial businesses have higher crime rates as opposed to mixed use or primarily residential areas.

Density of Crime in Southwest Baltimore- 2014

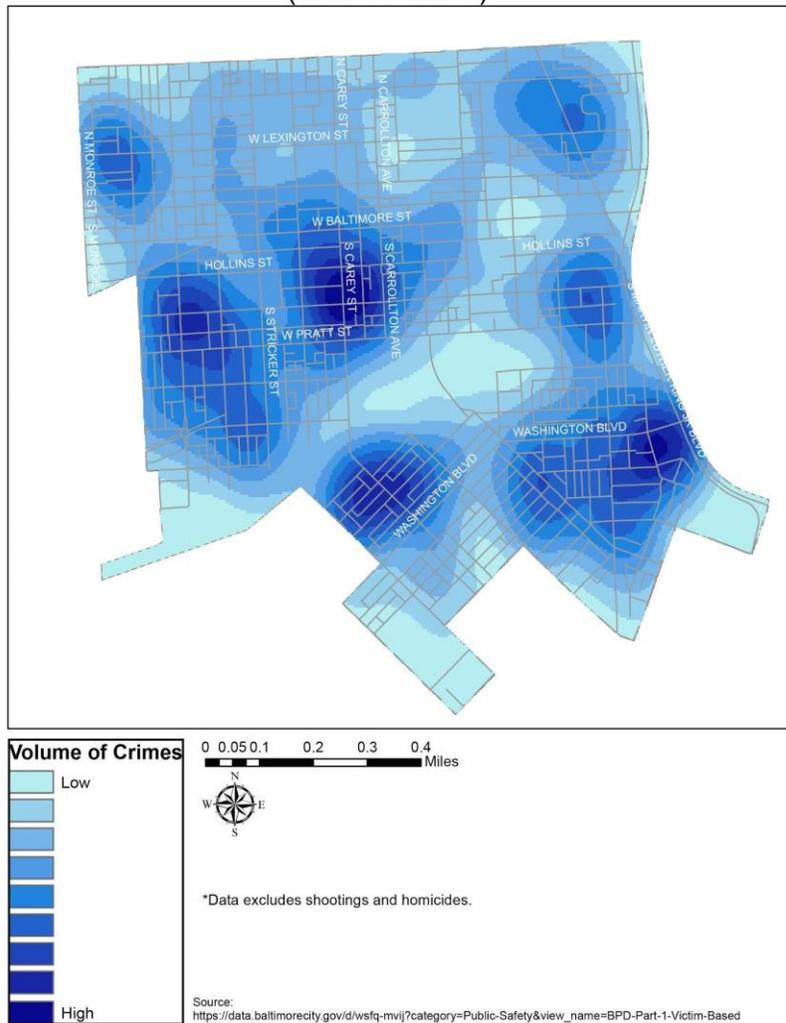


Other areas with high concentrations of crime are in the southeast and southwest areas of Southwest Baltimore. When compared with City vacancies and 311 light out service requests, these findings indicate that the three variables are related. The southern neighborhoods, namely Pigtown, Mount Clare and Barre Circle have been more vulnerable to crime occurrences due to poor street lighting and vacant properties. These findings can also be applied to the southern parts of Hollins Market and Union Square.

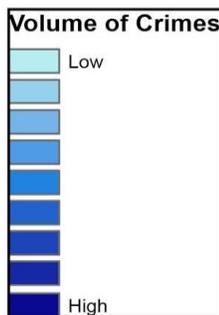
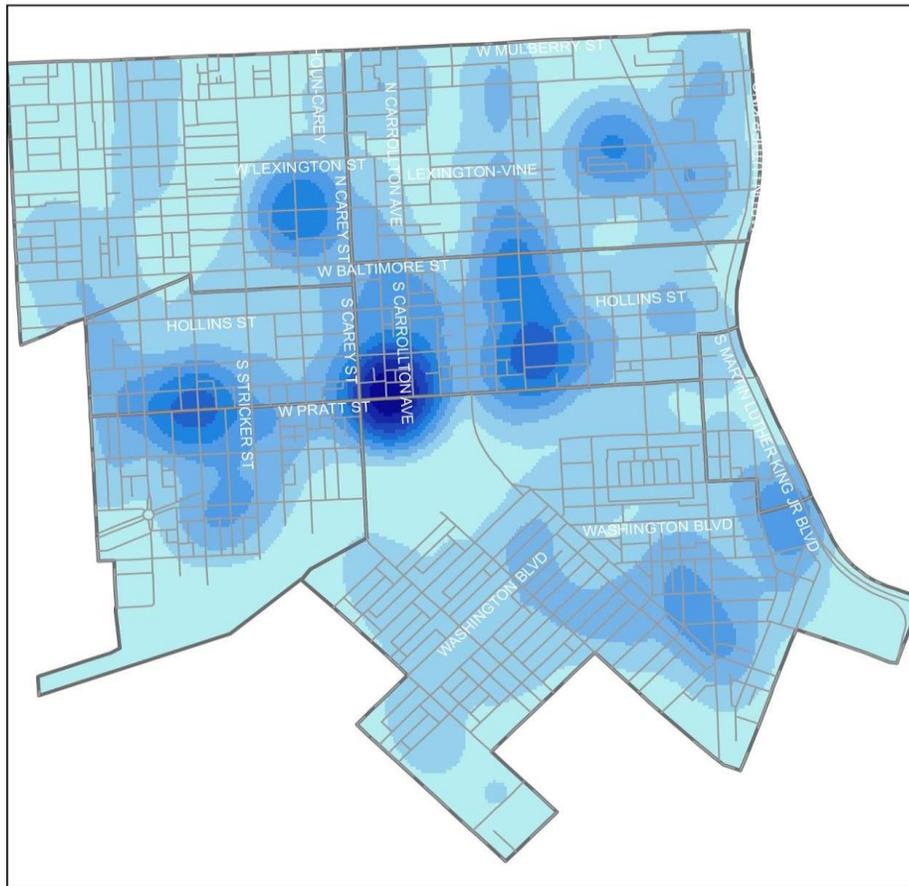
Crime ("Hot spots" in Southwest Baltimore by time of day)

With respect to the distribution of crime by time of day, the maps show that Southwest Baltimore is more at risk of crime occurrences late at night and early in the morning between 12:00am and 5:59am. The second most risky timeframe is between 6:00pm and 11:59pm. These findings are expected; studies have shown that most downtown crimes occur after midnight and generally, when the sun has gone down. The Southwest Baltimore area is safer during the early morning and afternoon between 6:00am and 11:59am. Crime occurrences are lowest between 12:00pm and 5:59pm.

Density of Crime in Southwest Baltimore-2014 (12am-5:59am)



Density of Crime in Southwest Baltimore- 2014 (6:00am to 11:59am)



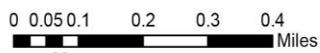
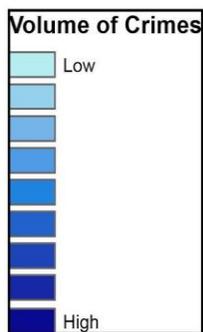
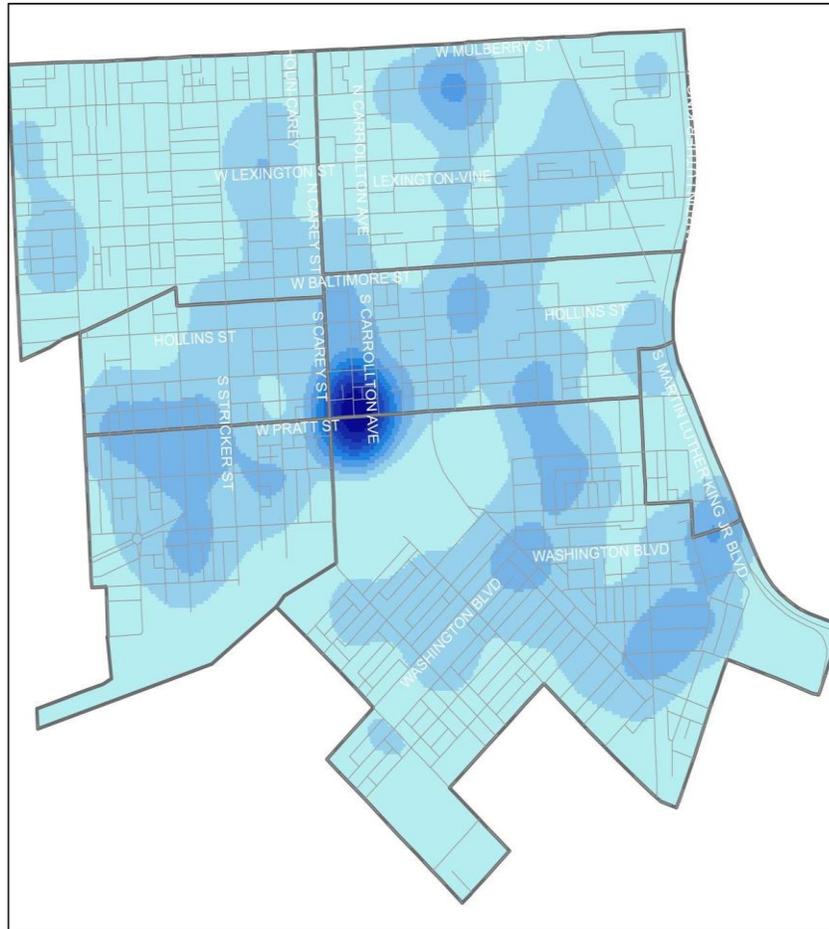
0 0.05 0.1 0.2 0.3 0.4 Miles



*Data excludes shootings and homicides

Source: https://data.baltimorecity.gov/d/wsfq-mvij?category=Public-Safety&view_name=BPD-Part-1-Victim-Based

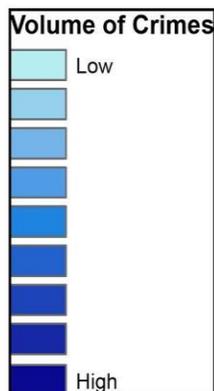
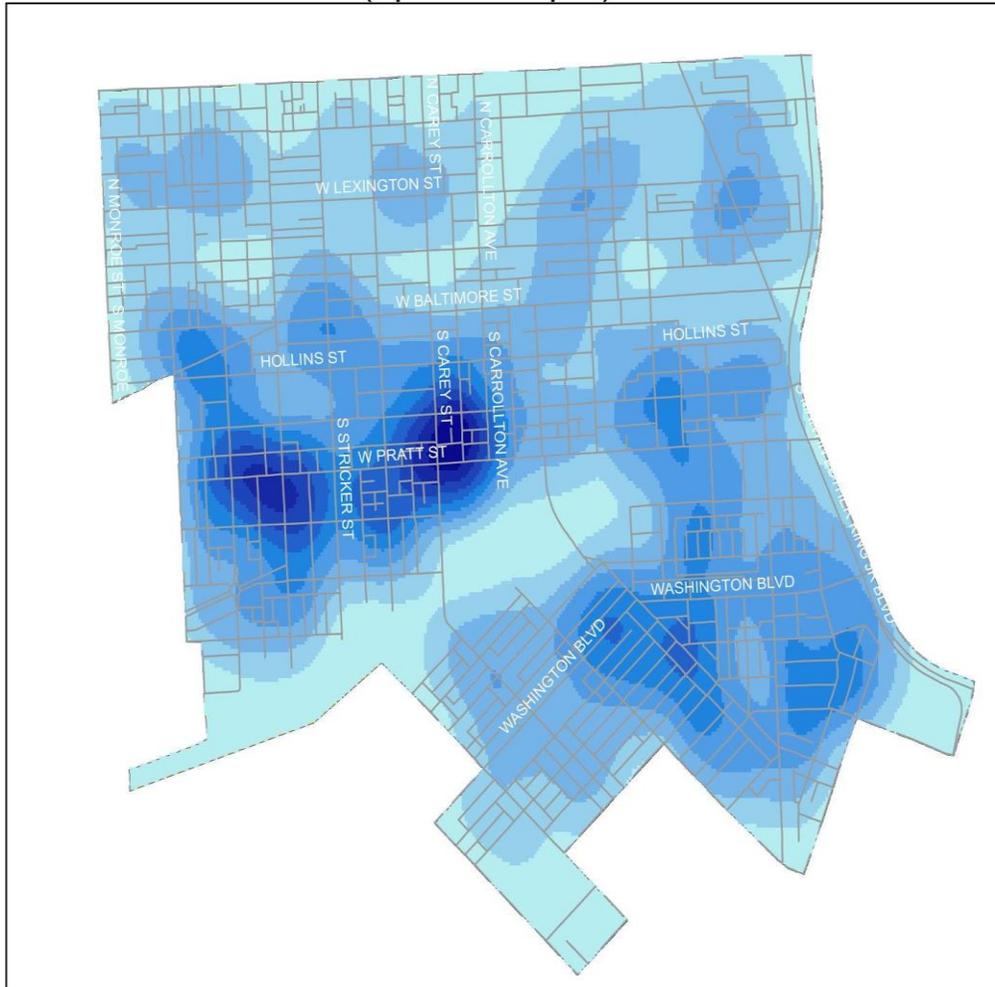
Density of Crime in Southwest Baltimore- 2014 (12:00pm to 5:59pm)



*Data excludes shootings and homicides

Source: https://data.baltimorecity.gov/d/wsfq-mvij?category=Public-Safety&view_name=BPD-Part-1-Victim-Based

Density of Crime in Southwest Baltimore-2014 (6pm-11:59pm)



0 0.05 0.1 0.2 0.3 0.4 Miles



*Data excludes shootings and homicides.

Source:
https://data.baltimorecity.gov/d/wsfq-mvij?category=Public-Safety&view_name=BPD-Part-1-Victim-Based

Recommendations

Baltimore City has limited resources and should carefully consider how they focus their repair and development efforts for declining areas. The City should focus on several strategies to promote greater health and safety in Southwest Baltimore.

- Baltimore should develop and implement a comprehensive transportation plan that includes complete streets measures to improve pedestrian and bicyclist safety, and create an environment that makes active transportation and transit appealing.
- To reduce illegal dumping in Southwest Baltimore, the City should consider making access to landfills more affordable for smaller construction and hauling businesses. The City also needs to provide equal services in terms of street repair and street light installation/repair to ensure that low-income neighborhoods receive the same benefits as high-income neighborhoods, and could explore more cost-saving techniques to provide these services. However, to eliminate street trash, properly repair all roads, and provide adequate street lighting, the City should encourage economic development to attract and retain residents, which will encourage redevelopment and property rehabilitation in the area.
- Instead of simply increasing police presence in certain problem areas, the City should prioritize retraining Baltimore police and fostering programs like Safe Streets throughout the City to reduce incidents of violent crimes³⁸ and restore the relationship between communities and the police. According to the 2010 Justice Policy Institute report, “A Capitol Concern: The disproportionate impact of the justice system on low-income communities in D.C.,” investing in front-end services that prevent high-risk individuals from entering the justice system is more effective at improving public safety and promoting community well-being than traditional policing. In addition, the report states that to reduce the disproportionately high share of people of color in the criminal justice system and use public resources towards the reduction of crime more efficiently, one strategy that could be used is issuing citations for minor offenses instead of arrests.³⁹

³⁸ <http://www.baltimoresun.com/news/maryland/crime/blog/bs-md-ci-safe-streets-20150601-story.html>

³⁹ <http://www.justicepolicy.org/news/1909>

Future Research

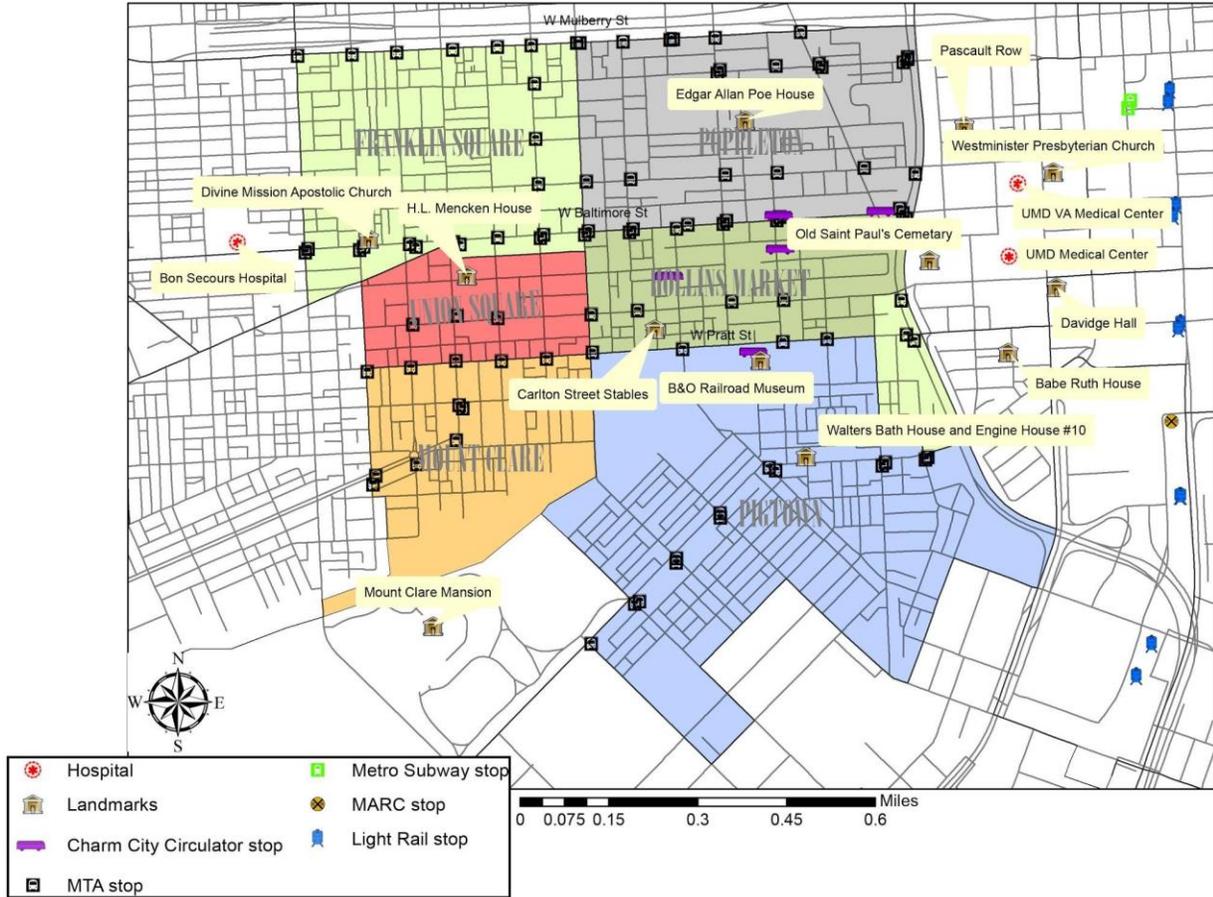
- Improve Neighborhood Survey data collection (particularly formatting to make mapping easier) through the development of a Crowdsourced Reporter ArcGIS Web Application. Add maps for other issues reported in the neighborhood surveys and 311 service requests including: sidewalk conditions, additional trash data, and signs.
- Map geographic barriers around the SWP area to highlight areas of isolation and inaccessibility.
- Map food deserts because access to healthy food outlets is an important health indicator. Compare maps of alcohol outlet density to crime.⁴⁰
- Map the per capita incarceration rate per block group or neighborhood, and compare the findings to other Baltimore neighborhoods.

⁴⁰ <http://www.rewritebaltimore.org/pdf/Alcohol%20Outlet%20Density%20Reduction.pdf>

Appendix

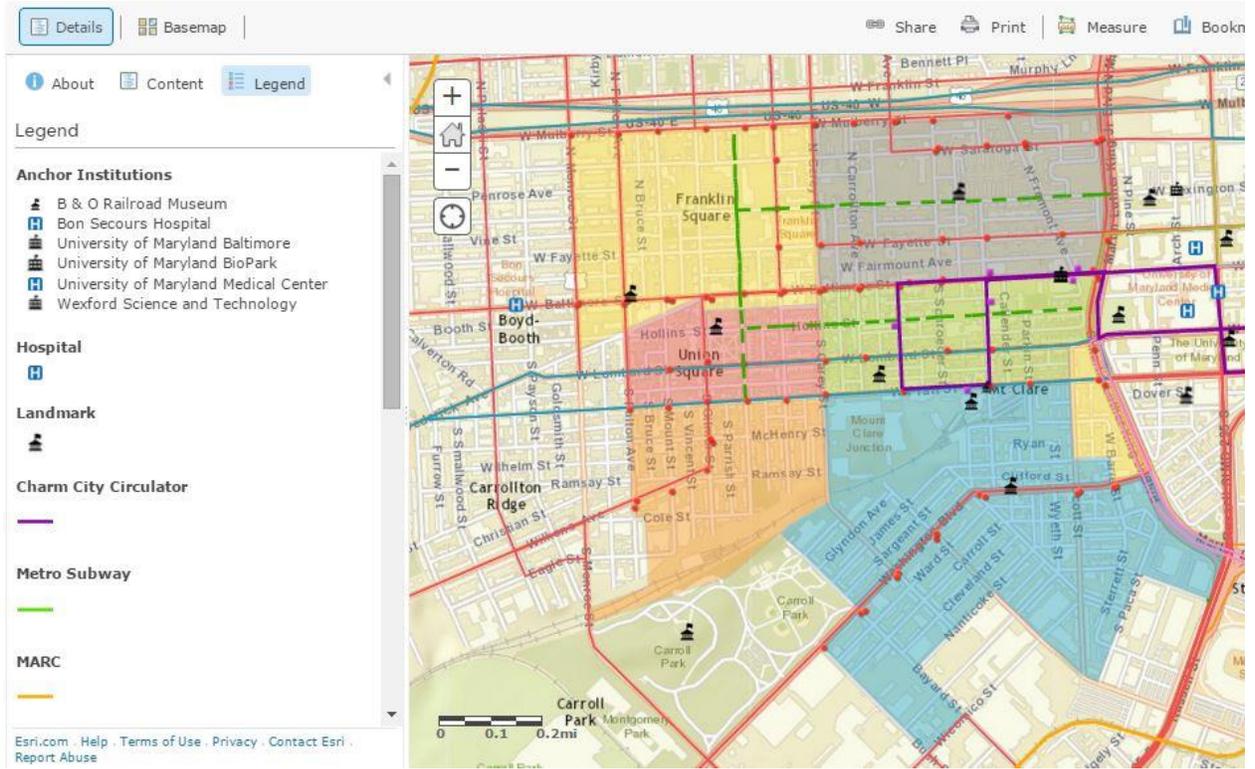
Appendix 1 Landmarks GIS Map

SWP Transit Stops and Institutions



Appendix 2 Transit and Landmarks Online Map

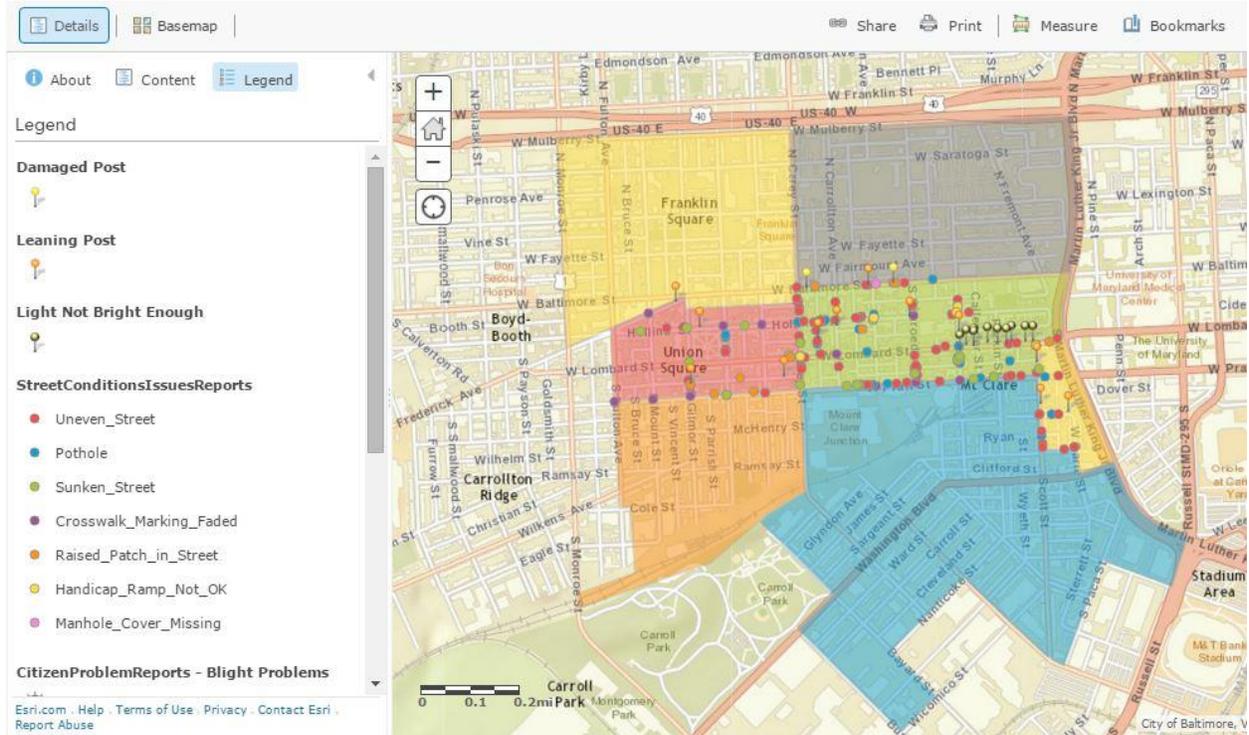
ArcGIS ▾ SWP Transit & Landmarks



<http://www.arcgis.com/home/webmap/viewer.html?webmap=91d0f178d6e24d51bd7ea8d8a7fe4629>

Appendix 3 Street Conditions Online Map

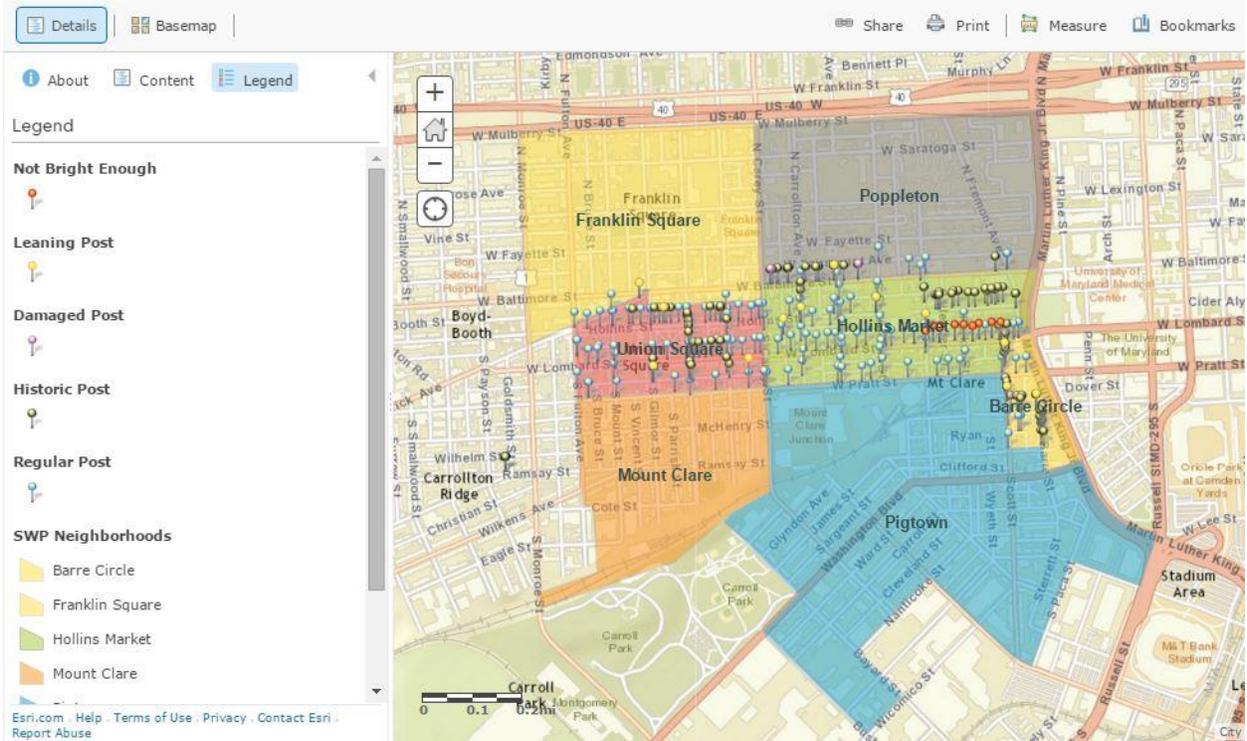
ArcGIS ▾ SW Baltimore Neighborhood Survey



<http://www.arcgis.com/home/webmap/viewer.html?webmap=2983a92918e24f758d78c43f4be9b755&extent=-76.6473,39.2804,-76.6237,39.2926>

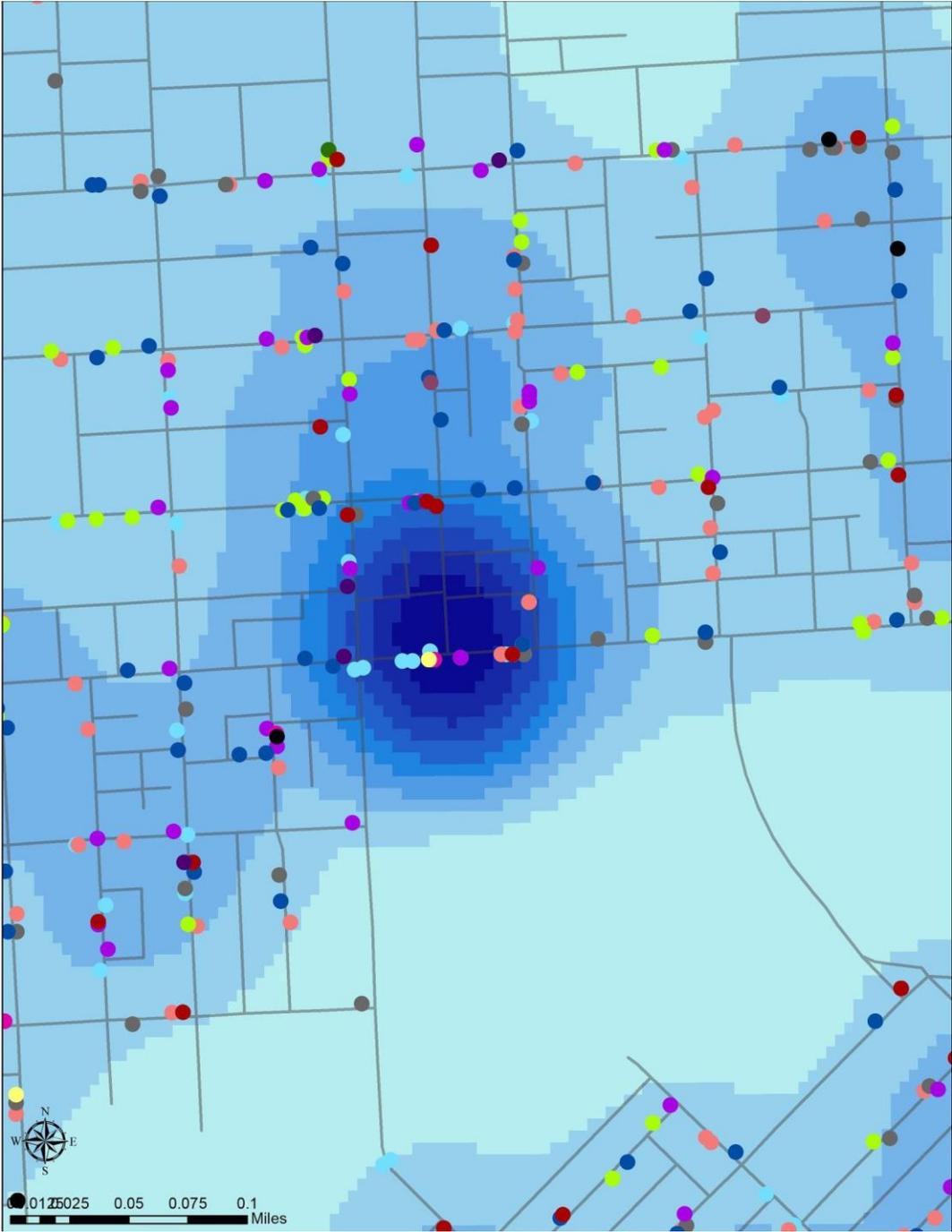
Appendix 4 Street Lights Online Map

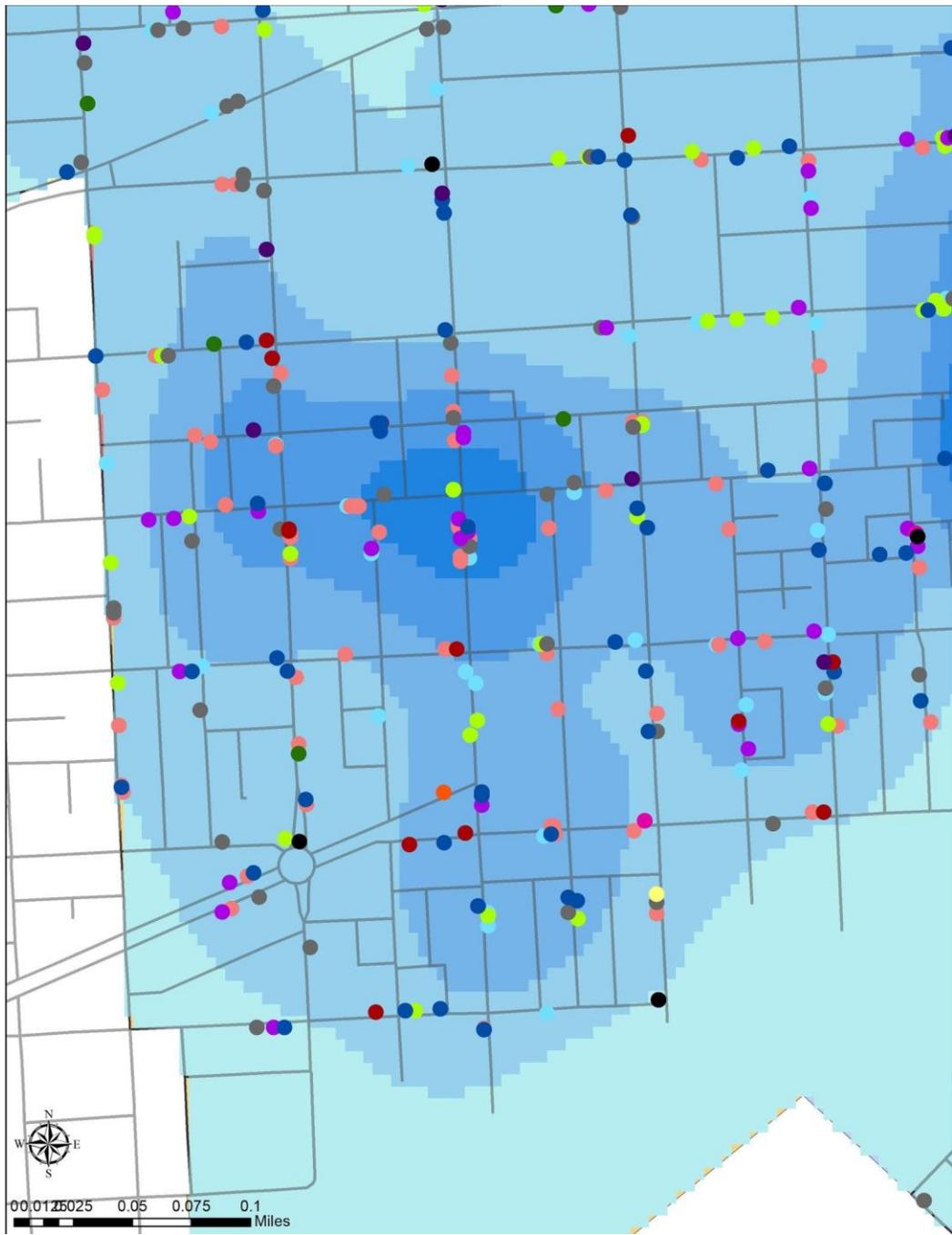
ArcGIS ▾ SWP Street Lights Survey

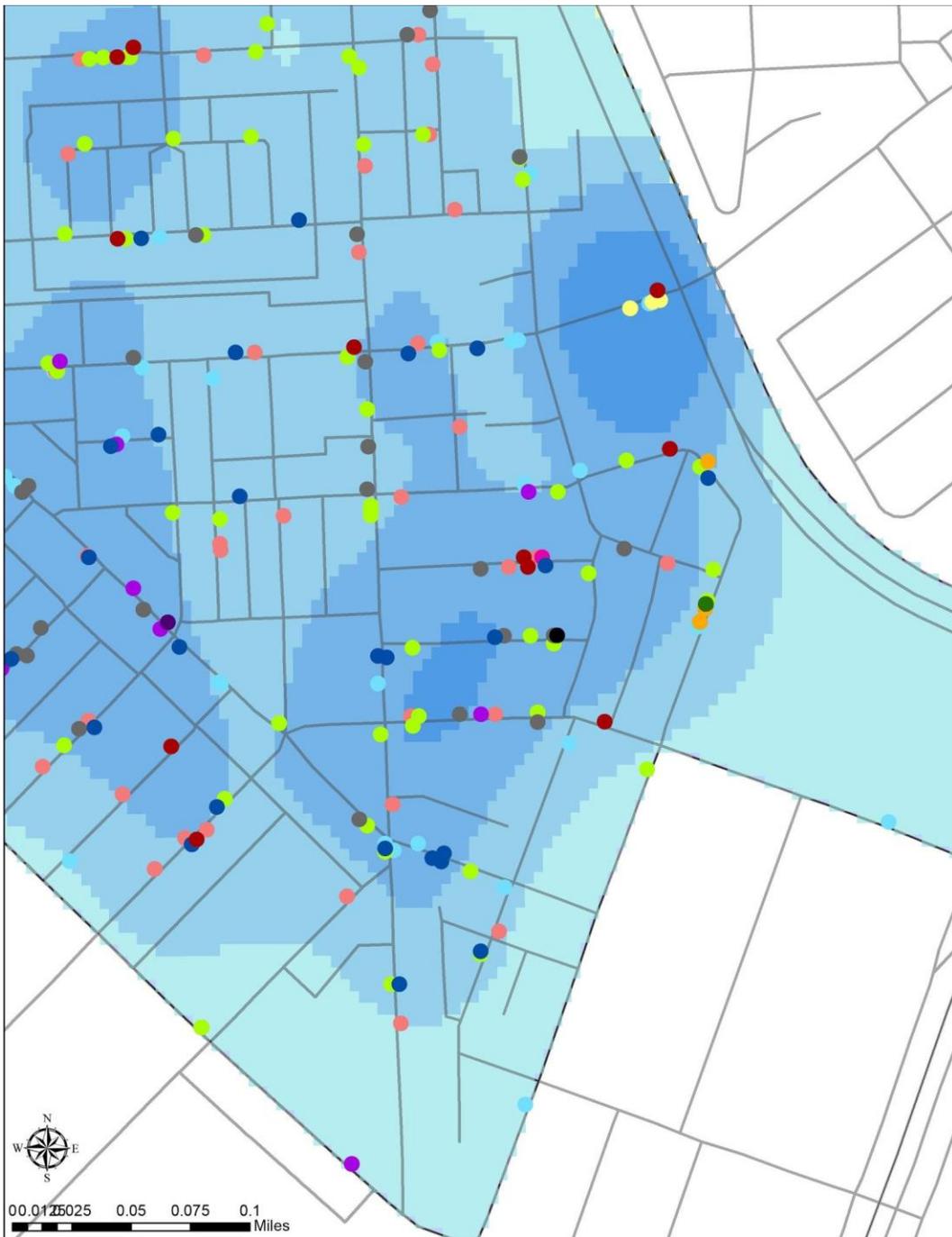


<http://www.arcgis.com/home/webmap/viewer.html?webmap=9fe4694de0b34a73954820888b563877>

Appendix 5 Zoomed in Crime Density Overlaid by Type Maps

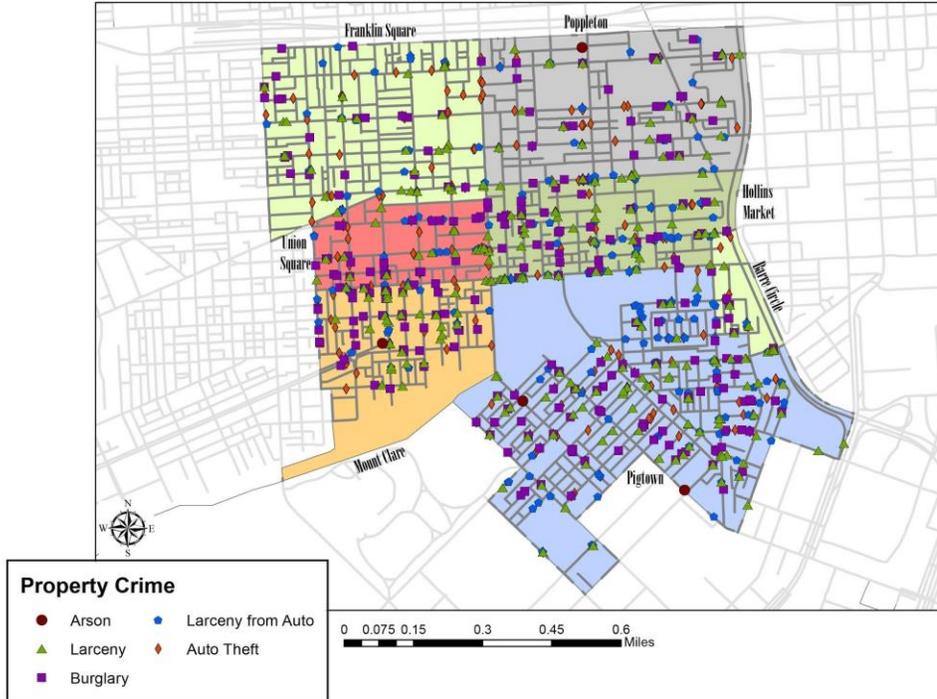






Appendix 6 Property and Violent Crime Dot Density Maps

Property Crime in Southwest Baltimore-2014



Southwest Baltimore Violent Crime- 2014

