Health Impact Assessment

of the

EPA Brownfields Area-Wide Plan

Florida HEALTH
Hillsborough County

JANUARY 2018

Mission

To protect, promote, and improve the health of all people in Florida through integrated state, county, and community efforts.

Vision

To be the healthiest state in the nation.

Values (ICARE)

- **I**nnovation – We search for creative solutions and manage resources wisely.
- **C**ollaboration – We use teamwork to achieve common goals and solve problems.
- **A**ccountability – We perform with integrity and respect.
- **R**esponsiveness – We achieve our mission by serving our customers and engaging our partners
- **E**xcellence – We promote quality outcomes through learning and continuous performance improvement.

Principles

Honesty, Fairness, Devotion, Courage, and Excellence

This report is available at the Florida Department of Health–Hillsborough County website at: http://hillsborough.floridahealth.gov/

HIA CONTRIBUTORS

HIA Research Team

Ayesha Johnson, PhD, Florida Department of Health in Hillsborough County
Allison Nguyen, MPH, CHES, Florida Department of Health in Hillsborough County
Rachel Chase, MPH, Florida Department of Health in Hillsborough County
Bria Thomas, MPH, CPH, Florida Department of Health in Hillsborough County

Brownfields Area-Wide Project Team

Christian Wells, PhD, USF Center for Brownfields Research
Miles Ballogg, Cadno Associates
Beverly Ward, PhD, Beverly Ward Associates
Sarah Combs, University Area Community Development Center
Nestor Ortiz, University Area Community Development Center
Diana Diaz, University Area Community Development Center
Gabrielle Lehigh, University of South Florida
Pedro Parra, Hillsborough County City-County Planning Commission

Subject Matter Experts

Michele Ogilvie, MA, Hillsborough Metropolitan Planning Organization
Lena Young Green, Coalition of Community Gardens Tampa Bay – Florida
Kitty Wallace, Coalition of Community Gardens Tampa Bay – Florida
Quinn Lundquist, MPH, CPH, Florida Department of Health in Pinellas County
Deanna Davis, RDN, LDN, Florida Department of Health in Hillsborough County
Jennifer Waskovich, MS, RD, LDN, Florida Department of Health in Hillsborough County

ACKNOWLEDGEMENTS

The Florida Department of Health in Hillsborough County (DOH-Hillsborough) would like to thank the University Area Community Development Corporation (UACDC), other members of the EPA Brownfield Area-Wide Plan project team, and the subject matter experts who provided their input at various stages of this Health Impact Assessment (HIA).

The opinions expressed in this report are those of the authors and do not necessarily reflect the opinions of DOH-Hillsborough, or any other individual stakeholders listed above.

Funding for this HIA was provided by USF Center for Brownfields Research through EPA Grant No. 00D54917

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

EXECUTIVE SUMMARY

In June 2017, the Florida Department of Health in Hillsborough County (DOH-Hillsborough) responded to a Request for Proposal from the University of South Florida (USF), Center for Brownfields Research to conduct a rapid Health Impact Assessment (HIA) for Phase I of the EPA Brownfields Area-Wide Project (EPA Brownfields AWP).

This project is focused on the University Area Community (UAC), a neighborhood located in unincorporated Hillsborough County on the northern edge of the City of Tampa, Florida. The area is mixed with residential and commercial properties, and contains many vacant lots some of which are perceived by residents to be contaminated by environmental pollutants. USF engaged the community and other stakeholders to develop a brownfields area-wide plan along with an implementation strategy for the neighborhood. Approximately 11,000 residents live in this diverse community. Among residents, 74% are racial and ethnic minorities; this is larger than the percentage minorities in Hillsborough County (29%) and in the state of Florida (26%). The poverty rate in the target area (58%) is more than three times the county rate (18%) and almost six times the state rate (10%). The unemployment rate is 16%. Additionally, there is a higher proportion of residents 25 years and older with no high school education compared to county and state proportions.

The HIA process began in July 2017, with initial screening meetings to determine which health impacts would be included in the HIA, and which would be addressed using other assessment tools. Scoping the HIA took place in September 2017. During the Scoping Phase, the research questions our team developed were:

- What would be the impact of the EPA Brownfields AWP?
- How would the EPA Brownfields AWP affect the health of the population within the targeted geographic location?
- Would the impacts cause undue burden or harm to vulnerable populations in the area (i.e. racial and ethnic minorities, people with movement-related disabilities, children and older adults)?

To answer these research questions, three pathways defined by immediate outcomes from the plan were considered. These pathways connect determinants of health to intermediate and long-term health outcomes that were previously identified by community residents as being important to the community. The pathways explored were: access to a community park (Pathway A), access to a community garden (Pathway B), and access to an active living system (Pathway C). The outcomes studied were:

Pathway A

- Risk of Crime
- Crime-Related Incidents
- Exposure to Outdoor Air Pollutants
- Asthma/Respiratory Disease Exacerbation
- Exposure to Heat
- Heat-Related Illness
- Stress Levels
- Mental Health
- Physical Health
- Premature Mortality

Pathway B

- Access to Fresh Food
- Physical Health
- Premature Mortality
- Social Engagement Opportunities
- Overall Well-Being

Pathway C

- Walkability
- Overall Well-Being
- Access to Health Care

The Assessment phase took place between September and October 2017. Assessment of health impacts was conducted by literature review. Additionally, stakeholders including the project team were engaged for data and feedback.

In November 2017, an overview of the HIA data and results were presented to subject matter experts (SMEs) for their consideration and review. During this discussion, the health impact predictions and preliminary recommendations were drafted. The likelihood and direction of the impact predictions were determined, in addition to the magnitude of the impact on the local population. The health impact predictions included:

Table 1. Summary Impact Predictions

Outcome	Likelihood, Direction, and Magnitude of Impact on the local population
Access to a Community Park	Likely increase, with a significant impact
Risk of Crime	Likely decrease, with a moderate impact
Crime-Related Incidents	Likely decrease, with a moderate impact
Exposure to Outdoor Air Pollutants	Likely increase, with a low impact
Asthma/Respiratory Disease Exacerbation	Likely increase, with a low impact
Exposure to Heat	Likely increase, with a low to moderate impact

Table 1. continued

Outcome	Likelihood, Direction, and Magnitude of Impact on the local population
Heat-Related Illness	Likely increase, with a low to moderate impact
Stress Levels	Likely decrease, with a moderate impact
Mental Health	Likely increase, with a moderate impact
Physical Health	Likely increase, with a moderate impact
Premature Mortality	Likely decrease, with a low impact
Access to a Community Garden	Likely increase, with a significant impact
Access to Fresh Food	Likely increase, with a moderate impact
Social Engagement Opportunities	Likely increase, with a moderate impact
Well-Being	Likely increase, with a moderate impact
Access to an Active Living System	Likely increase, with a moderate impact
Walkability	Likely increase, with a significant impact
Access to Health Care	Likely increase, with a moderate impact
Disruption	Likely increase, with low to moderate impact
Gentrification	Likely increase, with moderate to significant impact

The SMEs used these impact predictions to help draft recommendations for the plan that would better promote the positive impacts of the project and help to mitigate the potentially negative impacts. Additionally, the HIA results were presented to the community and their feedback was incorporated into the recommendations for the project. The final recommendations are listed below with recommendation from community residents indicated with an asterisk (*****):

- Promote landscaping to increase shade cover.
- Market the park so residents are aware of it (e.g. DOH-WIC clinics in the UACDC can let clients know about the park).
- Children 12 years and younger should be accompanied by an adult at all times.*****
- Promote safe park use through education and signs – not leaving young children unattended, not allowing children to climb on aquifer barrier etc.; signs should be appropriate for the health literacy of the community.
- Park should be adequately lit.*****
- Ensure that sidewalks and paths are compliant with the Americans with Disabilities Act (ADA).

- Promote awareness and prevention of drowning.
- Include a walking path with track around play area so caregivers can have playing children in their line of sight, while being active themselves.
- Set the hours for park use to better ensure children are not in the park after dark. Hours can be adjusted seasonally.*
- Have organized activities in the park for children.*
- Develop an emergency protocol for the park (e.g. blue light phone).*
- Use best practices for park use related to maintenance (e.g. trash cans, clean up, landscaping etc.).*
- Promote meal preparation classes.
- Promote gardening classes.
- Engage community leaders to promote and arrange activities around community gardening (e.g. breakfast in the garden, lunch in the garden).
- Incorporate activities for older adults in the use of the community center (e.g. sliver sneakers, partnering with OLLI).
- Educate residents on how to reduce respiratory–related exacerbations due to allergens and increased exposure to air pollution.
- Educate residents on heat-related illness and how to prevent it.
- Install drinking fountains and benches in the park.
- Provide ground covering and/or shade screens for park equipment and protection against heat.
- Provide signs throughout the park to address heat-related illness and the need for frequent hydration; signs should be appropriate for the health literacy of the community.
- Provide residents with regular updates on the park development as the project progresses.
- Use best practices for park maintenance related to safety.
- Encourage the UACDC and other local non-profit organizations to increase their assets (e.g. acquiring additional properties) in the community so that they will have increased ability to address housing and other needs.
- Engage the community to motivate governmental organizations (county) to support affordable housing initiatives.
- Educate residents and provide them with employability skills such as job interview techniques, resume writing etc. to help them increase their earning potential.
- Encourage residents to access opportunities that will increase their employability such as those provided by OLLI.
- Include shared lane markings/sharrows and speed bumps around Harvest Hope Park, to indicate that bicyclists are also using the road.

- Install traffic control features (e.g. speed bumps, speed limits signs) around Harvest Hope Park, to discourage speeding.*
- With the changing activity patterns encourage a “see something, say something”, “coffee with a cop” or neighborhood watch-type program be implemented if not already in place.*

The HIA results were shared with the community and the project team. This HIA report will also be posted on the DOH-Hillsborough website. Other methods to communicate the HIA results may include creating executive summaries, factsheets, infographics, and media messaging.

The plan to monitor and evaluate this HIA is described in Table 22 of this report.

INTRODUCTION

Brownfields

A *brownfield* can be defined as a "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant" (Greenberg, Lowrie, Mayer, Miller, & Solitare, 2001). They can also be thought of as structures that are known to be contaminated or perceived to be contaminated, that are underutilized or not unused (Greenberg et al., 2001). Brownfields are different from superfund sites in that superfund sites are definitively contaminated sites requiring a long-term response to clean up (EPA, 2017). Redevelopment of a superfund site is regulated by the federal government. Brownfields may be privately redeveloped. Therefore a project desiring to redevelop a brownfield property must be carefully planned in order to identify potential hazards which may exist or surface during the redevelopment of the property (Columbia Center for New Media Teaching and Learning [CCNMTL], 2017). Brownfield redevelopment is also a large undertaking as the national Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 holds the purchaser of any property liable for any contaminants on this property.

Brownfields are typically abandoned, closed or under-used industrial or commercial facilities, such as an abandoned factory in a town's former industrial section or a closed commercial building or warehouse in a suburban setting. According to the EPA there are presently over half a million brownfields in the United States. The redevelopment of brownfields has become an important health issue. Typically brownfields remain idle and unused for decades because the cost of cleaning these sites tends to be very high and uncertain. Redevelopment of brownfields does, however, provide the hope of creating jobs, expanding the tax base, and revitalizing the economies of local communities (CCNTML, 2017). Further, decontaminating brownfields reduces community health risks and creates opportunities for redevelopment activities that can improve housing and open space opportunities for communities that lack these assets (Greenberg et al., 2001). Unfortunately, the cost of a clean-up can even be more than what the land would be worth after remediation. However, to promote redevelopment, federal and state programs have evolved to assist developers interested in cleaning up brownfield sites and redeveloping them for productive use.

Redevelopment in Florida

Brownfield redevelopment projects in Florida are easier and cheaper to conduct compared to similar projects in other parts of the country. This is due to environmental degradation and contamination in Florida being less severe than in many other U.S. states (Enterprise Florida, 2017).

Additionally, businesses that clean up and redevelop an existing brownfield are eligible for financial incentives, regulatory benefits, technical assistance, and liability protection. These include refunds for new jobs created in an area near a brownfield by an eligible business, attractive business locations with existing infrastructure, cleanup tax credits, cleanup liability protection, low-interest loans for assessment and cleanup, and increased State Loan Guarantees which can improve lending opportunities and expedited permitting for Brownfield projects (Enterprise Florida, 2017).

EPA Brownfields Area-Wide Plan

The proposed EPA Brownfields Area-Wide Plan (EPA Brownfields AWP) is focused on the University Area Community (UAC), a neighborhood located in unincorporated Hillsborough County on the northern edge of the City of Tampa, Florida. The UAC is an underserved community characterized by low incomes, high unemployment and poverty rates, and disproportionately high levels of childhood morbidity. An infant from this neighborhood is twice as likely to die during the first year of life compared to infants from surrounding regions (Smith, 2004). The area is a mixture of residential and commercial properties, and contains many vacant lots, some of which are perceived by residents to be contaminated by environmental pollutants. Faculty and students from the University of South Florida (USF) plan to work together with this community and other stakeholders to develop a brownfields area-wide plan and implementation strategy for the neighborhood. The project will build on existing planning activities that the community has already developed for housing rehabilitation, new business creation, increased access to health services, and improved opportunities for recreation. The project will focus on brownfields that are a major impediment to these redevelopment considerations, particularly the Harvest Hope Park catalyst site. Project activities will include community engagement, local capacity building for residents, an economic market analysis, and evaluation of existing planning documents along with social, health, and environmental data to determine the extent to which contamination will impact revitalization efforts. Key partners working with USF include the Florida Brownfields Association, the University Area Community Development Corporation (a community-based nonprofit organization in the UAC), Mort Elementary School (located in the UAC), Environmental Protection Commission of Hillsborough County, Florida Department of Health in Hillsborough County

(DOH-Hillsborough), Economic Development, Hillsborough County City-County Planning Commission, and three private consulting and social marketing firms located near the UAC.

The proposed brownfield catalyst site is a 6.82-acre parcel located in the center of the UAC, surrounded by single- and multi-family residential housing. The property (13704 N. 20th St. Tampa, FL 33613) contains one small (1100 sq. ft.) one-story masonry/concrete block commercial building. The majority of the property is overgrown with trees, brush, shrubs, and grass. There is a large, polluted, spring-fed pond in the northwest corner of the site, which has been formally designated as a “wetland conservation area” by the Environmental Protection Commission of Hillsborough County, but it is not connected to any sole source aquifer. Records indicate that the site was private property from the 1960s-1980s, and served as a practice field for the Police Athletic League in the 1990s. The site is currently owned and managed by the University Area Community Development Corporation (UACDC), a key partner on this EPA Brownfield AWP.

Figure 1. Project Area with Census Tracts Highlighted

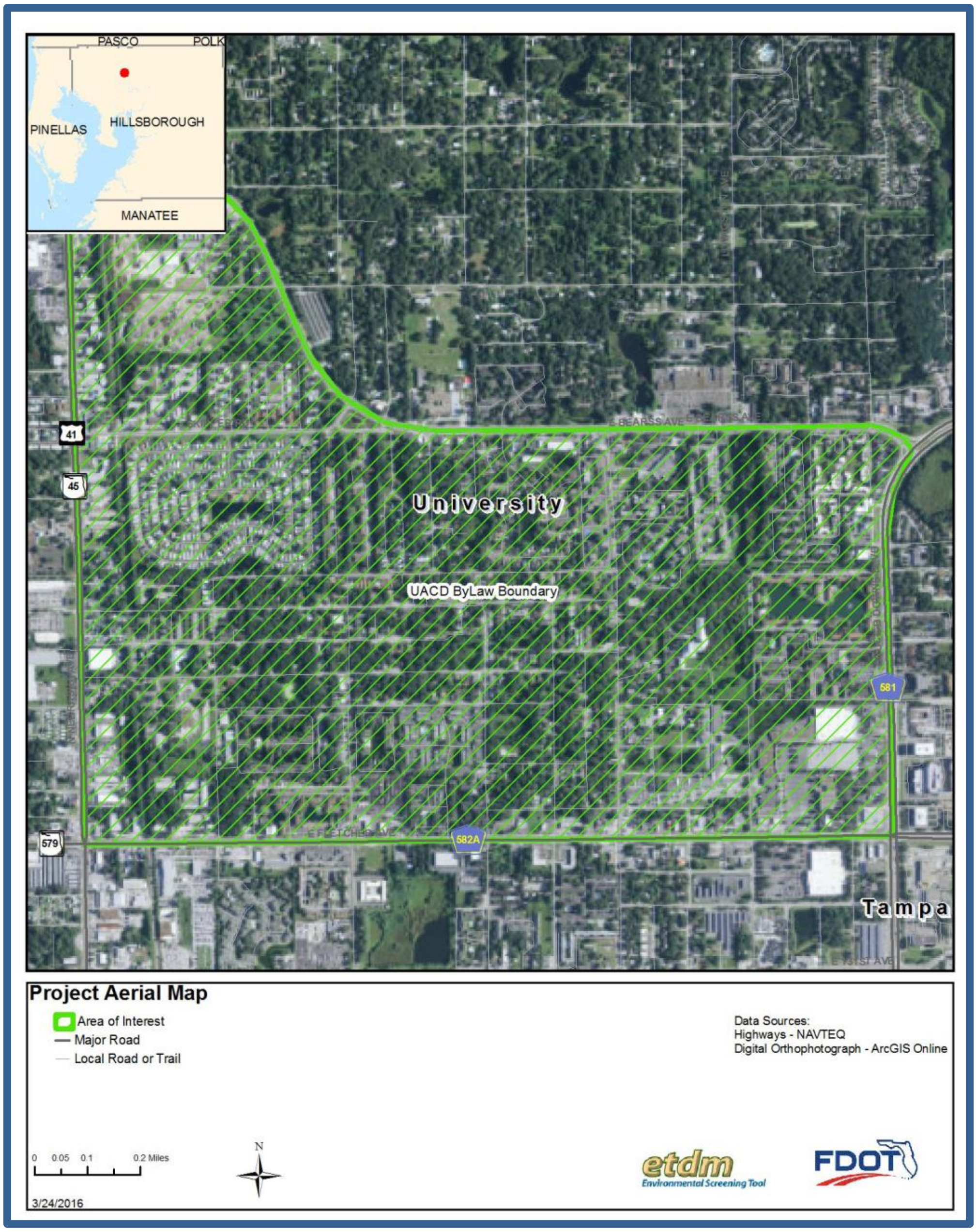


Figure 2. Aerial Map of Project Area

In 2015, the UACDC conducted a needs-based assessment using printed, online, and walk-in surveys in the community, with 375 respondents. The assessment concluded that the primary needs identified by residents were environmental and human health. Community members specifically desire to have access to a recreational park in the neighborhood, especially one in which they can develop a community garden and have access to healthy foods, since the primary grocery store serving this area recently closed, leaving many residents with less access to fresh foods. The catalyst site for the project was acquired from Hillsborough County by the UACDC with the intent of redeveloping the property for recreational purposes. Once developed, this catalyst site will be used for community programming and capacity building in the community. The UACDC has constructed a small scale garden in raised beds on the property. Responding to concerns raised by community residents, the UACDC also plans to establish a playground and multi-purpose sports field on the property, walking trails around the pond, and other amenities. The development of this property has high potential to spur redevelopment in surrounding properties such as residences and vacant lots, which in turn will play a key role in further redevelopment to surrounding businesses, local schools, and other commercial and service-oriented properties. These changes can positively impact job creation in the area and help to address concerns about unemployment and poverty. In many ways, area residents view Harvest Hope Park as a keystone to redevelopment.

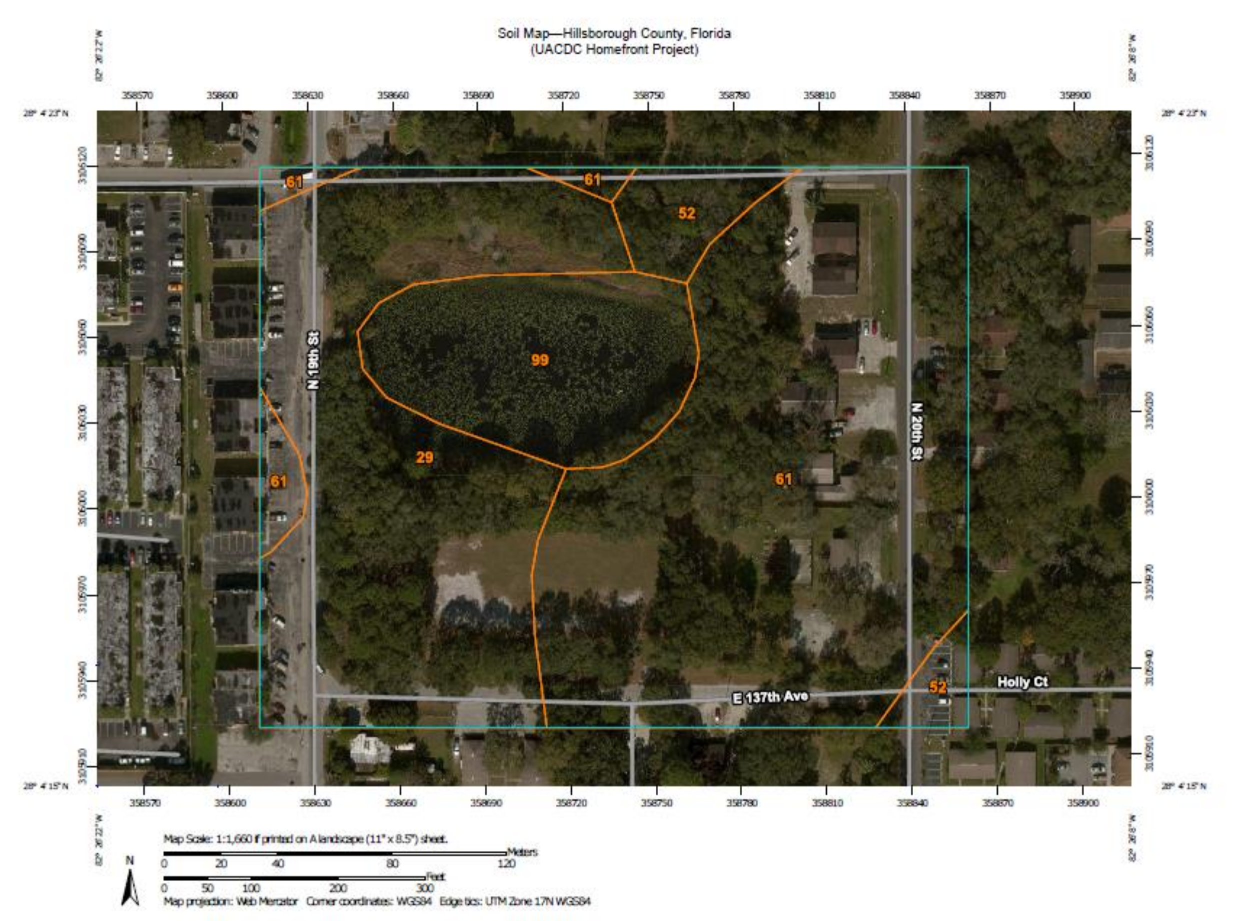


Figure 3. Soil Map Highlighting Proposed Site for Harvest Hope Park

EPA Brownfields Area-Wide Plan Health Impact Assessment

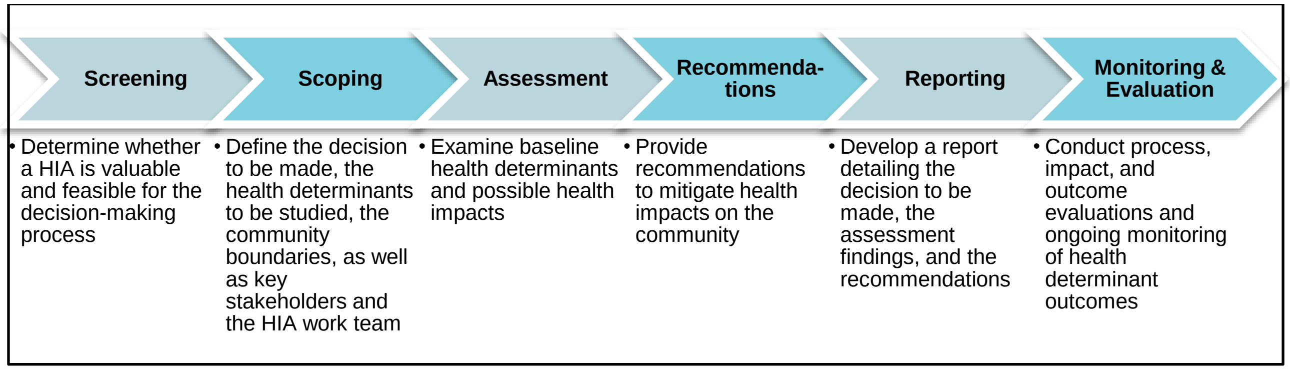
In June 2017, DOH-Hillsborough responded to a Request for Proposal from the University of South Florida (USF), Center for Brownfields Research to conduct a rapid Health Impact Assessment (HIA) for Phase I of the EPA Brownfields AWP.

“Health Impact Assessment (HIA) is a practice that aims to protect and promote health and to reduce inequities in health during a decision-making process” by considering the intended and unintended health impact of a proposed plan, project, program or policy (Bhatia, et al., 2014). It consists of six phases, which include screening, scoping, assessment, recommendations, reporting, and monitoring & evaluation. The information in this report is organized by HIA phase and includes information compiled and analyzed from July 2017 through November 2017. The report sections include the following information:

- **Background:** information on HIAs and their importance
- **Screening:** information to demonstrate feasibility, the key decision, proposed health determinants and outcomes, and main stakeholders
- **Scoping:** research questions, pathways diagram, and metrics to be examined
- **Assessment:** results from secondary data analysis along with impact predictions
- **Recommendations and Reporting:** proposed recommendations and plan for the reporting and dissemination of the HIA results and report
- **Monitoring & Evaluation:** the plan for monitoring and evaluating the HIA process and outcome indicators over time

BACKGROUND ON HIA

“Health Impact Assessment (HIA) is a practice that aims to protect and promote health and to reduce inequities in health during a decision-making process” (Bhatia, et al., 2014). It is a systematic process used to identify and assess the potential intended and unintended health effects of a proposed plan, project, program, or policy on a specific population. HIA considers how those effects are distributed across a population, whether certain subgroups would be disproportionally affected, and provides recommendations on ways to mitigate the effects. It includes six key phases as part of the standard process: screening, scoping, assessment, recommendations, reporting, and monitoring & evaluation (Bhatia, et al., 2014), which are explained in greater detail in Figure 4. Following the core principle of a comprehensive approach to health, HIAs should be guided by the wider determinants of health.



Screening	Scoping	Assessment	Recommenda-tions	Reporting	Monitoring & Evaluation
• Determine whether a HIA is valuable and feasible for the decision-making process	• Define the decision to be made, the health determinants to be studied, the community boundaries, as well as key stakeholders and the HIA work team	• Examine baseline health determinants and possible health impacts	• Provide recommendations to mitigate health impacts on the community	• Develop a report detailing the decision to be made, the assessment findings, and the recommendations	• Conduct process, impact, and outcome evaluations and ongoing monitoring of health determinant outcomes

Figure 4. Phases of the HIA Process

HIA considers which social health determinants may be impacted by the proposed plan, project, program, or policy, and predicts how health will be impacted in immediate, intermediate and long-term outcomes (Quigley, et al., 2006). Although the main focus of HIAs includes considering health impacts and potential disparate impacts, equity and democracy play a larger role in the HIA practice.

HIAs are informed by engaging the affected communities as well as SMEs. SMEs are engaged because there may be many unknowns with regards to health impacts and the complexity of these impacts which may result from the proposed plan, project, program or policy (Knol, Slottje, van der Sluijs, & Lebret, 2010; Spruijt, Knol, Petersen, & Lebret, 2016). These unknowns are better accounted for if SMEs are engaged throughout any process that will lead to making a decision (Knol et al., 2010). HIA attempts to quantify health impacts. One factor for considering HIA is that the association between heath impacts and the scope of the project may not be glaringly obvious. It therefore benefits the decision–making process to engage experts who may be more knowledgeable about the scope of the impacts. Engaging SMEs also promotes transparency for the project, which helps to build trust within a community (Knol et al., 2010). SMEs may be engaged to various degrees during the HIA process (Spruijt et al., 2016).

HIAs vary in size and scope. A *Rapid* HIA is usually carried out in a shorter time frame (i.e. a few months) and utilizes minimal resources. It usually includes a brief investigation of potential health impacts. It involves SME engagement and research from previously conducted HIAs. An *Intermediate* HIA is typically carried out in within a one year period and utilizes moderate resources. It requires a more detailed investigation of the potential health impacts. An intermediate HIA requires reviewing similar HIAs as well as other types of assessment conducted. A *Comprehensive* HIA typically takes in excess of one year to complete and utilizes considerable resources. It requires an intense investigation of potential health impacts. It also involves review of available literature as well as some primary data collection (WHO, 2017). The defining feature of a comprehensive HIA is the collection of primary data. The distinction between and a rapid HIA and an intermediate HIA is less objective. Often the defining feature is the timeframe for completion (WHO, 2017).

SCREENING & SCOPING

Screening

The purpose of *Screening* is to determine the feasibility of conducting an HIA for a proposed plan, project, program, or policy. The Screening phase for the EPA Brownfields AWP HIA occurred in August 2017, when the project team along with non-profit organizations who serve the UAC met to determine the feasibility of conducting an HIA. The team discussed intended positive health impacts such as having a community park, having a community garden and kitchen, and having a more walkable community. The team also identified potentially unintended negative impacts such as exposure to air pollutants, the disruption to residents during the building phase of the project, and the potential gentrification of the community. Appendix A includes the screening worksheet that was completed during this phase. During the screening meeting it was confirmed that a rapid HIA should be conducted due to the time available to conduct the assessment and the fact that health was being considered within the scope of other assessments (i.e. Social Impact Assessment Environmental Impact Assessment).

Scoping

Scoping defines the health determinants and outcomes to be studied, the geographic boundaries of the project, as well as key stakeholders to inform the HIA. Scoping for the EPA Brownfields AWP HIA was conducted in September 2017. In this phase, DOH-Hillsborough determined the goals, research questions, and specific health determinants and outcomes to examine in this HIA. The Comprehensive Pathway diagram, which demonstrates linkages between the three main determinants and selected outcomes, was also drafted during this phase. The census tracts surrounding the UAC were included as the geographic scope of this HIA, and the target area's demographics are detailed in the Community Profile section of this report.

The principal research questions for this HIA include:

- What is the impact of the EPA Brownfields AWP?
- How would implementing the EPA Brownfields AWP affect the health of the population within the target geographic location?
- Would the impacts cause undue burden or harm to vulnerable populations in the area (i.e. racial and ethnic minorities, people with movement-related disabilities, children, older adults, veterans and immigrants)?

The goals of the HIA include:

- Involve diverse stakeholders in the HIA process
- Build on the relationship between equity and health
- Highlight the impact of the EPA Brownfields AWP on health
- Include health in the decision-making process of the proposed plan
- Reinforce the importance and utility of an HIA to the project team and the public for use in future plans, projects, programs, or policies

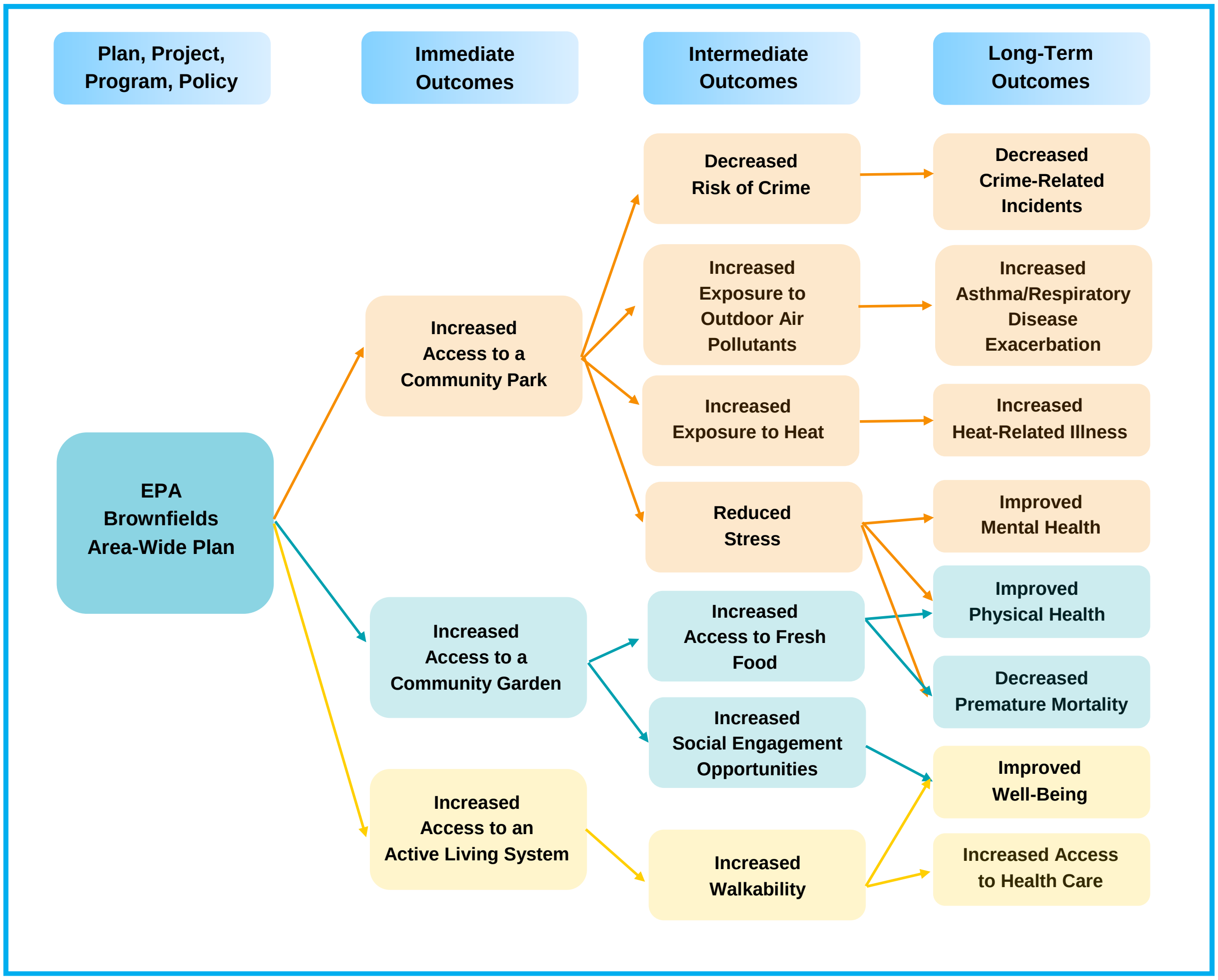


Figure 5. EPA Brownfields Area-Wide Plan Comprehensive Pathways Diagram

Community Profile

The UAC is an 864-acre underserved residential/commercial neighborhood located in unincorporated Hillsborough County on the northern edge of the City of Tampa, a 2015/Second Round HUD Promise Zone Finalist. The neighborhood contains vacant and abandoned lots polluted with solid waste, and is surrounded by numerous businesses that produce hazardous wastes. At the center of the community is a large brownfield that was acquired recently by the UACDC. This brownfield is perceived by residents to be contaminated. Roughly 75% of the approximately 10,500 residents in the neighborhood represent minority groups, primarily Hispanic (39%) and Black (33%), and 19% are U.S. Veterans (Table 2).

Figure 1 shows the target area with census tracts indicated. Tables 3 and 4 show the distribution of demographic characteristics in the target area across census tracts. There is a higher percentage minority population in the target area when compared to the city, county and state. The per capita median income is half that of the city, county and state. It is therefore not surprising that the poverty rate in the area is more than triple the rates for the city, county and state.

Table 2. Demographic Characteristics of the Project Areas in a Regional Context

Characteristic	UAC[1,2,3,4]	City[2,4]	County[2,4]	State[2,4]
Population	10,532	351,006	1,229,226	18,991,634
Percent Minority	74%	40%	29%	26%
African American	33%	27%	25%	16%
Hispanic	39%	24%	29%	23%
Per Capita Median Income	$12,230	$25,513	$27,062	$25,187
Population 65 & older	8%	11%	12%	19%
Population 17 & younger	35%	24%	24%	21%
Unemployment	16%	11%	9%	11%
Poverty Rate	58%	15%	18%	10%
Adults with No HS Diploma	32%	9%	14%	14%
No Vehicle	22%	11%	7%	7%
Renter Occupied Housing	89%	42%	35%	27%

Sources: [1]EPA EJScreen ACS Tool; [2]U.S. Census 2010; [3]FL Environmental Screening Tool (www.fla-etat.org/est); [4]2010-2014 American Community Survey; [5]2016 Bureau of Labor Statistics

Within the area there is some variation with respect to age, income and poverty. Census tract 110.03 has a larger percentage of residents aged 65 years and older compared to the other census tracts in the HIA target area. Additionally, the median income is higher in this census tract with a smaller percentage of residents living below the poverty level and who are uninsured.

Table 3. Distribution of Age by Census Tract

Census Tract	Median Age (Years)	Population younger than 20 yrs. (%)	Population 20 – 65 yrs. (%)	Population older than 65 yrs. (%)
Florida	41.4	23	58	19
Hillsborough	36.6	26	62	13
108.08	28.7	20	75	6
108.17	31.9	33	60	8
108.18	28.8	32	60	8
110.03	35.8	20	67	13

Source: Florida Health Charts [FLCHARTS], 2012-2016

Table 4. Distribution of Income & Poverty by Census Tract

Census Tract	Median HH Income ($)	Population below poverty level (%)	Population unemployed (%)	Population uninsured (%)
Florida	47,507	16.5	9.7	18.0
Hillsborough	50,579	17.0	9.0	16.3
108.08	14,808	56.2	17.5	32.5
108.17	22,616	32.9	57.6	32.6
108.18	20,898	52.8	20.0	47.9
110.03	31,512	21.7	12.7	20.6

Source: FLCHARTS, 2012-2016

This community has been identified as “one of the most economically depressed neighborhoods in Florida” (Smith, 2004). The per capita median income has remained steady over the past several years at roughly $12,000. An overwhelming majority (95-100%) of K12 students in the UAC are eligible to receive free/reduced lunch. The primary elementary school serving the area, Mort Elementary, is a Title I School (Roldan, 2016). Title I schools receive federal funding due to having high numbers or high percentages of children from low-income families to help ensure that all children meet challenging state academic standards (U.S. Department of Education, 2015). Many residents struggle with lack of education, unemployment, language barriers, inadequate health care access, and are transportation disadvantaged. The community’s need is reflected by statistics including the fact that 32% of community residents have not completed high school, the rate of unemployment is almost twice that of the county, 51% of community residents report speaking English “not well” or “not at all”, an infant from this neighborhood is twice as likely to die during the first year of life than any other area in Florida, and nearly 22% of residents lack access to a vehicle compared to 7% in the county (Table 2).

ASSESSMENT

Methods

During the *Assessment* phase, baseline health determinants and health impact predictions are examined. This phase was carried out between September and November 2017. Assessment methods included conducting a literature review of peer-reviewed journal articles and grey literature; as well as reviewing data from previously completed HIAs that evaluated similar health determinants and outcomes. Geographic Information Systems (GIS) mapping was also included. The HIA team engaged other experts for their input, including other HIA practitioners with expertise in brownfields redevelopment, and other members of the project team conducting social and environmental assessments. This feedback was incorporated throughout the Assessment and Recommendations phases of this HIA.

Limitations and assumptions were considered during the HIA process. The limitations of the HIA included: various health factor and outcome indicators were only available at the county level and not at the census tract level. Data sources including other completed HIAs had different geographic target areas and as such information may not be generalizable to this community. Additionally, as a rapid HIA, not all connections between and within pathways were considered, and additional pathways were not explored.

Results

Rationale and Research Questions:

The rationale for Pathway A is that the EPA Brownfields AWP will provide increased access to parks as part of an active living system for those who live in the UAC. Having access to a community park would decrease the risk of crime and crime-related incidents, increase exposure to outdoor air pollutants and asthma/respiratory disease exacerbations, increase exposure to heat and heat related illness, reduce stress, improve mental & physical health, and decrease premature mortality.

Specifically, the research questions include:

- Is there a community park in the UAC?
- What is the prevalence of crime and crime-related incidents in the target area?
- What is the current prevalence of asthma/respiratory disease?
- What is the current prevalence of heat-related illness in the target area?
- What is the current prevalence of mental health/stress in the target area?

- What is the current prevalence of overweight/obesity and other chronic diseases in the target area?
- What is the distribution of premature mortality in the target area?
- How will each of these measures change as a result of the EPA Brownfields AWP?

Priority Pathway A: Access to a Community Park

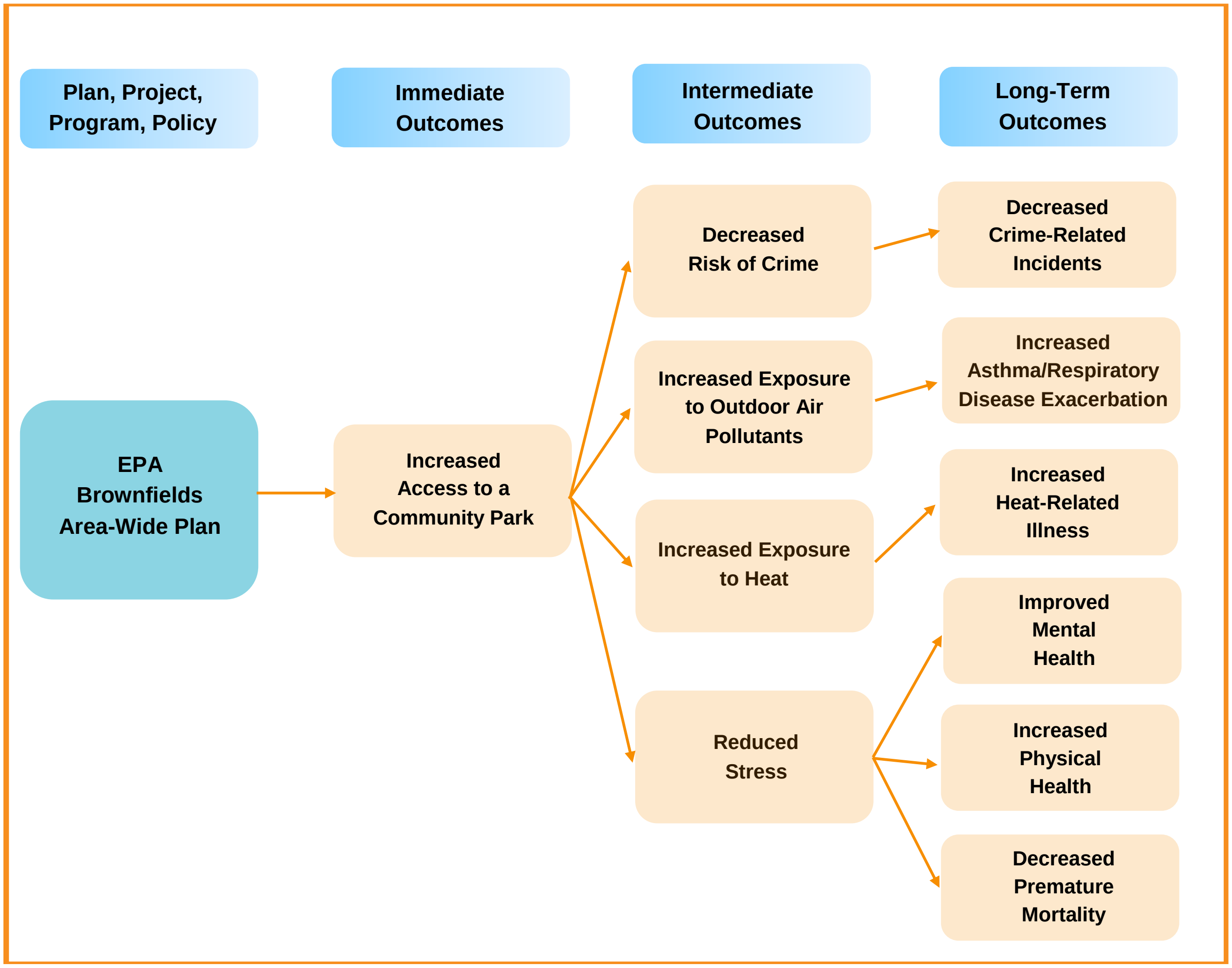


Figure 6. Priority Area A Pathway Diagram (Access to a Community Park)

Literature Review:

The National Recreation and Park Association states that parks and recreation are vitally important to establishing and maintaining quality of life in a community, ensuring the health of families and youth, as well as contributing greatly to environmental well-being (National Recreation and Park Association, 2010). This literature review seeks to address access to community parks and how they create opportunities to reduce crime-related incidents, improve mental & physical health, as well as social well-being. The association between outdoor activity and increased exposure to air pollutants and heat are also discussed.

Recent studies equate community parks to higher crime rates, but there is little empirical evidence that explains the reasoning for this conclusion (Troy & Grove, 2008). Troy and Grove (2008) discovered in their systematic survey of neighborhood parks that “activity generating” characteristics like tennis courts, lighting, and public transportation are key factors that reduce the likelihood of violent, property, and related crimes that are associated with public parks. Generating activity brings more people to park areas, thus increasing surveillance and guardianship which act as deterrents to potential offenders (Troy & Grove, 2008). Crime prevention related to community parks may depend on limiting the “opportunity for crime” (Jeffrey, 1971) by incorporating features that support lower levels of fear, such as greener surroundings (Chiesura, 2004) as well as activities that attract frequent park usage (Troy & Grove, 2008). Community parks can also limit the opportunity for crime by reducing natural and physical elements that evoke fear for park users such as low lighting, litter, and infrastructure which conceals and isolates park users from their surroundings (Cranz, 1982; Fisher & Nasar, 1992). Keeping these important factors in mind, the literature suggests that community parks designed with specific features can be used as tools to increase community-wide engagement, and to reduce the type of crime that is typically seen in public park spaces.

It is well documented that while increased outdoor activity has numerous benefits for human health, there are also negative impacts to be considered. Firstly, there is the increased exposure to outdoor air pollutants, particularly in more urban settings. Exposure to outdoor air pollutants can cause an increase in the prevalence of and morbidity associated with asthma/respiratory disease (Guarnieri & Balmes, 2014; Nishimura et al., 2013). Additionally, early-life exposure to air pollution, particularly NO_2 from motor vehicle exhaust, is associated with childhood asthma in minority populations (Nishimura et al., 2013). There is a growing body of evidence that suggests that air pollution is not only associated with asthma, but actually causes it (Nishimura et al., 2013). As residents increase their outdoor activity in an effort to adopt a healthier lifestyle, they should also consider their increased exposure to heat leading to heat-related illness (Atha, 2013). Heat-related illness is defined as a “physiologic insult to the body from exposure to elevated temperatures” (Atha, 2013). The term describes a set of symptoms stemming from exposure to heat that can be characterized by exhaustion, headaches, cramps and heat stroke (Atha, 2013). This increased exposure to heat can in the long-term cause increases in heat-related illnesses (Atha, 2013; Kovach, Konrad II, &

Fuhrmann, 2015). Urban locations are typically more vulnerable to heat-related illness, however, rural communities are not exempt. It is therefore important for persons to be aware of air pollution and heat-related illness and employ measures to remain safe (Kovach et al., 2015). It is also well documented that the risks of exposure to outdoor air pollutants and exposure to heat do not outweigh the health benefits of being outdoors in nature and green space (Averett, 2015; Anderson et al., 2015).

Green spaces and community parks have also been linked to mental health improvement because of the natural environment's relaxing and restorative properties (Chiesura, 2004). There is also extensive literature examining the possible benefits recreation and exercise can have on an individual's mental health (Barton & Pretty, 2010; Biddle & Asare, 2011; Hassmen, Koivula, & Uutela, 2000). Physical activity has been associated with improvement in persons with mild to moderate depression, as well as improved self-image, cognitive functioning, and anxiety levels (Taylor, Sallis, & Needle, 1985). This suggests that having the appropriate infrastructure in a community park fosters positive physical and psychological outcomes for park users. The psychological impacts that nature and community parks provide extend beyond physical activity. A recent study concluded that the mere presence of high quality public open spaces, regardless of park use, was associated with improved mental health (Francis, Wood, Knuiman, & Giles-Corti, 2012).

The experience of being in nature has been shown to elicit positive feelings (Chiesura, 2004), along with an enhanced "sense of place". "Sense of place" is defined by Frumkin (2003) as the feeling someone has about their surrounding environment and community they live in. *The Broken Window Theory* (Kelling & Wilson, 1982) used broken windows as a metaphor to explain disorder within neighborhoods. Broken windows emphasize how important physical surroundings were to the culture of a neighborhood (Kelling & Wilson, 1982). Community parks exist as positive contributions to the built environment that, when built with specific features, are viewed as neighborhood amenities (Chiesura, 2004) and positive additions to communities. Kellert (2002) also argues that regular contact with nature can positively enhance emotional and cognitive development in children and adolescents. Overall, the psychological benefits of green space and public parks are seen to be restorative and stress relieving for young children (Kellert, 2002) and adults (Chiesura, 2004; Cranz, 1982; Ulrich, 1981).

An additional aspect of mental health is stress which, if prolonged, can have adverse psychological and physiological effects including premature mortality (Braveman, Egerter, & Mockenhaupt, 2011). In 2012, an exploratory study tested whether the presence of green space in a neighborhood environment was associated with stress levels. Using cortisol, a stress hormone, to measure stress levels, researchers found significant relationships between self-reported stress cortisol secretion and quantity of green space (Thompson et al., 2012). They found that stress levels decreased as green space increased (Thompson et al., 2012). The findings of this study suggest that characteristics of community parks, such as green space, are associated with residents' perceived stress levels and overall well-being. Similarly, outdoor physical activity significantly buffers stressful life events for park users (Caltabiano, 1995). The benefits of the natural environment provided by public parks enhance the quality of life of residents and provide relief from daily stressors (Chiesura, 2004).

The United States Department of Health and Human Services [HHS] (2008) describes physical activity as an integral part of maintaining health and well-being. Being active reduces the risk of chronic illness, mortality, and can improve one's overall health status (Centers for Disease Control and Prevention [CDC], 2015). Built environmental factors have shown to motivate physical activity (Humpel, Owen, & Leslie, 2002) and in community park environments, make physical activity more accessible to citizens at little to no cost (Godbey & Mowen, 2003), thereby reducing financial barriers. Bedimo-Rung, Mowen and Cohen (2005) developed a conceptual model which demonstrated the relationship between parks and physical activity. The model suggests that changes to the built environment, beyond individual behavior, can motivate surrounding residents to exercise. Their study showed that parks located in close proximity to community members were associated with higher rates of physical activity (Bedimo-Rung, Mowen, & Cohen, 2005), which further influenced healthier lifestyles for residents living in those communities. A study exploring environmental determinants of physical activity found that attractive, public, and open spaces are associated with higher levels of walking. Participants in this study were 50% more likely to achieve higher levels of walking if they lived closer to appealing, public, and open spaces (Giles-Corti et al., 2005). It can be concluded that building community parks in central locations within neighborhoods promotes exercise and influences positive health outcomes for residents and their community.

Figure 7. Current Catalyst Site for Harvest Hope Park

Determinant: Access to a Community Park

Currently in the target area, there are no community parks or recreation areas (Figure 8). Various apartment complexes within the target area have parks and play areas which are restricted to their residents. Community residents view abandoned lots as parks/play areas and, as such, even some organized sporting events are held in these types of locations. There is a public park approximately two miles away. However, due to its location and the road safety concerns that would be encountered in trying to access that park, Copeland Park, it is not a viable option for UAC residents. There are also limited trails and pathways for pedestrian access to the park and as such would pose a safety risk for persons using that park regularly. A healthy community should have a safe open space dedicated to play. The UACDC has basketball courts on its premises, however these are not sufficient to serve the greater need of the community. Figure 7 shows the current state of the proposed park site, while Figure 9 shows the proposed park design. Included in the park is a playground which was designed by children who live in the community, and were engaged in the park design process. Appendix B shows some of the designs that the children rendered for the park, and Table 5 shows a summary of the design features of the park.

Impact Prediction:

The EPA Brownfields AWP includes establishing the Harvest Hope Park. This project is being planned in collaboration with the community and there have been numerous opportunities for feedback. Establishing the park, as well as the general redevelopment plan, will be promoted throughout the community and will provide residents with a safe space for recreation as well as many other activities. Residents will likely have significant increased access to a community park, which will have a likely positive impact on their health.

Figure 8. Recreational Areas within the University Area

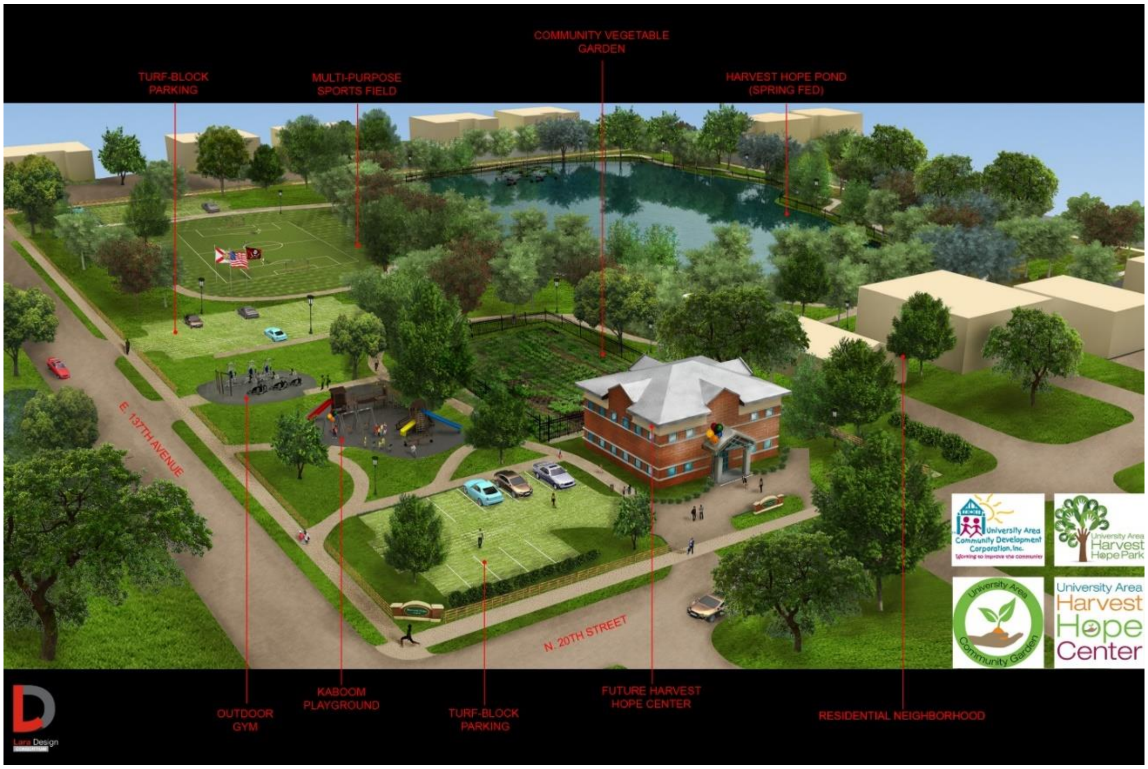


Figure 9. Features of the Proposed Harvest Hope Park

Figure 10. Kaboom Playground (Designed by Children from the Community)

Table 5. Summary of the Proposed Harvest Hope Park

Design Feature	Description
Kaboom Playground	Playground for children to play. Including a swing set and a slide. Playground designed by community resident children.
Community Vegetable Garden	Community vegetable garden for residents to use for gardening and using the produce.
Outdoor Gym	Residents will be able to do targeted exercises using the outdoor gym.
Turf-block Parking	Parking area for residents using the park.
Harvest Hope Center	Community center to house a kitchen. Residents will be able to participate in cooking classes and have another site for community events.
Harvest Hope Pond	Spring fed pond with safety barrier.
Multi-purpose Sports Field	Sports field where residents may participate in sporting activities, organized or informal.

Intermediate Outcome: Risk of Crime

Increasing access to a safe place to play and for social connectivity will likely increase the number of community residents using the park. Increased use will increase park goers' perception of safety, thus increasing the passive surveillance in the community. Increased surveillance can aid in reducing the risk of crime in the park and the surrounding area. Table 6 below shows the 3-year age adjusted firearms discharge rate in Hillsborough County.

Table 6. Distribution of Crime in Hillsborough County and Florida

Crime Measure	Hillsborough County	Florida
Firearms discharge age adjusted death rate, 3-year rolling (per 100,000 population)	11.0	12.2

Source: FLCHARTS, 2014-2016

Impact Prediction:

Planned improvements to the area including establishing the Harvest Hope Park and improving community walkability through establishing pathways for pedestrian traffic. As such, it is expected that the overall risk of crime will likely decrease, with a moderate impact. The proposed lighting throughout the park is consistent with Crime Prevention Through Environmental Designs (CPTED) designs, and is likely to help increase nighttime visibility in the park and thereby discourage criminal activity.

Long-Term Outcome: Crime-Related Incidents

Crimes of all types are a concern in many communities throughout the county and within the target area. Crimes of any type, violent or non-violent, can degrade the feeling of safety in a neighborhood. The figure below shows the distribution of selected crimes within the target area for 2016, and Table 7 shows the distribution of selected crimes between 2014 and 2016.

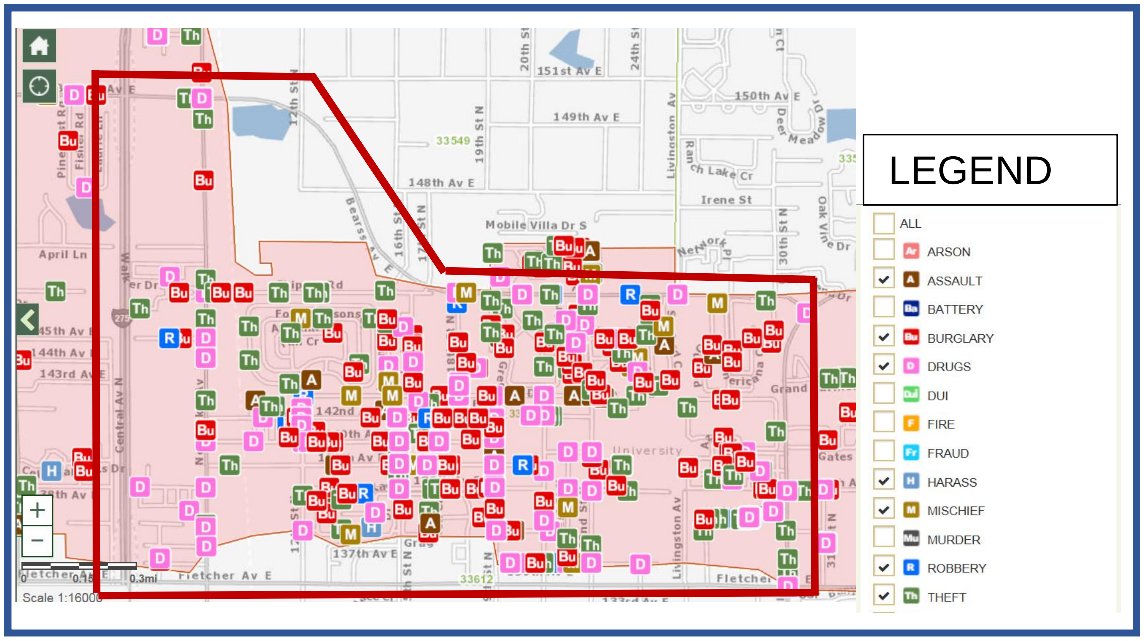


Figure 11. Distribution of Select Crimes in the Target Area (2016)

Impact Prediction:

An increase in the number of people out and about in the community and utilizing the park, as well as the proposed lighting throughout the park, are expected to cause a likely moderate decrease in crime-related incidents in the area.

Table 7. Distribution of Select Crimes in Area ZIP Code 33613

Type of Crime	2014	2015	2016
Assault	46	49	44
Battery	424	474	599
Burglary	486	347	304
Drugs	331	320	391
Harass	9	8	8
Mischief	194	211	208
Robbery	60	45	32
Theft	576	709	611
Other	> 1,000	800	849

Source: Hillsborough County Sheriff's Office, 2017

Intermediate Outcome: Exposure to Outdoor Air Pollutants

Increased exposure to outdoor air pollutants can exacerbate asthma/respiratory diseases. Additionally, this increased exposure can worsen preexisting conditions and cause new diagnoses of asthma/respiratory diseases in vulnerable populations. Based on county level data, in 2015, most (239) days were categorized as good air quality days.

Impact Prediction:

Building the Harvest Hope Park will provide community residents access to a place for recreation as well as other health seeking activities, including access to a community park, a community garden and to an active living system. These immediate outcomes will increase residents' outdoor activity. While there a numerous health benefits to be gained from physical activity and being outdoors in nature and green space, the increased exposure to outdoor air pollutants should not be ignored. There will be a likely low increase in exposure to outdoor air pollutants for persons accessing the park and being outdoors, due to increased interaction with the traffic in that area. Vulnerable populations such as individuals with preexisting conditions, children and older adults may be affected more by this increased exposure.

Long-Term Outcomes: Asthma/Respiratory Disease Exacerbation

The prevalence of asthma in Hillsborough County is 9.2% among adults (Table 8), with Hispanics having the highest prevalence (13.8%), followed by Black Non-Hispanics (7.9%) and White Non-Hispanics (7.3%). There are also disparities across income and level of educational attainment. Among adults earning less than $25,000 a year, 19.0% had asthma, and the rate was also 19.1% among adults with less than a high school education. Based on the disparities across income, the rates of asthma in the target area would be expected to be almost twice as high as the rate in the county. There were approximately 468 emergency room visits due to asthma per 100,000 population in Hillsborough County. Table 9 displays a summary of the health status related to asthma in the county.

Table 8. Distribution of Asthma/Respiratory Disease Indicators in Hillsborough County and Florida

Asthma/Respiratory Disease Measure	Hillsborough County	Florida
Adults who currently have asthma (%)[a]	9.2	8.3
Annual Income < $25,000	19.0	12.4
Less than high school education	19.1	12.5
White non-Hispanic	7.3	8.3
Black non-Hispanic	7.9	8.9
Hispanic	13.8	8.3

Sources: [a]Behavioral Risk Factor Surveillance System [BRFSS], 2013

Table 9. Distribution of Asthma within the Population

Asthma/Respiratory Disease Measure	Hillsborough County	Florida
Adults who currently have asthma (%)[a]	9.2	8.3
Age-adjusted death rate due to asthma (per 100,000 population)[b]	0.8	0.8
Crude death rate due to asthma among children under 5 years old (per 100,000 population)[b]	1.0	0.2
Crude death rate due to asthma among adults over 65 years old (per 100,000 population)[b]	2.2	1.9
Emergency room visits due to asthma (per 100,000 population)[b]	468.1	505.0

Sources: [a]Behavioral Risk Factor Surveillance System [BRFSS], 2013; [b]FLCHARTS, 2014-2016;

Impact Prediction:

Exposure to outdoor air pollutants will cause a likely low increase of asthma/respiratory disease exacerbation in those with preexisting respiratory disease, increasing the risk of asthma attacks and emergency department visits and hospitalizations. This increase is expected to be moderate among persons whose outdoor activity will increase, but low among persons who already spend a significant amount of time outdoors. Mitigation strategies can include providing education to local residents. Education to increase awareness of the best times to exercise outside based on levels of air pollutants and allergens in the area could help to reduce asthma/respiratory illness exacerbations.

Intermediate Outcome: Exposure to Heat

With increased outdoor activity comes the concern of increased exposure to heat, particularly in Florida. During the summer months it is very likely for heat index levels to rise above what is considered healthy for outdoor activity. Persons with preexisting conditions and other vulnerable populations must take the necessary precautions to minimize their exposure to heat.

Impact Prediction:

Building the Harvest Hope Park will provide community residents access to a place for recreation as well as other health seeking activities, increasing residents’ outdoor activity.

While there are numerous health benefits to be gained from physical activity and from being outdoors in nature and green space, the increased exposure to heat is a pressing concern and should not be ignored. There will be a likely low to moderate increase in exposure to heat for persons accessing the park and being outdoors in that area. Vulnerable populations such as individuals with preexisting conditions, children and older adults are likely to be more affected by this increased exposure.

Long-Term Outcomes: Heat-Related Illness

Exposure to heat can lead to heat-related illness, including heat cramps, heat exhaustion, and heat stroke. Severe cases of heat-related illness can even cause death. In recent years, Hillsborough County has had higher rates of heat-related hospitalization and emergency room visits when compared to previous years, as well as compared to the rates in Florida (Table 10).

Table 10. Heat-Related Hospital and Emergency Room Visits

	2013	2014	2015	2016
Age-adjusted rate of heat-related hospitalizations during summer months per 100,000				
Florida	2.7	3.7	4.1	5.4
Hillsborough County	3.0	6.3	4.8	7.2
Crude rate of heat-related emergency room visits during summer months per 100,000				
Florida	17.6	22.7	25.6	31.6
Hillsborough County	18.8	25.8	25.5	31.9

Source: Florida Environmental Public Health Tracking Network

Impact Prediction:

There will be a likely low to moderate increase in heat-related illness associated with encouraging physical activity and park use among residents, especially during the summer months when temperatures and relative humidity are elevated. Vulnerable populations are at a higher risk of heat-related illness, especially those with preexisting health conditions and those with a lack of awareness of the effects of exposure to heat and heat-related illness. Heat-related illness can be mitigated by staying hydrated while exercising, seeking shaded areas, and planning outdoor activity during times when the heat index is lower.

Intermediate Outcome: Stress

Currently, there are no parks that are readily accessible for residents in the UAC. As the Harvest Hope area in the community is being developed, residents will feel better about their neighborhood. The area will be cleaner, with more trees and green space available. Spending time in, and living near green space and parks has been shown to reduce stress. In surveys conducted in the Town 'N' Country area of Hillsborough County in 2015, residents were asked to self-report how many days on average they feel stressed, worried, nervous or anxious. Among respondents, 59.0% reported feeling stressed or anxious two or more days each week (Table 11).

Table 11. Self-Reported Mental Health (Stress and Anxiety)

N=173	0-1 days a week	2-4 days a week	5-6 days a week	7 days a week
How many days a week do you feel stressed, worried, nervous, or anxious?	41.0%	27.8%	17.3%	13.9%

Source: DOH–Hillsborough: Parks and Rec HIA Community Survey, 2015

Impact Prediction:

Building the Harvest Hope Park will provide community residents access to a place for recreation and to other health promoting activities. There will be a likely increase in the physical activity levels of community residents. This increase in physical activity will effect a likely moderate decrease on stress levels. It is well documented that increased physical activity causes stress levels and other health indicators of stress to improve. Vulnerable populations expected to benefit from having a community park include children, individuals with disabilities, and older adults.

Long-Term Outcomes: Mental Health, Physical Health, and Premature Mortality

Not having a safe place to play can reduce the likelihood that children will engage in physical activity. Older adults and persons with disabilities are more likely to be hesitant about going outside to get fresh air. Parents are also more likely to have reservations about allowing their children to play outside if there is not a safe place designed for that. For example, this community has experienced a child being killed by a motor vehicle, because he was playing in the street due to the lack of a safe place to play in the neighborhood.

As physical activity increases, it is expected that the overall health of the community will improve. Tables 12 and 13 show the distributions of measures of mental health and physical health in the county and the state of Florida. It is well documented that measures of physical and mental health, such as obesity and depression, are more prevalent among persons of lower socioeconomic status. The target area has a median income level much lower than that of the rest of the county, therefore the rates are likely to be higher in the UAC than the rest of the county.

Table 12. Distribution of Mental Health Outcomes in Hillsborough County and Florida

Mental Health Measure	Hillsborough County	Florida
Adults who rate their health status as “fair” or “poor” (%)[a]	14.3	16.7
Adults who had poor mental health days on 14 or more of the past 30 days (%)[b]	13.0	12.7
Average number of unhealthy mental days in the past 30 days (days)[b]	4.3	4.1

Sources: [a]FLCHARTS, 2013; [b]Behavioral Risk Factor Surveillance System [BRFSS], 2013

Impact Prediction:

Residents will have a place to meet and due to the park’s central location, and will be more inclined to walk there, thus increasing their physical activity and causing a likely moderate improvement in their physical health. Additionally, children will have a safe place to play outdoors and therefore increase their physical activity. As physical activity increases, a likely moderate improvement in mental health and feelings of well-being are expected. In the long term there is likely to be a low impact on the decrease of chronic disease prevalence and premature mortality. Vulnerable populations to benefit from having a community park include children, individuals with disabilities, and older adults.

Table 13. Distribution of Physical Health Outcomes in Hillsborough County and Florida

Physical Health Measure	Hillsborough County	Florida
Adults who meet moderate physical activity recommendations (%)[a]	33.7	34.6
Adults who are inactive or insufficiently active (%)[b]	53.1	52.9
Middle and high school students who were physically active for at least 60 minutes per day on all seven of the past days (%)[c]	21.3	22.9
Adults who are overweight (%)[b]	38.2	36.4
Middle and high school students who are overweight (%)[c]	16.3	15.8
Adults who are obese (%)[b]	29.3	26.4
Middle and high school students who are obese (%)[c]	12.8	12.4
Adults who have ever been told they had diabetes (%)[b]	12.4	11.2
Average number of unhealthy physical days in the past 30 days (days) [b]	4.3	4.5
Premature death (years of life lost)[d]	6,800	6,700

Sources: [a]FLCHARTS, 2007; [b]BRFSS, 2013; [c]Youth Risk Behavioral Surveillance System [YRBS], 2014; [d]County Health Rankings, 2017

Priority Pathway B: Access to a Community Garden

Rationale and Research Questions:

The EPA Brownfields AWP will allow residents in the UAC to have increased access to a community garden (Pathway B). Having access to a community garden can increase residents' access to fresh fruits and vegetables as well as provide an increase in opportunities for social engagement. Increased consumption of fresh fruits and vegetables can in turn improve physical health and reduce premature mortality. Increased opportunities for social engagement can improve overall well-being.

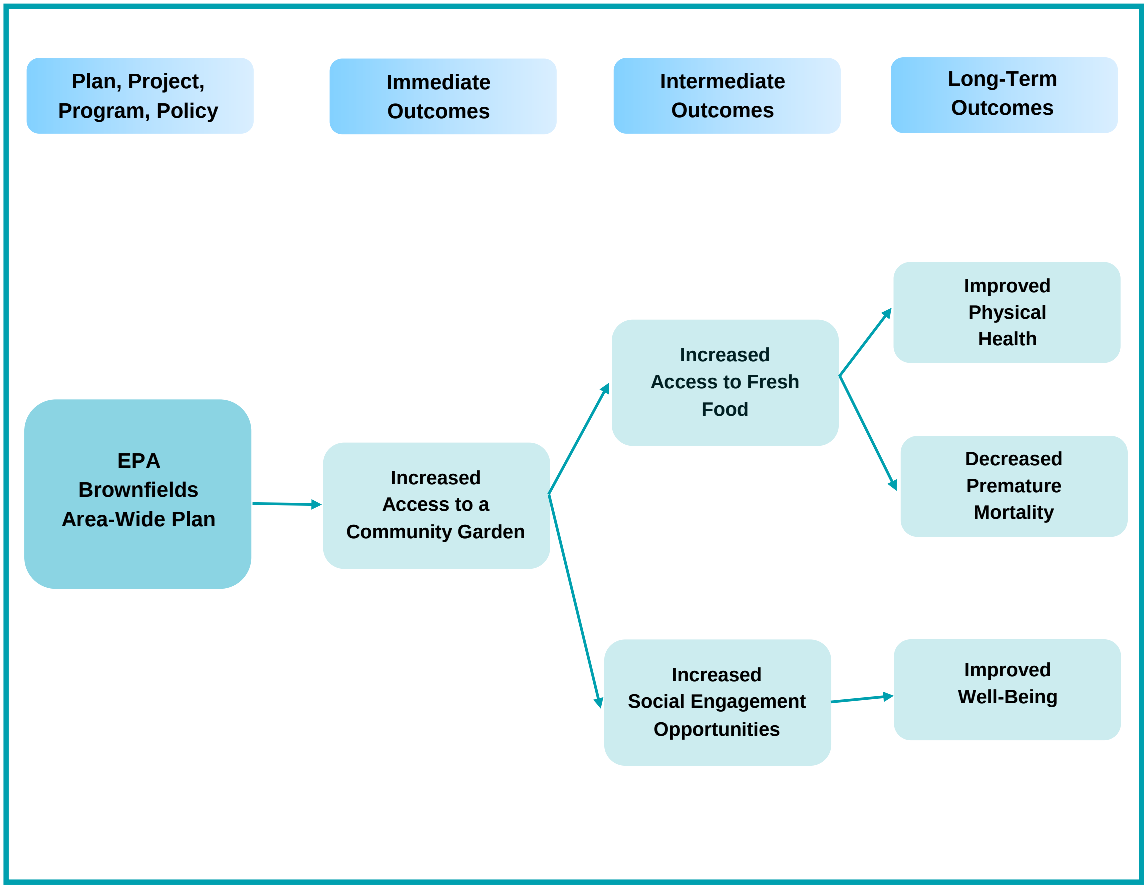


Figure 12. Priority Pathway B Diagram (Access to a Community Garden)

The research questions include:

- How accessible are grocery stores to residents living in the UAC?
- What types of opportunities for social engagement exist in the area?
- How would each of these measures change as a result of the EPA Brownfields AWP?

Literature Review:

Community gardens are defined as any piece of land gardened by a group of people in a neighborhood (American Gardening Association, 2017). The first community gardens were established in Detroit, Michigan in response to the 1839 Economic Crisis. During this time, urban garden programs were established in vacant lots to provide jobs for the unemployed and food for the hungry. The success of the Detroit programs led to the development of community gardens in other cities such as San Francisco and Boston (Smithsonian Gardens: Community of Gardens, n.d.). Over a century later, urban gardens continue to cultivate fresh foods, social engagement, and provide community empowerment for the surrounding neighborhoods.

Half of all adults living in the United States have one or more preventable chronic illnesses related to poor eating habits (CDC, 2015). However, forty-two million Americans, including thirteen million children (Feeding America, 2017), lack consistent access to healthy and nutritious foods (United States Department of Agriculture, 2017). Community gardens are one way to address the community need for food security by reconnecting residents to affordable food systems, and allowing persons the opportunity to obtain a nutritionally adequate diet (Gottlieb & Fisher, 1996). In southeast Toronto, Canada, a community-based research project identified 15 active community gardens and investigated the health impacts of community gardening by using in-depth interviews with community gardeners and residents from the area (Wakefield, Yeudall, Taron, Reynolds, & Skinner, 2007). The most important outcome from this case study was the increase in access to fresh and wholesome foods. The gardeners explained that their service helped residents to substitute store-bought goods for less expensive, garden-grown produce (Wakefield et al., 2007). Given that income is an important determinant of food insecurity (Hamilton et al., 1997), access to affordable food was particularly important for lower income communities. Community gardens also serve as improvements to the built environment, and have been proven to significantly influence a person’s diet (Rose & Richards, 2004). Another community garden in Toronto, named in honor of Alex Wilson, a landscape designer and community activist, had lasting health impacts on its community. The Wilson garden, which occupied a forty-acre lot, was used to cultivate fresh foods and respond to the dietary needs of low-income residents (Irvine, Johnson, & Peters, 1999). Other features such as improved neighbor aesthetics and active participation in gardening are associated with community gardens (Litt, Soobader, Turbin, Hale, & Marshall, 2011). These findings suggest that community gardens add to communities and promote a healthy lifestyle.

Community gardens also provide opportunities for residents to engage with one another and build social capital (Kingsley & Townsend, 2006). Social capital is defined as “the network of trusting relationships that exists in a community which creates benefits for community members.” (Brisson & Usher, 2005). Kingsley and Townsend (2006) examined the concept of social capital within the context of community gardens and reported that community gardens enabled residents to feel connected to their neighborhood. Social cohesion, social support and social connections were also described as benefits to those who visit and live near community gardens (Kingsley &

Townsend, 2006). A similar study which surveyed 20 community garden programs in New York concluded that community gardens facilitated improved social networks and organizational capacity, especially in lower income neighborhoods (Armstrong, 2000). Given that families living in lower-income neighborhoods use social support and social capital as a means to obtain essential resources (Brisson & Usher, 2005), community gardens serve as a space to fulfill those needs. Gardeners also report that community gardens improve relationships and support positive social interactions "in places where social exclusion and marginalization are pervasive problems" (Wakefield et al., 2007). These findings suggest that gardens not only provide access to fresh produce, but also create opportunities for fellowship and social engagement between community members.

Urban green spaces located in lower income communities have been proven to provide inexpensive and productive recreation for adults and youth (Ober, Alaimo, Elam, & Perry, 2008; Tieg, et al., 2009). Studies on urban gardens further suggest that community gardens can empower and promote community-wide engagement, especially over long periods of time (Ober et al., 2008; Wakefield et al., 2007). Attributes of successful community gardens including leadership, outreach and volunteerism, have shown to reflect higher levels of social involvement for residents (Litt et al., 2011). Traditionally, gardens in lower income communities provide an opportunity for youth to engage in skill building and educational activities (Ober et al., 2008). Engaging both adults and youth in productive and rewarding activities promotes community togetherness (Ober et al., 2008). A historical account of community gardens on the lower eastside of Manhattan in New York City described their gardens as transformations of empty lots, once occupied by trash, needles, and old appliances into "productive places full of color, camaraderie and safety." (Schmelzkopf, 1995). Gardens in areas with higher crimes rates provided safer spaces for socialization, improved stability on surrounding streets, and increased neighborhood friendliness (Schmelzkopf, 1995). Additional qualitative findings on aesthetics and health suggest that gardens can be used, "as a way to awaken senses and support a more holistic way to contemplate health and wellness" (Litt et al., 2011).

Determinant: Access to a Community Garden

Currently there are some grocery stores which serve the UAC residents. These include a local Target, Aldi, and Walmart which carry department store items in addition to full supermarket items such as fresh fruits and vegetables. However, these stores are approximately between one and two miles (17 - 30 minutes walking) away from the UAC. There are also smaller convenience stores located within a one mile radius of the community, to which residents can walk to purchase items. Currently there are various churches and other non-profit organizations, including the University Mall and the

UACDC, which serve residents of the community. These organizations provide services such as meal delivery and organized events for social engagement.

Impact Prediction:

Establishing a community garden will likely significantly increase residents' access to a community garden. This will also provide them with increased access to fresh food and increased opportunities for social engagement. The community garden experts that were consulted indicated that participation in community gardens helps residents to develop a sense of community with neighbors, and connect with family.

Intermediate Outcome: Access to Fresh Food

Residents have some access to fresh options in their community, however establishing a community garden will provide residents with increased access. The 2013 Florida Behavioral Risk Factor Surveillance (BRFSS) reflected that only 16.1% adults reported consuming at least five serving of fruits and vegetables a day (Table 14).

Table 14. Eating Habits among Adults in Hillsborough County and Florida

Diet	Hillsborough County	Florida
Adults who consume at least five servings of fruits and vegetables a day (%)	16.1	18.3

Source: BRFSS, 2013

The 2015 UACDC Community Needs Assessment (Table 15) reflected that more than 75% of community residents feel it is very important to provide healthy, nutritious meals to their families and that the most commonly cited barrier to this is cost. Most community residents also reported a desire to focus on improving their health in the area of weight loss. It is well documented that a healthy diet is an important component of any safe weight loss plan.

Table 15. Health & Well-being of Residents in the UAC

How important is it (to you) to provide healthy, nutritious meals to your family?			
	Very Important	Somewhat Important	Not Important
# of people who chose this response	283	20	2
% of total surveyed	78%	5%	1%

Table 15. continued

What are some of the barriers you face in trying to provide healthy, nutritious meals to your family?			
	Fresh foods aren’t as cost effective	**Difficult to get children to eat fruits/veggies**	**Fresh food expire faster**
# of people who chose this response (more than one answer possible)	100	52	52
Results ranking	1	2	2

If you could improve you and your family’s overall/general health, what area(s) would you focus on?			
	Losing Weight	**Lowering cholesterol**	**Lowering blood pressure**
# of people who chose this response (more than one answer possible)	171	94	91
Results ranking	1	2	3

Source: UACDC Community Needs Assessment, 2015

Impact Prediction:

The EPA Brownfield AWP will establish a community garden. This will cause a likely moderate increase residents’ access to fresh food, thus increasing the percentage of adults and children in the community who consume at least five servings of fruits and vegetables a day.

Long-Term Outcomes: Physical Health and Premature Mortality

The association between access to fresh food and its impact on human health has been well documented. On the UACDC community needs assessment, residents expressed the desire to participate in community gardening. They also expressed concerns that the Harvest Hope site as an abandoned lot would interfere with these efforts.

Impact Prediction:

There will be improvement in the health status of community residents, including a moderate impact on physical health and a low impact on premature mortality. Vulnerable populations who will benefit from community gardening include: individuals with chronic diseases, and older adults.

Intermediate Outcome: Opportunities for Social Engagement

Healthy communities are ones in which residents are engaged. Social engagement helps to shape the services that are provided to communities and to build trust between residents in the community, and, between the community and the organizations that serve it (Minnesota Department of Health, 2017). There are various local non-profits groups which serve the community, and provide opportunities for interest-based social engagement. The majority of the organized social engagement in the area takes place at the UACDC. Access to these opportunities can be limited due to varying factors such as interest, time of day, child care, cost and transportation. Community gardening provides additional opportunities for social engagement.

Impact Prediction:

There will be a likely moderate increase in social engagement among residents living in the UAC due to the presence of the community garden. Vulnerable populations who will benefit from community gardening and increased social engagement include individuals with chronic diseases and older adults.

Long-Term Outcome: Well-Being

Community gardening increases exposure to nature, which has been shown to improve measures of well-being including depression and overall health status. In Hillsborough County, 18.1% of adults have been told at some time that they have a depressive disorder (Table 16). Additionally, this percentage varies greatly by income level. Persons with lower levels of income report higher levels of depression (26.3% among persons earning less than $25,000 compared to 18.1% overall). In the 2015/2016 Community Health Assessment, residents living in Hillsborough County provided feedback on various health issues in the county. Approximately one-tenth (11.3%) of participating residents rated their community as “unhealthy” or “very unhealthy”. Similarly 6.8% rated their personal health as “unhealthy” or “very unhealthy”. The age-adjusted suicide rate the county is 13.2 per 100,000 population compared to the rate in the state of 14.2 (Table 16).

Impact Prediction:

As the community garden is established, there will be a likely moderate increase in the overall well-being of community residents. The community garden will provide additional opportunities for social engagement, which will likely cause community members to perceive their surroundings as being healthier. A positive perception of the environment will help residents to feel better about their community and their surroundings, and will have a positive impact on their well-being. Vulnerable populations who would benefit from increased opportunities for social engagement include individuals with chronic diseases, older adults, and individuals who experience higher rates of stress and anxiety.

Table 16. Distribution of Measures of Well-Being in Hillsborough County and Florida

Well-Being Measure	Hillsborough County	Florida
Adults who have ever been told they had a depressive disorder (%)[a]	18.1	16.8
Community's health rated as "unhealthy" or "very unhealthy" (%)[b]	11.3	-
Personal health rated as "unhealthy" or "very unhealthy" (%)[b]	6.8	-
Age adjusted suicide rate (rate per 100,000 population)[c]	13.2	14.2

Sources: [a]BRFSS, 2013; [b]DOH-Hillsborough Community Health Assessment [CHA], 2016; [c]FLCHARTS, 2014-2016

Priority Pathway C: Access to an Active Living System

Rationale and Research Questions:

The EPA Brownfields AWP will increase access to an active living system for UAC residents. The project includes increasing sidewalk coverage so that residents will have a more walkable community. This will affect residents' well-being and could improve their access to health care and other local services. In particular the older adults living in the community will have increased transportation access to health care with a more walkable community. Other individuals to benefit from increased access to an active living system include individuals accessing DOH-Hillsborough clinics located in the area.

The research questions include:

- How accessible are learning opportunities for older adults living in the UAC?
- How accessible is health care to older adults living in the UAC?
- How would each of these measures change as a result of the EPA Brownfields AWP?

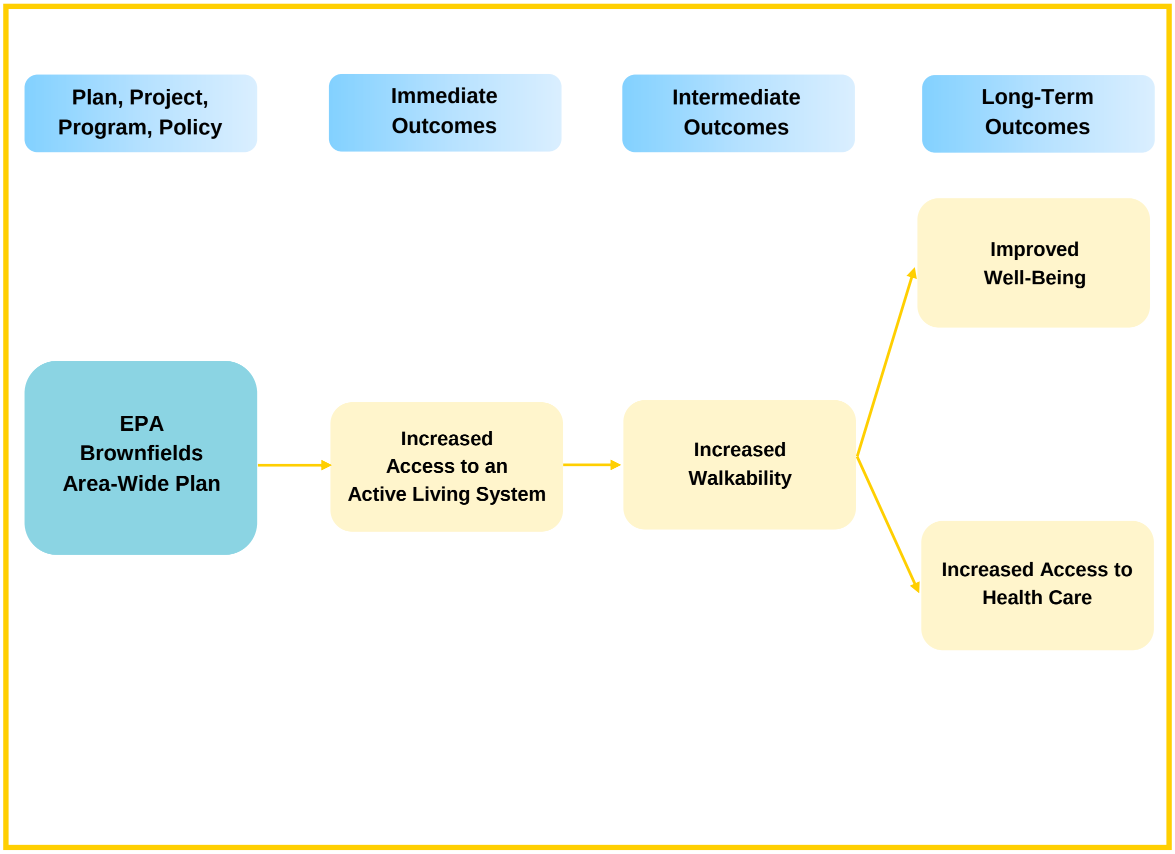


Figure 13. Priority Pathway C Diagram (Access to an Active Living System)

Literature Review:

The design of a built environment greatly influences physical and mental health in communities (Dannenberg et al., 2003). Increasing community walkability can impact community health and influence social engagement opportunities, especially among older populations.

Increasing physical activity levels can reduce risk of chronic disease, premature death, and promote healthy aging (U.S. Department of Health & Human Services [HHS], 2008). Walking is the most common form of physical activity in the country (HHS, 2015), and a simple way to improve an individual’s overall health. Walking does not require any special skills, gym memberships or expensive equipment (CDC, 2016). Despite the exponential benefits physical activity has on health, only one in five older adults meets the 2008 physical activity guidelines (CDC, 2014). Older adults are also one of the least active age groups in the population (Kerr, Rosenberg, & Frank, 2012). Infrastructure that promotes walkability in neighborhoods may help to improve community-wide health outcomes, specifically for older populations who are at increased risk for chronic disease as they age (CDC, 2015).

The older population also suffers disproportionally from adverse consequences of land use decisions (Bullard & Johnson, 1997). Transportation is often cited as a barrier to health care access, which can lead to poor disease management (Syed, Gerber, & Sharp, 2013). Lack of transportation to health services can result in delayed care, missed appointments, and delayed medication use (Syed et al., 2013). Furthermore, many communities are heavily reliant on vehicular travel (Frumkin, 2016). “If roads are more available than sidewalks and paths, then people shift from walking to driving”, (Frumkin, 2016). Creating walkable communities with additional sidewalks, green space, and pathways can improve access to health care for populations who rely on public transportation (Lovett, Haynes, Sunnenberg, & Gale, 2002). Research on how active community environments promote health has noted five key factors: frequency of walking, obesity, weight, chronic disease diagnosis and perceptions of personal health status. The results suggest that people living in walkable counties, with lower rates of crime, tend to have a lower body mass index (Doyle, Kelly-Schwartz, Schlossberg, & Stockard, 2006). Walkable and safe environments significantly influence exercise and weight.

Healthy aging is defined as “the development and maintenance of optimal mental, social, physical well-being, and function in older adults” (Minnesota Department of Health, 2006). It is important to design opportunities in the built environment that support recreational walking to motivate social and physical activity among older adults (Kerr, Rosenberg, & Frank, 2012). This suggests that developing a community conducive to physical activity, such as walking, can significantly influence long-term health outcomes and combat chronic disease while supporting healthy aging (Nelson et al., 2007).

Walkable communities also provide many social benefits such as increased social support (Doyle et al., 2006), increased social capital, and enhanced social cohesion (HHS, 2015). Kerr, Rosenberg and Frank (2012) explain the concept of “aging in place”. Many adults prefer to age at home versus a group-living setting, which can cause isolation and decline in ability to function independently (Kerr et al., 2012). Constructing an environment that makes socializing more accessible may encourage older adults to engage each other and to participate in outdoor activities. Walkable communities help to promote community ties that inspire trust and reciprocity among community members (Berkman, 1995; Leyden, 2003).

Dependence on vehicular transportation, has established more car-oriented subdivisions, thus promoting transportation by vehicles instead of by foot (Leyden, 2003). Developers who only consider travel by vehicle may deter residents from walking and exercising within their own neighborhoods. Residents who live in communities where they are able to walk report feelings of increased connectedness to their community, deeper relationships with their neighbors, and increased feelings of trust and faith in others (Leyden, 2003; Richard, Gauvin, Gosselin, & Laforest, 2008). This is also true among older adults. Research analyzing neighborhood correlation to social participation reported that the more resources their participants possessed, the more likely they were to participate in social activities (Richard et al., 2008). Also, those who walked daily were more likely to have higher levels of participation in activities such as volunteering, engaging in hobbies outside of their homes, and visiting family members or friends (Mendes de Leon et al., 2009; Richard et al., 2008). Analysis of data from 4,000 adults in an urban community showed that neighborhood features and environment helped to shape walking behaviors, and influenced higher levels of social cohesion (Mendes de Leon et al., 2009). A vast amount of literature demonstrates that walkable communities influence community health and present opportunities for social engagement.

Determinant: Access to an Active Living System

Currently the immediate area surrounding the UACDC has streets with full sidewalk coverage. However, other areas within the community do not have these improved streets. The EPA Brownfields AWP will expand areas with pavement to improve community walkability. In the UAC, approximately 22% of households do not have a vehicle, which is three times the rate of non-vehicle households in the county. Therefore, this community would benefit from improved walkability.

Impact Prediction:

Creating a more walkable community will cause a likely moderate increase in older adults' access to an active living system. This would increase the overall physical activity among older adults thus improving their well-being. Increased walkability will also increase their ability to access health care and other social services. Additionally, increased walkability will increase their access to opportunities for social engagement.

Intermediate Outcome: Walkability

Creating an active living system will provide a more walkable community for older adults who live in the UAC. While there is a focus on older adults for this pathway, many of the children who live in the area walk to school. Increased walkability will provide them with safer access to school.

Impact Prediction:

There will be a likely significant increase in the number of older adults walking in the community. If the UAC is more walkable, then older adults will be more likely to access services in the immediate area. There will also be increased connectedness to other places such as USF, and health centers. Other vulnerable populations who would benefit from a more walkable community include: individuals with chronic diseases, children, and individuals with disabilities.

Long-Term Outcomes: Well-Being

A more walkable community increases opportunities for physical activity. Physical activity positively affects well-being by altering brain chemistry, reducing symptoms of anxiety and depression and improving mood. Additionally, a more walkable community will increase transportation access to goods and services. Among the services that would be more accessible is the Osher Lifelong Learning Institute at USF (OLLI-USF). OLLI-USF is an organization of older adults who formed a community focused on continued learning. Participating in a learning community will provide intellectual stimulation, social interaction and service opportunities. It is well documented that intellectual stimulation and social interaction have a positive effect on well-being, particularly for older adults. Improving the well-being of older adults in the area will decrease their need for specialized health care, which can be costly if available. Table 17 shows the availability of nursing home beds in the county and in the state. The availability is much lower in the county when compared to the state. Additionally, the age-adjusted death rate for Alzheimer's disease is 26.0 per 100,000 population which is higher than the state rate of 21.6. In the 2015/2016 Community Health Assessment, aging problems and mental health problems were ranked as the 3rd and 4th most important problems in the county following being overweight and cancers.

Table 17. Distribution of Measures of Well-Being for Older Adults in Hillsborough County and Florida

Well-Being Measure	Hillsborough County	Florida
Nursing home beds (rate per 100,000 population)	295.6	420.4
Age adjusted death rate for Alzheimer's Disease (rate per 100,000 population)	26.0	21.6

Source: FLCHARTS, 2014-2016

The association between overall well-being and exposure to nature has been well documented. In order to capture this restorative benefit effect, focus groups were conducted in the Town 'N' Country area of Hillsborough County in 2015 as part of a Parks and Recreation-related HIA. Focus group participants were asked how it makes them feel to be outside in nature. All participants' comments were positive, and the responses indicated that nature contributed positively to their physical and mental health. Table 18 includes a few key responses from the focus group sessions that provide a description of the effect nature has on health. It would be expected that residents from the UAC would have a similar response safer opportunities to be outside in nature.

Table 18. Distribution of Self-Reported Measures of Well-Being in Hillsborough County and Florida

How does it make you feel to be outside in nature?
• Good/Wonderful/I love it
• Being in nature makes you feel healthy and feel good
• Nature helps me a lot
• Everything that one does outside in fresh air is good for health

Source: DOH–Hillsborough: Parks and Rec HIA Community Survey, 2015

Impact Prediction:

There will be a likely moderate improvement in the well-being of older adults who walk more throughout the community to access goods and services. At the individual level, physical activity will help to improve mood. At the community level, there will be greater interaction between older adults walking through the community. Other vulnerable populations who will benefit from having access to a more walkable community include: individuals with chronic diseases, individuals with movement-related disabilities, children, and care takers of persons with mental and physical health concerns.

Long-Term Outcome: Access to Health Care

A more walkable community means increased access to goods and services. In particular older adults will have increased access to health care. In the 2015/2016 Community Health Assessment, county residents answered questions about their medical care. Approximately one in six (16.9%) adults did not get needed medical care during the past 12 months and some indicated that transportation was the reason for not getting the needed medical care. Additionally, approximately one-fifth of residents who have a medical provider access medical care at a health center or walk-in clinic and approximately half of those who have no medical provider, access medical care at a health center or walk-in clinic.

Table 19. Distribution of Measures of Access to Health Care in Hillsborough County

Health Care Measure	Hillsborough County
Adults who did not get needed medical care during the past 12 months (%)	16.9
Adults who receive medical care at a health center or walk-in clinic among those who have no medical provider (%)	47.9
Adults who receive medical care at a health center or walk-in clinic among those who have a medical provider (%)	18.0
Did not get needed medical care during the past 12 months due to not having transportation (%)	4.4

Source: CHA, 2016

Impact Prediction:

There will be a likely moderate increase in access to health care over time for older adults using the walkways and paths created by the EPA Brownfields AWP. Increased walkability will also improve well-being, decreasing the need to access health care for some persons. Additionally, a safely designed streetscape provides a less stressful walking environment by providing safer sidewalks, safer crossings, increased social connections with neighbors, and families utilizing the system. Other vulnerable populations who will benefit from increased walkability in the community include individuals with chronic diseases, individuals with movement-related disabilities, care-takers, and parents with no personal vehicle who will have increased access to health care.

Matrix of Predicted Health Impacts

Meetings with the HIA Research Team and SMEs were held to determine the impact predictions for each health determinant and outcome examined in the HIA. These impact predictions are summarized in Table 20.

Table 20. Health Impact Matrix Summary of Findings

Outcome	Likelihood, Direction, and Magnitude of Impact on the local population
Access to a Community Park	Likely increase, with a significant impact
Risk of Crime	Likely decrease, with a moderate impact
Crime-Related Incidents	Likely decrease, with a moderate impact
Exposure to Outdoor Air Pollutants	Likely increase, with a low impact
Asthma/Respiratory Disease Exacerbation	Likely increase, with a low impact
Exposure to Heat	Likely increase, with a low to moderate impact
Heat-Related Illness	Likely increase, with a low to moderate impact
Stress Levels	Likely decrease, with a moderate impact
Mental Health	Likely increase, with a moderate impact
Physical Health	Likely increase, with a moderate impact
Premature Mortality	Likely decrease, with a low impact
Access to a Community Garden	Likely increase, with a significant impact
Access to Fresh Food	Likely increase, with a moderate impact
Social Engagement Opportunities	Likely increase, with a moderate impact
Well-Being	Likely increase, with a moderate impact
Access to an Active Living System	Likely increase, with a moderate impact
Walkability	Likely increase, with a significant impact
Access to Health Care	Likely increase, with a moderate impact
Disruption	Likely increase, with low to moderate impact
Gentrification	Likely increase, with moderate to significant impact

RECOMMENDATIONS AND REPORTING

An overview of the HIA was presented to SMEs in November 2017. From this meeting *Recommendations* were drafted that would promote the positive health outcomes and mitigate the negative health outcomes. The HIA was also presented to community members in January 2018 at a monthly leadership council meeting. Their feedback and recommendations are also included and indicated with an asterisk (*****).

Reporting of this HIA included presentations to the EPA Brownfields AWP project team and the University Area community. Once complete, this will report will be posted on DOH-Hillsborough's website, and electronic and hard copies provided to all project partners.

Recommendations to Improve Access to a Community Park

- Promote landscaping to increase shade cover.
- Market the park so residents are aware of it (e.g. DOH-WIC clinics in the UACDC can let clients know about the park).
- Children 12 years and younger should be accompanied by an adult at all times.*****
- Promote safe park use through education and signs – not leaving young children unattended, not allowing children to climb on aquifer barrier etc.; signs should be appropriate for the health literacy of the community.
- Park should be adequately lit.*****
- Ensure that sidewalks and paths are compliant with the Americans with Disabilities Act (ADA).
- Promote awareness and prevention of drowning.
- Include a walking path with track around play area so caregivers can have playing children in their line of sight, while being active themselves.
- Set the hours for park use to better ensure children are not in the park after dark. Hours can be adjusted seasonally.*****
- Have organized activities in the park for children.*****
- Develop an emergency protocol for the park (e.g. blue light phone).*****
- Use best practices for park use related to maintenance (e.g. trash cans, clean up, landscaping etc.).*****

Recommendations to Improve Access to Community Garden

- Promote meal preparation classes.
- Promote gardening classes.

- Engage community leaders to promote and arrange activities around community gardening (e.g. breakfast in the garden, lunch in the garden).

Recommendations to Improve Access to an Active Living System

- Incorporate activities for older adults in the use of the community center (e.g. sliver sneakers, partnering with OLLI).

Recommendations to Mitigate Asthma/Respiratory Disease Exacerbation and Heat-Related Illness

- Educate residents on how to reduce respiratory–related exacerbations due to allergens and increased exposure to air pollution.
- Educate residents on heat-related illness and how to prevent it.
- Install drinking fountains and benches in the park.
- Provide ground covering and/or shade screens for park equipment and protection against heat.
- Provide signs throughout the park to address heat-related illness and the need for frequent hydration; signs should be appropriate for the health literacy of the community.

Recommendations to Mitigate Disruption

- Provide residents with regular updates on the park development as the project progresses.
- Use best practices for park maintenance related to safety.

Recommendations to Mitigate Gentrification

- Encourage the UACDC and other local non-profit organizations to increase their assets (e.g. acquiring additional properties) in the community so that they will have increased ability to address housing and other needs.
- Engage the community to motivate governmental organizations (county) to support affordable housing initiatives.
- Educate residents and provide them with employability skills such as job interview techniques, resume writing etc. to help them increase their earning potential.
- Encourage residents to access opportunities that will increase their employability such as those provided by OLLI.

Other Recommendations

- Include shared lane markings/sharrows and speed bumps around Harvest Hope Park, to indicate that bicyclists are also using the road.
- Install traffic control features (e.g. speed bumps, speed limits signs) around Harvest Hope Park, to discourage speeding.*
- With the changing activity patterns encourage a “see something, say something”, “coffee with a cop” or neighborhood watch-type program be implemented if not already in place.*

MONITORING AND EVALUATION

Process Evaluation Plan

An HIA *Evaluation* will occur at the conclusion of the HIA to determine how well the process was carried out, if the correct partners were involved, to identify the lessons learned and unanticipated outcomes. The DOH-Hillsborough will conduct this evaluation internally with its HIA team within a month of submitting the final HIA report. Table 21 includes the process evaluation questions that will be discussed with the HIA Research Team. Additionally, an online survey will be sent to the project team requesting their feedback on key aspects of the HIA report. The evaluation questions included in Table 21 were adapted from various resources located on the UCLA HIA Clearing House Learning & Information Center, the UCLA School of Public Health HIA Project, and the Human Impact Project, available at:

- http://www.ph.ucla.edu/hs/health-impact/training/pdfs/Module6_Evaluation_notes.pdf;
- http://www.hiaguide.org/methods-resources/methods/phases-hia-4-reportingevaluation;
- http://www.humanimpact.org/new-to-hia/tools-and-resources/#hiamonitoringeval

Table 21. Process Evaluation Questions

Questions
Was the HIA consistent with the Work Plan and Time Line completed during the scoping phase? How much time was spent on the HIA? By whom (not just those who conducted HIA)?
Who was involved in each phase of the HIA and why? Were there others who should have been involved and why?
What were the associated financial costs (e.g., salaries, travel, expenses)?
Were vulnerable groups or their representatives involved with the HIA? What efforts were taken to involve affected populations in the HIA process? Were these efforts successful?
Did we have all the data sources needed? Was routine data on vulnerable groups readily available and accessible?
Did the impacts identify the differential distributions across different population groups, not just impact on vulnerable groups?

Table 21. continued

Were stakeholders given an opportunity to review the findings and comment?
Did recommendations include actions to address any differential distribution of impacts?
Did the HIA identify evidence-based health-promoting design solutions, mitigations, or alternatives?
Did the HIA provide analysis of the effectiveness and feasibility of these recommendations?
Were efforts to mitigate potentially negative effects of the proposed plan, project, program, or policy concentrated on the impacts of the largest magnitude? If not, why?
Were recommendations prioritized by the HIA steering committee? If not, why? What process was used?
How and when were recommendations delivered to decision makers?
Was the HIA decision-making process transparent? How so? If not, what do you recommend to better ensure transparency?
Were there any unanticipated outcomes that resulted? What are the outcomes to date as a result of the HIA process?
To what extent were the goals of the HIA achieved?
What were the strengths of the HIA process?
What were the weaknesses or gaps of the HIA process?
What did those involved think about the process and what changes would they make if they were to do it again?

Outcome Evaluation Plan

Finally, an outcome evaluation will be conducted once the Harvest Hope Park is built. *Monitoring* will occur based on the availability of data to measure changes in immediate, intermediate, and long-term outcomes examined in this HIA. Some measures are not available at the census tract or ZIP code level and as such it may be difficult to see changes occurring specifically in that area. Table 22 contains the indicators that will be monitored, the data source, monitoring lead, and frequency of monitoring for the outcome evaluation.

Table 22. Monitoring Plan

Monitoring Indicators	Data Source	Monitoring Lead	Frequency
Demographics	Community Health Assessment	DOH-Hillsborough	Every 5 years
Health Status	Florida CHARTS	DOH-Hillsborough	Every 3 years
Crime Data	Hillsborough County Sheriff's Office	DOH-Hillsborough	Ongoing

CONCLUSION

The purpose of the EPA Brownfields AWP HIA was to examine the development of the Harvest Hope Park proposed for the UAC, assess its impact on the surrounding population including health outcomes, and provide recommendations to mitigate any negative health effects, while promoting the positive ones. The Pathways considered for their health impacts were access to a community park, access to a community garden, and access to an active living system particularly for older adults.

The outcomes predicted by persons having increased access to a community park include a decreased risk of crime, and crime-related incidents. The decreased risk of crime stems from having additional persons using the park thus creating an ‘eyes on the street’ effect. The impacts are predicted to be moderate however, the value of a more closely knit community has an impact on human health. While increased ‘eyes on the street’ can improve the sense of safety, it also signifies increased outdoor activity. Increased outdoor activity may cause low to moderate impacts of increased exposure to outdoor air pollutants, asthma/respiratory disease exacerbation, heat and heat-related illness. Recommendations were provided on how to better protect residents from these negative health impacts. Having increased access to a community park is also predicted to moderately reduce stress and thus moderately improve mental health and physical health, while having a low impact on decreasing premature mortality over time.

Having access to a community garden is predicted to moderately increase access to fresh food and thus moderately improve physical health, while having a low impact on decreasing premature mortality over time. Increased access to a community garden is also predicted to moderately increase social engagement opportunities and thus moderately improving overall well-being.

Access to an active living system is predicted to significantly increase community walkability and moderately improve access to health care, particularly for older adults. Hillsborough County consistently ranks poorly in the nation for having large numbers of pedestrian deaths. Improving non-motorized transportation options, especially for vulnerable populations, is critical to reducing the tragic loss of life experienced in the county.

Additionally, the redevelopment efforts in the community can cause disruption to the community while improvements made can cause gentrification and dislocation. This can put pressure on the surrounding communities. Various recommendations are included to help mitigate these negative effects. However, gentrification and dislocation issues would require change at the policy level in order to not negatively affect communities.

In addition to the practical recommendations and analysis of this project, the value of the EPA Brownfields AWP HIA is in the increased collaboration between health and various other sectors. The project team included professionals from diverse sectors that are not typically associated with health. The HIA was important in demonstrating the impacts of a community redevelopment plan by exploring some of the positive health impacts, as well as the negative health impacts not generally associated with this type of project. Increased collaboration between health and other sectors is an important step to creating Health in All Policies (HiAP) frameworks within which to consider any type of community based initiative.

REFERENCES

American Gardening Association. (2017). *Growing Community Gardens Across the U.S. and Canada*. Retrieved from https://communitygarden.org: https://communitygarden.org/mission/

Anderson, Z., de Nazelle, A., Mendez, M., Garcia-Aymerich, J., Hertel, O., Tjonneland, A., & Nieuwenhuijsen, M. (2015). A sudy of the combined effects of physical activity and air pollution on mortality in elderly urban residents: The Danish diet, cancer and health cohort. *Environmental Health Perspectives, 123*(6), 557-563.

Armstrong, D. (2000). A survey of community gardens in upstate New York: implications for health promotion and community development. *Health & Place, 6*(4), 319-327.

Atha, W. F. (2013). Heat-Related Illness. *Emergency Medicine Clinics of North America, 31*(4), 1097-1108.

Averett, N. (2015). Exercising in polluted areas: Study suggest benefits outweigh the health risks of NO2 exposure. *Environmental Health Perspectives, 123*(6), A 158.

Ballogg, M. (2015). *Brownfields to Healthfields: Florida Healthfields Successes.* Retrieved from United States Environmental Protection Agency: https://www.epa.gov/sites/production/files/2016-03/documents/ej_iwg_rev_mgb.pdf

Barton, J., & Pretty, J. (2010). What is the best dose of nature and green exercise for improving mental health? A multi-study analysis. *Environmental Science & Technology, 44*(10), 3947-3955.

Bedimo-Rung, A., Mowen, A., & Cohen, D. (2005). The significance of parks to physical activity and public health: a conceptual model. *American Journal of Preventive Medicine, 28*(2), 159-168.

Berkman, L. (1995). The role of social relations in health promotion . *Pschosomatic Medicine* (57), 245-254.

Bhatia, R. (2011). *Health Imapct Assessment: A guide for practice.*

Bhatia, R., Farhang, L., Heller, J., Lee, M., Orenstein, M., Richardson, M., & Wernham, A. (2014). *Minimum Elements and Practice Standards for Health Impact Assessment: Version 3.* Retrieved from http://hiasociety.org/wp-content/uploads/2013/11/HIA-Practice-Standards-September-2014.pdf

Biddle, S., & Asare, M. (2011). Physical activity and mental health in children and adolescents: a review of reviews. *Bristish Journal of Sports Medicine, 45*, 886-895.

Braveman, P., Egerter, S., & Mockenhaupt, R. (2011). Broadening the focus. *American Journal of Preventive Medicine, 40*(1), S4-S18.

Brisson, D., & Usher, C. (2005). Bonding social capital in low-income neighborhoods. *Family Relations, 54*(5), 644-653.

Brown, G. (1998). An examination of homeless men, day labor, and the University West community. *M.A. Thesis*. University of South Florida.

Bullard, R., & Johnson, G. (1997). *Just transportation: dimsantling race and class barriers to mobility.* New Society Publishers.

Caltabiano, M. (1995). Main and stress-moderating health benefits of leisure. *Society and Leisure, 18*(1), 33-51.

Centers for Disease Control and Prevention [CDC]. (2015). *At a Glance 2015: Healthy Aging. Helping Older Americans Achieve Healthy and Quality Lives.* Retrieved from cdc.gov: https://www.cdc.gov/chronicdisease/resources/publications/aag/pdf/2015/healthy-aging-aag.pdf

Centers for Disease Control and Prevention [CDC]. (2016). *Physical Activity: Why Walk? Why Not!* Retrieved from cdc.gov: https://www.cdc.gov/physicalactivity/walking/index.htm

Centers for Disease Control and Prevnetion [CDC]. (2015). *Dietary Guidelines for Americans 2015-2020.* Retrieved from https://health.gov/dietaryguidelines/2015/resources/2015-2020_Dietary_Guidelines.pdf

Centers for Disease Control and Prevnetion [CDC]. (2015). *Physical Activity Basics*. Retrieved 2017, from https://www.cdc.gov/physicalactivity/basics/index.htm

Chiesura, A. (2004). The role of urban parks for the sustainable city. *Landscape and Urban Planning, 68*(1), 129-138.

Columbia Center for New Media Teaching and Learning [CCNMTL]. (2017). *What is a "brownfield"?* Retrieved from Brownfield Action: http://brownfieldaction.org/brownfieldaction/brownfield_basics

Cranz, G. (1982). The politics of park design: A history of urban parks in America. *MA: MIT Press*.

Dannenberg, A., Jackson, R., Frumkin, H., Schieber, R., Pratt, M., Kochtitzky, C., & Tilson, H. (2003). The impact of community design and land-use choices on public health: a scientific research agenda. *93*(9), 1500-1508.

Doyle, S., Kelly-Schwartz, A., Schlossberg, M., & Stockard, J. (2006). ACtive community envrionments and health: the relationship of walkable and safe communities to individual health. *Journal of the American Planning Association , 72*(2), 19-31.

Enterprise Florida. (2017). *Brownfields Incentives*. Retrieved from Why Florida: https://www.enterpriseflorida.com/why-florida/business-climate/incentives/brownfield-incentives/

EPA. (2017, March 9). *Types of Contaminated Sites*. Retrieved from United States Environmental Protection Agency: https://www.epa.gov/enforcement/types-contaminated-sites

Feeding America. (2017). *Feeding America: Hunder and Health.* Retrieved from https://hungerandhealth.feedingamerica.org/understand-food-insecurity/

Fisher, B., & Nasar, J. (1992). Fear of crime in relation to three exterior site features: Prospect, refuge, and escape. *Environment and Behavior, 24*(1), 35-65.

Francis, J., Wood, L. J., Knuiman, M., & Giles-Corti, B. (2012). Quality or quantity? Exploring the relationship between Public Open Space attributes and mental health in Perth, Western Australia. *Social Science & Medicine, 74*(10), 1570-1577.

Frumkin, H. (2003). Healthy places: exploring the evidence. *American Journal of Public Health, 93*(9), 1451-1456.

Frumkin, H. (2016). Urban sprawl and public health. *Public health reports, 117*(3), 201.

Giles-Corti, B., Broomhall, M., Knuiman, M., Collins, C., Douglas, K., Ng, K., . . . Donovan, J. (2005). Increasing walking: how important is distance to, attractiveness, and size of public open space? *American Journal of Preventive Medicine, 28*(2), 169-176.

Godbey, G., & Mowen, A. (2003). The role of parks and recreation in promoting physical activity and health. *Franklin County Healthier Communities Through Active Living Summit, Kauffman Station PA.*

Gottlieb, R., & Fisher, A. (1996). Community food secruity and envrionmental justice . *Agirculture and Human Values, 13*(3), 23-32.

Greenberg, M., Lowrie, K., Mayer, H., Miller, K. T., & Solitare, L. (2001). Brownfield redevelopment as a smart growth option in the United States. *The Environmentalist*, 129–143.

Guarnieri, M., & Balmes, J. R. (2014). Outdoor Air Pollution and Asthma. *The Lancet, 383*(9928), 1581-1592.

Hamilton, W., Cook, J., Thompson, W., Buron, L., Frongillo, E., Olson, C., & Wehler, C. (1997). Household Food Insecruity in the United States in 1995: Summary Report of the Food Security Measurememnt Project.

Hassmen, P., Koivula, N., & Uutela, A. (2000). Physical exercise and psychological well-being: a population study in Finland. *Preventive Medicine, 30*(1), 17-25.

Hillsvorough County Sheriff's Office [HCSO]. (2017). *Hillsborough County Crime Search*. Retrieved from Hillsborough County Sheriff's Office: http://gis.hcso.tampa.fl.us/publicgis/crimemapping/

Humpel, N., Owen, N., & Leslie, E. (2002). Environmental factors associated with adults' participation in physical activity: a review. *American Journal of Preventive Medicine, 22*(3), 188-199.

Irvine, S., Johnson, L., & Peters, K. (1999). Community gardens and sustainable land use planning: A case-study of the Alex Wilson community garden. *Local Environment, 4*(1), 33-46.

Jeffrey, C. (1971). *Crime prevention through environmental design.* Beverly Hills: Sage Publications.

Kellert, S. (2002). Experiencing nature: affective, cognitive, and evaluative development in children. *Children and Nature: Psychological, Sociocultural, and Evolutionary Investigations*, 117-151.

Kelling, G., & Wilson, J. (1982). Broken windows: the police and neighborhood safety. *Atlantic Monthly, 249*(3), 29-38.

Kerr, J., Rosenberg, D., & Frank, L. (2012). The role of the build envrionment in healthy aging: community design, physical activity, and health among older adults. *CPL Bibliography, 27*(1), 43-60.

Kingsley , J., & Townsend, M. (2006). 'Dig into social capital: community gardens as mechanisms for growing ubran social connectedness . *Urban Policy and Research, 24*(4), 525-537.

Knol, A. B., Slottje, P., van der Sluijs, J. P., & Lebret, E. (2010). The use of expert elicitation in environmental health impact assessment: a seven step procedure. *Environmental Health*.

Kovach, M. M., Konrad II, C. E., & Fuhrmann, C. M. (2015). Area-level risk factors for heat-related illness in rural and urban locations across North Carolina, USA. *Applied Geography, 60*, 175-183.

Leyden, K. (2003). Social capital and the built envrionment: the importance of walkable neighborhoods. *American journal of public health , 93*(9), 1546-1551.

Litt, J., Soobader, M., Turbin, M., Hale, J., & Marshall, J. (2011). The influence of social involement, neighborhood aesthetics and community garden participation on fruit and vegetable consumption. *American Journal of Public Health, 101*(8), 1466-1473.

Lovett, A., Haynes, R., Sunnenberg, G., & Gale, S. (2002). Car travel time and accessibility by bus to general practitioner services: a study using patient regsters and GIS. *Social Science & Medicine, 55*(1), 97-111.

Mendes de Leon, C., Cagney, K., Bienias, J., Barnes, L., Skarupski, K., Scherr, P., & Evans, D. (2009). Neighborhood social cohesion and disorder in relation to walking in communitydwelling older adults: a multilevel analysis. . *Journal of Aging and Health, 21*(1), 155-171.

Minnesota Department of Health. (2006, May). *Creating Healthy Communities for an Aging Population.* Retrieved from http://www.health.state.mn.us/divs/orhpc/pubs/healthyaging/hareportnofs.pdf

Minnesota Department of Health. (2017). *Benefits of Community Engagement*. Retrieved from Minnesota Department of Health: http://www.health.state.mn.us/communityeng/intro/benefits.html

National Recreation and Park Association. (2010). *Why Parks and Recreation are Essential Public Services.* Retrieved 2017, from NRPA National Recreation and Park Association: https://www.nrpa.org/uploadedFiles/nrpa.org/Advocacy/Resources/Parks-Recreation-Essential-Public-Services-January-2010.pdf

Nelson, M., Rejeski, S., Blair, P., Duncan, J., Judge, A., King, C., . . . Castandeda-Sceppa, C. (2007). Physical activity and public health in older adults: recommendation from the American College of Sports Medicine and the American Heart Association. *Medicine and Science in Sports and Exercise, 39*, 1435-1445.

Nishimura, K. K., Galanter, J. M., Roth, L. A., Oh, S. S., Thakur, N., Nguyen, E. A., . . . Brignio-Buenaventura, E. (2013). Early-Life Air Pollution and Asthma Risk in Minority Children. The GALA II and SAGE II Studies. *American Journal of Respiratory and Critical Care Medicine, 188*(3).

Ober, A., Alaimo, K., Elam, D., & Perry, E. (2008). Growing vegetables and values: benefits of neighborhood-based community gardens for youth development and nutrition . *Journal of Hunger & Environmental Nutrition , 3*(4), 418-439.

Quigley, R., den Broeder, L., Furu, P., Bond, A., B., C., & Bos, R. (2006). *Health impact assessment international best practice principles: Special publication series no. 5.* Retrieved 2016, from from http://www.iaia.org/uploads/pdf/SP5_3.pdf

Richard, L., Gauvin, L., Gosselin, C., & Laforest, S. (2008). Stay connected: neighbourhood correlates of social participation among older sdults living in an urban envrionment in Montreal, Quebec. *Health Promotion International, 24*(1), 46-57.

Roldan, R. (2016). Suitcase City: Tampa neighborhood commits to help troubled school. *WUSF*.

Rose, D., & Richards, R. (2004). Food store access and household fruit and vegetable use among participants in the U.S. food stamp program. *Public Health Nutrition, 7*(8), 1081-1088.

Schmelzkopf, K. (1995). Urban community gardens as contested space. *Geogrpahical Review*, 364-381.

Smith, W. (2004, April 7). Hit-and-run wounds neighborhood. *Orlando Sentinel*.

Smithsonian Gardens: Community of Gardens. (n.d.). *Grown from the Past: A Short History of Community Gardening in the United States*. Retrieved from https://communityofgardens.si.edu/exhibits/show/historycommunitygardens/vacantlot

Spruijt, P., Knol, A. B., Petersen, A. C., & Lebret, E. (2016). Differences in views of experts about heir role in particulate matter policy advice: Empirical evidence from an international expert consultation. *Environmental Science & Policy*, 44-52.

Syed, S., Gerber, B., & Sharp, L. (2013). Traveling towards disease: transportation barriers to health care access. *Journal of Community Health, 38*(5), 976-993.

Taylor, C., Sallis, J., & Needle, R. (1985). The relation of physical activity and exercise to mental health. *Public Health Reports, 100*(2), 221-229.

The Centers for Disease Control and Prevention. (2014, May). *Facts about physical activity*. Retrieved from cdc.gov: https://www.cdc.gov/physicalactivity/data/facts.htm

Thompson, C., Roe, J., Aspinall, P., Mitchell, R., Clow, A., & Miller, D. (2012). More green space is linked to less stress in deprived communities: Evidence from salivary cortisol patterns. *Landscape and Urban Planning, 105*(3), 221-229.

Tieg, E., Amulya, J., Bardwell, L., Buchenau, M., Marshall, J., & Litt, J. (2009). Collective efficacy in Denver, Colorado: strengthening neighborhoods and health through community gardens. *Health & Place, 15*(4), 1115-1122.

Troy, A., & Grove, J. (2008). Property values, parks, and crime: A hedonic analysis in Baltimore, MD. *Landscape ane Urban Planning, 87*(3), 233-245.

U.S. Department of Education. (2015). *Title I Programs*. Retrieved from U.S. Department of Education: https://www2.ed.gov/programs/titleiparta/index.html

U.S. Department of Health & Human Services [HHS]. (2008). *Physical Activity Guidelines for Americans.* Retrieved 2017, from https://health.gov/paguidelines/pdf/paguide.pdf

U.S. Department of Health & Human Services [HHS]. (2015). *Step It Up! The Surgeon General's Call to Action to Promote Walking and Walkable Communities.* Retrieved from http://www.surgeongeneral.gov/library/calls/walking-and-walkable-communities/call-to-action-walking-and-walkable-communites.pdf

Ulrich, R. (1981). Natural versus urban scenes: Some psychological effects. *Environment and Behavior, 13*(5), 523-556.

United States Department of Agriculture. (2017). *Definitions of Food Insecurity.* Retrieved from https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx

Wakefield, S., Yeudall, F., Taron, C., Reynolds, J., & Skinner, A. (2007). Growing urban health: community gardening in south-east toronto. *Health Promotion International, 22*(2), 92-101.

WHO. (2017). *Health Impact Assessment*. Retrieved from World Health Organization: http://www.who.int/hia/tools/evidenceuse/en/index1.html

APPENDICES

Appendix A. EPA Brownfields Area-Wide Plan Screening Worksheet

Project Name:

EPA Brownfields Area-Wide Plan (EPA Brownfields AWP)

Date of Screening Meeting:

August 4, 2017

Date Screening Completed:

August 9, 2017

Brief Description:

- Develop a brownfields area-wide plan and implementation strategy for the University Area neighborhood.
- Build on existing planning activities that the community has already developed for housing rehabilitation, new business creation, increased access to health services, and improved opportunities for recreation.
- Focus on brownfields that are a major impediment to these redevelopment considerations, particularly the Harvest Hope Park catalyst site.
- Determine the extent to which contamination will impact revitalization efforts.
- Harvest Hope Park site would be a catalyst for additional redevelopment in the area. The project has a strong connection to Mort Elementary and they want to create a corridor to it.

Participants and Agency Affiliation:

C. Wells – USF

M. Ballogg – Florida Brownfields Association

N. Ortiz, D. Diaz – UACDC

B. Ward – Independent Consultant

G. Leigh – USF anthropology graduate student

A. Johnson, A. Nguyen, R. Chase – DOH-Hillsborough

Frances Joseph – CANDO Board Member (Mort Park Elementary)

Screening Questions	
Project and Timing	
PT 1	*Has a project, plan or policy been proposed?* Yes
PT 2	*How much time would be available for conducting an HIA?* Approximately 4.5 months
PT 3	*Is there sufficient time to conduct an analysis before the final decision is made?* Yes
PT 4	*What type of HIA would fit in this timeframe? (I.e. desktop, rapid, intermediate, comprehensive)* Rapid
Resources	
R 1	*What resources (staff, time, funding) are available to carry out an HIA? Which agencies can provide these?* Staff, time and funding are available. DOH-Hillsborough: Staff USF-Center for Brownfields Research: Funding
Health Impacts	
Residents recently completed a needs assessment and identified environmental concerns and human health concerns. They specifically indicated a desire to have access to a recreational park (particularly for the children who make up 35% of the population compared to 24% in the city and county) and a community garden in the neighborhood. Additional assessments being conducted: Social Impact Assessment, and Environmental Impact Assessment.	
HI 1	*Does the plan have the potential to affect one or more determinants of health?* Think about • access to recreational activities for children • residents previously identified primarily environment The EPA BF AWP will do clean-up, inventory, and also work with the community to determine redevelopment priorities. The EPA BF AWP has potential for affecting determinants. Ultimately, the EPA BF AWP will reinforce the needs of the community. I.e. turn something hazardous into something useful.

HI 2	*If so, which determinants and which health outcomes?* Food access; diet, health, food preparation. There is a vision for a community garden. The cost of fresh, healthy food is an issue. The local Winn Dixie recently closed. Access to care is covered with Tampa Family Health Centers and their partner affiliates which are located relatively close, however there is an opportunity to focus on the prevention side of health. I.e. enhance recreational opportunities.
HI 3	*<u>Individual Behaviors</u>* *(E.g. physical activity, diet)?* *Positively/Negatively/Who?* Positive effect on diet, access to healthy foods with a community garden. Community gardens are great, but if people don't know how to cook then is there no use. The end result might impact specific things like diabetes.
HI 4	*<u>The Environment</u>* *(E.g. air quality, water quality, hazards)?* *Positively/Negatively/Who?* Water quality is extremely poor due to age of houses, bad piping or faucets. There are minimum housing codes but they aren't enforced because residents fear retribution from landlords. Asthma and air quality in old homes are also issues. Traffic, safety, and air quality are all issues that could be impacted positively by the project.
HI 5	*<u>Causes of Health Inequities in the Community</u>* *(E.g. social support, family structure housing)?* *Positively/Negatively/Who?* There is a much higher proportion of children living in the project area, as well as veterans. People with disabilities have not been specifically identified, but they are vulnerable with the current situation, so they could all benefit from the project. There is possible negative effect of gentrification; want to improve the tax base through equitable redevelopment and getting the community to the table for the project. Housing is a major issue; need to try to provide affordable, safe housing (UACDC is doing through an affordable housing survey. They are also land banking) There could be a potential positive effect on social cohesion, with people coming out more.

HI 6	*<u>Access to Services</u>* *(E.g. transportation, health care, education, leisure, social services, access to green space)?* *Positively/Negatively/Who?* Roads have many potholes and lack sidewalks and bike lanes. There are a lot of people walking because they don't have vehicles, but need to make sure we don't make sidewalks to nowhere (i.e. just around the park). There will be more impact to residents of 22nd and 15th streets, as major through streets. Increased traffic will make it more risky for residents here to be out. There is a library being built, opening in fall of 2018.
HI 7	*<u>Access to livelihood</u>* *(E.g. income, employment)?* *Positively/Negatively/Who?* The EPA BF AWP will not directly address workforce development. UACDC currently has a block by block model of support around the park. The city of Tampa is currently conducting an economic development inventory which should be completed in December. A big issue for the schools is the large turn-over of students on an annual basis. This makes it hard to track key indicators. Most kids walk to school.
HI 8	*Is it likely that negative health–related outcomes will be disproportionately greater for vulnerable groups in the population? Would health inequities be impacted?* *In what ways?* Already, home values have started to increase. There is a need to mitigate effects of the process. There is a need to resist displacement. The project could put stress on sideline communities if residents from the project area are displaced to those communities. This could also impact school turn-over and stress at home. EPA BF AWP has to potential to improve emotional well-being. What is the emotional impact of walking by trash? The positive effects of being in a place where things are happening and people are investing in the area. There is a water spring in the area that is a health and drowning hazard for children.
HI 9	*Are the plan's impacts to health likely to be significant in terms of the number of people impacted, the magnitude, breadth and/or immediacy of impacts?* Generally residents in the area have similar vulnerability. However there is a higher percentage of children and veterans in the area and as such traffic safety concerns are magnified.

Hi 10	*Do evidence, expertise, and/or research methods exist to analyze health impacts of the plan?* Yes. DOH-Hillsborough staff will lead this effort. DOH-Hillsborough staff have previously conducted HIAs and have the research skills and access to data tools to complete the HIA.
Potential Impact of HIA Findings	
PI 1	*Is health already being considered in the plan or as part of the decision-making process? If yes, list how. (E.g. through an EIA)* Yes. There will be a social impact assessment (SIA) conducted by Beverly Ward. The process uses an Economic Assessment which assesses 11-12 factors. Additional factors will be assessed. Beverly Ward will provide DOH-Hillsborough staff will the complete list of factors being considered in the social impact assessment. There will also be an environmental impact assessment (EIA) conducted by Miles Ballogg. He will also provide DOH-Hillsborough staff with additional information about the data the environmental impact assessment will consider. In a phase 1 project typically data related to regulations and permits, e.g. what is underground is considered? Are there any old dry cleaning or gas station sites present?
PI 2	*If yes, what health impacts are already being considered?* SIA will examine existing data using a screening tool consisting of 11 to 12, possibly more, factors. These include persons with disabilities, environmental data such as air quality, water quality, flooding, standing water and the risk of mosquito breading grounds. EIA will utilize data from other regulatory sources to assess the environment. E.g. safety and integrity of underground storage tanks.
PI 3	*Will an HIA offer new insight?* Yes. The HIA will offer insight into how the determinants of health will be impacted by the EPA BF AWP. In particular it will offer insight into the impacts on human health and concerns previously expressed by the community.
PI 4	*Are the links between the plan and health or health determinants clear?* No. Some links are clearer than others. During brainstorming the project team thought of gentrification and disruption which are potential unintended outcomes.
PI 5	*Is the decision-making process open to the HIA and/or recommendations for changes to design, mitigations and/or alternatives?* Yes. Decision-making process is open to recommendation on how to mitigate unintended effects.

PI 6	*If applied, would HIA findings and recommendations potentially improve the impact that the plan has on health? Empower residents in land use policies?* Yes. A Community Needs Assessment was recently completed by the residents and the grant writing process for the EPA BF AWP included a housing assessment. Charettes will be conducted to share results with residents.
Potential Impact of the HIA Process	
PI 7	*What are the potential impacts of the HIA process? (E.g. building relationships, empowering community members, demonstrating how health can be used in decision-making, impacting root causes of health inequity)* The process has the capacity building for leadership. There is also a strategic communications/marketing team built in to the process to help community residents to see the end product/report.
Stakeholder Interest and Capacity	
SI 1	*Have public concerns about the health impacts of the plan been voiced or documented?* No. To date, the community does not know much about the specific EPA BF AWP. However, community residents are aware of redevelopment efforts in the area and they are supportive of such efforts.
SI 2	*Who are the stakeholders and interest groups involved in the decision-making process?* USF Center for Brownfields Research & Redevelopment, University Area Community Development Center
SI 3	*Do stakeholders have the interest to participate in the HIA?* Yes. Stakeholders are interested to participate and have offered their expertise to participate in the HIA.
SI 4	*Do stakeholders have the capacity (resources, skills, etc.) to participate in the HIA?* Yes. Stakeholders have the capacity to engage non-profit groups in the area in order to better assess community concerns.
SI 5	*Would stakeholders use the HIA to inform or influence the decision-making process? How?* Yes. Stake holders are interested to communicate HIA findings to residents are view recommendations. They are also interested in sustainability efforts. Understanding the health impacts associated with community residents will provide insight into ways to better engage the community in order to promote sustainability.

Next Steps	
NS 1	*Is an HIA recommended to add value to the decision-making process? (Yes/No)* *If no, what are the reasons for not conducting an HIA?* Yes. A rapid HIA is recommended.
NS 2	*Next Steps (Include dates, person/agency responsible)* DOH-Hillsborough staff will review screening worksheet and develop a plan for scoping the project. Dr. Wells will reconvene the group in order for a scoping meeting.
ADDITIONAL COMMENTS	

Appendix B. Community Park Design Event

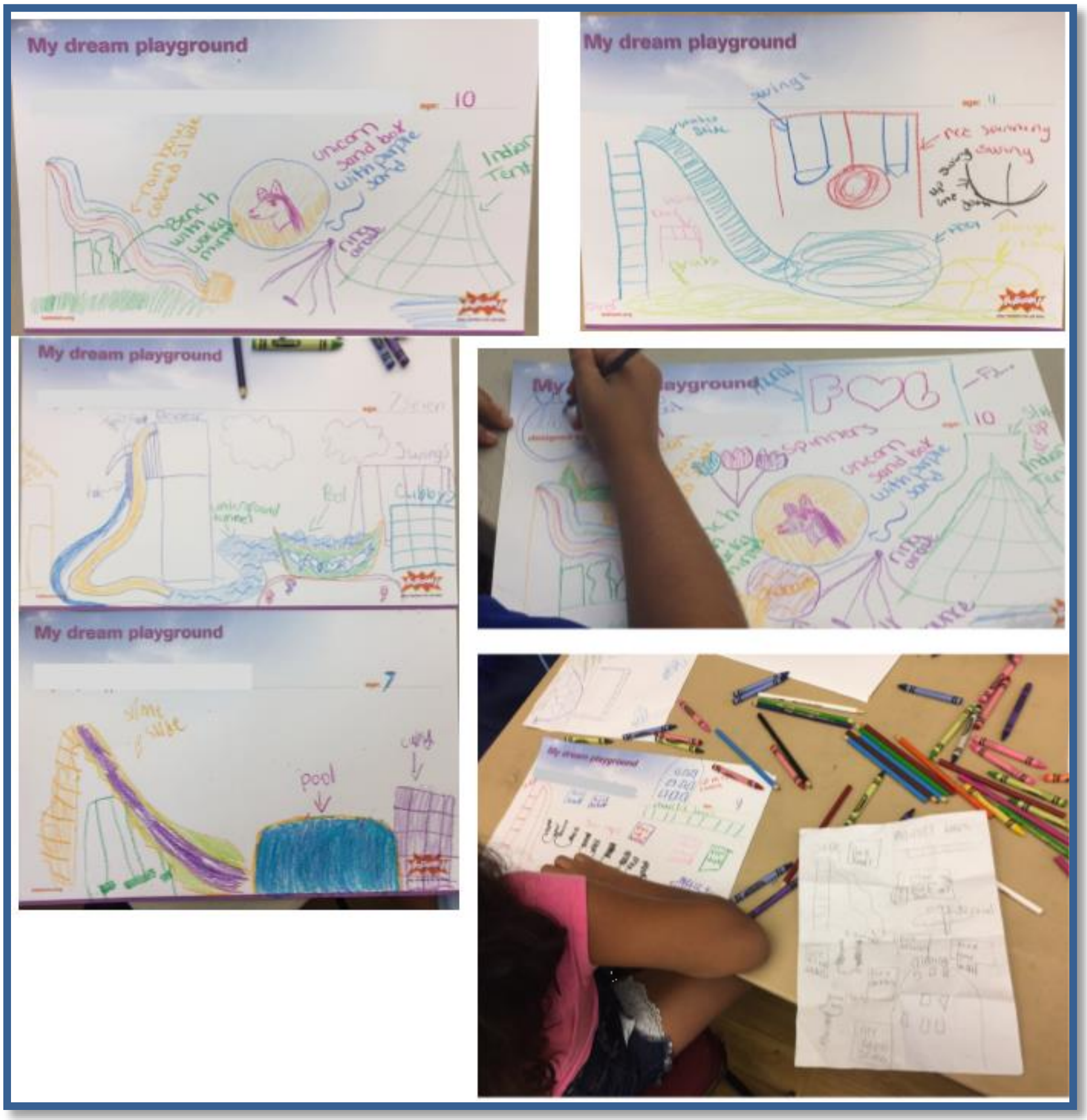


Figure 14. Park Designs from Children in the Community.

Figure 15. Resident Participating in the Community Park Design Event


Florida
HEALTH
Hillsborough County