Eastside Greenway Health Impact Assessment

Promoting Health and Equity in All Policies

Figure. 1

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Introduction

The Cuyahoga County Board of Health (CCBH), in partnership with LAND studio, Cuyahoga County Planning Commission, with assistance from Human Impact Partners conducted a health impact assessment (HIA) to inform and influence planning and implementation decisions related to the establishment of a trail and greenway network traversing diverse communities on Cuyahoga County's eastside. The HIA provides recommendations on plan development, design and implementation.

The CCBH has worked to advance the field of HIA in Cuyahoga County since 2009. Health Impact Assessment is a work stream of the Cuyahoga County PLACEMATTERS (PM) team. The team is guided by its vision for a Cuyahoga County where people can thrive because there is equitable access to resources and opportunities, whether, economic, social or environmental, that are necessary to attain the highest quality of life. The CCBH along with key partner the Cleveland City Planning Commission have organized conferences and local training opportunities, conducted HIAs, and obtained funding to support this work. The Northeast Ohio Health Impact Assessment Partnership (NEO HIA-P) convened in January of 2012, to bring together representatives from diverse sectors of the community sharing a commitment to utilize HIA as a means to advance "Health and Equity in All Policies." "Health and Equity in All Policy" is a coordinated policy response focused on addressing the social, environmental and economic determinants of health such as land use, education, housing, agriculture, transportation and urban development.

Health Impact Assessment

Health Impact Assessment (HIA) is a combination of procedures, methods and tools that systematically judges the potential and sometimes unintended effects of a proposed project, plan or policy on the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects (Improving Health in the United States: The Role of Health Impact Assessment, 2011).

Eastside Greenway

The Eastside Greenway seeks to connect the east side of Cleveland with 18 Greater Cleveland municipalities through a unified trail network that will link neighborhoods to employment centers, transit and existing green spaces. The communities within the study area include East Cleveland, Cleveland Heights, Shaker Heights, Beachwood, Pepper Pike, University Heights, Richmond Heights, Highland Heights, Mayfield Heights, Mayfield Village, Euclid, South Euclid, Lyndhurst, Bratenahl, Orange Village and Warrensville Heights and eastern portions of Cleveland.

Many individual trail segments are already in place within the project area, but lack critical connections. Linking all the individual trails would close gaps in community connections, provide safe alternative means of transportation, decrease the need for motorized travel, and improve the quality of life for a broad user base. Fig. 2 displays the overall Eastside Greenway planning area, with existing trails and proposed trails highlighted. This map shows all of the "missing links" or possibilities for trails and connections, before the community input and feasibility for prioritization of the Eastside Greenway. Many area stakeholders including municipal leaders, institutions, regional entities and neighborhood groups were engaged to participate in a scoping study led by LAND studio in 2012 and 2013. Upon conclusion of the scoping study in the spring of 2013, all agreed that in order to move the concept forward, a more formal planning process was needed.

LAND studio partnered with the Cuyahoga County Planning Commission to receive Transportation for Livable Communities Initiative (TLCI) grant from the Northeast Areawide Coordinating Agency (NOACA) to conduct a planning study for the Eastside Greenway in 2014 and 2015. The anticipated outcome of the TLCI planning process will result in specific trail alignment recommendations throughout the study area, suggested trailhead locations, and a phasing strategy for moving forward into design and implementation.

The goal is to lay the groundwork to create an interconnected public space network that will enhance transportation and recreation in the area, and simultaneously serve as a catalyst for economic development, increased educational opportunities and social benefit.

Figure 2.

Purpose of the Eastside Greenway HIA

The Eastside Greenway Health Impact Assessment (HIA) examined the potential health and equity impacts of the Eastside Greenway Plan. The Eastside Greenway Plan intends to provide recommendations for specific trail alignments, trailhead locations, and a phasing strategy for moving forward into design and implementation to create a unified network that will serve as an alternative mode of transportation, connecting neighborhoods to employment centers, transit, greenspace and recreation opportunities.

Screening –

The Eastside Greenway HIA was proposed during a local HIA training in 2012 hosted by the NEO HIA P. Since the proposed Eastside Greenway project scope was so large (i.e., 18 communities and over 250,000 people), involved communities that are diverse socioecomically and racially, involved numerous stakeholder groups and organizations, there was buy in from the planning team and key leaders, and most importantly an opportunity to elevate health equity, the HIA team easily came to the conclusion that this project was valuable and worthwhile. The HIA team at CCBH applied with the City of Cleveland to Pew and received funding support for this HIA. Once the CCBH and Cleveland City Planning received the funding from Pew, the CCBH HIA team further screened the HIA with the Eastside Greenway core team which includes Cleveland Metroparks, LAND Studio, Cleveland State University and County Planning Commission.
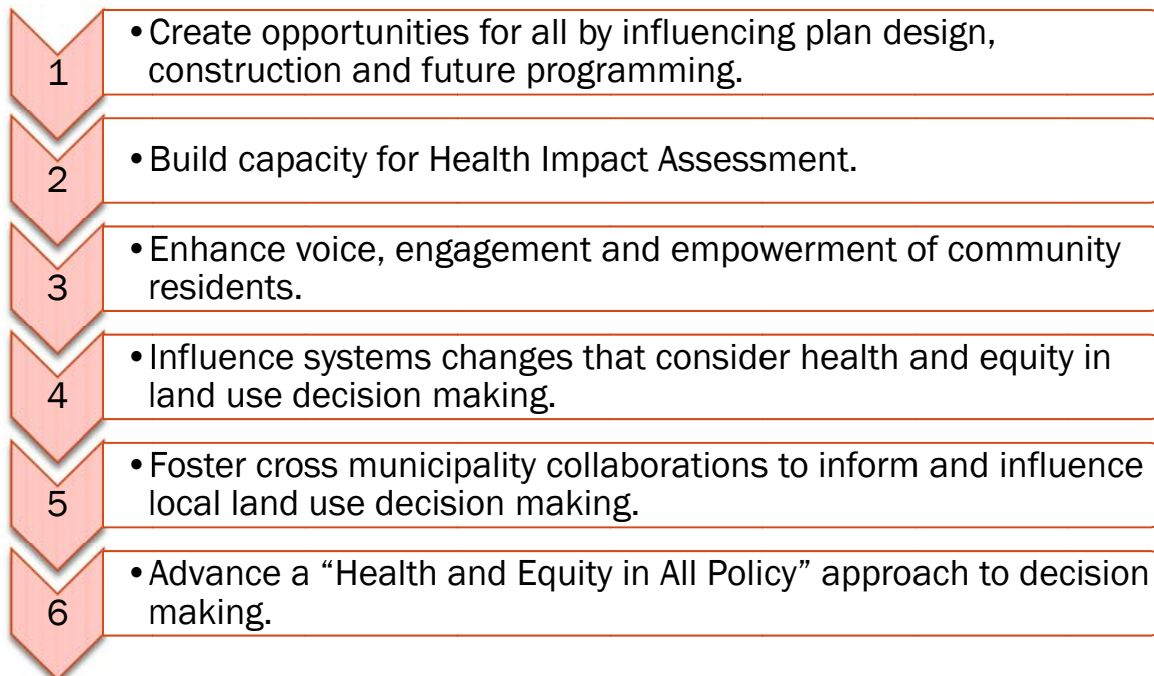

Figure 3.

Scoping

The Eastside Greenway core team applied for the Transportation for Livable Communities Initiative (TLCI) to develop the plan. The incorporation of the HIA was included in the TLCI application, and the scope of services for the planning consultant. With screening completed, the HIA team assembled the Technical Advisory Committee (TAC). This group was created to guide the HIA process for the Eastside Greenway. A list of participants is included on page XX. The TAC represents municipalities, planners, park systems, local and regional organizations, institutions, and watershed groups all with a vested interest in the planning area. The group explored the proposal for the TLCI project, created the goals for the HIA, prioritized the scope, reviewed the HIA findings, and guided the CCBH HIA team along every step of the HIA process.

Figure 4. Goals of the Eastside Greenway HIA

1. • Create opportunities for all by influencing plan design, construction and future programming.

2. • Build capacity for Health Impact Assessment.

3. • Enhance voice, engagement and empowerment of community residents.

4. • Influence systems changes that consider health and equity in land use decision making.

5. • Foster cross municipality collaborations to inform and influence local land use decision making.

6. • Advance a "Health and Equity in All Policy" approach to decision making.

The Eastside Greenway core team assembled a stakeholder group for the TLCI. The HIA team presented the potential health focus areas to this group to assist with prioritizing. The stakeholder group voted on the top three health issues, the HIA team met with the TAC and approved the initial focus areas: health equity, social cohesion, crime/fear of crime, and asked that transportation (safety/physical activity) be included as well. The TAC assembled key experts for each focus area of the HIA who agreed to assist with the HIA. To guide the assessment process, the HIA team constructed research questions and a scope for each of the health focus areas selected for the Eastside Greenway HIA. The list of research questions is included on page 7.
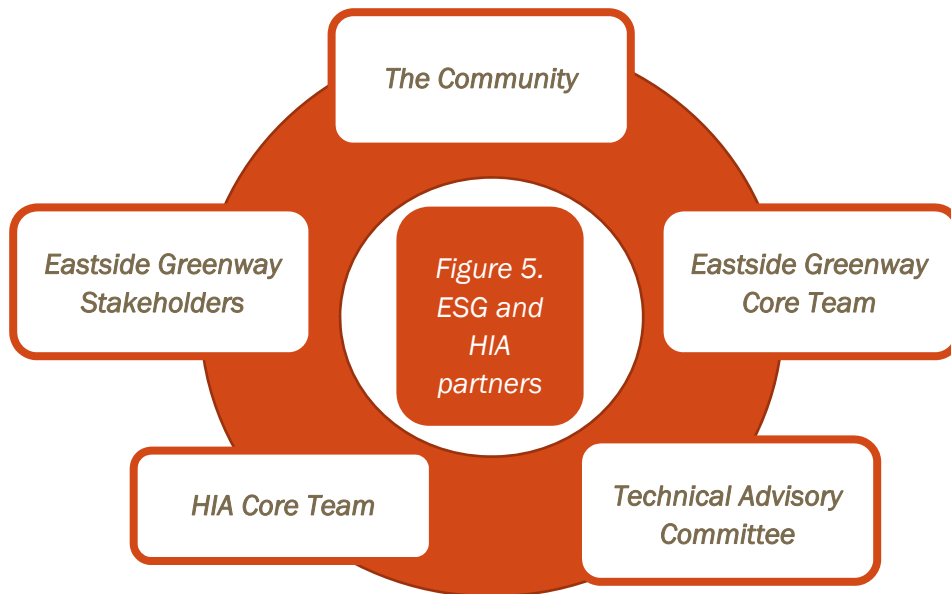
Figure 5. ESG and HIA partners

- The Community
- Eastside Greenway Stakeholders
- Eastside Greenway Core Team
- HIA Core Team
- Technical Advisory Committee

Figure 6. HIA Focus Areas

Equity
- Crime/Fear of Crime
- Social Cohesion
- Transportation Physical Activity/Safety

The HIA process provides opportunities for communities, especially those that endure health inequities, to ensure that decision-making processes reflect their health concerns and aspirations.

| Social Determinant of health	Figure 7. HIA Research Questions
Equity	• How will new trail alignments, connections and trailheads in the ESG study area impact usage by vulnerable populations?
Crime/Fear of Crime	• How do trails and greenways impact crime and safety/perception of crime and safety? • How does crime and safety/perception of crime and safety impact trail usage? • Where are crime hotspots within the municipalities in the Eastside Greenway study area and how could they be impacted by new trail alignments, connections and trailheads? • How will new trail alignments, connections and trailheads in the ESG study area impact the safety of vulnerable populations dealing with social, physical, economic or educational issues?
Transport-ation	• How do trails and greenways impact motor vehicle with bicycle/pedestrian crash rates? • How will new trail alignments, connections and trailheads in the Eastside Greenway study area influence transportation choices involving bicycle and pedestrian modes versus motor vehicles?
Social Cohesion	• How do trails and greenways impact social/community cohesion? • How do trails and greenways impact trail and park usage? • How does improving social interaction on trails and greenways impact mental health outcomes?

The HIA team created a pathway to demonstrate the connections between the Eastside Greenway plan and health outcomes. The pathway below (Fig 8.) is visual picture of how the ESG will ultimately impact health outcomes.

Figure 8. Eastside Greenway HIA Overarching Health Pathway
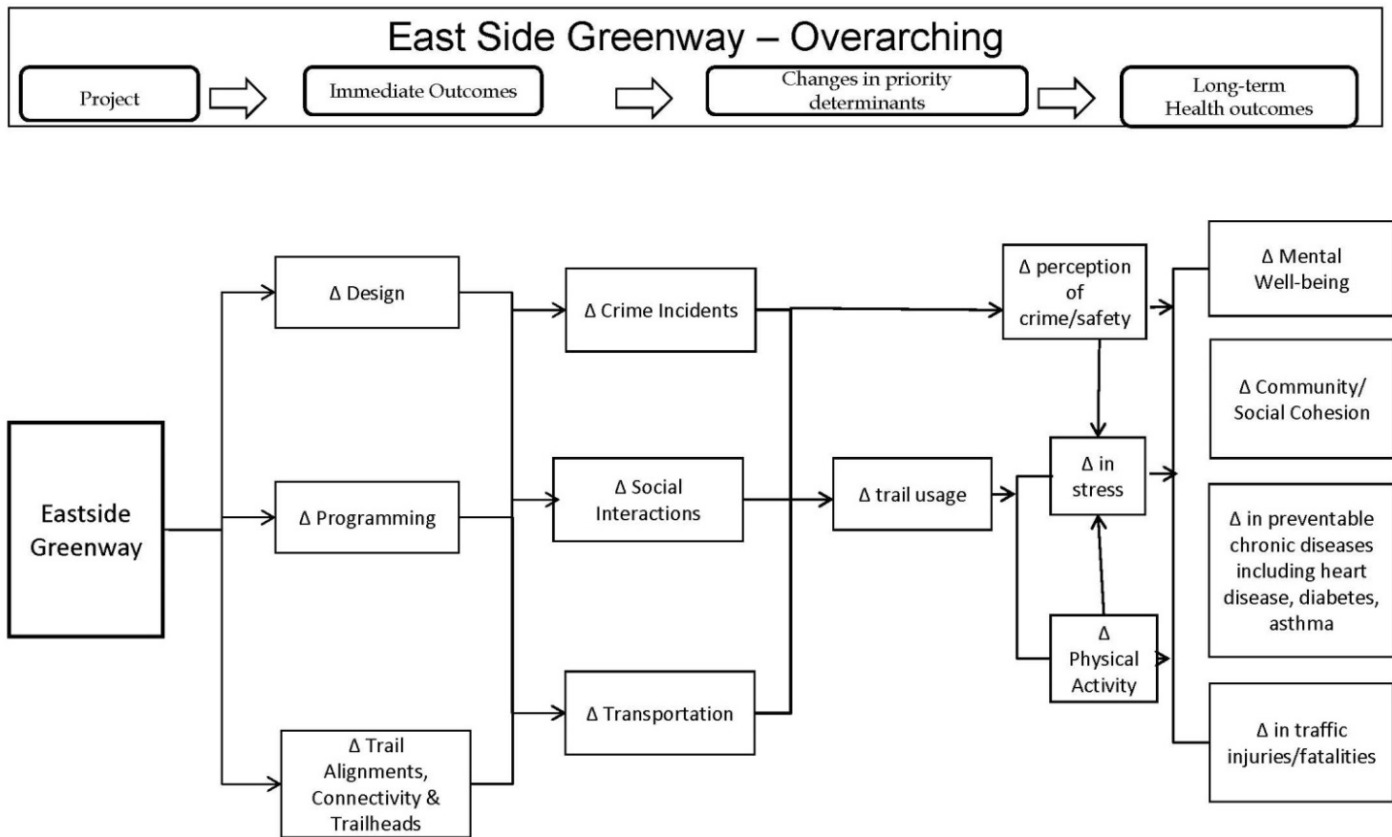
> *Despite growing awareness that social factors have powerful impact on health, decisions about policies and programs that shape these factors are often made without considering their potential health consequences (Health Impact Assessment: A Tool for Promoting Health in All Policies, 2011)*

Methods

During the scoping phase of the HIA, the TAC examined the existing data for each research question, and the data needs. HIA team members conducted a literature review for each HIA focus area. The upcoming focus area sections of this report will describe the specific data used in order to answer each research question.

Figure 9. Data Sources for the Eastside Greenway HIA

Existing Data -previous analysis	Existing data -new analysis	New Data
• Life Expectancy (Vital Statistics, Cuyahoga County Board of Health) • Quality of Life data (Health Improvement Partnership - Cuyahoga) • Metroparks survey results (Cleveland Metroparks)	• Census/demographics (US Census) • Collision (Ohio Department of Transportation) data • Health (Behavior Risk Factor Surveillance Surey) data • Chronic Disease Mortality (Cuyahoga County Board of Halth • Crime (Ohio Incident Based Reporting System) data • Walkscore (Walkscore.com) • Trail count reports -2 locations - (Rails to Trails Conservancy)	• Fear of crime (Kent State University)

The Behavior Risk Factor Surveillance Survey (BRFSS) is a comprehensive health behavior survey conducted to collect standardized and detailed information on various health indicators. The Cuyahoga County BRFSS is a point-in-time survey conducted via telephone of randomly selected adults aged 18 years and older from telephone-equipped households. Specific survey question results were analyzed for the Eastside Greenway HIA communities. In this report, "Eastside Greenway neighbors" refers to BRFSS respondents living in Eastside Greenway communities. This information was available by zip code, rather than census tract, so the HIA team was unable to break out the results exactly by Eastside Greenway regions as identified in Figure 2, however we believe that the geographies match closely enough that we can draw conclusions about the health and conditions in each region according to the BRFSS data.

The Cleveland Metroparks is an extensive system of nature preserves comprising 21,000 acres across Greater Cleveland. Many Metroparks preserves, parks and trails are included within the Eastside Greenway planning area. The Cleveland Metroparks survey results helped to inform this HIA. The survey, conducted in 2011 as part of the Metroparks Centennial plan, included interviews of 4500 (in person) and 1500 (telephone) park users and non-users. The Metroparks survey results were disaggregated and analyzed by race/ethnicity and by income level, and then utilized to predict usage rates and preferred activities for the Eastside Greenway among different racial and ethnic groups.

Describe Fear of Crime survey

The Eastside Greenway HIA team utilized Walk Score to assess the Eastside Greenway planning area (citation). For any address, Walk Score analyzes hundreds of walking routes to nearby amenities. Points are awarded based on the distance to amenities in each category. Amenities

within a 5 minute walk (.25 miles) are given maximum points. A decay function is used to give points to more distant amenities, with no points given after a 30 minute walk.

Walk Score measures pedestrian friendliness by analyzing population density and road metrics such as block length and intersection density. Data sources include Google, Education.com, Open Street Map, the U.S. Census, Localeze, and places added by the Walk Score user community.

Limitations
The geographic scale of the Eastside Greenway led to limitations. Community input. Crime data for all communities. Social Cohesion indicators – not comparable for each of the 17 communities. Trail count information was only available for two locations.

Equity

Neighborhoods and communities are not all created equally and some people are born and live in places where it is difficult to be healthy. Decisions our community makes every day impact health, and those decisions can make it harder for some people to live healthily. Some of these barriers have to do with where a person lives, works, or goes to school and what kind of health systems are in place to deal with illness. Others are related to social factors like jobs, income, and education level. People that live with fewer opportunities to be healthy in their communities are often sicker with chronic diseases such as high blood pressure, heart disease, and diabetes (see Figure X on page 16). When healthy living is easier for everyone, we live longer and healthier lives. Health Equity is when all people have "the opportunity to 'attain their full health potential' and no one is 'disadvantaged from achieving this potential because of their social position or other socially determined circumstance" (Braveman, 2003).

Achieving health equity will entail intentional societal efforts to address avoidable inequalities and achieve the highest level of health for all people.

The HIA team examined place based differences in race/ethnicity, income, education, preferences for outdoor activities and recreation, and the literature to determine areas where inequities are likely within the Eastside Greenway communities.

To determine the likely outcomes of the Eastside Greenway Plan, the HIA team utilized the Metroparks survey.

To examine the differences among the various communities of the Eastside Greenway planning area, the HIA team grouped census tracts within each of four regions, and calculated demographic data from the United States Census. The

map (Fig. 4) below shows the four regions, along with the Eastside Greenway "buffer" area.

Additionally, it would be helpful to see a table that compares not only the regions with each other, but how the entire population of the study area compares to the entire region on the same demographics. For example, is the ESG race more African American than the entire region?
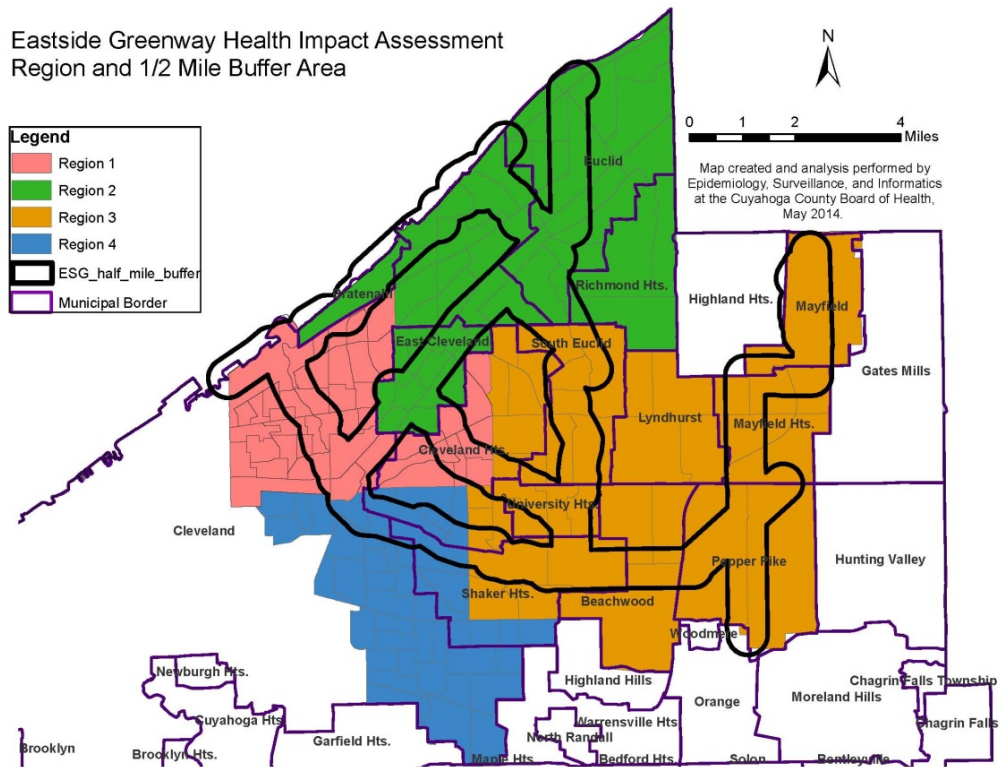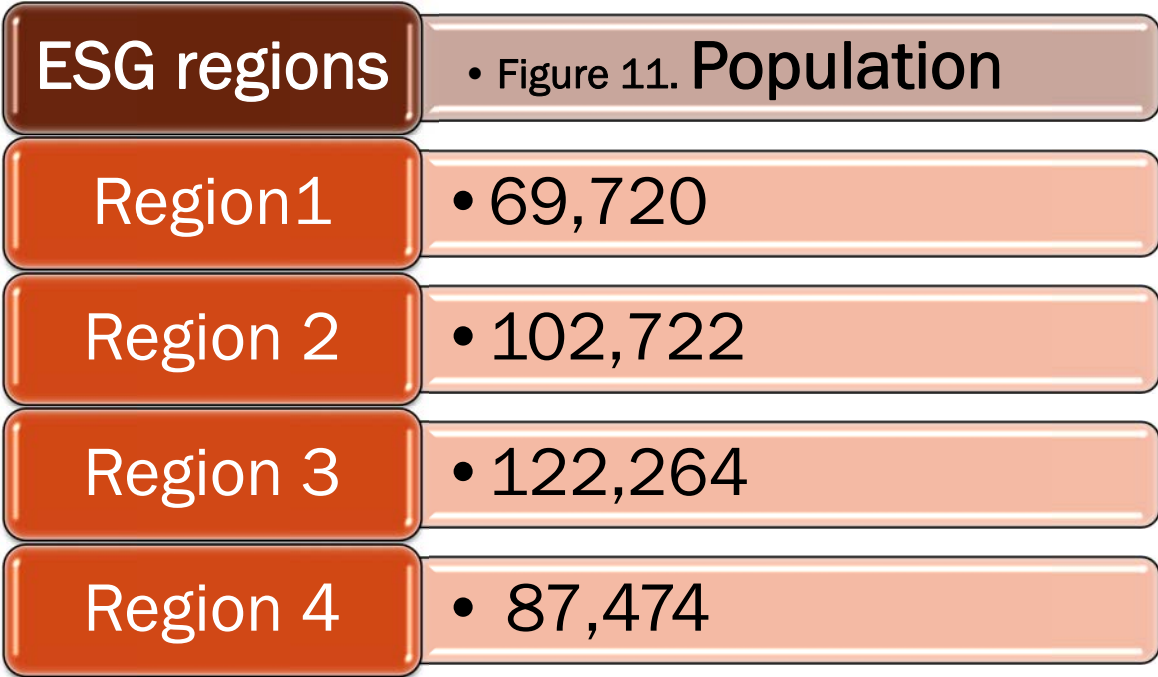

Figure 10.

The graphic below (Figure 11) shows the number of total population represented in each of the four Eastside Greenway regions.

| ESG regions	• Figure 11. Population
Region1	• 69,720
Region 2	• 102,722
Region 3	• 122,264
Region 4	• 87,474

The HIA team discovered stark differences among the ESG regions with regards to education, employment, income, racial makeup, mortality from chronic disease and life expectancy. For example, only around 9% of residents in region 1 hold a Bachelor's Degree or higher, compared to 48% of residents in region 3 (figure 12). In region 3, over 93% of residents are employed in the labor force, compared to only 78% of residents in region 1.

Figure 12. ESG Bachelor's Degree or Higher
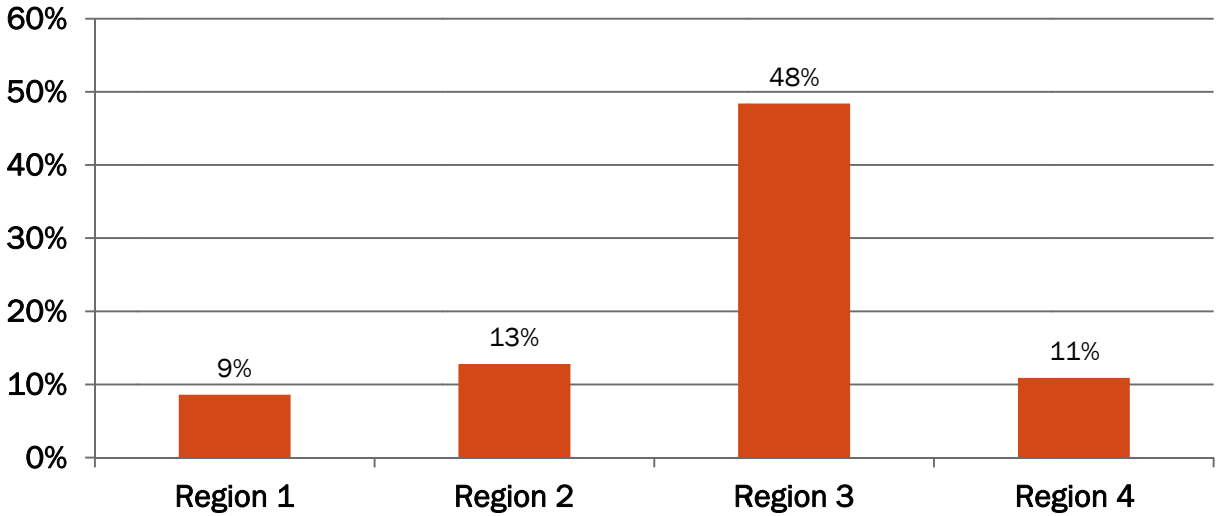
Only around 3% of the residents in region 3 have an income lower than $10,000 compared to over 20% of the residents in region 1 (see chart on page 14 in the social cohesion section). The median income of households in region 1 is $22,250 compared to $61,200 for households in region 3.
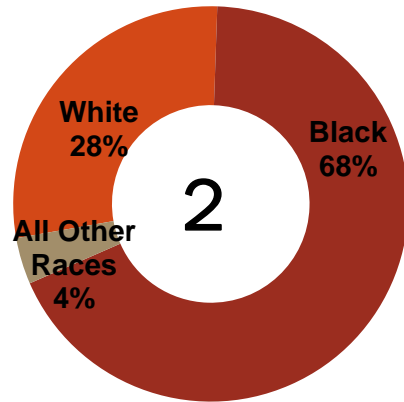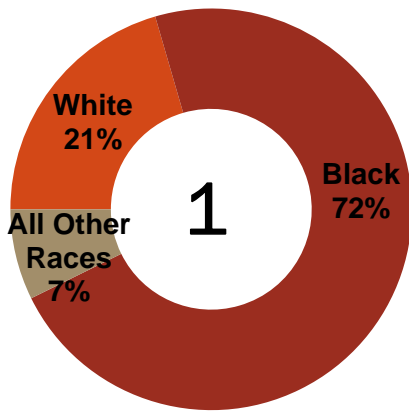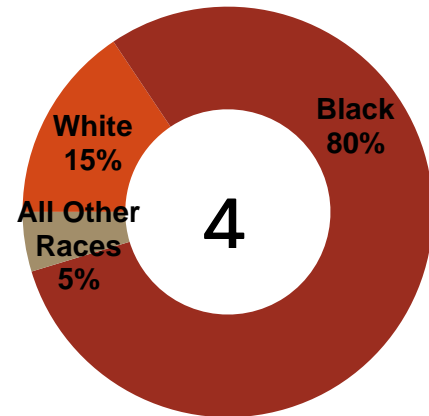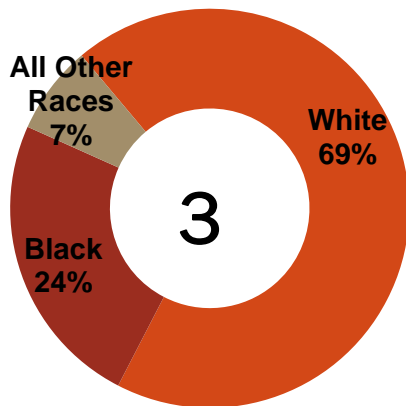
Figure 13. ESG Median Income

Region	Median Income
Region 1	$22,250
Region 2	$29,593
Region 3	$61,200
Region 4	$28,315
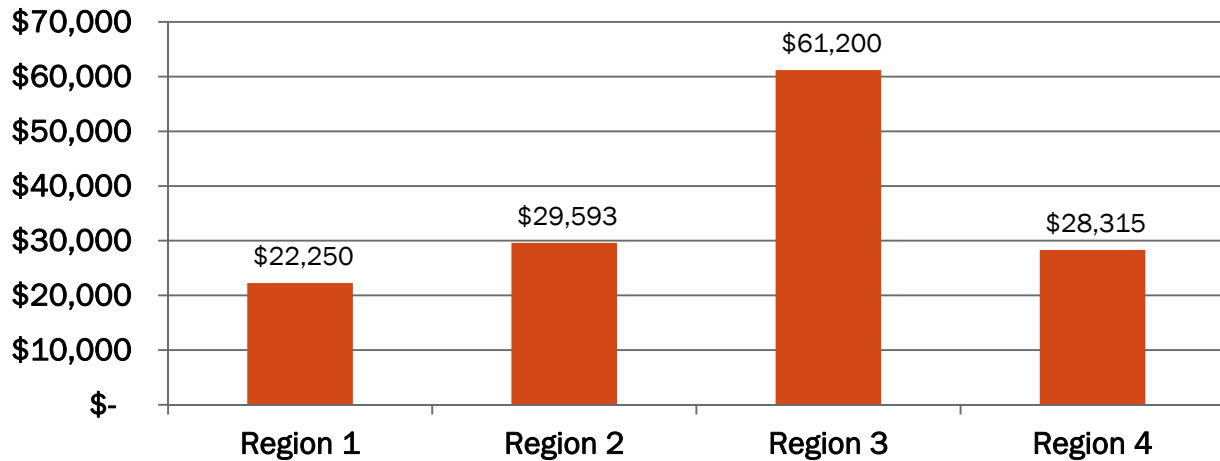
Individuals living in "high-minority" and low- educated block groups were half as likely as those in low-minority, higher educated block groups to have at least one "physical activity facility "within 1/4 mile. The number of physical activity facilities per block group was shown to change the relative odds of overweight; increasing the number of physical activity facilities within ¼ mile by 1 facility decreased the relative odds of overweight by 5% (Gordon-Larsen 2006). In addition to impacting physical activity and chronic disease mortality, income and education levels in a community impacts mental health. See the social cohesion section of this report for information on the relationship between these factors.

Research suggests that race can predict park and trail use, as well as the types of activities people will participate in. Whites tend to use parks to walk and bike, while African Americans/Blacks prefer to use the parks for picnics and festivals, generally speaking (Gobster, 2002). There is consistent and substantial evidence that racial and ethnic minorities do not participate in outdoor physical activity recreation as much as whites (Floyd 1999, Gobster, 2002, Shinew & Floyd 2005, Solop, Hagen & Ostergren, 2003).

In general, being close to a greenway increases users. In Minneapolis, 50% of the greenway users live 0.7 miles away. Interestingly, the portions of the proposed Eastside Greenway that are part of the Metroparks run through many ethnically diverse neighborhoods, however 87% of the users in the Metroparks survey identify as White, indicating that the amenities of the Greenway are not utilized by communities of color on the east side of Cleveland. There was no association between the racial composition of trail segment users and the racial composition of the neighborhoods with access to the segment, indicating that connected trails can serve as a green magnet, with users crossing into other neighborhoods/communities (Coutts, 2011). Spatial proximity to a greenway is not enough to overcome barriers to park use by communities of color (Brown, 2010). This information helped to inform the HIA team when looking at racial differences in the regions of the Eastside Greenway. Residents in Regions 1,2 and 4 are mostly Black/African American, whereas in region 3 the population is mostly White.

Figure 14. Racial breakdown by Eastside Greenway HIA region

Chart 1: Black 72%, White 21%, All Other Races 7%

Chart 2: Black 68%, White 28%, All Other Races 4%

Chart 3: White 69%, Black 24%, All Other Races 7%

Chart 4: Black 80%, White 15%, All Other Races 5%

Local data collected by the Cleveland Metroparks mirrored national research on race and park use. On the east side of Metro Cleveland, race and income appears to have a significant impact on a person's likelihood to bicycle on trails. In the Metroparks survey, only 14% of black respondents use the parks for bicycling, compared to 35% of white respondents. In the Metroparks survey, only 17% of respondents making less than $30,000 per year reported using the park for bicycling, compared with 89% of respondents making more than $30,000 per year.

Living in a disadvantaged community results in less physical activity, and higher rates of chronic diseases. Among the regions within the Eastside Greenway, the census tracts in Region 2 have the highest mortality rate from chronic conditions.

Figure 15. Deaths from Chronic Conditions
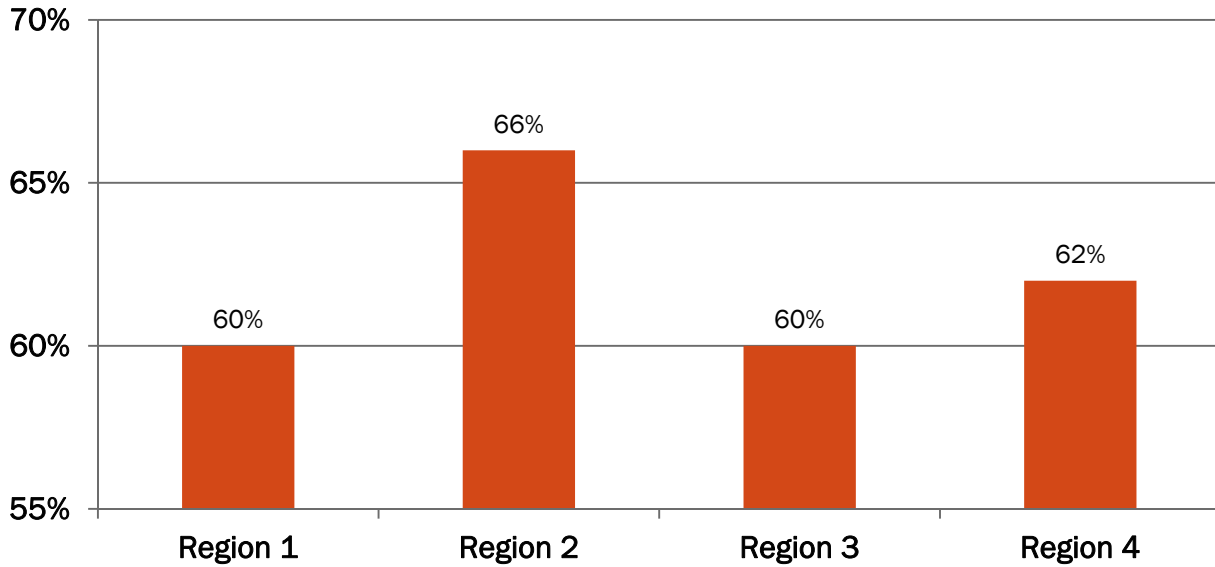
Ohio Department of Health, Center for Public Health Statistics and Informatics. 2010 Deaths and deaths due to chronic conditions by county (accessed June 7, 2014). The Department specifically disclaims responsibility for any analyses, interpretations or conclusions.

Figure 10 shows the life expectancy in each census tract within the Eastside Greenway planning area. The dark green areas represent the census tracts with the highest life expectancy (mainly region 3), and the dark red areas represent census tracts with the lowest life expectancy. The grey Eastside Greenway buffer area overlay shows how the Eastside Greenway will span from the areas in the county with the highest and lowest life expectancy.
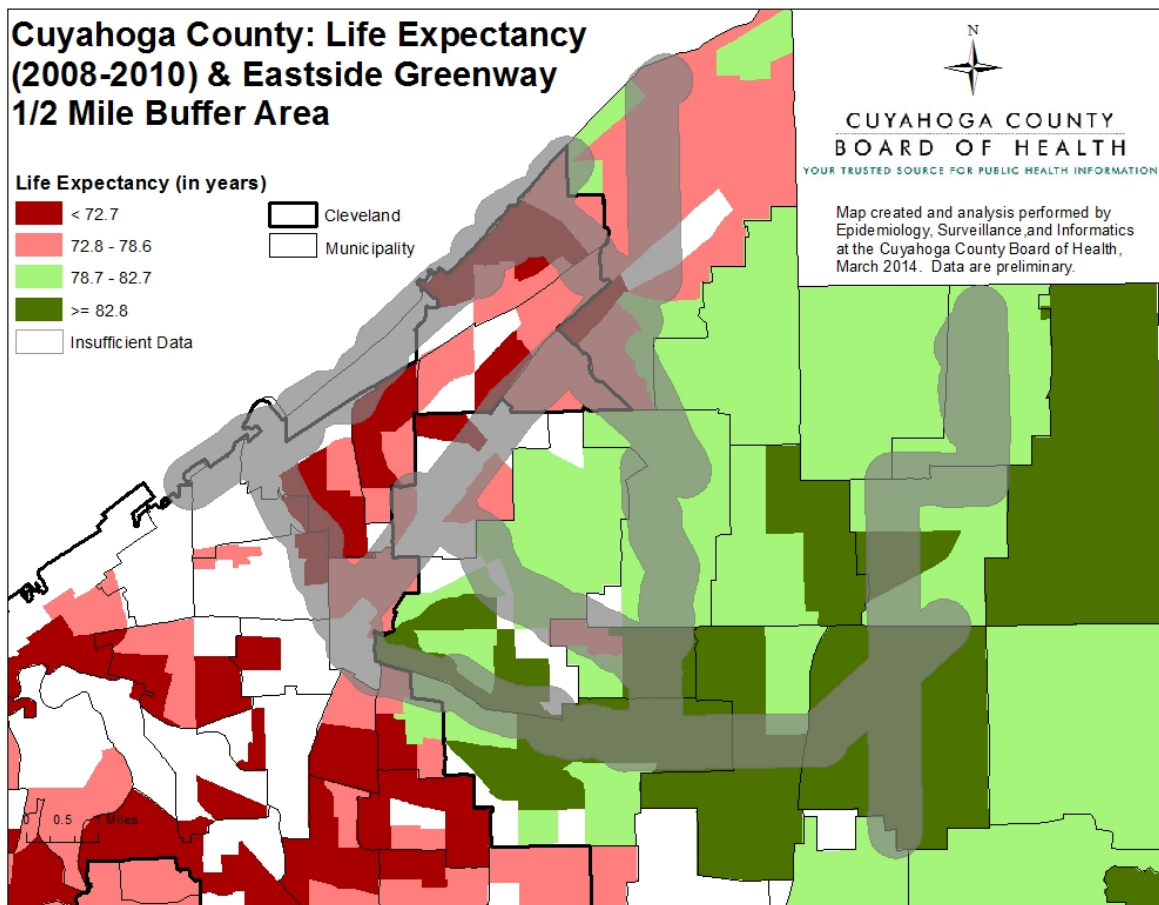
Cuyahoga County: Life Expectancy (2008-2010) & Eastside Greenway 1/2 Mile Buffer Area

Life Expectancy (in years)
- < 72.7
- 72.8 - 78.6
- 78.7 - 82.7
- >= 82.8
- Insufficient Data
- Cleveland
- Municipality

Map created and analysis performed by Epidemiology, Surveillance,and Informatics at the Cuyahoga County Board of Health, March 2014. Data are preliminary.

Figure 16.

The literature shows that personal safety on trails, exposure to various forms of recreation, and affordability of necessary equipment (Coutts and Miles, 2010) are all factors that affect whether a person will use a trail or not. Access to a trail or greenway is only one important factor. The success of the system will depend on how people perceive the space comprised by the greenway (Lindsey, et al, 2011).

Equity Findings

The Eastside Greenway plan has the potential to promote health equity and mitigate health disparities, such as the difference in life expectancy and rates of chronic disease. The HIA team reviewed literature and local data to predict what the health equity impacts will be from the Eastside Greenway plan. The following is a summary of the compiled results, which seek to make predictions on how the Eastside Greenway plan will impact health equity.

Developing a system of connected trails and green spaces through diverse communities will increase access to physical activity, recreation and social connection for over 275,000 people.

living within a ½ mile of the proposed trail system, of which more than half and will (139,121) are African American. Developing the Eastside Greenway will encourage those using the system to cross into multiple communities/neighborhoods (Coutts & Miles, 2011).

Developing the Eastside Greenway with a system of connected trails and green spaces that offers a variety of safe recreational opportunities with affordable equipment to those living in vulnerable communities near the trail system will increase usage by those populations (racial/ethnic minorities and low SES) (Lindsey, et al, 2011).

Safe and accessible public transportation to ESG trail access points and green spaces will increase usage by African Americans and lower SES living in vulnerable communities around the trail and greenway system (Metroparks survey).

Increased siting of play fields and picnic areas in communities with higher African American and/or Latino populations, as part of a system of connected trails and green spaces, could increase usage by those populations (Gobster 2002).

Increasing the availability of physical activity and recreational facilities through the development of connected trails and green spaces in vulnerable communities could increase physical activity, decrease the odds of overweight by up to 5%, and contribute to decreased health disparities (Godon-Larsen Nelson, Page, Popkin 2006).

NOTE: I'm not sure why you're not specifically calling out the Eastside Greenway in your predictions? This HIA is about the Eastside Greenway. So, instead of saying it as a generic "system of connected trails and green spaces", it seems more powerful and targeted if you call it what it is.

It would probably be more helpful to potentially getting the ESG funded if you were to say that the ESG will do this, rather than a generic system of connected green spaces. Maybe it doesn't matter...

Social Cohesion

Social cohesion is defined as the willingness of members of a society to cooperate with each other in order to survive and prosper. (Stanley, D, 2003) Belonging to a neighborhood with good social inclusion can be beneficial to a person's health (cite). Moving from a "socially deprived" neighborhood to greener urban areas was significantly associated with improved mental health (Smith, 2020). Researchers have long recognized that social cohesion can potentially promote better mental health. For example, a person in a socially deprived neighborhood may experience more stress and fewer resiliencies. INCLUDE ABOUT 4 OR 5 MORE LIT REVIEW FINDINGS ABOUT THE BENEFITS OF SOCIAL COHESION. YOU WILL NEED TO DO SOME MORE LIT REVIEW.

Use of trails, parks and greenways can improve social cohesion and connection. <mark>NOW YOU WILL HAVE TO INCLUDE 3 OR 4 LIT REVIEW FINDINGS THAT SUPPORT THIS.</mark>

In this HIA, we hypothesize that increasing usage of the ESG by both African Americans and White Metro Cleveland residents would lead to better social cohesion *within* communities and *between* communities.

Existing Conditions

Indicators researchers have used to demonstrate the social cohesion of a neighborhood include volunteerism, participation in civic programs, and community satisfaction. All of these indicators have associations with improved mental health and well-being. Since the Eastside Greenway includes such a large geographic area (17 communities) with 17 local governments, it was difficult to identify a benchmark indicator that was being collected by all local governments in order to compare social cohesion among the greenway communities. The HIA team turned to literature and known aspects of the community that are precursors to improved social cohesion.

<mark>INSERT HERE AT LEAST 1 LIT REVIEW FINDINGS THAT SHOWS THAT SOCIAL COHESION BETWEEN DIFFERENT RACES IS LOW. EVEN BETTER IF YOU COULD ADDITIONALLY FIND AN ARTICLE THAT SAYS THAT ABOUT CLEVELAND AND THE INNER RING SUBURBS (doesn't have to be a peer-reviewed article, could be a newspaper article).</mark>

The Behavioral Risk Factor Surveillance Survey (BRFSS) measured one indicator of social cohesion, which is social support to be physically active. In the ESG neighborhoods, the BRFSS findings show that 56% percent of the residents feel supported and encouraged by their communities to be healthy. This leaves a large proportion of the community (44%) not feeling supported and encouraged by their community to be healthy.

THEN PUT ALL THE REST OF THE FINDINGS (PG 12 – FIRST HALF OF 15)

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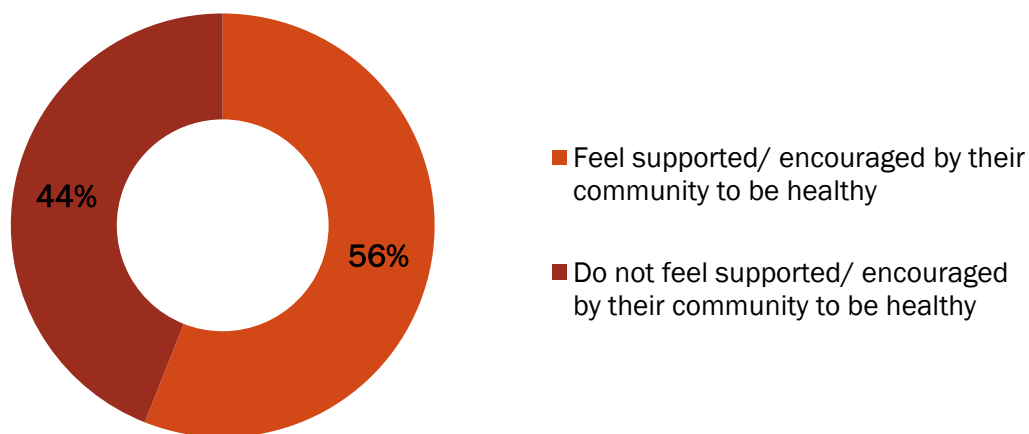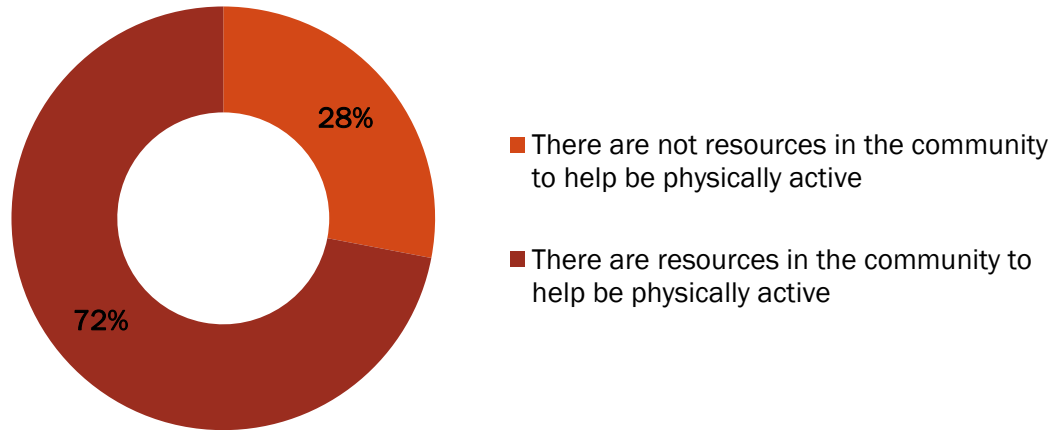## Figure X. ESG neighbors on community support to be healthy

44%

56%

■ Feel supported/ encouraged by their community to be healthy

■ Do not feel supported/ encouraged by their community to be healthy

Figure X. ESG neighbors on community resources for physical activity

28%

72%

■ There are not resources in the community to help be physically active

■ There are resources in the community to help be physically active

## What changes would increase park and trail usage?

Among residents in the ESG study area who responded to the BRFSS, 72% of the residents feeling that community resources to be physically activity are available to them, however 43% of respondents indicated that they have <u>never</u> used playgrounds/parks in the past year. The Cleveland Metroparks survey asked park users what changes could increase park and trail usage. The results were disaggregated to consider differences among white and black respondents. In some cases, outlined below, respondents' answers differed greatly among the two races. This is significant when considering how the Eastside Greenway affect social cohesion in the region because the design and amenities of the Greenway will impact usage differently by race. For example, improving public transit access, incorporating playing fields, and investing in solutions to improve safety would likely improve African Americans' use of parks (Figure XX and XX), whereas improving linkages with trails has more appeal to White users (Figure X).

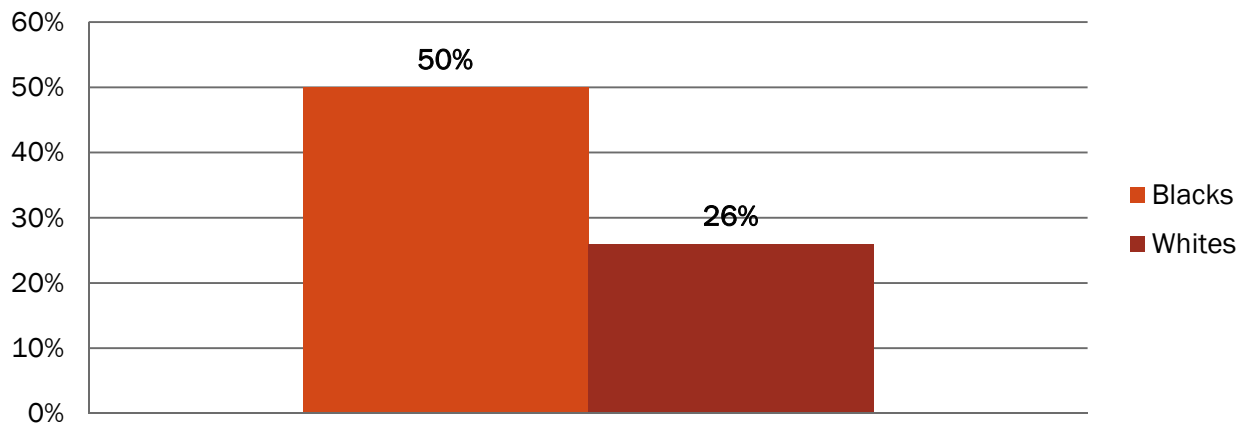## Percent of residents who would increase usage if parks are linked through trails and paths

Black: 59%
White: 70%
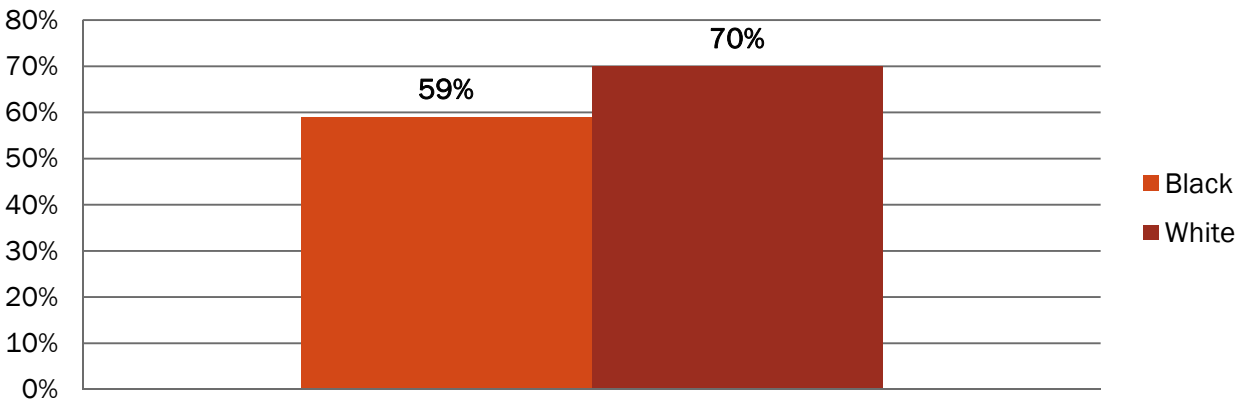
Good public transit improves park access. Eight of the ten most heavily used parks in American cities offer subway or light-rail access within ¼ mile, and all of them have bus service that comes even closer (Trust for Public Land , 2011). In the Eastside Greenway, public transportation may be more important to African Americans. Forty-two percent of African American respondents to the Cleveland Metroparks survey responded that they would increase park usage if public transportation is provided.

Percent of residents who would increase usage if public transportation is provided

Blacks: 42%
Whites: 18%
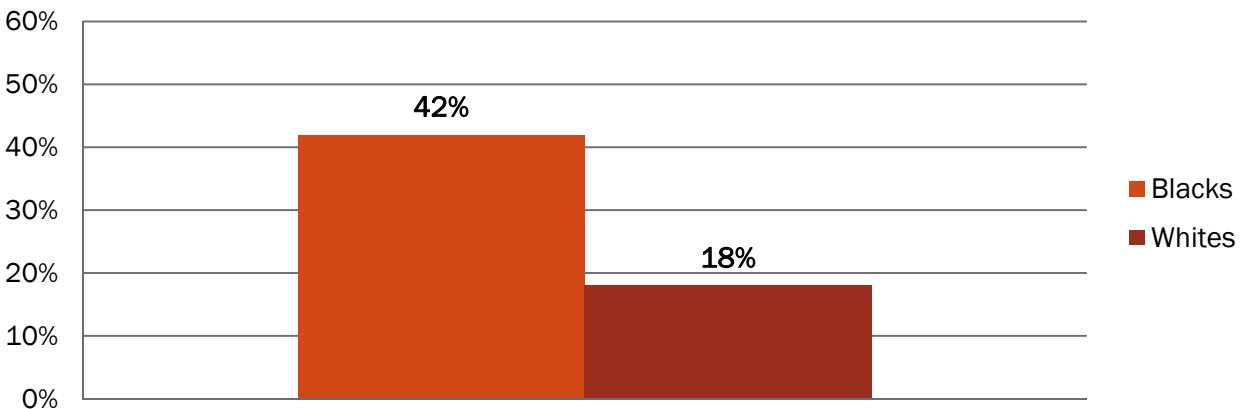
Percent of residents who would increase usage if play fields are increased

	Blacks	Whites
	50%	26%

Percent of residents who would increase usage if parks and trails are made safer

	Blacks	Whites
	63%	46%
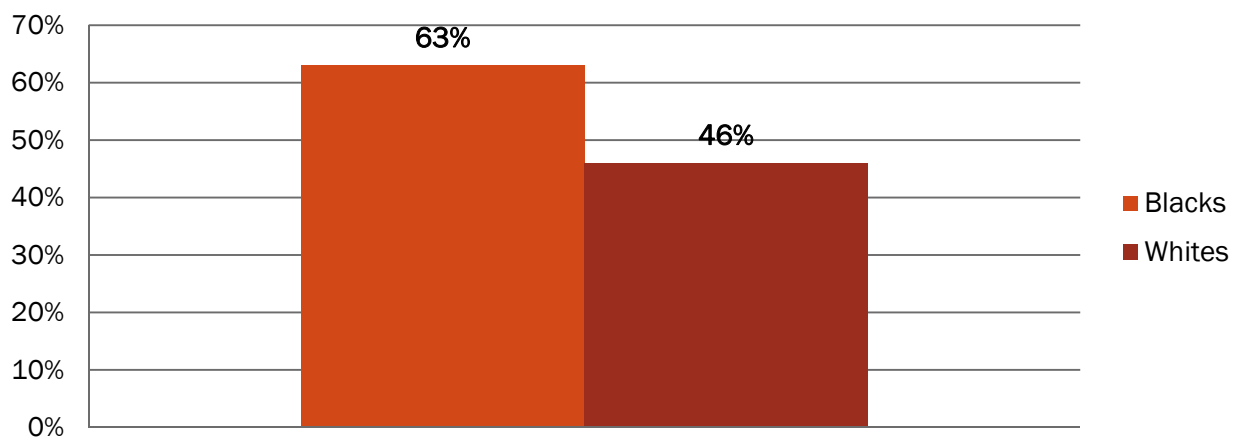
Residents of wealthier neighborhoods, where danger and personal safety are not overwhelming concerns, frequently prefer leafy, natural parks. Residents of poorer neighborhoods often shun forested areas and prefer open areas with lots of activity such as sports leagues to festivals, cultural events to clean up activities, tree planting to exercise activities (Trust for Public Land, 2011).

Residents of poorer neighborhoods often avoid forested areas and prefer open areas with lots of activity such as sports leagues to festivals, cultural events to clean up activities, tree planting to exercise activities (Trust for Public Land, 2011). Region 3 of the Eastside Greenway has the highest median income ($61,200) which is twice as high as any other region in the Eastside Greenway.

ESG households with median income ~~~~~~ $10,000 per year (percen~~~~~
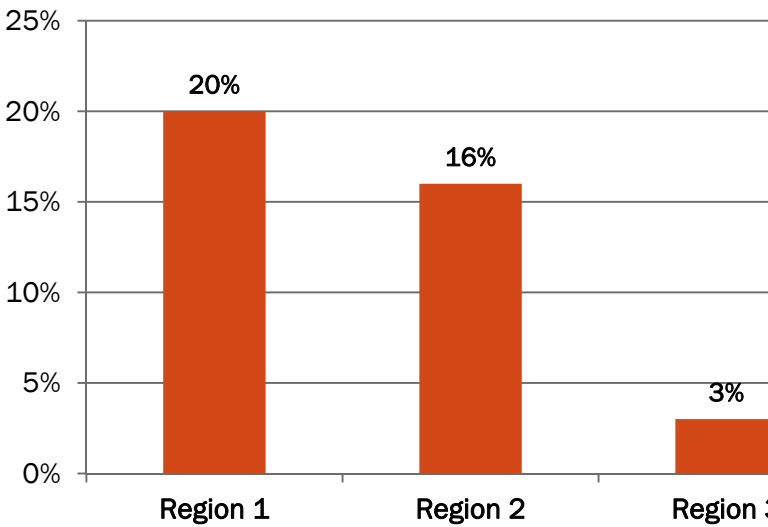
> *Forest Hill Park features open space, playgrounds, ball fields and courts, restrooms, picnic areas, benches and trails*

In research done by Echeverria et al, 2008, people living in low problematic neighborhoods experience less depression, and were less likely to smoke and drink (Echeverria et al, 2008). Luckily, poor mental health and mental health inequality can be improved by strengthening social cohesion in deprived neighborhoods. Interventions that help to facilitate social interaction and exchange may increase levels of social cohesion in deprived neighborhoods by enhancing trust and reciprocity (Fone et al 2014).

Walkable and mixed use neighborhoods have better social cohesion as measured by feeling connected to or part of the community, knowing neighbors and walking to work. Eastside Greenway walkability results are within the transportation section of this report. Higher walkscore sections of the Eastside greenway will have increased walking and bicycling, and also improved mental well-being (Leyden KM., 2003).

Social Cohesion Findings

Demographic characteristics, data from the Behavior Risk Factor Surveillance Survey, The Metroparks Survey, and literature review results informed the social cohesion findings.

Developing the Eastside Greenway, a system of connected trails and green spaces through diverse communities will encourage diverse populations living within ½ mile of the trail system (over 275,000 people) to cross communities/neighborhoods through the trail network. This cross-community interaction will improve social cohesion for communities in and around the eastside of the Cleveland Metropolitan region.

Having a developed network of trails and park systems will increase opportunities to promote relaxation. Time to unwind will encourage and support stress relief and positive mental health for residents living near the proposed Eastside Greenway.

Aligning public transit routes within a ¼ mile radius along the ESG system will increase the number of residents utilizing the greenway, thereby increasing the opportunities for social interaction.

Residents living in close proximity (½ mile radius) to a connected trail and green spaces system will have improved social connections with neighbors as compared with those living in car-oriented suburbs.

Residents with better access to a connected trail network and green spaces are more likely to have better social connections with the community. Better social connections leads to better health behaviors.

Events are more likely to have a better participation rate if located in areas of the ESG as opposed to more isolated, less desirable locations.

Improving opportunities and environment for social interaction on the ESG will improve usage.

Improvements in social interaction cannot be realized without addressing the Safety & Crime issues and recommendations.

Health Impact Analysis – Social Cohesion Findings

If the HIA recommendations are taken into consideration during the planning, design and construction of the Eastside Greenway, the following health impacts are predicted:

Indicator	Magnitude of Impact	Direction of Impact	Likelihood of Impact	Quality of Evidence
Mental Health				
Social connections	275,000	up		
Likelihood to participate in social	83% ESG neighbors	up		

events				
Park access due to better public transit				

Crime/Fear of Crime

Simply having a greenway and trail system in the neighborhood is not necessarily a sure fire way to increase usage, if the neighborhood is also dealing with crime or the fear of crime. The HIA team compared crime rates from the Ohio Incident Based Reporting System (OIBRS) for each section of the ESG planning area. To capture the fear of crime information from residents in the area, the HIA team conducted a survey led by Dr. Jacqueline Curtis at Kent State University, who has extensive experience studying fear of crime in neighborhoods.

The relationship among crime, fear of crime, and impact on physical activity in public open spaces is complex and dynamic. A common paradox is that places with low reported crime are areas where people fear crime most. However, areas with high reported crime incidents can also coincide with high fear of crime based on real risk of victimization and personal experience of being or knowing a victim. Furthermore, different populations experience higher likelihood of fear of crime, such as women, the elderly, and newer residents to a community (Riger et al. 1981; Hale 1996; Gilchrist et al. 1998; Roman and Chalfin 2008; Lorenc et al. 2013). Finally, different types of crimes and different types of characteristics of environments differentially impact people's perceptions of safety and then their use of public open space (Lewis & Maxfield 1980; Fisher & Nasar 1992; Nasar & Fisher 1993; Herbert & Davidson 1994; Fisher & Nasar 1995; Painter 1996; Austin et al. 2002; Carnegie et al. 2002; Lorenc et al. 2012; Lorenc et al. 2013). Some crime types, such as quality of life crimes (e.g. loitering, drunk and disorderly) serve as visible cues to people that they are not safe. However, many of these visible offenses are not captured by official incident data, but are instead cataloged by individuals and used to shape their perception of personal safety in a particular place.[1]

Despite the complexity between crime and fear of crime, a direct relationship often exists between fear of crime and its impact on people's behaviors. Fear of crime, particularly in public open spaces, is known to produce a variety of negative health outcomes and behaviors in

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[1] Over fifty years of research exists on the crime/fear of crime relationship which cannot be comprehensively presented in this report. Rather, for a summary of the salient issues, see Curtis (2012).

individuals (Harburg et al. 1973; Chandola 2001; Ross & Mirowski 2001; Airey 2003; Jackson & Stafford 2009; Roman et al. 2009: Lovasi et al. 2014). From a public health perspective, the evidence is clear that concern for personal safety constrains outdoor physical activity, especially for girls, women and the elderly (Ross 1993; Eyler et al. 1998; Wilbur et al. 2003; Gomex et al. 2004; Suminski et al. 2005; Stafford, Chandola, & Marmot 2007; Foster & Giles-Corti 2008; Bannerjee, Uhm, & Bahl 2014). Therefore, in the aim for health equity, fear of crime must be analyzed to understand where it exists and why in order for plans and policies to account for this real barrier to physical activity in public open space.

Reported crime data are collected by the type, date, and address location of the incident.[2] These data are then analyzed spatially to identify hot spots of types of crimes which show places with relatively high reported crime incidence. However, knowing where types of crimes are concentrated provides incomplete evidence for understanding barriers to use of public open space. Fear of crime in these areas must also be analyzed. These data are collected through the use of surveys with sketch maps and then analyzed for hot spots of concern (Curtis et al. 2014)[3]. The combination of these two approaches reveals where barriers will exist to use of public open space and then point to appropriate spatially targeted interventions.

The HIA team collected distributed and collected surveys entitled "Places to Avoid: Perception of Crime in the Community" at eight Cleveland Public Library locations durinve March and April 2014. All of the location are within the Eastside Greenway area. See table below (Figure.XX) 157 people participated in the survey in total, about 20 per site. For more detailed information about the methodology and the survey tool used, see Appendix A.

Figure: XX Fear of Crime data collection locations

Branch (Neighborhood)	Date	Time	Name of Survey Administrator	# collected	# usable
Rice, 11535 Shaker Blvd., 44120 (Buckeye-Woodhill and Shaker Square)	3/26/14 (Wednesday)	11.00am – 1.00pm	Jacqueline Curtis with Sara Bisson & Austin Raymond	31	30
Collinwood, 856 E. 152nd St., 44110 (Collinwood)	4/2/14 (Wednesday)	2:00-4:00 pm	Ann Stahlheber & Richard Stacklin	20	20
Memorial-Nottingham, 17109 Lake Shore Blvd., 44110 (Collinwood-Nottingham)	4/3/14 (Thursday)	10:00 am -2:00 pm	Ann Stahlheber & Richard Stacklin	33	26
Glenville, 11900 St. Clair Ave., 44108 (Glenville)	Tuesday, April 1	12-3pm	Michele Benko & Nichelle Shaw	11	11
Hough, 1566 Crawford	3/28/14	3.00pm –	Jacqueline Curtis with	13	13

[2] Incident data for this report were collected from the Ohio Incident Based Reporting System (OIBRS) for all available address level data for study areas in the Eastside Greenway Study Area. The time frame of the data vary by place, with some municipalities reporting many years of address level data and others only reporting a few years of this quality of data.
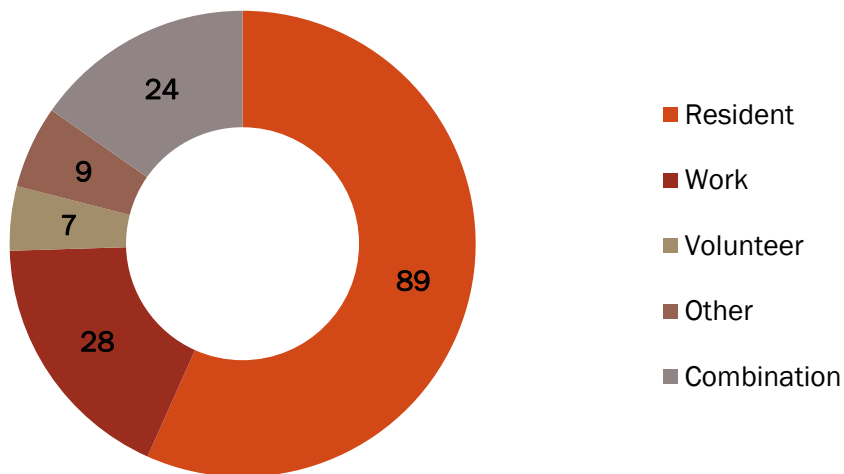
[3] The survey was approved by Kent State University Institutional Review Board (KSU IRB #14-157)

Rd., 44106 (Hough)	(Friday)	5.00pm	Sara Bisson & Joe Palmieri		
Addison , 6901 Superior Ave., 44103 (St. Clair-Superior)	3/29/14 (Saturday)	1.00pm – 3.00pm	Jacqueline Curtis with Sara Bisson & Diana Esempio	10	10
Martin L. King, Jr., 1962 Stokes Blvd., 44106 (Fairfax and University Circle)	Thursday, April 3	1:00 – 3:00 p.m.	Martha Halko & Michele Benko	12	12
Euclid City Library 631 East 222nd Street, Euclid, OH 44123-2091	March 25th (Tuesday)	9:30am – 11:30am	Michele Benko & Nichelle Shaw	32	27
Friends of Euclid Creek General (monthly meeting) FOEC at the South Euclid Community Center, 1370 Victory Drive, 44121	4/1/14 (Tuesday)	6:30pm – 8pm	Meiring Borcherds	8	8
TOTAL				170	157

Eastside Greenway HIA Fear of Crime Survey results:

 Demographic Characteristics

Relationship to the community

Length of time in the community

Legend:
- Less than 1 year
- 1 to 3 years
- 4 to 6 years
- 7 to 9 years
- 10+ years
- combination

Values: 20, 30, 21, 16, 69, 1

Race of survey participants

Legend:
- White
- Black
- Asian
- Something Else
- No answer

Values: 34, 110, 2, 10, 1

Age of survey participants

Legend:
- 18-29
- 30-45
- 46-60
- 61+
- no answer

Values shown: 40, 39, 53, 23, 2
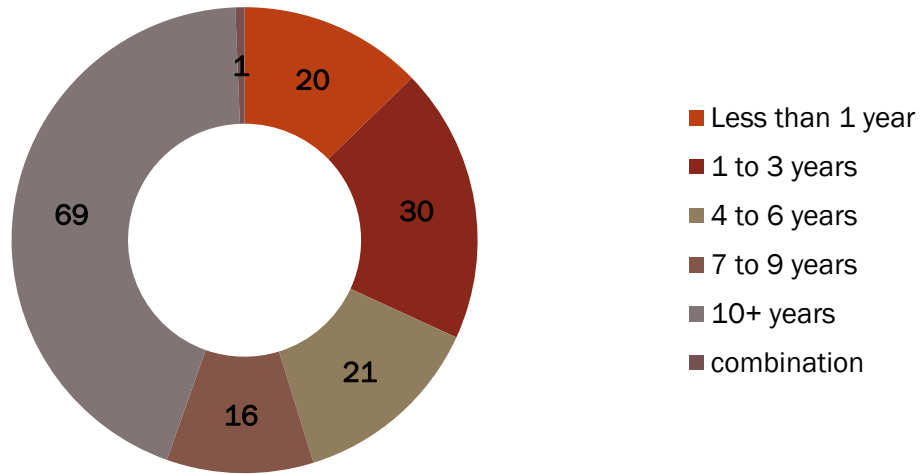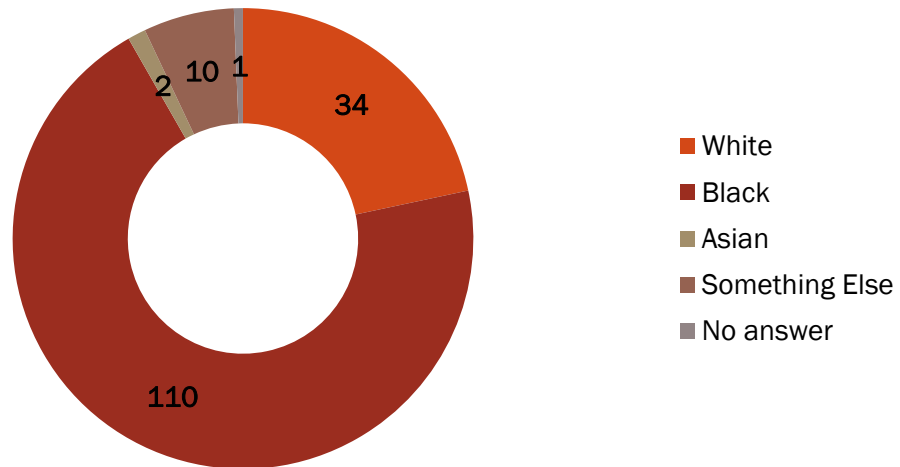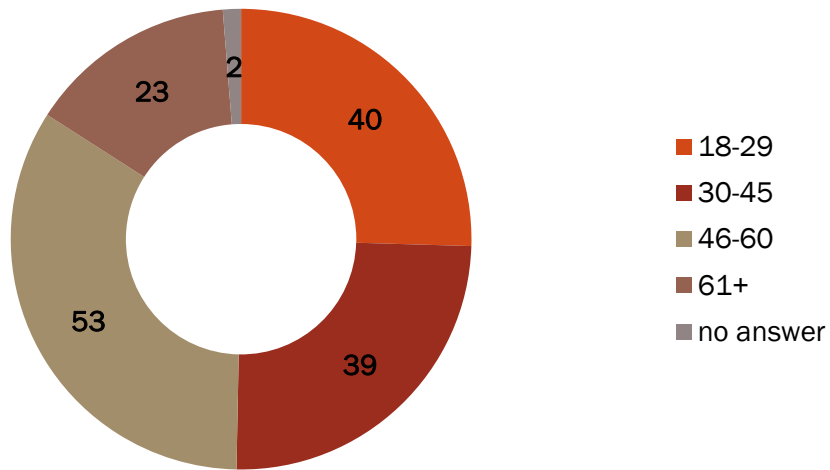
Figure X. Violent Crime hot spots around the Eastside Greenway (OIBRS data)

Note that the crime data in this map are for Cleveland, East Cleveland, and Euclid. Different municipalities have different time periods of incident data, so just because an area does not show a crime hot spot, does not mean there is not crime. If it is outside of the previously mentioned municipalities, it's a case of missing data.
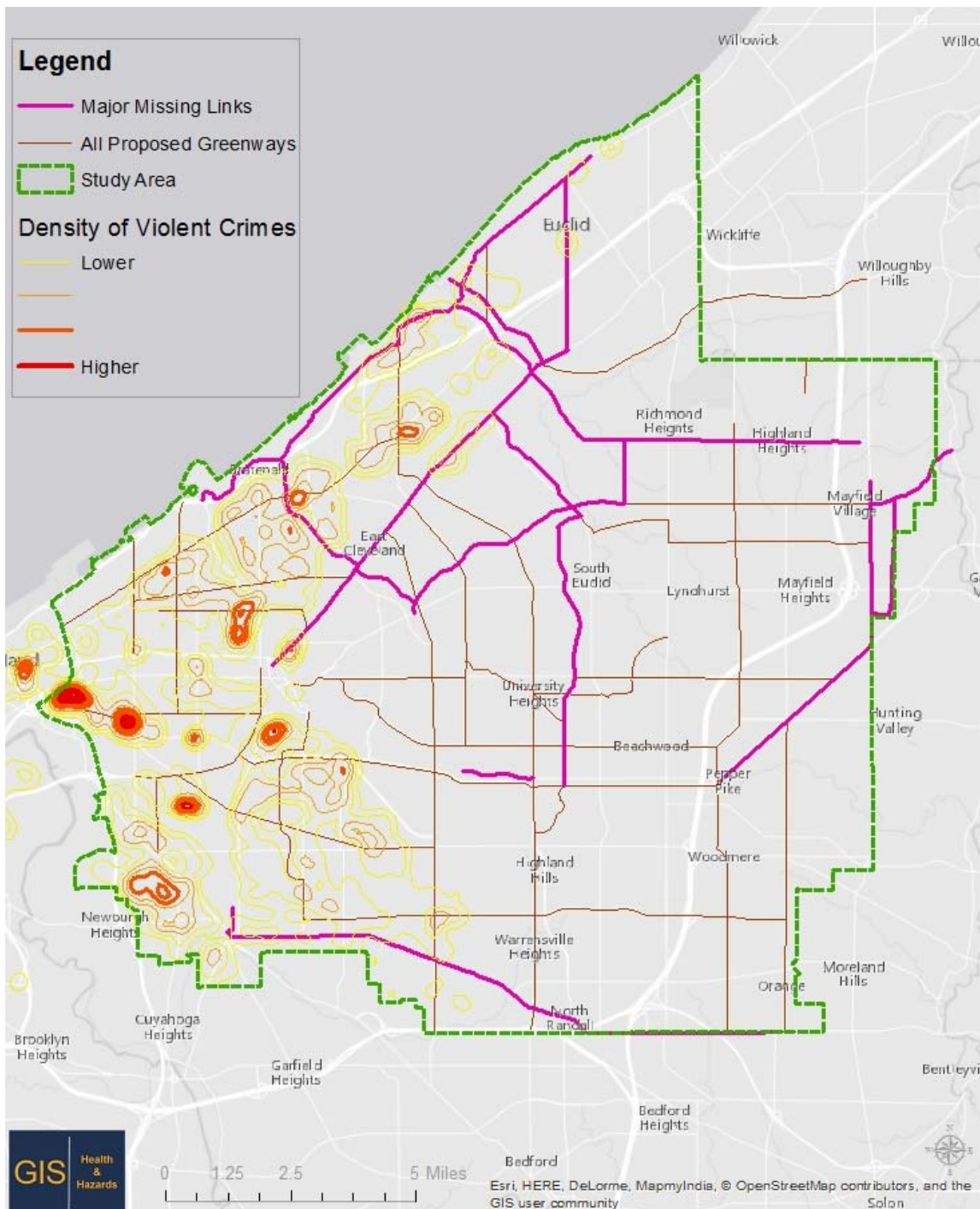
Figure X. Quality of Life crime hotspots near the Eastside Greenway(OIBRS data)

Legend
— Major Missing Links
— All Proposed Greenways
▢ Study Area

Density of Quality of Life Crimes
— Lower
—
—
— Higher
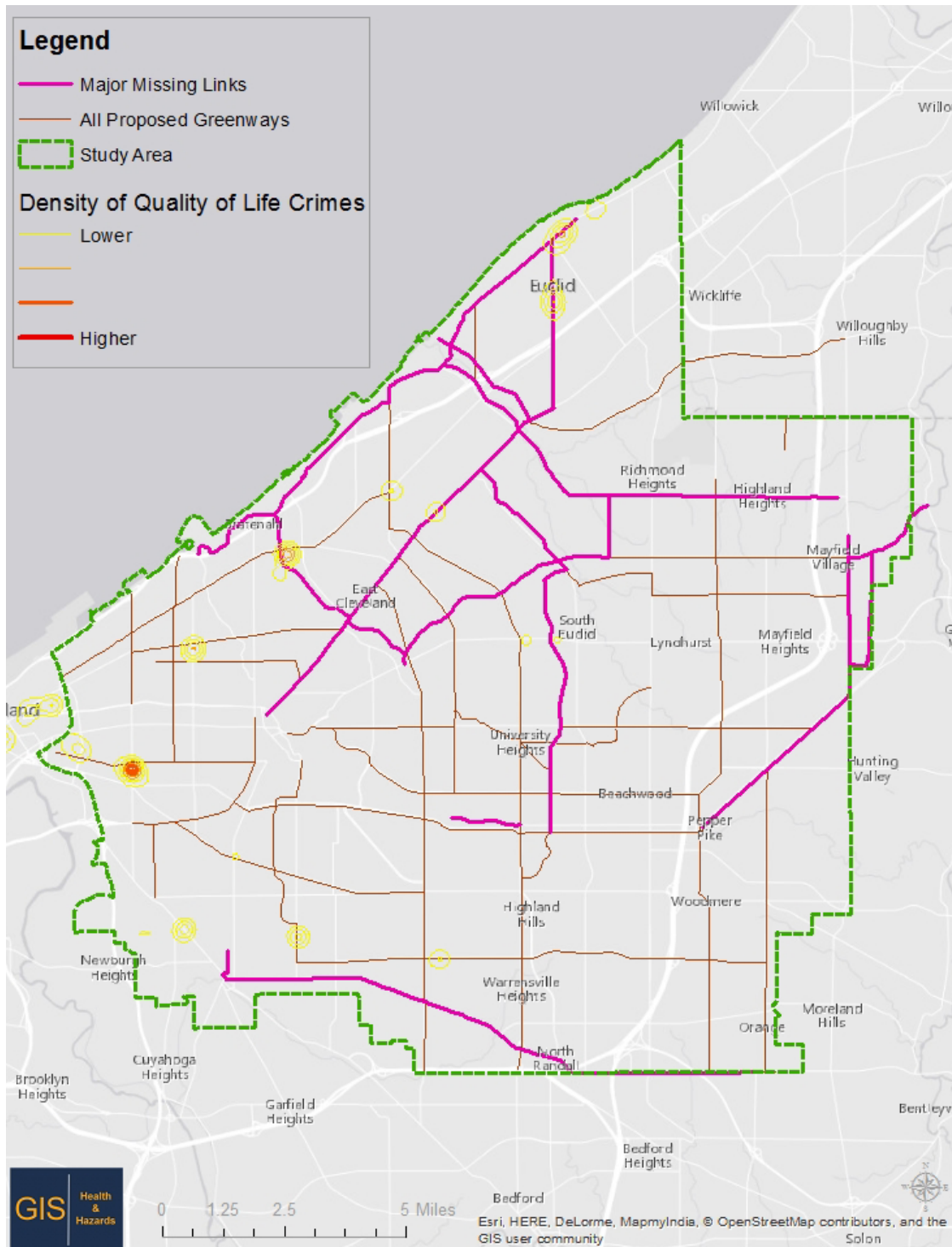
Figure X. Eastside Greenway residents reported "unsafe spaces"
(Fear of Crime survey)
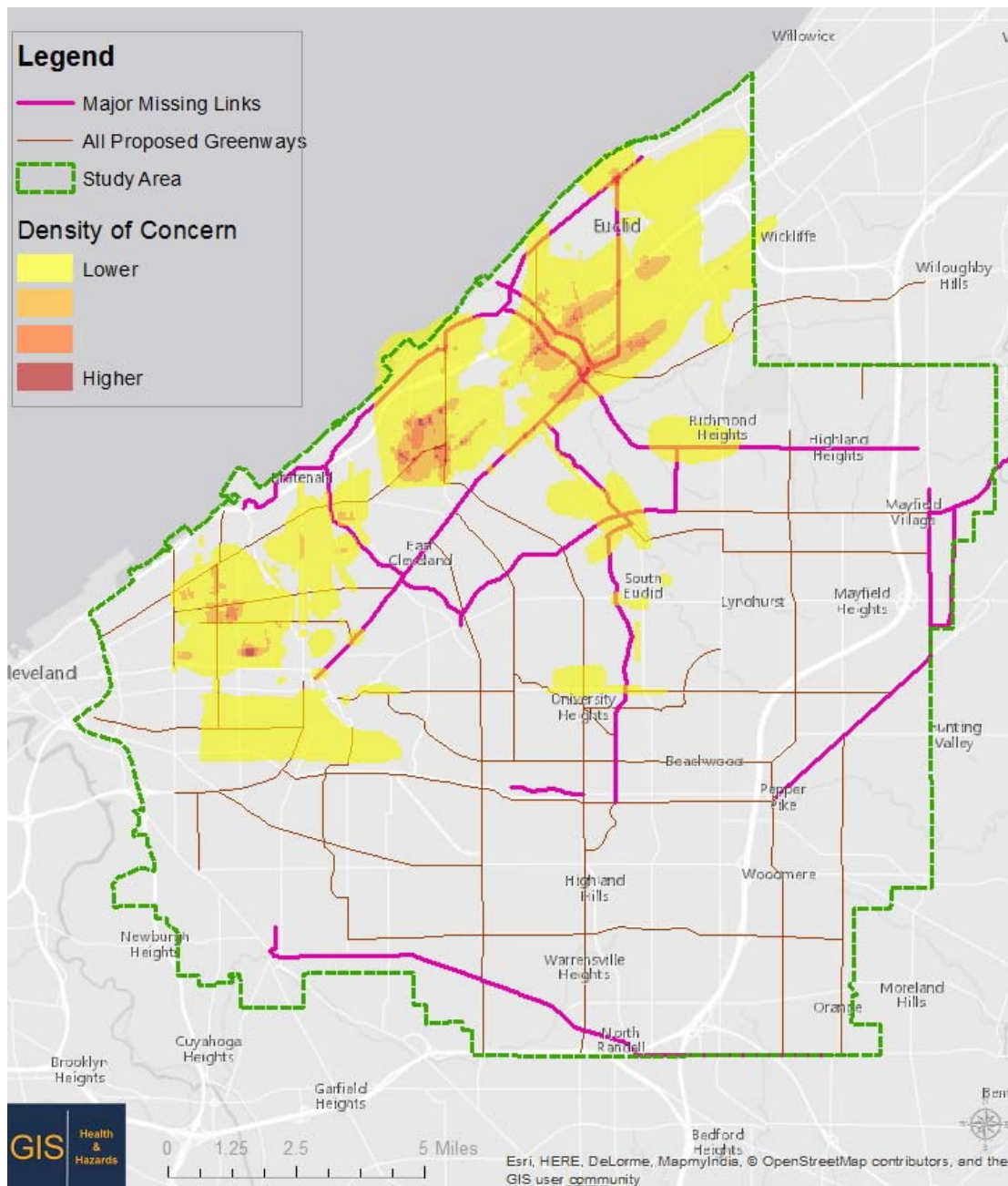
Crime/Fear of Crime Findings

Violent crimes and quality of life crimes are present in elevated levels in areas within and proximate to the ESG, particularly in X, Y and Z parts of Cleveland and in Euclid. Without reducing these types of crimes in these areas, use of the ESG will be limited, especially among women, minorities, and low-income populations.

Fear of crime among participants is commonly due to either witnessing crime or being a victim, sometimes on multiple occasions. Therefore, residents' fear of crime is warranted.

Based on the literature, this situation suggests negative health outcomes, e.g., stress, elevated blood pressure and overall constrained outdoor physical activity in the study communities. Reducing fear of crime in the ESG area would increase its use and improve the previously noted health outcomes.

However, it should be noted that reducing crime and the fear of crime are long-term initiatives that require community buy-in and participation. The ESG will not have its desired health equity outcomes without addressing these issues.

Health Impact Analysis- Crime/Fear of Crime Findings

If the HIA recommendations addressing crime and fear of crime are taken into consideration during the planning, design and construction of the Eastside Greenway, then where there is regular and widespread usage of public open space, such as the trails, evidence suggests that this will feedback into modifying these concerns (Jacobs 1961; Evenson et al. 2003; Gallagher et al. 2010). The magnitude is based on the total number of population residing in the half-mile buffer area around the ESG (n= 176,908). The derived values represent a conservative estimate of impact based on the population living in the buffer zone and in a hot spot of each indicator. In general, the following health impacts are predicted:

| Indicator	Magnitude of Impact	Direction of Impact	Likelihood of Impact	Quality of Evidence
Violent crime	48,753	⬇	2	2
Quality of life crime	74,848	⬇	2	2
Fear of crime	49,010	⬇	2	2

Transportation

The transportation section of this HIA health impact includes transportation safety and transportation choice/physical activity. The HIA team assessed the transportation safety of pedestrians and cyclists, and behaviors of people living in the Eastside Greenway planning area.

The Ohio Department Transportation keeps track of all reported motor vehicle collisions and their locations. The HIA team mapped the collisions that occurred between 2008 and 2012 in the Eastside Greenway planning area. A cluster of collisions between automobiles and bicycles and pedestrians occurred on Euclid Avenue (see Figure XX), a main street connecting University Circle and many East side neighborhoods. Since there are numerous factors that could influence collisions, the HIA team couldn't associate a cause of the cluster of collisions. (Understanding Bicyclist-Motorist Crashes in Minneapolis , Minnesota). This street contains a variety of bicycle facilities, including marked bike lanes, sharrows, or nothing. Euclid Avenue is a busy public transportation route, including both bus and light rail stops.

In order to determine transportation choice of people traversing the Eastside Greenway, the HIA team turned to census data. The census collects information on whether people drive, take public transit, walk or "other" to commute to work. Cycling to work is not separated from other data by the census in the "other" category. Figure XX below shows that residents in region 3 drive to work far more than residents of regions 1, 2 or 4. Region 3 is the higher income region, compared to the others, and consists mostly of residential land uses. People living in region 3 are suspected to live farther away from their employment. Living closer to where people work increases the likelihood that people will take public transit, walk or bicycle to work (cite – Nichelle's study).

Figure XX. Percent of residents in the Eastside Greenway who walk or take public transportation to work
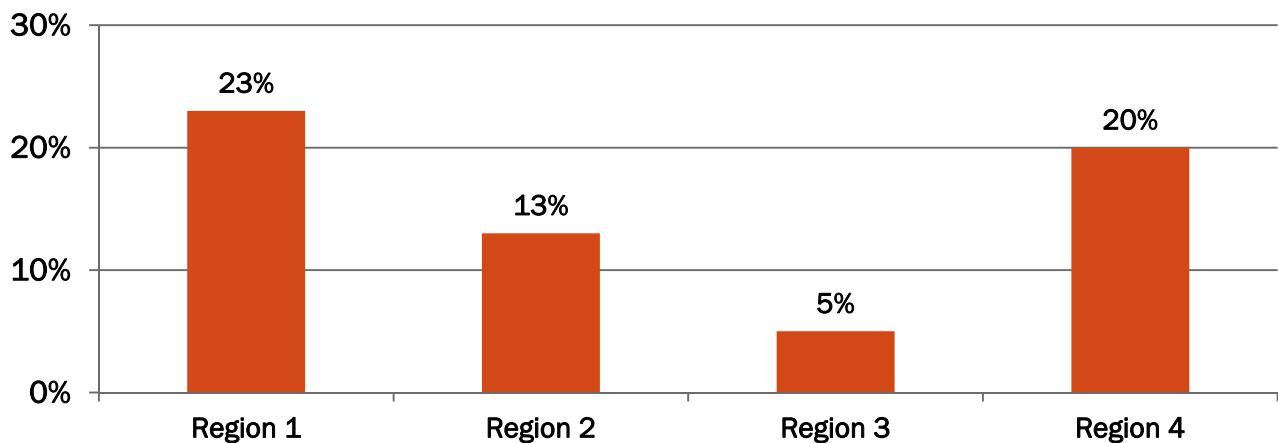
Eastside Greenway Health Impact Assessment
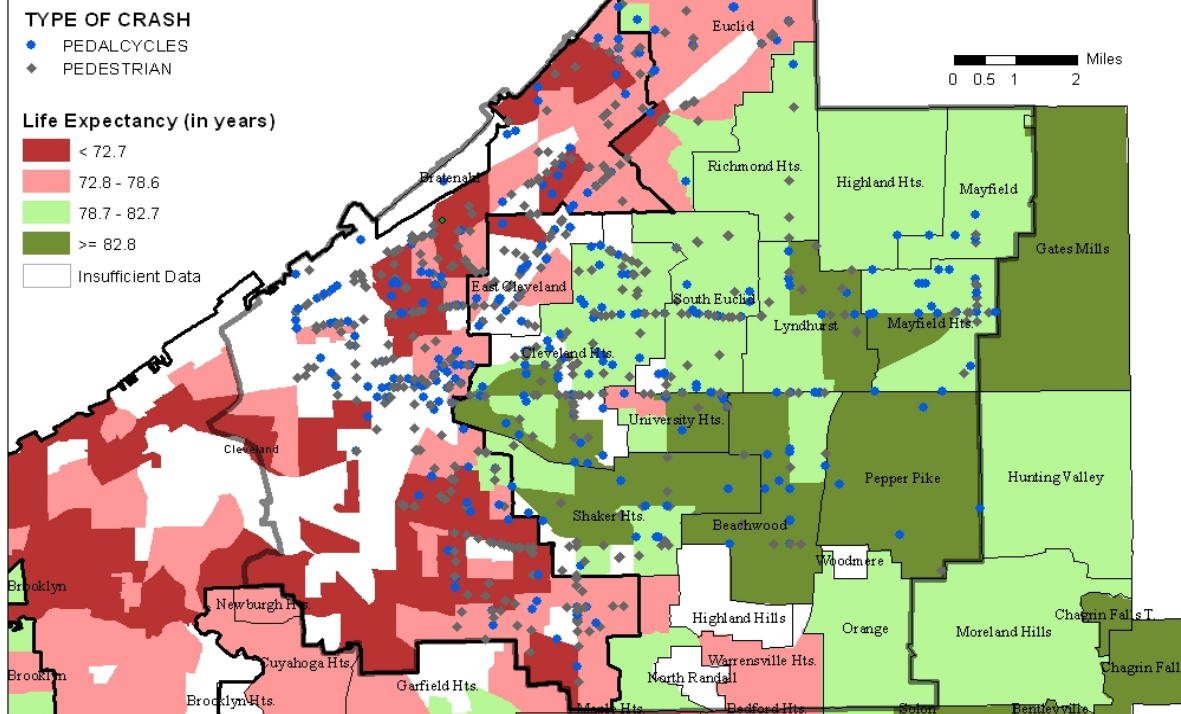2008-2012 Bicycle and Pedestrian Accidents
Within 1/2 Mile Buffer Area

Type of Accident
● BICYCLE (151)
★ PEDESTRIAN (210)
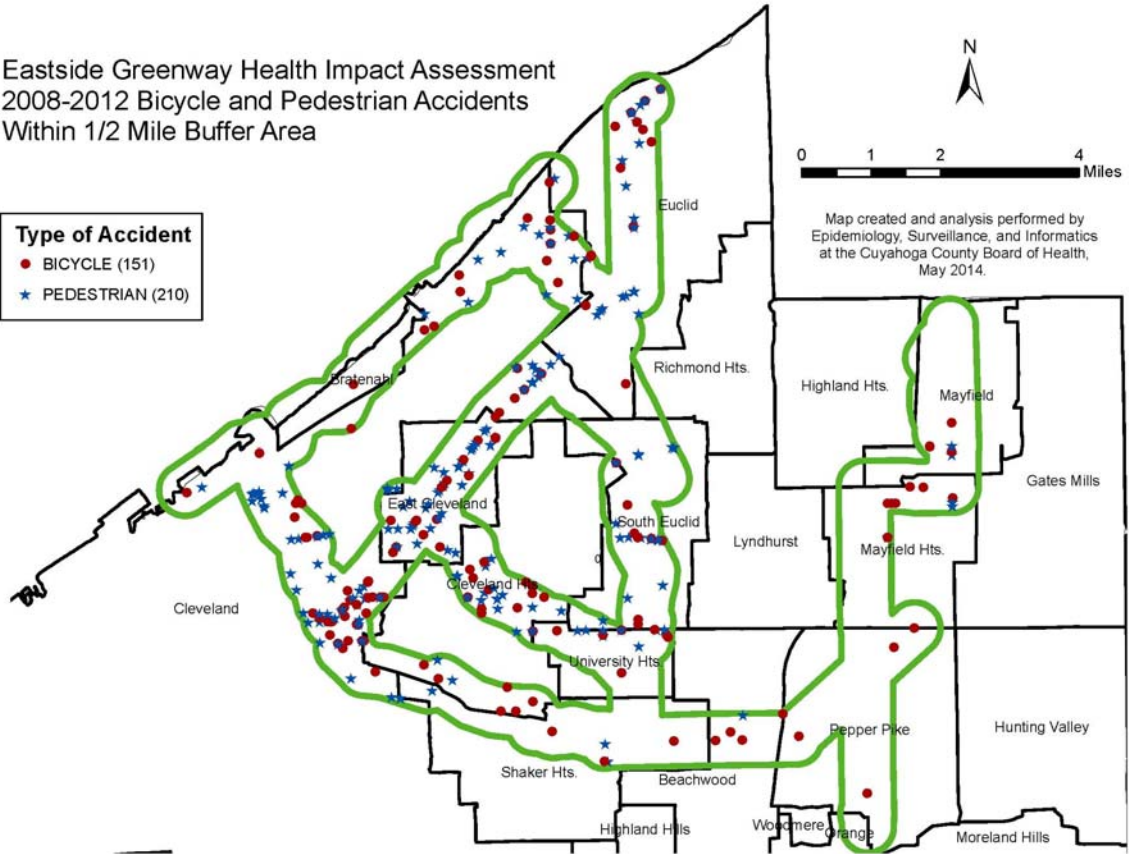
Map created and analysis performed by
Epidemiology, Surveillance, and Informatics
at the Cuyahoga County Board of Health,
May 2014.

Please provide some guidance for your maps. For example, in this one it would be good to have a little bit of narrative saying

Eastside Greenway Study Area with Life Expectancy and 2008-12 Bike or Pedestrian Crashes

Map created and analysis performed by Epidemiology, Surveillance ,and Informatics at the Cuyahoga County Board of Health, January 2015. Data are preliminary.

TYPE OF CRASH
- PEDALCYCLES
- PEDESTRIAN

Life Expectancy (in years)
- < 72.7
- 72.8 - 78.6
- 78.7 - 82.7
- >= 82.8
- Insufficient Data

Built environment factors and volume of cyclists both affect rates of bicycling and pedestrian collisions. Researchers have observed cycling fatalities decrease as walking and bicycling rates increase (W. Marshall, N. Garrick) (Walking and Cycling in Western Europe and the United States). In New York, as bicycle trips doubled, cyclist fatalities dropped from 28 to 4 per year. This trend was reported by Pucher and Bueler in Making Cycling Irresistible, which assessed cycling facilities among cities across the world. Improvements to the pedestrian environment greatly improve safety. Adding sidewalks can increase safety (by reducing collisions between automobiles and pedestrians) by up to 88%, adding additional shoulders to the road can increase pedestrian safety by up to 70% and road diets can decrease pedestrian collisions by 14 to 19%. Another big contributor to collisions is unpredictable behavior by road users. (Understanding bicyclist-motorist crashes in Minneapolis, MN).

The built environment can greatly impact the rate of in cycling and walking and safety on a given corridor. Dill reported that the most increases of bicycling occur when streets are equipped with bicycle lanes, paths and bicycle boulevards. Pucher and Bueler found that off street, separated bicycle paths are perceived as the most comfortable by cyclists. Ewing and Cervero reported that when people live closer to their employment location, they are more likely walk to work. Aesthetics was also found to be an important predictor in walking and cycling habits. Sigmundova observed that pleasant environments were significantly positively correlated to more walking for both men and women, and people living in pleasant environments participated

in more physical activities. Proximity to employment, goods and services, aesthetics and roadway infrastructure all contribute to the walkability and bikability of a corridor. Several techniques have been developed to predict walkability of a neighborhood. Frank et al found a strong association between walkability index and active transportation. People living in more walkable communities did more walking and biking for transportation and drove less. Saelens et al reported that people living in higher neighborhood walkability score neighborhoods get 70 more minutes of physical activity per week and were significantly less likely to be overweight. In these cases, the walkability index and the walkability scores were based on XXXXXXX.

The Walk Score was mapped for each half mile point along the Eastside Greenway planning area (using the center of the buffer area as the address scored). Mapped below in Figure X, much of the Eastside Greenway scored in the "car dependent" or "somewhat walkable" categories. The purple pins on the map show points that are "very walkable", although no points within the Eastside greenway scored in Walk Score's highest category, "walker's paradise".

Figure X. Map created using Google Earth of the Eastside greenway planning area with each point that was analyzed using Walk Score pinned. Purple Pins represent the most walkable, while the red pins represent the least walkable points in the Eastside Greenway planning area.

Figure X. East 114th and Euclid Avenue. The location in the Eastside Greenway area with the highest "Walk Score" (89). This location is in the "very walkable" category, where most errands can be accomplished on foot.

Figure XX. Lander Rd – this location is the least walkable in the Eastside Greenway planning area with a "Walk Score" of 5. This location is in the "car dependent" category where almost all errands require a car.

Land use mix can also assist to predict walking and bicycling behavior. Winters et al discovered increased odds of bicycling and walking was associated with more neighborhood

commercial, educational and industrial land uses and higher population density. The map XX demonstrates the land use mix in the Eastside Greenway planning area. The areas with the highest land use mix (Region 1 and 2) are likely to have higher rates of walking and bicycling.
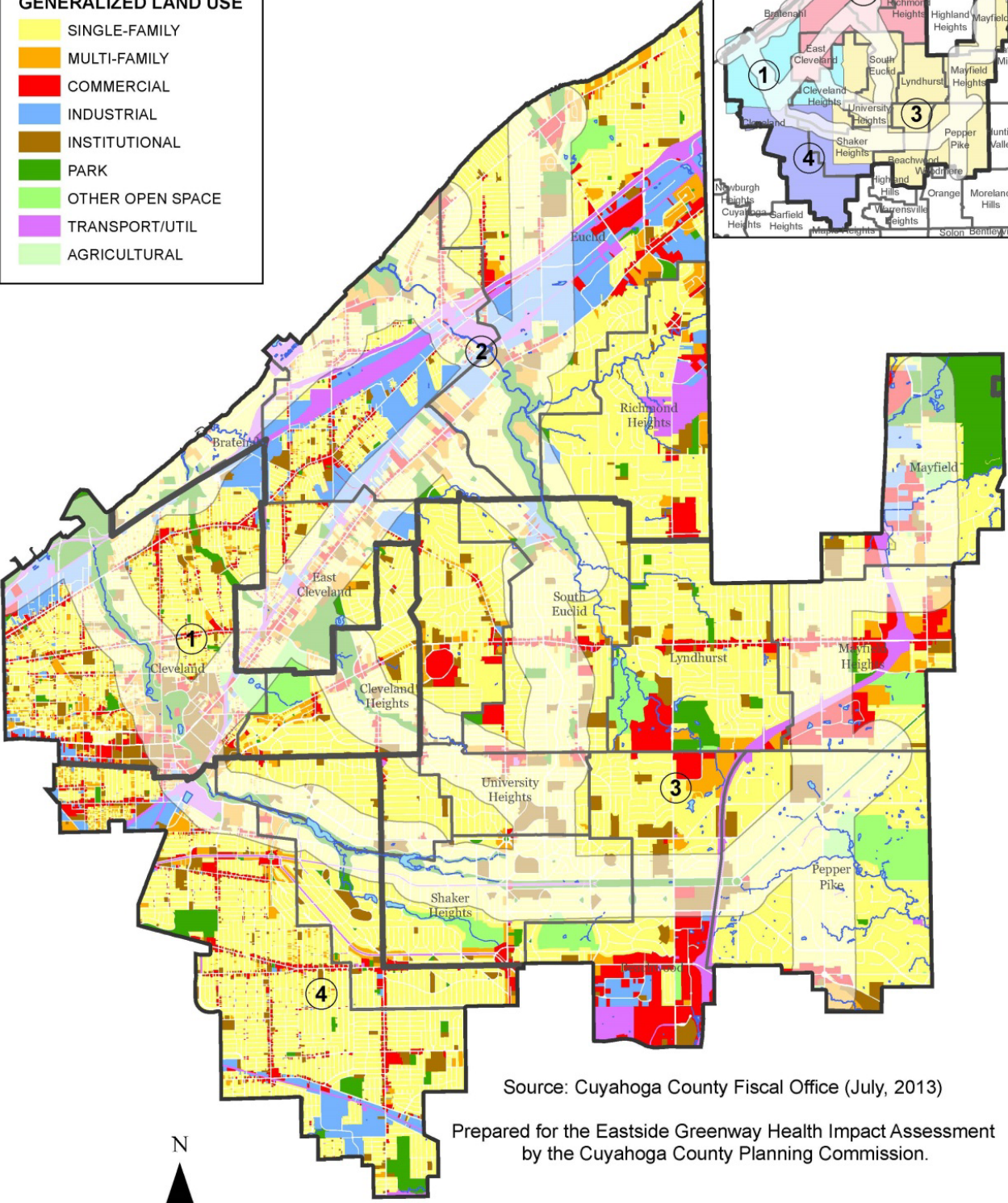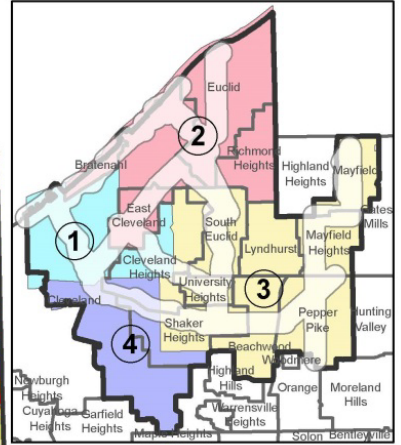
East Side Greenway
Land Use

Legend

ESG Regions (1-4)
ESG Half-Mile Buffer

GENERALIZED LAND USE

- SINGLE-FAMILY
- MULTI-FAMILY
- COMMERCIAL
- INDUSTRIAL
- INSTITUTIONAL
- PARK
- OTHER OPEN SPACE
- TRANSPORT/UTIL
- AGRICULTURAL

Source: Cuyahoga County Fiscal Office (July, 2013)

Prepared for the Eastside Greenway Health Impact Assessment
by the Cuyahoga County Planning Commission.

N

0   1   2   4
Miles

CUYAHOGA
COUNTY
PLANNING
COMMISSION
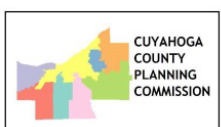
Can you say something about the land use mix map? It's just plopped in here and I have no idea why. I have to assume it has something to do with having amenities nearby to the ESG, but I need a little more info…I need you to draw conclusions based on it, and provide a short narrative explanation

Transportation Findings

Improving intersections will reduce collisions between automobiles and pedestrians and cyclists.

Education to improve predictability of drivers and pedestrians/cyclists will reduce collisions.

Highly mixed land use areas (regions 1 and 2) and those that are more aesthetically pleasing along the ESG buffer area will see the most increases in walking and biking.

Increasing walkability will reduce overweight/obesity in those neighborhoods.

Based on literature (Evenson) it is estimated that approximately 20,000 residents (5%) living in the ESG region will use new ESG trails for walking and biking.

The higher density regions of the ESG (regions 1 and 2) are more likely to have a higher increase in biking and walking as a result of the implementation of the ESG plan compared to regions 3 and 4. The population density of Region 1 is 5467.9 people per square mile and Region 2 ESG buffer area is 4768.5 people per square mile (see table).

Implementation of the ESG plan will increase bike trips. The current plan will increase the amount of trails from 30 miles to 60 miles of trail. The percent of bike trips will likely double (need to assess baseline bike trips).

For each point increase in walkscore, housing values can increase by $700-$3000 per home.

Bicycling will increase the most on sections of the Eastside Greenway where separated lanes, divided paths, bicycle boulevards are included in the plan.

Health Impact Analysis – Transportation

If the HIA recommendations are taken into consideration during the planning, design and construction of the Eastside Greenway, the following health impacts are predicted:

Indicator	Magnitude of Impact	Direction of Impact	Likelihood of Impact	Quality of Evidence
Cycling	2750 people (about 1% of the ESG population)	⬆	3	3

			3	3
Walking /Taking Public Transit to Work	82,000 people (about 30% of the ESG population)	⬆	3	3
Auto-Cyclist collisions	5 collisions (down from 37 per year)	⬇	3	3
Auto-Pedestrian collisions	63 collisions (down from 210 per year)	⬇	3	3

How were recommendations developed? Were stakeholders given an opportunity to review findings and comment on them? Did any of the recommendations consider equity? If yes, to what extent?

Type of Health Impact Key

C=Crime, Fear of Crime, E=Equity, SC = Social Cohesion, T=Transportation – physical activity, TS=Transportation safety

	Recommendation	Health Impact
Funding	Leverage Complete and Green Streets funding opportunities to increase biking and walking trails	T, TS, C, SC, E
	Advocate for increased funding to increase trail facilities and maintain the greenway	T, TS, C, SC, E

	Recommendation	Health Impact
Community Engagement/Support	Establish an ESG coalition of stakeholders and community members from each area of the ESG. This coalition will ensure that facilities, educational campaigns, policies and systems developed are appropriate for the diverse communities within the ESG.	E, C, T, TS, SC
	Develop a work group dedicated to bicycle/pedestrian safety	TS, T, C, SC, E
	Develop a Neighborhood Watch that provides visible presence within and proximate to the ESG; publicize the ESG among current	C, T, TS

		Neighborhood Watch groups in different municipalities	

	Recommendation	Health Impact
Policy	Establish Complete Streets policies in the municipalities within the East Side Greenway	T, TS
	Establish a bike safety ordinance to increase penalties for motorists who endanger cyclists or block bike lanes	T, TS
	Establish a comprehensive greenway management plan for paths and facilities within and proximate to the ESG which includes roles for residents, community groups, business owners and responds to different resource capacities in diverse communities.	E, C, SC, T, TS

	Recommendation	Health Impact
Infrastructure	Extend biking and pedestrian facilities on the Euclid Corridor east of the ESG planning area into and through the ESG planning area	T, TS, SC
	Increase biking infrastructure with separated lanes, divided paths, bicycle boulevards, increased bicycle parking and improved crossings/intersections	T, TS
	In locations where separated cycling lanes are not possible on roadways, traffic calming measures are recommended	TS, T
	Add functional attributes to promote walking and biking along the greenway including lockers, water fountains and restrooms	SC, T, TS
	Include open spaces, benches, swings to provide rest and relaxation within the ESG planning area	SC, E
	Ensure that large open spaces are included within the ESG to accommodate festivals and events	SC, E

	Recommendation	Health Impact
	Consider geographic distribution of trail connections and trail heads to assure equitable access for diverse populations throughout the ESG	E, T, SC
	Paths should be well-lit and provide clear visibility for users	C, T, TS
	Plan to incorporate play fields and picnic areas in regions with higher African American and/or Latino populations (regions 1,2 & 4)	E, SC

	Recommendation	Health Impact
Education	Create, publish, and promote an "East Side Greenway Guide" for biking and walking for both transit and recreation	T, TS, SC, E
	Create an education campaign to promote bicycling and walking among diverse populations	SC, T, TS, E

	Recommendation	Health Impact
System	Promote the RTA bike/transit program with a guide for parking and riding RTA to and from the ESG	T, TS, E
	Create a permit system to allow residents and community groups to reserve the parks within the ESG for activities, events and gatherings	SC, E
	Establish a low cost equipment rental program (such as bicycles, golf equipment, tennis racquets, and cross country skis).	SC, E T, TS
	Develop a system in which the coalition, neighborhood watch and law enforcement work together to make the ESG area safer	C, TS, SC, E
	Participate in the process of vacant land re-use, maintenance and disposal	C, TS, SC, E

	Recommendation	Health Impact
Assessment	Assess public transportation needs to access the trails and green spaces within the ESG planning area (especially vulnerable communities)	E, SC, T, TS, C
	Identify access points for ESG areas to understand where alignments and connections should be created	SC, E, T, TS, C
	Survey ESG community area residents to identify activities of interest, usage patterns, with consideration of the diverse populations within the ESG	E, SC, T, TS, C
	Assess current bicycle ridership rates	T, TS, SC
	Assess patrol activities for each municipality within the ESG	C

Did the HIA include documentation of the HIA process? Were recommendations delivered to the ESG planning leads? When? How? Were stakeholders involved in reviewing and communicating findings? How?

Stakeholders/Outcomes :

Who were the key stakeholders to complete the HIA?

Were there any people or organizations that were missing?

Did you establish formal agreements regarding stakeholder involvement? If not, how did the stakeholder group form?

How much staff and volunteer time was used to conduct the HIA? What is the estimated cost to conduct the HIA?   Did stakeholders gain skills or knowledge about the HIA process? Did the HIA process develop or enhance partnerships? Did the HIA process increase stakeholder knowledge of health inequities that exist in the study area?

Places to Avoid: Perceptions of Crime in the Community

We would like to create better places for getting outside and getting active in your community, but we need your help to understand how best to do this! There is a planning process under way to create a linked trail system on the eastside of Cuyahoga County. The goal is to connect neighborhoods to parks, work and recreation centers, and to increase walking and biking to improve your community's quality of life. We would like your input on where you think places in your area are safe or unsafe, and where you like to spend your time outdoors.

Thank you for taking the time to share your thoughts with us!

Instructions:

Please answer the following 5 questions.

1. What's your connection to this community? (Mark all that apply)

____ Resident

____ Work

____ Volunteer

____ Other

2. How long have you worked/lived/been connected to this neighborhood?

____ Less than 1 year

____ 1-3 years

____ 4-6 years

____ 7-9 years

____ 10 or more years

3. Please check your age range.

- 18-29 years
- 30-45 years
- 46-60 years
- 61 and older

4. Please indicate your sex.

- Male
- Female

5. a) Please indicate your race

- White/Caucasian
- Black/African American
- Other Asian Ancestry
- I think of myself as something else _____

b) Please indicate if you are Hispanic or Latino?

- Yes
- No

On the following pages, we have provided you with maps of your community. Using these maps, please complete the following:

USING THE RED MARKER

    1.   MARK places that you avoid because you feel unsafe due to criminal activity.
    2.   LABEL each of these places with a number.
    3.   LIST these numbers on the back of the map. For each place you have identified, please write:
        a) why you avoid this area

        b) when you avoid this area (times of the day and days of the week)

        c) what do you believe would make this place safe

USING THE GREEN MAKER

    4.   DRAW areas and MARK spots where you like to spend time outdoors

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Conflicts of interest

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