

# Rapid Health Impact Assessment: Tide to Town Trail Savannah, GA

CP 6243: Health Impact Assessment  
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# Executive Summary

The Tide to Town Rapid Health Impact Assessment (HIA) was conducted as part of a studio assignment at Georgia Institute of Technology (Georgia Tech). The purpose of the HIA is to evaluate the potential health and social impacts of the proposed Tide to Town trail in Savannah Georgia. The Tide to Town trail is a 30-mile circular walking trail within the City of Savannah proposed by Healthy Savannah, a community organization championing healthy communities. The trail is designed to re-unite the city and its residents with various waterways throughout the city. Graduate students led by Dr. Nisha Botchwey at Georgia Tech worked with Healthy Savannah to prepare a rapid health impact assessment of the project. The HIA focuses on three themes: residential displacement due to flooding; connectivity and physical activity; and the relationship between housing, jobs, and social cohesion. These topic areas were chosen based on previous health impact assessments of trails.

Displacement due to flooding centers on the potential impact of sea-level rise on properties near the trail. The following recommendations are presented to deal with potential flooding in the study area. First, stakeholders in Savannah including the Department of Public Works and Water Resources should identify stormwater management projects to complete within 50 years. Second, researchers recommend developing housing strategies to curb displacement that results from repetitive flooding. Finally, identify relocation destinations for residents that may be displaced.

The second area of focus for the rapid HIA is street connectivity and physical activity. Ultimately, this section focuses on the health impacts that result from improved utilitarian and recreation physical activity near and on the trail. Three recommendations are suggested. Two of the recommendations are site specific as they focus on urban design mitigations to sound and visual distractions. The final recommendation is for stakeholders in the Tide to Town trail to conduct a street audit in neighborhoods intersecting the trail to identify the best locations for trail access points.

The final pillar of the Tide to Town rapid HIA is housing, jobs, and social cohesion. The overarching recommendation is to co-design a community benefits agreement with the residents who will be impacted by the trail. The process can allow stakeholders to develop health equity metrics for the Tide to Town project, as well as establish policies and programs for living wages, workforce development, and affordable housing. Finally, stakeholders should explore shared equity models between private citizens and the Tide to Town Trail.

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# Introduction

The Tide to Town trail is a proposed 30-mile walking and bike trail that stretches from downtown Savannah to the marshes and waterways along the coast further south. This Rapid Health Impact Assessment (HIA) on Savannah's Tide to Town is intended to draw attention to aspects of the project as it pertains to the health and well-being of the existing population; as well as provide context and information for Healthy Savannah to conduct more robust assessments in particular areas as identified. As a similar trail project, the Beltline HIA provides a useful framework for assessing the health impacts of citywide trails and green infrastructure projects.

## **Demographics:**

The City of Savannah is one of Georgia's oldest cities. Established as a colony in 1733 when British colonizers overtook Native American settlers, Savannah grew prosperous as British settlers traded and sold cotton and rice grown by enslaved Africans across the Savannah River to older colonies in South Carolina. In modern times it is known for great restaurants, shopping, and tourist attractions including many historic buildings and town-square design by James Oglethorpe. According to the 2017 American Community Survey the total population in Savannah was 146,444 persons. Savannah represents nearly half of the population in Chatham County Georgia. It is Georgia's fifth largest city. In 2017 the median household income in Savannah was \$64,177 which is 21% greater than the median household income of Georgia for 2017 which was \$52,977. The maps below show the distribution of median household incomes (Figure 1), poverty rates (Figure 2), and racial/ethnic demographics (Figure 3) within the HIA study area inside the City of Savannah. The study area includes 43 census tracts which are within ½ mile of the Tide to Town trail. In each map there will be a section of Downtown Savannah not shown, that area is not within the study area as it is more than one half mile from the trail.

# Median Household Income (ACS 2017- 5 yr.)

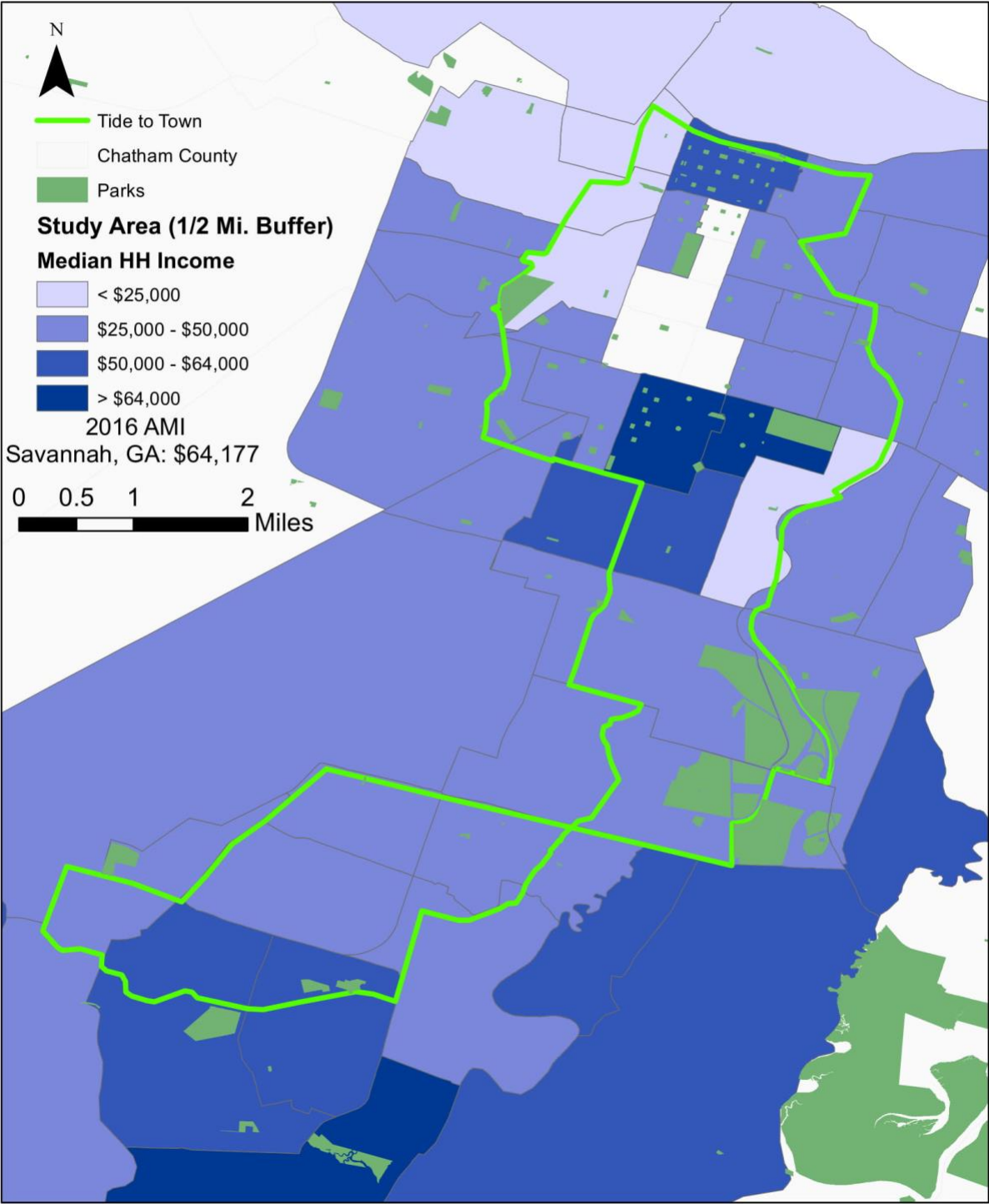
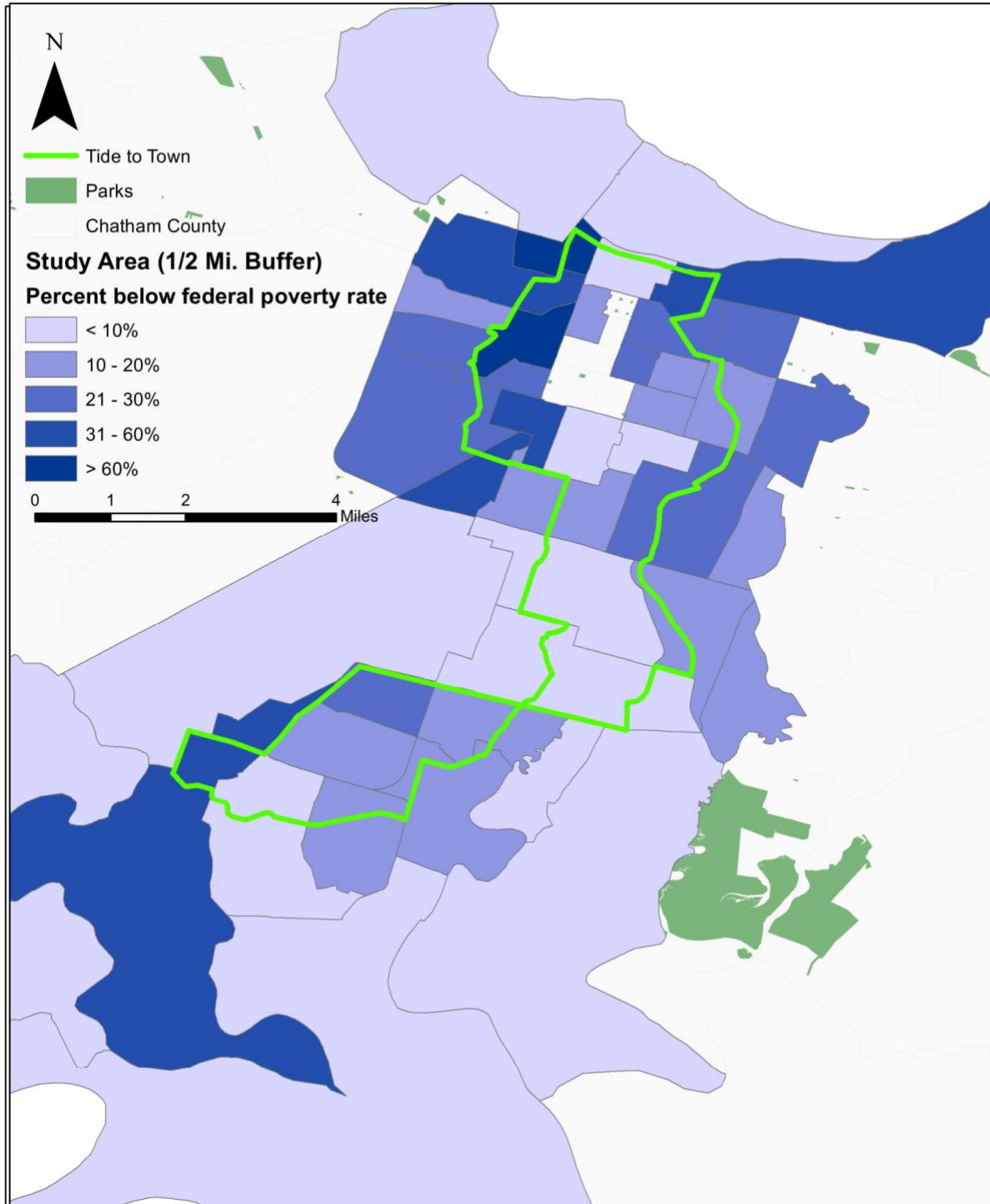


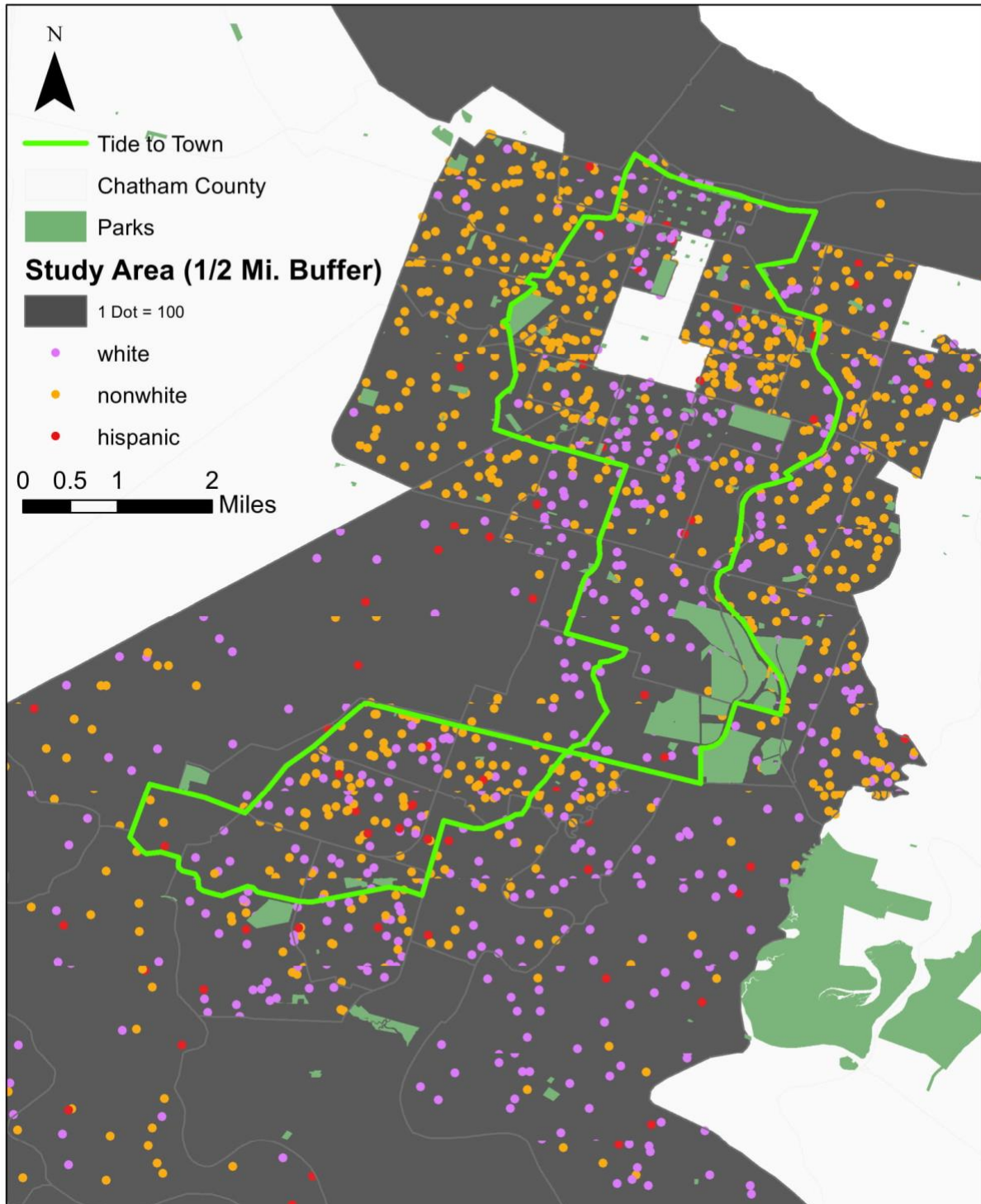
Figure 1. Median household income within 1/2 mile of proposed Tide to Town Trail.

## Poverty Rate (ACS 2017- 5 yr.)



**Figure 2.** Poverty rates within 1/2 mile of proposed Tide to Town Trail.

## Population by Race and Ethnicity (2017 ACS-5 yr.)



**Figure 3.** Race and ethnicity spatial distribution within 1/2 mile of proposed Tide to Town Trail.



# Screening

The screening step of a Health Impact Assessment is conducted to establish the value of conducting a health impact assessment for the particular project. This includes documenting whether it would be useful, timely, or appropriate. Screening also includes the identification of key populations and stakeholders who should be attended to in the HIA process.

The students in Dr. Nisha Botchwey's Health Impact Assessment course at the Georgia Institute of Technology elected to conduct the HIA on Tide to Town because of key health related issues related to major infrastructure projects. Many of these issues were identified in the Beltline HIA as well. Particularly, an increase in property values due to public-private-partnerships in infrastructure projects, which leads to concerns over affordable housing. Pedestrian connectivity was also identified as the placement of the loop could either maximize accessibility, or hinder it. Finally, there are environmental concerns that flooding and sea level rise may impact the development. Beyond the key health related issues, Tide to Town stakeholders, particularly Healthy Savannah, are open to the information; and additional information can be useful to the decision-making process.

# Scoping

The overarching issues that impacted health that were identified in the Beltline HIA included: 1) Timing of the Beltline's development activities, 2) Integrating the BeltLine in the fabric of the entire city, 3) Developing People-oriented Priorities, 4) Designing for all Users, and 5) Involving all Stakeholders. They also focused on five critical areas: 1) Access and Social Equity (to trails, to parks, to housing, transit, and healthy food), 2) Physical Activity, 3) Safety (injury and crime), 4) Social Capital, and 5) Environment (air quality, water resources, noise & vibration, and brownfields).

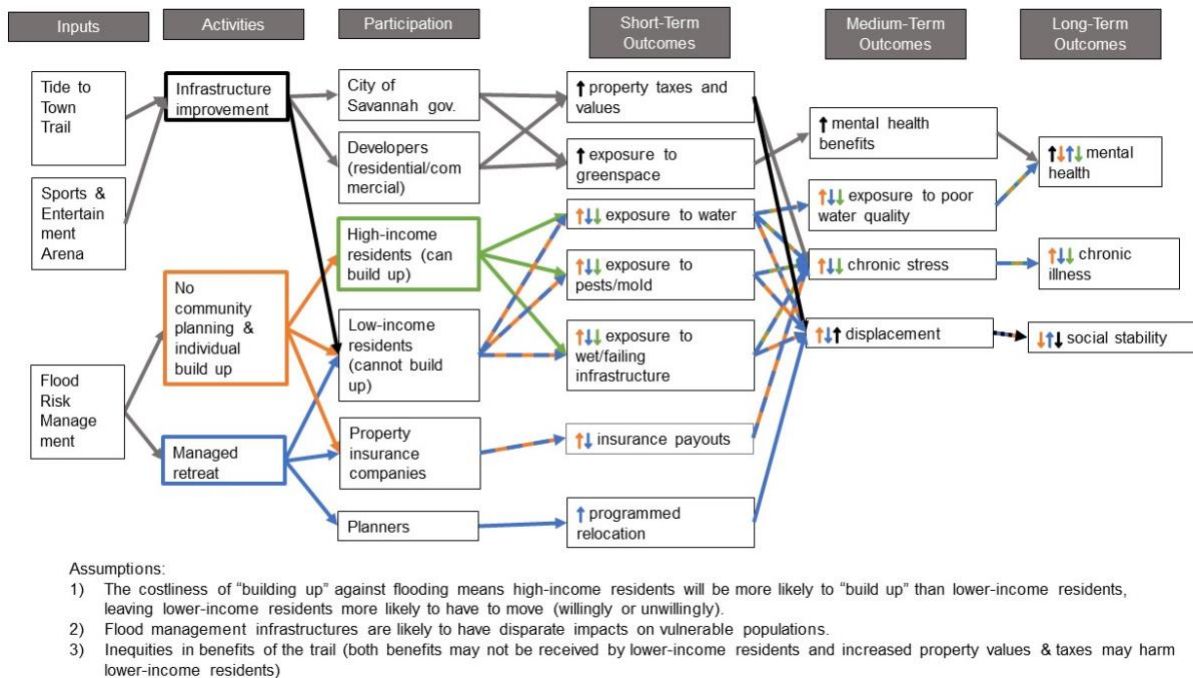
While the Beltline's HIA presented fairly robust analyses on each of the critical issue areas, the analysis and recommendations were not well synthesized with the overarching issues. This meant certain recommendations, therefore, remained vague, and/or inactionable (see Appendix B for an excerpt of the Beltline HIA's recommendations). Furthermore stakeholders were not identified who could be held accountable for key issues. The analysis might have benefited from another layer of synthesis to identify and prioritize cross cutting issues that could be targeted based on their connection to the identified critical issues (i.e., housing and safety) and alignment with an overarching issue (i.e., timing and/or integration).

Based on the framework offered by the Beltline's HIA along with the screening, the student team grouped closely aligned issues and created three cross cutting areas of analysis to the focus on:

1. Potential for impact of displacement due to flooding
2. Street connectivity and access to food and physical activity
3. Access to housing, social capital, and jobs

# Assessment

## Displacement due to Flooding



**Figure 4.** Logic model for displacement due to flooding.

### Responses to increasing flood risk: protection, accommodation, and retreat

Patterns in development and climate are increasing flood risks to populations in the US (Hauer et al., 2016, Wing et al., 2018). Common responses to increasing flooding are protection (e.g. seawalls), accommodation (e.g. elevation of homes), and retreat (e.g. relocation of households/communities out of flood prone areas). Given the costly nature of protection and accommodation, retreat may increasingly be an unavoidable option in light of the current climate and development trajectories (Stewart, 2018). This leads us to the first assumption applied in the flooding logic model above: that the costliness of protection/accommodation measures against flood risk means that high-income residents will be more likely to employ protection/accommodation measures against flooding leaving some form of retreat as the predominant option for low-income residents.

### Potential for displacement from flood management infrastructure

The nature of flood management infrastructure typically dictates that the infrastructure be located in low-lying areas and be of certain sizable footprint to mitigate an intended flooding event. The location and size of these flood management infrastructure being largely constrained by design foreshadows the potential for people or communities to be displaced for the proposed infrastructure. As an example from Georgia, the ongoing struggle between the neighborhood of

Peoplestown and the City of Atlanta depicts this tension between flood management and displacement of people. Spurred by severe flooding in 2012, the City of Atlanta implemented the Southeast Atlanta Green Infrastructure Initiative, a series of projects involving a variety of sewer capacity relief in the Peoplestown, Summer Hill, and Mechanicsville neighborhoods. In order to build the desired retention ponds and stormwater detention vaults, the City began utilizing its eminent domain powers to acquire the necessary land from residents of the neighborhoods in 2014.

An example of one woman's struggles against the City: *'the City offered 212,000 dollars for Jackson's home and gave the elderly woman sixty days to make a decision. "She's lived here for forty-seven years. She's lived in this community all her life. She's ninety-three years old, and you're talking about sixty days to figure out how to leave?" Dorsey said. Jackson's family fears what will happen if she has to move to another neighborhood where she doesn't have friends or support'* (Simonton, 2015). The use of eminent domain has upset residents and concerned citizens as many of the targeted properties are occupied by low-income people of racial minorities. In early 2020, the struggles between residents and the eminent domain powers still continue (Deere, 2020).

Eminent domain struggles for stormwater improvements have appeared in Savannah as well, with adversarial processes: *'Alderman Van Johnson likened the process to putting a gun on the table and then saying "let's negotiate"'* (Komanecky, 2019). The awareness of the fact that the nature of flood management infrastructure design necessitates certain locations and often sizable footprints that are likely to overlap with vulnerable populations is necessary to move forward in the development of robust communities. This nature has produced a pattern of injustice towards low-income communities, people of color, and migrant communities, not just in flood management infrastructure but green infrastructure as a whole (Anguelovski et al., 2019). A study in Philadelphia showed a trend of minority residents leaving gentrifying areas receiving green infrastructure and moving into neighborhoods where green infrastructure was not being invested in (Shokry et al., 2020). The post-Katrina New Orleans "green dot map" is an illustrative example of this pattern of injustice (Troeh, 2015). The map, released by the Bring New Orleans Back Commission, depicts areas for future park land displacing several low-lying neighborhoods with predominantly African American residents while sparing similarly damaged but predominantly white neighborhoods. This map infuriated residents so much that the plan was soon abandoned.

This leads to the second assumption applied in the logic model above: that the nature of flood management infrastructure means that flood management infrastructures are likely to have disparate impacts on vulnerable populations. With this interaction between flood management infrastructure and vulnerable populations, there is potential for the Tide to Town Trail footprint to intersect with flood management infrastructure, potentially displacing vulnerable populations. This potential calls for proactive flood risk management that could identify both future areas for flood management infrastructure and resolve current and future projects to minimize impacts on residents while addressing the flood risk management goals.

## **Health Impacts of Flooding**

Floodwaters can mobilize contaminants and pathogens and transport them, resulting in exposure. Repeated flooding without proper restoration can result in mold growth, exacerbating asthma, allergies, and other respiratory conditions. In a systematic review, Ahern et al. drew from 212 epidemiologic studies of health impacts of floods. Ahern et al. found that floods have the potential to cause death, injury, fecal-oral disease, vector-borne disease, rodent-borne disease, mental health, chemical exposure, and other neglected tropical diseases; however, the health impacts associated with a flood is influenced by the characteristics of a flood (e.g., scale, duration, suddenness of onset, location) and the affected population. Ahern et al. note that “[F]loods with the largest mortality impacts have occurred where infrastructures is poor and the population at risk has limited economic resources” (Ahern et al., 2005).

Of note, an association between mental health impacts and health has been documented across studies (Ahern et al., 2005). For example, in a study on children and families displaced by Hurricanes Katrina and Rita, Abramson et al. found that the displaced had lost stability, income, and security; lost insured status and welfare due to inter-state differences; and had increased negative mental health outcomes (Abramson et al., 2006). The displaced children also had high rates of chronic health conditions (including asthma, behavioral/conduct problems, developmental delay, physical impairment, and learning disabilities) and poor access to care post displacement (Abramson et al., 2006).

Indeed, events like Hurricane Katrina are extraordinary, as Uscher-Pines 2009 notes in a systematic review of health impacts of relocation post-disaster, with large variability in disaster characteristics making generalizing the health impacts of relocation more difficult due to the potential for type or magnitude of the disaster of enhance or minimize the relocation effects (Uscher-Pines 2009). However, Uscher-Pines notes that “[T]he literature suggests that relocated individuals are more likely to experience psychological morbidity post-disaster” (Uscher-Pines 2009).

### **Health Impacts of Green Infrastructure**

Green infrastructure projects have been noted for their tendency to create disparities (Immergluck & Balan, 2017, Kwon et al., 2017, Loughran, 2014; Smith et al., 2016) which likely extend to the health impacts of green infrastructure projects. Anguelovski et al. argue that low-income communities, people of color, and migrant communities are among the social groups most likely to be displaced by green infrastructure (Anguelovski et al., 2019). Rigolon and Németh demonstrate how green infrastructure can gain political support in the name of sustainability, but, concurrently, the process of planning these projects can procedurally neglect cross-sectoral efforts that would be necessary to avoiding disparities from these green infrastructure projects (Rigolon and Németh, 2018). Certainly, green infrastructure projects can provide health benefits to users, but these benefits may be disproportionately distributed across varying socioeconomic status (Zenk et al., 2015).

### **Health impacts of property buyouts**

Despite the lack of studies on health impacts of property buyouts, the social determinants of health provide a helpful perspective of how the impacts of relocation propagate into downstream health outcomes. Particular health determinants involved with housing include “housing, source of livelihood, social capital, cultural identity and traditional knowledge, land security, and access to energy, social support services, and education” (Dannenberg et al. 2019).

## **Assessment of Flooding in Savannah, GA**

### *Repetitive loss properties*

Repetitive loss properties are insurable properties for which more than one claim of more than \$1,000 was paid by the National Flood Insurance Program (NFIP) with a period between when the claims were paid being between 10 days to 10 years, since 1978. Repetitive loss properties represent a significant financial burden on the NFIP, with almost \$9 billion (one-fourth of all NFIP payments) paid to repetitive loss properties. Progress has been made in floodplain management, and, as a result, many of these structures are no longer insured. However, the proportion of insured repetitive loss properties are expected to increase in the future (Chatham County, 2018).

The 2017 FEMA data show 4 identified repetitive loss areas (areas were defined using the 2017 NFIP Community Rating System Manual) with 9 total repetitive loss properties and 47 total properties near the proposed Tide to Trail path. In interviews, property owners consistently cite stormwater drainage issues as causes for recurring flooding and a number of owners reported flooding from Hurricane Irma (Chatham County, 2018).

### *Who are property buyouts likely to affect?*

Mach et al. 2019 attempt to identify broader patterns in property buyouts by analyzing data from more than 40,000 FEMA funded voluntary buyouts of flood-prone properties across the US. Mach et al. found that although counties with higher population and income were more likely to administer property buyouts, the bought-out properties were located in areas with relatively lower population, income, education levels, lower English language proficiency, and greater racial diversity (Mach et al., 2019). Notably, many of these factors are highly relevant to acclimation after displacement. This broad pattern found across nationwide data highlights the need for awareness of and the need to address the equity of buyout implementation and outcomes in hazard-prone areas.

*Savannah social vulnerability to hazards*

Recognizing that the imbalance between vulnerability and resources has a multiplicative effect on the risk associated with hazard and the fact that the impact of social vulnerability has largely been overshadowed by management of physical hazards in disaster management, the US Center for Disease Control (CDC) developed a Social Vulnerability Index (SVI) for use in disaster management (Flanagan et al., 2011). The SVI is intended to capture vulnerability through 15 variables collected through the U.S. census organized under 4 themes (Table 1): socioeconomic status, household composition and disability, minority status and language, and housing and transportation.

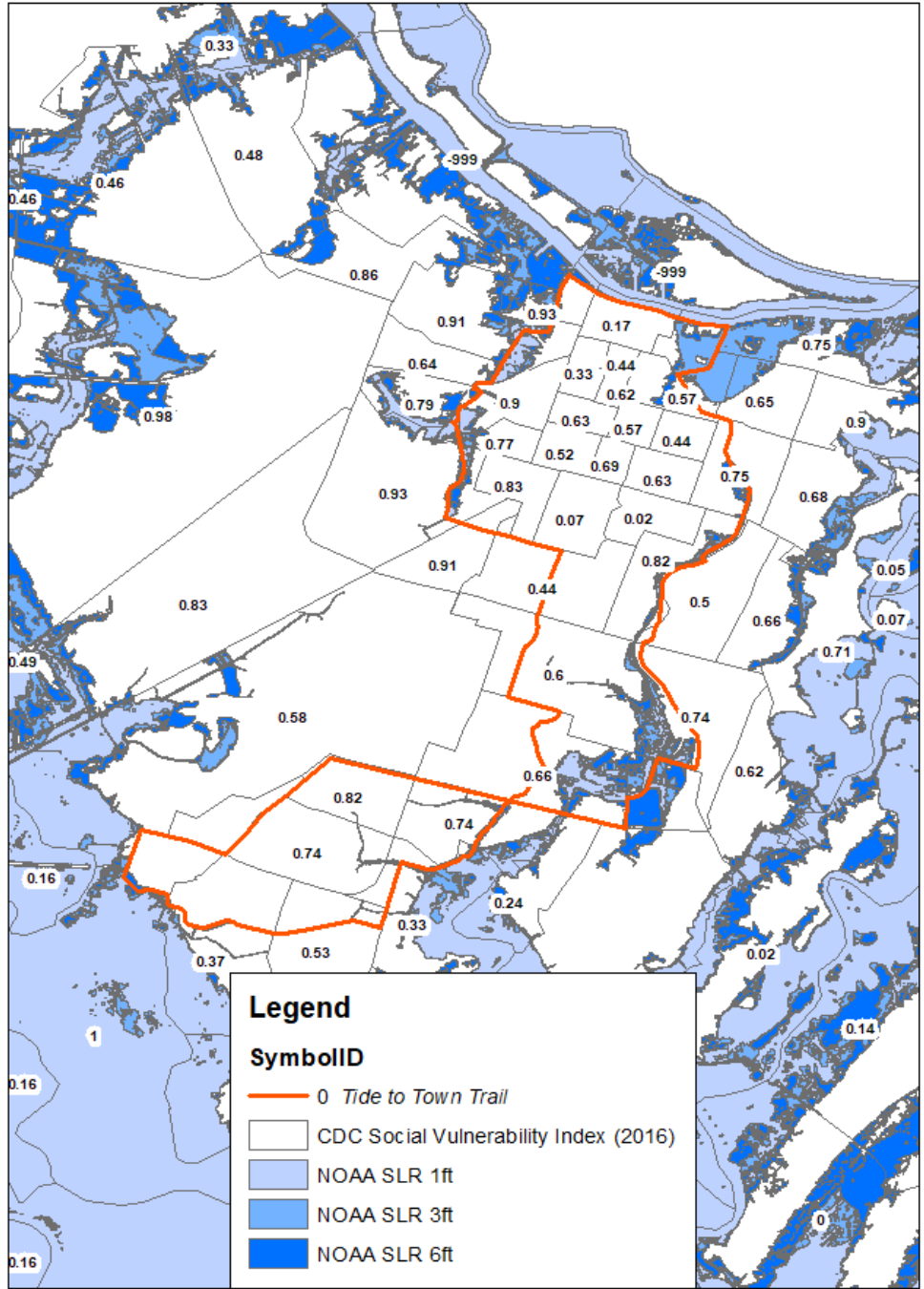
**Table 1.** CDC Social Vulnerability Index composition of variables organized under themes.

Overall Vulnerability	Socioeconomic Status	Below Poverty
		Unemployed
		Income
		No High School Diploma
	Household Composition & Disability	Aged 65 or Older
		Aged 17 or Younger
		Civilian with a Disability
		Single-Parent Households
	Minority Status & Language	Minority
		Speak English "Less than Well"
	Housing & Transportation	Multi-Unit Structures
		Mobile Homes
		Crowding
		No Vehicle
		Group Quarters

Each of the census variables is ranked from highest to lowest across all U.S. census tracts such that higher values indicate higher vulnerability (except for per capita income, for which higher values indicate lower vulnerability). Then a percentile rank is calculated for each census tract for each variable, then variable-specific ranks are aggregated across each theme, and, finally, an overall percentile rank for each tract is calculated as the sum of the percentile ranks for each theme.

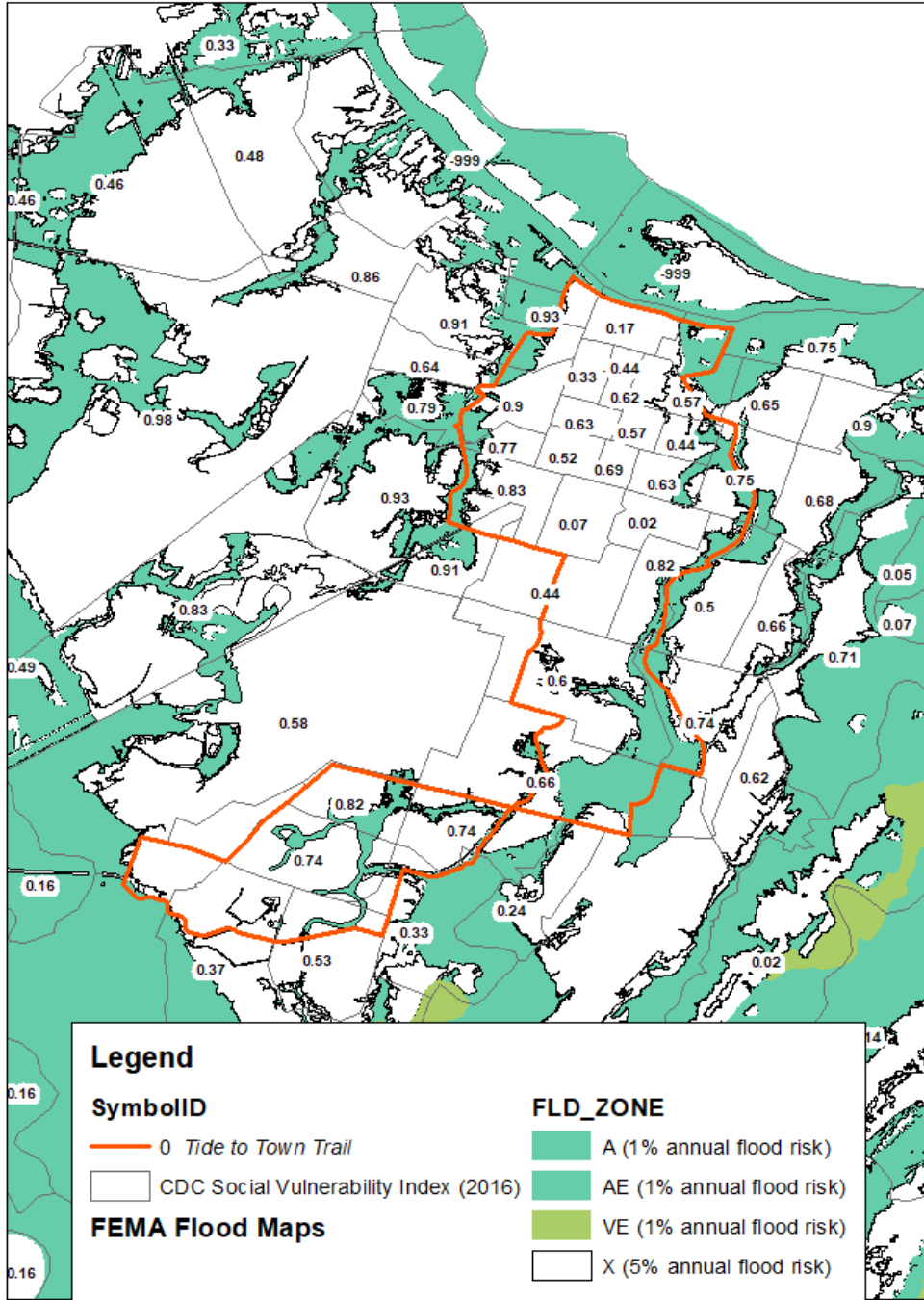
Flanagan et al. also apply the SVI to impacts of Hurricane Katrina on New Orleans residents, showing some association between the SVI and Katrina-related drowning deaths as well as mail delivery data (as a proxy for residents returning post-Katrina). This suggests the potential for the SVI to have predictive power for outcomes in vulnerable populations before, during, and after a hazard event. Notably, these census variables that make up the SVI also correspond with both the health impacts of relocation noted in Dannenberg et al. 2019 as well as the characteristics of areas where buyout properties occurred identified in Mach. et al. 2019.

Plotting the 2016 CDC SVI values on top of NOAA's 1ft, 3ft, and 6ft sea level rise projections, clusters of census tracts with high vulnerability (SVI values of 0.66 to 1.0) coincide with the sea level rise projections while census tracts with low and intermediate vulnerability (SVI values of -999 (null) to 0.33 and 0.33 to 0.66, respectively) tend to appear separated from the projected areas impacted by sea level rise (Figure 4). FEMA Special Flood Hazard Areas (SFHA) are categorized as high-risk areas, defined by areas with a 1% annual chance of flooding (26% chance of flooding over a 30-year mortgage). Overlaying the SVI over the FEMA SFHAs displays a similar pattern as that of the SVI and sea level rise (Figure 5): high SVI values often coincide with areas at risk of flooding.



**Figure 5.** CDC Social Vulnerability Index values (higher values indicate more socially vulnerable) plotted with proposed Tide to Town Trail and NOAA Sea Level Rise Projections.





**Figure 6.** CDC Social Vulnerability Index values (higher values indicate more socially vulnerable) plotted with proposed Tide to Town Trail and FEMA flood maps.

These two figures display how the Tide to Town trail, socially vulnerable populations, and areas at risk of flooding intersect. The intersect of these components emphasize the need for awareness of prospective flood management infrastructure plans, location and area occupied by the trail, and properties owned by residents in these intersecting areas. Planners should be aware that when working in these areas, the utilization of land for one of these components will

deny that land to be used for another component: in other words, planners will have to practice awareness of, gaining insight into, and willingness to address equity issues surrounding the competition of land for flood mitigation.

### Further Considerations

Additional analyses around flooding and social vulnerability can consider using the topographic wetness index:

$$TWI = \ln \frac{\text{accumulation area}}{\tan(\text{slope})}$$

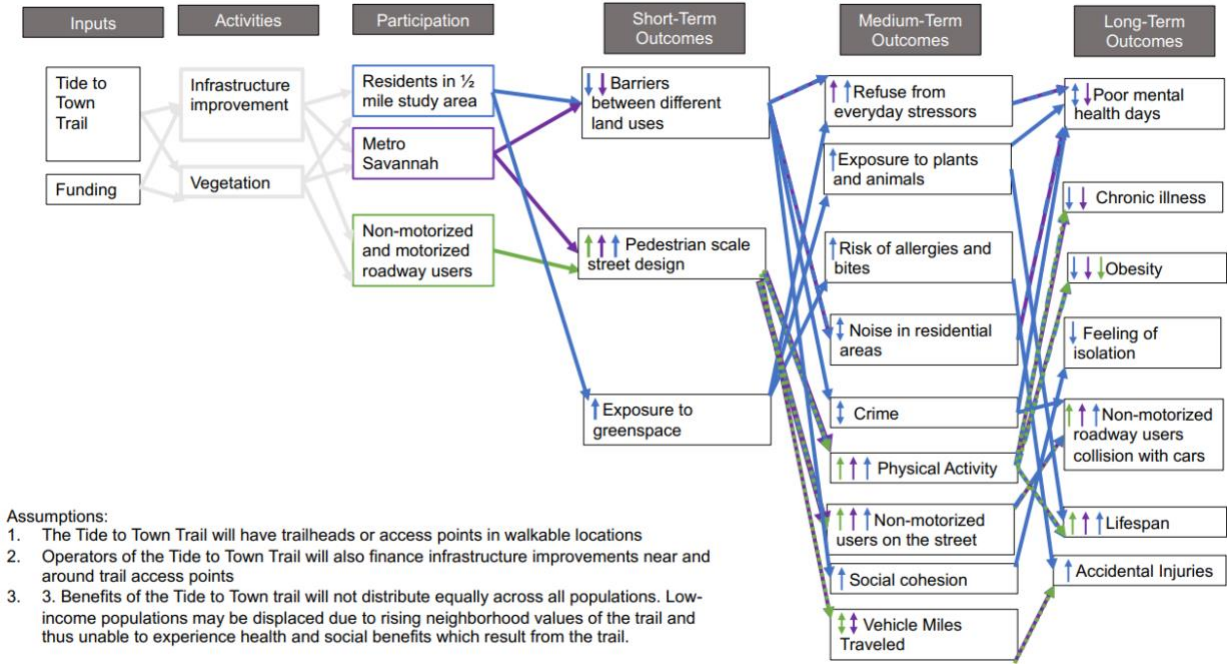
Where the accumulation area refers to the area upslope that drains to a certain point and the slope of the same certain point. It should be noted that the topographic wetness index captures the potential for runoff generation at a certain point using only topographic information. Thus, the topographic wetness index is most useful when local hydrology is topographically-controlled (Sørensen et al. 2006). Unfortunately, despite much effort, flood modeling at a high spatial resolution is a significant challenge due to the complex nature of flooding, dependency on a multitude of variables, and associated uncertainties (Teng et al. 2017). Conducting a ground-truthing survey to assess flood concerns and engaging the community not just before the Tide to Town Trail plan is finalized but also into the future, after the construction of the Trail may serve to better understand flood risks as the City of Savannah develops.

Elevated trailways should also be considered for the areas of the trail that are in low-lying areas at risk for flooding. As seen in Figures 4 and 5, several parts of the trail coincide with the sea level rise and flood risk areas. Elevated trails may provide opportunities for residents to continue using and enjoying the trail in the presence of elevated water levels.



**Figure 7.** Example of an elevated trailway (An Elevated Trail).

# Connectivity and Physical Activity



**Figure 8.** Logic model for connectivity and physical activity.

Traditional neighborhood zoning isolates residential land uses from all others. The influence of major trail projects on commercial development has been well documented. If commercial development does occur along the Tide to Town Trail it will reduce the barriers between residential and commercial neighborhoods as the proposed trail route intersects with many residential neighborhoods. Reducing barriers between different land uses can have multiple outcomes including: noise in residential areas (King, Roland-Mieszkowski, 2012), walking as physical activity (Brown, Yamanda, et. al, 2009), and changes in crime. When land-uses mix, particularly, residential and commercial land uses, research has found that at a high densities the rate of violent crimes decreases (Bellair & Browning, 2010). Mixed land use has been demonstrated to increase the number of people walking and bicycling for utilitarian purposes, also known as active transportation (Fran, Sallis, et. al, 2006).

For Savannah, there is potential growth in the number of people using non-motorized forms of transportation near the Tide to Town Trail. Mixed land uses had a positive yet weak association with social cohesion in terms of the ongoing integration of the individual behaviours in the neighborhood (Dempsey, 2008). Research has found that mixed land uses and density are negatively associated with single occupancy vehicle use (Frank & Pivo, 2012). Yet the Tide to Town Trail has the potential to attract visitors well beyond the City of Savannah and those users will more than likely drive to access the Trail. In this regard the impact of the trail itself can have most increases and reductions in vehicle miles traveled.

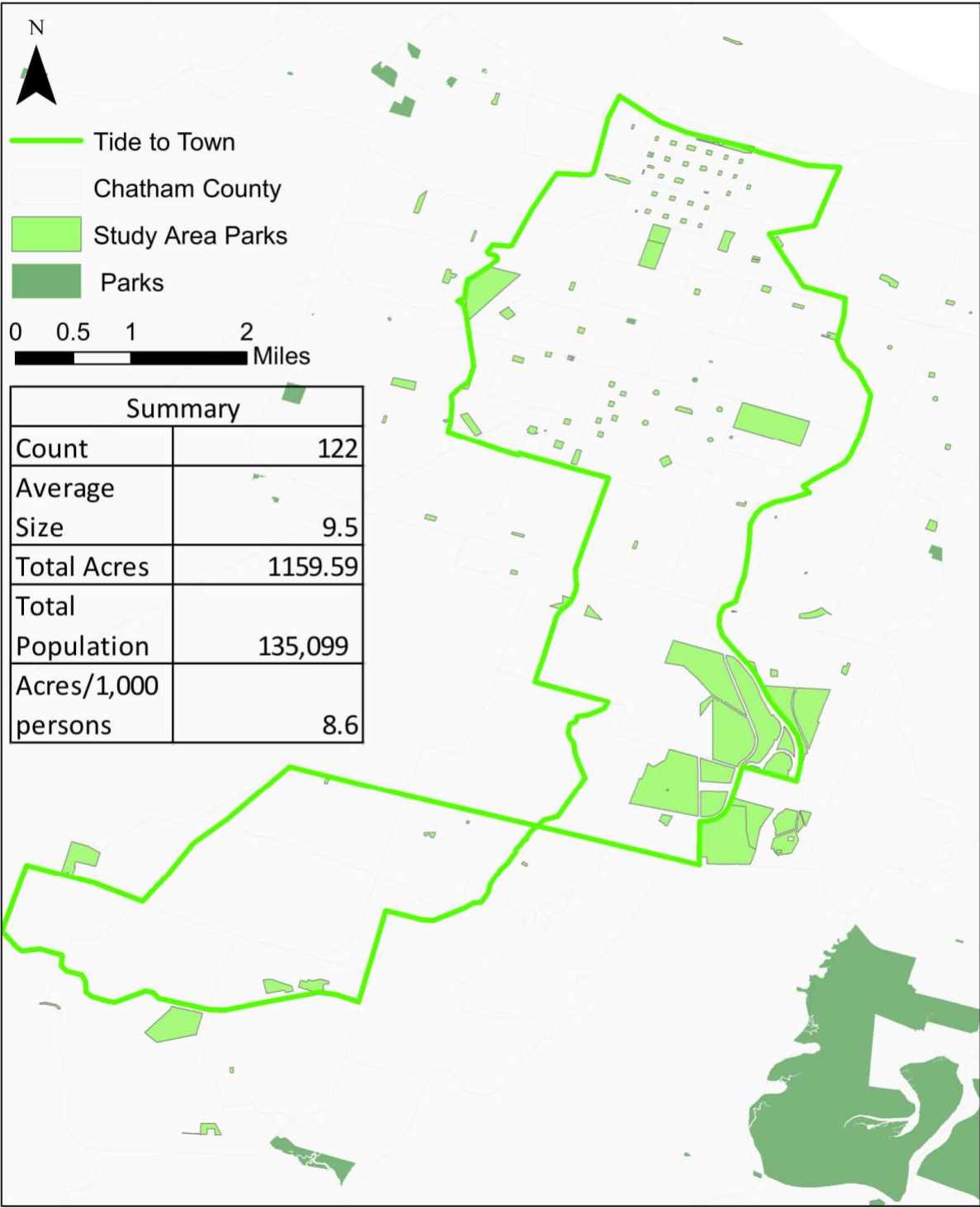
One assumption of this Health Impact Assessment is that the initial capital improvements to construct the trail will also be used to improve non-motorized road user connections to the trail. Pedestrian scale street design is a term that conveys a roadway design type that supports the most vulnerable user, the pedestrian. The design includes but is not limited to features such as shorter street lights, wide sidewalks, protected bicycle lanes, and painted crosswalks. Streets that are supportive of non-motorized roadway users have been associated with increased physical activity (Brown, Smith, et. al, 2016), reduction in vehicle miles traveled and additional non-motorized users on the street (Tal, & Handy, 2012).

Once the Tide to Town Trail is complete users of the trail will benefit from increased exposure to nature and greenspace. That exposure comes with some health benefits and some health risks. Literature has shown that time spent in natural environments is associated with stress relief (Tyrvaainen, Ojala, et. al, 2014). Tide to Town will rejuvenate access to rivers and waterbodies throughout Savannah that were previously obscure. Users of the trail will have increased exposure to plants and animal species. Increased interaction with green space, particularly natural greenspaces also increase trail user's risk of being bitten by insects. Additionally, for trail users with seasonal allergies using the trail may increase the number of days that they do not feel well due to allergy outbreaks.

### **Access to parks**

In the forty-three census tracts (defined as the study area) within a ½ mile boundary of the proposed Tide to Town trail there is a total population (according to the 2017 American Community Survey) of 135,099 persons. This figure represents nearly 90% of the City of Savannah's total population. In 2019 the National Park and Recreation Association conducted an assessment of over 1,000 different parks and recreation departments. The organization found that the median acreage of land per 1,000 residents was 10.1 acres. However in smaller cities (those with populations between 100,000 and 250,000) like Savannah the median is much lower at 8.5 acres per 1,000 persons. In the study area, there are 8.6 acres of parkland for every 1,000 residents, which is similar to other medium sized cities across the nation. However, in Savannah there are many small parks and squares yet with relatively few large parks with multiple facilities. Research of parks and user physical activity has demonstrated a direct positive correlation between the number of facilities within a park and physical activity. Parks with a greater number of facilities (such as basketball courts, soccer fields, playgrounds, etc.) were associated with a greater number of people engaging in moderate to vigorous physical activity (Giles-Corti, Broomhall, et. al, 2005). Figure 6 below shows the organization of parks across the study area.

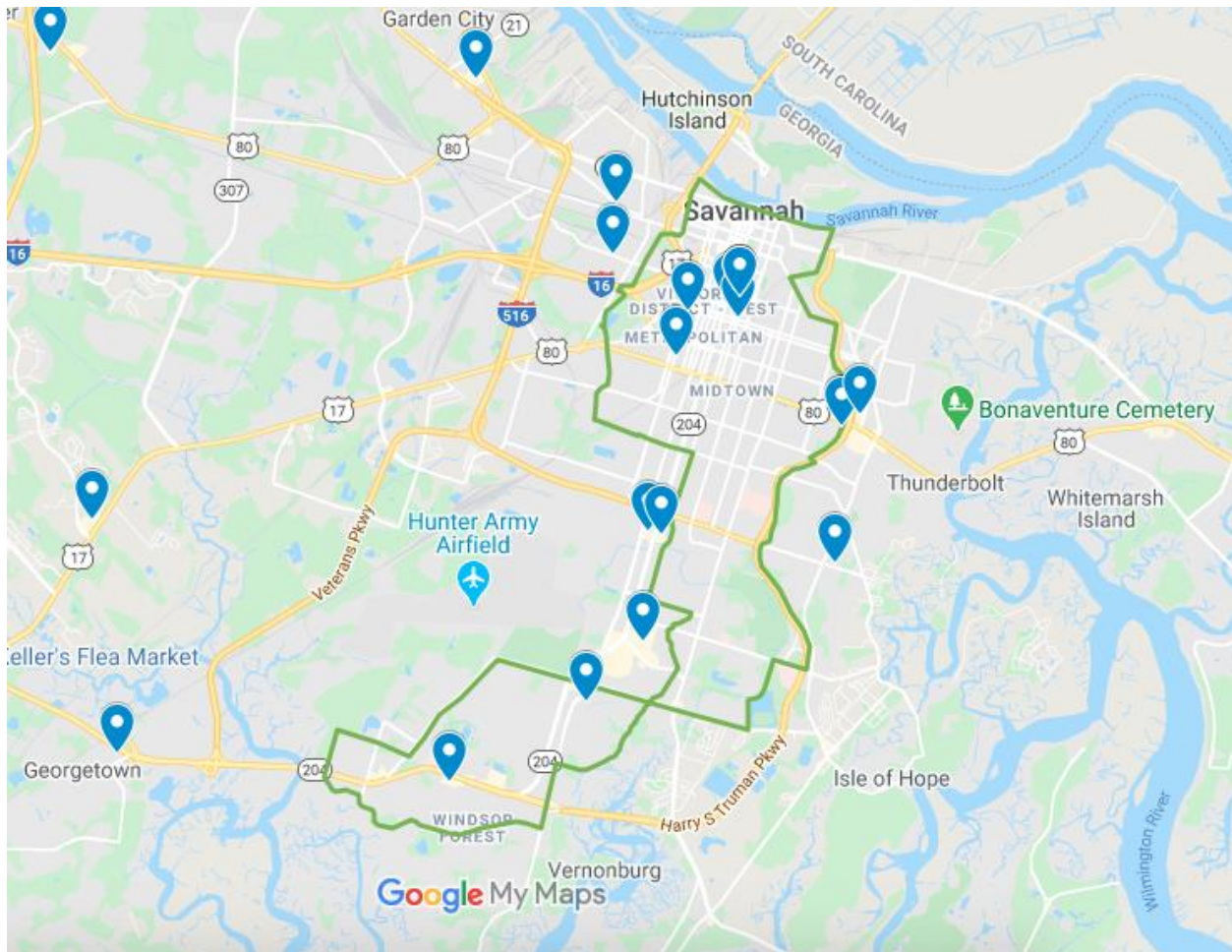
# Population & Parks



**Figure 9.** Population and parks of Savannah in relation to the proposed Tide to Town Trail.

## Healthy food

The U.S Department of Agriculture defines a food desert based on income and access thresholds which are: Low-income: a poverty rate of 20 percent or greater, or a median family income at or below 80 percent of the statewide or metropolitan area median family income; or Low-access: at least 500 persons and/or at least 33 percent of the population lives more than 1 mile from a supermarket or large grocery store (10 miles, in the case of rural census tracts). Inside of the 30 mile Tide to Town trail there are seven national grocery store chains and within a half-mile there are four grocery chains. Carver Heights and Highland Park/Lundhurst neighborhoods are classified food deserts. Figure 7 below shows the distribution of grocery stores in Savannah. A majority of the stores are clustered around downtown and neighborhoods to the west of downtown.



**Figure 10.** Distribution of grocery stores in Savannah in relation to the proposed Tide to Town Trail.

## Physical Activity

Access to recreation centers and park programming was evaluated. While American Community Survey 5-year estimates for 2017 data on 'mode of transport to work' was used to measure active transportation or utilitarian physical activity. There is one fitness center or gym within the 30 mile Tide to Town trail and three within the study area. In Savannah there are relatively few gym services available. Park programming is a good metric of community access to physical activity because the services are free or minimal cost, open to the public, and year round. Additionally, because there are many parks in Savannah and the study area there are few barriers to residents accessing the services. According to the National Park and Recreation Association (NRPA) an agency with a population between 100,000 and 250,000 offer around 200 programs annually. A non-comprehensive list of programming provided by Recreation and Leisure Services of the City of Savannah is shown below. Using this list alone, Savannah's park program offerings are comparable to cities of similar size. There are many opportunities for residents, of all ages, to engage with park facilities through programming in Savannah.

**Table 2.** Some of the park and recreation programming provided by the City of Savannah's Recreation and Leisure Services.

<b>Program</b>	<b>Operation and Season</b>	<b>Location</b>	<b>Target Demographic</b>
Tennis	Year round, weekdays 9a-9p, weekends 9a-5pm	Bacon Park Tennis Complex, Daffin Tennis Park	Public
Softball	Fall, by schedule	Parks with softball courts	Adults
Football	Fall, by schedule	Parks with football fields	Youth
Basketball	Spring, by schedule	Parks with basketball courts	Youth (6+)
Arts and Crafts	Year round, 4-7pm	Multiple parks and community centers	Public
Swim Team	Summer	9 different pool locations	Youth (6-17)
Water Aerobics	Summer, Mondays 6:30-7:30pm	Daffin Park Pool	Public
Supervised Playgrounds	Weekdays 3:30-6:30pm	Multiple park locations	Youth (6-13)
Therapeutic Recreation	Weekdays 3-6pm	Multiple park locations	Youth (9-21) & Adults (22+)

Although the City of Savannah was designed on a grid plan, few residents of working age commute to work using active transportation. Within the 43 census tract study area 75% of the

residents drive alone to work the remaining quarter of the residents either carpool, walk, use public transportation, ride a bicycle or motorcycle, or work from home. Specifically, 5% of the residents within the study area ride public transportation to work. Utilitarian physical activity is not only commuting to work, but also running household errands, accessing entertainment or retail establishments however there are relatively few data sources that measure non-work trips in a reliable manner. There is a concentration of residents that walk to work in historic downtown Savannah. In these census tracts between 8-12%, compared to a study area average of 5%, of residents walk to work. Residents in downtown Savannah engage in utilitarian physical activity more frequently than residents in south and western neighborhoods in which the percentage of working age residents that walk to work is less than 5%.

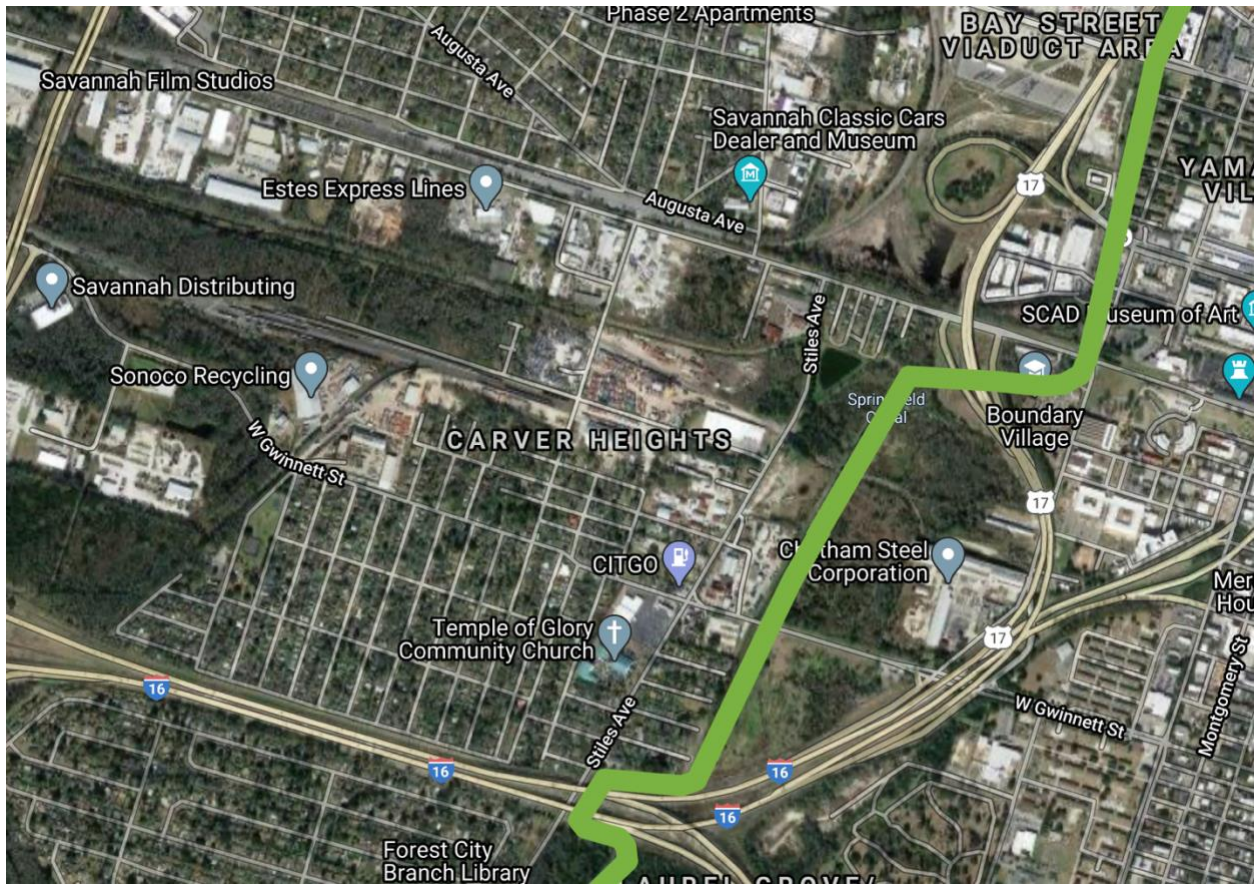
### **Street Connectivity**

A majority of Savannah's streets follow the original Oglethorpe Plan with small blocks, squares, and a structured grid. However, south of East Derenne Avenue and along borders and edges of the city near highways and airports the grid and great connectivity of the Oglethorpe Plan drops off significantly. Street connectivity is crucial to walkability because it enables pedestrians, bicyclists and others on non motorized forms of transportation to navigate with minimal to no dead ends and turnarounds. This rapid health impact assessment measures street connectivity as a measure of access to the Tide to Town trail. Given that the Tide to Town project is in the initial planning stages, specific entry points to the trail route have not been defined. For this reason a formal connectivity analysis using advanced modeling was not conducted for this HIA. Instead, a qualitative assessment of street connectivity was completed. The following criteria was used to identify streets and/or areas with connectivity challenges. The criteria is based on transportation planning and engineering research.

- I. Pedestrian fatalities (Gibbs, Nicholson, et. al, 2012, Ernest, Lang, et. al, 2011)
- II. Street design/ urban design (Li, Fisher, et. al, 2005, Handy, Boarnet, et. al., 2002)
- III. Proximity to highways (Brugge, Durant, et. al., 2007)
- IV. Mixed land-uses (Brown, Yamanda, et. al, 2009)
- V. Dead end streets (Ewing, et. al, 2003)

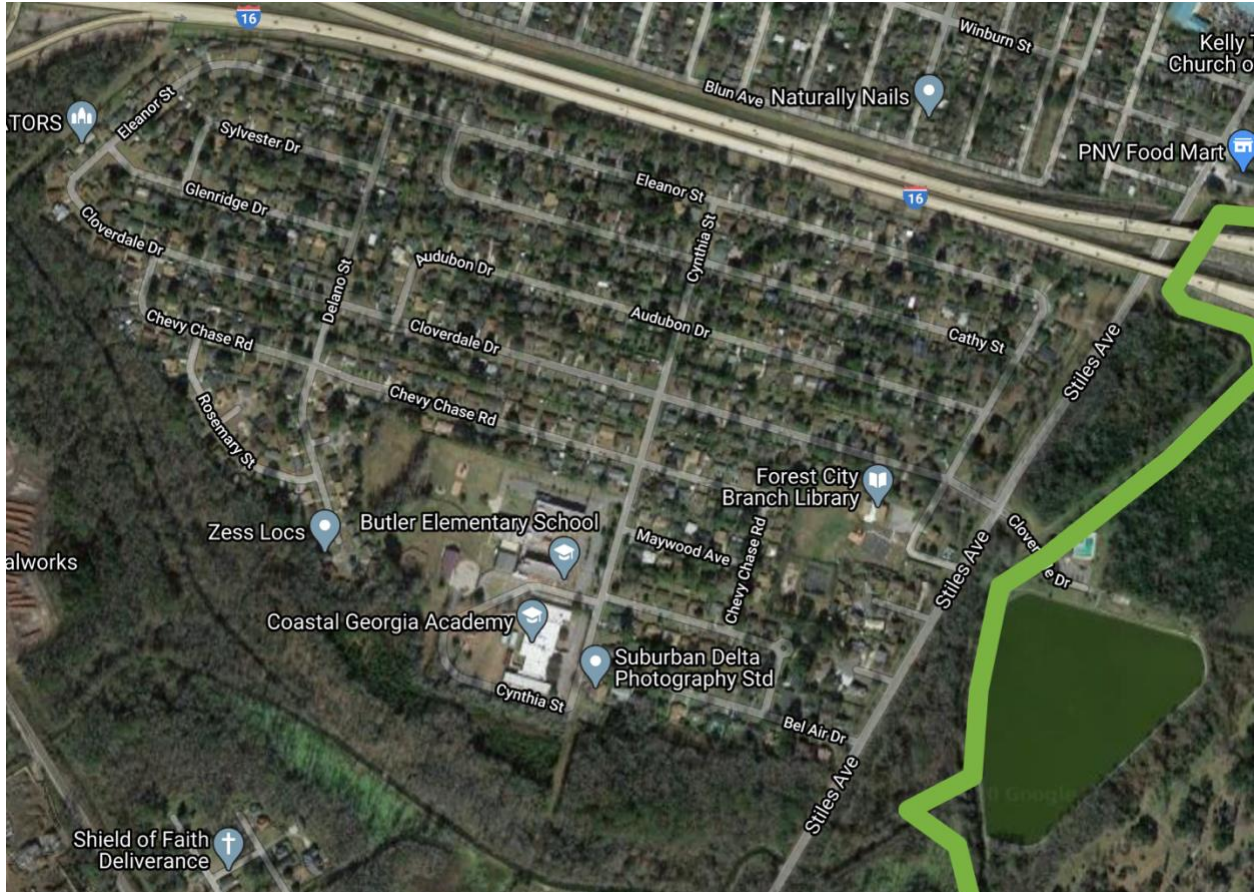


In the Carver Heights neighborhood near State Route 17: West Bay Street functions as a connector to Interstate 516 and does not have sidewalks. Between 2014 and 2018 there were two pedestrian involved car accidents on West Bay Street. Locating an entry/exit point to the trail here would not be beneficial. Additionally, user experience along this portion of the trail will be significantly dampened by the traffic volume and noise from vehicles. Figure 8 below depicts the proposed trail route within the neighborhood.



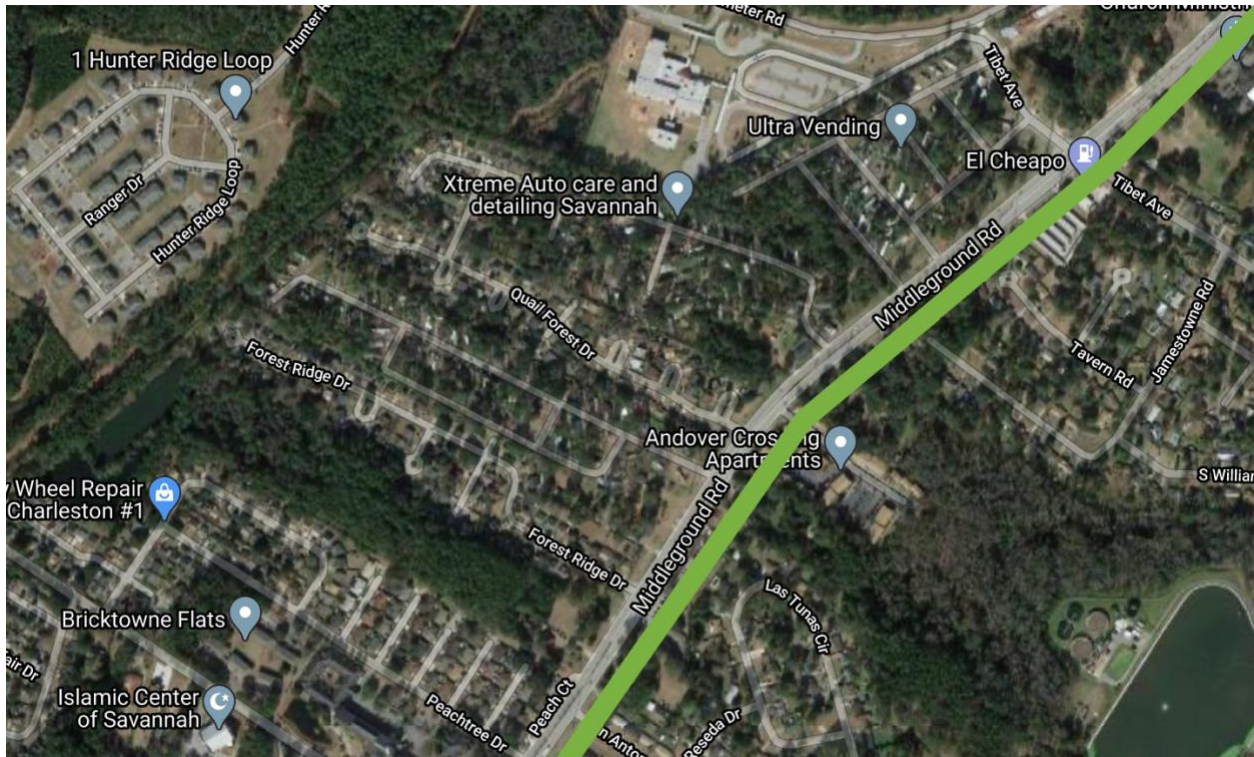
**Figure 11.** Route of proposed Tide to Town Trail through Carver Heights neighborhood.

In the Cloverdale neighborhood, a similar problem exists. Trail users will be surrounded by noise from cars, trucks, and vans on Route 17 as well as industrial pollution from the many state and city owned plants. Compounding these challenges, all of the streets are dead ends however most have sidewalks on at least one side of the street (Figure 9).



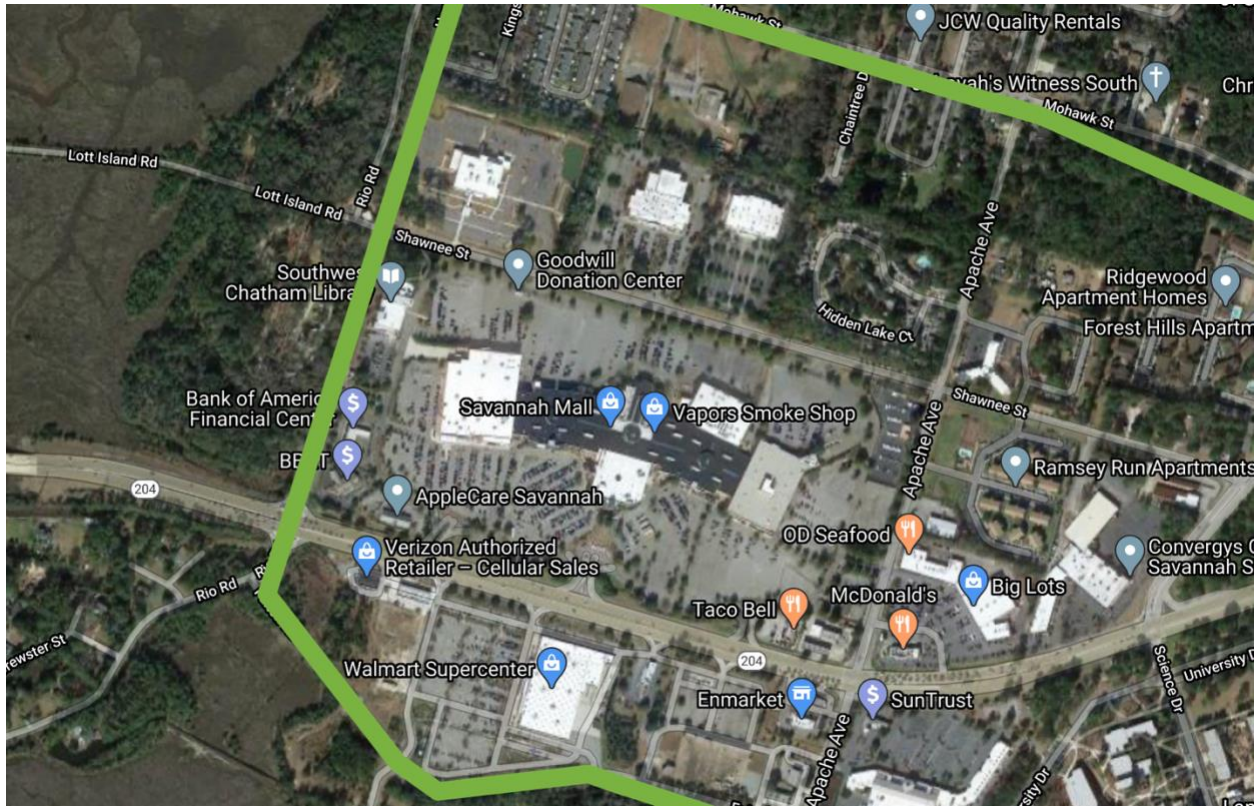
**Figure 12.** Route of proposed Tide to Town Trail through Cloverdale neighborhood.

In the Wilshire neighborhood, the route is proposed to run along Middleground Rd. This may not be the best route as there are few establishments and homes along this road. The neighborhood homes face inward on side streets leaving the arterial road for cars (Figure 10). There were two car accidents involving pedestrians on Middleground Rd. between 2014 and 2018.



**Figure 13.** Route of proposed Tide to Town Trail through Wilshire neighborhood.

The portion of the trail which runs along the rear of the Savannah Mall suffers from serious connectivity challenges. The mall and its parking lots disconnect trail users from the neighboring community and university (Figure 11).



**Figure 14.** Route of proposed Tide to Town Trail through the rear of Savannah Mall.

## Health Impacts of Housing, Social Capital, & Social Cohesion

A “social determinants of health” framework helps to connect the experience of residents with disparate access to [green] infrastructure investments, affordable housing, and economic and workforce development strategies to disparities in stress-related health outcomes in the short and long term. The logic model below details how Savannah’s current housing and workforce development activities in addition to the impending Tide to Town development might impact the health of its most vulnerable residents.

### Health Impacts of infrastructure improvements on low-income residents

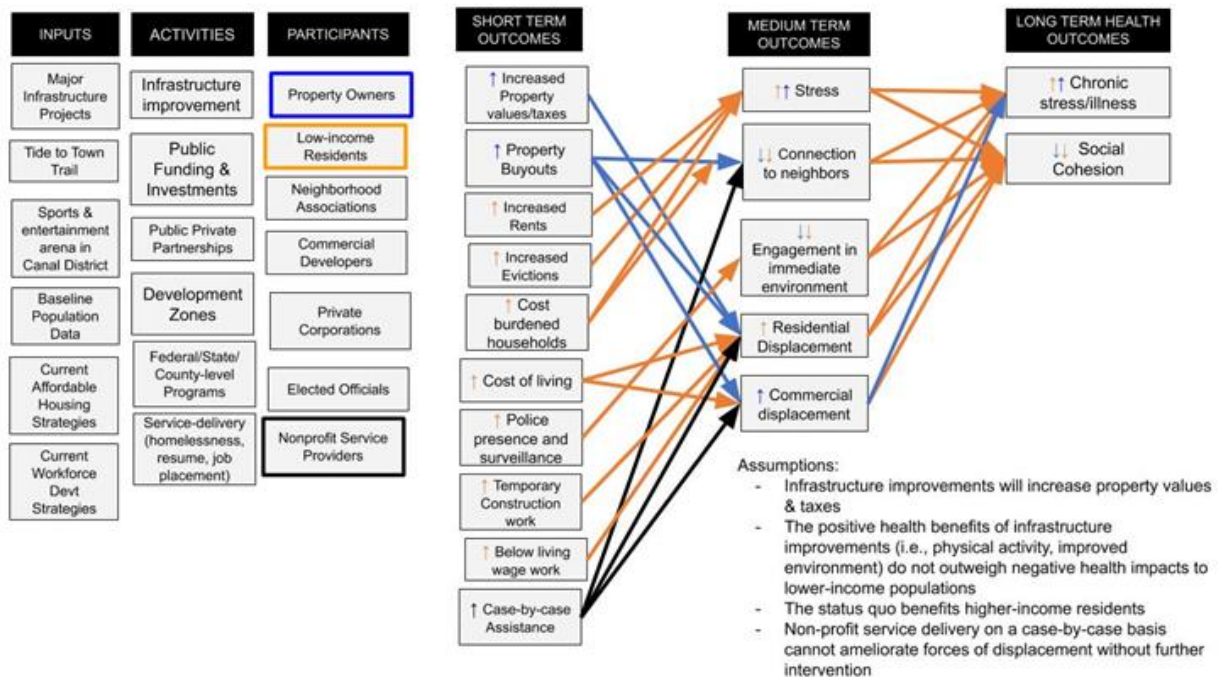


Figure 15. Logic model for housing, social capital, and social cohesion.

### Health disparities & displacement

In the Plan4Health released by Healthy Savannah for Chatham County, they assert that the “major causes of morbidity and mortality in Chatham County, such as diabetes, heart disease, and cancer, are related to poor diet and physical inactivity” (Plan4Health). Furthermore, “Cardiovascular disease is the leading cause of death in the county, accounting for 3,348 deaths and over 20,000 potential years of life lost before age 75 from 2009-2013. Obesity has reached epidemic proportions in Chatham County: 27 percent of adults are obese. Additionally, 20 percent of the population reported that they did not have access to a reliable source of food during the past year.”

There are further disparities in health outcomes based on race and income (CDC, 2009). “Public health data indicates that the burden of illness is higher among minorities and low income communities” dues to socioeconomic status (SES) which “is usually measured by determining

education, income, occupation or a combination of these factors (Winkleby, 1992).” According to the CDC (2009), “whether assessed by income or education, SES is linked to a wide range of health problems, including low birthweight, cardiovascular disease, hypertension, arthritis, respiratory illness, diabetes and cancer (Adler, 2002). Lower SES communities are known to have lesser quality housing, lack opportunities for outdoor activities or healthy food options (Scinivasan, 2003).” Savannah’s Plan4Health notes that: “According to County Health Rankings, 24.6 percent of African-American adults were obese, compared to 14.5 percent for whites” and it “emphasiz[es] the need to apply a lens of health equity to all project strategies.” The CDC (2009) agrees that “more support is needed for those people with lower SES to improve health status and overall quality of life.”

According to a health impact assessment conducted on Trinity Plaza in San Francisco, economic development activities such as “redevelopment, renovations, conversions of residential property can result in increased rents, displacement, and even homelessness [and] these effects can have indirect adverse effects on human health by causing poverty, loss of social support, and substandard living arrangements” (Guzman and Bhatia 2005). The potential for displacement and the negative impacts of displacement is prevalent in the waves of project completion for Tide To Town. As noted above, green infrastructure projects have a penchant to raise property values at a pace that is unsustainable for the local residents as development capital is invested into neighborhoods (Rigolon and Németh, 2018). Therefore while the Town to Trail project may indeed have health benefits for residents who can take advantage of the walking and biking infrastructure, the potential for rising property values without concurrent workforce development strategies that increase wages make lower income residents vulnerable to displacement.

The Trinity Plaza HIA offers that “Unaffordable housing is a key dimension of poverty, arguably the most important predictor of poor health in the population....when housing is unaffordable, people often sacrifice other material needs including food, clothing, and health care services.” “Further, as property and development costs increase in older Savannah neighborhoods those in need of affordable housing may seek such housing in outer laying portions of the Chatham and adjoining counties. Unless this housing is close to its occupant’s place of employment, shopping, etc., this new affordable housing will quickly become unaffordable due to rising transportation costs (p. 31).”

### **Health, social capital & social cohesion**

The authors of the Trinity Plaza HIA cite a number of studies that link losses in family support and community relationships due to displacement to poor health outcomes. For example: “Strong social relationships...provide material as well as emotional support,... prevents damaging feelings of isolation, and contributes to a sense of self-esteem and value” which has been linked to increased risk of early death (Cohen, 2000; Berkman & Syme, 1998). Social cohesion and social capital are identified as key mechanisms that support “ better adjusted, happier, and in some ways physically healthier individuals (Frumkin, 2004).” According to an HIA conducted on a redevelopment plan for downtown Denver, CO, both social cohesion and

social capital “can be compromised by linguistic or racial isolation, and socioeconomic inequalities” (Roof 2009). Dr. Mindy Thompson Fullilove’s book *Root Shock: How Tearing Up City Neighborhoods Hurts America, and What We Can Do About It* documents the impact of disrupted “mazeways” on the physical and emotional health of residents who experience upheaval due to development. Fullilove (2004) writes: “Root shock at the level of the individual is an upheaval that destroys the working model of the world. Root shock undermines trust, increases anxiety, destabilizes relationships, destroys social, emotional, and financial resources, and increases the risk for every kind of stress related disease, from depression to heart attack (p. 14).”

According to the literature, both social cohesion and social capital are critical for mitigating and reducing the inequities that may result in property crimes, deviant behavior, as well as health-related behaviors (Kawachi and Berkman, 1997). Interestingly, “a study found [that] in areas with high levels of social incivilities (anti-social activities such as crime), the likelihood of being more physically active was less and the likelihood of being overweight or obese was greater (Greenspace Scotland, 2008).” “Social cohesion is used to describe the existence of strong connections, interactions, and supports among members of a community, whereas social capital refers to the degree to which people know and trust their neighbors, level of social involvement, and participation in community activities.” Social cohesion and social capital can be measured by the existence of policies that mitigate the impact of disparities and are indicated by widespread participation in neighborhood associations or other civic society infrastructures (Kawachi and Berkman, 2000).

### **Social cohesion, crime, and development**

As development occurs, “local governments [typically] implement efforts to improve neighborhood safety such as increasing police presence, increasing eyes on the street and parks, improving street lighting and property conditions (graffiti, trash, weeds, etc.) (CDC, 2009).” The increased police surveillance that comes with neighborhood turnover has been found to correlate to stress related illnesses (Sewell, 2017). Moreover, these policing strategies pay little attention to the potential for housing and workforce development to mitigate crime by decreasing inequity and increasing social cohesion. Often, the goals of “providing job opportunities [through] redevelopment, [by] specifically ensuring residents in the neighborhood have access to jobs related to the redevelopment that include not only demolition and construction but other stages such as landscaping (CDC, 2009)” are overlooked or inadequately implemented.

## Housing affordability & development

According to projections in a report for Savannah's Affordable Housing Task Force, by the Carl Vinson Institute of Government, the "number of cost burdened households will increase from 23,696 in 2008, to 24,513 in 2018 and 25,208 in 2023." The report, which was written in 2008, relies on data from the 2000 Census. It documents that in 2000 "20,425 (about 40%) of Savannah households were cost burdened." The 2010 Census puts Savannah cost burdened households at 44% (including households with zero or negative rent).

The report calculates that residents' gross annual household incomes "would have to range between \$32,000 and \$48,000 to avoid paying more than 30% of [their] income toward rents or mortgage payments ranging between \$800 and \$1,200 a month. Minimum wage earners making \$5.85 per hour would have to work between 105 and 158 hours a week to afford housing that costs between \$90,000 and \$130,000. To work only 40 hours a week, without being cost burdened, would require an hourly rate of pay ranging between \$15.40 and \$23.07."

The Housing Authority of the City of Savannah owns eight apartment complexes throughout the city for low-income households. They are using public-private partnerships with housing developers and federal dollars to redevelop public housing and vacant parcels. The East Savannah Gateway redevelopment plan, for example, is funded by a Choice Neighborhood Grant and the HUD Rental Assistance Demonstration initiative. It plans to revitalize 5 public housing projects and to create 316 mixed income units of housing between 2019-2023.

To reduce inequities in housing access, the [Affordable Housing Regulatory Reform Task Force Report](#) recommends combining federal dollars with funding from the city and county as its main affordable housing intervention. According to the report, creating 5,000 units of new affordable housing between 2008 and 2023 (15 years), would reduce the number of cost burdened Savannah households by 20%. Assuming that each unit costs an average of \$110,000 and that developers or household could get financed for \$100,000 per unit, the report offers that "the gap financing necessary to make this housing affordable to those earning an average of \$30,000 per year would be about \$50,000,000—an average of about \$10,000 per household." Making projections that the city would continue to receive \$1 million per year over 15 years in HOME funds from the U.S. Department of Housing and Urban Development, the report suggests that the city could fill the \$35,000,000 gap "through various forms of local funding and/or development cost relief from the City, County, foundations, employers, etc. This funding and/or relief could help pay for and/or lower property acquisition, demolition, infrastructure and building construction costs." Therefore, a \$35,000,000 City and County investment could leverage \$500,000,000 in private investment (p.2).

The secondary recommendations that the Task Force report offers includes recruiting nationally recognized non-profit housing developers like The Enterprise Foundation and NeighborWorks; as well as supporting the emergence of new local non-profit housing developers, to open offices and develop housing in Savannah. They also suggest that the creation of a housing finance authority could help increase the production of, and funding for, affordable housing (p. 37).



Finally, the Task Force notes that more “significant and consistent investment by Chatham County in the Chatham County-City of Savannah Land Bank Authority (LBA) could pave the way for an affordable housing program in the county.” While “Chatham County currently pledges about \$30,000 a year to the LBA for operating and property acquisition,” the payment is not consistently made, and the LBA would need closer to \$200,000 from Chatham County (p. 13).

In addition to housing programs, workforce development interventions have the propensity to impact cost burdened households by bridging between industries and companies that provide jobs and local residents. Policy interventions can also set a floor for wages and benefits that can decrease strain on cost burdened households.

### **Workforce development and economic development**

Most of the workforce development programs in Savannah are service based, employer focused, regional programs with a “Savannah area” focus. The Savannah-area includes in some cases the Metropolitan Statistical Area made of Chatham, Bryan, and Effingham counties; and in other cases, the 10-county region made up of Bryan, Glynn, Chatham, Long, Bulloch, Camden, Effingham, Liberty, McIntosh and Screven. The Georgia Department of Labor, for example, has a Career Center serving Chatham, Bryan, and Effingham counties.

Conversely, the Savannah Economic Development Authority, which is designed to bring industrial development to the region emphasizes Savannah’s 16-county labor force drawn from within 60 miles of Savannah. The legislation authorizing SEDA created an institution with a 19-member Board of Directors who serve for periods of five years. The Mayor and Aldermen of the City of Savannah (the City), the SEDA Board of Directors and the Chatham County Commissioners (the County) appoint Board members by rotation. The Board itself replaces members who can no longer serve. SEDA focuses on business attraction, retention, and expansion; they boast that the area’s population is 902,000 and that the area’s 18 schools “enroll nearly 65,000 students.”

The Coastal Workforce Development Board is federally authorized by the Workforce Innovation and Opportunity Act of 2014 (WIOA) as the local workforce development entity for Savannah’s 10-county region. It is fiscally managed and administered by WorkSource Coastal, a department in the City of Savannah’s Community and Economic Development Bureau. The 25-member board is appointed by elected officials in the 10 counties and works together to create 4-year strategic plans. It has 7 job centers located in various counties throughout the region, and a one-stop service center in Savannah.

WorkSource has programs designed specifically for veterans, for adults and dislocated workers, for youth, and for employers. The employer targeted programs include layoff aversion, registered apprenticeships, on the job training, and incumbent worker training. The on the job training is for employers who have specific needs requirements for their operations. WorkSource requires the employer to pay for half of the employees wages while they are in training. There is also an online search portal for job seekers to access job postings in various

fields across the county. In Chatham county, there were 426 jobs with wages over \$16.75/hour. The youth programs highlighted include YouthBuild, and the Out of School Jobs for Georgia Graduates. Local organizations that provide job training and other services can also register to become WOIA Youth Service Providers. WorkSource also has a Youth Council which helps to make decisions on the bidding process for WOIA funds.

On a smaller scale, Step Up Savannah is a network of programs and nonprofits convened by leaders in Savannah to address concentrated poverty and build economic prosperity in Chatham county. They operate in five arenas which include workforce development, financial security, civic engagement, advocacy and education, and collaboration to accomplish these goals. Step Up Savannah has a 39-member board of directors composed of governmental, non-profit, and corporate partners. Their workforce development programs include an apprenticeship program and a network of service providers. They also provide a directory of 144 technical skill building programs, certifications, and trainings.

Chatham Apprenticeship Program is a Step Up Savannah program for unemployed and underemployed workers to obtain family-sustaining wages. It is particularly for those who face barriers such as spotty work history, low educational and basic skill levels, or criminal background. They provide skill building, certifications, job placement, and coaching. Though specific employer partnerships are not offered on the website, assistance in obtaining a forklift certification and Transportation Worker Identification Credential are named explicitly on the website, suggesting some job placements are with the ports.

Working Families Network is also a Step Up Savannah workforce development program. It is a collaborative of over 60 organizations that serve low income residents in Savannah and Chatham County. The network provides capacity building, professional development, a listserv, directory, and regular working group convenings to the member organizations in exchange for a \$25 (nonprofit) or \$100 (for profit) annual fee.

Despite the robust infrastructure, there is little self-reported data on the outcomes of the workforce development initiatives. The 2013-2017 ACS data estimates Savannah civilian labor force unemployment rate to be 11.6%. This differs greatly from the 3.2% unemployment rate cited for Savannah's MSA by SEDA from the Georgia Department of Labor. The gap is indicative of the disparities in access to jobs potentially being fostered by the current workforce development strategies. 43,157 of Savannah's residents over 16 are not in the labor force at all (ACS, 2017).

### **Mapping Savannah's business development landscape**

Figure 12 below shows different elements of Savannah's landscape for land and economic development programs. The Tide to Town trail is overlaid on the map in green. The orange background are the other parts of Chatham County, with the white outlines being other municipalities and unincorporated Chatham. The brown areas outlined in white are the parts of Savannah adjacent to the Tide to Town trail. The white circles with black outlines are Savannah

current capital improvement projects. The small yellow dots are pending street lights and the blue areas are wetlands. Economic Development areas are green and areas for Community Development Block Grants are purple. Urban Redevelopment areas are pink, with areas overlapping with CDBG areas in darker pink. The census tracts that are defined as Racially and Ethnically Concentrated Areas of Poverty in Savannah have black stripes.<sup>1</sup>

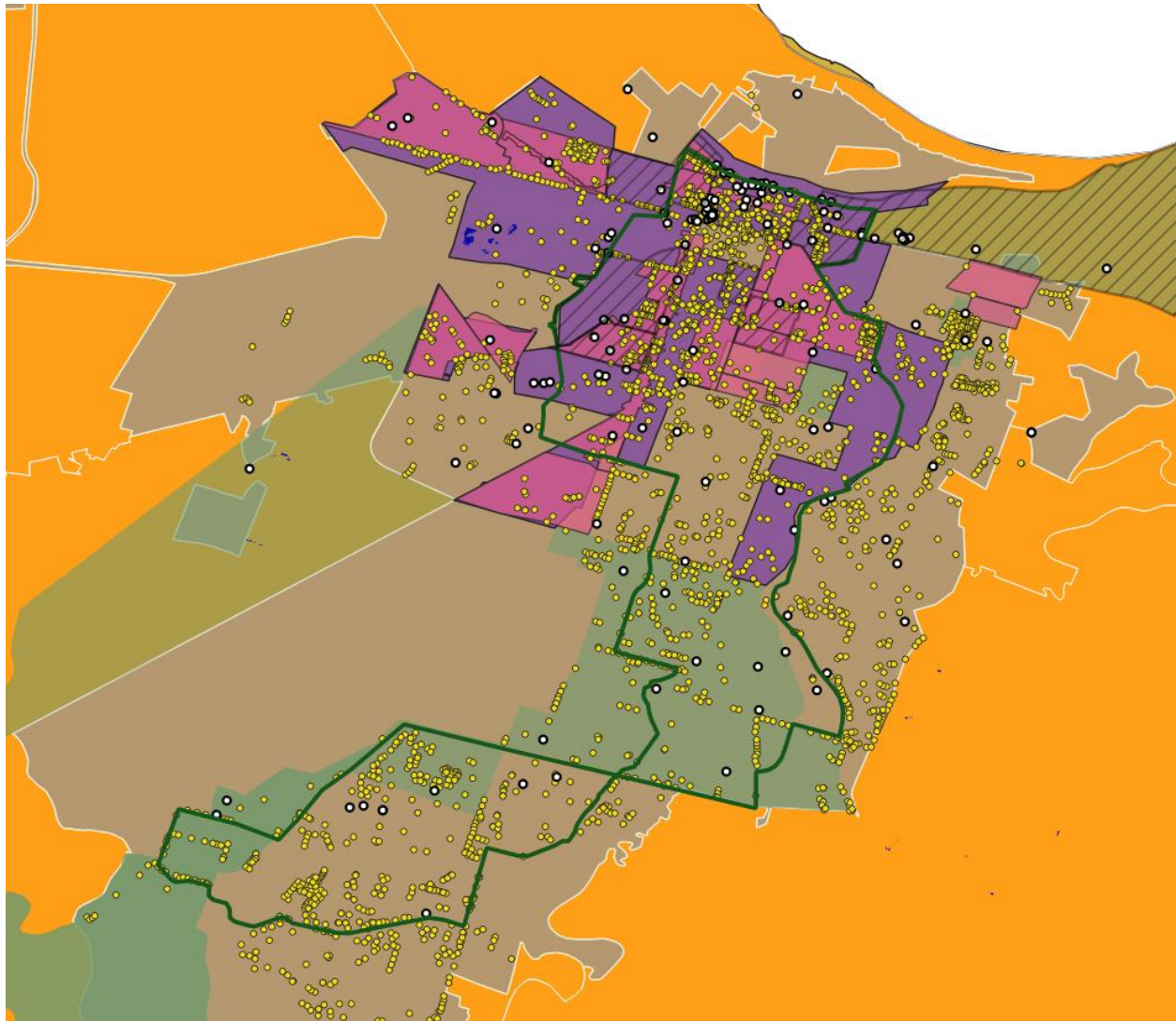
The Urban Redevelopment zones are “areas [that] present conditions such as deteriorating or inadequate infrastructure; a predominance of dilapidated or vacant buildings, higher levels of poverty and unemployment and other signs of blight and distress.” Cities argue that “the persistence of these conditions substantially impairs or arrests the sound growth of the City and constitutes an economic and social liability that is a menace to the public health, safety, and welfare.” The city provides incentives for businesses to locate in these zones. Community Development Block Grant Areas are funded by HUD at the state and local levels “to provide communities with resources to address a wide range of unique community development needs. The CDBG program provides annual grants on a formula basis to 1209 general units of local government and states.” Local governments then re-grant funds to nonprofits and service providers in the area.

Notably, the Economic Development areas are largely in areas outside and immediately surrounding the trail while the Urban Redevelopment and Community Development areas are concentrated in the northern part of Savannah, within the trail. Savannah’s economic development outlook includes federal opportunity zones and enterprise zones (Figure 13). The City of Savannah has three Enterprise Zones: Martin Luther King, Jr. Blvd. & Montgomery St.; Waters Avenue; and Pennsylvania Avenue also in the northern part of the city. There is a south side opportunity zone, but by and large, there are fewer publicly funded economic development programs and capital projects in the southern part of Savannah.

Overall, the economic, workforce, and affordable housing landscape is fragmented (Figure 14). Perhaps counterintuitively, the overlapping jurisdictions, programs, and incentives enables business development, land development, and workforce development to occur in silos. More coordination of development with service delivery is needed in order to ensure that Savannah’s most vulnerable residents can participate in the economic opportunities and amenity development.

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<sup>1</sup> These areas are defined as census tracts that have an individual poverty rate of 40% or more (or an individual poverty rate at least 3 times that of the tract average for the metropolitan area, whichever is lower) and a non-White population of 50% or more. As of 2010, Savannah contains six R/ECAP census tracts, all in or adjacent to the downtown and midtown areas (see Figure 6)



-  Savannah RECAPs
-  Trail Outline
-  Current Savannah Capital Improvement Projects
-  Pending Street Lights
-  Chatham Wetlands
-  Urban Redevelopment Zones
-  Community Development Block Group grants
-  Economic Development Zones

**Figure 16.** Landscape of City of Savannah land and economic development programs.

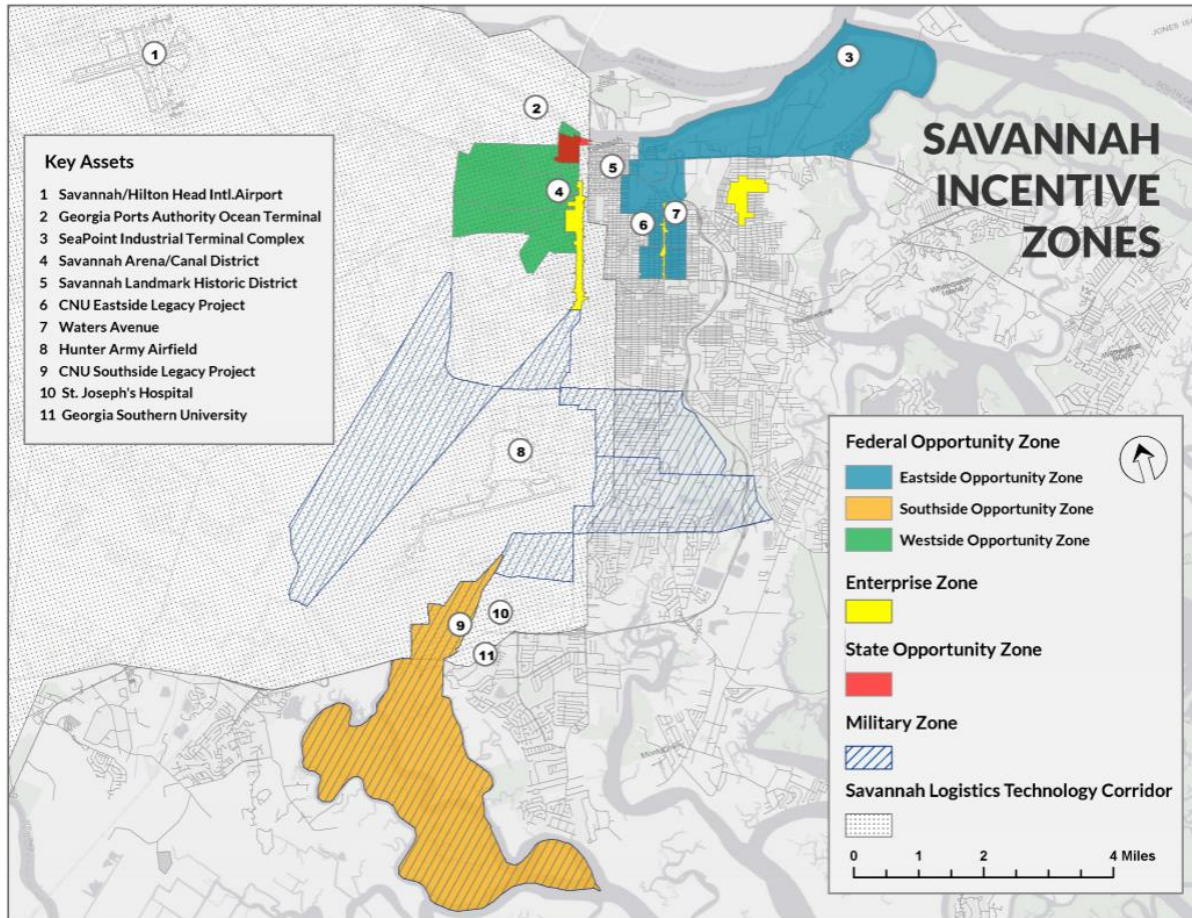
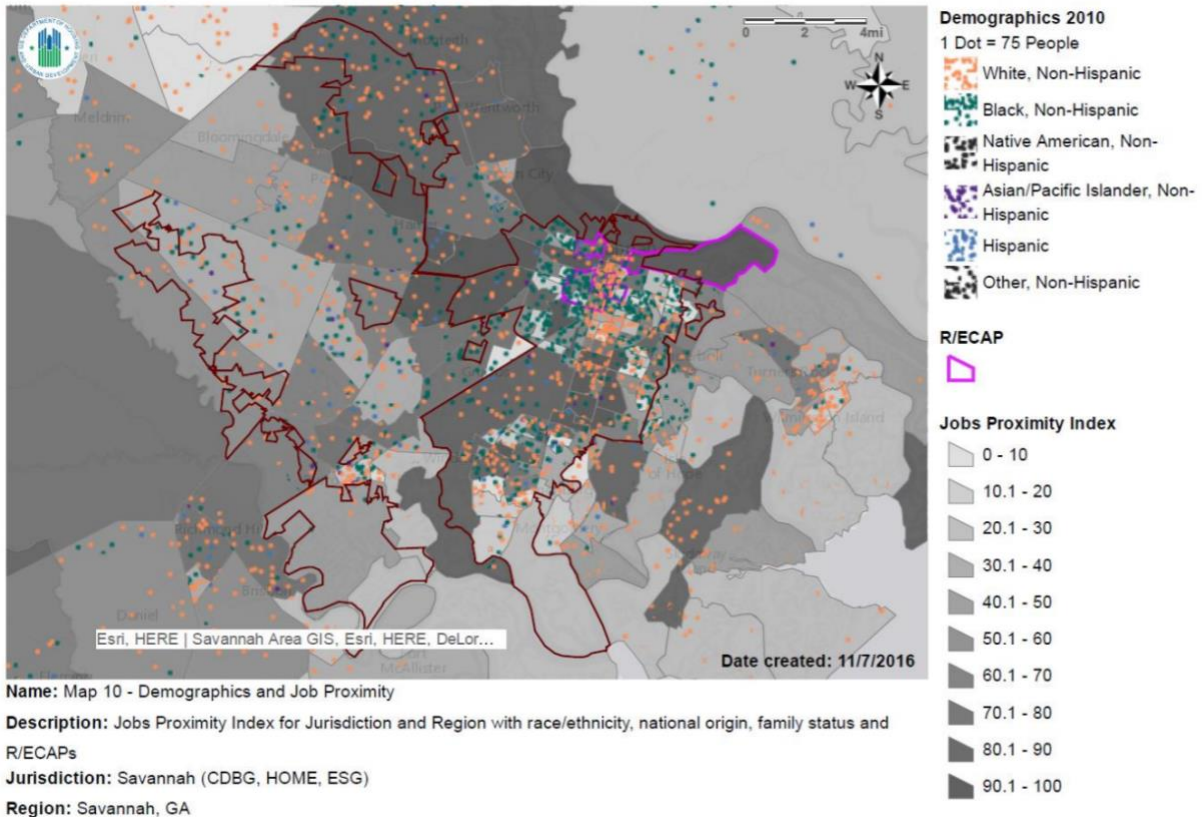


Figure 17. City of Savannah Incentive Zones.

Figure 12. Jobs Proximity Index and Race/Ethnicity in the City of Savannah



Name: Map 10 - Demographics and Job Proximity

Description: Jobs Proximity Index for Jurisdiction and Region with race/ethnicity, national origin, family status and R/ECAPs

Jurisdiction: Savannah (CDBG, HOME, ESG)

Region: Savannah, GA

Figure 18. Job proximity for the City of Savannah by race. (From Savannah Fair Housing Assessment (2017)).

# Recommendations

## Recommendations for Mitigation & Enhancement due to flooding:

- (1) **Identify flood concerns by engaging with residents, citizen advocacy groups, and Savannah Public Works & Water Resources to better understand the communities/residents that will be potentially impacted by flooding and/or displacement from flooding.** The Friends of Tide to Town Coalition should engage with actors involved with stormwater/green infrastructure planning in Savannah (e.g. Savannah Public Works & Water Resources, FEMA, The Harambee House, Inc / Citizens for Environmental Justice (HH/CFEJ)) early and comprehensively to understand possible locations of such projects. These conversations should also serve to inform and raise awareness of potential displacement of residents and initiate the development of comprehensive plans for relocation beyond monetary-compensation schemes. The Friends of Tide to Town Coalition, with collaboration with Savannah Public Works & Water Resources (and any other relevant actors revealed through initial conversations), should identify at least 25 stormwater projects the City is likely to undertake over the next 50 years that will require transfer of private property for public use. This should be done before the trail pathway is finalized.
  
- (2) **Eminent domain should be used only as a last resort when obtaining properties for stormwater projects.** Previous negative experiences in Peoplestown, Atlanta and Savannah illustrate the oppressive nature of use of eminent domain to obtain properties for stormwater projects. The loss of homes and social stability compounded with the potential for some subjectiveness (one engineer says it's necessary here, another engineer could say otherwise) can make this a hostile process.
  
- (3) **Begin proactive and comprehensive planning that accounts for displacement from flooding, in terms of providing programs to mitigate impacts of displacement.** With the identified projects from recommendation 1, the Friends of Tide to Town Coalition should engage conversations with the City of Savannah Development and Real Property Services, Housing and Neighborhood Services, and planners to develop a comprehensive relocation plan beyond monetary compensation. This plan should detail populations and properties vulnerable to displacement, incorporating information gathered from the HIA assessment and recommendation 1; programs aimed to aid displaced persons transition to a new location including resources to assist in job searches, getting access to healthcare services, translation/minority advocacy, etc.; compensation plans. A significant amount of effort toward this plan should be devoted towards mitigating disparities associated with flooding, recognizing that flooding and displacement disproportionately harm individuals and communities of lower income, lower education levels, lower English language proficiency, greater racial diversity, and lower population, and, thus, the programs to help those impacts by displacement should reflect this (e.g. resources for translations within relocation programs). This should be done before the trail pathway is finalized.

- (4) **Identify potential locations to which residents could be relocated and integrate programs with the relevant City of Savannah institutions (e.g. Land Bank Authority) such that these locations could be used for relocation of residents affected by flooding.** Savannah has numerous vacant lots; in addition, the City of Savannah Land Bank Authority aims to acquire vacant, abandoned, and tax-delinquent lots and convert them into affordable housing. This program provides existing structure and resources that could be leveraged into a relocation program. This should be done before the trail pathway is finalized.

### **Recommendations for Connectivity and Physical Activity:**

The following recommendations focus on improving and mitigating potential challenges for trail users. The recommendations primarily focus on urban design including vegetation, landscaping, and pedestrian scale design.

- (1) **Shield trail users from highway noise:** In neighborhoods where the trail must cross, either over or under, a highway specific design and infrastructure should be used. The trail is planned to have close proximity with highways at three locations: Route 16, Route 17, the Harry Truman Parkway. In these areas vegetated sound walls should be installed along the highway route. The infrastructure will aid in noise reduction and air quality mitigation. The design should be completed simultaneously with trail design and constructed along with the trail.
- (2) **Utilize intense vegetation to add sense of place:** Special design consideration should be taken in trail routes near the Savannah Mall. The proposed trail route runs along the side and rear of the Mall. The trail operators should design this portion of the trail to high standards. Ideally, users are unaware that they are walking behind acres of parking. The trail should widen where possible and feature an abundance of greenery and landscaping. The trail operators should incorporate this design consideration into the trail construction so that it is complete at the start of the project.
- (3) **Engage in a formal planning study to identify trail access points:** While the goal of the rapid HIA is to advise Healthy Savannah and partners on the health implications and challenges of the Tide to Town project we recognize that there is still much planning to be completed. Initially it was conceived that one set of recommendations would advise trail head or access point locations. Given the inability of the rapid HIA team to visit Savannah it was decided that recommendations of this nature should be left as next steps. Instead, it is recommended that Healthy Savannah and its partners utilize the U.S.D.O.T Walkability Checklist and the AARP Streets and Sidewalk Survey to audit non-motorized road user conditions on every street leading up to the trail. The audit results, in concert with input from residents, school aged children, and law enforcement officials should be used to design access points and trail heads for Tide to Town. It is



further recommended that decision making for access points is conducted at least a year before any construction begins on the trail. The operators of Tide to Town, Healthy Savannah, and other partners should execute the audit and community engagement.

### **Recommendations for Affordable Housing, Workforce Development, & Social Cohesion:**

As a convener of a wide range of stakeholders, Healthy Savannah can help the Tide to Trail development process take an integrated approach to workforce, economic, and housing development. In the East Harlem Neighborhood Plan Health Impact Assessment: Connecting Housing Affordability and Health, the authors advocate for increased inclusion in the project decision making by the impacted residents. Healthy Savannah has already convened a diverse set of organizations on the board of Tide to Trail, including Twickenham Neighborhood Association. Continuing to bring on surrounding neighborhood residents as stakeholders will enhance the project's ability to positively impact social cohesion. The Atlanta Beltline HIA resulted in the establishment of a robust community engagement framework which guides the roll out and implementation of the Beltline.

Healthy Savannah can use resources and their partnership with the YMCA through the REACH grant to proactively work with residents to develop a community benefits agreement in the next year as a process for honing and development housing, workforce, and economic development recommendations. They can build on the Parks & Recreation 2018 survey by conducting an additional survey of access and commuting patterns to assess resident preferences and priorities for work and housing.

Specific ideas that can guide the convening, discussion, and integration of strategies include:

- Developing healthy equity metrics around Tide to Town's commitment to connecting residents to employment centers, schools, and service.
- Advocating for policy standards that provide a high level of permanent, living wage jobs to community residents as additional amenities are developed connected to Tide to Town
- Supporting the creation of a fund for affordable housing projects, workforce development programs, and other resident priorities to access as Tide to Town is developed
- Explore innovation examples of cooperative, shared equity models between private entities, government, and residents for large scale infrastructure, projects, and programs

### **Figure 19. A Case Study of the Turner Field Community Benefits Coalition**

The Turner Field Community Benefits Coalition came together in 2013 when residents and leaders from the neighborhoods surrounding the Turner Field stadium in Atlanta recognized the need for coordinated action after the Braves announced they would stop playing there. These historically black neighborhoods had been impacted by the preparation for the Olympics in the 1990s; and had never quite recovered from the loss of capital and connectivity when highways were built through their tight knit community in the 1950s and 1960s. The Olympics promised jobs, services, and amenities to residents that ultimately went unfulfilled as development approvals were granted in exchange for contracts and private funding.

The residents wanted whomever was selected as the new developer of the stadium to commit to being responsive to their priorities by signing a negotiated community benefits agreement. Unfortunately lack of support from the City of Atlanta resulted in their demands being largely ignored. The residents came together to survey their neighborhoods and design a community benefits agreement that named priority areas including Housing, Workforce Development, Infrastructure, Arts & Services, and Accountability.

A key challenge was at the intersection of affordable housing and green infrastructure. Due to runoff from the highways, the houses in the neighborhoods were prone to flooding. Attempts to mitigate the flooding, including the use of green infrastructure such as permeable surfaces, had proven to be unsuccessful. Nevertheless the property values in the neighborhood steadily increased as the developers were announced, confirming fears about pending evictions, property tax increases, and lack of affordable housing.

In a thinly veiled attempt to assemble land for private development, the City of Atlanta used eminent domain to seize the houses on one of the streets in the neighborhood. The stated public use of the land was for a retention pond to deal with the flooding. The residents, contending that preventing displacement should be the number one priority of the City, proposed a different site for the retention pond - an already existing park in the middle of one of the neighborhoods. Two of the remaining families on the street are still embroiled in a legal battle over the claims to their property.

# Reporting

This list provides a snapshot of those entities and stakeholders who may be interested in and responsive to the analysis conducted in this health impact assessment. There is overlap between entities and individuals who are part of Tide to Town, workforce development efforts, and service providers (highlighted in bold and underlined).

## Stakeholder list for dissemination:

Entity	Contact person	Organization	Role
<b><u>Step Up Savannah Board member</u></b>	<b><u>Steven Allison</u></b>	<b><u>Union Mission</u></b>	<b><u>Executive Director</u></b>
<b><u>Step Up Savannah Board member</u></b>	<b><u>Sr. Pat Baber</u></b>	<b><u>St. Mary's Community Center</u></b>	<b><u>Director</u></b>
Step Up Savannah Board member	Arthur Best	Economic Opportunity Authority	Workforce Development Director
Step Up Savannah Board member	Latoya Brannen	Safety Net Planning Council	Care Coordinator
Step Up Savannah Board member	Dr. Autry Byrd	Savannah State University	BSW Field Coordinator
Step Up Savannah Board member	Scott Center	National Office Systems Inc.	President
Step Up Savannah Board member	Falen Cox	Cox, Rodman & Middleton, LLC	Partner
<b><u>Step Up Savannah Board member</u></b>	<b><u>Tabatha Crawford Roberts</u></b>	<b><u>Neighborhood Leadership Academy</u></b>	<b><u>graduate</u></b>
Step Up Savannah Board member	Lawton C. Davis, MD	Coastal Health District	Director
Step Up Savannah Board member	Eddie Deloach	City of Savannah	Mayor
Step Up Savannah Board member	Cheryl D. Dozier, DSW	Savannah State University	President
<b><u>Step Up Savannah Board member</u></b>	<b><u>Terry Enoch, Vice Chair</u></b>	<b><u>Savannah-Chatham County Public School System</u></b>	<b><u>Chief of Police</u></b>
Step Up Savannah Board member	Carl Gilliard	Feed the Hungry	CEO
Step Up Savannah Board member	Holden Hayes, Immediate Past Chair	South State Bank	President
Step Up Savannah Board member	Diane Jackson	Young Men of Honor	Founder
Step Up Savannah Board member	Betty Jones	Neighborhood Leadership Academy	graduate
Step Up Savannah Board member	Terry Lemmons	Workplace Advisory Services	Owner
Step Up Savannah Board member	Molly Lieberman	Loop It Up Savannah	Executive Director
Step Up Savannah Board member	Betty Lloyd	West Savannah Neighborhood Association	
<b><u>Step Up Savannah Board member</u></b>	<b><u>Dr. Ann Levett</u></b>	<b><u>Savannah Chatham County</u></b>	<b><u>Superintendent</u></b>

<b><u>member</u></b>		<b><u>Public Schools</u></b>	
Step Up Savannah Board member	Patricia Lyons	Senior Citizens, Inc	President
<b><u>Step Up Savannah Board member</u></b>	<b><u>Frank Macgill, Attorney at Law</u></b>	<b><u>HunterMaclean</u></b>	<b><u>Managing Partner</u></b>
Step Up Savannah Board member	Pastor Ricardo Manuel	2nd Ebenezer Missionary Baptist Church	Pastor
<b><u>Step Up Savannah Board member</u></b>	<b><u>Maureen McFadden</u></b>	<b><u>Gateway Community Service Board</u></b>	<b><u>Director of Child and Adolescent Services</u></b>
Step Up Savannah Board member	John Neely	Savannah, Colliers International	Principal
Step Up Savannah Board member	Gary Sanchez	AT&T	Southeast Georgia Regional Director, External Affairs
<b><u>Step Up Savannah Board member</u></b>	<b><u>Gregg Schroeder</u></b>	<b><u>United Way of the Coastal Empire</u></b>	<b><u>President/CEO</u></b>
Step Up Savannah Board member	The Honorable Al Scott	Chatham County Board of Commissioners	Chairman
Step Up Savannah Board member	Lee Smith	Chatham County	County Manager
Step Up Savannah Board member	David Sneed, Chair	Gulfstream Aerospace Corporation	
<b><u>Step Up Savannah Board member</u></b>	<b><u>Mark Sprosty, Treasurer</u></b>	<b><u>Savannah Economic Development Authority</u></b>	<b><u>VP of Finance and Administration</u></b>
Step Up Savannah Board member	Joseph J. Steffen, Jr.		Attorney
Step Up Savannah Board member	Jim Stevenson		Civic Leader
<b><u>Step Up Savannah Board member</u></b>	<b><u>Brent Stubbs</u></b>	<b><u>Savannah Technical College</u></b>	<b><u>Dean of General Studies</u></b>
<b><u>Step Up Savannah Board member</u></b>	<b><u>Gloria Williams</u></b>	<b><u>Neighborhood Leadership Academy</u></b>	<b><u>Graduate</u></b>
Step Up Savannah Board member	Dr. Zke Zimmerman	President	100 Black Men of Savannah
Tide to Town Board	Paula Kreissler, Vice-Chair	Healthy Savannah	Director of Healthy Living and Community Development
Tide to Town Board	George Seaborough	Twickenham Neighborhood Association	
Tide to Town Board	Brent Buice, Chair	East Coast Greenway Alliance	South Carolina and Georgia Coordinator
Tide to Town Board	Laura Ballock, Treasurer	Barge Design Solutions	Savannah Office Lead
Tide to Town Board	John Bennett	Georgia Bikes	Safety Education Programs Manager
Tide to Town Board	Sean Brandon	City of Savannah	Management Services Bureau Chief
Tide to Town Board	Caila Brown	Bike Walk Savannah	Executive Director
Tide to Town Board	Denise Grabowski	sybioncity	Principal
Tide to Town Board	Mike Maynor	Quality Bike Shop	Owner
Tide to Town Board	Jim Collins	Thomas & Hutton	Vice President and Regional

			Manager
<b><u>Tide to Town Board</u></b>	<b><u>Terry Enoch</u></b>	<b><u>Savannah-Chatham County Public School System</u></b>	<b><u>Chief of Police</u></b>
SEDA Board	John Coleman, Chairman	Bonitz of Georgia, Inc.	Owner
<b><u>SEDA Board</u></b>	<b><u>Paul Hinchey, Vice Chairman</u></b>	<b><u>St. Joseph's/Candler Health System</u></b>	<b><u>CEO</u></b>
SEDA Board	Kay Ford, Secretary/Treasurer	BankSouth	Chief Banking Officer
SEDA Board	Karen Bogans	International Paper	Communications Manager
<b><u>SEDA Board</u></b>	<b><u>Cheri Dean</u></b>	<b><u>Park Place Outreach, Inc</u></b>	<b><u>Transitional Living Program, Program Director</u></b>
SEDA Board	Reed Dulany	Georgia Historical Society	Dulany Industries, Inc, President
SEDA Board	Truitt Eavenson	Georgia Power	Southeast Region Vice President
SEDA Board	Nina Gompels	NTG Enterprises Inc	Owner
SEDA Board	Steve Green	Georgia Chamber of Commerce, former Chair	Morris Manning Martin & Green Consulting LLP, President & CEO
SEDA Board	Bill Hubbard	Georgia Chamber of Commerce	Chair
SEDA Board	Kevin Jackson	Georgia Ports Authority	EnvironVac Holdings LLC, President and CEO
SEDA Board	Bob James	Carver State Bank	President
<b><u>SEDA Board</u></b>	<b><u>Frank Macgill</u></b>	<b><u>HunterMaclean</u></b>	<b><u>Managing Partner</u></b>
SEDA Board	Quentin Marlin	Ellis, Painter, Ratterree & Adams LLP	Partner
SEDA Board	Greg Parker	Parker's Kitchen	Founder, CEO
SEDA Board	Kalpesh Patel	Image Hotels	President, COO
SEDA Board	Joyce Roche´	Girls, Inc	Former CEO and President
SEDA Board	Willie Seymore	International Longshoremen's Association Local 1414	Vice President
SEDA Board	Trey Thompson	Savannah Pilots Association	Master Pilot
Working Families Network	Yolandra Shipp	Academic Girls Empowering for Success (AGES)	Founding Advisor
Working Families Network	Mary Jane Crouch	America's Second Harvest of Coastal Georgia	Executive Director
Working Families Network	Sarahlyn U Phillips	AWWIN, Inc (Assisting Working Women In Need)	Founder
Working Families Network	Mahogany Bowers	Blessings In A Bookbag, Inc.	Founder
Working Families Network	Tiffany Nelson	Build A Bridge Foundation of Georgia, Inc.	Executive Director
Working Families Network	Cindy Kelley	Chatham-Savannah Authority for the Homeless	Executive Director
Working Families Network	Jesse Rosenblum	Coastal Heritage Museum	Nutrition & Garden Program Coordinator
Working Families Network	Catalina Garcia-Quick	Communities in Schools	Executive Director

Working Families Network	Richard Reeve	Consumer Credit Counseling Service	Director of Education
	<i>Deep Center</i>	Dare Dukes	Executive Director
Working Families Network	Freddie Patrick	Eastside Concerned Citizens Inc	Executive Director
Working Families Network	Katrina Bostick	Family Promise of Greater Savannah	Executive Director
Working Families Network	Nikki White	Fatherless Daughters of America	Founder and CEO
Working Families Network	Teri Schell	Forsyth Farmers' Market, Inc.	Executive Director
Working Families Network	Kibwana Burks	Frank Callen Boys & Girls Club	Director of Mentoring Programs
Working Families Network	Zelonia Williams	Future Minds Literacy and Adult Education, Inc.	
Working Families Network	Melissa Reams	Georgia Association for Primary Health Care	Healthy Teens for a Healthy Savannah, Project Coordinator
Working Families Network	Marco L. George	George Leile Visions, Inc	Program Director
Working Families Network	Frenchye Wilkerson	Georgia Vocational Rehabilitation Agency	Team Lead
Working Families Network	Jennifer Tucker	Goodwill of Southeast Georgia	Senior Director of Workforce Development
Working Families Network	Dr. Mildred McClain	Harambee House	Director
Working Families Network	Ellen Bradley	Heads-Up Guidance Services (HUGS)	HUGS' Executive Board Member
Working Families Network	Carolyn Guilford	Health Restoration Consulting	
Working Families Network		Kicklighter Resource Center, Inc.	
Working Families Network	Molly Lieberman	Loop It Up Savannah	Executive Director
Working Families Network	Mary Fuller	Lutheran Services of Georgia	Executive Director
Working Families Network	Rebecca Major	MedBank Foundation, Inc.	Executive Director
Working Families Network	Lee Robbins	The Mediation Center of the Coastal Empire, Inc	Programs Manager
Working Families Network	Jeff Parsons	The Moses Jackson Center Advancement Center	Training Instructor
Working Families Network	Michael O'Neal	Parent University	
<b><u>Working Families Network</u></b>	<b><u>DaShauna Kimble</u></b>	<b><u>Park Place Outreach, Inc</u></b>	<b><u>Assistant Director/Sr. Case Manager</u></b>
Working Families Network	Kerri Goodrich	Performance Initiatives	Executive Director
Working Families Network	Kesha Gibson-Carter	Rape Crisis Center of the Coastal Empire	Executive Director
Working Families Network	Tabatha Crawford-Roberts	Right Track Consulting Services, LLC	Founder
Working Families Network	Linda James	The Salvation Army	Business Administrator
Working Families Network	Jeffrey Schifanelli	Savannah Community Acupuncture, Inc.	
Working Families Network	Ethel Berksteiner	Savannah Technical College	Executive Director of LEC and

			TSC
Working Families Network	Jennifer Graham	Shelter from the Rain	Executive Director
Working Families Network	Sister Julie Franchi	Social Apostolate	Director
<b><u>Working Families Network</u></b>	<b><u>Sharon Simpson</u></b>	<b><u>St. Mary's Community Center</u></b>	<b><u>Workforce Developer</u></b>
Working Families Network	Kate Blair	Step Up Savannah	Director of Development & Communications
<b><u>Working Families Network</u></b>	<b><u>Laura Lane McKinnon</u></b>	<b><u>Union Mission</u></b>	<b><u>Director of Development</u></b>
Working Families Network	Ariana Berksteiner	United Ministries: Emmaus House	Executive Director
<b><u>Working Families Network</u></b>	<b><u>Daniela Trajkovska</u></b>	<b><u>United Way of the Coastal Empire</u></b>	
Working Families Network	Tammy A.K. Mixon-Calderon	Wesley Community Centers of Savannah, Inc.	
Working Families Network	Rev. Eric Beene, Pastor	White Bluff Presbyterian Church	
Working Families Network	Stephen P. Dantin, Executive Director	Whitfield Foundation and Center, Inc.	
Working Families Network	Dr. LaVeisha Mobley-Cummings	Youth Advocate Programs, Inc.	Tri-State Regional Director
<b><u>Healthy Savannah</u></b>	<b><u>Adam Walker</u></b>	<b><u>St. Joseph/Candler Hospital System</u></b>	<b><u>Coastal Georgia Indicators Coalition, Chair</u></b>
Healthy Savannah	Jennifer Wright	Memorial University Medical Center	Coastal Georgia Indicators Coalition, Vice Chair
Healthy Savannah	Michael Kemp	Synovus Trust Company, NA	Coastal Georgia Indicators Coalition, Past Chair
<b><u>Healthy Savannah</u></b>	<b><u>Linda Cramer</u></b>	<b><u>Chatham County Board of Commissioners</u></b>	<b><u>Coastal Georgia Indicators Coalition, Charter Organization Representative</u></b>
<b><u>Healthy Savannah</u></b>	<b><u>Toby Moreau</u></b>	<b><u>United Way of the Coastal Empire</u></b>	<b><u>Coastal Georgia Indicators Coalition, Charter Organization Representative</u></b>
Healthy Savannah	Otis Johnson	Community Member	Coastal Georgia Indicators Coalition, Charter Org. Representative Emeritus
Healthy Savannah	Tammi Brown	Chatham County Health Department	Coastal Georgia Indicators Coalition, Board Member
<b><u>Healthy Savannah</u></b>	<b><u>Mark Johnson</u></b>	<b><u>Gateway Community Service Board</u></b>	<b><u>Coastal Georgia Indicators Coalition, Board Member</u></b>
Healthy Savannah	Melanie Wilson	Metropolitan Planning Commission	Coastal Georgia Indicators Coalition, Board Member
Healthy Savannah	Lizann Roberts director.cgic@gmail.com	Coastal Georgia Indicators Coalition	Executive Director

# Evaluation

The purpose of evaluating the Health Impact Assessment is to assess the process of the assessment. The goal of the evaluation is to determine if the steps taken in the HIA can be improved. For the Tide to Town rapid HIA the evaluation section proposes an evaluation plan for members of Healthy Savannah to conduct.

To evaluate and monitor the health impact assessment and recommendations Healthy Savannah should work with stakeholders listed above (see reporting section) and with residents and business owners in Savannah to establish an HIA steering committee. The committee will work together to ensure that this health impact assessment meets the intended goals of the Tide to Town trail. The following section is the evaluation plan.

First the steering committee should assess which residents and business owners should participate in the committee. To begin, chairs of the committee must decide the appropriate number of residents and business owners. Ideally, the number of participants is balanced across various city sections. The chairs should utilize all City of Savannah media communications to spread the word about joining the committee. Once requests to join are offered, chairs of the committee should evaluate the demographics of prospective members. Should participants come from similar race, ethnic, income, and employment classes, chairs of the committee should seek out residents and business owners from diverse demographics.

The first task of the Tide to Town is to evaluate the current scope of this rapid HIA. Are committee members satisfied with the health outcomes and determinants assessed? Were there any health outcomes and/or determinants not considered? It should be recognized that the HIA was conducted focusing on three determinants flooding, street connectivity, and housing because other health impact assessments conducted for trails focused on these determinants. However, there are many others to consider, including but not limited to business growth and change, air quality, transportation, and tourism.

The steering committee will also want to evaluate the assessment of the health determinants. A question of relevance could be: Was evidence used in the HIA supported by literature?

In the case of the Tide to Town rapid HIA, researchers used peer reviewed journals to identify previous studies which evaluated health determinants correlation with health outcomes. The references section of the HIA identifies the sources of the literature. Another question would consider if project alternatives were examined in the rapid HIA? In the Tide to Town rapid HIA alternatives were not considered. The proposed trail route was taken as a given and the assessment and recommendations assumed the route would remain. The steering committee may want to evaluate whether or not there are better or worse alternatives to the Tide to Town trail route. Alternatives may include, re-routing the trail in some areas or not executing the project.



Finally, the steering committee will want to evaluate the recommendations proposed in the Tide to Town rapid HIA. Several questions should be explored:

1. Did the HIA evaluate evidenced-based design solutions or alternatives?
2. Did the HIA provide analysis of the effectiveness and/or feasibility of the recommendations?
3. Are the recommendations a priority of the steering committee?

The evaluation plan for the Tide to Town rapid health impact assessment has the following steps:

**Assemble a Tide to Town Steering Committee:** The committee must include members of Healthy Savannah, board members of housing, workforce development, and environmental groups, in addition to residents and business owners. The committee must be diverse in terms of location, race, ethnicity, age, income, sex, and employment type.

**Evaluate the scope of the HIA:** Once the committee is assembled, it should work together to determine if the goals, health determinants, and health outcomes of the HIA fit within the priorities of the Tide to Town trail project.

**Measuring quality of HIA assessment:** The committee will want to determine if the HIA meets rigor and considers enough alternatives.

**Evaluate recommendations:** Committee members must determine if the recommendations are effective, feasible, and in concert with other goals of the Tide to Town project.

# Monitoring

The objective of monitoring in an HIA is to track the impacts of the HIA on the decision-making process by tracking how the recommendations were received and implemented in the decision-making process as well as the impacts of the decision on health determinants. Monitoring can be particularly significant when the predicted health outcomes are adverse and the pathways for such outcomes may be not well characterized. Because the Tide to Town Trail has both a broad physical scope and a broad array of potential inequitable health impacts, we highly suggest that a monitoring plan, separate from an evaluation plan, be implemented for this HIA. This being a rapid HIA, the following table detailing a monitoring plan are based on accessible information and, therefore, can serve as a start for a more detailed plan. For example, the “action plan if not compliant” fields in the recommendation adoption monitoring table can be determined using more appropriate details by the Friends of Tide to Town Coalition. See Appendix A for a monitoring plan template.

## Recommendation adoption monitoring:

Mitigation/Recommendation	Method to monitor implementation	Responsible party	Monitoring timeline	Action plan if not compliant
<p><b>Flooding 1:</b> The Friends of Tide to Town Coalition should engage conversation with actors involved with stormwater/green infrastructure planning in Savannah (e.g. Savannah Public Works &amp; Water Resources, FEMA, The Harambee House, Inc / Citizens for Environmental Justice (HH/CFEJ)) early and comprehensively to understand possible locations of such projects. These conversations should also serve to inform and raise awareness of potential displacement of residents and initiate the development of comprehensive plans for relocation beyond monetary-compensation schemes. The Friends of Tide to Town Coalition, with collaboration with Savannah Public Works &amp; Water Resources (and any other relevant actors revealed through initial conversations), should identify at least 25 stormwater projects the City is likely to undertake over the next 50 years that will require transfer of private property for public use.</p>	<p>A) How many meetings/how many times were residents, citizen advocacy groups, and Savannah Public Works &amp; Water Resources engaged to understand future flood management infrastructure? B) How many potential stormwater projects were identified as likely to be undertaken?</p>	The Friends of Tide to Town coalition	Before the trail pathway is finalized.	
<p><b>Flooding 2:</b> With the identified projects from recommendation 1, the Friends of Tide to Town Coalition should engage conversations with the City of Savannah Development and Real Property Services, Housing and Neighborhood Services, and planners to develop a comprehensive relocation plan beyond monetary compensation. This plan should detail populations and properties vulnerable to displacement, incorporating information gathered from the HIA assessment and recommendation 1; programs aimed to aid displaced persons transition to a new location including resources to assist in job searches, getting access to healthcare services, translation/minority advocacy, etc.; compensation plans. A significant amount of effort toward this plan should be devoted towards mitigating disparities associated with flooding, recognizing that flooding and displacement disproportionately harm individuals and communities of</p>	<p>A) How many meetings were held to progress proactive and comprehensive planning for displacement? B) How many populations and properties were identified as vulnerable to displacement?</p>	The Friends of Tide to Town coalition	Before the trail pathway is finalized.	

lower income, lower education levels, lower English language proficiency, greater racial diversity, and lower population, and, thus, the programs to help those impacts by displacement should reflect this (e.g. resources for translations within relocation programs).				
<b>Flooding 3:</b> Identify potential locations to which residents could be relocated and integrate programs with the relevant City of Savannah institutions (e.g. Land Bank Authority) such that these locations could be used for relocation of residents affected by flooding.	A) How many potential properties for relocation were identified?	The Friends of Tide to Town coalition	Before the trail pathway is finalized.	
<b>Connectivity &amp; Physical Activity 1:</b> In neighborhoods where the trail must cross, either over or under, a highway specific design and infrastructure should be used. The trail is planned to have close proximity with highways at 3 locations: Route 16, Route 17, the Harry Truman Parkway. In these areas vegetated sound walls should be installed along the highway route. The infrastructure will aid in noise reduction and air quality mitigation. The design should be completed simultaneously with trail design and constructed along with the trail.	A) How many locations where the trail and highway intersect were identified? B) How many locations for sound wall installations were identified? C) How much in funds were allocated for the construction of sound walls?	The Friends of Tide to Town coalition	Before the trail pathway & design are finalized.	
<b>Connectivity &amp; Physical Activity 2:</b> Special design consideration should be taken in trail routes near the Savannah Mall. The proposed trail route runs along the side and rear of the Mall. The trail operators should design this portion of the trail to high standards. Ideally, users are unaware that they are walking behind acres of parking. The trail should widen where possible and feature an abundance of greenery and landscaping. The trail operators should incorporate this design consideration into the trail construction so that it is complete at the start of the project.	A) What measures were taken to design the trail section near the Savannah Mall distinctly separate trail users from the Mall parking lot?	The Friends of Tide to Town coalition	Before trail design is finalized.	
<b>Connectivity &amp; Physical Activity 3:</b> While the goal of the rapid HIA is to advise Healthy Savannah and partners on the health implications and challenges of the Tide to Town project we recognize that there is still much planning to be completed. Initially it was conceived that one set of recommendations would advise trail head or access point locations. Given the inability of the rapid HIA team to visit Savannah it was decided that recommendations of this nature should be left as next steps. Instead, it is recommended that Healthy Savannah and it's partners utilize the U.S.D.O.T Walkability Checklist and the AARP Streets and Sidewalk Survey to audit non-motorized road user conditions on every street leading up to the trail. The audit results, in concert with input from residents, school aged children, and law enforcement officials should be used to design access points and trail heads for Tide to Town. It is further recommended that decision making for access points is conducted at least a year before any construction begins on the trail. The operators of Tide to Town, Healthy Savannah, and other partners should execute the audit and community engagement.	A) Were the US DOT Walkability Checklist and AARP Streets and Sidewalk Survey used to audit non-motorized road user conditions on every street leading up to the trail? B) How many residents, school-aged children, and law enforcement officials were engaged for input? C) Were the audit, input engagement, and access point selection completed at least a year before any construction on the trail began?	The Friends of Tide to Town coalition, Healthy Savannah	At least one year before any construction begins on the trail	
<b>Affordable Housing, Workforce Development, &amp; Social Cohesion:</b> Healthy Savannah can use resources and their partnership with the YMCA through the REACH grant to proactively work with residents to develop a community benefits agreement in the next year as a	A) Was a signed, legally binding community benefits agreement reached? B) Who participated in the CBA process?	The Friends of Tide to Town coalition, Healthy Savannah	In the next year	

<p>process for honing and development housing, workforce, and economic development recommendations. They can build on the Parks &amp; Recreation 2018 survey by conducting an additional survey of access and commuting patterns to assess resident preferences and priorities for work and housing.</p> <p>Specific ideas that can guide the convening, discussion, and integration of strategies include:</p> <ul style="list-style-type: none"> <li>• Developing healthy equity metrics around Tide to Town's commitment to connecting residents to employment centers, schools, and service.</li> <li>• Advocating for policy standards that provide a high level of permanent, living wage jobs to community residents as additional amenities are developed connected to Tide to Town</li> <li>• Supporting the creation of a fund for affordable housing projects, workforce development programs, and other resident priorities to access as Tide to Town is developed</li> </ul> <p>Explore innovation examples of cooperative, shared equity models between private entities, government, and residents for large scale infrastructure, projects, and programs</p>	<p>B) How much additional data on resident priorities was gathered?  C) What shared equity models were explored?  D) What policies were proposed and/or passed?  E) How much funding was allocated to resident priorities?</p>			
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Potential indicators to use in monitoring impacts of decision on health outcomes/determinants:

Health outcome/Determinant	Predicted health impact of project/policy	Indicators to monitor	Data sources	Next steps
Mental health	With displacement of populations, increased mental stress, reduced social cohesion, reduced resources, etc.	Mentally unhealthy days, suicide, adolescents with a major depressive episode in the past 12 months	Behavioral Risk Factor Surveillance System (BRFSS), National Health Interview Survey (NHIS)	Monitoring by Healthy Savannah, Chatham County Health Department
Chronic illness	With increased access to active transport/recreation infrastructure, improved chronic illness outcomes (heart diseases, diabetes, etc.)  With decreased or status quo access to housing and jobs increased stress related chronic illness outcomes (heart diseases, diabetes, etc.)	CDC Chronic Disease Indicators ( <a href="https://chronicdata.cdc.gov/browse?category=Chronic+Disease+Indicators">https://chronicdata.cdc.gov/browse?category=Chronic+Disease+Indicators</a> )	Chatham County Health Department, National Center for Chronic Disease Prevention and Health Promotion's (NCCDPHP) Chronic Disease and Health Promotion Data and Indicators Open Data Portal	Monitoring by Healthy Savannah, Chatham County Health Department
Non-motorized user collision with cars	With increased resident activity, increased exposure to traffic may increase risk of collision	Non-motorized user collision with cars, fatalities	GDOT, Georgia Electronic Accident Reporting System (GEARS)	Monitoring by Healthy Savannah, Chatham County Health Department
Accidental injuries	With increased resident activity, increased exposure to non-motorized traffic may increase risk of collision and increased use of the trail may increase falls/injuries	Injury deaths	Georgia Electronic Accident Reporting System (GEARS)	Monitoring by Healthy Savannah, Chatham County Health Department

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## Appendix A: Monitoring Plan Template

Monitoring Plan Elements	Responsible Party	Indicators
<p><b>Background:</b></p> <ul style="list-style-type: none"> <li>• State the plan, project or policy evaluated by the HIA.</li> <li>• Describe the key elements of the plan, project or policy that were analyzed by the HIA.</li> <li>• List process and outcomes recommendations made to decision-makers. If prioritized, list in that order.</li> <li>• List decision-makers (e.g., agencies, elected officials) involved in deciding on the plan, project, or policy.</li> <li>• Identify 2-3 goals for the monitoring process.</li> <li>• Identify resources to conduct, complete, and report monitoring activities, including data collection.</li> <li>• Define roles for individuals or organizations.</li> <li>• Identify criteria or triggers for action.</li> </ul>		
<p><b>Decision Outcome:</b></p> <ul style="list-style-type: none"> <li>• What was the outcome of the decision related to the plan, project or policy under review?</li> <li>• Which, if any, recommendations were integrated into the plan, project or policy?</li> <li>• Were recommendations implemented after the decision?</li> <li>• Overall, did the final plan, project or policy decision change in a way that was consistent with the recommendations of the HIA?</li> </ul>		<p>Create tracking chart where note on a quarterly basis:</p> <ul style="list-style-type: none"> <li>• Whether decision was made</li> <li>• Which recs. were incorporated into the plan, project, or policy</li> <li>• Whether each accepted rec. was implemented as agreed to</li> </ul>
<p><b>Decision Process:</b></p> <ul style="list-style-type: none"> <li>• To what extent did stakeholders use HIA findings?</li> <li>• To what extent did decision-makers use HIA findings?</li> <li>• Did the HIA inform a discussion of the trade-offs involved with a project/policy?</li> <li>• Were discussions of connections between the decision and health evident in the media, statements by public officials or stakeholders, public testimony, public documents, or policy statements?</li> <li>• Did the HIA help to build consensus and buy-in for policy decisions and their implementation?</li> <li>• Did the HIA lead to interest from previously uninvolved groups?</li> <li>• Did the HIA encourage public health agencies to participate in new roles in policy and planning efforts?</li> <li>• Have requests for the study of health impacts on additional projects, plans, or policies in the same jurisdiction followed?</li> <li>• Are there new efforts to institutionalize HIA or other forms of health analysis of public policy?</li> <li>• Did the HIA lead to greater institutional support for consideration of health in formal decision-making processes?</li> </ul>		<p>Create tracking chart that where can note on a bimonthly basis:</p> <ul style="list-style-type: none"> <li>• Media</li> <li>• Testimony</li> <li>• Letters</li> <li>• Communications materials</li> <li>• Referencing of health evidence in public documents</li> </ul>
<p><b>Health Determinants:</b></p> <ul style="list-style-type: none"> <li>• What specific health determinants will be assessed? (e.g., air quality, noise, affordable housing, traffic calming, communicable disease – ideally, these are the health determinants related to our recommendations)</li> </ul>		<p>Create tracking chart that where note on an annual basis:</p> <ul style="list-style-type: none"> <li>• Whether any change in the determinant has been observed</li> <li>• Direction of change</li> </ul>