

# Northwest Independence Sidewalk Health Impact Assessment



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**Section I:  
Executive Summary – Key Findings**

## The Proposal

The City of Independence Health Department (IHD), with funding from the Healthcare Foundation of Greater Kansas City, conducted a Health Impact Assessment (HIA) that recommended prioritization of future sidewalk placement in northwest Independence, Missouri. This HIA offers a structured process to determine how sidewalk placement will affect health and overall well-being in zip code 64053.



One of the few walkable sidewalks in zip code 64053.

## Why this Health Impact Assessment?

In 2013, IHD conducted a Community Health Assessment (CHA) in order to measure a variety of health related data based on feedback of residents within Independence. Findings from the CHA concluded that residents in northwest Independence lack access to a safe area for physical activity and report being unsatisfied with the physical infrastructure and the lack of health resources in the area. Additionally, the CHA found that 70% of the residents in zip code 64053 were considered overweight or obese, which is above the overall rate of 67% for Independence as a whole.

One of the most important factors contributing to the obesity epidemic in the United States is lack of physical activity. The CHA showed that 55% of residents in zip code 64053 did not meet the 2008 Physical Activity Guidelines of 150 minutes of activity per week.<sup>20</sup> This is above the United States average of 52% of adults not meeting this standard. The barriers to engaging in physical activity identified in this area of Independence include a lack of sidewalks, drainage ditch complications and safety concerns. Because of these barriers, many residents of the area do not perceive this area of town to be a safe environment to partake in physical activity.

An HIA is a research and public engagement tool used to elevate the consideration of health and equity in public decisions, like land-use planning, policies, and programs. IHD and other stakeholders felt that adding evidence about the health impact of additional sidewalks in northwest Independence would be a valuable activity in order to inform decision-makers about why and where sidewalks would make a difference in zip code 64053. A list of those stakeholders is provided on page 6. IHD was also interested in building capacity to conduct HIAs for future decision-making.

One of the key components of the IHD's *Building a Healthier Independence* (BHI) initiative is to encourage active living; therefore, IHD focused its efforts on giving northwest Independence access to a safe environment to be physically active.

## Research Questions

Four primary health determinants and eight related research questions were identified. Health determinants can include the structure of the environment around social policies, behaviors, and people that ultimately determine health outcomes. The health determinants and research questions include the following:

- Physical Activity
  - How does having sidewalks impact the actual use of sidewalks?
  - How will having sidewalks impact physical activity?
- Sense of Ownership
  - How will placement of sidewalks impact value of homes/property and perceived value of neighborhood?
  - What are the potential unintended impacts of creating sidewalks?
- Crime and Perception of Safety
  - How will having sidewalks impact actual crime?
  - How will having sidewalks impact the perception of safety?
- Creating Access to places in Northwest Independence
  - How will placement of sidewalks impact social interactions and sense of community in the area?
  - How will placement of sidewalks influence other potential resources for the area (grocery store, etc.)?



A neighborhood crime watch sign posted in zip code 64053.



Kids playing at Fairmount Park.

## Stakeholder Concerns

Stakeholders who are affected by the prospective change (sidewalk placement) are included on Table 1. All stakeholders listed were engaged in conducting the HIA.

**Table 1. Engagement of Stakeholders**

Stakeholders	Interest in HIA or Sidewalk Placement	Impacted by Sidewalk Placement Decisions	Power to Influence Decision
<b>City of Independence City Council</b>	Moderate Interest	Low Impact	High Power
<b>Residents of Northwest Independence</b>	High Interest	High Impact	Low Power
<b>Independence School District</b>	Moderate Interest	Moderate Impact	Moderate Power
<b>Walk and Bike Advocate Groups</b>	Moderate Interest	Low Impact	Low power
<b>Community Churches</b>	High Interest	High Impact	Moderate Power
<b>Northwest Communities Development Corporation (NWCDC)</b>	High Interest	High Impact	Moderate Power
<b>Neighborhood and Block Groups</b>	Moderate Interest	Moderate Impact	Moderate Power
<b>City of Independence Public Works</b>	Moderate Interest	Low Impact	High Power
<b>City of Independence Community Development</b>	Moderate Interest	Low Impact	High Power

There were multiple concerns that surfaced during discussions with prominent stakeholders in this HIA. According to City ordinance, homeowners are held responsible for maintaining land up to the street in front of their homes, including sidewalks or any other infrastructures that may be there. In Missouri, maintaining sidewalks primarily includes ice/snow removal and repairing cracks/damages. The residents of the area have the potential to oppose the idea of sidewalk placement on their property due to the maintenance responsibility.

Another concern is the infrastructure in the area in regards to drainage ditches and storm water back up. Storm water drainage ditches were dug or deepened to relieve the standing water. Adding sidewalks may involve the addition of storm water draining mechanisms, which could be a costly process.

## Overall Findings

The Northwest Independence Sidewalk HIA found that putting a sidewalk north of 24 Highway in zip code 64053 in specific places recommended in this HIA will have a positive impact on health. It will increase opportunities for physical activity, better access to healthy foods, and improving safety, which can lead to a reduction of chronic diseases. Sidewalk placement within this area may lead to increased access to resources, connectivity, property value, and perception of safety. Actual crime and sense of community and ownership is not impacted based on placement of sidewalks. While the majority of health impacts are positive, there are some potentially negative health impacts.

The following literature review items were considered:

- Recent studies using objective measures of total physical activity have found that residents of highly-walkable neighborhoods get one more hour of activity each week and are 2.4 times more likely to meet physical activity recommendations than residents of low-walkable neighborhoods.
- Residents are 65% more likely to walk in a neighborhood with sidewalks, and it is predicted residents in zip code 64053 will add approximately 30 minutes more a week due to new sidewalks and newly maintained sidewalks.
- Property values are likely to increase, on average, \$6,800 due to putting sidewalks in the community, leading to increased walkability.
- Actual crime events in northwest Independence were not associated with either lack of sidewalk or having sidewalks, and actual crime was not associated with likelihood of being physically active. However, the *perception* of safety is associated with rates of physical activity in the literature as well as in the 64053 Walkability Assessment conducted for this HIA.
- States with the highest levels of biking and walking have, on average, the lowest rates of obesity, diabetes, and high blood pressure.
- Top pedestrian complaints according to a U.S. Department of Transportation survey are “incomplete streets,” or streets that are designed with only cars in mind and often limit transportation choices by making walking, bicycling, and taking public transportation inconvenient, unattractive, and, too often, dangerous. Often incomplete streets have unconnected sidewalks or no sidewalks, bike lanes, or safe routes for alternative transportation. Thirty percent (30%) of pedestrians experience problematic streets due to too few sidewalks.

## Top Recommendations

Based on community input, stakeholder input, and the walkability assessment survey results of zip code 64053, nine specific recommendations were produced. The following recommendations were the top three choices after a prioritization by stakeholders and community members.

1. Installation of sidewalks to link all major resources within the Fairmount Neighborhood. This would include sidewalks from the Fairmount shopping district (along 24 Highway from Ash Avenue to Wilson Road) to the Northwest Communities Development Corporation (NWCDC) to Fairmount Elementary School to Fairmount Park along Norledge Avenue to Ash Avenue and down to 24 Highway.
2. Installation of a sidewalk placed on Ash Avenue on from Ash Avenue and Kentucky Avenue intersection to Ash Avenue and 24 Highway intersection.
3. Installation of a sidewalk to connect Mount Washington Neighborhood and Fairmount Neighborhood via Arlington Avenue and Kentucky Avenue.

Through the HIA process, it has been found that placement of sidewalks would have a positive health impact on residents of northwest Independence. The next step is to work with potential funders and find additional funding opportunities to further determine which recommendation(s) to pursue and complete.



A painted crosswalk leading to no safe place to walk.

## **Section II: Introduction and Background**

## Introduction

IHD conducted a CHA in October and November of 2013 in order to measure a variety of health related data within the City of Independence. As part of the CHA, IHD conducted a survey, which had a significant sample size within each Independence zip code. Of the 10,099 households that received a survey, 1,946 households completed surveys, resulting in a 19% response rate with a 95% confidence level. The northwest region of Independence, MO, specifically the 2.1 square mile area of zip code 64053, borders both Kansas City, MO and Sugar Creek, MO. Community members often identify this area of Independence as lacking physical infrastructure and health resources. The CHA survey was sent to 1,342 houses in zip code 64053 and 174 were returned, giving this zip code a 13% response rate. The CHA revealed many health disparities among the residents of the northwest portion of Independence, which is included in census tract 110, and is the focus of this HIA.<sup>20</sup>

According to the Centers for Disease Control and Prevention (CDC), approximately 69% of adults age 20 and older are considered overweight or obese in the United States.<sup>9</sup> One of the most important factors contributing to the obesity epidemic in the United States is lack of physical activity. The CHA

showed that 55% of residents in zip code 64053 did not meet the 2008 Physical Activity Guidelines of 150 minutes of activity per week.<sup>20</sup> This is slightly above the activity level of adults in the United States in which 52% of adults do not meet this standard. Residents in this part of the city cited a number of factors as barriers to engaging in physical activity, including lack of sidewalks or sidewalks in disrepair, drainage ditch complications, safety



A break in the sidewalk on a street in zip code 64053.

concerns, and other demographics of the area. Because of these barriers, residents felt that this area of town may not be a safe environment to partake in physical activity. Therefore, IHD focused its efforts on giving northwest Independence access to a safe environment to be physically active.

A study published in the *American Journal of Preventative Medicine*, titled “Walkable Communities and Adolescent Weight,” discovered that neighborhood design features have been associated with health outcomes, including the prevalence of obesity. Results of that study suggest living in a more walkable community is associated with reduced prevalence of adolescents who are overweight or obese. Zip code 64053 in Independence is often identified by community members as lacking physical infrastructure, including sidewalks and walkable streets, and the results of the CHA supports this as zip code 64053 was the

least satisfied of any other zip code with the walkability of their community. This may be a factor in why fewer residents meet physical activity recommendations, which may contribute to the high prevalence of obesity in that area. People who are physically active tend to live longer and have lower risk for heart disease, stroke, type 2 diabetes, depression, and some cancers. Physical activity can also help with weight control.<sup>10</sup>

Disparities in health are linked to disparities in socioeconomic status and other social factors. When compared to the rest of Independence, a higher percentage of residents in the northwest part of the city live below the poverty level. The CHA found zip code 64053 had the second-lowest income level in the city.<sup>20</sup> Because of this, residents in northwest Independence may experience more constraints on personal choices and experience more adverse health outcomes than other Independence residents.

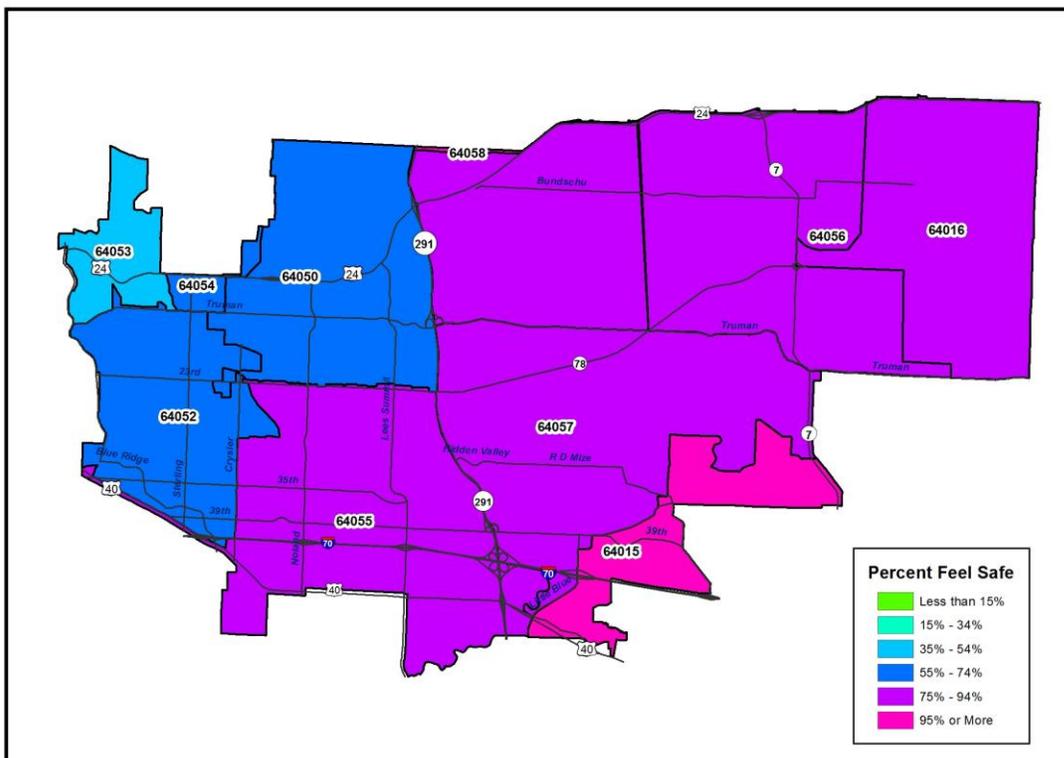


Often families have to walk in the street to get anywhere because there are no sidewalks to walk on.

Safety concerns, both from traffic collisions and from crime, are another perceived barrier to physical activity in the area. Respondents in the zip code 64053 were very unlikely to indicate that they felt safe walking in their neighborhood, with less than 50% of CHA respondents in 64053 answering they felt it was safe to walk in their neighborhood.<sup>20</sup> The top three reasons respondents reported not feeling safe walking in their neighborhood were: no sidewalks or sidewalks in bad shape, fear of crime, and poor lighting. The map below demonstrates the perception of walking safety in Independence.

### Walking Safety

"Do you feel it is safe to walk in your neighborhood?"



IHD's BHI initiative works to encourage healthy eating, active living, and tobacco cessation on a citywide level. The initiative's activities that relate to physical activity include installing seven emergency blue phones along trails, placing Geographical Information System (GIS) trail markers, launching a mobile health app, increasing membership to a local recreation center, starting a walking program for Independence residents, planning a free 5K, and providing funds for physical fitness equipment. While many programs and activities within this initiative succeed, individuals who lack access to safe and accessible areas for physical activity do not always reap the benefits of BHI activities. A new focus on the built environment and its impact on health has become a clear need.

## Steps of an HIA

An HIA is a systematic research and community engagement process that brings together data, health expertise, and stakeholder input to identify the potential health effects of a project, proposal, land use plan, or policy, and to make recommendations that improve policies and environments for health. The combination of procedures, methods, and tools used during an HIA help a team judge the potential, and sometimes unintended, effects of a plan on the health of a population and the distribution of those effects within the population.

The Healthcare Foundation of Greater Kansas City grant through which the HIA was funded began on August 1, 2014, and was completed on July 31, 2015.

HIAs consist of six phases including screening, scoping, assessment, recommendations, reporting, and monitoring and evaluation. These will be discussed throughout the report.

### Screening: Why Conduct an HIA

The HIA process begins with screening as the first step. This step helps stakeholders determine whether an HIA is feasible, timely, and would add value to the decision-making process. During this time, stakeholders focus on who the potential partners could be, evaluate the project based on screening criteria, and ultimately decide whether to conduct an HIA. The proposed plan's potential impact on health and the time available to complete an HIA is considered during this step.

Currently there is no process in place to determine where sidewalk placement in Independence will occur. This HIA helped determine need, locations, and priority for sidewalk placement or another form of infrastructural change in northwest Independence. The steps of an HIA allow for community input and engagement, build relationships and collaborations, identify evidence, and improve transparency in decision-making.

Staff from IHD analyzed the results of the 2013 CHA and realized there was a need that was not being met in zip code 64053. Together, with representatives from other City departments, it was decided that it would be beneficial to have a method from start to finish that would involve a training, procedures and



One of the many community meetings held to gain community interest and input in the sidewalk project.

tools, and community and stakeholder input in collaboration with research on the topic.

When it comes to infrastructure changes in a community, many positive and negative health outcomes can originate from those changes. Because of this, an HIA recommending type and placement of infrastructure changes in northwest Independence to provide the most health benefits for the region was necessary. When health is not taken into consideration, residents who lack access to a safe area for physical activity are being left behind. IHD and other agency and community stakeholders decided that a relevant and timely analysis could be completed. Additionally, the decision-makers were receptive to learning about the recommendations of the HIA. Finally, IHD had interest in building capacity to conduct HIAs for this land use decision as well as potentially for future decisions.

Based on the above, IHD decided, in collaboration with impacted stakeholders who are listed and described earlier, to conduct an HIA on the sidewalk placement in zip code 64053. The HIA emphasizes the northwest area of Independence where dissatisfaction with sidewalks, recreation programs, and the availability of parks, trails, and playgrounds is highest. Other activities occurring in this region demonstrate there is a commitment and desire to improve northwest Independence, including the redevelopment of a senior housing center and the creation of a new park/trail, among others. This HIA provides both the physical assessment and the community engagement that is required to determine where the need is. This project may not have required a full HIA, but IHD completed one in part to realize the goal of increasing staff capacity in the use of the HIA tool. Training and collaboration of staff and community members in the implementation of this HIA, as well as future HIAs, may lead to changes in how health and its impact is discussed when making policy, environmental, and infrastructure changes and identifying health as a priority in decision making.



A street with no sidewalks within the target zip code. Sidewalk placement is sometimes different from house to house leading to limited connectivity.

### Scoping

Scoping is the second step of an HIA. Scoping determines the goals and timeline for the project. Scoping helps define priority issues, research questions and methods of implementation related to the main decision being made, and identifies specific roles for participants. This step is key in the process as it molds the foundation and sets the tone of the project.

Determinants of health and pathway diagrams are completed during this step. Pathway diagrams are created for each health determinant and are shared with stakeholders to ensure that the important factors are well understood by everyone involved. A pathway diagram allows for a pictorial representation of how the project will have immediate, intermediate, and long-term outcomes. After pathway diagrams are created, the specific research questions for the HIA are identified. The research questions, or hypotheses, are necessary so the HIA team can then test if their hypotheses are true based on locally available data and a reasoned prediction of potential positive and negative outcomes of the proposed project.



Fairmount Family Medical Care, a health clinic and one of the few resources within the zip code.

There were several environmental and social determinants of health to consider. The first determinant affected by the outcomes of the HIA is the built environment. The first HIA hypothesis was that placement of sidewalks would increase the walkability of the region and create access to city parks, walking trails, schools, and other resources in the area. A second hypothesis relating to the built environment is that having safe and walkable routes would encourage increased physical activity, including walking, running, and biking, and may also lead to easier access to other places in the area where people can be physically active.

Overweight/obesity is a lifestyle-related health determinant, but simply urging individuals to make healthier choices is not sufficient to guarantee better outcomes. Another HIA hypothesis was that behavior change would be more attainable when supportive policies and a strong physical infrastructure are in place; and this is even more important for communities where residents have fewer personal resources to pursue healthy lifestyle choices.

Crime and the perception of safety was another health determinant that was prioritized in the scope of research. The HIA team hypothesis was that identifying or installing safe walkways would create an environment where residents feel at ease exercising outside. The environment for crime has the potential to decrease with an advanced awareness of this area and the focus on safety.

The final health determinant examined in this HIA was pride and a sense of ownership over their property. Due to this, residents may be concerned about decreasing their lot size, taking away the drainage system in place, and the added responsibility of sidewalk upkeep. It may be an unwanted burden to some. An upside is that installing walkable sidewalks or walkways could increase the value of homes in zip code 64053.<sup>12</sup>

To this end, the goal of the HIA was to recommend prioritization for future placement of sidewalks to increase access to safe areas for physical activity in northwest Independence. The project helps determine, distinguish, and promote current safe environments for physical activity. The HIA provides evidence and additional support for residents in an under-resourced area of Independence who are at risk for multiple chronic diseases.

Stakeholders and community members were actively engaged in order to prioritize the scope. Several community meetings were held within zip code 64053. In addition, monthly meetings with stakeholders have been helpful in the process, as they are updated on the process and are able to give feedback and ideas to continue. The stakeholders are responsible for attending meetings, giving feedback, helping with potential data sources, and helping with the final execution of the recommended plan.

### Assessment

During the assessment stage of the HIA process, the focus is to provide a profile of existing conditions and an evaluation of potential health impacts. An HIA should present predictions of the ways a proposed decision could impact population health. It is encouraged to find tools and methods that already exist to assess health outcomes and potential impacts that the proposed project may have.

#### Research and Assessment Tools

This assessment includes baseline information about current conditions, primary data, secondary data, quantitative forecasting, surveys, and community meetings. Baseline information was gathered to determine the current conditions. Some areas of baseline data were problematic to determine. Current sidewalk location and condition was mapped out using GIS

tracking. Which streets had walkable sidewalks, unwalkable sidewalks, or no sidewalks at all was determined. The map on page 20 shows the majority of streets are without sidewalks or with unwalkable sidewalks in this zip code.



One of the busiest streets within zip code 64053, also with no sidewalks or places for people to safely walk.

IHD created a walkability assessment survey to determine current residents' views on walkability of the area including presence of sidewalks, drivers, street access, room to walk,

and pleasantness of walking in the area. IHD created the walkability assessment by combining elements of an existing walkability survey created by the Pedestrian and Bicycle Information Center that would be suitable for this HIA.<sup>25</sup> The survey included questions such as where residents currently walk, where they would like to walk, why they do or do not walk, among other topics. This helped gather primary data from the people affected by the decision of the HIA.

The survey was mailed out to 747 residents who live in zip code 64053, and was also distributed at community meetings in that zip code to gain responses to the walkability assessment survey for further input on the walkability of the area. One hundred and thirty-two (132) surveys were returned and completed. The goal of the survey was to gauge baseline data on current walking habits of residents of zip code 64053 as well as help assess walkability of the area. A copy of the survey can be found in the appendix of the document.

The ages of respondents varied, with the most prevalent age group being 25-49. Thirty-six percent of respondents were between the ages of 25-49. Twenty-seven percent were 50–64, and 28% were over 65. The respondents were 67% female, 32% male, and 1% who chose not to disclose their gender.

**Table 2. Age Distribution of Walkability Survey Respondents**

Age Groups	Response Percent
Under 18	2%
18 - 25	2%
25-49	36%
50 - 64	27%
65 +	28%
None	5%

IHD staff gathered secondary data and conducted a literature review to answer the research questions. Based on the literature review, baseline data, and primary data collected, quantitative forecasting was completed to determine impact.

## Recommendations

The recommendations step provides evidence-based recommendations to maximize positive health impacts. For each impact identified, evidence-based recommendations are gathered from experts and prioritized by HIA stakeholders. Important elements to include when writing recommendations are who is responsible for implementing the recommendations, when they should be recommended, evidence from the HIA findings to support the recommendation, prioritization of recommendations, and the cost of the recommendations. Funding sources should be included as well. For the recommendations in this HIA, see pages 44-60.

## Reporting

The reporting step includes developing the HIA report and communicating the findings and recommendations. Before the final report is written, stakeholders come to a consensus regarding key findings and recommendations. IHD developed a communication plan to suit the needs of the stakeholders and made the report accessible for public review.

## Monitoring and Evaluation

There are three types of evaluation in an HIA:

- 1) process evaluation,
- 2) impact evaluation, and
- 3) outcome evaluation.

Monitoring tracks indicators that can be used to inform process, impact and outcome evaluations. Evaluation and monitoring are important in the HIA process because they allow the impact the HIA has on the decision-making process and the implementation of the decision to be seen. IHD will be evaluating the process of conducting this HIA. The Monitoring Plan is included on page 62.

## HIA Partners

The Health Care Foundation of Greater Kansas City funded the HIA through a Healthy Lifestyles Grant. Technical assistance for the HIA process came from Human Impact Partners. The key partners who came together to conduct the HIA include City of Independence City Council, IHD, residents of northwest Independence, the Independence School District, community churches, the NWCDC, LINC/Caring Communities, local churches, neighborhood and block groups, City of Independence Public Works, and City of Independence Community Development.



One of the many churches located in the area.  
This was a meeting site for many of the stakeholder meetings.

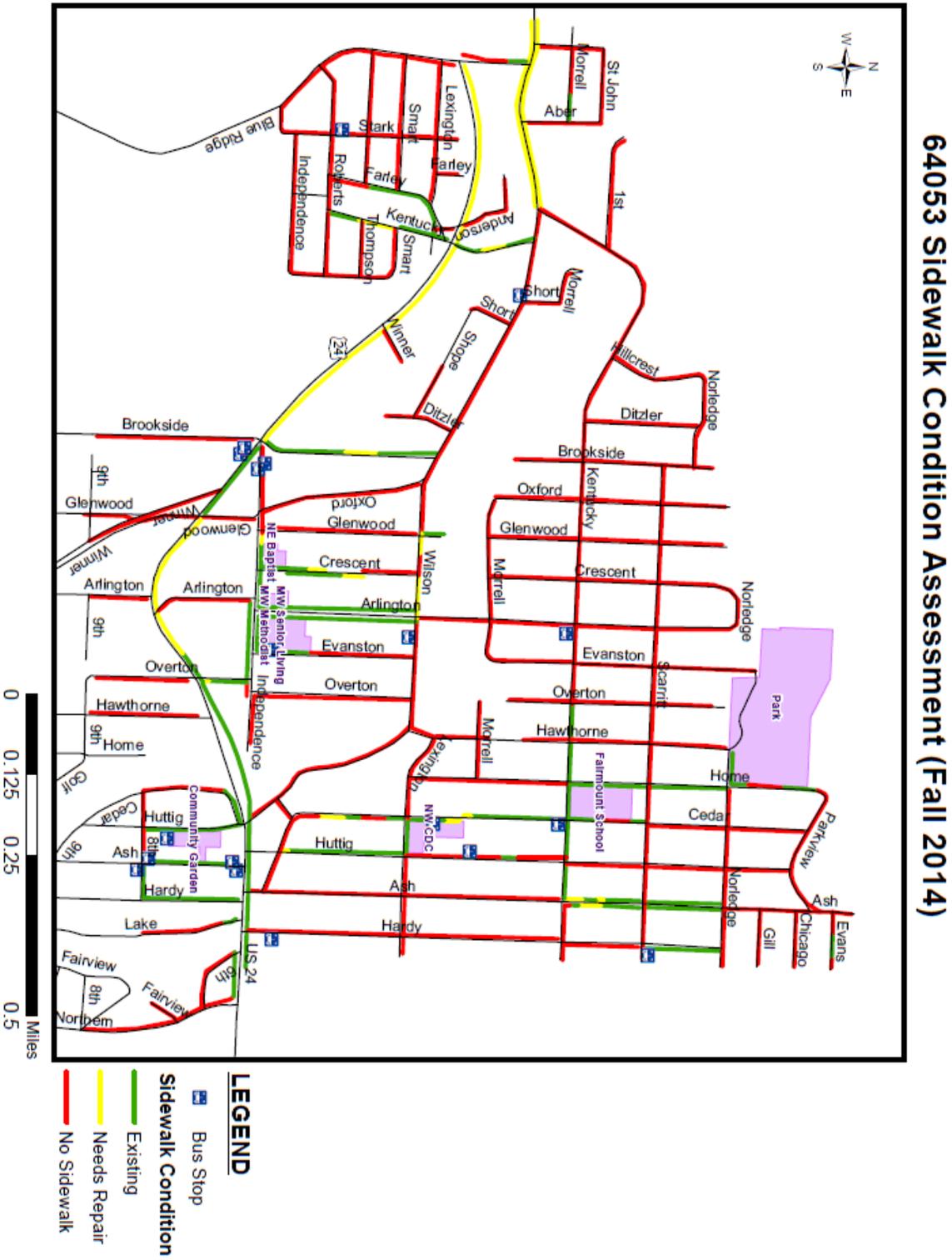
Monthly meetings kept stakeholders updated on the HIA process and solicited their feedback. The stakeholders were responsible for attending meetings, giving feedback, helping with potential data sources, and helping with the final execution of the recommended plan.

## Goal of the HIA

The goal of the HIA is to provide recommendations for the placement of sidewalks to provide safe places to be physically active in northwest Independence, specifically zip code 64053.

Installation or repairing sidewalks is something that many neighborhoods in Independence could benefit from. Based on the information from the CHA, it was determined that zip code 64053 has the greatest need based on level of satisfaction with current infrastructure and health determinants of residents in the area.<sup>20</sup> With those key indicators, zip code 64053 became the focus of the HIA.

In addition, a GIS map was created to determine current conditions of sidewalks in zip code 64053. Which streets had walkable sidewalks, unwalkable sidewalks, or no sidewalks at all was determined. The map on the following page shows that the majority of streets are without sidewalks or with unwalkable sidewalks in this zip code.



A simple definition of walkability, which was one of the main considerations of this HIA, is a measure of how friendly an area is to walking. Additionally, it is the extent to which the built environment is compatible with the people living, shopping, visiting, enjoying or spending time in an area. Sidewalks are a major aspect of walkability, but other factors need to be considered as well. Studies show there are higher total walking trips in areas with the highest walkability, as defined by availability, accessibility, and condition of sidewalks, good infrastructure aesthetics, and good route connectivity.<sup>8</sup>

Since the City of Independence Public Works and Community Development Departments would have primary roles in completing the project, these two stakeholders were included in the HIA scope process.

### Who will be affected

Those affected by the HIA are current and future residents of zip code 64053, as well as current and future businesses residing in zip code 64053.

The vulnerable populations considered as part of the HIA include families, school-aged children, low-income citizens, several ethnicities, disabled citizens, elderly citizens, and the homeless population.

The focus of the HIA includes the region of Independence within zip code 64053 and north of 24 Highway. Sugar Creek, Missouri and Kansas City, Missouri border this area. It includes the Mount Washington and Fairmount areas.



A side view of Mount Washington Senior Living next to a community garden and short, gravel walking trail.

## Health Determinants

Four health determinants were considered in the completion of this HIA. The first was physical activity. The HIA looked at whether having sidewalks or a change in physical infrastructure will have an impact on the physical activity of residents in the area. Additionally, any connections that could be made that would provide access to places to be physically active was taken into consideration.

### Physical Activity

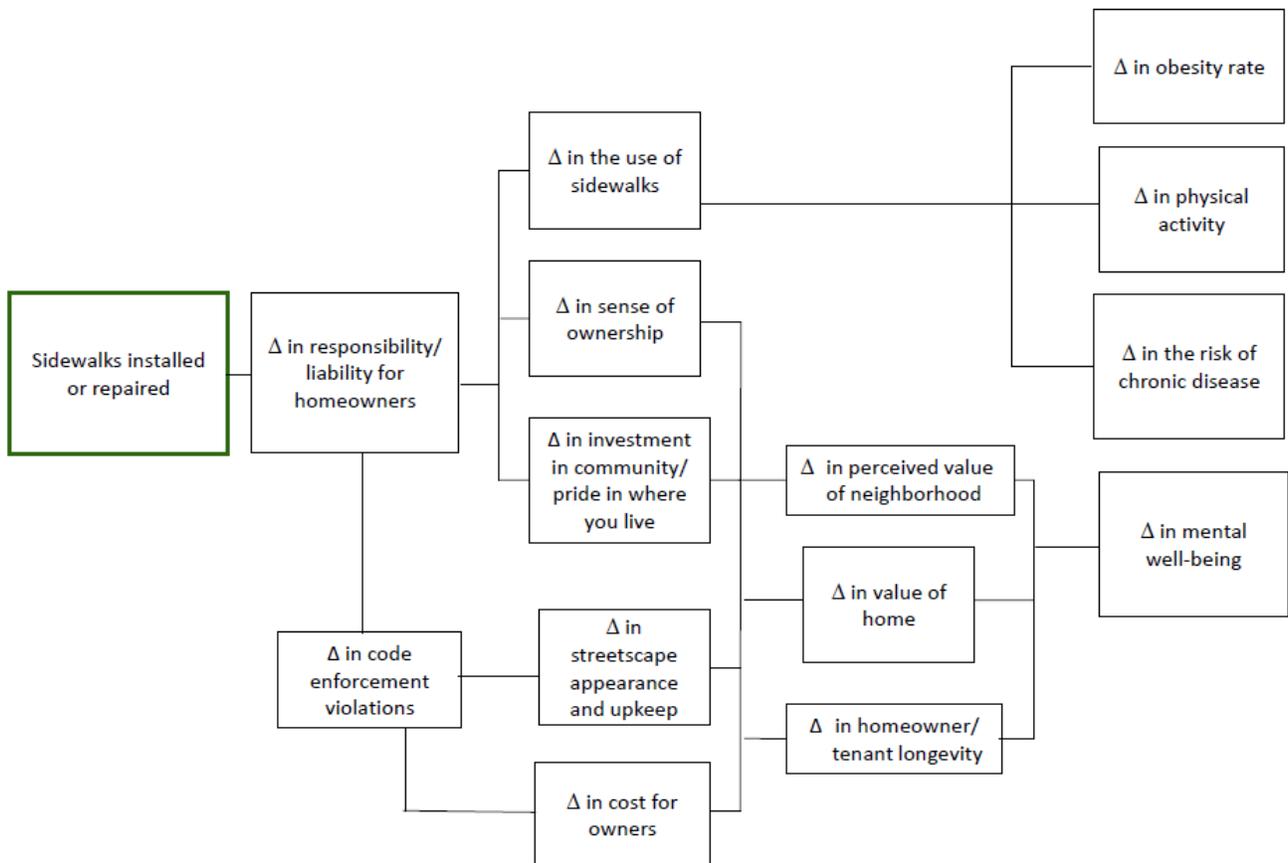


• Health impacts of chronic disease include: heart disease, diabetes, hypertension

Δ = change

The second determinant considered was sense of ownership. Originally, there was concern whether this could lead to more cost and responsibilities for residents of zip code 64053 who did not want sidewalks or do not have the means to take care of the sidewalks. However, positive outcomes can come with this as well, such as more pride in where you live and a better streetscape and appearance of the neighborhood.

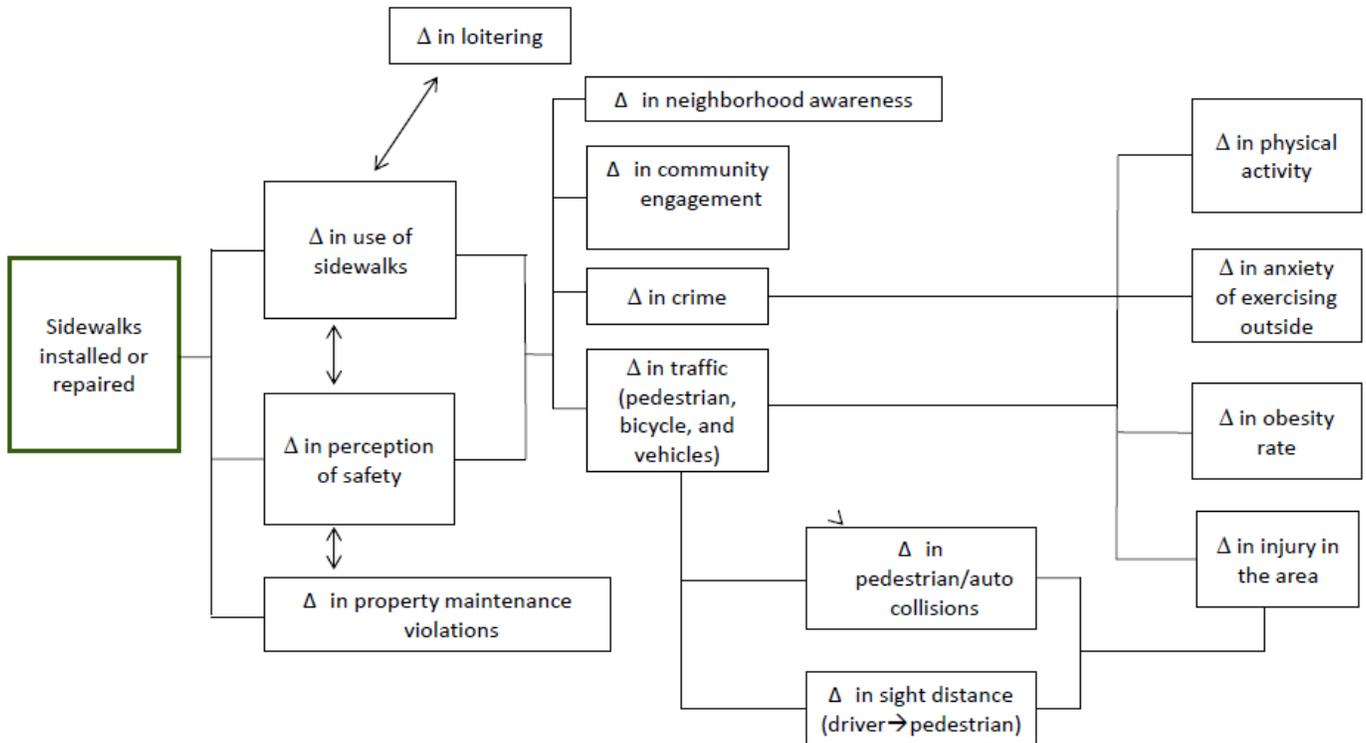
**Sense of Ownership**



Δ = change

The third health determinant examined crime and perception of safety. An important factor in whether people are physically active outdoors in zip code 64053 was based on crime rates and residents' perception of safety. Whether the addition of sidewalks, infrastructure changes, or improvements where people do not feel safe was examined. Many different factors were evaluated with perception of safety, some of which included lighting, dangerous dogs, and crime rates.

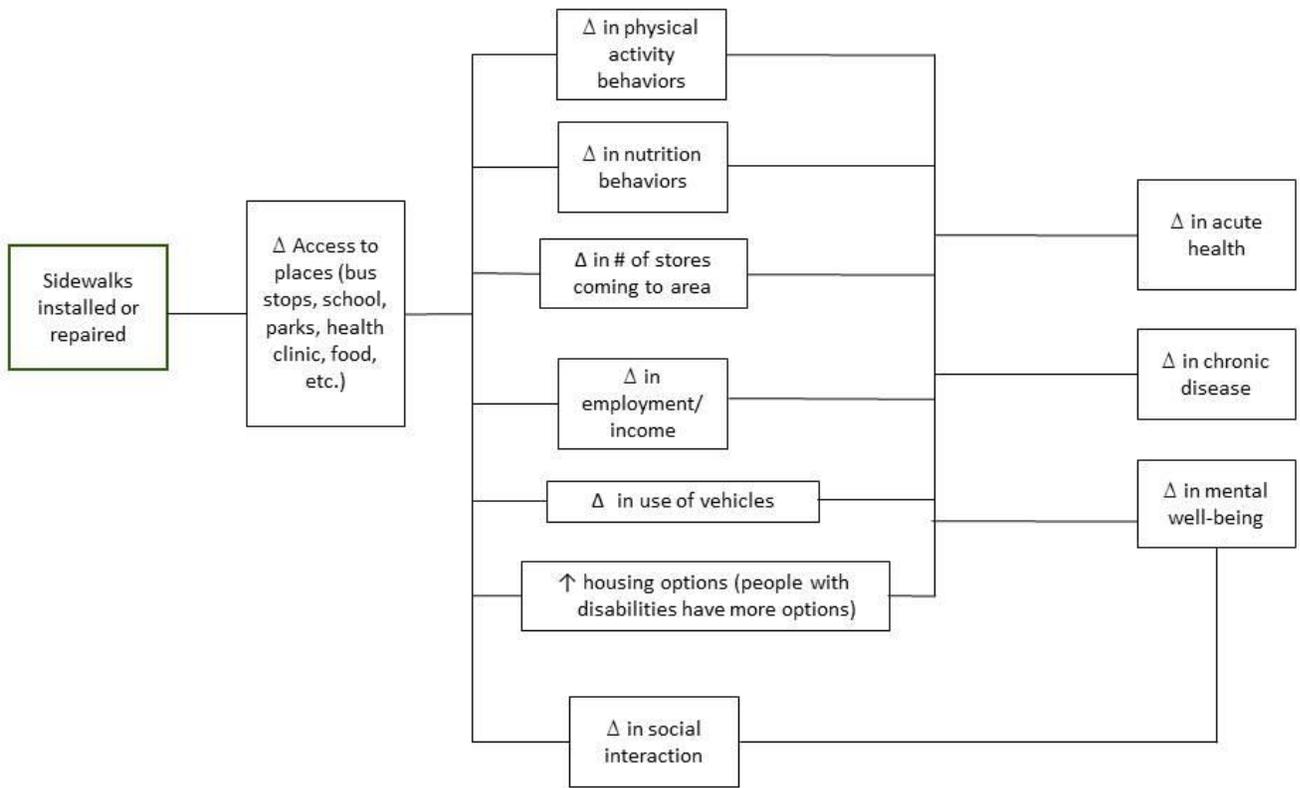
### Crime and Perception of Safety



Δ = change

Lastly, access to places within the zip code and to other parts of the city was considered. It was important to determine whether repairing or installing sidewalks would create access for those in the area, and help people get where they want and need to go easily. In addition, considering the ability to encourage more resources (such as a grocery store) to come to the area was important.

**Creating Access to Places in Northwest Independence**



• Health impacts of chronic disease includes: heart disease, diabetes, hypertension

Δ = change



24 Highway, the south border of the target area for this project.

## Research Questions

The health determinants that guided the HIA were physical activity, sense of ownership, crime and perception of safety, and access to places. The research questions from the different health determinants and pathways diagrams were prioritized in order of importance by stakeholders and through the completion of the scoping worksheets. Listed from highest to lowest priority, the research questions are as follows:

1. How does having sidewalks impact the actual use of sidewalks?
2. How will having sidewalks impact physical activity?
3. How will placement of sidewalks impact value of homes/property and perceived value of neighborhood?
4. How will placement of sidewalks impact social interactions and sense of community in the area?
5. How will having sidewalks impact actual crime?
6. How will having sidewalks impact the perception of safety?
7. How will placement of sidewalks influence other potential resources for the area (i.e. grocery store)?
8. What are potential unintended impacts of creating sidewalks?

## **Section III: Assessment Findings**

The table below summarizes findings for the four health determinants: physical activity, sense of ownership, crime and perception of safety, and access to resources. Judgments were made by IHD after analyzing the literature review, secondary data on existing conditions, results from the community meeting discussions, and results from the walkability assessment surveys. The literature review results in some cases supports putting sidewalks in northwest Independence for health, while other research is unclear. These impacts will apply to residents and visitors to zip code 64053. The explanation for HIA conclusions provided in the table is supplied in depth in the narrative below the table.

**Table 3. Direction, Severity, Likelihood and Confidence in HIA Predictions**

Prediction	Severity of Health Impact Key: ΔΔΔ = Large ΔΔ = Moderate Δ = Small ? = Uncertain “No Effect” = No Effect	Direction Key: Δ = Positive Δ∇ = Mixed ∇ = Negative ~ = No Change ? = Uncertain	Likelihood	Confidence Key: *** = Very ** = Somewhat * = Confident ~ = Not Confident or Unsure
Use of Sidewalks	ΔΔ	Δ	Likely	**
Physical Activity	ΔΔ	Δ	Likely	**
Value of Homes	ΔΔ	Δ	Likely	**
Unintended Impacts	No effect	~	Unlikely	*
Actual Crime	No effect	~	Unlikely	*
Perception of Safety	Δ	Δ	Possible	*
Sense of Community	No effect	~	Unlikely	**
Access to Resources	?	?	Uncertain	~

### Physical Activity

According to the CDC, approximately 69% of adults age 20 and older are considered overweight or obese in the United States.<sup>9</sup> One of the most important factors contributing to the obesity epidemic in the United States is lack of physical activity. The American Heart Association recommends at least 150 minutes of moderate activity each week.<sup>2</sup> People who are physically active tend to live longer and have lower risk for heart disease, stroke, type 2 diabetes, depression, and some cancers.<sup>10</sup> Obesity is lower in places where people use

bicycles, public transportation and their feet and where bicycles, public transportation and their feet are more easily accommodated.<sup>3</sup>



One of the two billboards posted promoting physical activity.

The CHA identified the northwest region of Independence, Missouri as lacking physical infrastructure and health resources, such as sidewalks, that help residents reach physical activity recommendations.<sup>20</sup> Additionally, 70% of the residents in zip code 64053 are overweight or obese, which is above the overall rate in Independence of 67% and the national rate of 69%.<sup>9, 20</sup> The CHA showed that 55% of residents in zip code 64053 did not meet the 2008 Physical Activity Guidelines of 150 minutes of activity per week.<sup>20</sup> This is above the 52% of adults in the United States who did not meet this standard.

Furthermore, residents in this part of the city cited a number of factors as barriers to engaging in physical activity, including lack of sidewalks or sidewalks in disrepair. The two research questions that were examined relating to the impact of sidewalk placement on physical activity include:

1. How does having sidewalks impact the actual use of sidewalks?
2. How will having sidewalks impact physical activity among residents of zip code 64053?

Because the two questions resulted in similar evidence, the two questions are combined into the following question.

### **Does having sidewalks in a neighborhood impact rates of physical activity?**

Sidewalks provide opportunities for walking, and studies have shown that people with access to sidewalks are more likely to walk and meet recommendations for physical activity.<sup>8,18</sup> According to the Surface Transportation Policy Project (STTP), residents are 65% more likely to walk in a neighborhood with sidewalks, thus showing that use comes with presence.<sup>4</sup> The STTP poll also concluded that Americans want to walk and bike more; specifically 55% of Americans would prefer to drive less and walk more.<sup>4</sup> The National Transportation Availability and Use survey found that 30% of pedestrians experience problematic streets due to too few sidewalks.<sup>28</sup>



Train tracks pass through many roads within zip code 64053.

The top walker complaints from the STTP poll are incomplete streets, which are those designed with only cars in mind and often limit transportation choices by making walking, bicycling, and taking public transportation inconvenient, unattractive, and, too often, dangerous.<sup>4</sup> Often incomplete streets have unconnected sidewalks or no sidewalks, bike lanes, or safe routes for alternative transportation.

A review of several studies relating to the built environment and walking found that sidewalks and the connectivity of routes were correlated with improved rates of walking.<sup>26</sup> In addition, pedestrian infrastructure such as sidewalks and crosswalks, and aesthetics show associations with increased recreational walking.<sup>26</sup> The ease of exercising in the neighborhood, which includes presence of sidewalks to exercise on, and frequently seeing others exercise aid people in exercising themselves.<sup>19</sup> Another study found that an aesthetically pleasing and convenient environment, which includes sidewalks and places to easily walk, is associated with an increased likelihood of walking by residents.<sup>2,24</sup>

Relating to children and walking to school, there are also increases in students' walking rates when sidewalks are present. In an evaluation of a Safe Routes to Schools program implemented in California, sidewalk and traffic safety improvements along the walking route increased walking to school rates.<sup>6</sup> Another study showed that lower walk time and greater sidewalk coverage, including presence of sidewalks and connection of sidewalks, related to higher likelihood of walking to school.<sup>14</sup> The reductions in walk and bike times and the increase in sidewalk coverage led to more than twice as many students walking to school (4.5% to 10.3%) and more than three times as many students (3.4% to 11.1%) biking to school.<sup>14</sup> Together, the nonmotorized mode share increased from 7.9 to 21.4 percent.<sup>14</sup> Active transport to school was more likely among residents of areas that were non-rural and had sidewalks.<sup>16</sup>



A family walks home from school along the side of the road because there is nowhere else to walk.

Presence of sidewalks leads to increased physical activity in adolescents as well as adults.<sup>13</sup> There is a significant positive association between the presence and condition of sidewalks and children's physical activity. Sidewalk characteristics that foster walking such as distance to curb and presence of trees as a buffer are positively associated with light-intensity physical activity.<sup>19</sup> Ewing et al found that the proportion of street miles with sidewalks was positively associated with children's rates of walking or cycling to school however there was no association between the presence of bike lanes and children's walking/cycling to school.<sup>15</sup>



Of those who responded they were not walking in their neighborhood, the most common reasons why include:

- No sidewalks
- Speeding drivers
- Unleashed pets (dogs)
- Worried about personal safety
- Poor lighting

Another question on the survey asked, “What encourages or discourages you from being active outside, and why?” The top five responses referred to factors that discouraged residents from being active outside. They include:

- Broken or overgrown sidewalks
- Fast drivers/cars
- Animals
- Poor/no lighting
- Crime

The vast majority (89%) of respondents stated that if sidewalks were installed or repaired in their neighborhood, they would use them. The survey was also used to gauge where residents are currently walking to in northwest Independence and where they would like to be able to walk. The top locations where people are currently walking include:

- Park
- Gas station
- Community center
- Fairmont area
- Church

The locations where people would like to walk include both common areas and along roads. The common areas were the park and around the Fairmont area in general. The top roads listed where people would like to be able to safely walk along include Kentucky Avenue, 24 Highway, Ash Avenue, Arlington Street, and Huttig Avenue.

### Predictions

Depending on where sidewalks are placed in northwest Independence, it is predicted that students who walk to school, residents who ride the bus, anyone living in the area who utilizes the resources in the area and exercisers in the area will use them. Studies have shown that people are 65% more likely to walk if there are sidewalks. The 64% of residents who currently walk or run around the neighborhood would continue to walk or run and utilize sidewalks when available. Of those who did not walk or run in the area, the main reason was due to no sidewalks. Eighty-nine percent (89%) of residents stated that if there were sidewalks installed or repaired in their neighborhood, they would use them. Those

who are currently walking to the park, gas station, community center, around the Fairmount area, or to church will continue to walk with or without sidewalks, but sidewalks would allow a safer trip for those residents. All of this suggests if sidewalks were available, they would be utilized.



Cars often drive alongside walkers, sometimes slowing down, sometimes not.

If sidewalks are placed in northwest Independence, residents will increase their rates of physical activity by 30 minutes per week. Based on the literature review and responses from the walkability assessment survey, the presence of sidewalks increases physical activity and leads to greater use of them as opposed to the road and other walkways. Several studies have shown that sidewalks and greater walkability of a neighborhood are an important factor to increasing physical activity, one even showing that people in walkable neighborhoods averaged 52 more minutes of physical activity per week. We do not predict as drastic of an increase in zip code 64053 as in this study because in the case of the study, walkability

included having sidewalks as well as other factors. However, we predict that sidewalks will add 30 more minutes of walking for residents in the area even without addressing other walkability issues. The main factor that discourages residents from walking in northwest Independence based on the walkability assessment survey is broken or overgrown sidewalks. Because currently 55% of residents do not reach the recommended 150 minutes of physical activity per week, it would be fairly significant to add another 30 minutes.

## Sense of Ownership

Sense of ownership is the feeling that something belongs to someone. With this comes a sense of pride and belonging to where one lives and what they own, whether or not it is actually owned by them; renters can still have a sense of ownership over their house and their neighborhood. When conducting the assessment and determining the recommendations for the HIA, it was important not to inflict additional cost and responsibilities for residents of zip code 64053. We set out to gauge current pride in the places residents lived and see how this would change with the placement of sidewalks, allowing for a better streetscape and appearance of the neighborhood.

One of the indicators chosen in the scoping stage for “sense of ownership” was home value. The median value for a home in zip code 64053 is \$68,200. The median rent paid is \$436 per month. The total population in zip code 64053 is 4,711 and the total number of households

is 1,921. Forty-eight percent of those who live in this zip code are renters. The homeownership rate is 52%.

The two research questions that were examined relating to how placement of sidewalks will influence sense of ownership include:

1. How will placement of sidewalks impact value of homes/property and perceived value of neighborhood?
2. What are the potential unintended impacts of creating sidewalks?

### **How will placement of sidewalks impact value of homes/property and perceived value of neighborhood?**

According to Walking the Walk CEOs for Cities, sidewalks increase property values. Walkability adds anywhere from \$4000 to \$34000 to home values.<sup>9</sup> A study by the Urban land Institute shows homebuyers are willing to pay more for homes in walkable neighborhoods.<sup>18</sup> A Real Estate Research Corporation analysis shows that property values rise fastest in pedestrian friendly areas.<sup>18</sup> Additionally, sidewalks improve customer traffic for retail businesses.<sup>18</sup> According to City of Independence Community Development and NWDC, on a street block in zip code 64053 where houses were recently renovated, part of which included placement of sidewalks in front of the houses, property value went up 10%.

### **What are potential unintended impacts of creating sidewalks?**

In the scoping phase of this HIA, stakeholders raised considerations such as once sidewalks are installed, it would be the responsibility of the owner to maintain the sidewalks, how placement of sidewalks may affect the upkeep of lawns, trees, and brush, if residents might be concerned about the drainage ditches installed, and if having sidewalks placed in the area might

increase citing of code violations due to more city involvement in the neighborhood. When these issues were raised at community meetings for the HIA to prioritize the scope of research, residents did not express concern, leading to the conclusion that there are no perceived unintended impacts of creating sidewalks. The literature review and the walkability assessment survey results also support the community scoping meeting findings that residents are unconcerned about these issues.



The abrupt end of a sidewalk along a street.

### Community Survey Results

On the walkability survey, when asked, "Is walking in your neighborhood a pleasant experience?" 67.2% responded no.



Some of the problems that arose from the survey related to perceived value of the neighborhood include vandalism, a dirty appearance, the need for more grass, flowers, trees, or shade, and sidewalks that were broken or cracked. Additionally, more comments were made on the lack of sidewalks and the need for neighborhood cleanup of overgrown plants, grass, and tree, undesirable or rundown properties, the presence of trash, and graffiti.

**Table 4. Streets listed most often as unpleasant to walk**

Response Percentage	Street
16%	Ash
12%	Cedar
22%	Kentucky

### Predictions

If sidewalks are placed in northwest Independence, it is predicted property values will increase by 10%, or on average \$6,820.

If sidewalks are placed in northwest Independence, it is predicted there will be no major unintended impacts. The literature review showed little to no research about placement of

sidewalks creating unintended problems in neighborhoods and there was no mention of unintended impacts to consider in the walkability assessment survey responses or community meetings. Thus, the issue seems to be unstudied but does not seem to be a large concern to residents of zip code 64053.

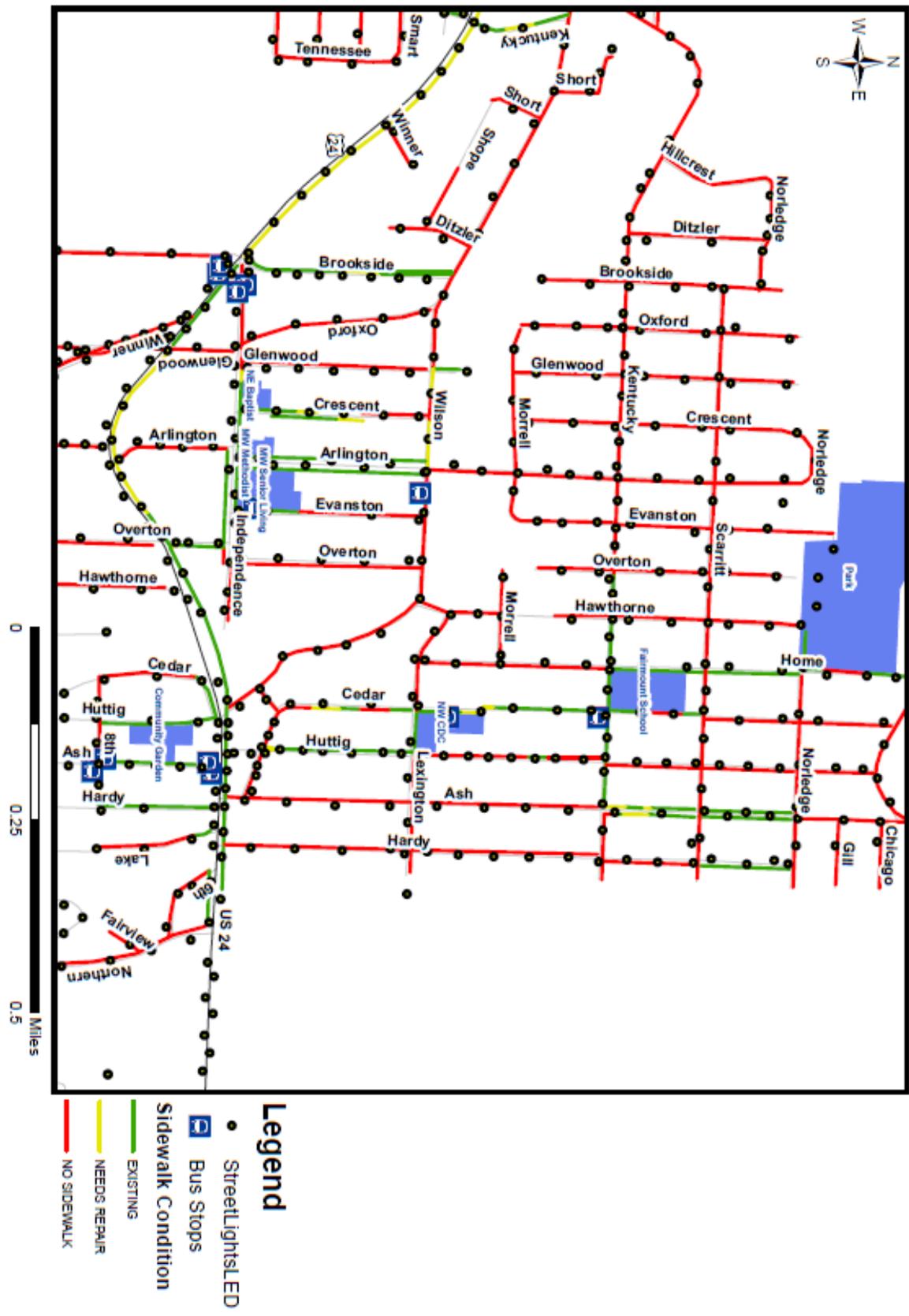
## Crime and perception of safety

Safety concerns are another barrier to physical activity in zip code 64053. Respondents of the CHA in zip code 64053 were very unlikely to indicate they felt safe walking in their neighborhood.<sup>20</sup> More than 50% of CHA respondents in 64053 did not feel it was safe to walk in their neighborhood. The top three reasons respondents reported not feeling safe walking in their neighborhood were: no sidewalks or sidewalks in bad shape, fear of crime, and poor lighting.<sup>20</sup>



The end of Fairmount trail leads to a four-way with no sidewalks to continue walking along.

On the following page is a map of current street light placement in the area. With the exception of a few streets, streetlights are present at close intervals. However, no existing data was available as to whether they were working lights or how broad the coverage of the light was. Collecting primary data such as this was beyond the scope of this HIA.



Current Sidewalk Situation

The two research questions examined relating to how placement of sidewalks will influence crime and perception of crime include:

1. How will having sidewalks impact actual crime in the zip code?
2. How will having sidewalks impact the perception of safety?

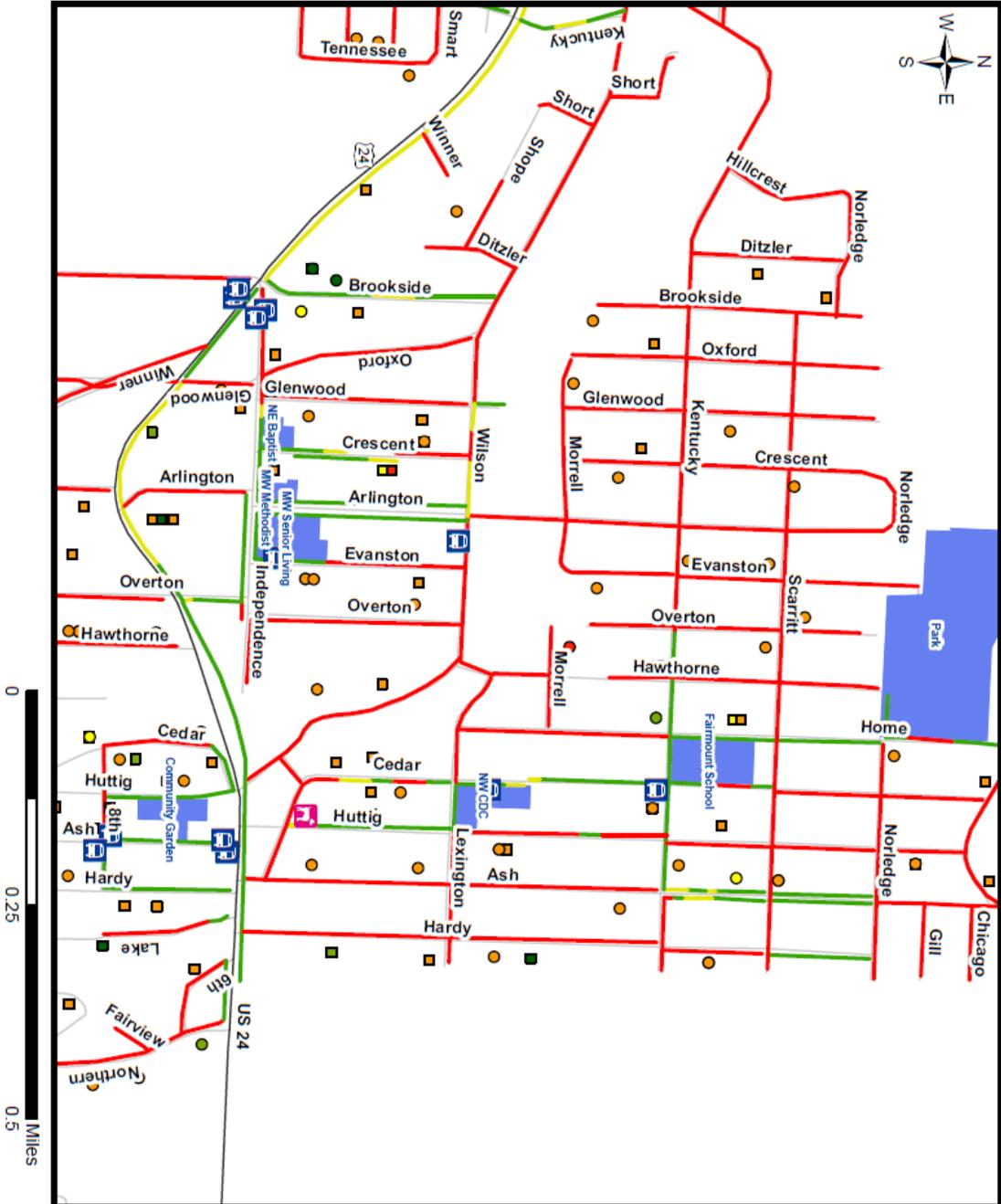
Again, because the two questions resulted in similar evidence, the questions are combined into the following question.

### **How will having sidewalks impact actual crime and perception of safety in northwest Independence?**

Studies show there may be a reduced crime risk through increased pedestrian traffic.<sup>8, 18</sup> However, in most cases, actual crime did not emerge as a barrier to vigorous exercise and there were little to no association between perceived safety and children's physical activity.<sup>13, 19</sup> Findings for safety items, such as footpaths being safe, high levels of crime, unattended dogs, how safe it is to walk alone, heavy traffic, or streetlights, demonstrated few associations with physical activity.<sup>19</sup>

On the following page is a map of specific crime activities within zip code 64053 in 2013 and 2014, overlaid with the sidewalk presence and walkability (green meaning there are walkable sidewalks, yellow meaning unwalkable sidewalks, and red meaning no sidewalks present). In two years there were 93 assault, robbery, or sex offense crimes in zip code 64053; 81 were simple or aggravated assaults, seven were forcible rape or a sex offense, and five were robbery offenses. The occurrence of criminal activity did not appear to vary based on the presence of walkable, unwalkable, or no sidewalks.

Current Sidewalk Situation



Legend

- Bus Stops
- Dangerous Dogs
- 2013 Crime**
  - AGGRAVATED ASSAULT
  - ROBBERY
  - SEX OFFENSE
  - SIMPLE ASSAULT
  - FORCIBLE RAPE
- 2014 Crime**
  - AGGRAVATED ASSAULT
  - ROBBERY
  - SEX OFFENSE
  - SIMPLE ASSAULT
  - FORCIBLE RAPE
- Sidewalk Condition**
  - EXISTING
  - NEEDS REPAIR
  - NO SIDEWALK

Perception of safety with sidewalks had a bigger impact on physical activity. People who perceived their neighborhood to be unsafe were more likely to be physically inactive.<sup>19</sup> A significant association was found between perceived safety from crime and physical activity behavior.<sup>19</sup> In addition, perceiving footpaths or sidewalks as safe for walking were significantly associated with increased physical activity.<sup>5</sup> Perceptions of an attractive, safe and interesting neighborhood were shown to be associated with walking for recreation.<sup>17</sup> It is important to note, however, there was no difference between perceived crime in low and high-walkability neighborhoods.<sup>27</sup> A study by Knoblauch et al. regarding pedestrian-vehicle crashes found when comparing urban streets with and without sidewalks, pedestrian crashes were more than two times as likely to occur at locations without sidewalks.<sup>23</sup>

### Community Survey Results

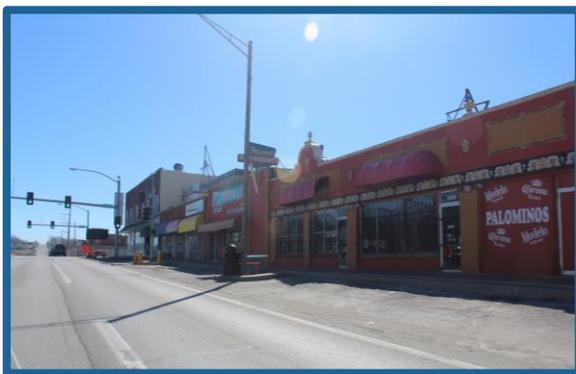
More than 50% of CHA respondents in zip code 64053 did not feel it was safe to walk in their neighborhood.<sup>20</sup> Some of the walkability assessment survey findings support this idea. People noted vandalism, scary dogs or suspicious people, and the walkway not being well lit or having hiding places as reasons they did not like to walk or did not feel safe walking.

### Predictions

If sidewalks are placed in northwest Independence, it is predicted there will be no change in actual crime. The results of the literature review suggest that actual crime is not impacted based on location of a sidewalk. Additionally, current crime rates in zip code 64053 do not seem to be affected by whether or not there are sidewalks along the roads.

If you put sidewalks in northwest Independence, it is predicted the perception of safety of residents and visitors will stay the same or slightly improve. Literature review about sidewalks and safety provided mixed results, but through the walkability assessment survey, community members gave the impression that perception of safety would increase with the presence of sidewalks. However, confidence in this prediction is low and if there were a positive shift, it would not be very large.

## Access to resources in northwest Independence



Palomino's, a Mexican restaurant along 24 Highway within zip code 64053.

The CHA concludes residents in northwest Independence lack access to a safe area for physical activity and report being unsatisfied with the physical infrastructure and lack of health resources in the area.<sup>20</sup> This is shown in northwest Independence where residents reported being unsatisfied with the physical infrastructure, including bike lanes on roads, bike racks, and sidewalks. They were also unsatisfied with the lack of

health resources, including access to healthy foods, community gardens, parks, and recreational programs in the area. Sidewalk placement within this area may lead to increased access to resources, such as parks, the community center, a health clinic, and school and increased connectivity to other neighborhoods where there are more retail options than in zip code 64053.

It was vital to determine whether repairing or installing sidewalks would create greater access to goods and services for those in the area, and if sidewalks would help people get where they want and need to go easily. In addition, it was important to determine whether the placement of sidewalks would encourage more resources (such as a grocery store) to come to the area.

The built environment is the first environmental and social determinant that could change based on the outcomes of the HIA. The placement of sidewalks can increase the walkability of the region and create access to city parks, walking trails, the school, and other resources in the area. Having safe and walkable routes may encourage an environment of increased physical activity, including walking, running, and biking. It may also lead to easier access to other places in the area where people can be physically active.



An elementary school in the area, Fairmount Elementary.

The current resources in the area include the NWCDC Community Center, senior living apartments, three restaurants, a park, an elementary school, Fairmount Family Medical Care clinic, several churches, bus stops to connect people to other places throughout the city, a gas station, and a few stores and auto shops. There are few pedestrian-accessible connections between the resources; the community is automobile-centric. Additionally, the main resource that residents have expressed need for in zip code 64053 is a grocery store.



Fairmount Park, a local place where many families bring their children to play.

The two research questions that were examined relating to how placement of sidewalks would influence access to resources include:

1. How will placement of sidewalks impact social interactions and sense of community in the area?
2. How will placement of sidewalks influence other potential resources in the area?

### **How will placement of sidewalks impact social interactions and sense of community in the area?**

Relationships with other residents can be a valuable resource for health. Sidewalks allow for an enhanced sense of community through better connections to neighbors and businesses.<sup>18</sup> Additionally, emotional satisfaction with the neighborhood was related to more moderate physical activity and less sitting among women.<sup>7</sup>

### **How will placement of sidewalks influence other potential resources for the area?**

The main resource that residents feel is missing from the area is a grocery store. Determining whether creating and repairing sidewalks would specifically incentivize a grocery store to locate in zip code 64053 could not be determined. However, sidewalks would create safer ways to access current resources in the area for more residents, which would be beneficial. In creating the recommendations for this HIA, residents identified the sidewalk by the school, the route to the park, and the route to the Fairmont area as places where putting sidewalks or repairing existing sidewalks would enable them to get to places that are important to them. Certain sidewalk placement could also improve access to bus stops to allow access to other resources within the city.

### **Community Survey Results**

The top resources that residents currently walk to include:

- Park
- Gas station
- Community center
- Fairmont area
- Church

Additionally, residents would like to have better pedestrian access to the park and around the Fairmont area. The top roads listed where people would like to be able to safely walk along included Kentucky Avenue, 24 Highway, Ash Avenue, Arlington Street, and Huttig Avenue.

### Predictions

If sidewalks are placed in northwest Independence, it is predicted that social interactions and sense of community will stay the same. Based on the literature review and survey findings, sidewalk placement does not have much of an impact on social interactions and sense of community. There is not a significant enough increase or decrease to this factor when determining sidewalk placement. Though not strong, there is a chance if sidewalks were present to allow for easier physical activity and greater social interactions, residents would be more satisfied with their neighborhood.

If sidewalks are placed in northwest Independence, it is unknown whether retail and service resources will increase or decrease. No correlation between creation or maintenance of sidewalks and an increase in goods and services locating in an area could be found. However, providing access to bus stops will create access to other places in Independence. Better access to parks, gas stations, the community center, the Fairmount area, and churches currently in the area could be provided through creating or maintaining sidewalks that connect these resources.

## **Section IV: Recommendations**

An important part of the HIA process is to create recommendations. For this HIA, the recommendations focus on how to ensure the positive health impacts that have been predicted which are related to physical activity, access, sense of ownership, and crime and perception of safety. The recommendations focus on exactly where to place future sidewalks.

In summary, the positive impacts of the creation and maintenance of sidewalks in zip code 64053 are:

- Decreased rates of obesity
- Increased rate of physical activity
- Increased use of sidewalks
- Increased property value
- Increased resident responsibility
- Increased pride in neighborhood
- Increased perception of safety
- Better streetscape appearance
- Increased access to community resources

Negative impacts of the creation and maintenance of sidewalks in zip code 64053 include:

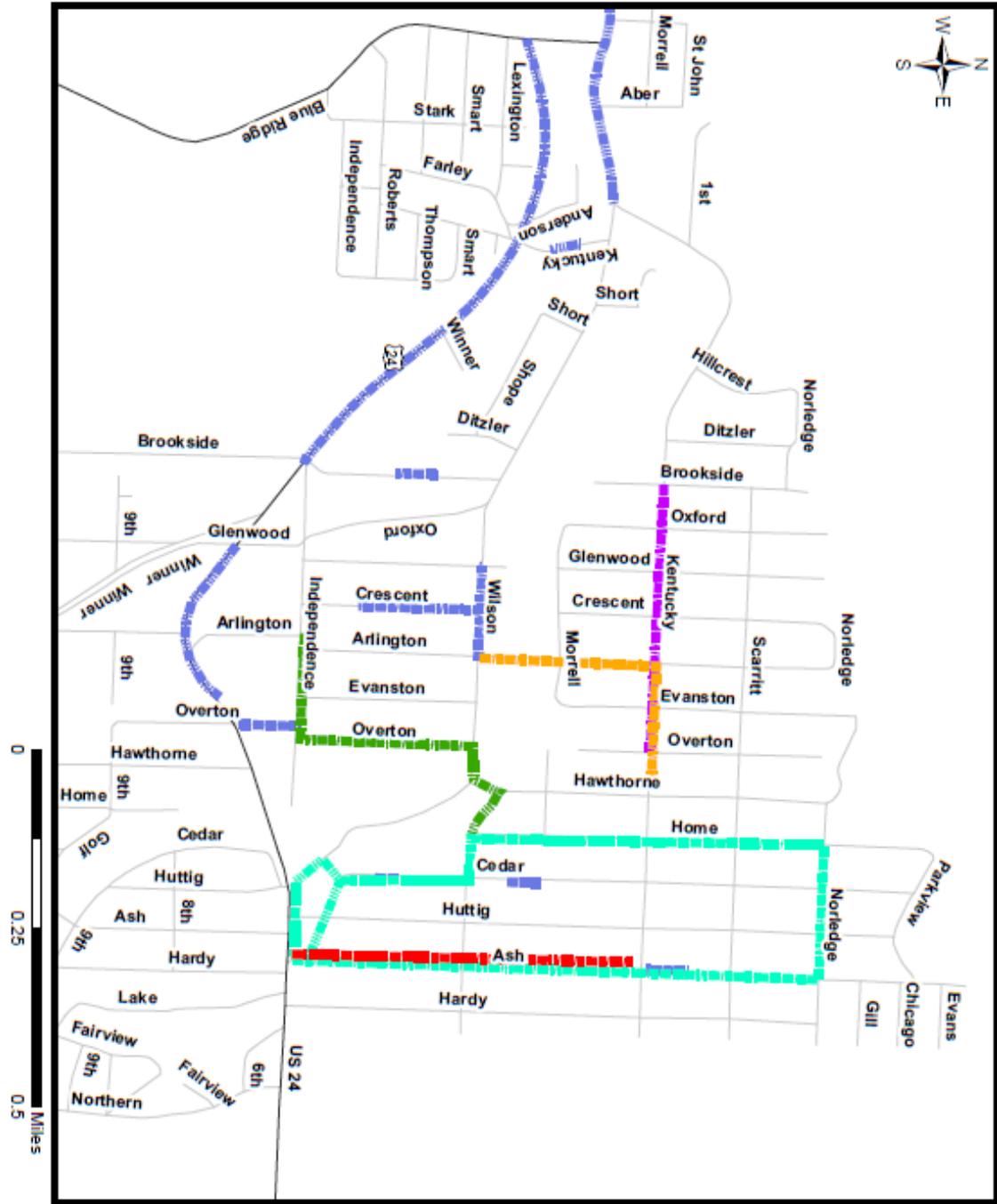
- Increased resident responsibility
- Cost of implementation

The placement recommendations are derived from meetings with community residents in zip code 64053, the walkability survey sent to residents in zip code 64053, and the stakeholders of the project. The feasibility of carrying out the recommendations must also be considered. The recommendations related to sidewalk placement have been ranked based on results of a survey of residents and stakeholders in order of highest to lowest priority.

## Recommendations Related to Sidewalk Placement

1. Installation of sidewalks to create a link to all major resources within the Fairmount Neighborhood. This would include sidewalks from the Fairmount shopping district (along 24 Highway from Ash Avenue to Wilson Road) to the NWCDC to Fairmount Elementary School to Fairmount Park along Norledge Avenue to Ash Avenue and down to 24 Highway.
2. Installation of a sidewalk on Ash Avenue from the Ash Avenue and Kentucky Avenue intersection to the Ash Avenue and 24 Highway intersection.
3. Installation of sidewalks to connect Mount Washington Neighborhood and Fairmount Neighborhood via Arlington Avenue and Kentucky Avenue.
4. Installation of a sidewalk on Kentucky Avenue from the Kentucky Avenue and Brookside Avenue intersection to the Kentucky Avenue and Overton Avenue intersection.
5. Installation of sidewalks to connect NWCDC to the Mount Washington Senior Living.
6. Fix areas where sidewalks are present but in disrepair or unwalkable and include maintenance of current sidewalks.

Recommended Options



- Legend**
- 24 Hwy to Kentucky
  - Fairmount Loop
  - NWCDC to Sr Living
  - Ermt to Mt. Wash
  - Brksd to Overton
  - Repair Existing

## Recommendations Not Related to Sidewalk Placement

1. Create a marked walking path/bike lane on one side of the roads and space for parking on the other. This may be a less expensive option than any of the first six recommendations.
2. Ensure lighting is adequate.
3. Place benches along sidewalks and commonly walked routes.

In order to help with any prioritization or phased implementation, a table has been created rating the level of health impact of each recommended sidewalk placement. We considered community priorities, strength of the literature, and confidence in our predictions in order to estimate the strength of the positive health impact for the various health determinants (listed in the columns).

**Table 5. Strength of Health Impacts of Nine HIA Recommendations**

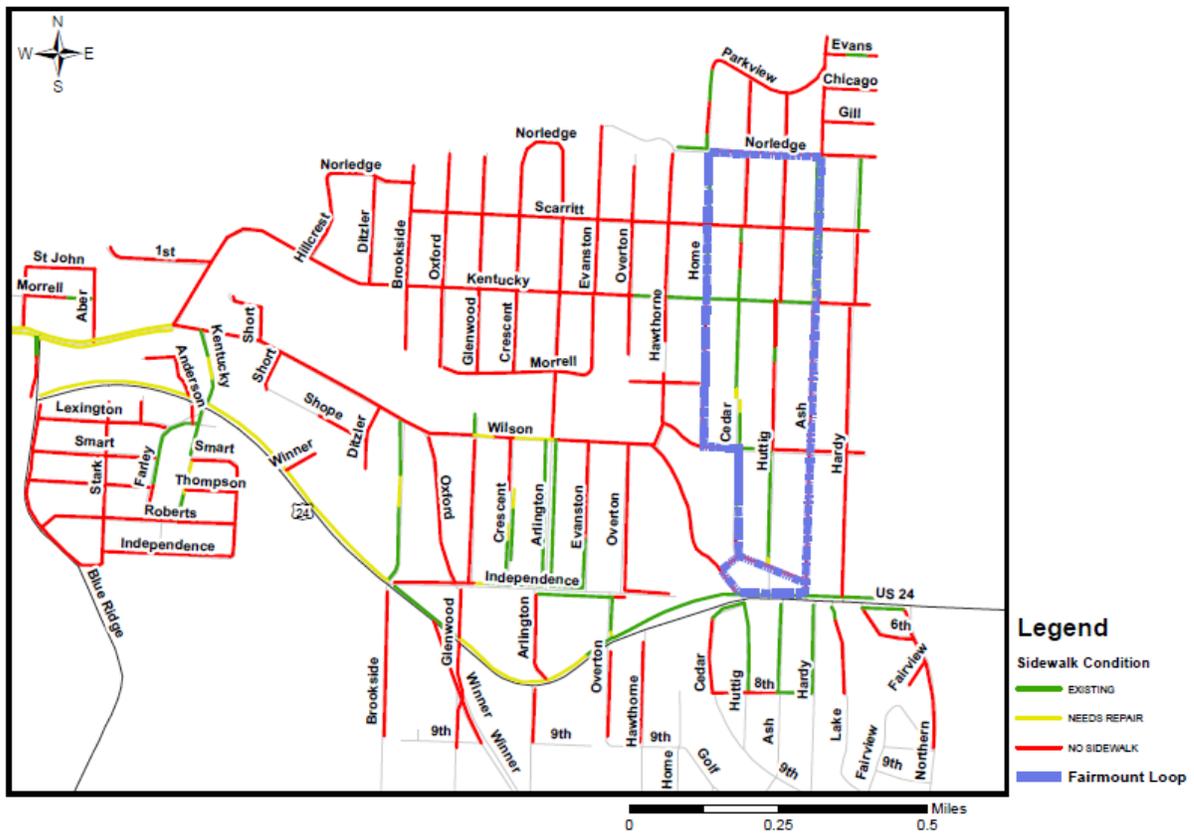
Recommendation	Physical Activity	Collision Safety	Access to Retail and Services	Crime/Safety	Social Connections	Neighborhood Image
1 Fairmont Neighborhood Link	****	***	**	***	***	****
2 Ash/Kentucky to Ash/24	****	**	***	**	***	****
3 Connect Mt. Washington neighborhood and Fairmount Neighborhood via Arlington and Kentucky	***	*	**	***	***	***
4 Kentucky/Brookside to Kentucky/Overton	***	**	*	*	**	****
5 NWCDC to Mt. Washington Senior Living	**	*	*	*	**	***
6 Fix and Maintain Existing Sidewalks	*	**	*	○	○	*
7 Create Marked Walking Path/Bike Lane on One Side; Parking Lane on Other Side	*	*	○	*	*	**
8 Ensure Lighting is Adequate	○	*	*	**	○	*
9 Place Benches along Sidewalks and Commonly Walked Routes	*	○	*	*	**	*

\*\*\*\* = Strongest positive impact  
 \*\*\* = Stronger positive impact  
 \*\* = Strong positive impact  
 \* = positive impact  
 ○ = no positive or negative impact

Below are detailed descriptions of each recommended sidewalk placement and other recommendations. The detailed description includes the community priorities, the primary action agency, a suggested timeline, and any potential downsides to the recommendation.

- Sidewalk placement to create a link to all major resources within the Fairmount Neighborhood.** This would include sidewalks from the Fairmount shopping district (along 24 Highway from Ash Avenue to Wilson Road) to the NWCDC to Fairmount Elementary School to Fairmount Park and back to the shopping district.

**Fairmount Loop**



**Community Priorities**

Input from community meetings and walkability surveys revealed the top five places people reported currently walking to include Fairmount Park, NWCDC, around the Fairmount area in general, to the gas station, and to church. This sidewalk placement would include many of these locations and create a better route to get to and from each of these places.

The community and the walkability survey also determined that the top places people reported they would like to walk to include around the Fairmount area in general. This

sidewalk placement would create a route for people to more easily access retail and services.

**Potential Downsides of this Recommendation**

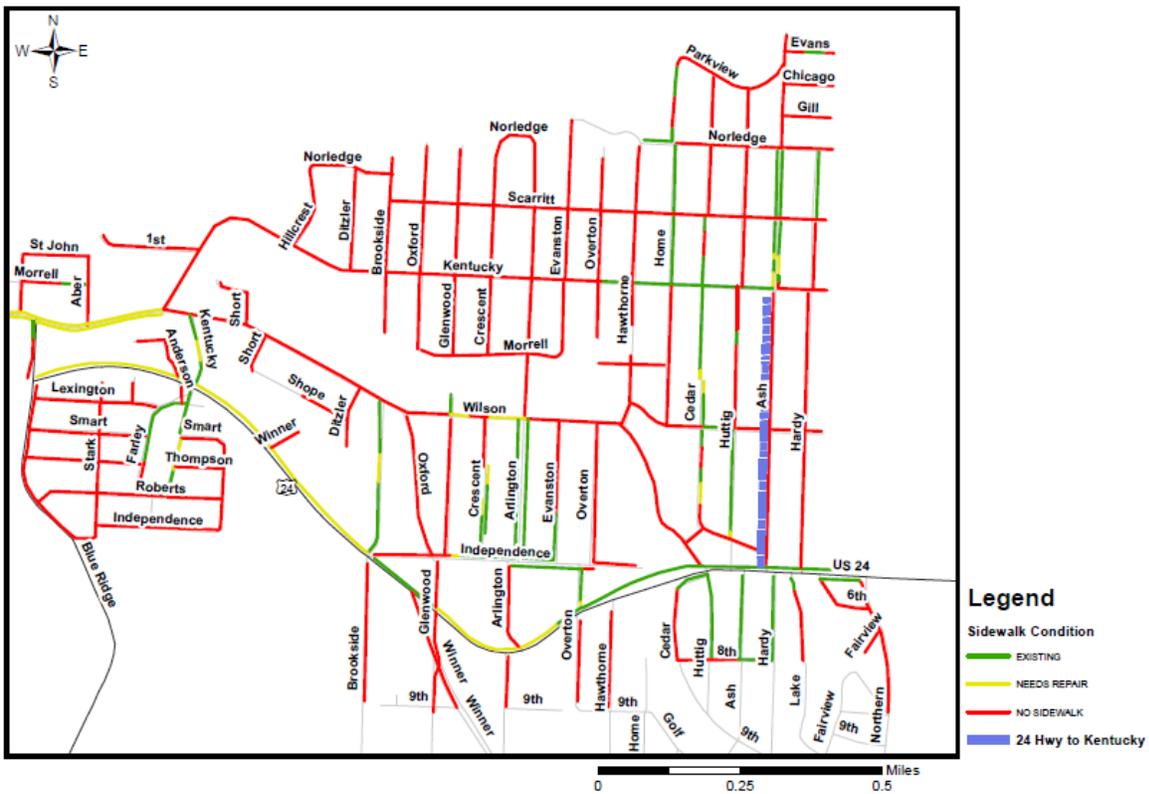
A negative aspect of sidewalk placement along this route is the size of the project. This would be a large project to fully connect all four locations.

**Primary Action Agency:** City of Independence Public Works

**Suggested Timeline:** Started by the end of 2016

**2. Sidewalk placement on Ash Avenue on one or both sides from Ash and Kentucky intersection to Ash and 24 Highway intersection.**

24 Hwy to Kentucky



### Community Priority

Ash Avenue was one of the top four streets mentioned as having issues related to walkability based on the walkability survey sent to residents and community meetings with residents of zip code 64053. Ash Avenue was a top response for a street where many residents currently walk, and a top response for a street where residents would like to walk as it serves as one of the major connectors to 24 Highway.

This is a recommendation because of the access to resources it could provide, amount of people that could be affected, and its prevalence in the surveys, which shows community support. Through the stakeholder meetings and meetings with community groups in the area, it was advised to start with sidewalk placement along north/south routes so that they could serve as destination routes as opposed to connector routes.

### Evidence Supporting Health Impact Prediction

Since Ash Avenue serves as a major north/south road in the area, it is one of the only straight connections to 24 Highway. Along 24 Highway are many resources that are not available within the neighborhoods in zip code 64053, such as a gas station, restaurant, health clinic, etc. A sidewalk here would provide safe access to 24 Highway and more resources. A study titled *Environmental Correlates of Physical Activity in a sample of Belgian Adults* indicated that walking and moderate intensity activities were related to sidewalks and access to shops.<sup>6</sup>

The positive impacts of sidewalk placement along Ash Avenue include decreased use of the road for walking. This would lead to increased safety of pedestrians due to a decreased risk of collisions. Sidewalk placement would increase the property value of houses along Ash Avenue. In addition, it would provide a better streetscape appearance along Ash Avenue for residents and visitors to improve the overall neighborhood image of zip code 64053.

### Potential Downsides of this Recommendation

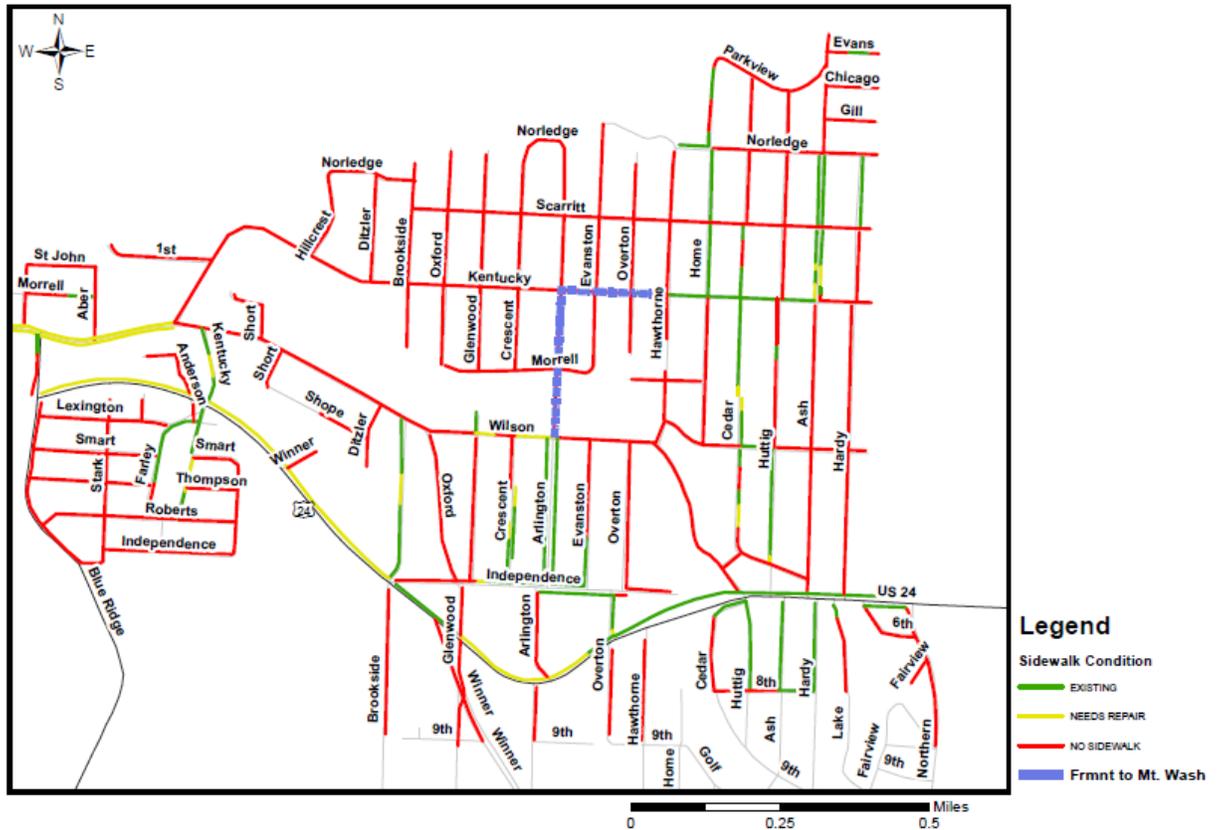
A negative aspect of sidewalk placement along Ash Avenue is that it is located on the far east side of zip code 64053 and may not benefit the western population. Sidewalks along Ash Avenue may not be beneficial if people cannot easily get to Ash Avenue to utilize them. Some other items to consider with feasibility of sidewalk placement along Ash Avenue include the drainage ditches along the road (if any), homeowner/renter opinion, road width, and easement.

**Primary Action Agency:** City of Independence Public Works

**Suggested Timeline:** Started by July 2016

### 3. Sidewalk placement to connect Mount Washington Neighborhood and Fairmount Neighborhood via Arlington Avenue and Kentucky Avenue.

Fairmount to Mt. Washington



#### Community Priorities

As of now, there is no connection between the Fairmount Neighborhood and the Mount Washington Neighborhood, two major neighborhoods in zip code 64053. This would provide a route, although not a direct link to resources between the neighborhoods, for easier access between the two areas. This connection could lead to increased safety of pedestrians and residents.

Arlington Avenue was one of the top five streets mentioned as having issues related to walkability based on the walkability survey and community meetings held with residents of zip code 64053. Arlington Avenue was a top response for a street where residents would like to walk as it serves as a north/south destination road.

#### Evidence Supporting Health Impact Prediction

Sidewalk placement from the Wilson Road and Arlington Avenue intersection to the Arlington Avenue intersection and Kentucky Avenue and along Kentucky Avenue to Overton

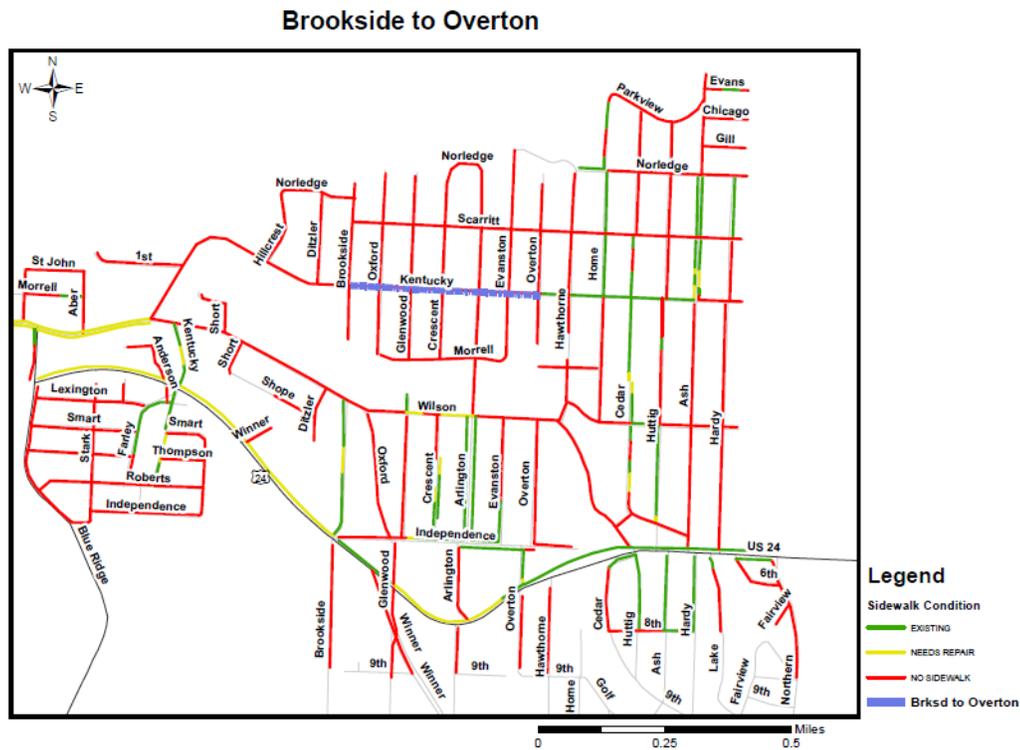
Avenue and Kentucky Avenue will create a walkable connection, though not the most direct.

Arlington Avenue is another major north/south road in the zip code, and connects residents to 24 Highway. Along 24 Highway are many resources not available within the neighborhood setting within zip code 64053. A sidewalk here would provide access to 24 Highway and more resources. The positive impacts of sidewalk placement along Arlington Avenue include a decreased use of the road for walking. This would lead to increased safety of pedestrians. Sidewalk placement would increase the property value of houses along Arlington Avenue. It would also provide better neighborhood appearance along Arlington Avenue for residents and visitors to improve the overall image of zip code 64053.

**Primary Action Agency:** City of Independence Public Works

**Suggested Timeline:** Started by July 2016

**4. Sidewalk placement on Kentucky Avenue from Kentucky Avenue and Brookside Avenue to Kentucky Avenue and Overton Avenue.**



**Community Priorities**

Sidewalk placement along Kentucky Avenue would provide safe access along one of the busiest streets in the area. There is a lot of foot traffic along Kentucky Avenue, and with the lack of sidewalks, much of that foot traffic is on the road. Kentucky Avenue was one of the

top four streets brought up as having issues related to walkability based on the walkability survey and community meetings with residents of zip code 64053. Kentucky Avenue was also a top response for a street where many residents currently walk, and a top response for a street where residents would like to walk as it serves as one of the major east/west connector roads in the zip code. Throughout the surveys and community meetings, there were numerous mentions of drivers driving too fast, driving through stop signs, poor visibility, and lack of sidewalks along Kentucky Avenue.

This is a recommendation because of the access to resources it could provide and amount of people affected. It was also mentioned often in the surveys, which shows community support. Access to the school and the bus stop would help many residents get to places they need to go. Furthermore, as Kentucky Avenue is one of the busiest streets in the area, it would benefit a large amount of residents.

### **Evidence Supporting Health Impact Prediction**

The positive impacts of sidewalk placement along Kentucky Avenue include a decreased use of the road for walking, which would lead to increased safety of pedestrians. The local elementary school in the area is located on Kentucky Avenue so this recommendation would provide greater safety for youth in the zip code as well. Additionally, it would provide better access to a bus stop located along Kentucky Avenue. This bus stop provides residents access to other resources within the zip code and throughout Independence. The same *Environmental Correlates of Physical Activity in a sample of Belgian Adults* study mentioned earlier also indicated walking and moderate intensity activities were related to sidewalks and access to transportation facilities.

Sidewalks along Kentucky Avenue would allow a better sidewalk connection to the school so students who walk or bike to school can do so safely. This may also lead to an increase in percentage of students who walk or bike to school. It would also provide a better streetscape appearance along Kentucky Avenue for residents and visitors to improve the overall image of zip code 64053. A study by Boarnet et al found that in their evaluation of a safe-routes-to-school program, children who passed areas in which traffic control methods were installed, such as crosswalks, speedbumps, stop signs, traffic control officers, and sidewalks, were more likely to walk or cycle to school than children who did not pass such areas.<sup>5</sup>

In an evaluation of a safe-routes-to-school program, it was found that children who passed areas in which traffic control methods were installed were more likely to walk or cycle to school than children who did not pass such areas.<sup>5</sup>

### **Potential Downsides of this Recommendation**

A negative aspect of sidewalk placement along Kentucky Avenue is that it is an east/west road and serves more as a connector street than a destination street. This sidewalk placement would, for the most part, only benefit residents of Fairmount neighborhood. Another negative outcome to consider is that placing sidewalks along Kentucky, although

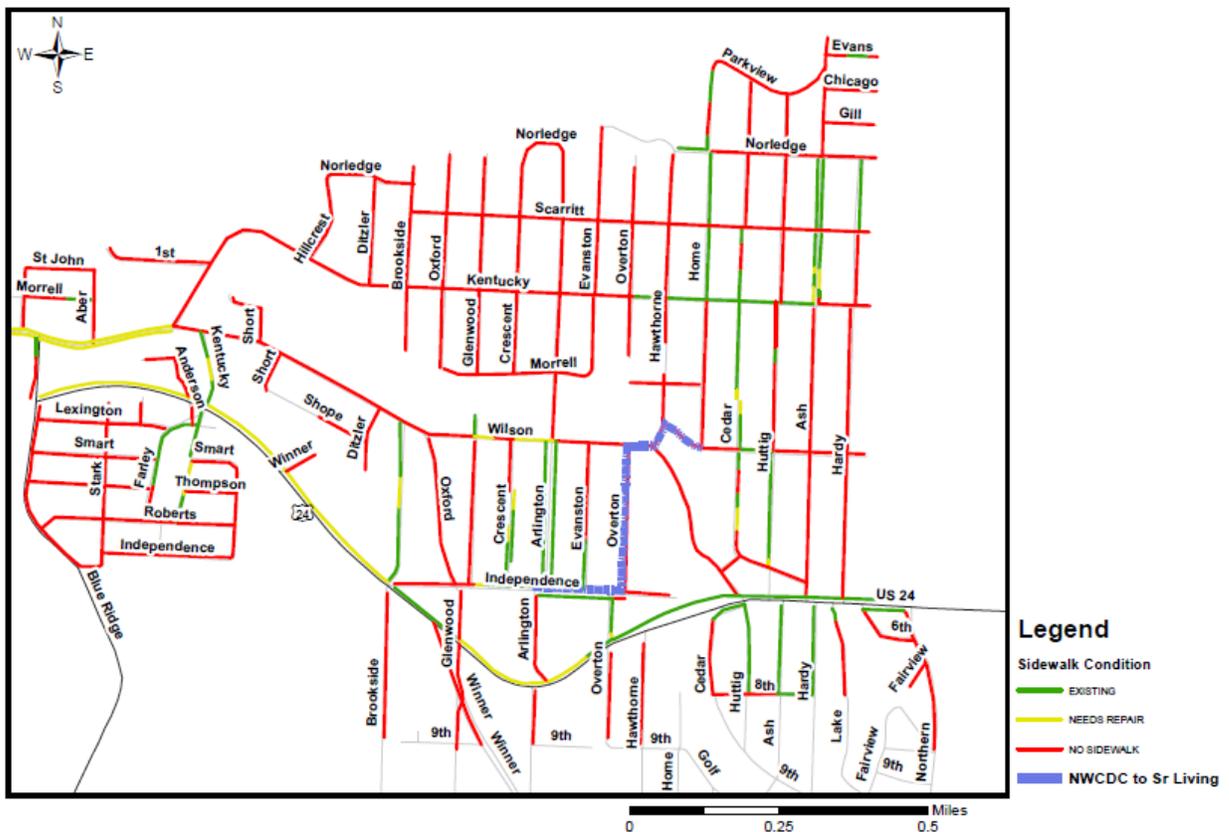
providing a safer place to walk, may lead to lessened safety if drivers do not follow driving rules and pay attention to pedestrians. Some other items to consider with feasibility of sidewalk placement along Kentucky Avenue include road width, easement, and the cost and size of the project.

**Primary Action Agency:** City of Independence Public Works

**Suggested Timeline:** Started by July 2016

**5. Sidewalk placement to connect Northwest Communities Development Corporation (NWCDC) to the Mount Washington Senior Living.**

NWCDC to Sr Living



**Community Priorities**

As of now, there is no connection between the Fairmount Neighborhood and the Mount Washington Neighborhood, two major neighborhoods in zip code 64053. This would provide a direct route for easier access between the two areas as well as provide a connection between two resources within the areas. Many people from the Mount Washington Neighborhood utilize services at NW CDC and a sidewalk from NW CDC to

Mount Washington Senior Living would provide a connection that could lead to increased safety of pedestrians and residents due to a lowered risk of collision.

This is a recommendation because of the connection it would provide to the region. It was suggested by residents of Mount Washington Senior Living, employees of NWCDC, residents who visit NWCDC, and by stakeholders of the HIA. A major complaint by residents is those using a scooter, wheelchair, pushing a stroller, etc., cannot get around easily. This connection via Overton Avenue instead of Evanston Avenue was selected due to a greater presence of streetlights on Overton Avenue.

### **Evidence Supporting Health Impact Prediction**

The positive impacts of sidewalk placement connecting these two areas include a decreased use of the road for walking. This area is hilly and has many curves where driver visibility can be low. Fast drivers/cars were a major concern throughout this area as a discouragement for being active outside. It could also lead to an increased perception of safety through this area.

### **Potential Downsides of this Recommendation**

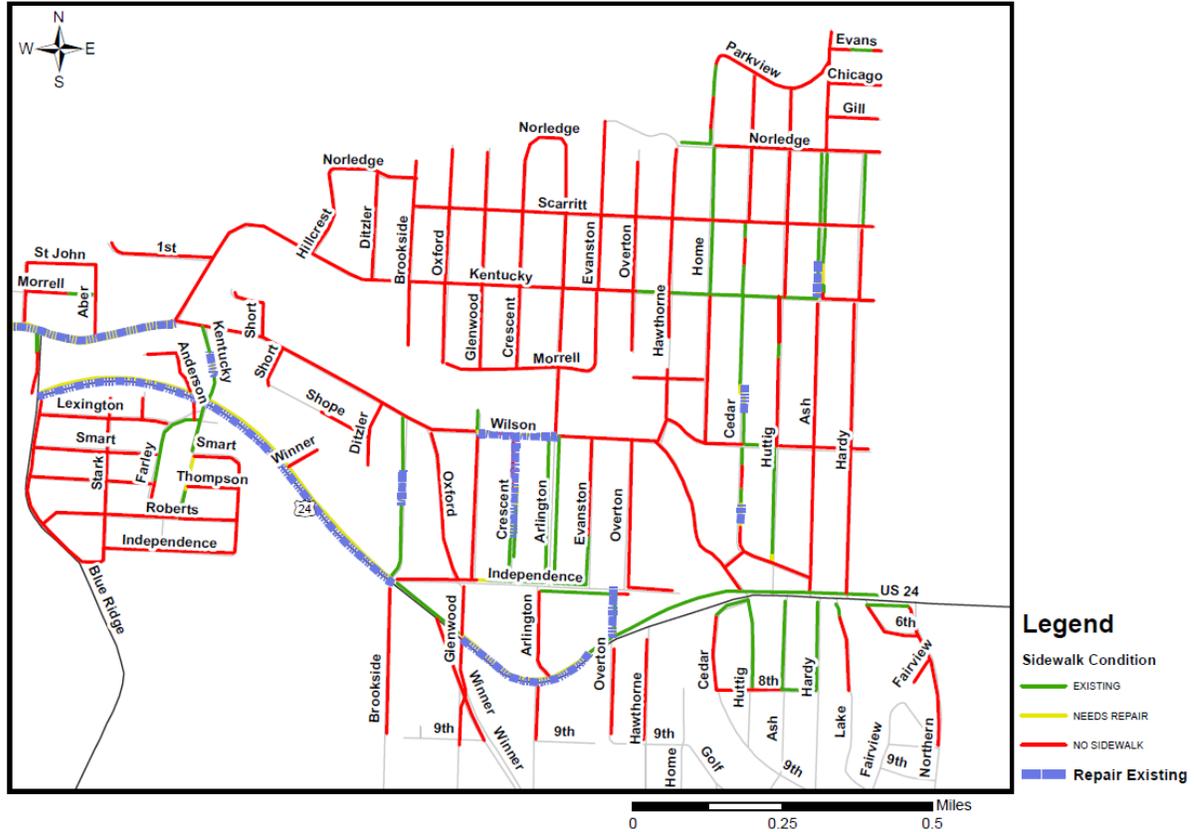
Negative impacts related to sidewalk placement connecting NWCDC to Mount Washington Senior Living include train tracks, the topography of the area, and the population that would utilize the sidewalks. There are train tracks that run between NWCDC and Mount Washington Senior Living. There would be no way around this and the sidewalk/path created would have to cross over the tracks. Additionally, the roads around Mount Washington Neighborhood are very hilly. This may deter people from utilizing any sidewalks that are placed and make sidewalk placement difficult. While this would serve as a great connection between the two neighborhoods, the population that would utilize the path may be limited to those who live in Mount Washington Senior Living and employ services at NWCDC. Some other items to consider with feasibility of sidewalk placement connecting NWCDC and Mount Washington include lighting, road width, easement, and the curves and hills of the road. This recommendation may require further investigation by transportation groups to further determine pros, cons, and effectiveness.

**Primary Action Agency:** City of Independence Public Works

**Suggested Timeline:** Started by July 2016

**6. Fix areas where sidewalks are present but in disrepair or unwalkable and maintenance of current sidewalks.**

**Repair Existing**



**Community Priorities**

There are currently areas throughout zip code 64053 where sidewalks are present, but they are not walkable due to cracks, brokenness, and overgrown grass and plants. The other aspect of this recommendation would be ensuring maintenance of current sidewalks. This suggestion came from the stakeholders of the HIA as a means to create connectivity and fix what is already present.

A major complaint from many residents presented via the walkability survey and community meetings is residents in scooters, wheelchairs, or with strollers cannot get around to very many places easily due to disrepair and current sidewalk conditions. This includes on and off ramps from the sidewalks to the roads as well. This leads to many residents opting to use the road for transportation purposes, which can be an unsafe option.

### **Evidence Supporting Health Impact Prediction**

Some positive impacts of this recommendation include a possible lower cost, feasibility of sidewalk placement, and the connection of sidewalks it will create. Since sidewalks are already present, there may be a lower cost to fixing the current condition as opposed to placing new sidewalks. Similarly, because sidewalks are present, there is no issue with road width or easement. These would be places where the sidewalks can be repaired and there would be no issue with the feasibility of sidewalk placement. An additional positive impact would be repairing the unwalkable sidewalks would recreate a connected sidewalk network that has fallen apart with the disrepair of sidewalks. The maintenance of current sidewalks will hopefully keep sidewalks walkable before they get to disrepair.

### **Potential Downsides of this Recommendation**

There are a couple possible negative impacts of this recommendation as well. First, the unwalkable sidewalks are spaced out throughout zip code 64053. This could be an inconvenience to those who do the repairs and may require a prioritization of which sidewalks to fix. Additionally, with the maintenance of sidewalks, there is an issue of who will maintain them. According to City ordinance, homeowners are held responsible for maintaining land up to the street in front of their homes, including sidewalks or any other infrastructures that may be there. This could become a property maintenance issue and a cost issue for the homeowner. If the City were able to fund the initial repairs, this may be more effective.

To alleviate confusion, the City of Independence Public Works Department could publish the maintenance schedule on the website as a way for residents to contact them when they notice any maintenance needed.

**Primary Action Agency:** City of Independence Public Works

**Suggested Timeline:** Started by end of 2016

## Recommendations Not Related to Sidewalk Placement

There are also a couple recommendations that are not related to sidewalk placement that could help improve the health and safety of residents of zip code 64053. These include:

- 7. Create a marked walking path/bike lane on one side of the roads and places for parking on the other**
- 8. Ensure lighting is adequate**
- 9. Place benches along sidewalks and commonly walked routes**

These are other factors that impact walkability of zip code 64053. In many cases within this neighborhood, the main areas available for parking are on the streets. Due to this, creating a marked walking path/bike lane on both sides of the road would not be feasible. However, a marked walking path/bike lane might be a more affordable option compared to sidewalk installation. This would allow for a safer place for pedestrians to walk along streets that do not have sidewalks. This would still allow for parking of residents on the opposite side and enough room to drive down the roads. It is also recommended to place a barrier of some kind between the walking path/bike lane and driving portion of the road. This would serve two purposes. First, it would enable residents to feel safer walking on the roads where cars often drive fast. Second, it would help prevent parked cars from being present in the walking path/bike lane. It is recommended that the City of Independence Public Works Department create a marked path, separated by barriers, for bikers and walkers by the end of 2016. This recommendation may be a cheaper option along any of the previously listed sidewalk placement recommendations.

Sidewalk characteristics such as the distance from the sidewalk to the curb, average height of trees, and sidewalk material and type are associated with higher light intensity physical activity among children.<sup>22</sup>

It will be important to ensure that lighting sources such as streetlights in zip code 64053 are working, providing adequate light, and spaced appropriately. Without these considerations, having sidewalks available will not matter if they are not being used. It was mentioned often in the walkability surveys and community meetings that poor lighting is a deterrent to physical activity and walking within the area. Specifically, it is recommended that the City of Independence Power and Light Department conduct a lighting audit by late 2015 or early 2016 that is made public, and then overhaul any sub-par pedestrian lighting by the end of 2016.

A third recommendation is to place benches along sidewalks and commonly walked routes. This could improve social interactions throughout the community. Additionally, there is a large number of the older population within this zip code and many who utilize walking aids. Benches would provide them places to take breaks or sit and enjoy the neighborhood

during their activity. The City of Independence Public Works could install benches at popular locations within zip code 64053.

Some important findings to note from the literature review include:

- The absence of roads hazards are often a bigger factor in walkability than the provision of amenities.
- Increasing awareness and use of walkable sidewalks, parks, community gardens, and other environmental supports already available in neighborhoods may be a cost-effective mechanism for increasing physical activity and walking. Interventions to increase environmental supports for physical activity should factor in resources in the area, such as private recreational facilities, parks, playgroups, and sports fields, as well as adequate lighting, and other external factors.
- Future community-based interventions should focus on expanding awareness, safety, and access to and use of places where people can engage in physical activity and walking.
- Sidewalk characteristics such as the distance from the sidewalk to the curb, average height of trees, and sidewalk material and type are associated with higher use and higher physical activity.

After recommendations are considered, it is suggested that City of Independence Public Works Department and IHD should jointly hold meetings with 64503 residents to further examine the specific changes. This will ensure support from the community and those affected by the recommendations.

Potential funding sources for the sidewalk improvements depend on the selected recommendation. Some funding sources include Missouri Department of Transportation, City of Independence Public Works, City of Independence Community Development Block Grant, the Independence School District, and other transportation or infrastructure grants. IHD will collaborate with stakeholders to disseminate the results of this HIA to support implementation, budget requests, and grant writing on sidewalk recommendations for northwest Independence.

## **Section V: Monitoring**

The purpose of a monitoring plan is to hold agencies and organizations accountable and monitor the progress of implementation of HIA recommendations. The Monitoring Plan describes indicators to be monitored, by whom, when, how, and methods for reporting monitoring findings.

There are four indicators to be monitored from the completion of this HIA. They include that a sidewalk is placed or repaired, whether the sidewalk is being used, is there an increase in physical activity of the area, and determining the resident satisfaction with the sidewalk placement or repair. The table below describes the monitoring plan.

**Table 6. Monitoring Plan**

Indicators to be monitored	Who monitors	When it will be monitored	How it will be monitored	Method for reporting monitoring findings
<b>Sidewalks are placed or repaired</b>	IHD, City of Independence Public Works Department	One year after completion of HIA	Visual check for sidewalks	One year after sidewalk installed or repaired, short report will be prepared to share findings.
<b>Sidewalk use</b>	IHD, City of Independence Public Works Department	Six months after sidewalk is installed	Measure baseline before sidewalk is installed or repaired. Physical count of people utilizing sidewalks.	One year after sidewalk installed or repaired, short report will be prepared to share findings.
<b>Physical activity rates</b>	IHD	One year after sidewalk installed	2017 Community Health Assessment survey	2017 Community Health Assessment report
<b>Resident satisfaction with the sidewalk placement or repair</b>	NWCDC, neighborhood association, City of Independence Community Development Department, IHD	Six months after sidewalk is installed	Survey, community meetings	One year after sidewalk installed or repaired, short report will be prepared to share findings.

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## **Section VII: Appendix**

## Health Impact Assessment Case Study

### **Background:**

In 2013, the City of Independence Health Department conducted a Community Health Assessment (CHA) in order to measure a variety of health related data within the City of Independence. Findings from the CHA concluded that residents who lack access to a safe area for physical activity are being left behind. This is shown in Northwest Independence where residents reported being unsatisfied with the physical infrastructure and the lack of health resources in the area. Additionally, the CHA found that 70% of the residents in ZIP code 64053 were considered overweight or obese, which is above the overall rate of 67% in Independence.

According to the Centers for Disease Control and Prevention (CDC), approximately 69% of adults age 20 and older are considered overweight or obese in the United States. One of the most important factors contributing to the obesity epidemic in the United States is lack of physical activity. The CHA showed that 55% of residents in ZIP code 64053 did not meet the 2008 Physical Activity Guidelines of 2 hours and 30 minutes of activity per week. This is above the United States 52% of adults not meeting this standard. The barriers to engaging in physical activity that we have identified in this part of Independence include a lack of sidewalks, drainage ditch complications, safety concerns, and other demographics of the area. Because of these barriers, this area of town may not be a safe environment for residents to partake in physical activity. One of the key components of the Independence Health Department's (IHD) Building a Healthier Independence initiative is to encourage active living, therefore, the IHD has decided to focus its efforts on giving Northwest Independence access to a safe environment to be physically active.

In October 2014, the IHD will be hosted a Health Impact Assessment (HIA) training that will educate IHD and various community stakeholders. The purpose of this assessment will be to recommend prioritization for future placement of sidewalks to increase access to safe areas of physical activity in Northwest Independence.

### **Decision-Makers and Decision-Making process:**

The Healthcare Foundation of Greater Kansas City grant of \$46,136.00, which was awarded to the City of Independence Health Department, will be used to fund the Health Impact Assessment that will help determine the greatest need of sidewalk placement in Northwest Independence.

Some of the funding for the placement of sidewalks may come from the Community Development Block Grant (CDBG) depending on need, timeframe, and availability. The CDBG funds are received from the U.S. Department of Housing and Urban Development on an annual basis to provide a flexible source of funding to develop urban communities by providing affordable housing, creating suitable living environments, and expanding economic opportunities for low and moderate income residents. There is typically

\$300,000-350,000 designated for infrastructure, construction, lighting, and public facilities in low to moderate income neighborhoods every year. Some of these funds are already set-aside for on-going projects. The application process begins on November 1<sup>st</sup> with a deadline in mid-January. The projects are approved in April/May and funds become available July 1<sup>st</sup> of every year. The decision-makers who help decide how these funds are dispersed are the City Council, the City Manager, an advisory committee, and staff recommendation. The 7 person Advisory committee is made up of members from the Advisory Board of Health, Chamber of Commerce, Independence School District, Truman Heartland Community Foundation, Labor Management, the Ministerial Alliance, and various members from different service organizations.

The Department of Public Works has funds that are distributed as needed when situations arise and the public voices their opinions. There is no official application process. The funds come from the Independence sales tax revenue which varies from year to year and is usually \$100,000-300,000. A portion of these funds is given to the Sidewalks to Schools and Sidewalks to Parks initiative. There is the potential to have on-going projects with funding given over multiple years, or the potential for the department to hold funds for a more complex project in the future.

**Timeline:**

The Healthcare Foundation of Greater Kansas City grant period is from 7/1/2014-6/30/2014. IHD will meet with stakeholders, review walkability tools for future assessment, and research other issues regarding walkability in ZIP code 64053. The HIA training will be held in October of 2014 to inform City officials and stakeholders about the importance of health in policy decisions. In October and November, GIS data of current sidewalks will be gathered, and mini-walkability events will be held with community groups to get details and opinions of sidewalk placement. An assessment and survey will be completed about how walkable neighborhood sidewalks and streets are. We will determine potential walking routes for signage in December. January 2015 begins the formation of a walking group on the designated walking routes and the installation of trail markers and "safe route" signs, if weather permits. By the end of June, we will compile the walkability assessment data, GIS layers and survey findings into a report that will be shared with stakeholders.

**History of Concerns:**

According to City ordinance, homeowners are held responsible for maintaining land up to the street in front of their homes, including sidewalks or any other infrastructures that may be there. In Missouri, maintaining sidewalks includes snow removal and repairing cracks/damages. The residents of the area could have the potential to oppose the idea and not want sidewalks placed on their property or have the construction in their area.

Another concern is that in the last 25 years, the infrastructure has been worsened in an attempt to fix complaints from community members in that area about storm water back up. Storm water drainage ditches were dug or deepened to relieve the standing water.

There may be the perception that the city would be taking away the good drainage system if we pave over the ditches, when in fact, the drainage would still be there. Does this create issues with putting sidewalks on those streets? Will the residents of Northwest Independence exercise their right of easement?

**Environmental and Social Determinants of Health to Consider:**

The first environmental and social determinant that could change based on the outcomes of the health impact assessment is with the built environment. The placement of sidewalks will increase the walkability of the region and create access to city parks, walking trails, and schools in the area. Having safe and walkable routes may encourage an environment of increased physical activity, including walking, running, and biking. It may also lead to easier access to other places in the area where people can be physically active.

Crime and the perception of safety are additional factors. The plan is to install safe walkways and create an environment where residents of the area feel at ease exercising outside. The environment for crime has the potential to decrease with an advanced awareness of this area and focusing on safety.

The members of this community may have pride or a sense of ownership about their property and may be concerned about decreasing their lot size, the city taking away the good drainage that they finally have, or maybe the concern that they will have to care for the sidewalks themselves. It may seem like an unwanted burden to them. Installing nice walkways could increase the value of the homes though.

**Stakeholders:**

Stakeholders include the City of Independence officials, residents of Northwest Independence, the Independence School District, walk and bike advocate groups, community churches, the Northwest Communities Development Corporation (NWCDC), neighborhood and block groups, and various other City Departments, including Public Works, the Planning department, and Community Development.